



CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

2024 DEC 10 AM 11:54

OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

BZA Application Form

BZA Number: 1144543

General Information

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

Special Permit: X

Variance:

Appeal:

PETITIONER: DISH NETWORKS C/O Keenan Brinn as agent for NB+C

PETITIONER'S ADDRESS: 300 Unicorn Dr., Woburn, MA 01801

LOCATION OF PROPERTY: 1 Brattle Sq., Cambridge, MA

TYPE OF OCCUPANCY: Business

ZONING DISTRICT: Business B Zone

REASON FOR PETITION:

/Telecommunication Facility (antenna)/

DESCRIPTION OF PETITIONER'S PROPOSAL:

The applicant seeks permission to install a telecommunications facility on an existing rooftop where other wireless providers have already installed their facilities. The work will include the placement of out door equipment and antennas per plans attached and is subject to the city's Wireless By-law.

SECTIONS OF ZONING ORDINANCE CITED:

Article: 4.000	Section: 4.32.g.1 & Sec. 4.40 (Footnote 49) (Telecommunication Facility).
Article: 10.000	Section: 10.40 (Special Permit).
Article: 6409	Section: Federal Middle Class Tax Relief Act (Spectrum Act).

Original
Signature(s):

(Petitioner (s) / Owner)

KEENAN BRINN

(Print Name)

Address:

31 CHESTERFIELD RD, MILTON, MA

Tel. No.

6176805464

E-Mail Address:

kbrinn@nbcllc.com

02186

Date: 12/5/24

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 BCSP 9 OBS Property LLC
(OWNER)

Address: C/O Beacon Capital Partners, LLC, 200 State Street, 5th Fl.,
Boston, MA 02109

State that I/We own the property located at 1 Brattle Square, Cambridge, MA 02138
which is the subject of this zoning application.

The record title of this property is in the name of BCSP 9 OBS
Property LLC

*Pursuant to a deed of duly recorded in the date 12/14/22, Middlesex South
County Registry of Deeds at Book 81056, Page 381; ^{and Book 81056} _{Page 390}
Middlesex Registry District of Land Court, Certificate No. _____

Book _____ Page _____

BCSP 9 OBS Property LLC
By: [Signature] Deputy General Counsel
SIGNATURE BY LAND OWNER OR and Managing Director
AUTHORIZED TRUSTEE, OFFICER OR AGENT*

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

Commonwealth of Massachusetts, County of Suffolk

The above-name Jill R. Hyde, Deputy General
Counsel & Managing Director personally appeared before me,
this 5th of November, 2024, and made oath that the above statement is true.

Clarissa Vazquez Notary
My commission expires 9/30/2027 (Notary Seal).



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

BZA Application Form

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 1 Brattle Sq., 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:

The Ordinance allows for the placement of wireless facilities in this district. There are currently other facilities on this same roof.

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:

After construction visits to the building will be minimal. The addition of this proposed equipment will blend in with the the other existing rooftop facilities.

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

The installation will be on the rooftop and will not adversely affect the operation or potential development as this will be limited to a rooftop well above street level and out of the way of general activities.

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:

This installation is well within the realm of safe limits as set by the FCC EME guidelines.

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

The Ordinance allows for these installations and this one in particular is utilizing an existin buildin that already houses telecommunications facilities.

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

BZA Application Form**DIMENSIONAL INFORMATION**

Applicant: DISH NETWORKS
Location: 1 Brattle Sq., Cambridge, MA
Phone: 6176805464

Present Use/Occupancy: Business
Zone: Business B Zone
Requested Use/Occupancy: Wireless

		<u>Existing Conditions</u>	<u>Requested Conditions</u>	<u>Ordinance Requirements</u>	
<u>TOTAL GROSS FLOOR AREA:</u>		0 - Rooftop Space	0	0	(max.)
<u>LOT AREA:</u>		0 - Rooftop space	0	0	(min.)
<u>RATIO OF GROSS FLOOR AREA TO LOT AREA: ²</u>		0	0	0	
<u>LOT AREA OF EACH DWELLING UNIT</u>		0	0	0	
<u>SIZE OF LOT:</u>	WIDTH	0	0	0	
	DEPTH	0	0	0	
<u>SETBACKS IN FEET:</u>	FRONT	0	0	0	
	REAR	0	0	0	
	LEFT SIDE	0	0	0	
	RIGHT SIDE	0	0	0	
<u>SIZE OF BUILDING:</u>	HEIGHT	0	0	0	
	WIDTH	0	0	0	
	LENGTH	0	0	0	
<u>RATIO OF USABLE OPEN SPACE TO LOT AREA:</u>		This will be a wireless rooftop mount similar to others on there now.	Wireless rooftop facility with radio equipment and antennas.	Not applicable.	
<u>NO. OF DWELLING UNITS:</u>		0	0	0	
<u>NO. OF PARKING SPACES:</u>		0	0	0	
<u>NO. OF LOADING AREAS:</u>		N/A	N/A	N/A	
<u>DISTANCE TO NEAREST BLDG. ON SAME LOT</u>		N/A	N/A	N/A	

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

N/A

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



View 3

View 1

View 2

**Dominion Court
Location Map**

● - not visible ● - visible



Site Name: BOBOS00341B
Wireless Communication Facility
1 Brattle Square
Cambridge, MD 02138

Photograph Information:
View 1-Brattle Street
View from the East
Showing the Existing Site

NB+C
TOTALLY COMMITTED.



Site Name: BOBOS00341B
Wireless Communication Facility
1 Brattle Square
Cambridge, MD 02138

Photograph Information:
View 1-Brattle Street
View from the East
Showing the Proposed Site

NB+C
TOTALLY COMMITTED.



Site Name: BOBOS00341B
Wireless Communication Facility
1 Brattle Square
Cambridge, MD 02138

Photograph Information:
View 2-Eliot Street
View from the South
Showing the Existing Site

NB+C
TOTALLY COMMITTED.



Site Name: BOBOS00341B
Wireless Communication Facility
1 Brattle Square
Cambridge, MD 02138

Photograph Information:
View 2-Eliot Street
View from the South
Showing the Proposed Site

NB+CTM
TOTALLY COMMITTED.



Site Name: BOBOS00341B
Wireless Communication Facility
1 Brattle Square
Cambridge, MD 02138

Photograph Information:
View 3-Brattle Street
View from the North
SITE NOT VISIBLE

NB+CTM
TOTALLY COMMITTED.



October 23, 2024

Board of Zoning Appeal c/o
Inspectional Services Department 831
Massachusetts Avenue
Cambridge, Massachusetts 02139

RE: Corporate Organization of DISH Network Corporation's Wireless Assets and Licenses Dear

Board Members:

As you know, DISH Wireless L.L.C. ("DISH"), a wholly owned indirect subsidiary of DISH Network Corporation, is in the process of filing a Zoning Application with City of Cambridge Board of Zoning Appeal in connection with obtaining a zoning permit to construct certain wireless telecommunications equipment. This equipment is designed to operate on certain radio frequencies for which DISH or an affiliate of DISH holds, or otherwise has the right to use, a license issued by the Federal Communications Commission ("FCC"). This letter provides information regarding the corporate ownership structure of the individual DISH Network Corporation subsidiaries that hold the relevant FCC licenses:

- ParkerB.com Wireless L.L.C. (600 MHz)
- American H Block Wireless L.L.C. (H Block)
- Gamma Acquisition L.L.C. and DBSD Corporation (AWS-4)

Each of the companies listed above is a direct or indirect subsidiary of DISH Network Corporation.

Please contact the undersigned with any questions at Elijah.Luutu@dish.com.

Sincerely,

A handwritten signature in blue ink that reads "Elijah Luutu".

Elijah Luutu,
Senior RF Engineering

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

I/We BCSP 9 OBS Property LLC
(OWNER)

Address: C/O Beacon Capital Partners, LLC, 200 State Street, 5th Fl., Boston, MA 02109

State that I/We own the property located at 1 Brattle Square, Cambridge, MA 02138 which is the subject of this zoning application.

The record title of this property is in the name of BCSP 9 OBS Property LLC

*Pursuant to a deed of duly recorded in the date 12/14/22, Middlesex South County Registry of Deeds at Book 81056, Page 381; or and Book 81056 Page 390

Middlesex Registry District of Land Court, Certificate No. _____

Book _____ Page _____

BCSP 9 OBS Property LLC
By: [Signature] Deputy General Counsel and Managing Director
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 Suffolk

The above-name Jill R. Hyde, Deputy General Counsel & Managing Director personally appeared before me, this 5th of November, 2024, and made oath that the above statement is true.

Clarissa Vazquez Notary

My commission expires 9/30/2027 (Notary Seal).



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

Dish Wireless coverage in Cambridge, MA without BOBOS00341B



 In-Building Coverage

Dish Wireless coverage in Cambridge, MA with BOBOS00341B

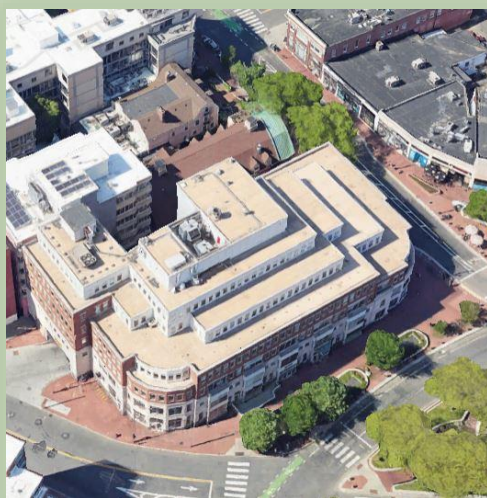


 In-Building Coverage

Radio Frequency - Electromagnetic Energy (RF-EME) Report

Site No. BOBOS00341B
1 Brattle Square
Cambridge, Massachusetts 02138
42° 22' 23.86" N, -71° 7' 17.31" W NAD83

EBI Project No. 018412-PR
May 23, 2024



Prepared for:
DISH Wireless

Prepared by:
EBI | **BUILDING VALUE
SUSTAINABLY**

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APPENDIX B	RADIO FREQUENCY ELECTROMAGNETIC ENERGY SAFETY / SIGNAGE PLANS
APPENDIX C	FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

REFERENCE DOCUMENTS (NOT ATTACHED)

CDs: BOBOS00341B_FINALSTAMPEDCDs_20240123085313

RFDS: RFDS-BOBOS00341B-FINAL-20240122-v.0_20240122111509

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by DISH Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for DISH Wireless Site BOBOS00341B located at 1 Brattle Square in Cambridge, Massachusetts to determine RF-EME exposure levels from proposed DISH Wireless communications equipment at this site. As described in greater detail in Appendix C of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for the general public and for occupational activities. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 43 feet of DISH's proposed antennas at the penthouse roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 12 feet of DISH's proposed antennas at the penthouse roof level. Additionally, there are areas where workers who may be elevated above the rooftop and ground may be exposed to power densities greater than the occupational limits. Therefore, workers should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the DISH Wireless antennas, the maximum power density generated by the DISH antennas is approximately **2,551.23** percent of the FCC's general public limit (**510.25** percent of the FCC's occupational limit).

The composite exposure level from all carriers on this site is approximately **2,551.26** percent of the FCC's general public limit (**510.25** percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna. At ground level, the composite exposure level from all carriers on this site is approximately **0.83** percent of the FCC's general public limit (**0.166** percent of the FCC's occupational limit).

Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); DISH Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact DISH Wireless since only DISH has the ability to lockout/tagout the facility, or to authorize others to do so.

Implementation of the signage and installation of the recommended barriers recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per second (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by DISH Wireless in this area will potentially operate within a frequency range of 600 to 5000 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 a distance 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 in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists since they 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.

2.0 SITE DESCRIPTION

This project site includes the following proposed wireless telecommunication antennas on a rooftop located at 1 Brattle Square in Cambridge, Massachusetts.

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (°)	Mechanical Downtilt (°)	Horizontal Beamwidth (°)	Aperture (feet)	Total Power Input (Watts)	Gain (dBd)	Total ERP (Watts)	Total EIRP (Watts)
1	DISH	JMA	MX08FRO665-21 02DT 600	600	20	0	62	6.0	240	11.35	2918.85	4786.91
1	DISH	JMA	MX08FRO665-21 04DT 2007	2007	20	0	63	6.0	160	16.05	5742.75	9418.11
1	DISH	JMA	MX08FRO665-21 04DT 2100	2100	20	0	65	6.0	160	16.75	6747.14	11065.32
2	DISH	JMA	MX08FRO665-21 02DT 600	600	140	0	62	6.0	240	11.35	2918.85	4786.91
2	DISH	JMA	MX08FRO665-21 04DT 2007	2007	140	0	63	6.0	160	16.05	5742.75	9418.11
2	DISH	JMA	MX08FRO665-21 04DT 2100	2100	140	0	65	6.0	160	16.75	6747.14	11065.32
3	DISH	JMA	MX08FRO665-21 02DT 600	600	260	0	62	6.0	240	11.35	2918.85	4786.91
3	DISH	JMA	MX08FRO665-21 04DT 2007	2007	260	0	63	6.0	160	16.05	5742.75	9418.11
3	DISH	JMA	MX08FRO665-21 04DT 2100	2100	260	0	65	6.0	160	16.75	6747.14	11065.32
4	Unknown	GENERIC	PANEL 4FT 00DT 850	850	320	0	61	4.0	100	11.52	1419.06	2327.25
5	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	320	0	65	4.0	100	14.65	2917.43	4784.58

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (°)	Mechanical Downtilt (°)	Horizontal Beamwidth (°)	Aperture (feet)	Total Power Input (Watts)	Gain (dBd)	Total ERP (Watts)	Total EIRP (Watts)
6	Unknown	GENERIC	PANEL 4FT 00DT 850	850	320	0	61	4.0	100	11.52	1419.06	2327.25
7	Unknown	GENERIC	PANEL 4FT 00DT 850	850	130	0	61	4.0	100	11.52	1419.06	2327.25
8	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	130	0	65	4.0	100	14.65	2917.43	4784.58
9	Unknown	GENERIC	PANEL 4FT 00DT 850	850	130	0	61	4.0	100	11.52	1419.06	2327.25
10	Unknown	GENERIC	PANEL 4FT 00DT 850	850	260	0	61	4.0	100	11.52	1419.06	2327.25
11	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	260	0	65	4.0	100	14.65	2917.43	4784.58
12	Unknown	GENERIC	PANEL 4FT 00DT 850	850	260	0	61	4.0	100	11.52	1419.06	2327.25

• Note there is 1 DISH Wireless antenna per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.

Ant #	NAME	X	Y	Antenna Radiation Centerline	Z-Height Penthouse	Z-Height Shelter Roof	Z-Height Main Roof	Z-Height Lower Roof	Z-Height Lower Roof 2	Z-Height Lower Roof 3	Z-Height Ground
1	DISH	52.8	1.5	97.0	6.7	9.5	19.5	29.5	39.5	67.0	97.0
2	DISH	53.1	0.0	97.0	6.7	9.5	19.5	29.5	39.5	67.0	97.0
3	DISH	20.4	16.7	97.0	6.7	9.5	19.5	29.5	39.5	67.0	97.0
4	Unknown	8.2	24.7	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
5	Unknown	10.4	26.4	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
6	Unknown	12.6	27.9	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
7	Unknown	11.9	41.5	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
8	Unknown	8.5	43.9	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
9	Unknown	5.3	45.8	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
10	Unknown	12.4	31.3	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
11	Unknown	14.8	28.4	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0
12	Unknown	17.0	25.0	87.0	-3.3	-0.5	9.5	19.5	29.5	57.0	87.0

• Note the Z-Height represents the distance from the antenna centerline in feet.

The above tables contain an inventory of proposed DISH Wireless antennas and other carrier antennas if sufficient information was available to model them. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes. 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 that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Appendix C. Appendix B presents a site safety plan that provides a plan view of the rooftop with antenna locations.

3.0 WORST-CASE PREDICTIVE MODELING

EBI has performed theoretical MPE modeling using RoofMaster™ software to estimate the worst-case power density at the site's nearby broadcast levels resulting from operation of the antennas. RoofMaster™ is a widely-used predictive modeling program that has been developed by Waterford Consultants to predict RF power density values for rooftop and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. Using the computational methods set forth in Federal Communications Commission (FCC) Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65), RoofMaster™ calculates predicted power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by DISH Wireless and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by DISH Wireless and information gathered from other sources. Elevations of walking/working surfaces were estimated based on elevations provided and available aerial imagery. Sector orientation assignments were made assuming coverage is directed to areas of site. Changes to antenna mount heights or placement will impact site compliance. The parameters used for modeling are summarized in the Site Description antenna inventory table in Section 2.0.

An Unknown Carrier also has antennas on the rooftop. Information about these antennas was included in the modeling analysis.

The worst-case predictive modeling results are presented in the tables below.

Maximum Calculated MPEs On-Site				
Walking/Working Surface	Dish Only % MPE Limit		Composite (All carriers) % MPE Limit	
	General Public	Occupational	General Public	Occupational
Ground	N/A	N/A	0.83	0.166
Nearest Walking Surface (Penthouse Roof)	2,551.23	510.25	2,551.26	510.25

Areas Exceeding the FCC's MPE Limits: Horizontal Stay-Back Distance (in Feet from Antenna)		
Location	Occupational Limit	General Public Limit
Nearest Walking Surface (Penthouse Roof) In front of Sectors A, B & C	12	43

The inputs used in the modeling are summarized in the Site Description antenna inventory table in Section 2.0. A graphical representation of the RoofMaster™ modeling results is presented in Appendix B.

4.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are areas in front of the DISH Wireless antennas that exceed the FCC standards for general public and occupational exposure. In order to alert people accessing the rooftop, a Guidelines sign and an NOC Information are recommended for installation at each access point to the rooftop. Additionally, yellow Caution signs are recommended for installation behind the DISH Wireless Sector A, B, and C antennas and on the barriers in front of them. These signs must be placed in a conspicuous manner so that they are visible to any person approaching the antennas and the barriers from any direction.

Barriers are recommended for installation when possible to block access to the areas in front of the antennas that exceed the FCC general public and/or occupational limits. Barriers may consist of rope, chain, or fencing. Painted stripes should only be used as a last resort. Barriers are only recommended for installation up to 6 feet from the edge of the rooftop because the accessible areas of concern are within 6 feet of an area with no guard rail or parapet greater than 39 inches high. A 23-foot barrier is recommended in front of the DISH Wireless Sector A antenna, a 3-foot barrier is recommended in front of the DISH Wireless Sector B antenna, two 3-foot barriers are recommended in front of the DISH Wireless Sector C antenna at the penthouse roof level.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the rooftop should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage and installation of the recommended barriers, and signify their understanding of the Site Safety Plan.

To reduce the risk of exposure, EBI recommends that access to areas associated with the active antenna installation be restricted and secured where possible. All workers and individuals, including arborists and landscapers, accessing the rooftop along with nearby elevated structures or trees within areas exceeding the general public MPE must be made aware of the presence and locations of antennas and their associated fields, where applicable.

Implementation of the signage and installation of the recommended barriers recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

5.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by DISH Wireless Site Number BOBOS00341B located at 1 Brattle Square in Cambridge, Massachusetts to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, the worst-case emitted power density may exceed the FCC's general public limit within approximately 43 feet of DISH's proposed antennas at the penthouse roof level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 12 feet of DISH's proposed antennas at the penthouse roof level.

Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); DISH Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact DISH Wireless since only DISH Wireless has the ability to lockout/tagout the facility, or to authorize others to do so.

6.0 LIMITATIONS

This report was prepared for the use of DISH Wireless. 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 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

Certifications

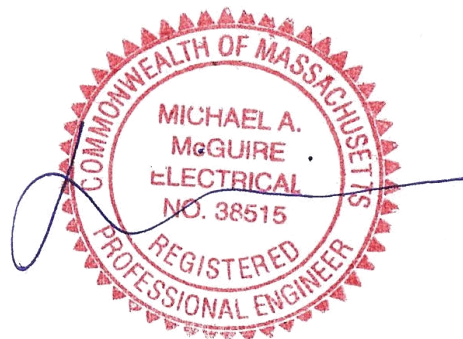
Preparer Certification

I, Colin Mounce, 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 fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data 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.

A rectangular box containing a handwritten signature in black ink. The signature appears to be 'CM' followed by a stylized flourish.

Reviewed and Approved by:



sealed 23may2024 mike@h2dc.com
H2DC PLLC MA CoA#: 001239603

Michael McGuire
Electrical Engineer
mike@h2dc.com

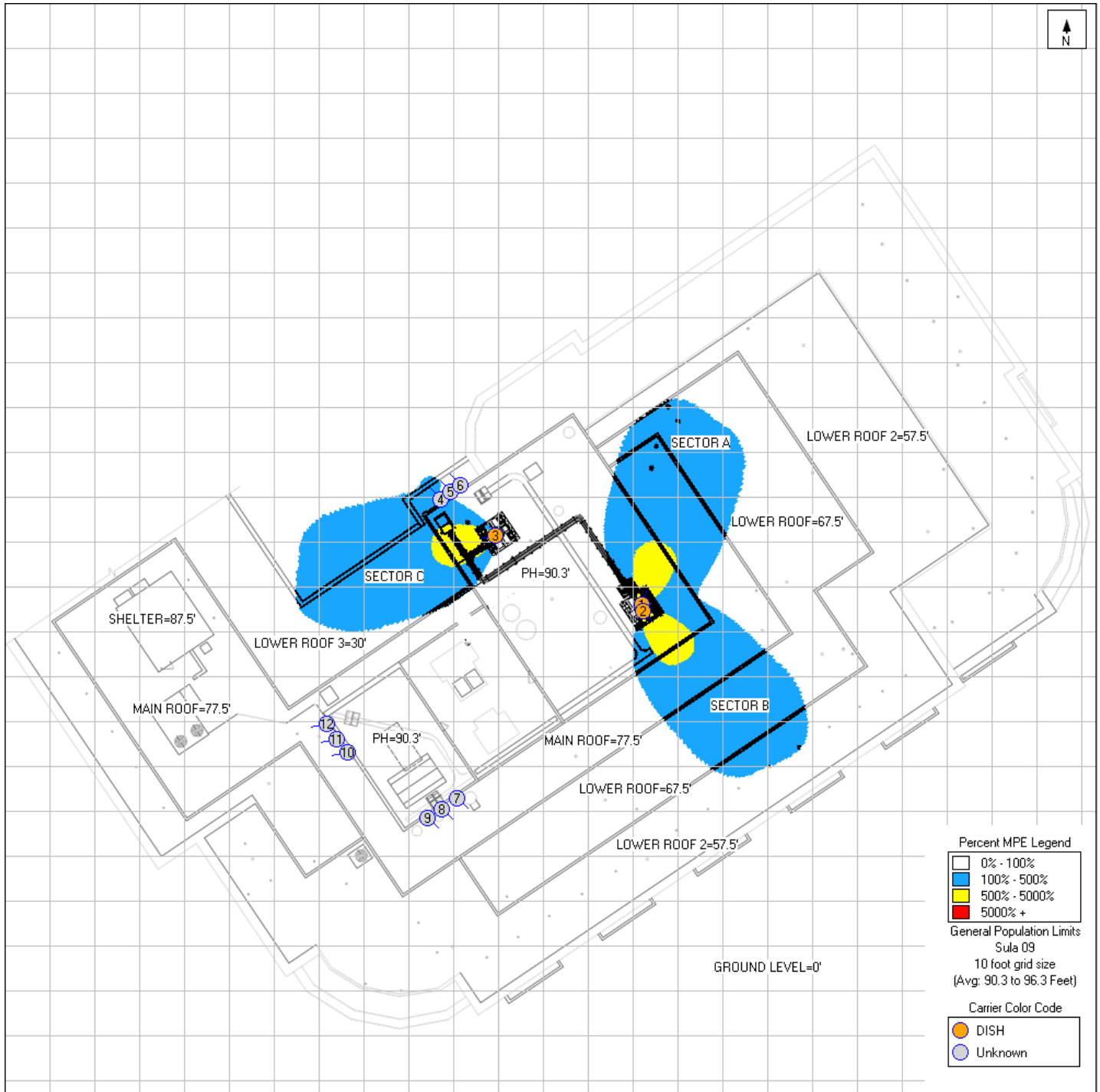
Note that EBI's scope of work is limited to an evaluation of the Radio Frequency - Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Appendix B

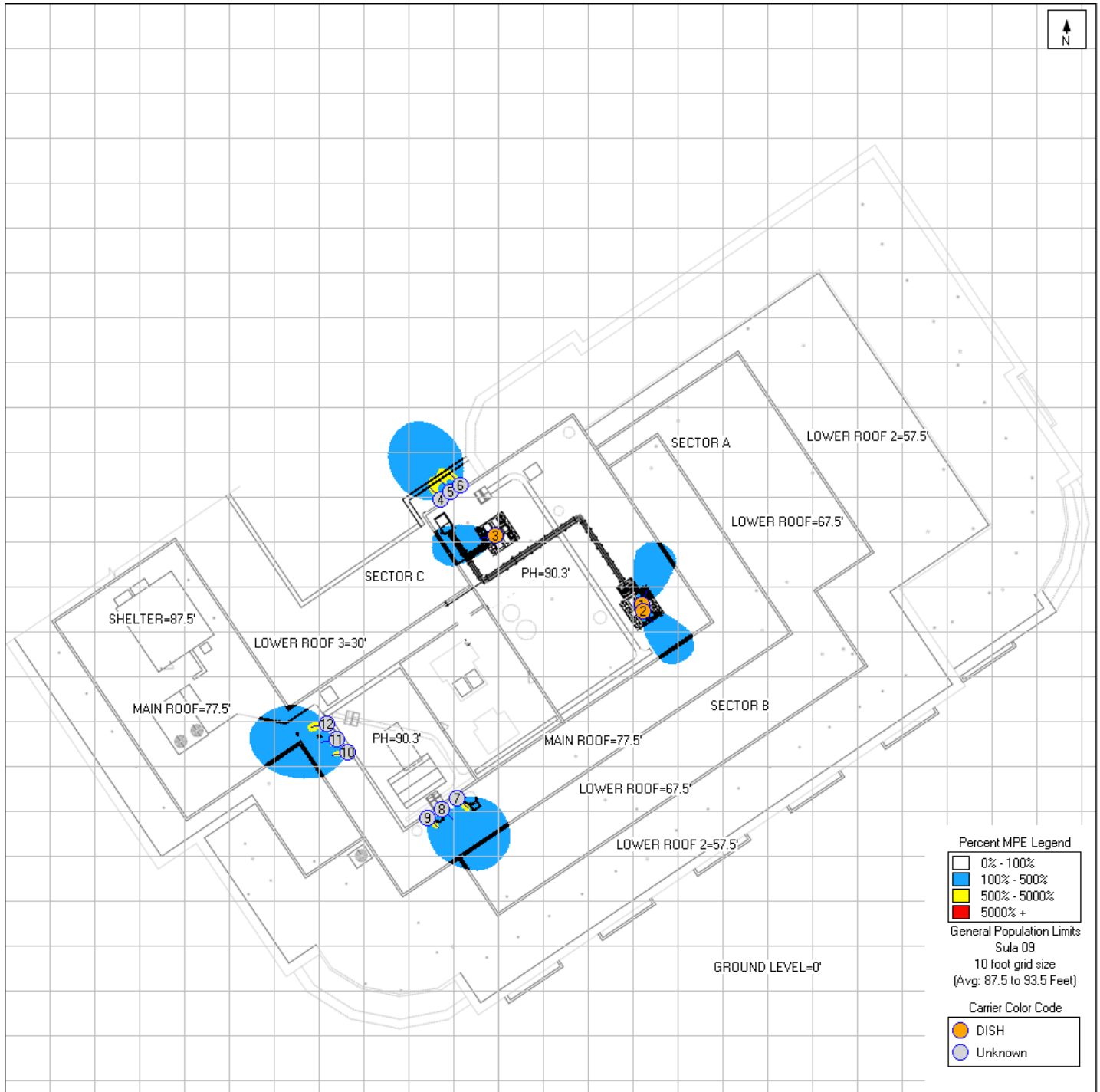
Radio Frequency Electromagnetic Energy

Safety Information and Signage Plans

Nearest Walking Surface (Penthouse Roof Level) Simulation



Shelter Roof Level Simulation



Percent MPE Legend

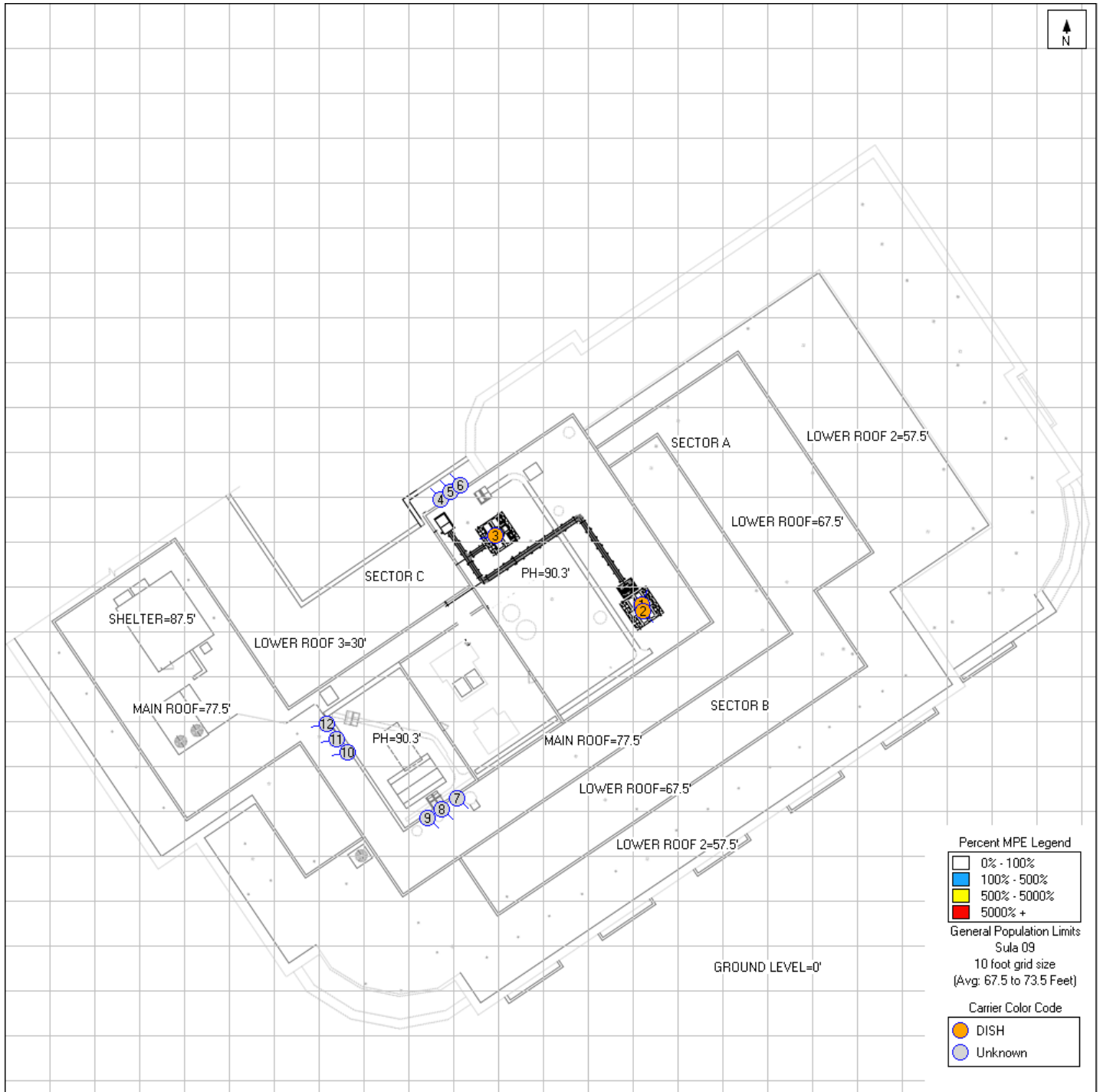
0% - 100%
100% - 500%
500% - 5000%
5000% +

General Population Limits
Sula 09
10 foot grid size
(Avg: 77.5 to 83.5 Feet)

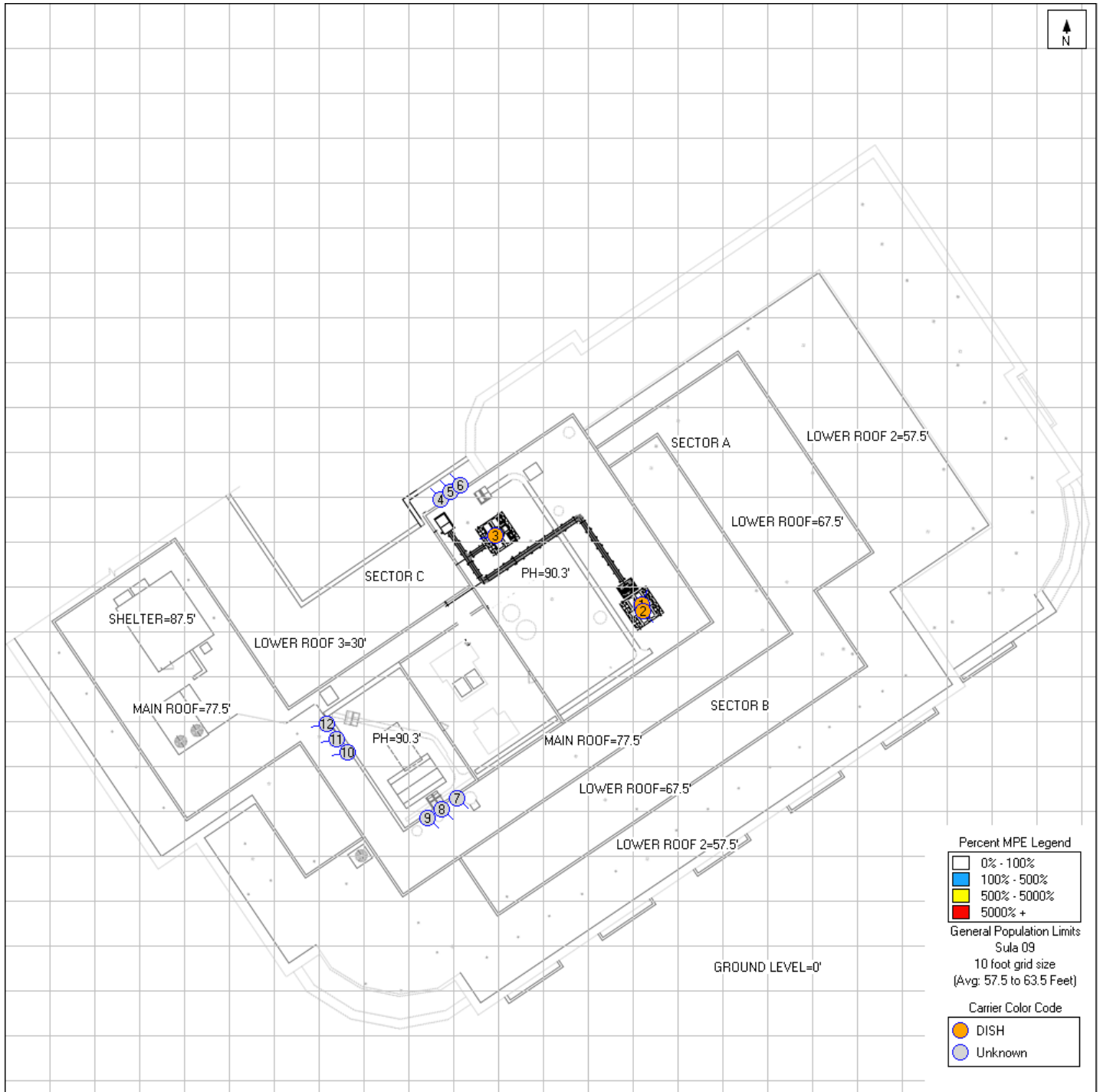
Carrier Color Code

DISH
Unknown

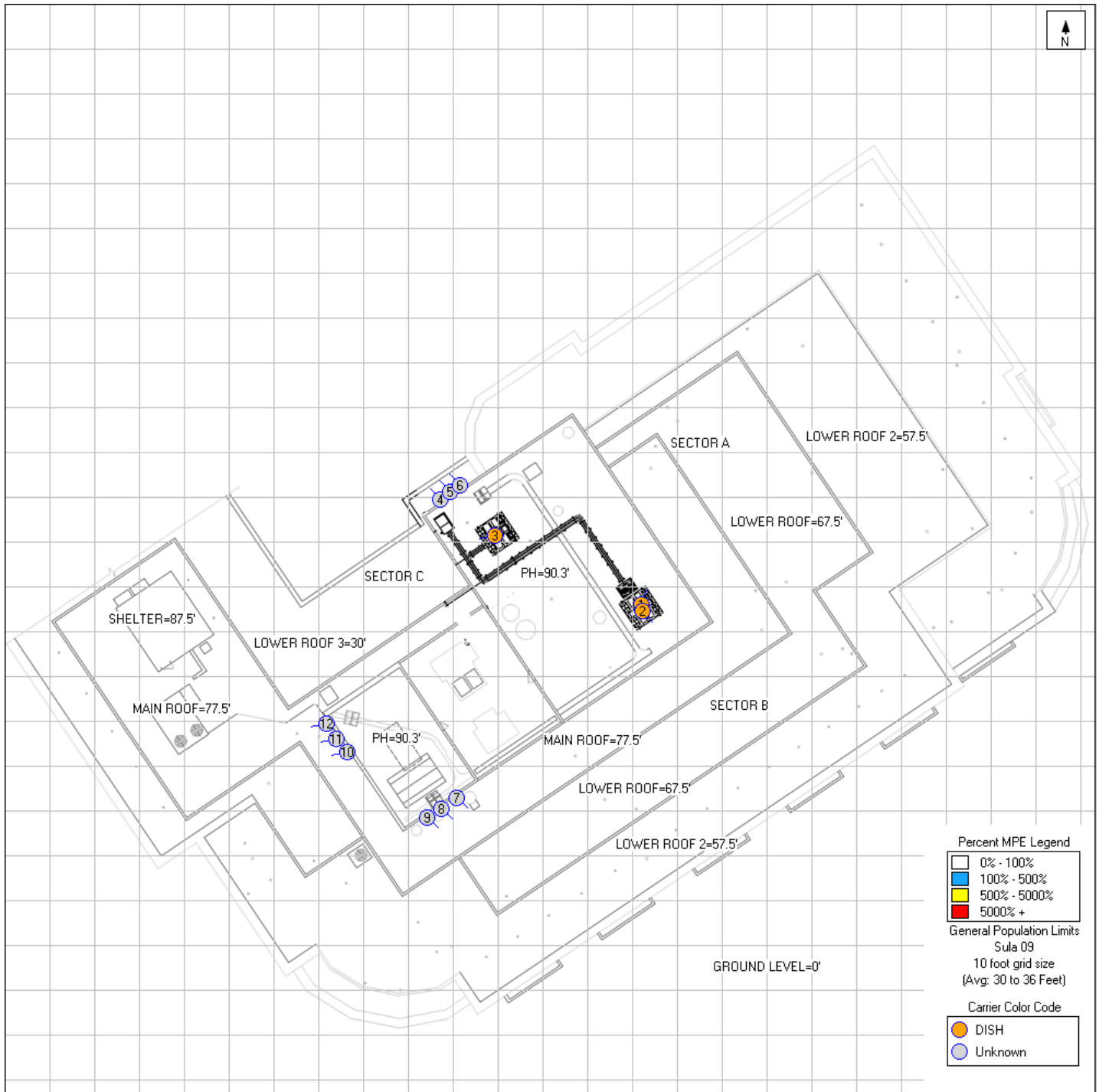
Lower Roof Level Simulation



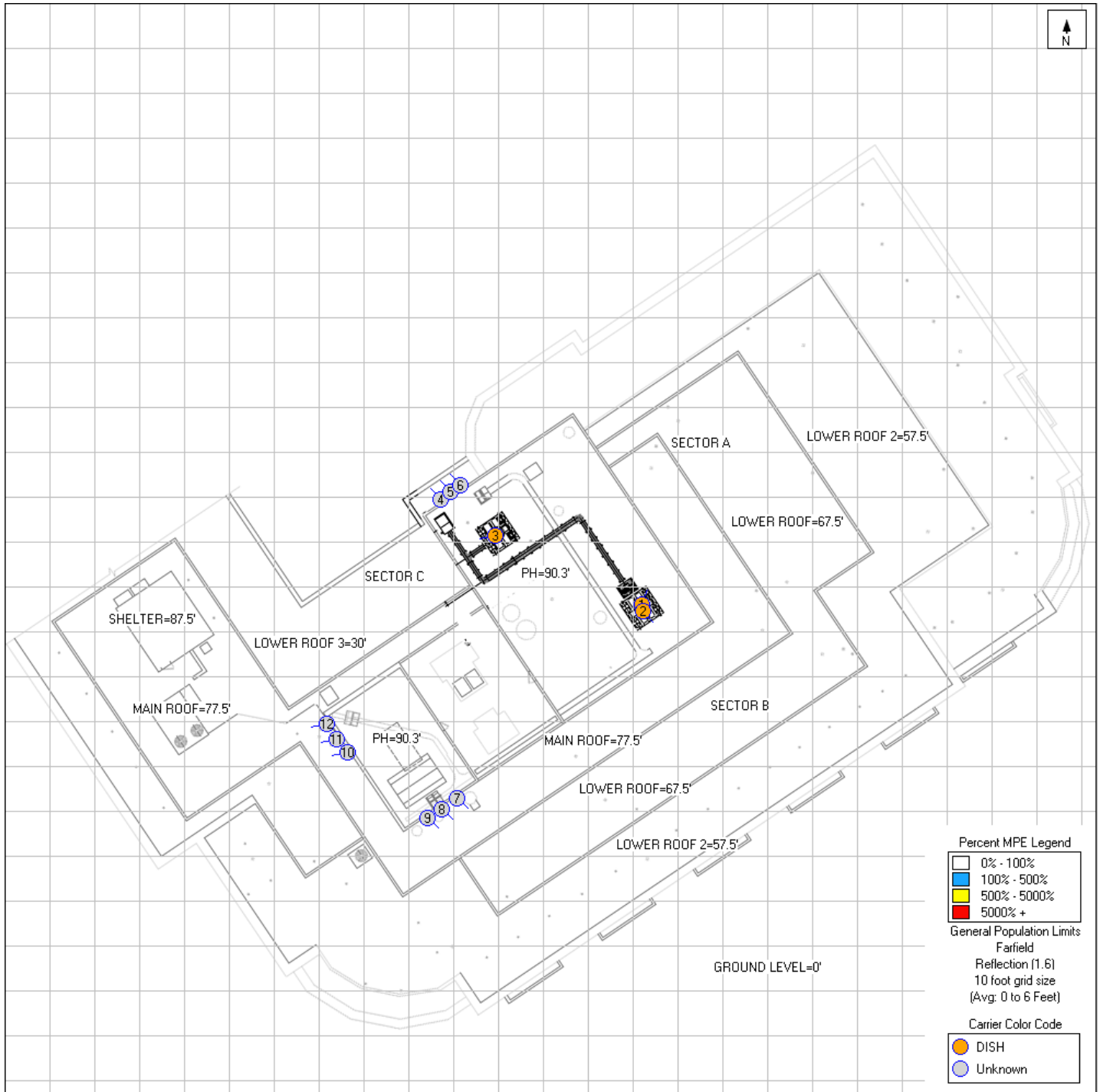
Lower Roof 2 Level Simulation



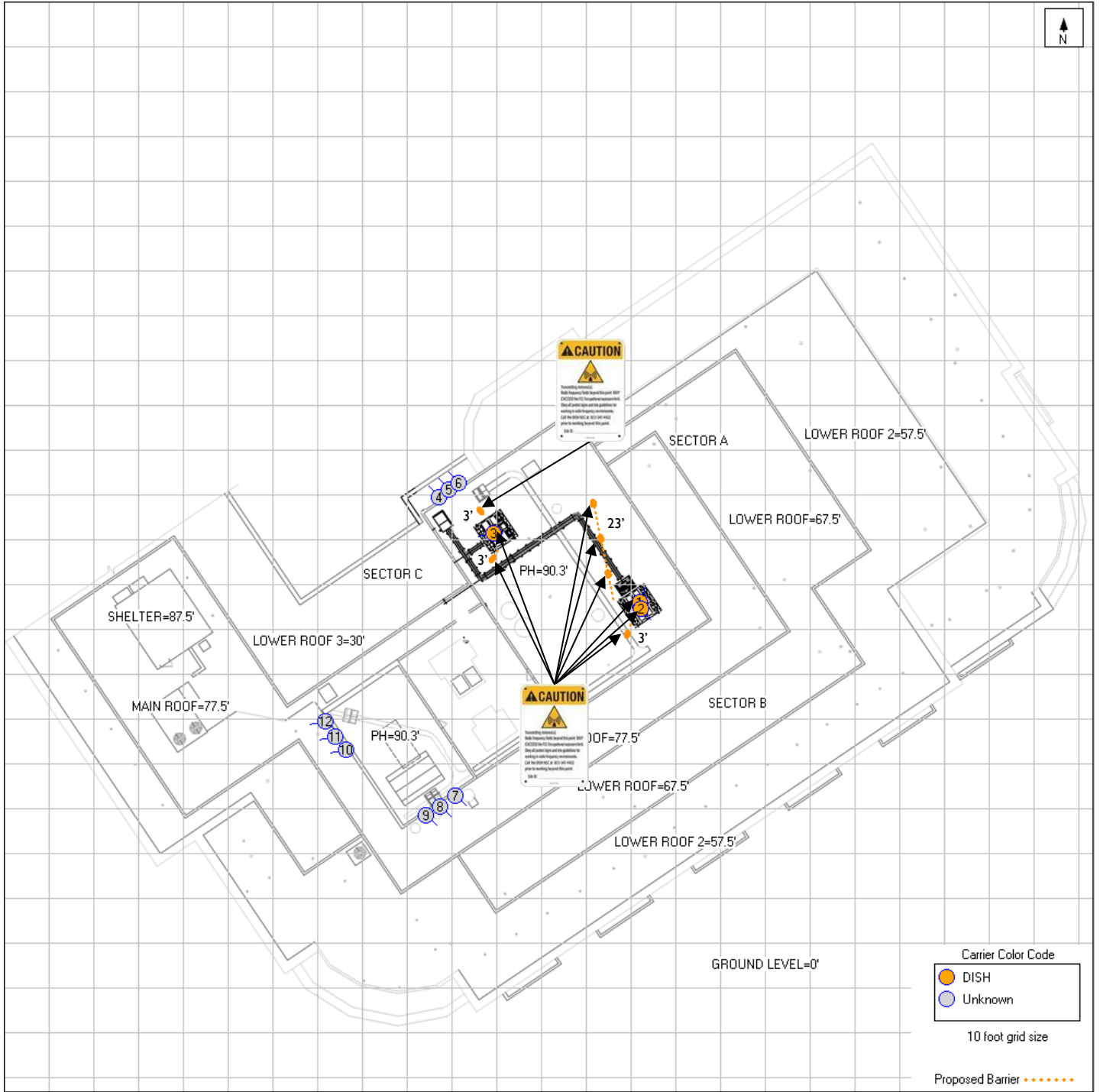
Lower Roof 3 Level Simulation



Ground Level Simulation



DISH Wireless Safety (Signage) Plan



Post at all Roof
Access Points

Final Compliance Configuration						
	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER / MARKER
Access Point(s)	1	0	0	0	1	N/A
Alpha	0	0	4	0	0	23'
Beta	0	0	2	0	0	3'
Gamma	0	0	2	0	0	3' & 3'

Sign	Posting Instructions	Required Signage / Mitigation
	NOC Information Information signs are used to provide contact information for any questions or concerns for personnel accessing the site.	Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	Guidelines Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	Notice Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.	Signage not required.
	Caution Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.	Securely post behind the DISH Wireless Sector A, B, and C antennas and on the barriers in front of them.
	Warning Used to notify individuals that they are entering a hot zone where the occupational FCC's MPE limit has been exceeded by 10x.	Signage not required.

Appendix C

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 public/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 public/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 public/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.

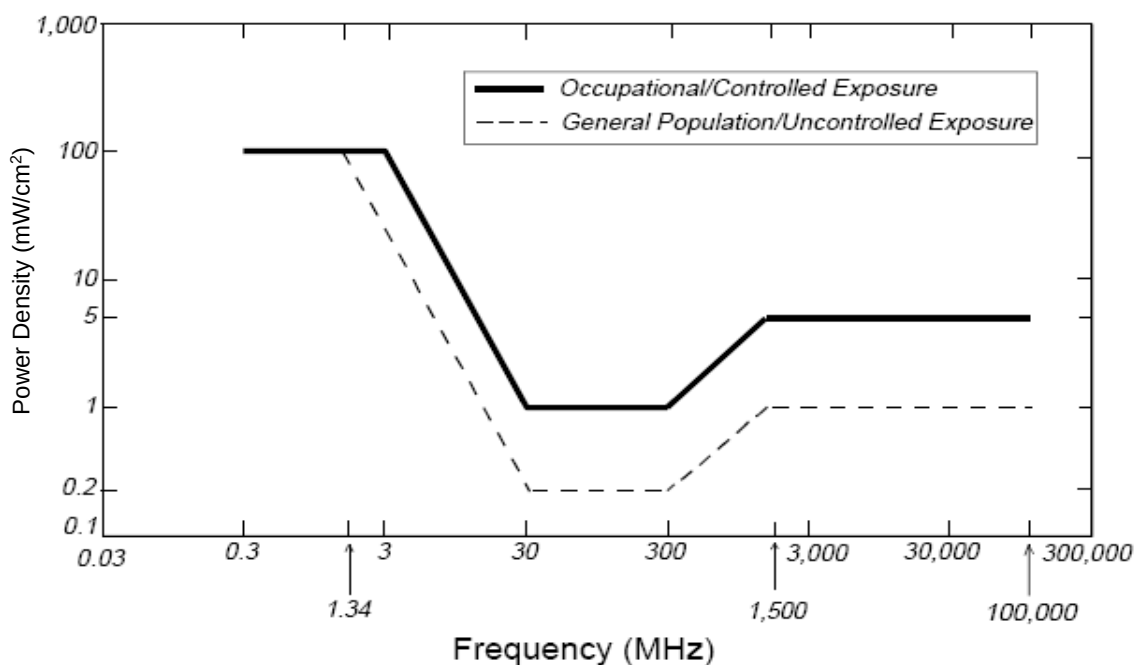
The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the DISH Wireless equipment operating at 600 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm² and an uncontrolled MPE of 0.57 mW/cm². For the DISH Wireless equipment operating at 1900 MHz, the FCC's occupational MPE is 5.0 mW/cm² and an uncontrolled MPE limit of 1.0 mW/cm². 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 Public/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)
Plane-wave Equivalent Power Density



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
Microwave (Point-to-Point)	5,000 - 80,000 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Broadband Radio (BRS)	2,600 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Wireless Communication (WCS)	2,300 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Advanced Wireless (AWS)	2,100 MHz	5.00 mW/cm ²	1.00 mW/cm ²
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 (SMR)	855 MHz	2.85 mW/cm ²	0.57 mW/cm ²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm ²	0.47 mW/cm ²
Most Restrictive Frequency 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 DISH Wireless in this area will potentially operate within a frequency range of 600 to 5000 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.

FCC Compliance Requirement

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

1. SUMMARY OF TELECOMMUNICATIONS LICENSE AGREEMENT TERMS

PROPERTY:	One Brattle Square Cambridge, MA 02138
LICENSOR:	BCSP 9 OBS Property LLC
LICENSEE:	DISH Wireless L.L.C.
LICENSEE'S NOTICE ADDRESSES:	DISH Wireless L.L.C. Attn: Lease Administration (BOBOS00341B) 5701 South Santa Fe Dr. Littleton, Colorado 80120
LICENSEE'S CONTACT FOR POWER SHUTDOWN:	833-347-4602
LICENSEE'S INVOICE ADDRESS:	DISH Wireless L.L.C. Attn: Lease Administration (BOBOS00341B) 5701 South Santa Fe Dr. Littleton, Colorado 80120
PROPERTY/SITE MANAGEMENT CO.	Newmark
COMMENCEMENT DATE:	the first (1st) day following the commencement of Licensee's Installation
MONTHLY LICENSE FEE:	\$2,500.00
ONE TIME ADMIN FEE:	\$1,500.00 (payable in accordance with Section 5(c) below)
ADDRESS PAYMENT FOR RENT	One Brattle Square, Cambridge, MA 02138
ANNUAL INCREASES:	3%
INITIAL TERM:	Sixty (60) Months
RENEWAL TERMS:	Two (2) additional sixty (60) month terms
ELECTRICITY PROVIDED BY:	Building (submeter)
EQUIPMENT TYPE AND/OR NO. OF ANTENNA:	(3) Wireless Antennas installed within (2) concealed canisters on the upper roof
INTERNAL or EXTERNAL EQUIPMENT:	Internal Equipment within existing 216 s.f. room in basement

SITE AGREEMENT

This Site Agreement (“**Agreement**”) is made this 30th day of October, 2024 (the “**Effective Date**”) by and between BCSP 9 OBS Property LLC, having a mailing address at c/o Beacon Capital Partners LLC, 200 State Street, 5th floor, Boston, MA 02109 (“**Licensor**”) and Dish Wireless L.L.C. (“**Licensee**”). Licensor and Licensee may hereinafter be collectively referred to as the “**Parties**” or individually as a “**Party**”.

In consideration of the mutual promises and covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

2. Premises.

a. Description of Premises. Licensor is the owner of a building commonly known as One Brattle Square (the “**Building**”) and located at One Brattle Square Cambridge, MA 02138 (“**Property**”). Licensor hereby grants to Licensee a license (the “**License**”) to use Licensor’s existing telecommunications infrastructure and equipment (“**Licensor’s Equipment or Facilities**”) including but not limited to the existing fiber ring and equipment in each building’s Main Point of Entry (“**MPOE**”) and the areas of the Property more particularly described in Exhibit A attached hereto, which is inclusive of the approximately 12’ x 18’ foot room on the ground floor previously utilized by another wireless communications provider, which has since been abandoned (“**Premises**”) for the purposes described below. Licensee acknowledges that the rights herein granted by Licensor are not exclusive, including within the Premises, and that Licensor may have previously granted (or in the future grant) similar rights to third parties, including but not limited to telecommunications carriers or tenants of the Property, and Licensee shall cooperate with Licensor to allow for provision of communication services by another telecommunications carrier, and nothing contained herein shall be construed as granting to Licensee any easement, leasehold, property, ownership or other rights in the Property, other than a license agreement on the terms set forth herein, or to create a partnership or joint venture between Licensor and Licensee.

b. Premises AS-IS. Licensee acknowledges that it has inspected the Premises, Property and all appurtenances thereto and is fully familiar with the physical condition thereof and agrees to accept the Premises “**AS-IS**”. Licensee acknowledges that neither Licensor nor any officer, employee or agent of Licensor has made any representation or warranty with respect to the condition of the Premises, the Property or the suitability thereof for any particular purpose.

c. Relocation. Licensor shall have the right at any time during the Term (as hereinafter defined), upon giving Licensee not less than thirty (30) days prior notice (a “**Relocation Notice**”), to require Licensee to relocate to another space in the Property that is reasonably acceptable to Licensee (the “**Substitute Premises**”). If Licensor shall send a Relocation Notice as aforesaid, Licensee shall relocate Licensee’s Equipment (as hereinafter defined) to the Substitute Premises at the time set forth in the Relocation Notice. If Licensee fails to timely move Licensee’s Equipment, Licensor may do so provided Licensor has sent Licensee a second notice no less than thirty (30) days prior to actually moving Licensee’s Equipment. Licensor will pay all reasonable costs and expenses to be incurred by Licensee in moving Licensee’s Equipment. If Licensor moves

Licensee to the Substitute Premises, this Agreement and each of its terms, covenants and conditions shall remain in full force and effect and be deemed applicable to the Substitute Premises, and the Substitute Premises shall thereafter be deemed to be the Premises as though Licensors and Licensee had entered into an express written amendment of this Agreement with respect thereto. If the substitute premises are not suitable for Licensee to use for the purposes described in this Agreement, Licensee may immediately terminate this Agreement with no further obligations accruing after such termination.

3. Use of Premises.

a. Use of Licensee's Equipment. Licensee shall use the Premises solely for the installation, operation and maintenance, at Licensee's sole expense, of Licensee's telecommunications equipment i.e., fiber optic cables, facilities and appurtenances thereto, as more particularly described on attached Exhibit B ("**Licensee's Equipment or Facilities**") for the purpose of providing telecommunications services (i.e., bandwidth access over Licensee's Equipment) and Wireless Services, as defined below, in the frequencies set forth in Exhibit D attached hereto (the "**Permitted Use**"). The Licensee's Equipment or Facilities installed or supplied by Licensee pursuant to this Agreement, as between Licensee and Licensors, shall remain the property of Licensee, and nothing herein shall be deemed to create any property interest herein in Licensors. Prohibited Uses. Licensee shall not use the Premises for any illegal purpose and shall not conduct any activity at the Premises (including the Permitted Use) that may be harmful to the health or safety of others, including, without limitation, other tenants or occupants of the Property. Licensee shall conduct its business and control its agents, employees, invitees, licensees and visitors in such manner as not to create any nuisance or materially interfere with, annoy, or disturb any other tenant or occupant of the Property. Licensee will not use the Premises in any way so as to increase (other than to a de minimis extent) Licensors's insurance premiums or those of other tenants at the Property.

b. Access to Premises. Licensee shall have access to the Premises during normal business hours upon at least 24 hours prior notice to Licensors and subject to reasonable scheduling requirements of Licensors. In the event of a Licensee Emergency, as defined below, Licensee shall have access to the Premises after normal business hours upon reasonable notice to Licensors. Licensee shall at all times comply with all access and security policies and procedures in place for the Property as well as payment of any out-of-pocket costs incurred by Licensors as a result of emergency access after business hours, including but not limited to, the then current hourly and/or overtime wages of Licensors's employees or agents. "Licensee Emergency" shall mean any event that requires that Licensee gain access to the Premises to: (i) remain compliant with Applicable Laws, as defined below; (ii) ensure the ability of Licensee and its vendors, representatives and/or customers to immediately troubleshoot and/or remedy interrupted, lost, or poor quality service; or (iii) address any incident of fire, flood, weather, failure of power, public emergency, acts of God or other casualty affecting the Premises.

c. Change in Services. Licensee may not provide any other services other than the Permitted Use at or from the Property without the Licensors's prior consent, which Licensors may withhold in its sole discretion, including "Wireless Services" in frequencies not set forth in Section 2(a). "**Wireless Services**" means any Radio Communication (defined below) services, including, signal transmission, emission, or reception services, over spectrum licensed by the

Federal Communications Commission (“**FCC**”) to Wireless Providers (defined below) or for which a Wireless Provider holds an FCC license, including frequencies in the 700 MHz, 800 MHz (including the 800 SMR/iDEN band (ranging from 806 - 866 & 869 MHz)), 850 MHz, 900 MHz, the Personal Communications Services (PCS) bands (1.9 GHz), the Advanced Wireless Services bands (1.7 GHz, 2.1 GHz, and 2.5 GHz bands), and such other bands as are or become part of the migration path of Wireless Providers with regard to voice and data to 5G or future generational functionality or may otherwise be licensed to Wireless Providers by the FCC from time to time. “**Radio Communication**” means the definition contained in 47 U.S.C. §153(40) (as may be amended or superseded) and is the transmission by radio of writing, signs, signals, pictures, and sounds of all kinds, including all instrumentalities, facilities, apparatus, and services (among other things, the receipt, forwarding, and delivery of communications) incidental to such transmission). “**Wireless Provider**” means a third-party wireless communication service provider whose primary business is the provision of Wireless Services, including without limitation those providers operating under the branded names of AT&T Wireless, Verizon Wireless, T-Mobile and shall also be deemed to include Dish Wireless. Licensee may not provide any other services at or from the Property without the Licensor’s prior consent, which Licensor may withhold in its sole discretion.

4. Term; Renewal and Termination.

a. Initial Term. This Agreement shall be effective as of the “**Effective Date**”. The initial term of this Agreement (the “**Initial Term**”) will commence on the first (1st) day following the commencement of Licensee’s Installation (the “**Commencement Date**”) and will expire on the last day of the month that is sixty (60) months after the Commencement Date unless terminated sooner, renewed or extended in accordance with this Agreement. The Initial Term shall automatically renew for up to two (2) additional terms of sixty (60) months each (each, a “Renewal Term” and together with the Initial Term, the “Term”). However, Licensee may, in Licensee’s sole and absolute discretion, elect not to renew the lease at the end of the then-current Term by giving Licensor written Notice at least ninety (90) days prior to the end of the then-current Term. The Parties agree that, subject to the Contingencies, this Agreement constitutes a binding and valid obligation on each Party and that each Party has vested rights in this Agreement as of the Effective Date.

b. Right to Terminate. This Agreement may be terminated: (i) by either Party, upon thirty (30) days prior written notice to the other Party, if the Property becomes unusable for fixed telecommunications services due to any change in governmental regulations, including but not limited to the regulations of the FCC or the Federal Aviation Agency (“**FAA**”) or any other federal, state or local regulations or codes; (ii) by either Party, upon thirty (30) days prior written notice to the other Party, if the Property becomes unusable for fixed telecommunications services due to destruction of the Property by fire or other cause in accordance with the terms of Paragraph 15 or condemnation of the Property or the Premises in accordance with Paragraph 16 and such damage is not restored by Licensor; (iii) by either Party, upon thirty (30) days prior written notice to the other Party, if the Property is or becomes unusable for fixed telecommunications services due to Licensee’s inability to obtain or maintain any approval, permit or license necessary to use the Property for the purpose permitted hereunder or to operate Licensee’s Equipment, through no fault of Licensee; or (iv) upon six (6) months written notice, by Licensee if Licensee determines that the Premises are not appropriate for its operations due to substantiated significant economic or technological difficulties including, without limitation, signal strength or interference;

5. Monthly Rent.

a. Monthly Rent. Licensee shall pay Licensor, on the first day of each month during the Term, without demand, offset or counterclaim, monthly rent in the amount of Two Thousand Five Hundred Dollars (\$2,500.00) ("**Monthly Rent**"), subject to adjustment as provided below and prorated for any partial month. If, in the normal course of business Licensor sends monthly invoices, such invoices shall be sent to Licensee at the address designated in Section 22 of this Agreement, as may be updated in accordance with that Section.

b. Annual Increase. Upon each anniversary of the Commencement Date, the Monthly Rent shall increase without further act or instrument in an amount equal to three percent (3 %) of the then immediately preceding Monthly Rent and shall be rounded up to the next highest dollar amount.

c. One-time Non-Refundable Administrative and Infrastructure Fee. Within forty-five (45) days after the later of the: (i) mutual the execution; or (ii) Licensee's delivered receipt of the fully executed Agreement, Licensee shall pay Licensor a One-time Non-Refundable Administrative and Infrastructure Fee of ONE THOUSAND FIVE HUNDRED 00/100 DOLLARS (\$1,500.00).

d. Service Charge and Interest. Licensee will pay a service charge of One Hundred Dollars (\$100.00) for bookkeeping and administrative expenses if the Monthly Rent is not received within fifteen (15) days after its due date. In addition to the service charge, any Monthly Rent or other amounts due hereunder not paid within fifteen (15) days after the date due will accrue interest from the date due at the lesser of ten percent (10%) per annum or the highest lawful rate until payment is received by Licensor. Licensor may apply payments received from Licensee to any obligations of Licensee then accrued, without regard to any designation by Licensee.

e. Address for Payment. The Monthly Rent and all other sums due hereunder shall be sent to Licensor at the following address along with evidence of the applicable Property name and address, until notified otherwise by Licensor:

One Brattle Square
Cambridge, MA 02138

f. Taxes. In addition to the Monthly Rent, Licensee shall pay Licensor if, within sixty (60) days after Licensee's receipt of an undisputed invoice along with sufficient supporting documentation, any sales, use, property or other taxes or assessments ("**Taxes**"), including, without limitation, penalties and interest thereof, if any (except income taxes and taxes based on Licensor's gross receipts or revenues), which are directly as attributable to Licensee's use of the Premises.

6. Interference and Emissions.

a. No Interference by Licensee. Licensee represents and warrants that Licensee's Equipment will not cause material interference with (i) any existing communications equipment installed on the Property as of the Effective Date, or (ii) with the ability of office tenants/occupants of the Property or office tenants/occupants of other buildings adjacent to the

Property to receive or transmit radio, television, telephone, microwave, short-wave, long-wave or other signals of any sort presently or hereafter installed (on any licensed frequency provided such tenants/occupants hold a license to operate in such frequency or unlicensed frequency), or (iii) with any other tenants'/occupants' or Licensor's equipment, installation, wires, cabling or machinery (electronic or otherwise) at the Property. Should material interference occur, Licensor shall provide Licensee with written notice of such interference and Licensee shall promptly make all necessary repairs and adjustments or reduce the power sufficiently to minimize the material interference until the same can be remedied, at Licensee's expense, to insure cessation of interference to Licensor's reasonable satisfaction, and any expenses reasonably and actually incurred by Licensor, up to \$1,000.00, in connection therewith shall be paid to Licensor within forty-five (45) days after Licensee's receipt of Licensor's invoice. If interference cannot be eliminated within seventy-two (72) hours after receipt of written notice from Licensor to Licensee, Licensee shall temporarily disconnect the electric power and shut down Licensee's Equipment, except for intermittent operation for the purpose of testing correction of such interference. In the event Licensee does not shut down Licensee's Equipment as aforesaid, Licensor may do so, at Licensee's cost. In no event may Licensee restart Licensee's Equipment, other than intermittent operation for the purpose of testing Licensee's Equipment as aforesaid, until such interference has been corrected. If the interference is not corrected within thirty (30) days after receipt of written notice, Licensor shall have the right to terminating this Agreement. In the event this Agreement is terminated pursuant to the terms of this Paragraph, same shall be deemed a material breach by Licensee, same shall cause irreparable injury to Licensor and therefore Licensee shall remain liable and responsible for and shall timely pay the Monthly Rent due for the remainder of the then-current Term.

b. No Interference by Licensor. Licensor shall use commercially reasonable efforts to avoid and prevent any interference with the communications operations of Licensee. In the event any such interference does not cease within seventy-two (72) hours after written notice, , the Parties acknowledge that continuing interference will cause irreparable injury to Licensee, and in such event Licensee shall have the right to terminate this Agreement immediately with no further obligations, upon prior notice to Licensor. For purposes of this Section, use of commercially reasonable efforts to comply with the Installation Standards (as defined below) applicable to the equipment or infrastructure alleged to be causing the interference shall constitute reasonable efforts to minimize interference as required by this Section.

c. RF Emissions. Licensee hereby acknowledges that antenna power output ("RF Emissions") are presently subject to restrictions imposed by the FCC for RF Emissions standards on Maximum Permissible Exposure ("MPE") limits for workers and the general public. Licensee shall operate the Licensee's Equipment in a manner that will not cause the Property to exceed the FCC specified MPE. Licensee, at its sole cost and expense, shall be solely responsible for causing the Licensee's Equipment and Licensee's activities at the Premises to be in compliance with all applicable MPE limits and RF Emissions, including, without limitation, performing any and all tests, analyses and similar procedures to determine whether MPE limits are being exceeded at the Property.

7. Electrical and Other Facilities and Services.

a. Procurement of Services.

Licensee shall endeavor to install its own electrical meter at the site. In the event, Licensee, in Licensee's sole discretion, is unable to install its own electrical meter, Licensor shall provide, at Licensee's sole expense, electrical service to operate Licensee's Equipment via a separate submeter to be installed by Licensee at its sole cost and expense. Such installation shall be subject to Licensor's prior approval as to the location of utility routes and manner of installations pursuant to and in accordance with Paragraph 12(a) hereof. . Licensor shall use reasonable diligence to restore any interruption in electrical service to the Property promptly. Licensee shall maintain and repair the Smart sub-meter at Licensee's sole cost and expense.

b. Licensor Not Liable for Interruption in Power. Licensor shall not be liable for interruption of power in any respect including damage to person or property (of any kind or nature) and Licensee shall not be relieved of its obligations hereunder unless caused by Licensor's or its employee's gross negligence or willful misconduct. Licensor shall at all times be able to shut down the electrical service, if any, to the Premises and Licensee's Equipment in connection with any maintenance operation conducted for the Property following at least 48 hours prior notice, except in the event of a bona fide emergency which is reasonably likely to result in damage or injury to persons, the Building or the Property, in which case, Licensor shall give Licensee as much notice as is practicable under the circumstances via telephone at Licensee's NOC number: 833-347-4602. Licensor agrees to make a reasonable effort to schedule any such shutdown outside the Property's normal business day.

8. Compliance with Laws; Maintenance of Permits.

Licensee will install, maintain, repair, replace, modify and operate Licensee's Equipment at all times in strict compliance with all applicable federal, state, and local laws, ordinances, rules and regulations, including without limitation applicable occupational, health and safety standards and the regulations promulgated by the FCC (the "**FCC License**") and FAA and all applicable zoning, building and fire codes, the requirements of any applicable fire insurance underwriter or rating bureau all as may be periodically updated and amended throughout the Term ("**Applicable Laws**") and in compliance with the Building's rules and regulations, as set forth on the attached **Exhibit C ("Building Rules and Regulations")** or as may be reasonably established from time to time by Licensor and/or Manager (as defined below) for the entire Property, provided that any changes to such Building Rules and Regulations are provided to Licensee in advance ("**Applicable Laws**") and the "**Building Rules and Regulations**" are collectively referred as the "**Installation Standards**"). Licensee, at Licensee's sole cost and expense, shall be solely responsible for securing and maintaining all applicable permits, licenses and approvals required under the Applicable Laws for the installation, maintenance, and operation of Licensee's Equipment. Licensee shall endeavor to deliver to Licensor copies of any such permits, licenses or approvals within ten (10) business days after Licensor's written request.

9. Maintenance, Repair and Warranty.

a. Maintenance of Premises and Equipment. Licensee shall keep the Premises and Licensee's Equipment neat and clean. During the Term, Licensee will promptly and properly repair any roof leaks or other damage or injury (including structural damage) to the roof of the Property, the Premises, or any other part of the Property caused directly by Licensee's use of the Premises or its installation, use, maintenance, or removal of Licensee's Equipment. If Licensee

does not promptly, after receipt of written notice, repair any such leaks, damage, or injury, or if the damage affects the roof or any other structural element of the Property, Licenser may (but shall have no obligation to) perform same at Licensee's cost and Licensee hereby authorizes Licenser to make such repairs and charge Licensee for all costs and expenses incurred in doing so if Licenser shall elect to do so.

b. Warranty. Promptly after the Effective Date, Licenser shall provide Licensee with a copy of Licenser's warranty on the roof of the Building that is currently in effect (the "Warranty"). Prior to Licensee's installation, Licensee shall coordinate with the holder of the Warranty and shall utilize such roofing contractor, at Licensee's expense, as may be reasonably necessary to ensure that Licensee's Equipment will not void the Warranty provided the costs charged by such roofing contractor and the quality of its work are competitive with charges and work quality for similar services within the same geographic region. Licenser shall promptly cooperate with Licensee's efforts to comply with the conditions of the Warranty including, but not limited to, executing and/or submitting any paperwork that may be required by the holder of the Warranty and allowing access to the Structure for any inspections that may be required to maintain the Warranty.

c. Licenser's Maintenance Rights. Licenser may from time to time maintain, repair, alter, modify, reconstruct, replace or upgrade, at its own expense, the Property to the extent Licenser, in its sole discretion, deems necessary or desirable. Licenser shall give advance written notice to Licensee of any such changes and shall advise Licensee of any disruptions or outages that are reasonably likely to materially affect Licensee's Equipment; provided (i) Licenser exercises due diligence to complete the repairs and (ii) in the event any interruption to Licensee's Equipment lasts more than three (3) days, Licensee may have the right to install temporary receiving and transmitting equipment in a location to be mutually agreed by the Parties. Licenser shall use commercially reasonable efforts to conduct any work in such a way that minimizes the impact to Licensee's Equipment. Absent a bona fide emergency which is reasonably likely to result in damage or injury to persons, the Building or Property, Licenser shall provide Licensee ninety (90) days prior written notice of any work that is reasonably likely to materially affect Licensee's Equipment. In the event of an emergency, Licenser shall give Licensee as much notice as is reasonably practicable under the circumstances.

10. Assignment, Subletting, Liens and Encumbrances. Licensee covenants and agrees not to assign this Agreement or to mortgage, pledge, encumber or sublicense the Premises or any part thereof or to otherwise permit the Premises or any part thereof to be used by anyone other than Licensee without obtaining Licenser's prior written consent in each instance. .. "**Affiliate(s)**" means, with respect to a Party, any person or entity, directly or indirectly, controlling, controlled by, or under common control with such Party, in each case for so long as such control continues. For purposes of this definition, "control" shall mean (i) the ownership, directly or indirectly, or at least fifty percent (50%) of either: (a) the voting rights attached to issued voting shares; or (b) the power to elect fifty percent (50%) of the directors of such entity, or (ii) the ability to direct the actions of the entity. No assignment or sublicensing under this Agreement nor Licenser's consent thereto shall relieve Licensee from its obligations thereunder and Licensee shall remain fully and primarily liable therefor. No assignment or sublicensing shall affect Permitted Use. Notwithstanding anything to the contrary contained in this Agreement, Licensee may collaterally assign, mortgage, pledge, hypothecate or otherwise transfer without consent its interest in this

Agreement to any financing entity, or agent on behalf of any financing entity to whom Licensee (i) has obligations for borrowed money or in respect of guaranties thereof, (ii) has obligations evidenced by loans, bonds, debentures, notes or similar instruments, or (iii) has obligations under or with respect to letters of credit, bankers acceptances and similar facilities or in respect of guaranties thereof.

11. Inspection.

a. Access. Upon no less than two (2) business days prior notice, Licensee shall permit Licenser or its agents or representatives to have access to Licensee's Equipment to (i) inspect Licensee's Equipment to verify adherence to the approved plans, (ii) perform any obligations of Licensee hereunder which Licensee has failed to perform after written notice, and (iii) assure Licensee's compliance with the terms and provisions of this Agreement.

b. Annual Inspection. No more than once per calendar year, Licenser may request that Licensee, at its sole expense, perform a physical inspection of the Premises and Licensee's Equipment. To the extent Licensee's Equipment might be deemed to adversely affect the structural integrity of the Building, such inspection will include a survey of structural integrity and a review and correction of any loose bolts, fittings or other appurtenances. Licensee shall provide a written certification, in the form of a Professional Engineer Letter signed by a license engineer, of such inspections to Licenser not more than twenty (20) days following each such inspection. In the absence of such a certification, Licenser shall have the right (but not the obligation) to conduct or arrange for such an inspection to charge Licensee for such actual and reasonable costs up to \$1,500.00.

12. Licensee's Equipment.

a. Title to Licensee's Equipment; Risk of Loss. Legal title to all of Licensee's Equipment (other than conduit, cabling and wiring installed in the Property) shall be and remain with Licensee. Licensee at all times shall have care, custody, and control of Licensee's Equipment, subject to the provisions of this Agreement, and all of Licensee's Equipment kept, stored, or maintained on the Premises will be kept, stored, or maintained at the sole risk of Licensee and Licensee shall take all reasonable measures and precautions to render Licensee's Equipment inaccessible to unauthorized persons. Licenser acknowledges that Licensee may enter into financing arrangements including promissory notes and financial and security agreements for the financing of Licensee's Equipment and Facilities (the "Collateral") with a third-party financing entity and may in the future enter into additional financing arrangements with other financing entities. In connection therewith, Licenser (i) consents to the installation of the Collateral to the extent that the Collateral is part of the approved Licensee's Equipment and Facilities; (ii) disclaims any interest in the Collateral, as fixtures or otherwise, whether arising at law or otherwise, including, but not limited to any statutory landlord's lien; and (iii) agrees that the Collateral shall be exempt from execution, foreclosure, sale, levy, attachment, or distress for any Monthly Rent due or to become due and that such Collateral may be removed at any time without recourse to legal proceedings.

b. Compliance with Engineering Standards. Licensee shall install, operate, and maintain Licensee's Equipment in accordance with the engineering standards prevailing from time to time in the communications industry.

c. Equipment Identification. Licensee shall clearly and conspicuously use and maintain tags to identify Licensee's Equipment on each floor, which tags shall indicate Licensee's name and, if applicable, frequency number(s). Licensee shall also post a copy of its FCC License, if applicable, on Licensee's Equipment upon installation.

d. Limitations on Equipment. If any equipment or installations other than that described in Exhibit B is installed by Licensee, and such installation substantially deviates (in number and type) from what is listed in Exhibit B, then Licenser may (i) require Licensee to adjust the Monthly Rent (if any), to a reasonable amount requested by Licenser and agreed to by Licensee or (ii) Licenser may require Licensee to immediately remove such equipment at Licensee's sole cost and expense.

e. Performance of Licensee's Work. Licensee installation, relocation and modification of Licensee's Equipment or Facilities on the Property ("Licensee's Work") shall be (i) performed in a safe and workmanlike manner, consistent with generally accepted construction standards for telecommunication equipment installation; (ii) performed in accordance with the Building Rules and Regulations; and (iii) include the use of union contractors and workers, if applicable, during any installation of Licensee's Equipment or Facilities on the Property.

f. Utilization of Riser Management Company. Licensee shall utilize the Building's riser management company for all of Licensee's Work in the Building to enable the efficient installation and the appropriate distribution of telecommunication services within the Building.

13. Licenser's Review of Plans and Approval of Contractors.

a. Plans. Prior to installing (including modifying or replacing) Licensee's Equipment that is not a Like-Kind Modification, as defined below, or any other equipment to be installed on, repaired, modified, replaced or removed from the Premises, Licensee shall submit to Licenser for its approval detailed plans and specifications of the proposed installation, which plans shall depict those items set forth on Exhibit B (or modifications to or replacement of Licensee's Equipment, or other equipment, as applicable), indicate the information set forth on Exhibit B, comply with all Applicable Laws and the Installation Standards and shall be prepared by and stamped by a professional engineer. Licenser shall have fifteen (15) business days to review and approve such plans, which shall not be unreasonably withheld or conditioned. In the event Licenser fails to approve or otherwise respond to Licensee's plans and specifications, within the aforementioned fifteen (15) day review period then Licensee shall be permitted to proceed as if Licenser expressly approved the plans and specifications. In no event will Licenser's approval of such plans be deemed a representation that they comply with Applicable Laws, will not cause interference with other communications operations, or are structurally sound. Notwithstanding anything else contained herein, Licensee shall be permitted to make Like Kind Modifications to Licensee's Equipment upon prior notice to Licenser. As used herein "Like-Kind Modifications" shall mean any upgrades or replacements of "like-kind" equipment which is substantially similar

in dimension, weight, and aesthetics or which is wholly contained within LICENSEE's equipment room referenced above and/or cabinets contained therein.

b. Supervision by Licensor. Licensor may require that its representative, be present and have the right to supervise the installation, replacement, modification, repair or removal of Licensee's Equipment. Provided Licensor has notified Licensee in writing to have its representative present. If Licensee installs Licensee's Equipment without such supervision, Licensee shall be liable to Licensor for any damages that may occur as a result. The actual fees incurred by reason of any monitoring performed by Licensor or its agents, contractors, employees in connection with Licensee's work shall be paid by Licensee up to a total of \$1,500.00. Licensee shall reimburse Licensor for such cost within forty-five (45) days after receipt of an undisputed invoice with sufficient supporting documentation.

c. Approval of Contractors. Licensor shall have the right of prior approval of any contractors performing installation, modification or maintenance work on behalf of Licensee at the Property, which approval shall not be unreasonably withheld, conditioned or delayed, and once given, such approval may be rescinded by Licensor for reasons of site integrity and performance. Licensee shall submit to Licensor prior to the commencement of any work at the Premises a letter naming any proposed contractor, the proposed date the installation will commence, all time frames, and the estimated duration of the installation. Licensor shall notify Licensee within a reasonable period of time thereafter not to exceed five (5) business days as to whether Licensor has approved such contractor, date, time, duration and equipment. Licensee shall cause each contractor to obtain and maintain insurance in compliance with the terms of Paragraph 17 and shall provide a certificate of insurance evidencing same to Licensor upon demand.

14. Removal of Licensee's Equipment and Holdover.

a. Removal by Licensee. Within sixty (60) days after the expiration or earlier termination of this Agreement, time being of the essence, Licensee shall remove Licensee's Equipment from the Property at Licensee's sole cost and expense. Licensee shall, at its sole cost and expense, repair any damage to the Property including, but not limited to the Premises and repairs as required in Paragraph 8 caused thereby and shall restore the Premises and the Property to its original condition, ordinary wear and tear excluded.

b. Removal by Licensor. If Licensee does not remove Licensee's Equipment within the period stated above in paragraph "a", in addition to Licensor's other rights and remedies available hereunder, at law or in equity, Licensor may: (i) remove Licensee's Equipment and store it at Licensee's sole cost and expense, which amount shall be paid to Licensor on demand and if Licensee fails to claim Licensee's Equipment and pay such amounts within forty-five (45) days after written notice from Licensor, Licensee's Equipment shall be deemed abandoned and Licensor shall have the right to dispose of Licensee's Equipment as Licensor sees fit; or (ii) charge Licensee an amount equal to one hundred fifty percent (150%) of the amount of Monthly Rent charged hereunder immediately prior to termination or expiration for each full and partial month that Licensee's Equipment remains on the Premises. The foregoing provisions will not serve as permission for Licensee to holdover, nor serve to extend the term of this Agreement, although Licensee will remain bound to comply with all provisions of this Agreement until Licensee fully vacates the Premises in accordance with the terms of this Agreement.

c. Abandonment of Cabling. If Licensee elects to abandon any cabling or other transmission line which is the property of Licensee, and if Licensor consents to such abandonment in writing (which consent may be withheld in Licensor's sole and absolute discretion), then such cabling and transmission line shall become the sole property of Licensor. Otherwise, Licensee agrees, at its expense to remove any or all cabling and transmission lines and other Equipment which are its property, and further agrees to assume the responsibility during the removal for any damage to cabling or transmission line(s) belonging to others and shall indemnify defend and hold harmless Licensor against all claims for damages by any other Licensee or any tenant or other occupant of the Property.

15. Default.

a. Event of Default. Each of the following shall be deemed to be an event of default under this Agreement:

- (i) The Monthly Rent or any other sum due by Licensee under this Agreement remains unpaid for thirty (30) days after delivery of written notice from Licensor that past Monthly Rent remains due and payable.
- (ii) If either Party files a petition under any section or chapter of the Federal Bankruptcy Code, as amended, or under any similar law or statute of the United States or any state thereof, or such Party becomes the subject of any involuntary bankruptcy or insolvency in proceedings filed against such Party thereunder.
- (iii) Intentionally Omitted
- (iv) Failure by Licensee to comply with the terms of Paragraph 5 within the time frame set forth therein or with Paragraph 12(b).
- (v) Any failure by a Party to comply with any other covenant, condition or agreement contained herein or in any rider, exhibit or other addendum hereto, and such failure continues thirty (30) days after written notice thereof; provided, however, that if such failure is curable but cannot be cured within such thirty (30) day period, then if such Party fails to cure such default within sixty (60) days after such notice, provided that Party has commenced to cure such default promptly after receipt of notice thereof and acts diligently and continuously to prosecute such cure to completion.

b. Remedies. If an event of default beyond any applicable cure periods shall occur, the non-defaulting Party may, in addition to any other rights and remedies which such non-defaulting Party may have hereunder, at law or in equity, do the following (unless such remedies are prohibited by the laws of the state in which the Property is located):

- (i) Terminate this Agreement by sending a written notice of cancellation which specifies that this Agreement shall terminate three (3) days after delivery of such notice, and upon the expiration of said three (3) days, this Agreement and the Term hereunder shall end and expire as fully and completely as if

the date of expiration of such three (3) day period was the day herein fixed for the expiration of Term hereof. If the Term shall expire as aforesaid, Licensors may, without notice, re-enter the Premises and dispossess Licensee or other occupant of the Premises by summary proceedings or otherwise, and remove their effects and hold the Premises as if this Agreement had not been made, and Licensee shall remain liable hereunder as herein provided. In case of any such re-entry, expiration and/or dispossession by summary proceedings or otherwise, Licensors may re-let the Premises either in the name of Licensors or otherwise under terms acceptable to Licensors (including without limitation, the length of the term and rent concessions). Licensors, at its option, may also make such repairs and replacements as are reasonably necessary or desirable for the purpose of re-letting the Premises, all of which shall be paid by Licensee, and the making of such repairs or replacements shall not operate or be construed to release Licensee from liability hereunder. Neither the failure or refusal of Licensors to re-let the Premises or any part thereof or, in the event the Premises are re-let, the failure of Licensors to collect the rent under such re-letting shall release or affect Licensee's liability for damages, and Licensors shall not in any way be liable for same. Any such damages shall be paid in monthly installments by Licensee on the dates specified in this Agreement for Monthly Rent to be paid and any such suit brought to collect the amount of the deficiency for any month or months shall not prejudice in any way the rights of Licensors to collect the deficiency for any subsequent month by similar proceeding. Notwithstanding the above, the Parties waive rights they may have for any consequential, punitive, and/or special damages.

- (ii) Turn off the power to Licensee's Equipment at the Premises, until removal of Licensee's Equipment; if not removed by Licensee within thirty (30) days from the termination of this Agreement, such removal may be done by Licensors and Licensee's Equipment may be stored at Licensee's expense and without prejudice to any other right or remedies that Licensors may have. Licensors shall not be liable for any damages resulting from shutting off power, removal or storage and Licensee hereby waives any right to claim damages.

All remedies and rights of the non-defaulting Party under this Agreement are cumulative. Licensee expressly waives any and all rights of redemption under any present or future law in the event of Licensee's eviction or dispossession for any cause.

c. Expenses. After an event of default, the defaulting Party shall also pay within thirty (30) days after receipt of a written invoice, all reasonable and actual expenses that the non-defaulting Party may incur for attorneys' fees and disbursements relating to such default (including advice for counsel, suit and any appeals), and management fees and expenses.

16. Fire Clause. In the event of a fire or other casualty in or on the Property or Premises, Licensee or Licensors shall promptly give notice thereof to the other. If the Premises or Property through no fault of Licensee, its agents, employees, invitees or visitors, shall be partially destroyed

by fire or other casualty so as to render the Premises unusable, the Monthly Rent provided for herein shall abate thereafter until such time as the Premises, is made usable as reasonably determined by Licensor. If, through the fault of Licensee, its agents, employees, invitees or visitors, the Premises or Property is partially destroyed by fire or other casualty so as to render the Premises or Property unusable, the Monthly Rent provided for herein shall not abate and Licensee shall be responsible and liable to Licensor for any costs or expenses associated with restoration or repair resulting from such fire or casualty.

In the event of total or partial destruction of the Property or Premises without fault of Licensee, its agents, employees, invitees or visitors, which Licensor does not elect to (or is unable to) repair or restore within ninety (90) days and if Licensee's rights under this Agreement are materially impaired as a result, then this Agreement shall cease and come to an end as of the date of destruction, provided that the Monthly Rent and all other sums accrued up to said date of destruction shall be due to Licensor from Licensee within twenty (20) days after such date of destruction. If, through the fault of Licensee, its agents, employees, invitees or visitors, the Premises or Property is totally destroyed, Licensee shall be liable to Licensor for any costs and expenses associated with restoration or repair resulting from such destruction.

Nothing herein shall be construed to require Licensor to rebuild the Property or Premises, but if Licensor decides not to rebuild or if the Property or the Premises cannot be rebuilt within said ninety (90) days, this Agreement shall terminate as of the date of such destruction.

17. Condemnation. If all or any portion of the Property shall be taken or condemned for any public purpose to such an extent as to make Licensee unable to utilize Licensee's Equipment, this Agreement shall, at the option of either party, forthwith cease and terminate. Licensee shall have no claim to any part of the condemnation award for Licensee's interest in the Premises or this Agreement but may claim for the loss, if any, of Licensee's Equipment or relocation or moving costs.

18. Licensee's Insurance.

a. Licensee's Insurance. Licensee shall maintain, or cause to be maintained, throughout the Term of this Agreement (or upon the commencement of work, if earlier) the following insurance, on a primary and noncontributory basis at its own expense, in amounts not less than those specified, and Licensee shall provide Licensor with proof of such insurance:

- (i) commercial liability insurance on an "occurrence basis", with combined single limits of not less than \$2,000,000 per occurrence for bodily injury and \$2,000,000 per occurrence for property damage and general aggregate of \$5,000,000;
- (ii) umbrella liability insurance coverage with limits of not less than \$5,000,000;
- (iii) workers compensation insurance in statutory limits.

- (iv) if Licensee operates owned, hired or non-owned vehicles on or about the Property, comprehensive automobile liability insurance with a limit of not less than \$1,000,000 combined bodily injury and property damage; and
- (v) property damage insurance on an all risks form in respect of the, Licensee's Equipment and all alterations, trade fixtures and leasehold improvements installed in or made to the Premises for the full insurance value thereof (i.e. actual replacement cost without deduction for physical depreciation).

Each such policy shall list Licensor and Manager and their respective agents, and such affiliates and other parties with an insurable interest as Licensor and Manager may designate from time to time as additional insureds on a primary & non-contributory basis (except with respect to workers' compensation), and the Holder of any Mortgages (hereinafter defined) and/or ground lessors and any other parties with an insurable interest as designated by Licensor as additional insured parties. Each policy shall provide that it will not be cancelled during the Term to affect the coverage required except after thirty (30) days prior notice thereof to Licensor and Manager, or ten (10) days prior notice to Licensor in the event of a non-payment of premium. Licensor makes no representation or warranty to Licensee that the amount of insurance required to be carried by Licensee under the terms of this Agreement is adequate to fully protect Licensee's interests. Licensee is encouraged to evaluate its insurance needs and obtain whatever additional types or amounts of insurance that it may deem desirable or appropriate.

b. Certificates of Insurance. Licensee shall, prior to Licensee's occupancy and annually thereafter, furnish to Licensor certificates of insurance evidencing the requirements under this Paragraph along with additional insured endorsement.

c. Licensor's Insurance. At all times during the Term, Licensor will carry and maintain fire and extended coverage insurance covering the Property in reasonable amounts. Licensor shall also carry commercial general liability insurance on the Property, including any common areas, in reasonable amounts.

d. Waiver of Subrogation. To the extent allowable under the laws and regulations governing insurance within the state in which the Property is located, Licensor and Licensee each release the other and their respective agents and employees from all liability to each other, or anyone claiming through or under them, by way of subrogation or otherwise, for any loss or damage to property caused by or resulting from risks insured against under this Agreement, pursuant to insurance policies required to be carried by the Parties which are in force at the time of the loss or damage. Licensor and Licensee will each endeavor to cause its insurance carrier to include in the policies provided pursuant to this Agreement an endorsement recognizing this waiver of subrogation. The provisions of this Paragraph shall survive the expiration or termination of this Agreement.

19. Liability.

a. Exculpation of Licensor and Manager. Except for their own respective acts or failure to act constituting gross negligence or willful misconduct, Licensor and Manager shall not be liable to Licensee or to any other person for any loss or damage due to personal injury,

property damage, libel or slander, FCC or FAA penalties, or imperfect or unsatisfactory communications experienced by Licensee or its customers or for any other reason whatsoever.

b. Indemnity by Licensee. Licensee will indemnify, defend and save harmless Licensor and its Manager and their respective principals, representatives, members, shareholders, partners, trustees, beneficiaries, directors, officers, employees, affiliates and agents (collectively, the “**Indemnitees**”) from and against any and all claims, loss, damage, liability, and expenses (including without limitation reasonable attorneys’ fees and disbursements and investigative, remedial, settlement, compliance and response costs in connection with any environmental matters), occasioned by, or arising directly or indirectly out of this Agreement, Licensee’s rights hereunder (including, without limitation, the installation, maintenance, modification, repair, replacement, use and removal of the Equipment), Licensee’s use of the Premises, the Property or any portion thereof or any act or failure to act by Licensee, its agents, officers, employees or contractors including, without limitation, the failure by Licensee to comply with the terms of this Agreement, except and to the extent of the negligent acts or omissions or willful misconduct of Licensor, its officers, employees, agents or contractors. All indemnifications made for the benefit of Licensor under this Agreement shall also be deemed to run to the benefit of the Indemnitees.

c. Incidental and Consequential Damages. Notwithstanding any other provision of this Agreement, in no event shall each Party and/or each Party’s agents or employees (or any of the officers, trustees, directors, partners, beneficiaries, joint venturers, members, stockholders or other principals or representatives and the like, disclosed or undisclosed, thereof) ever be liable for consequential, punitive, special or incidental damages or lost profits including but not limited to, loss of profits or revenue, costs or damages resulting from the indemnified Party’s commitments to subscribers, customers, employees, contractors or subcontractors from rental, lease or other agreements or arrangements or from communications services contracts.

d. The provisions of this Paragraph 18 shall survive the expiration or termination of this Agreement.

20. Brokerage. Each Party covenants with, and represents and warrants to, the other that it has had no dealings or communications with any broker or agent in connection with the consummation of this Agreement, and each Party agrees to pay, hold harmless and indemnify the other from and against any and all cost, expense (including reasonable attorney’s fees) or liability for any compensation, commissions or charges claimed by any other broker or agent with respect to this Agreement or the negotiation thereof, and arising out of such dealings or negotiations.

21. Site Management. Licensee acknowledges that Licensor has procured the services of CBRE or such other manager designated by Licensor from time to time, is hereinafter referred to as “**Manager**”) for purposes of managing the Property, inclusive of the Premises, with respect to the operations of Licensee and other Licensees conducting communications services from the Property. Licensee agrees to comply fully with the directions and requirements of the Manager in connection with this Agreement and the operations of Licensee hereunder.

22. Limitation of Licensor’s Liability. Licensee shall neither assert nor seek to enforce any claim against Licensor, or Licensor’s agents or employees, or the assets of Licensor or of Licensor’s agents or employees, for breach of this Agreement or otherwise, other than against

Licensor's interest in the Property and in the uncollected rents, issues and profits thereof, and Licensee agrees to look solely to such interest for the satisfaction of any liability of Licensor under this Agreement, it being specifically agreed that in no event shall Licensor or Licensor's agents or employees (or any of the officers, trustees, directors, partners, beneficiaries, joint venturers, members, stockholders or other principals or representatives, and the like, disclosed or undisclosed, thereof) ever be personally liable for any such liability. This paragraph shall not limit any right that Licensee might otherwise have to obtain injunctive relief against Licensor or to take any other action which shall not involve the personal liability of Licensor to respond in monetary damages from Licensor's assets other than the Licensor's interest in said real estate, as aforesaid.

Licensor shall not be deemed to be in default of its obligations under the Agreement unless Licensee has given Licensor written notice of such default, and Licensor has failed to cure such default within thirty (30) days after Licensor receives such notice or such longer period of time as Licensor may reasonably require to cure such default, provided that Licensor has commenced to cure such default promptly after receipt of notice thereof and acts diligently and continuously to prosecute such cure to completion. If an event of default shall occur, Licensee may, in addition to any other rights and remedies which Licensee may have hereunder, at law or in equity, terminate this Agreement, upon written notice of cancellation which specifies that this Agreement shall terminate three (3) days after delivery of such notice, and upon the expiration of said three (3) days, this Agreement and the Term hereunder shall end and expire as fully and completely as if the date of expiration of such three (3) day period was the day herein fixed for the expiration of the Term hereof.

23. Notice. Any notice, communication, request or reply in this Agreement required to be given, must be in writing and shall be effectively given if sent by telecopy and deposited in the United States mail, postage prepaid, certified or registered and addressed to the Party to be notified, or sent by a nationally recognized, reliable overnight courier or delivered in person to such Party. Any notice mailed shall be effective, unless otherwise stated in this Agreement, from and after the expiration of three (3) days after it is deposited in a depository of the United States Postal Service. For purposes of notice the addresses of the Parties shall, until changed as hereinafter provided, be as follows:

If to Licensor, to:

BCSP OBS 9 Property LLC
c/o Beacon Capital Partners, LLC
200 State Street, 5th Floor
Boston, Massachusetts 02109
Attention: General Counsel
Facsimile: 617-457-0410
Email: KHoffman@beaconcapital.com

With a copy to:

G&E Real Estate Management Services, Inc.
a Delaware corporation doing business as
Newmark Management("Newmark")
Attention Joseph Gruber
E-mail: joseph.gruber@nmrk.com

If to Licensee, to:

DISH Wireless L.L.C.
Attn: Lease Administration / Site ID: BOBOS00341B
5701 South Santa Fe Dr.
Littleton, Colorado 80120

The Parties may from time to time change their respective notice address by giving fifteen (15) days prior written notice in accordance with the terms above.

24. Liens. Licensee shall keep the Property and Premises free from any mechanic's, materialmen's or similar liens or encumbrances in connection with any work on or respecting the Premises not performed by or at the request of Licensors, and shall defend, indemnify and hold Licensors harmless from and against any claims, liabilities, judgments, or costs (including attorneys' fee) arising out of the same or in connection therewith. Licensee will remove any such lien within thirty (30) days after written notice by Licensors, and if Licensee fails to do so Licensors may pay the amount necessary to remove such lien or encumbrance, without being responsible for investigating the validity thereof, and the amount so paid including, without limitation, the cost of any bonds, attorney's fees and other costs incurred in the discharge of such lien or encumbrance will be deemed an additional charge to be paid by Licensee hereunder upon demand.

25. Subordination, Attornment and Mortgagee Protection. This Agreement is subject and subordinate to all Mortgages (as defined below) now or hereafter placed upon the Property, and to the provisions of any reciprocal easement, operating agreement, declaration, restrictive covenant, and all other encumbrances and matters of public record applicable to the Property. However, any Holder (as defined below) may elect to make this Agreement prior to the lien of its Mortgage, by written notice to Licensee. Licensee shall execute such documentation as Licensors or any Holder may request from time to time, in order to confirm the matters, set forth in this Paragraph. If any foreclosure proceedings are initiated by any Holder or deed in lieu is granted or any ground lease is terminated, Licensee agrees, upon written request of any such Holder or any purchaser at foreclosure sale, to attorn to such party and to execute and deliver any instruments necessary or appropriate to evidence or effectuate such attornment. In the event of attornment, no Holder shall be: (i) liable for any act or omission of Licensors, or subject to any offset or defense which Licensee might have against Licensors (prior to such Holder becoming Licensors), or (ii) bound by any future modification of this Agreement not consented to by such Holder. **"Mortgage"** means all mortgages, deeds of trust, ground leases and other such encumbrances now or hereafter placed upon the Property or any part thereof, and all renewals, modifications, consolidations, replacement or extensions thereof, and all indebtedness now or hereafter secured thereby and all interest therein. "Holder" means the holder of any Mortgage at the time in question, and where such Mortgage is a ground lessor, such term shall refer to the ground lessor.

26. Estoppel Certificate. Licensee shall from time to time, within thirty (30) days after written request from the Licenser, execute, acknowledge and deliver an estoppel certificate containing terms acceptable to the other party or any Holder of a Mortgage..

27. Miscellaneous.

a. Partial Invalidity. If any term or provision of this Agreement, or the application thereof to any person or circumstance, shall to any extent be invalid or unenforceable, as finally determined by a court of competent jurisdiction, the remainder of this Agreement or the application of such term or provision to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

b. Attorney's Fees. If either Party fails to perform any of the terms, covenants, agreements or conditions contained in this Agreement and places the enforcement of this Agreement, or any part thereof, or the collection of any sums due, or to become due hereunder in the hands of any attorney, or files suit upon same, the non-prevailing Party agrees to pay all of the prevailing Party's reasonable costs associated with the same including reasonable attorneys' fees.

c. Non-Waiver. Failure of Licenser to insist on strict performance of any of the conditions, covenants, terms or provisions of this Agreement or to exercise any of its rights hereunder shall not waive such rights, but Licenser shall have the right to enforce such rights at any time and take such action as might be lawful or authorized hereunder, either in law or in equity. The receipt of any sum paid by Licensee to Licenser after a breach of this Agreement shall not be deemed a waiver of such breach unless expressly set forth in writing.

d. Entire Agreement and Amendment. This Agreement constitutes the entire agreement and understanding between the Parties, and supersedes all offers, negotiations and other agreements concerning the subject matter contained herein. There are no representations or understandings of any kind not set forth herein. Any amendments to this Agreement must be in writing and executed by both Parties.

e. Binding Effect, Gender and Captions. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of Licenser and shall be binding upon and inure to the benefit of Licensee, its successors, and, to the extent assignment may be approved or permitted by Licenser hereunder, Licensee's assigns. The pronouns of any gender shall include the other genders, and either the singular or the plural shall include the other. The captions of this Agreement have been inserted for convenience only and are not to be construed as part of this Agreement or in any way limiting the scope or intent of its provision.

f. Governing Law. All of the terms of this Agreement shall be construed according to the laws of the state in which the Property is located.

g. Environmental. Licensee shall not bring onto or permit to be brought onto the Property any Hazardous Substances, except for those contained in its back-up power batteries and reasonable quantities of common materials used in telecommunications operations (i.e. cleaning solvents), provided and upon the condition that Licensee shall cause all of same at all times be used, handled, stored, and disposed of in compliance with all applicable federal, state,

and local laws and regulations. Licensee shall not have the right to perform any environmental testing without Licensors' prior reasonable written consent first obtained. "**Hazardous Substances**" means any substance, chemical, pollutant, or waste that is at any time identified as hazardous, toxic or dangerous under any applicable federal, state or local law or regulation and specifically includes but is not limited to asbestos and asbestos containing materials, polychlorinated biphenyl's (PCBs) and petroleum products or other fuels (including crude oil or any portion or derivative thereof). Licensee shall defend, indemnify and hold harmless Licensors and Licensors' partners, affiliates, agents and employees against any and all losses, liabilities, claims and/or costs (including reasonable attorneys' fees and costs) arising from any breach of any representation, warranty or agreement contained in this paragraph. Licensors has not and shall not cause, knowingly permit or fail to remediate **Hazardous Substances** to be placed, stored, treated, released, spilled, transported or disposed of on, under, at or from the Property and/or Building in violation of any applicable environmental laws during the term of this Agreement. Licensors understands and agrees that notwithstanding anything contained in this Agreement to the contrary, in no event shall Licensee have any liability whatsoever with respect to any Hazardous Substance that was on, about, adjacent to, under or near the Building prior to the Effective Date, or that was generated, possessed, used, stored, released, spilled, treated, transported, manufactured, refined, handled, produced or disposed of on, about, adjacent to, under or near the Property and/or Structure by: (1) Licensors, its agents, employees, contractors or invitees; or (2) any third party who is not an employee, agent, contractor or invitee of Licensee. The provisions of this subsection shall survive the expiration or earlier termination of this Agreement.

h. Recordation. Licensee agrees not to record this Agreement or any other document referencing same unless required to do so by law, in which event Licensee agrees to execute, upon termination of this Agreement a recordable instrument evidencing such termination in form reasonably acceptable to Licensors.

i. Force Majeure. Neither Party nor their agents shall be liable for any unanticipated matter beyond its reasonable control, such as acts of God, riot, strike, insurrection and war, however, that nothing contained in this Section 26(i) shall (i) relieve Licensee from the obligation to timely pay Monthly Rent under this Agreement, or (ii) permit Licensee to holdover in the Premises after the expiration or earlier termination of this Agreement.

j. Compliance with Lender Requirements. Licensee shall comply with the requirements of the Holders of any Mortgages affecting the Property (including, without limitation, executing any customary documents required by any such Holder).

k. Incentive Programs. Licensee shall, in order to assist Licensors in obtaining any incentives, abatements, exemptions, subsidies, energy discounts, refunds or payments that may be available to Licensors in connection with the tax, energy or other incentive programs with respect to the entire Property or any portion thereof, including, without limitation, the Premises, (i) use commercially reasonable efforts to promptly execute and file any reasonable and necessary applications, certifications or other documents, and (ii) use commercially reasonable efforts to follow all required procedures within any applicable time limitations, and Licensee shall provide Licensors with such further cooperation as may reasonably be requested by Licensors.

l. Execution. This Agreement may be in any number of counterparts, each of which will be deemed an original, but all of which together will constitute one instrument. The Parties acknowledge and agree that they may conduct this transaction by electronic means and that this Agreement may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original signature. Without limitation, in addition to electronically produced signatures, “electronic signature” shall include faxed versions of an original signature or electronically scanned and transmitted versions (e.g., via pdf) of an original signature.

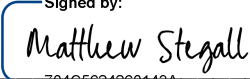
m. Notwithstanding that this Agreement concerns a grant of license, the Parties agree and acknowledge that this Agreement is not revocable at will and may only be terminated in accordance with its express terms.

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as the date aforesaid.

LICENSOR:

BCSP 9 OBS Property LLC

Signed by:

By: Matthew Stegall
Name: Matthew Stegall
Title: Managing Director
10/30/2024

LICENSEE:

DISH Wireless L.L.C.

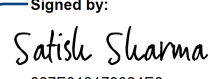
Signed by:

By: Satish Sharma
Name: Satish Sharma
Title: Executive Vice President
10/24/2024

EXHIBIT A
PREMISES

PARCEL 1 A certain parcel of land with the buildings thereon, situated on Brattle Street, Middlesex County, Massachusetts, and being bounded and described as follows:

EASTERLY On Brattle Street, Eighty-Two and 31/100(82.31) feet;

EASTERLY by a curved line Twelve and 39/100 (12.39) feet;

SOUTHERLY on land formerly of the Boston Elevated Railway Company on a line three (3) feet northerly of the southerly face of the coping of the northerly wall of the Cambridge Main Street Subway, Mount Auburn incline, and parallel thereto, Two hundred thirty-two and 62/100 (232.62) feet;

WESTERLY by land now or formerly of the Boston Elevated Railway company, Nineteen and 39/100 (19.39) feet;

NORTHERLY by land now or formerly of Heirs of Betchelder and land now or formerly of the Social Union, Two hundred fourteen and 84/100 (214.84) feet, more or less. The premises described above are shown on a plan entitled "Boston Elevated Railway Company, Elevated & Subway Construction Plan of Land in Cambridge" dated July 1914, by C.S. Sargent, Vice President, recorded with the Middlesex South Registry of Deeds at Book 4307, Page End.

PARCEL II That certain leasehold estate created pursuant to that certain lease by and between Massachusetts Bay Transportation Authority as Landlord, and John T. Magnarelli and Daniel V. Calano, Trustees of Brattle Square Associates Trust, as Tenant, dated as of September 23, 1988, as amended by First Amendment to Ground Lease dated March 2, 1990, by and among said Massachusetts Bay Transportation Authority, and Trustee of Ivanhoe Realty Trust as set forth in a document entitled "Notice of Lease and Notice of Assignment of Lease", recorded with said Deeds, Book 20411, Page 211, encumbering the real property described as follows:

Four parcels of land in Cambridge, Middlesex County, Commonwealth of Massachusetts, shown as Parcels B, C, D and E on a plan entitled "Boston Elevated Railway, Elevated & Subway Construction Plan of Land in Cambridge, Mass." dated July 1914, recorded with said Deeds at the End of Book 4307; together bounded and described as follows:

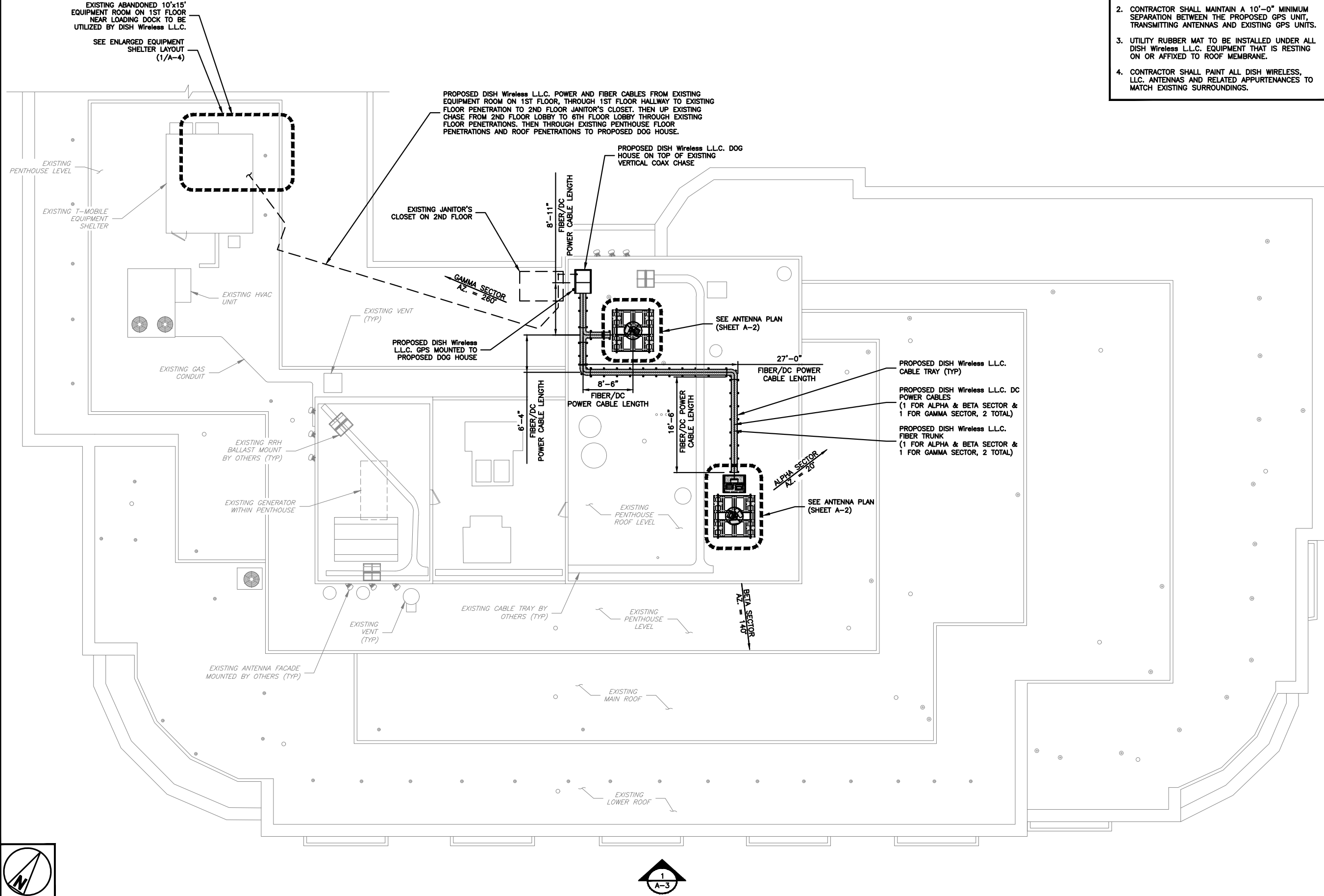
Easterly by Brattle Street and Brattle Square, by a curved line, sixty-three and 75/100 (63.75) feet; Southeasterly by Brattle Square, one hundred five and 45/100(105.45) feet; Southerly by Brattle Square and Mount Auburn Street, by a curved line, seventy-three and 67/100 (73.67) feet;

Southwesterly by Mount Auburn Street, one hundred ten and 85/100 (110.85) feet;

Northwesterly by land shown on said plan as now or formerly of the Heirs of Batchelder, fifty-seven and 5/100 (57.05) feet; Northeasterly by Parcel "A" on said plan, nineteen and 39/100 (19.39) feet; and Northwesterly by said Parcel "A", two hundred thirty-two and 62/100 (232.62) feet.

EXHIBIT B
LICENSEE'S EQUIPMENT

[See attached]



NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL DISH Wireless L.L.C. EQUIPMENT THAT IS RESTING ON OR AFFIXED TO ROOF MEMBRANE.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, L.L.C. ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



NB+C ENGINEERING SERVICES, LLC.

100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:

CWE NSB DRG

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION
1	08/07/24	REVISED UTILITY ROUTING

A&E PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

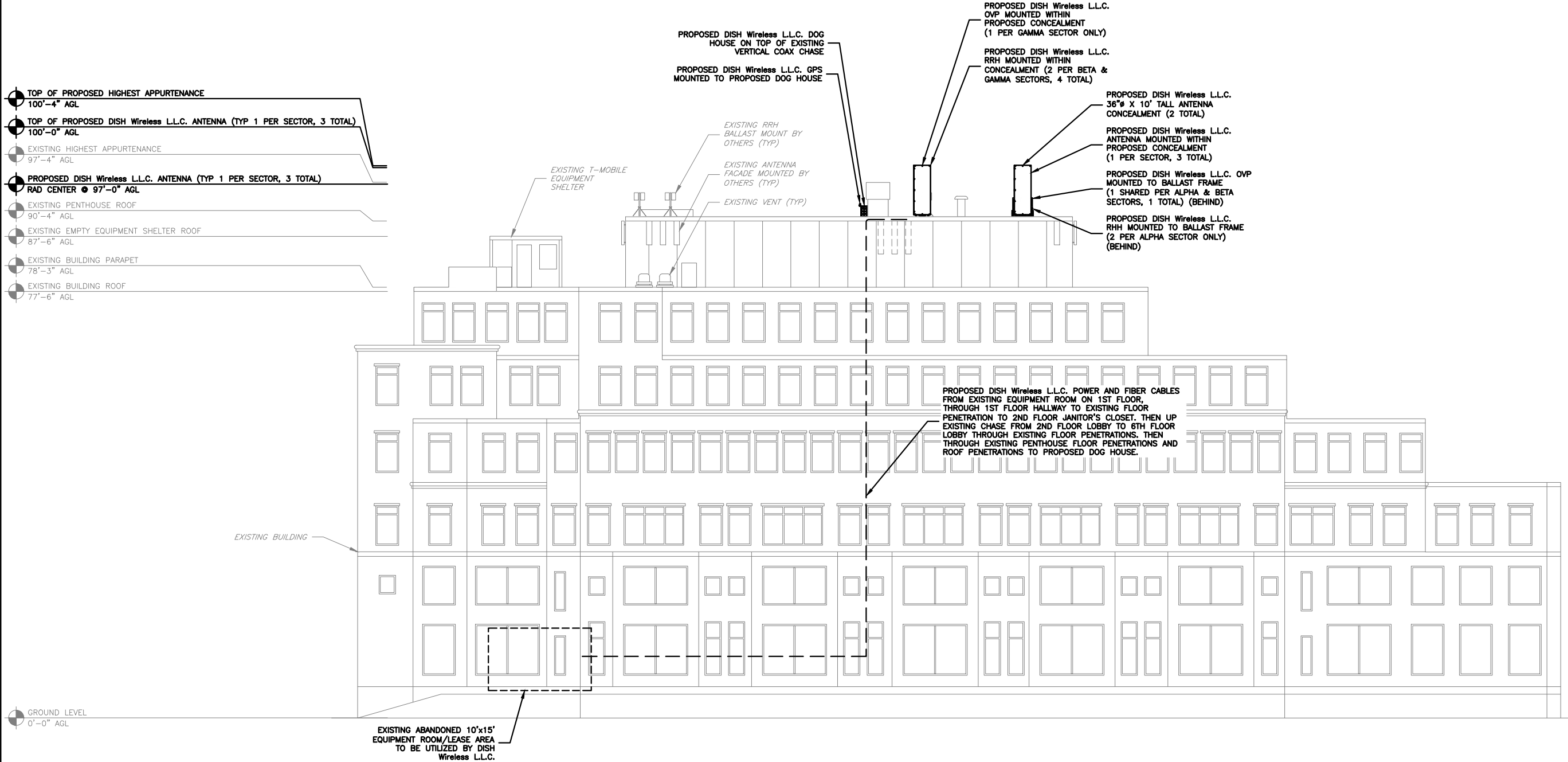
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
BUILDING
PLAN

SHEET NUMBER
A-1

BUILDING PLAN





NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



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DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION
1	08/07/24	REVISED UTILITY ROUTING

A&E PROJECT NUMBER
100753

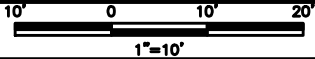
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

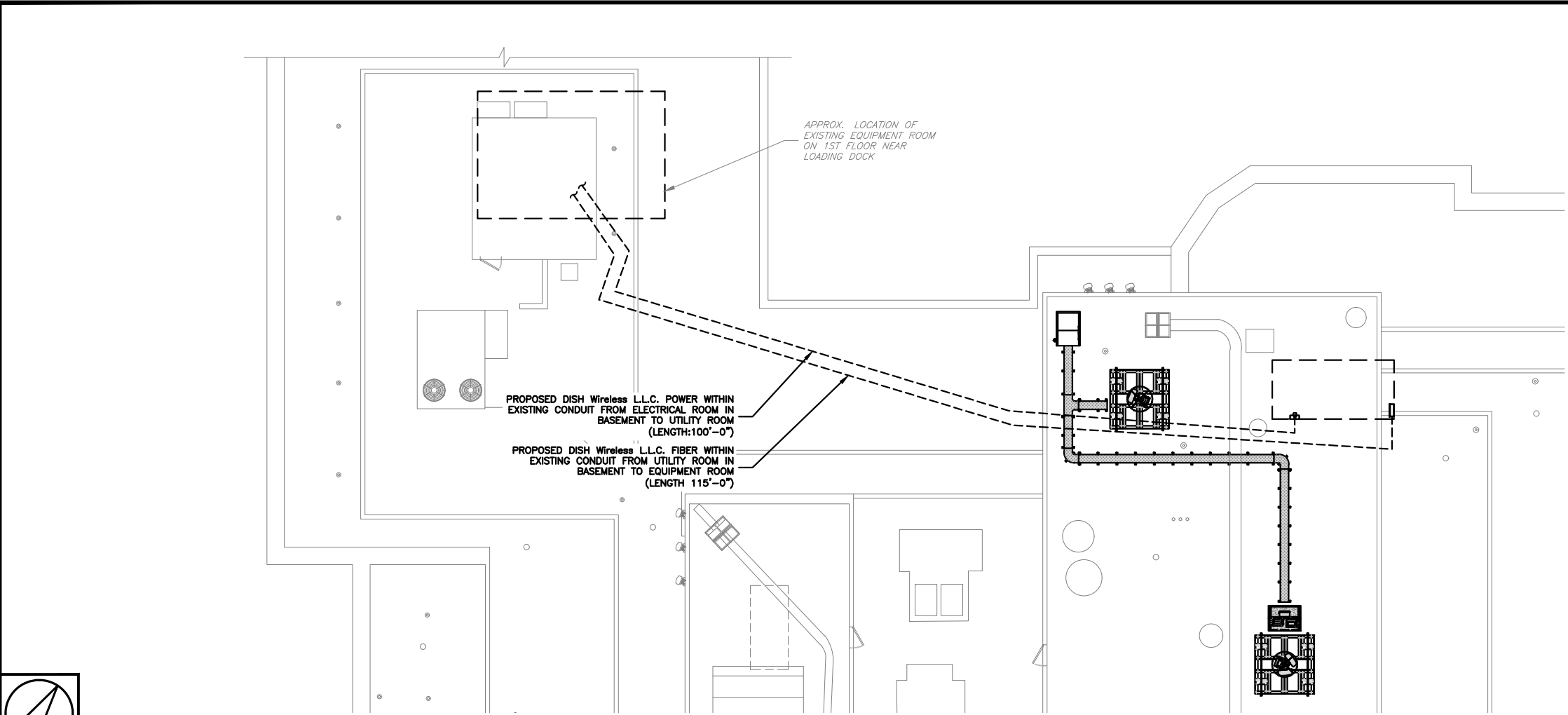
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
BUILDING
ELEVATION

SHEET NUMBER
A-3

BUILDING ELEVATION





- NOTES**
1. UTILIZE EXISTING ABANDONED CONDUITS WHERE AVAILABLE. REPLACE/INSTALL NEW CONDUIT SECTIONS AS NEEDED.
 2. CONTRACTOR TO VERIFY WITH DISH Wireless L.L.C. C.M. THE LOCATION OF THE POWER AND FIBER SOURCE PRIOR TO CONSTRUCTION.
 3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



NB+C ENGINEERING SERVICES, LLC.

100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION
1	06/07/24	REVISED UTILITY ROUTING

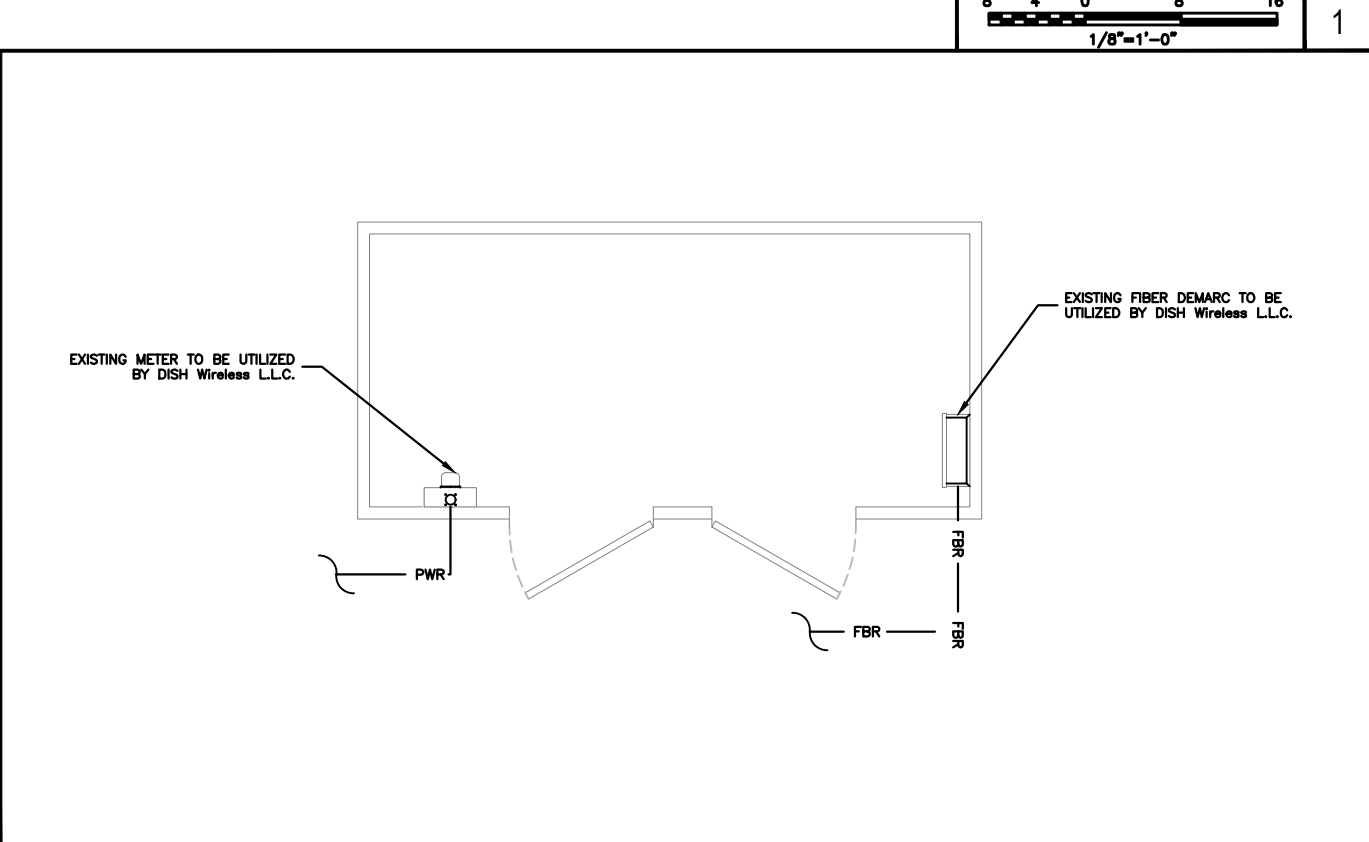
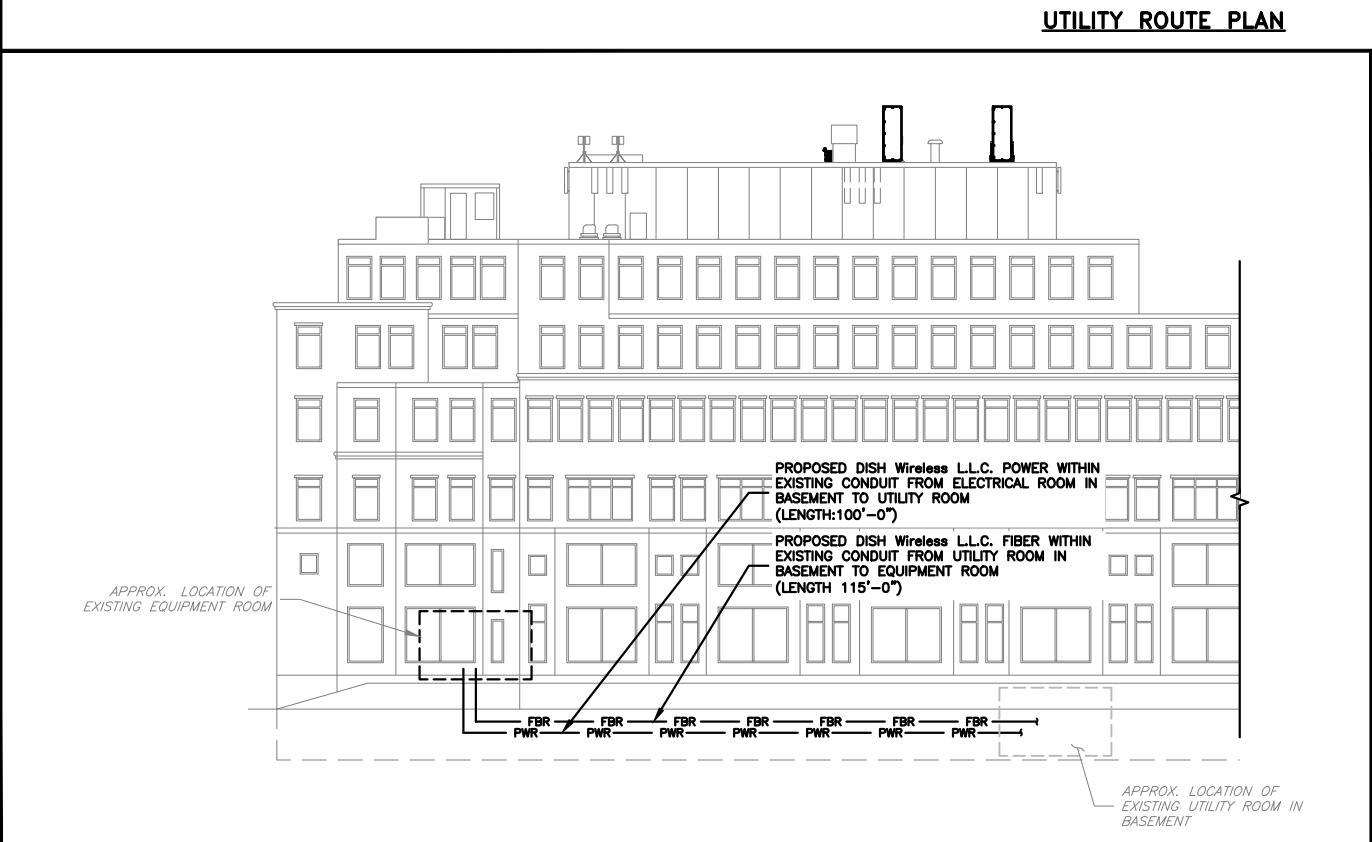
A&E PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1



UTILITY ROUTE ELEVATION

16' 12' 8' 4' 0' 16' 32'
1/16"=1'-0"

UTILITY ROOM

12' 6' 0' 1' 2' 3' 4' 5'
1/2"=1'-0"

LPD

EXHIBIT C
BUILDING RULES AND REGULATIONS

CONSTRUCTION RULES AND REGULATIONS

1. All work shall be performed in accordance with all applicable state laws and in accordance with all requirements and codes of the City of Cambridge Fire Department, Inspectional Services Department and guidelines of Newmark, the Building manager working on behalf of Landlord ("Building Management"). The Building is operational and extra care and precautions must be taken to avoid interruption of services.
2. Certificates of Insurance in compliance with the requirements of Exhibit 3 of the Lease must be provided from general contractor ("Contractor") and its subcontractors at a minimum of seven (7) days prior to the commencement of any work.
3. At least three (3) weeks before construction, Contractor must schedule a pre-construction meeting with the Landlord's project management team. Meeting materials should include detailed schedules; addresses and telephone numbers of supervisors, contractors and subcontractors; copies of permits; proof of current insurance (including all subcontractors); and notice of any contractor's involvement in a labor dispute. Contractor shall supply Building Management with a copy of all permits prior to the start of any work.
4. Contractor is required to keep and make available a daily log of personnel entering and exiting the premises. Building Management will provide access cards and keys to direct employees of Contractor. Contractor shall be responsible for providing access to subcontractors. A Contractor ID badge may be issued during the work to facilitate this process. Building Management reserves the right to restrict access further at any point, and for any reason.
5. Contractor personnel are only permitted within the Building during normal trade working hours plus 30 minutes time before and after normal trade hours for set up and pick up of tools, etc., unless prior approval is given by Building Management.
6. Testing of sprinkler system, fire protection system, demolition, coring, and any other similar type work must be coordinated through Building Management with ten (10) days prior notice. Work on any system within the Building shall be coordinated with Building Management. Additionally, any sprinkler or fire alarm work and/or testing which may result in the activation of visual or audible devices shall be done outside of normal business hours for the Building.
7. The loading dock must be reserved in advance and is not exclusive to Contractor's sole use. Contractor will provide Building Management with a weekly delivery schedule.
8. Any common interior paths of travel, including entrances, lobbies, hallways, and elevators, will be properly protected. Protection may include elevator pads, walk off mats, plastic on carpet, Masonite on tile floors, cardboard or Masonite on wall areas, or suitable alternatives approved by Building Management.

9. Contractor shall provide heavy plastic screening for dust protection and/or temporary walls of suitable appearance as required by Building Management.
10. Walk-off mats are to be provided at entrance doors.
11. No utilities (electricity, water, and plumbing) or services to the tenants are to be cutoff or interrupted without first having requested, in writing, and secured, in writing, the permission of Building Management. Request for this permission will be submitted in writing by Contractor to Building Management ten (10) business days prior to the planned cutoff.
12. Prior to any building management control work commencing that shall impact the existing Building and control network, Building Management's representative shall need to be consulted.
13. If taking the Building fire alarm points offline is required in connection with any work, the cost of such service will be billable to the Contractor. Contractor can choose to have their subcontractor handle taking the fire alarm points or panel offline, provided the subcontractor is licensed to do so, and works within the requirements and codes of the City of Cambridge Fire Department.
14. Should any scope of work require entry to another tenant's space, Tenant and/or Contractor must notify Building Management. If approved by Building Management, the activity shall be under the supervision of Building Management's representative. The cost of said supervision will be billable to the Contractor.
15. Admittance to the roof of the Building is allowed only upon the prior written consent of Building Management. Admittance for the duration of the project may be accommodated, but specific conditions for controlled access may apply.
16. There is a "No Smoking Policy" in effect for all areas of the Building.
17. Contractor will be responsible for daily removal of waste foods, milk and soft drink containers, etc. Building trash receptacles are not to be used.
18. Construction personnel are not to eat in the lobby or in front of the Building, nor are they to congregate in the lobby or in front of the Building.
19. Construction personnel are not to utilize any vacant space within the Building other than that space which is designated by the Building Management to the Contractor.
20. There will be no radios on the job site.
21. All workers are required to wear a shirt, shoes, and full length trousers.

22. Public spaces, corridors, elevator, bathrooms, lobby, etc., must be cleaned immediately after use. Restrooms for contractor use will be designated to the Contractor. No other restrooms are to be utilized by Contractor personnel.

23. There will be no smoking, eating, or open food containers in the elevator, carpeted areas, or public lobbies. There will be no yelling or boisterous activities; nor is alcohol or controlled substances allowed or tolerated. Individuals under the influence or in possession of such will be prosecuted.

24. Contractor shall post no signs without Building Manager's expressed prior approval which may be withheld for any reason.

25. Contractor shall supply Building Management with a copy of all permits prior to start of any work.

26. Contractor shall complete work without disruption from labor disputes and in harmony with other trades.

27. The Construction Rules and Regulations are subject to change in Landlord's sole discretion.

28. Landlord reserves the right to prohibit access to the building by any contractors who fail to comply with these Construction Rules and Regulations.

EXHIBIT D

PERMITTED FREQUENCIES

	Band	Downlink	Uplink
n66	H - I	2160 - 2170 MHz	1760 - 1770 MHz
n66	A - B	2180 - 2200 MHz	
n70	H, A - B	1995 - 2020 MHz	1700 - 1710 MHz
n71	F - G	642 - 652 MHz	688 -698 MHz



BOBOS00341B (BOBOS00341B)
1 BRATTLE SQUARE
CAMBRIDGE, MIDDLESEX COUNTY, MASSACHUSETTS 02138

PREPARED FOR:
DISH WIRELESS LLC

RAMAKER & ASSOCIATES, INC.
PROJECT NUMBER: 60991

NEPA SCREENING REPORT & CHECKLIST



September 23, 2024

DISH Wireless LLC

Andrew Foreman, National Program Manager

SUBJECT: NEPA Screening Report & Checklist

**PROJECT: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts 02138
Ramaker & Associates, Inc. Project #60991**

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a National Environmental Policy Act of 1969 (NEPA) Screening Report & Checklist (NEPA Screen) for the proposed site development activities associated with the above-referenced site.

Based on the review of the FCC Special Interest Items as outlined in 47 CFR §1.1307 (a) (1) through (8), §1.1307 (b), §1.1310, and §1.1307 (d), this project will not have a significant environmental impact. It is the opinion of Ramaker that this project is categorically excluded from further environmental processing, and preparation of an Environmental Assessment is not required.

Project recommendations and requirements are included in Section 5.2 of the attached report. The recommendations and requirements include both site-specific (if appropriate) and general recommendations. Following the requirements is critical to avoiding significant environmental impacts to NEPA categories.

A NEPA Screening Checklist summarizing these items is included with this summary. If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

Ramaker & Associates, Inc.

A handwritten signature in dark ink, appearing to read "Daniel Feldmann", with a long horizontal flourish extending to the right.

Daniel Feldmann, NEPA Compliance Manager

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NEPA SCREENING CHECKLIST

SITE NAME (SITE NUMBER):	BOBOS00341B (BOBOS00341B)			
ADDRESS:	1 Brattle Square, Cambridge, Middlesex County, Massachusetts			
LATITUDE:	42° 22' 23.944" North			
LONGITUDE:	71° 7' 17.378" West			
	YES	NO	N/A	Comments
Will the facility be located in an officially designated wilderness area, per 47 CFR §1.1307(a)(1)?	☐	☐	X	Consulting Agency To Contact: NPS, USFWS & BLM Comments: See Section 3.1 for details.
Will the facility be located in a designated wildlife preserve, per 47 CFR §1.1307(a)(2)?	☐	☐	X	Consulting Agency To Contact: NPS, USFS & BLM Comments: See Section 3.2 for details.
Will the facility affect listed or proposed threatened or endangered species or designated critical habitats; or jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973, per 47 CFR §1.1307(a)(3)?	☐	☐	X	Consulting Agency To Contact: USFWS & State Equivalent Comments: See Section 3.3 for details.
Will the facility be over 450 feet above ground level (AGL); per 47 CFR §1.1307(d).	☐	☐	X	Consulting Agency To Contact: USFWS & State Equivalent Comments: See Section 3.3 for details.
Will the facility affect districts, sites, buildings, structures, or objects significant in American history, architecture, archeology, engineering, or culture, that are listed, or are eligible for listing in the National Register of Historic Places, per 47 CFR §1.1307(a)(4)?	☐	X	☐	Consulting Agency To Contact: SHPO, THPO & NHOs Comments: See Section 3.4 for details.
Will the facility affect Indian religious sites, per 47 CFR §1.1307(a)(5)?	☐	X	☐	Consulting Agency To Contact: THPO, NHOs & Bureau of Indian Affairs Comments: See Section 3.5 for details.
Will the facility be located in a floodplain, per 47 CFR §1.1307(a)(6)?	☐	☐	X	Consulting Agency To Contact: FEMA Comments: See Section 3.6 for details.
Will the facility involve a significant change in surface features, per 47 CFR §1.1307(a)(7)?	☐	☐	X	Consulting Agency To Contact: US Army Corps of Engineers Comments: See Section 3.7 for details.
Will the facility be equipped with high intensity white lights in a residential neighborhood, per 47 CFR §1.1307(a)(8)?	☐	☐	X	Consulting Agency To Contact: Not Applicable Comments: See Section 3.8 for details.
Facilities that may result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in 47 CFR §1.1307(b) & §1.1310.	☐	X	☐	Consulting Agency To Contact: Not Applicable Comments: It is Ramaker's understanding that DISH will ensure that the proposed antenna structure will comply with the established criteria regarding radio frequency exposure limits in accordance with the Second Report and Order, as well as the FCC Code of Federal Regulations 47 CFR §1.1307, §1.1310, published at the time of this report.

1.0 EXECUTIVE SUMMARY

1.1 SUMMARY OF ACTION

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a National Environmental Policy Act (NEPA) Screening Report & Checklist (NEPA Screen). The NEPA Screen included a review of the Federal Communications Commission (FCC) Special Interest Items as outlined in 47 CFR §1.1307 (a) (1) through (8).

1.2 OVERVIEW OF PROJECT

This NEPA Screen was prepared for the proposed telecommunications facility¹ project. The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

DISH proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

Figures 1 through 4 include the location of the Subject Property at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts: Boston South, Massachusetts Quadrangle (*Figure 1*), photographs of the Subject Property and surrounding area (*Figure 2*), a site plan/sketch (*Figure 3*), and an aerial photograph of the project area (*Figure 4*).

1.3 SUMMARY OF RESULTS

Based on the review of the FCC Special Interest Items as outlined in 47 CFR §1.1307 (a) (1) through (8), §1.1307 (b), §1.1310, and §1.1307 (d), this project will not have a significant environmental impact. It is the opinion of Ramaker that this project is categorically excluded from further environmental processing, and preparation of an Environmental Assessment is not required.

1. "Facility" is defined by the FCC as a Tower or an Antenna. The term Facility may also refer to a Tower and its associated Antenna(s).

Project recommendations and requirements are included in Section 5.2 of the attached report. The recommendations and requirements include both site-specific (if appropriate) and general recommendations. Following the requirements is critical to avoiding significant environmental impacts to NEPA categories.

2.0 INTRODUCTION

2.1 NEPA SCREEN BACKGROUND

NEPA requires federal agencies to consider the environmental impacts of their proposed actions and reasonable alternatives to those actions. To fulfill this mandate, the FCC adopted its NEPA rules (47 CFR., Subpart I – Procedures Implementing the National Environmental Policy Act of 1969, §§1.1301 to 1.1320), which identifies that specific actions are categorically excluded from environmental processing.

As a licensing agency, the FCC complies with NEPA by requiring applicants for licenses (including those involving the construction of wireless telecommunications facilities) to review the environmental consequences of their proposed actions.

In 47 CFR §1.1307 (a) and (b), the FCC identifies actions for which EAs must be prepared. Per §1.1306 (a), if the actions are not covered in 47 CFR §1.1307 (a) and (b), they “[...] are deemed individually and cumulatively to have no significant effect on the quality of the human environment and are categorically excluded from environmental processing.” Actions that require an EA include:

- Facilities located in an officially designated wilderness area.
- Facilities located in a designated wilderness preserve.
- Facilities which may affect listed or proposed threatened or endangered species or designated critical habitats; or is likely to jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973.
- Facilities that may affect districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture, that are listed, or are eligible for listing in the National Register of Historic Places.
- Facilities that may affect Indian religious sites.
- Facilities located in a flood plain.
- Facilities that involve a significant change in surface features.
- Antenna towers equipped with high intensity white lights that are located in a residential neighborhood.
- Facilities that may result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1307(b) §1.1310.

In other words, if a telecommunications project does not fall under any of the listed categories in section 1.1307, the project is deemed to have no significant environmental impact. Applications for such projects can proceed without providing any environmental documentation to the FCC, although the licensee is advised to maintain documentation supporting its determination of no significant effect in the event that these records are requested by the FCC.

Additional policies are outlined in the *Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005* 47 CFR, Appendix C to Part 1 (NPA), and the *First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016* (Revised Collocation Agreement).

2.2 SCOPE OF SERVICES

Ramaker was retained to conduct an environmental screening of the FCC Special Interest Items as outlined in 47 CFR, Section 1.1307 (a) (1) through (8). The NEPA Screen and the attached figures, correspondence and exhibits are provided to document potential impacts to the FCC Special Interest Items.

The NEPA Screen prepared by Ramaker provides a determination, pursuant to FCC's regulations, of whether the proposed project will have a significant environmental impact and thus, whether it is categorically excluded from further environmental processing. The NEPA Screen also provides documentation supporting this determination.

Unless otherwise noted, this NEPA Screening Report also includes additional standards as required by DISH.

2.3 STATEMENT OF USER RELIANCE

This report was prepared by Ramaker for the exclusive use of DISH. No other party shall have any right to rely on any service provided by Ramaker without prior written consent by Ramaker.

2.4 LIMITATIONS

This report was performed in accordance with the generally accepted practices in the field of environmental consulting. The analysis and recommendations indicated in this report are based upon the best current available information as reviewed by Ramaker.

The results of this report are based upon the professional interpretation of readily available information gathered during this evaluation. Ramaker considers that the information provided by the cited references is complete and accurate. Ramaker does not warrant that this report represents an exhaustive study of all potential environmental effects or impacts that will result from construction of the facility. Ramaker reserves the right to alter the opinions offered in this report if additional information concerning the environmental characteristics facility and surrounding area should become available. No warranty, expressed or implied, is made.

3.0 FCC SPECIAL INTEREST ITEMS

The following is a review of the project's potential impact to the FCC Special Interest Items as outlined in 47 CFR, §1.1307 (a) (1) through (8). Under 47 CFR §1.1306- §1.1307, the NPA, and the Revised Collocation Agreement, construction of certain facilities are excluded from review of NEPA Special Interest Items.

As part of this NEPA Screen, Ramaker completed a Preliminary NEPA Review Summary. The report is included as Appendix A of this report and includes a summary of the FCC Special Interest Items that require review for this project. When categories can be excluded from review, additional information regarding the exclusion is provided in the attached report.

3.1 CHECKLIST ITEM # 1 - DESIGNATED WILDERNESS AREAS

§ 1.1307 (a) (1) - Facilities that are to be located in an officially designated wilderness area.

Background

The Wilderness Act of 1964 allowed certain lands to become officially designated wilderness areas. Four federal agencies manage officially designated wilderness areas in the United States; the United States Department of Interior - Bureau of Land Management (BLM), the National Park Service (NPS), the United States Forestry Service (USFS), and the United States Fish and Wildlife Service (USFWS). In addition, states may designate equivalent wilderness areas, also known as “natural areas.”

Finding

This FCC Special Interest Item is excluded from review.

3.2 CHECKLIST ITEM # 2 - DESIGNATED WILDLIFE PRESERVES

§ 1.1307 (a) (2) - Facilities that are to be located in an officially designated wildlife preserve.

Background

Officially designated wildlife preserves, which are formally known as refuges, are managed by the USFWS. The fundamental conservation mission and wildlife dependent recreation areas for refuge were outlined in the National Wildlife Refuge System Improvement Act of 1997. Wildlife refuges provide habitat for wildlife, including threatened and endangered plant and animals. In addition, wildlife refuges are used by migratory birds. The USFWS National Wildlife Refuge System includes wildlife refuges in every state, wetland management districts, and other protected areas. States may also designate wildlife preserves and areas.

Finding

This FCC Special Interest Item is excluded from review.

3.3 CHECKLIST ITEM # 3 - LISTED THREATENED OR ENDANGERED SPECIES OR DESIGNATED CRITICAL HABITAT

§ 1307 (a) (3) - Facilities that: may (i) affect listed threatened or endangered species or designated critical habitats; or (ii) are likely to jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973.

Note: The list of endangered and threatened species is contained in 50 CFR 17.11, 17.22, 222.23(a) and 227.4. The list of designated critical habitats is contained in 50 CFR 17.95, 17.96 and part 226. To ascertain the status of proposed species and habitats, inquiries may be directed to the Regional Director of the Fish and Wildlife Service, Department of the Interior.

Background

The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1536) directs federal agencies to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of “Listed Threatened Species, Endangered Species, or Designated Critical Habitats” (Listed Species). In addition, Section 7 of the Act sets out the consultation process, which is further implemented by Title 50 of the Code of Federal Regulations (50 CFR § 402).

Under 50 CFR § 402, Federal agencies must review their actions, review a list of species and critical habitat that may be in the project area, and determine whether the action may affect any of those species or their critical habitat. No further consultation is required if species and their critical habitat will not be affected. Informal or formal consultation is required for actions which may affect species or their critical habitat.

In addition to federally protected species, individual states may identify endangered and threatened species and critical habitats that are subject to protection under state law.

The construction of new telecommunication facilities (towers more specifically), creates a potentially significant impact on migratory birds, especially approximately 350 species of night-migrating birds. Please note that the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for allowing unauthorized take, it must be recognized that some birds may be killed at structures, such as communications towers, even if all reasonable measures to avoid it are implemented.

The USFWS’s Division of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds. While it is not possible under the MBTA to absolve individuals or companies from liability if they follow these recommended guidelines, the Division of Law Enforcement and the Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals or companies who have made good faith efforts to avoid the take of migratory birds.

FCC's implementation date of the NEPA Compliance for Proposed Antenna Structure Registrations, Effects of Communications Towers on Migratory Birds (WT Docket No. 08-61, WT Docket No. 03-187, *Order on Remand* (12.09.11)), adopts procedural measures to ensure that migratory birds are fully considered prior to construction. In addition, under the Note to paragraph (d) of Section 1.1307, the Commission requires an Applicant to prepare an EA that considers the effects on migratory birds when a proposed antenna structure will be over 450 feet above ground level (AGL).

Finding

This FCC Special Interest Item is excluded from review.

3.4 CHECKLIST ITEM # 4 - HISTORIC PLACES

§ 1.1307 (a) (4) - Facilities that may affect districts, sites, buildings, structures, or objects significant in American history, architecture, archeology, engineering, or culture, that are listed, or are eligible for listing in the National Register of Historic Places.

Background

FCC rules and policies pertaining to Section 106 Review under the National Historic Preservation Act (NHPA) are outlined in the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005, the First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016 (Revised Collocation Agreement), 47 CFR §1.1307 (a)(4)(i), and 47 CFR §1.1320.

In the event that the project meets the exemption criteria provided in the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process (NPA) (Sections III.A through III.F), the evaluation should include documentation supporting this determination and the NPA provides that no additional consultation with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) is required for the undertaking. Some exemptions still require completion of the process of participation of Indian Tribes and Native Hawaiian Organizations.

Research & Review

The following resources and reviews were utilized to evaluate this NEPA item:

1. **Review for Exclusions from Section 106 Review** – Based on a review of the proposed project, this undertaking does not qualify for an exclusion from Section 106 review.
2. **Direct APE** – The Direct APE is limited to the area of potential ground disturbance and any property, or any portion thereof that will be physically altered or destroyed by the Undertaking. On November 24, 2008, the FCC further clarified that the Direct APE is limited to the tower or non-tower structure on which the collocation will be mounted as well as the lease area including the access route and utility corridor. As part of this project, Ramaker considered two facets of the Direct APE with respect to a collocation to a non-tower structure. As outlined by the FCC, this included the potential to impact Archaeological Resources associated with any potential ground disturbance activities as

well as the historical significance of the support structure and the subsequent potential for impact to the historic integrity of the support structure as a result of the proposed collocation activities. The following is a summary of the potential for effect to the Direct APE when considering these two facets:

Archaeological Resources: Ramaker reviewed the proposed collocation activities and identified that as part of this project there would be no new ground disturbance activities. Due to the nature of the proposed construction activities, an archaeological survey was not completed as part of this review. It is the opinion of Ramaker that the proposed undertaking will result in **“No Historic Properties Affected”** in the projects Direct APE.

Support Structure: Similar to the Indirect APE review (below), Ramaker reviewed the SHPO’s records for historically significant structures to qualify whether the support structure had been previously identified to be a structure of potential architectural and/or cultural significance. Based on the findings associated with this investigation, Ramaker has concluded that the project will result in **“No Historic Properties Affected”** in the Direct APE, when considering the antenna support structure.

3. **Indirect APE** – Ramaker reviewed the SHPO/THPO inventory of historic properties within the project’s Indirect APE. Ramaker’s research and review found **“No Adverse Effect”** to cultural or historic properties in the Indirect APE.
4. **Public Participation** – Public participation included correspondence with the local government that has primary land use jurisdiction over the Subject Property, publication of the proposed undertaking in the newspaper, and correspondence with other agencies and parties who were considered potential sources of information. When possible, the Certified Local Government (CLG) was contacted for comment. Comments were received from the Cambridge Historical Commission, regarding the proposed undertaking. Following additional correspondence, Ms. Burks of the Cambridge Historical Commission indicated that she no longer had concerns associated with the proposed undertaking and no further consultation was required. No other comments associated with effects to historic properties were received during the designated comment period.
5. **Indian Tribes and NHOs** – See Section 3.5, below, for a full description of correspondence with potentially interested Indian Tribes and NHOs.
6. **Submission Packet FCC Form 621** – In accordance with the NPA, Ramaker completed a submission packet for submittal to the SHPO/THPO. The submission packet included a determination of **“No Adverse Effect”** to historic properties. The determination of **“No Adverse Effect”** was based on the evaluation of the Direct and Indirect APEs, public participation, and correspondence with potentially interested Indian Tribes and NHOs. The submission packet was submitted to the SHPO electronically (E-106) and via certified mail (U.S. Postal Service).

The SHPO concurred with Ramaker’s Assessment of Effects. A copy of the SHPO’s concurrence is included as an attachment to this report.

7.

Finding

This facility will have “No Adverse Effect” on districts, sites, buildings, structures or objects significant in American history, architecture, archaeology, engineering, or culture that are listed, or are eligible for listing in the National Register of Historic Places. Please see Section 5.2 for site specific requirements.

3.5 CHECKLIST ITEM # 5 - INDIAN RELIGIOUS SITES

§ 1.1307 (a) (5) - Facilities that may affect Indian religious sites.

Background

The FCC’s Tower Construction Notification System (TCNS) was created to increase communication with Indian Tribes and NHOs in the context of the review required by Section 106 of the NHPA. FCC’s TCNS provides early notification to potentially interested Indian Tribes and NHOs of proposed facilities.

Research & Review

The following resources and reviews were utilized to evaluate this NEPA item:

1. **Initial TCNS Filing** - Ramaker entered the project information into FCC’s TCNS database. This activity then triggered notification to Tribal Nations and NHOs who have identified themselves as being potentially interested in FCC undertakings in the project area. The Subject Property’s specific TCNS number was assigned by the FCC TCNS process as “Notification ID” number 281876.
2. **Project Information Submittal** - The FCC has determined that by providing the detailed information included in the FCC Form 621 submittal packages constitutes a good faith effort to supply the information reasonably necessary for Tribal Nations and NHOs to ascertain whether historic properties of religious and cultural significance to them may be effected by the undertaking. A project summary tracker, including records of communications with the Tribal Nations and NHOs, has been included as an attachment to this report. These records provide dates when submittal packages were originally provided to the tribes. In addition, these records provide a date when additional attempts to contact Tribal Nations and NHOs was completed by Ramaker.
3. **Escalation to FCC** - Approximately 30 days after Ramaker sent the Tribal Nations and NHOs project information (FCC Form 621 submittal packages), Ramaker referred correspondence with unresponsive Indian Tribes and NHOs to the FCC. These escalations included those completed through the FCC’s TCNS website and those via the FCC’s TCNS Help Desk. Subsequent to the referral of unresponsive tribes to the FCC, Ramaker received correspondence from the FCC identifying that the FCC initiated government to government contact with the unresponsive Indian Tribes and NHOs. Based on the FCC’s guidance, unresponsive Tribal Nations and NHOs have received a request from the FCC requesting their comments on the proposed facility within 15 days of the letter being issued, obligations under Section IV of the NPA with respect to the unresponsive Indian Tribes and NHOs is complete.

In summary, Ramaker opines that all appropriate due diligence was completed following the FCC's "Best Practices Policy" and that all appropriate Tribal Nations and NHOs were provided an opportunity to provide comment. Copies of the consultation records are included upon request.

Finding

The proposed activity will not affect Indian religious sites.

3.6 CHECKLIST ITEM # 6 - 100-YEAR FLOODPLAIN

§ 1.1307 (a) (6) - Facilities to be located in a floodplain.

Background

Executive Order 11988 states that the "[...] term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in a given year." Based on this and FCC guidelines, the 100-year floodplain (one percent change of flooding in any given year) was utilized for screening of this NEPA item².

Finding

This FCC Special Interest Item is excluded from review.

3.7 CHECKLIST ITEM # 7 - IMPACTS TO SURFACE FEATURES

§ 1.1307 (a) (7) - Facilities whose construction will involve significant change in surface features (e.g. wetland fill, deforestation or water diversion).

Background

The Clean Water Act (40 CFR § 230.3) defines wetlands as "[...] those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." The United States Army Corps of Engineers (ACOE) has jurisdiction over certain wetlands, waterways, lakes, streams, and natural springs.

Finding

This FCC Special Interest Item is excluded from review.

3.8 CHECKLIST ITEM # 8 - HIGH INTENSITY WHITE LIGHTS IN RESIDENTIAL NEIGHBORHOODS

§ 1.1307 (a) (8) - Facilities that will be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law.

2. The FCC encyclopedia does mention that in limited circumstances the 500-year floodplain standard should be used. See <http://www.fcc.gov/encyclopedia/nepa-faq>.

Background

High intensity white lights are required by the Federal Aviation Administration (FAA) for aviation avoidance marking on towers over 700 feet above ground surface. Towers under 700 feet generally are not equipped with high intensity lights unless an FAA aeronautical study shows otherwise.

Finding

This FCC Special Interest Item is excluded from review.

4.0 ADDITIONAL SPECIAL INTEREST ITEMS

The following is a review of the project's potential impact to other potential special interest items.

4.1 CHECKLIST ITEM # 9 - HUMAN EXPOSURE TO RADIOFREQUENCY RADIATION

§ 1.1307 (b) & § 1.1310 - Facilities that would cause human exposure to levels of radiofrequency radiation in excess of Commission-adopted guidelines.

It is Ramaker's understanding that DISH will ensure that the proposed antenna structure will comply with the established criteria regarding radio frequency exposure limits in accordance with the Second Report and Order, as well as the FCC Code of Federal Regulations 47 CFR § 1.1307, § 1.1310, published at the time of this report.

Finding

This facility will not cause human exposure to levels of radio frequency radiation in excess of Commission-adopted guidelines.

4.2 NATIONAL SCENIC TRAIL SYSTEM

Background

On October 5, 1999, Cellular Telecommunications Industry Association (CTIA), Personal Communications Industry Association (PCIA), and the Managing and Supporting Trail Organizations (MSTOs) for the National Scenic Trail system, implemented a consulting policy, *Siting of Wireless Telecommunications Facilities Near National Scenic Trails - Resolution*. As part of the resolution, wireless telecommunications carriers are to notify the appropriate MSTO if a wireless telecommunications facility will be sited within one mile of a National Scenic Trail.

Finding

This project is a collocation and does not include the siting of a new tower; as such, this item was not reviewed as part of this NEPA screen.

4.3 OTHER

No other items were included within the scope of this review.

5.0 CONCLUSIONS, REQUIREMENTS & RECOMMENDATIONS

5.1 CONCLUSIONS

Based on the review of the FCC Special Interest Items as outlined in *47 CFR §1.1307 (a) (1) through (8), §1.1307 (b), §1.1310, and §1.1307 (d)*, this project will not have a significant environmental impact.

5.2 REQUIREMENTS & RECOMMENDATIONS

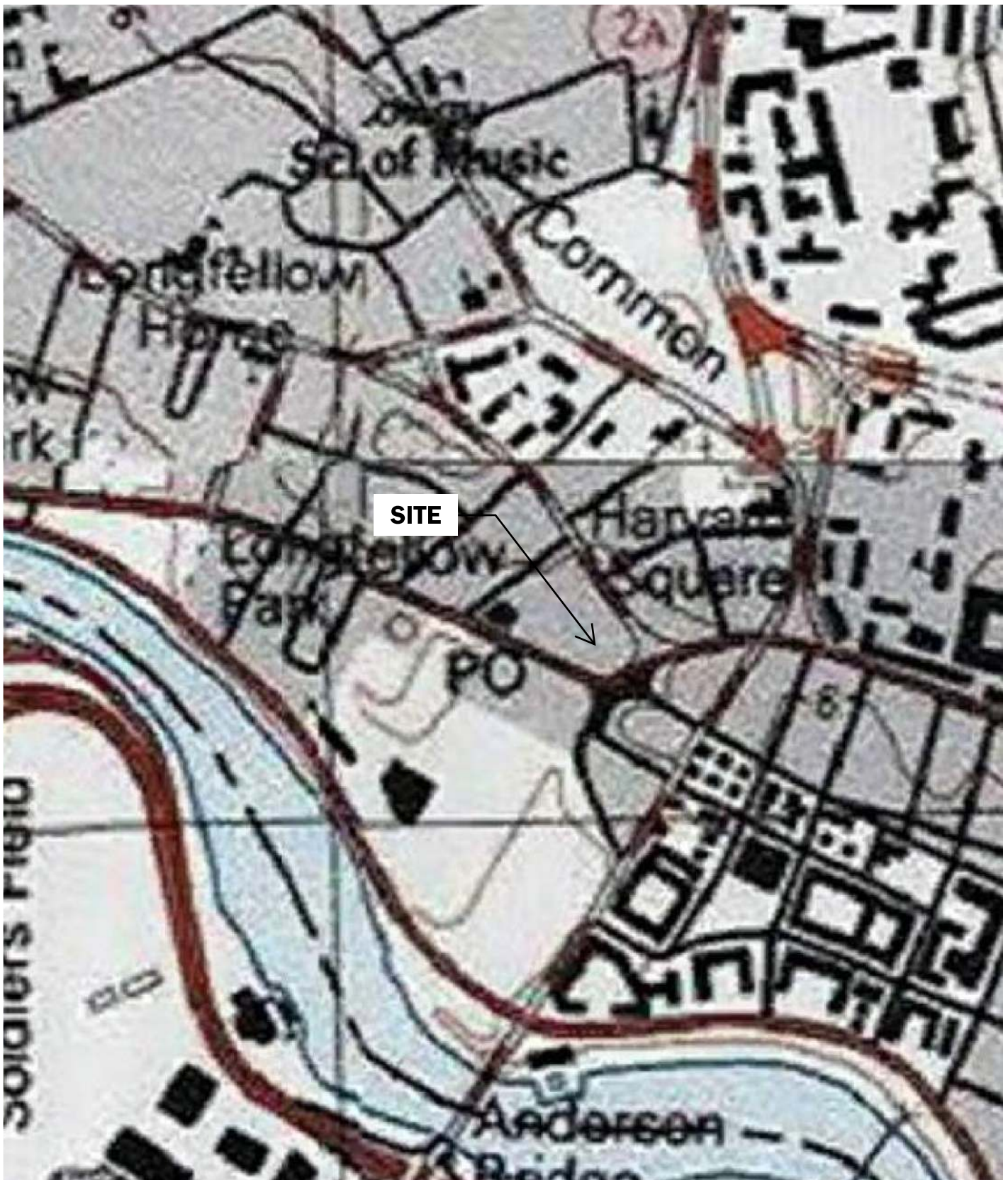
It is the opinion of Ramaker that this project is categorically excluded from further environmental processing, and preparation of an EA is not required.

Project recommendations and requirements are below. The recommendations and requirements include both site-specific (if appropriate) and general recommendations. Following the requirements is critical to avoiding significant environmental impacts to NEPA categories.

General Requirement: Inadvertent Discovery of Artifacts – In the event of an inadvertent discovery of human or archaeological remains during site construction activities, immediately stop construction and contact local law enforcement. Follow-up should then begin with the SHPO's office and tribes listed on the project's Notice of Organizations (see TCNS NOO document attached).

Site-Specific Requirement: Construction Methods – Through the course of the Section 106 consultation process, it was identified that that the proposed antennas will be installed within a concealment painted to match the existing surroundings. If this construction requirement can not be met, further consultation with Massachusetts SHPO will be required.

Figure 1 - USGS 7.5-Minute Quadrangle



USGS 7.5-Minute Quadrangle

BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Massachusetts 02138
Middlesex County



Source: Google Earth

RAMAKER
employee-owned

NOT TO SCALE

Figure 2 - Property Photographs



1. View of the host structure facing north from Eliot Street within the Harvard Square Historic District (Boundary Expansion).



2. View of the host structure facing northwest from Brattle Street within the Harvard Square Historic District (Boundary Expansion).



3. View of the host structure facing south from Church Street within the Harvard Square Historic District (Boundary Expansion).

Figure 3 - Site Plans



**1 BRATTLE SQUARE
CAMBRIDGE, MA 02138**

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

A detailed street map of a neighborhood in Los Angeles, California. The map shows several streets including S 1st Street, S 2nd Street, S 3rd Street, S 4th Street, S 5th Street, S 6th Street, S 7th Street, S 8th Street, S 9th Street, S 10th Street, S 11th Street, S 12th Street, S 13th Street, S 14th Street, S 15th Street, S 16th Street, S 17th Street, S 18th Street, S 19th Street, S 20th Street, S 21st Street, S 22nd Street, S 23rd Street, S 24th Street, S 25th Street, S 26th Street, S 27th Street, S 28th Street, S 29th Street, S 30th Street, S 31st Street, S 32nd Street, S 33rd Street, S 34th Street, S 35th Street, S 36th Street, S 37th Street, S 38th Street, S 39th Street, S 40th Street, S 41st Street, S 42nd Street, S 43rd Street, S 44th Street, S 45th Street, S 46th Street, S 47th Street, S 48th Street, S 49th Street, S 50th Street, S 51st Street, S 52nd Street, S 53rd Street, S 54th Street, S 55th Street, S 56th Street, S 57th Street, S 58th Street, S 59th Street, S 60th Street, S 61st Street, S 62nd Street, S 63rd Street, S 64th Street, S 65th Street, S 66th Street, S 67th Street, S 68th Street, S 69th Street, S 70th Street, S 71st Street, S 72nd Street, S 73rd Street, S 74th Street, S 75th Street, S 76th Street, S 77th Street, S 78th Street, S 79th Street, S 80th Street, S 81st Street, S 82nd Street, S 83rd Street, S 84th Street, S 85th Street, S 86th Street, S 87th Street, S 88th Street, S 89th Street, S 90th Street, S 91st Street, S 92nd Street, S 93rd Street, S 94th Street, S 95th Street, S 96th Street, S 97th Street, S 98th Street, S 99th Street, S 100th Street. A red pin marks the "SITE LOCATION" at the intersection of S 1st Street and S 2nd Street. Other landmarks include the "Cambridge Center for Adult Education", "Harvard Square", "Flour Bakery + Cafe", "Harvard Square", "Flour Bakery + Cafe", "Harvard Square", "Flour Bakery + Cafe". A scale bar indicates distances up to 1 mile. A north arrow is located in the bottom right corner. The text "NO SCALE" is written vertically along the right edge of the map.

5

TOTALLY COMMITTED



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER,

DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG

SUBMITTALS		DESCRIPTION
REV	DATE	
0	05/13/2014	RETURN FOR COMPLETION

A&E PROJECT NUMBER
100753

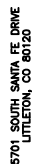
DISH Wireless LLC.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

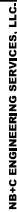
TITLE SHEET

SHEET NUMBER

T-1



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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TO ALTER THIS DOCUMENT.

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CWE	NSB	DRG

RECEIVED REV. #.

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

A&E PROJECT NUM

1007E3

cc/001

DISH Wireless L

PROJECT INFORMATION

BOBOS0034

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2
3
4
5

1 BRATTLE SC

CAMBRIDGE, MA

SHEET TITLE

BUILDING

PLAN

QUESTIONS

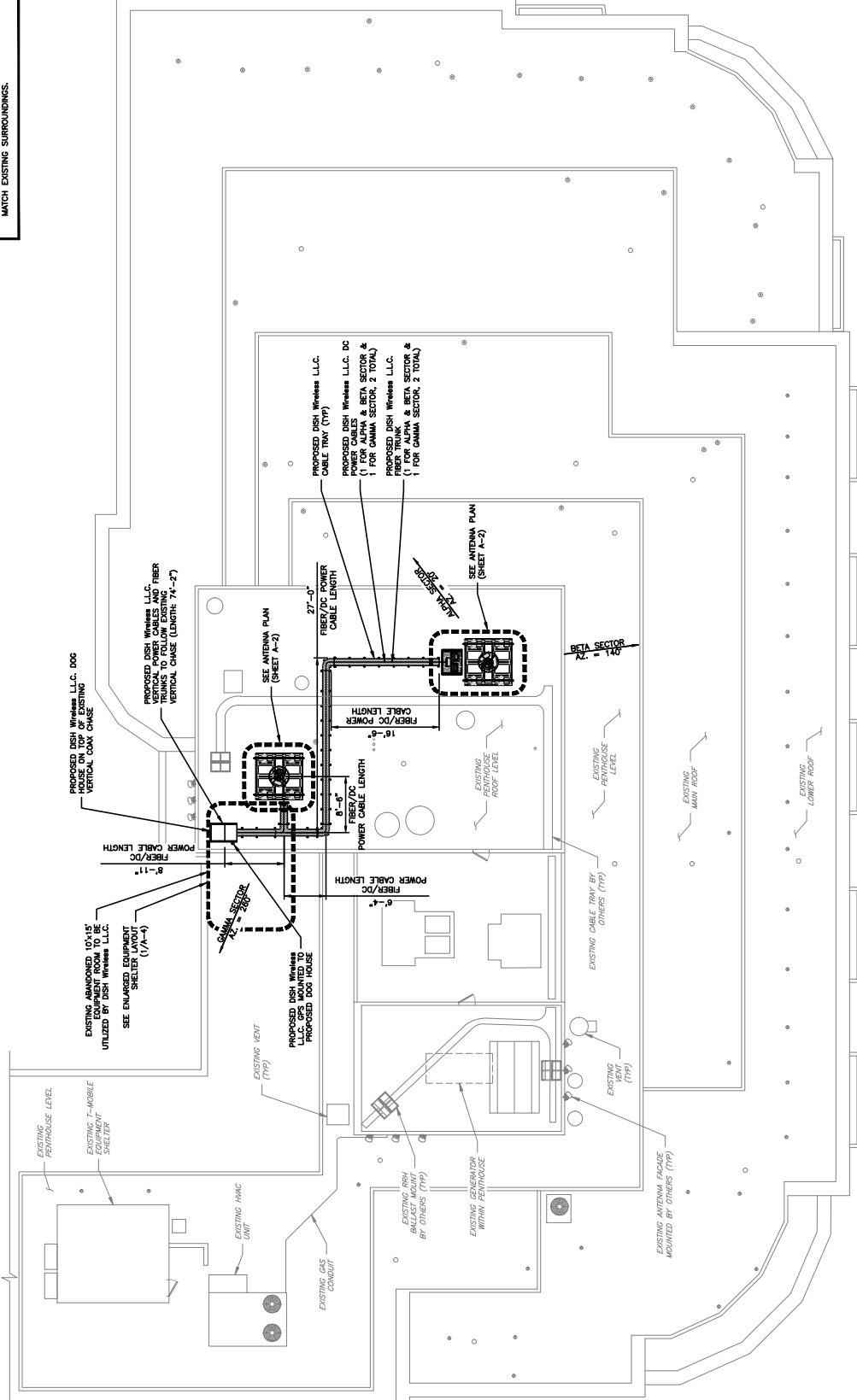
SHEET NUMBER

 $\Delta-1$

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NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL DISH WIRELESS LLC EQUIPMENT THAT IS RESTING ON OR AFFIRED TO ROOF MEMBRANE.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



BUILDING PLAN



NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDs FOR ALL RF DETAILS.
3. EXISTING EQUIPMENT OMITTED FOR CLARITY.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. EQUIPMENT TO MATCH EXISTING SURROUNDINGS.

PROPOSED DISH WIRELESS, LLC. OVP MOUNTED TO BALLAST FRAME (1 PER SECTOR, 3 TOTAL)

PROPOSED DISH WIRELESS, LLC. OVP MOUNTED TO BALLAST FRAME (1 PER SECTOR, 3 TOTAL)

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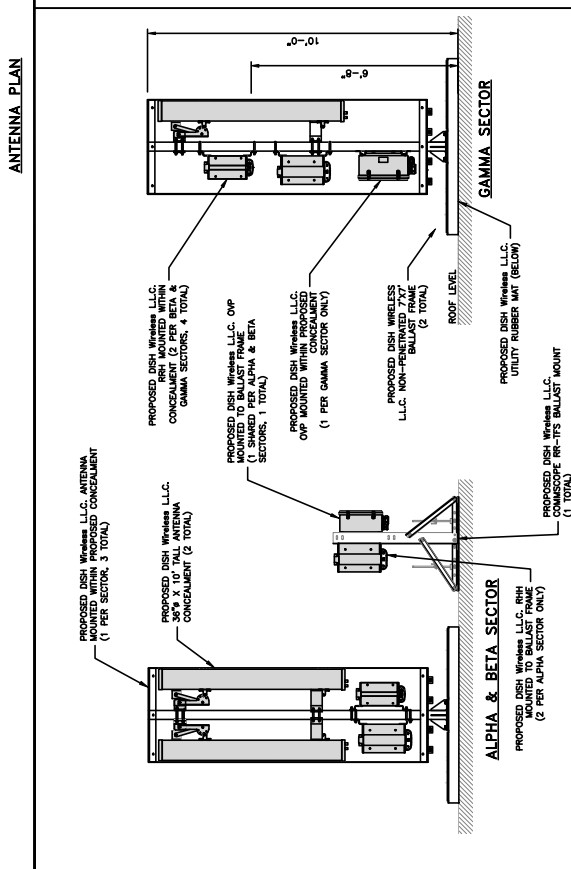
PROPOSED DISH WIRELESS, LLC. OVP MOUNTED TO BALLAST FRAME (1 PER SECTOR, 3 TOTAL)

PROPOSED DISH WIRELESS, LLC. OVP MOUNTED TO BALLAST FRAME (1 PER SECTOR, 3 TOTAL)

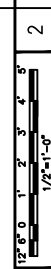
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PROPOSED DISH WIRELESS, LLC. OVP MOUNTED TO BALLAST FRAME (1 PER SECTOR, 3 TOTAL)

ANTENNA PLAN



ANTENNA ELEVATION



ANTENNA SCHEDULE



dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
100 KOLLO DRIVE
SUITE 303
CHELSEA, MA 01824
(978) 554-3300



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CWE NSB DRG

RFDs REV #:

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/1/24	ISSUED FOR CONSTRUCTION
1		
2		
3		
4		
5		
6		
7		
8		
9		

ARE PROJECT NUMBER

100753

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBOS00341B

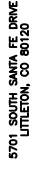
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
ANTENNA PLAN,
ELEVATION AND SCHEDULE

SHEET NUMBER

A-2

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC, ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



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CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

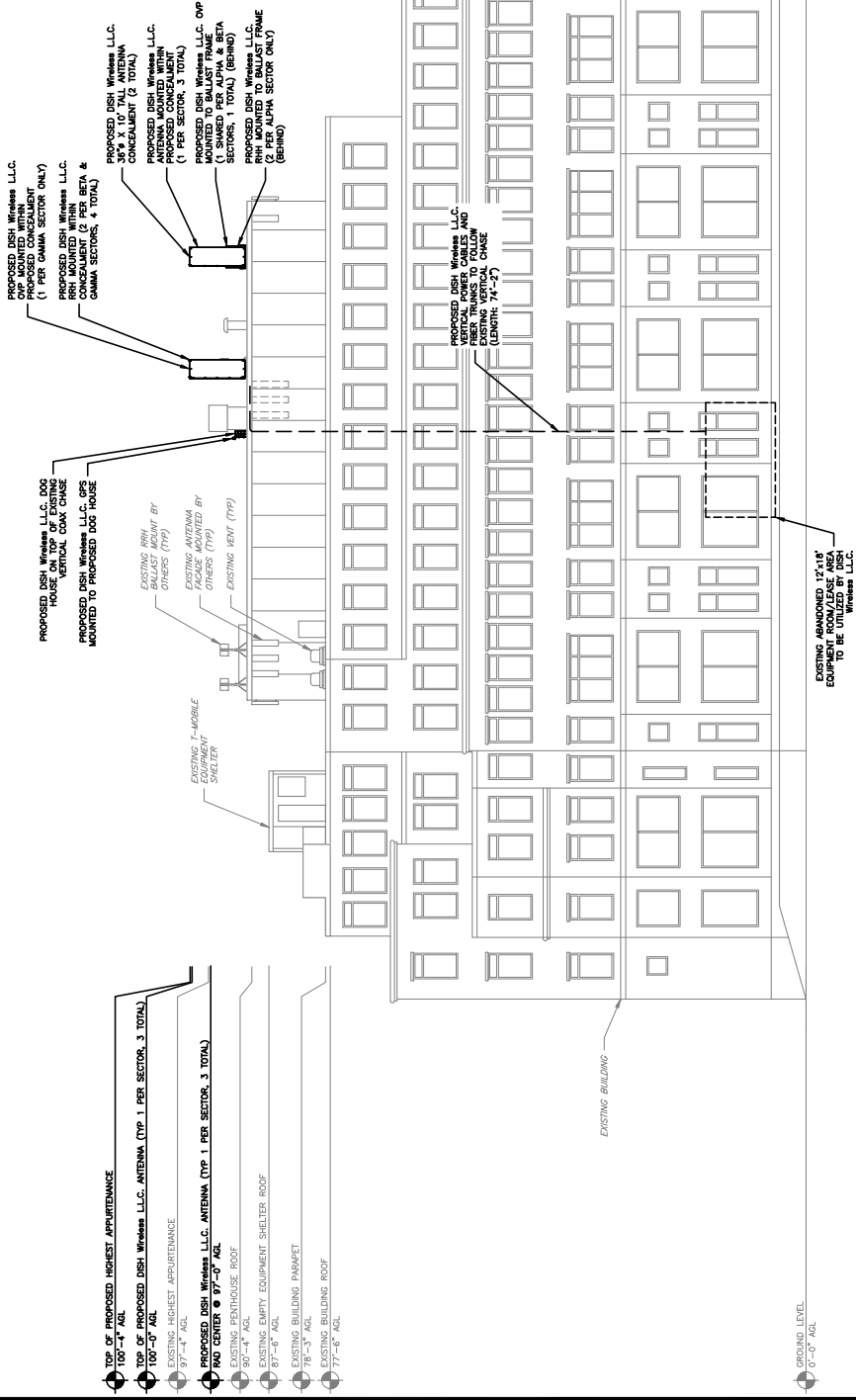
100753

DISH Wireless LLC.
PROJECT INFORMATION
BOBQ500341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

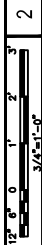
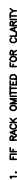
SHEET TITLE
BUILDING

SHEET NUMBER
A-3

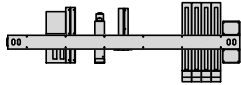
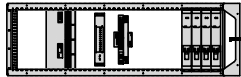


BUILDING ELEVATION





FIE RACK LOADED	
DIMENSIONS (HxWxD):	83.99"x28"x28.5"
WEIGHT:	±8900 lbs

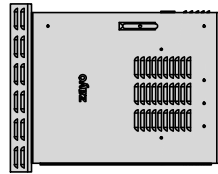
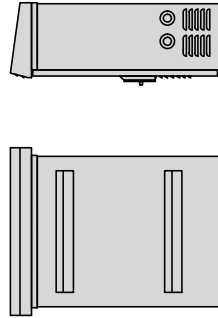
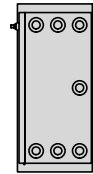


FIE RACK DETAIL

NO SCALE

1

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD):	36.1"x28"x12.8"
WEIGHT:	86 lbs

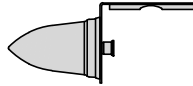
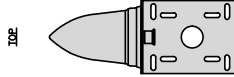


FIBER NID ENCLOSURE DETAIL

NO SCALE

4

PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DxHxT) MM/INCH	511.25/20.12x127.0/5.0x127.0/5.0
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz

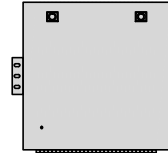
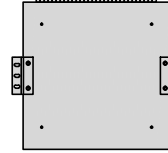
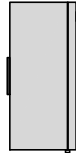


GPS DETAIL

NO SCALE

2

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x8"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FIBER TELCO ENCLOSURE DETAIL

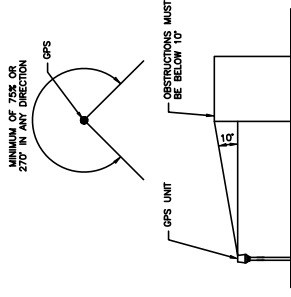
NO SCALE

5

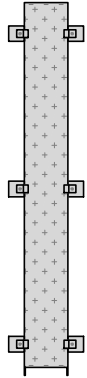
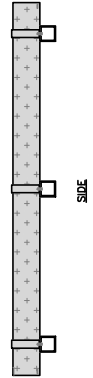
GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

3



COMMSCOPE RT-CB4D ROOFTOP COVER KIT	
DIMENSIONS (HxWxD)	7"x 11.25"x 8"
WEIGHT/ VOLUME	86.98 LBS
CABLE RUN (FT)	4
MOUNTING	NON-PENETRATING
INCLUDED PRODUCTS:	RTCB4D.01 CHANNEL (1) MT-F1586 SLEEPERS (3) RTCUH HARDWARE RTHC.01 HOLD-DOWN CLAMPS (6)



ROOFTOP CABLE TRAY DETAIL

NO SCALE

6



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 POLLO DRIVE
SUITE 303
CHELSEA, MA 01824
(978) 264-0300



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CWE	NSB	DRG
RFDS REV #:	0	0

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

AAE PROJECT NUMBER	100753
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DISH Wireless, LLC.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-5

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 KENILWOOD DRIVE
SUITE 303
CHELSEA, MA 01824
(978) 554-0300



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CWE NSB DRG

RFDS REV #:

CONSTRUCTION DOCUMENTS

SUBMITTALS
REV DATE DESCRIPTION
0 01/1/24 REVISION FOR CONSTRUCTION

ARE PROJECT NUMBER
100753

DISH Wireless, LLC.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

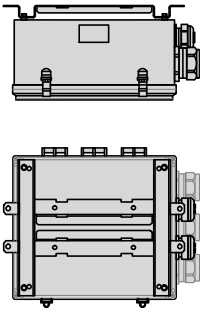
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

RAYCAP RDIC-3045-PF-48 SURGE PROTECTION DEVICE (OVP)	
DIMENSIONS (HxWxD)	19.00"x16.21"x9.64"
WEIGHT	21 lbs



FRONT



SIDE

BACK

SURGE PROTECTION DEVICE DETAIL (OVP)

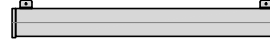
NO SCALE

3

JMA MX08FR0665-21	
DIMENSIONS (HxWxD)	72.5"x26.0"x6.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



FRONT



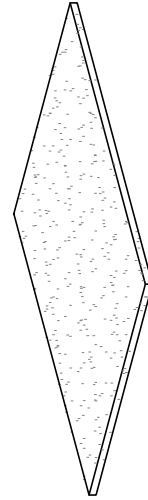
SIDE

ANTENNA DETAIL

NO SCALE

6

UTILITY RUBBER MAT, BLACK	
DIMENSIONS	4' x 3' x 1/2"
WEIGHT/ VOLUME	36.0 LB AVERAGE
MATERIAL	100% RECYCLE RUBBER

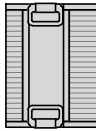


UTILITY RUBBER MAT DETAIL

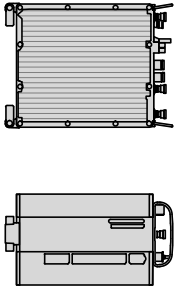
NO SCALE

9

SAMSUNG - LOW BAND SFG-ARR3J601D/RF4450T-71A	
DIMENSIONS (HxWxD)	15"x16.5"x11"
WEIGHT	94.6 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR -48VDC
INPUT VOLTAGE	(-36 to 36 VDC)



FRONT



SIDE

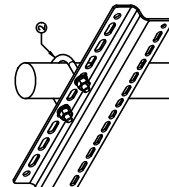
BACK

RRH DETAIL

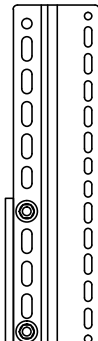
NO SCALE

2

SABRE SINGLE Z-BRACKET C10123151	
DIMENSIONS (HxWxD) (1 BRACKET)	5'42.0"x1'-13'16"
WEIGHT (FULL ASSEMBLY)	13.41 lbs
PACKAGE QUANTITY	2



#	DESCRIPTION
1	RRH Z BRACKET, 3/16"
2	U-BOLT ASSEMBLY, 1/2" FOR 2-7/8" PIPE



NOTE:
OR DISH Wireless, LLC.
APPROVED EQUIPMENT

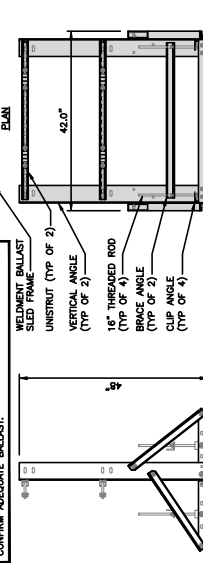
RRH MOUNT DETAIL

NO SCALE

5

COMSCOPE RR-TFS BALLAST MOUNT	
DIMENSIONS (HxWxD)	48"x42"x36.1"
WEIGHT	161.77 lb

NOTE: PROPOSED (14) TOTAL 4"x8"x16" SOLID CONCRETE BLOCKS (35 LB EACH), EVENLY DISTRIBUTED WITHIN BALLAST MOUNT. (SEE ATTACHED DRAWING FOR BALLAST MOUNT IN BLOCK WEIGHT, GO TO WEIGH EACH INDIVIDUAL BLOCK TO CONFIRM ADEQUATE BALLAST.

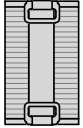


BALLAST MOUNT DETAIL

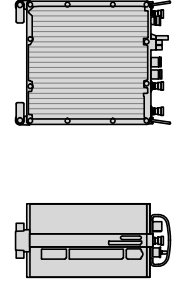
NO SCALE

8

SAMSUNG - MID BAND SFG-ARR3K601D/RF4451D-70A	
DIMENSIONS (HxWxD)	15"x15"x8.9"
WEIGHT	61.3 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR -48VDC
INPUT VOLTAGE	(-36 to 36 VDC)



FRONT



SIDE

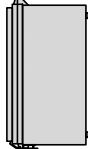
BACK

RRH DETAIL

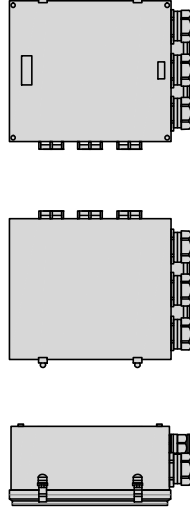
NO SCALE

1

RAYCAP RDIC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x6.15"
WEIGHT	21.82 LBS



FRONT



SIDE

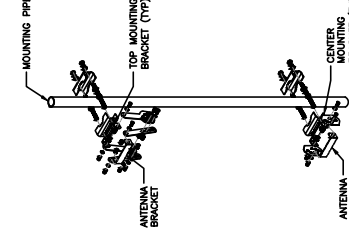
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

4

JMA ANTENNA MOUNTING BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 kg)
POLE DIAMETER RANGE	2.5 TO 4.5 INCHES

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4'-6", AND 8'-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT



ANTENNA DOWNTILT BRACKET DETAIL

NO SCALE

7



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 02154
(617) 554-3300



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CWE NSB DRG

RFDS REV #:

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REV DATE DESCRIPTION
0 01/1/24 REVISION FOR CONSTRUCTION

ARE PROJECT NUMBER
100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

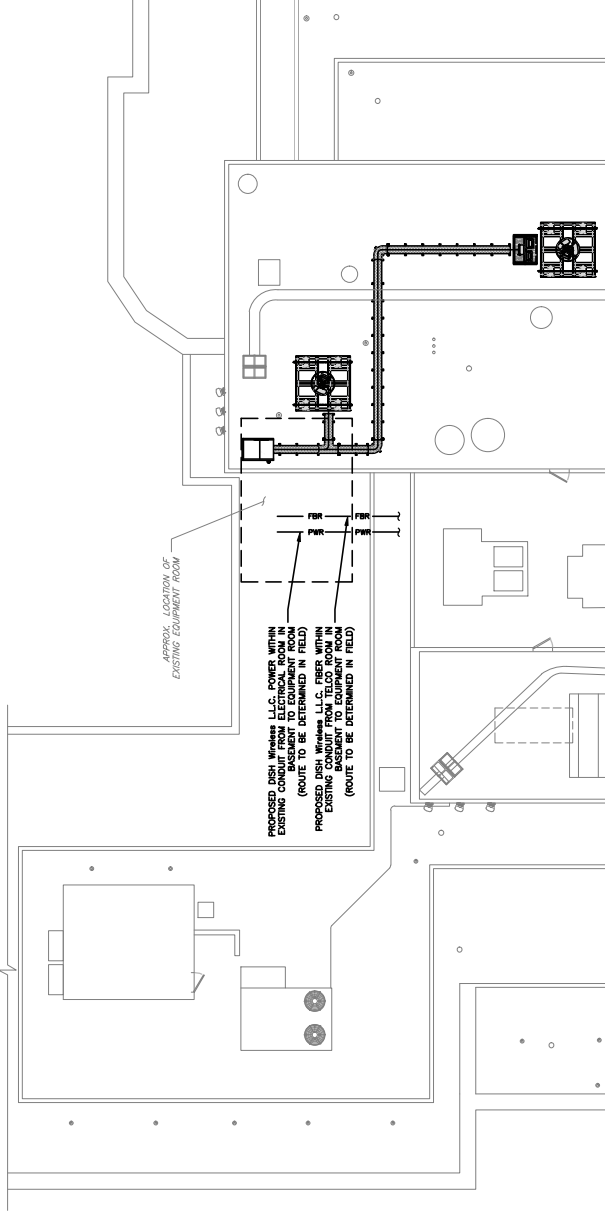
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

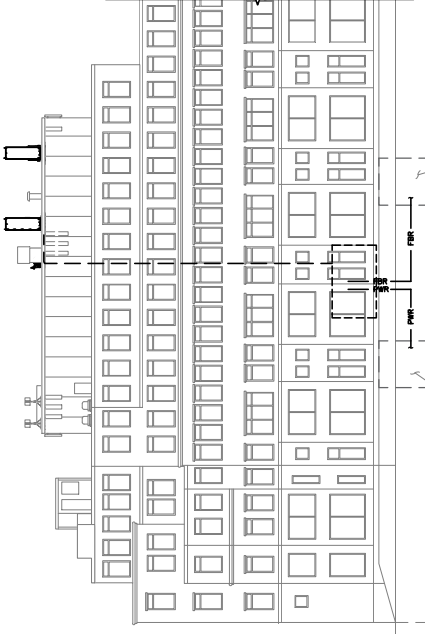
SHEET NUMBER
E-1

NOTES

1. UTILIZE EXISTING ABANDONED CONDUITS WHERE AVAILABLE. REPLACE/INSTALL NEW CONDUIT SECTIONS AS NEEDED.
2. CONTRACTOR TO VERIFY WITH DISH Wireless LLC, 5701 SOUTH SANTA FE DRIVE, LITTLETON, CO 80120, THE LOCATION OF THE POWER AND FIBER SOURCE PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.



UTILITY ROUTE PLAN



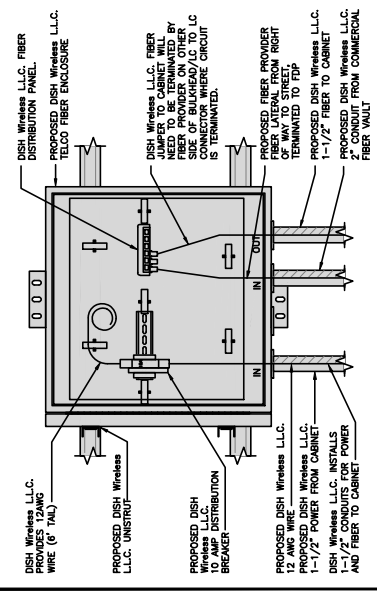
UTILITY ROUTE ELEVATION

NOT USED

NO SCALE

3

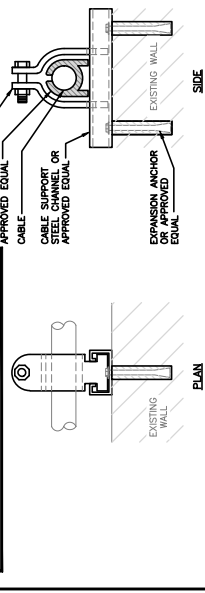
- DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.
1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE MUST BE BROUGHT TO THE PROJECT MANAGER'S ATTENTION PRIOR TO THE CLOSING OF THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL REQUIREMENTS OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUTING SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL CABLE RELAY AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.



DARK TELCO BOX - INTERIOR WIRING LAYOUT

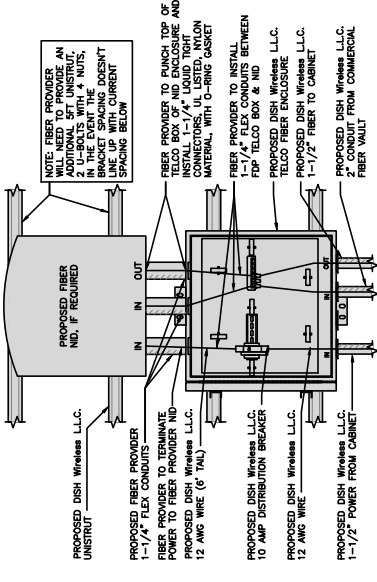
NO SCALE	2
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CABLE WALL MOUNT SUPPORT		
UNISTRUT TYPE	GRANGER 21000T	
UNISTRUT DIMENSIONS (IN/MA)	1 5/8" x 1 5/8" x 12"	
WEIGHT/ VOLUME	1.85 LB PER FOOT	
ULTIMATE LOAD CAPACITY	718.5 LB	
NOTES:		
1. ALL HARDWARE AND PARTS SHALL BE HOT DIPPED GALVANIZED WITH LOCK WASHERS AND HEAVY HEX NUTS.		
2. VERTICAL CABLE MOUNT: 4"-0" MAX UNISTRUT SEPARATION		
3. HORIZONTAL CABLE MOUNT: 3"-0" MAX UNISTRUT SEPARATION		



CABLE WALL MOUNT SUPPORT DETAIL

NO SCALE	4
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LIT TELCO BOX - INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE	3
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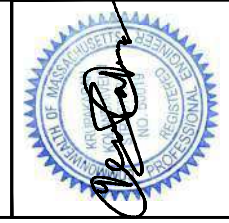


5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
100 KELSO DRIVE
SUITE 303
CHELSEA, MA 01824
(978) 666-3300



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DATE	01/11/24
REV	0
DESCRIPTION	REVISION FOR CONSTRUCTION

DATE	01/11/24
REV	0
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DESCRIPTION	REVISION FOR CONSTRUCTION



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100 ARLO DRIVE
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CHELSEA, MA 01864
(978) 554-3300



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ENGINEER TO SIGN THIS DOCUMENT.

DATE	01/11/24
BY	DRG
CHECKED BY	NSB
DATE	01/11/24

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION
1		
2		
3		
4		
5		
6		
7		
8		
9		

100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER
G-1

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- #6 AWG STRANDED & INSULATED
- - - #2 AWG SOLID COPPER TINNED
- GROUND ROD
- ▲ BUSS BAR INSULATOR

GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless LLC, GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
- NO EXOTHERMIC WELDING ON ROOFTOP

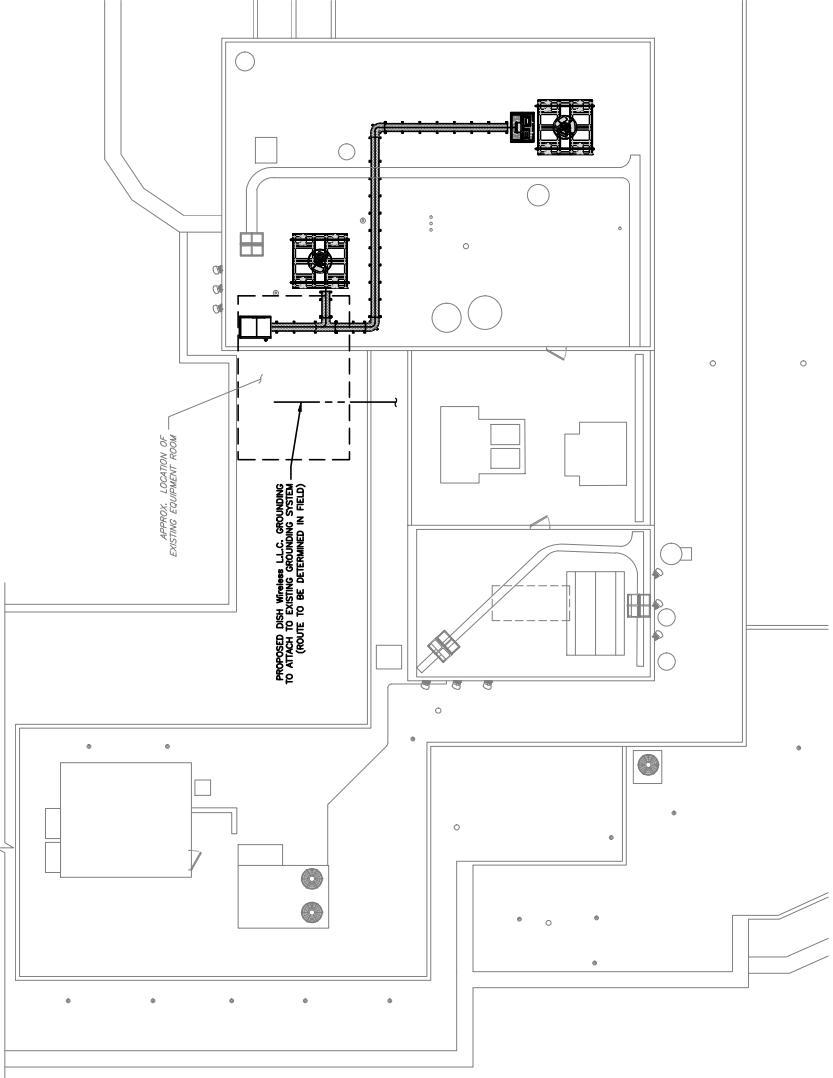
GROUNDING ROOFTOP KEY NOTES

- EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE OR 8 INCHES BELOW THE FIRST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- ROOFTOP GROUND SYSTEM: THE GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE BUILDING. ALL CONDUCTORS SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING OR ROOM.
- GROUND ROD: UNLISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY 60" FEET LONG, GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- CELL REFERENCE GROUND BAR (CGR): POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO COMMON BUILDING GROUND SYSTEM WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- HATCH PLATE GROUND BAR: BOND TO THE COMMON BUILDING GROUND SYSTEM WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH INSTALLED, THE HATCH-PLATE SHALL BE CONNECTED TO THE CELL REFERENCE GROUND BAR USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS DOWN.
- EXTERIOR CABLE ENTRY POINT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE ROOM, BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH MECHANICAL CONNECTIONS.
- TELECOM GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENT'S METAL FRAMEWORK.
- INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- FENCE AND GATE GROUNDING: METAL FENCES SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL, NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO THE BUILDING, SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM, USING #2 TINNED SOLID COPPER WIRE.
- ICE BREAKER SURGEPROT: EACH ICE BREAKER (IB) SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXTERIOR WELLS AT BOTH THE ICE BREAKER LEG AND BARE GROUND RING.
- BUILDING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE AND CONDUCTORS BE GROUNDED TO THE COMMON BUILDING GROUND SYSTEM. ALL SERVICE AND CONDUCTORS SHALL BE GROUNDED TO THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR.
- ROOFTOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO COMMON BUILDING GROUND SYSTEM. REFER TO DISH Wireless LLC, GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE

2



GROUNDING PLAN

1

1"=1'-0"





5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 02154
(617) 554-3300



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DRAWN BY: [blank] CHECKED BY: [blank] APPROVED BY: [blank]
CWE NSB DRG

RFDS REV #:

0

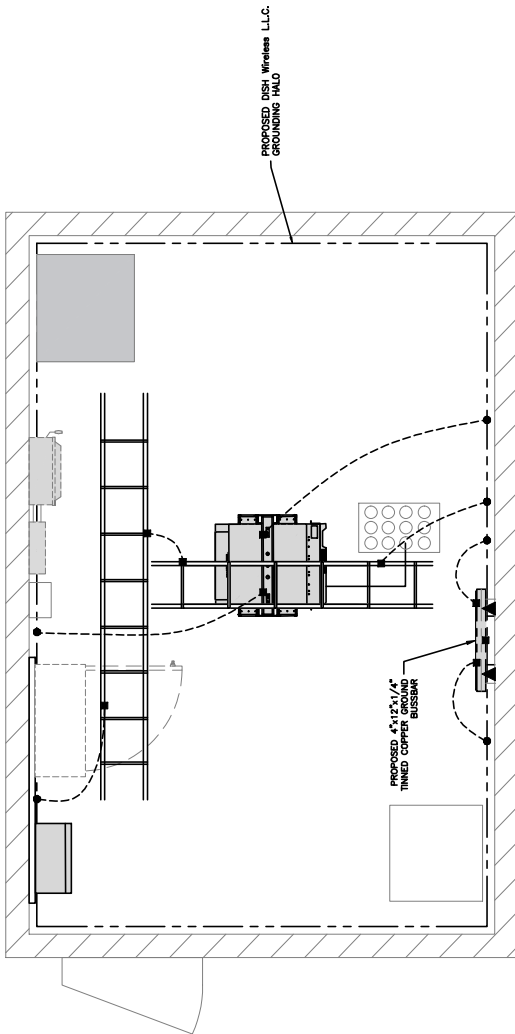
CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION

0 01/11/24 REVISION FOR CONSTRUCTION

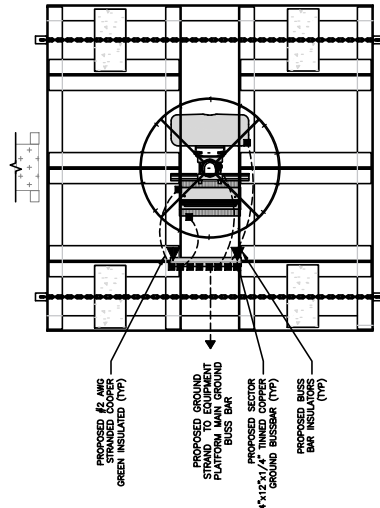
NOTE

EQUIPMENT CABINET LIMITED FOR CLARITY



TYPICAL ROOFTOP EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ROOFTOP ANTENNA GROUNDING PLAN

NO SCALE 2

NOT USED

NO SCALE 3

G-2

SHEET NUMBER

GROUNDING DETAILS

SHEET TITLE

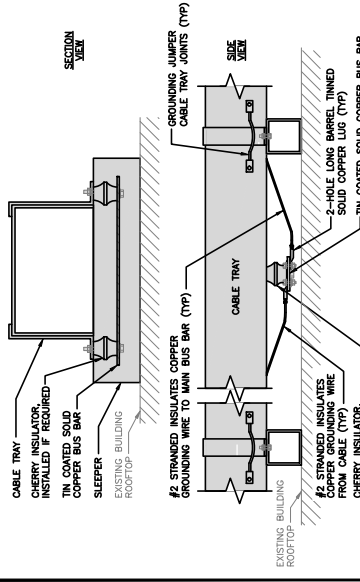
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

PROJECT INFORMATION

DISH Wireless LLC.

100753

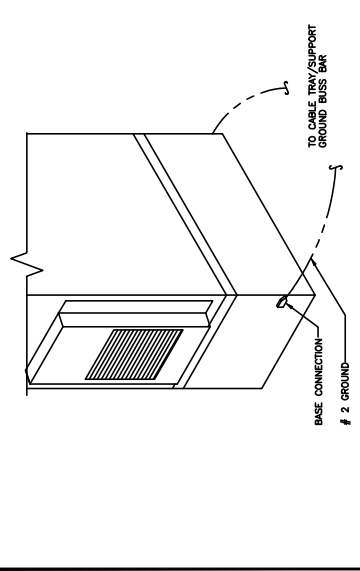
AAE PROJECT NUMBER



TYPICAL CABLE TRAY GROUND BUSS BAR

NO SCALE

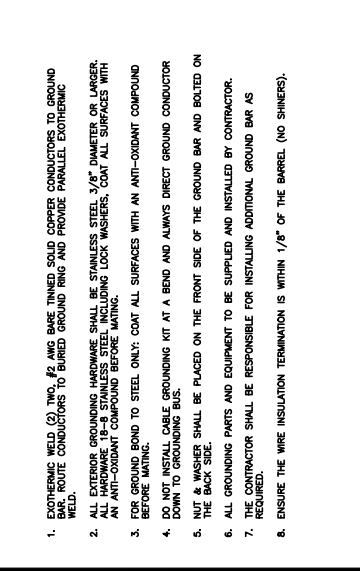
3



OUTDOOR CABINET GROUNDING

NO SCALE

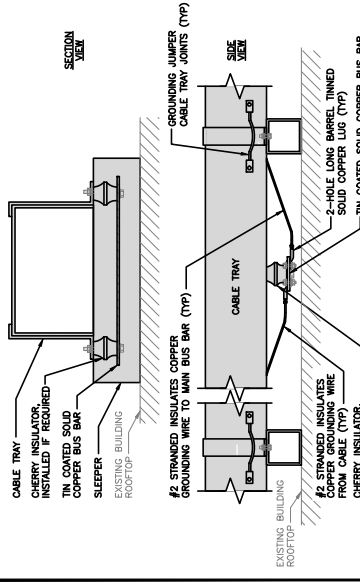
2



TYPICAL GPS UNIT GROUNDING

NO SCALE

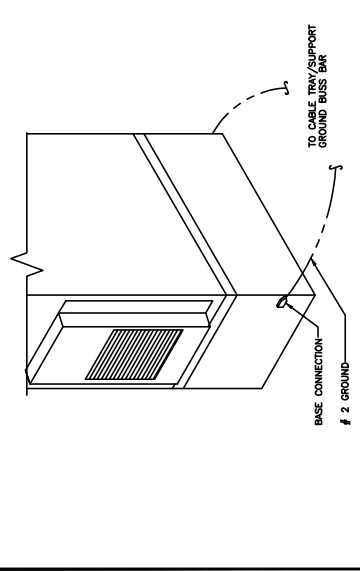
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TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

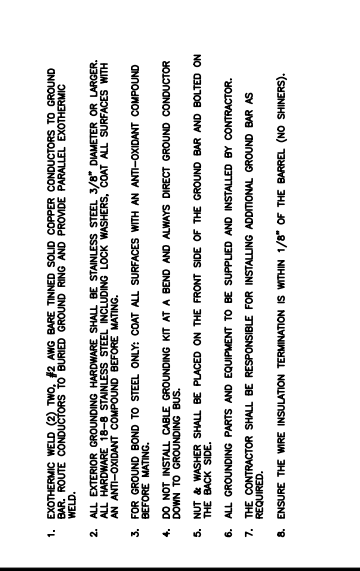
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TYPICAL EXTERIOR TWO HOLE LUG

NO SCALE

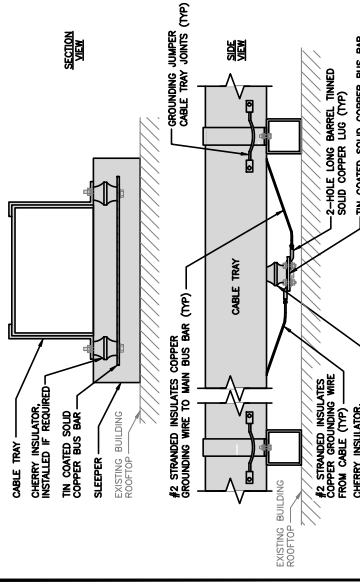
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LUG DETAIL

NO SCALE

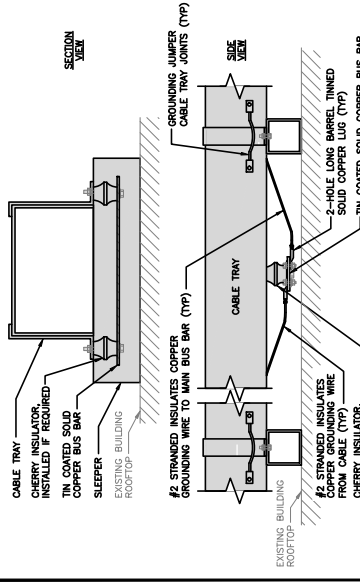
7



TYPICAL COLD WATER CONDUIT GROUNDING DETAIL

NO SCALE

9

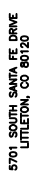


TYPICAL COLD WATER CONDUIT GROUNDING DETAIL

NO SCALE

9

[illegible]



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



NB+C ENGINEERING SERVICES, LLC.
100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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CWE	NSB	DRG

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
100753

DISH Wireless LLC.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

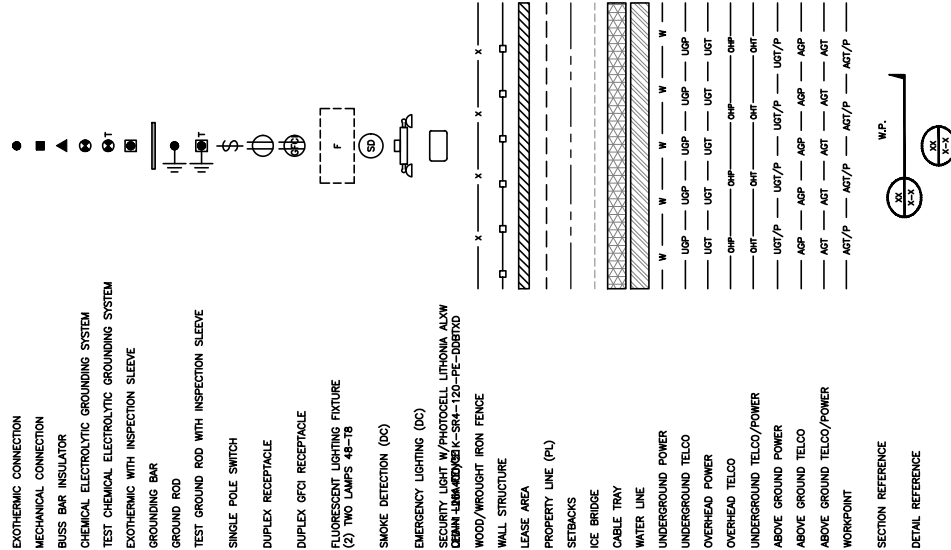
SHEET TITLE
LEGEND AND
ABBREVIATIONS

GN-1

[illegible]

ABBREVIATIONS

LEGEND



SIGN TYPES		
TYPE	COLOR	PURPOSE
NOTICE	GREEN	ADVISE THE PUBLIC OF THE PRESENCE OF A DISH WIRELESS SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE.
CAUTION	BLUE	ADVISE THE PUBLIC OF THE PRESENCE OF A DISH WIRELESS SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE.
WARNING	YELLOW	ADVISE THE PUBLIC OF THE PRESENCE OF A DISH WIRELESS SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE.
NOTICE	ORANGE/RED	ADVISE THE PUBLIC OF THE PRESENCE OF A DISH WIRELESS SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE. ADVISE THE PUBLIC OF THE LOCATION OF THE SITE.

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless LLC.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless LLC EQUIPMENT.
- IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless LLC H-FRAME WITH A SECURE ATTACH METHOD.
- IF THE INFORMATION SIGN IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless LLC CONSTRUCTION MANAGER RECOMMENDATIONS.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS, PLEASE CONTACT DISH Wireless LLC CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless LLC LOGO, SEE DISH Wireless LLC DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless LLC).
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless LLC APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless LLC CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE, APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREENS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-8874

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE



Transmitting Antenna(s)

Radio frequency fields beyond this point MAY EXCEED the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-8874 prior to working beyond this point.

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION



Transmitting Antenna(s)

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Site ID: _____



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WARNING



Transmitting Antenna(s)

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Site ID: _____



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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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100 HOLLO DRIVE
SUITE 200
CHELSEA, MA 01824
(978) 666-0000



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DRAWN BY: CHECKED BY: APPROVED BY:
CWE NSB DRG
RFDS REV #:

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

AAE PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE

RF SIGNAGE

SHEET NUMBER

GN-2

RF SIGNAGE

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless LLC. AND TOWER OWNER NOC & THE DISH Wireless LLC. AND TOWER OWNER CONSTRUCTION MANAGER.

- GENERAL NOTES:**

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER-DISH Wireless LLC

TOWER OWNER·TOWER OWNER

9. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLIANCE NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
10. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
11. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS, WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
12. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST THE FABRICATOR AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
13. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CARRIER POC AND TOWER OWNER.
14. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR 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.
15. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS; EQUIPMENT; APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
16. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
17. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
18. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL UTILITIES FOR POWER, TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEDMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless LLC. AND TOWER OWNER
20. CONTRACTOR 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.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

	5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120		TOTALLY COMMITTED. NB+C ENGINEERING SERVICES, LLC. 100 APOLLO DRIVE CHELSEA/FORD, MA 01824 (978) 864-4308	 <i>Peter Pappalardo</i>	IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS HE OR SHE BE AN AGENT UNDER THE DIRECTION AND CONTROL OF SUCH PERSON, TO PREPARE OR SIGN THIS DOCUMENT TO ALTER THE DOCUMENT. DRAWN BY: _____ CHECKED BY: _____ APPROVED BY: _____ <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%; text-align: left;">CWE</th> <th style="width: 33%; text-align: left;">NSB</th> <th style="width: 33%; text-align: left;">DRG</th> </tr> </thead> <tbody> <tr> <td>RPTS REV #:</td> <td></td> <td>0</td> </tr> </tbody> </table>	CWE	NSB	DRG	RPTS REV #:		0	CONSTRUCTION DOCUMENTS
CWE	NSB	DRG										
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SUBMITTALS												
REV /	DATE	DESCRIPTION										
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BOBOS00341B												
1 BRATTLE SQUARE												
CAMBRIDGE, MA 02138												
SHEET TITLE												
GENERAL NOTES												
SHEET NUMBER												
GN-3												

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 338, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'_c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90° AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WFF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (F_y) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT AVAILABLE AT THE POINT OF INSTALLATION. THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THWN, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THWN, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THWN, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE. COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMO), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREFOLD SPECIMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANOUT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. CONDUITS SHALL BE PROTECTED FROM PHYSICAL DAMAGE BY INSTALLING CONDUIT PROTECTORS AT ALL CORNERS AND OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C."
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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DATE	CHECKED BY	APPROVED BY
CWE	NSB	DRG

ISSUES REV #:

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

SUBMITTALS

100753

AAE PROJECT NUMBER

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GESS'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. 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 BITS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BITS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BITS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR SUCH AS METALLIC CONDUITS, METAL SUPPORT, CLIPS, OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED, WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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DRAWN BY: [] CHECKED BY: [] APPROVED BY: []
CWE NSB DRG

RFDS REV #:

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AAE PROJECT NUMBER
100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5

PMI CHECKLIST

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED	REPORT ITEM
PRE-CONSTRUCTION	
X	PMI CHECKLIST DRAWING
X	EDR APPROVED SHOP DRAWINGS
N/A	FABRICATION INSPECTION
N/A	FABRICATOR CERTIFIED WELD INSPECTION
N/A	MATERIAL TEST REPORT (MTR)
N/A	FABRICATOR RIDE INSPECTION
N/A	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS
N/A	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	PMI INSPECTOR REDLINE OR RECORD DRAWING(S)
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTE: X INDICATES A DOCUMENT NEEDED FOR THE PMI REPORT
N/A INDICATES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

NOTE:
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO MATERIAL BIDDING, MATERIAL ORDERS, AND FABRICATION.
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO MATERIAL BIDDING, MATERIAL ORDERS, AND FABRICATION.
WEATHERPROOFING AND SEALING. CONTRACTOR SHALL ENSURE ROOF MEMBRANE WARRANTY IS MAINTAINED, AS APPLICABLE AND PER ROOF MEMBRANE MANUFACTURER SPECIFICATIONS.

POST MODIFICATION INSPECTION NOTES:

GENERAL

- THE POST MODIFICATION INSPECTION (PMI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF THE MODIFICATION DRAWINGS. THE PMI INSPECTOR SHALL REVIEW THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR), FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).
- THE PMI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN. THE PMI INSPECTOR DOES NOT TAKE OWNERSHIP OF THE MODIFICATION DESIGN. MODIFICATION OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY REMAINS WITH THE EOR AT ALL TIMES.
- ALL PMIs SHALL BE CONDUCTED BY A PMI INSPECTOR THAT IS APPROVED TO PERFORM ELEVATED WORK FOR NB+C ENGINEERING SERVICES, LLC.
- TO ENSURE THAT THE REQUIREMENTS OF THE PMI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE PMI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IF IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY, IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR NB+C POINT OF CONTACT (POC).
- REFER TO COR-01 : CONTRACTOR CLOSOUT REQUIREMENTS FOR FURTHER DETAILS AND REQUIREMENTS.

PMI INSPECTOR

- THE PMI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE PMI TO, AT A MINIMUM,
 - REVIEW THE REQUIREMENTS OF THE PMI CHECKLIST
 - WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- THE PMI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE PMI REPORT TO NB+C ENGINEERING SERVICES, LLC.

CORRECTION OF FAILING PMI'S

- IF THE MODIFICATION INSTALLATION WOULD FAIL THE PMI (FAILED PMI), THE GC SHALL WORK WITH THE ENGINEER OF RECORD TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:
 - CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT PMI
 - OR, WITH EOR'S APPROVAL THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.

REQUIRED PHOTOS

- BETWEEN THE GC AND THE PMI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE PMI REPORT:
 - PRE-CONSTRUCTION GENERAL SITE CONDITION
 - PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
 - PHOTOGRAPHS OF ALL CRITICAL DETAILS
 - WELD PREPARATION
 - WELD INSPECTION AND TORQUE
 - FINAL INSTALLED CONDITION
 - POST CONSTRUCTION PHOTOGRAPHS
 - FINAL WELD CONDITION
- PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.



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CWE	NSB	DRG

RFDS REV #:

0

CONSTRUCTION DOCUMENTS

SUBMITTALS	
REV	DATE
0	01/11/24

REASON FOR CONSTRUCTION

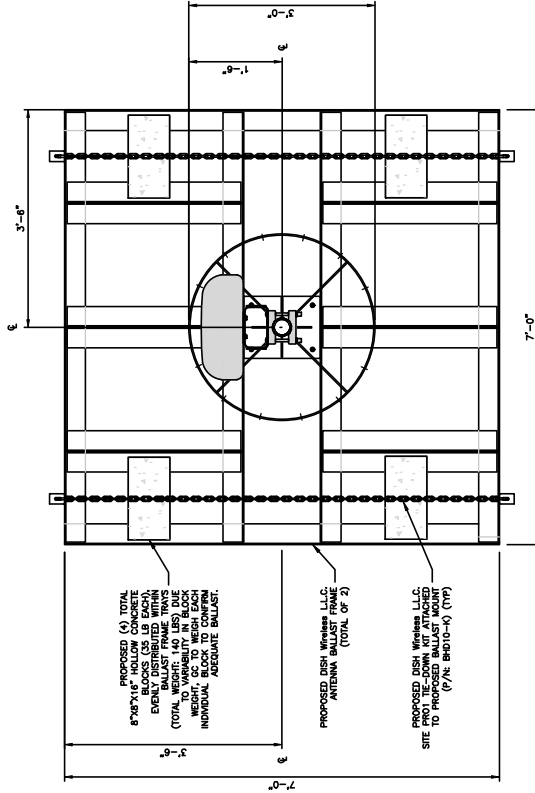
STRUCTURAL NOTES

- THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE STRUCTURAL STEEL MEMBERS, INCLUDING THE CONCRETE AND BEARING PLATE, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
- THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
 - AISC - "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
 - AISC - "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
 - AISC - "D1.1 STRUCTURAL WELDING CODE - STEEL"
- MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:

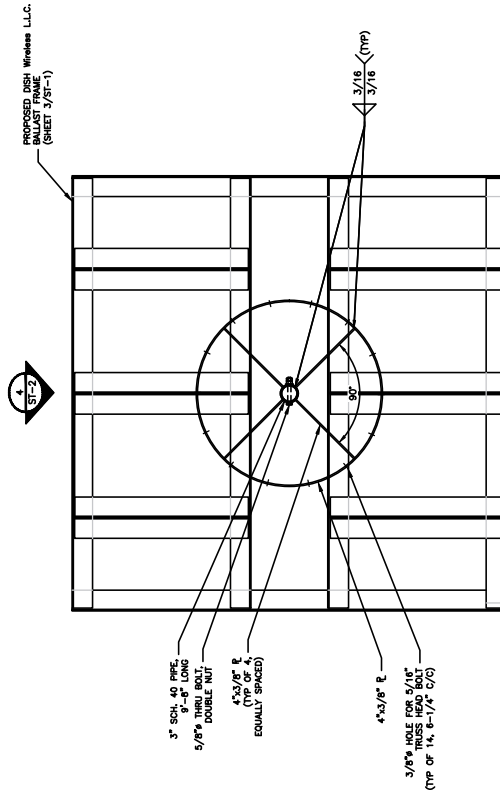
ITEM	DESCRIPTION	ASTM SPECIFICATION
1	STRUCTURAL WIDE FLANGE & I BEAMS	A992 OR A572
2	OTHER STRUCTURAL SHAPES AND PLATES	A572
3	STRUCTURAL TUBING	A500, GRADE B
4	PIPE (NORMAL)	A53, GRADE B
5	PIPE (SPECIAL)	A53, GRADE B
6	PIPE (SPECIAL)	SCH 40 PIPE
7	ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, USING E70XX ELECTRODES, UNLESS OTHERWISE NOTED. PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.	
8	HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND CUTTING OF STEEL SHALL BE PROHIBITED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.	
9	ALL STEEL TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A153.	
10	ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.	
11	CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.	
12	THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATION. THE FABRICATOR SHALL FURNISH SHOP DRAWINGS TO CONFORM TO AISC "DETAILING FOR STEEL CONSTRUCTION".	

FRP STRUCTURAL MEMBERS

- FRP STRUCTURAL SHAPES SHALL BE BEDFORD FRP SERIES 1525, MANUFACTURED USING THE PULTRUSION PROCESS.
- IF PREFABRICATED MEMBERS DO NOT ASSEMBLE PER PLAN, CONTACT ENGINEER BEFORE CUTTING OR ALTERING FABRICATED MEMBERS.
- FRP STRUCTURAL MEMBERS SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL PROTECT THE FRP STRUCTURAL MEMBERS FROM FABRICATION, HANDLING, AND INSTALLATION.
- FRP BOLTS SHOULD BE TIGHTENED 1/2 TURN PAST SNUG AND LOCKED WITH EPOXY.



NOTES



OVERALL BALLAST CONCEALMENT PLAN



1

OVERALL CONCEALMENT PLAN



2

OVERALL BALLAST FRAME PLAN



3

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC
100 ROLLING DRIVE
SUITE 200
CHELSEA, MA 01824
(978) 554-0300



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DRAWN BY: CHECKED BY: APPROVED BY:
CWE NSB DRG

RFDS REV #:

0

CONSTRUCTION DOCUMENTS

SUBMITTALS
REV DATE DESCRIPTION
0 01/11/24 REVISION FOR CONSTRUCTION

AAE PROJECT NUMBER

100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
ANTENNA BALLAST FRAME
& CONCEALMENT PLAN

SHEET NUMBER

ST-1



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ROLLING DRIVE
SUITE 303
CHELSEA, MA 01824
(978) 554-0300



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DRAWN BY: CHECKED BY: APPROVED BY:
CWE NSB DRG
RFD REV #:

CONSTRUCTION DOCUMENTS

SUBMITTALS
REV DATE DESCRIPTION
0 01/11/24 REVISION FOR CONSTRUCTION

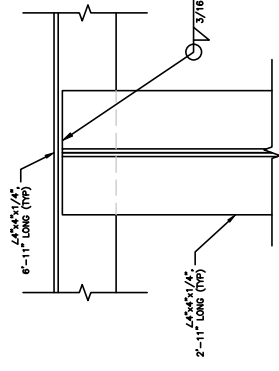
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DISH Wireless, LLC.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

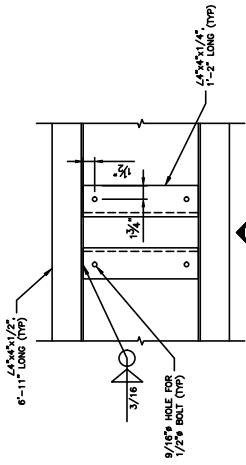
SHEET TITLE
CONCEALMENT DETAILS & CONCEALMENT ELEVATIONS

SHEET NUMBER
ST-2



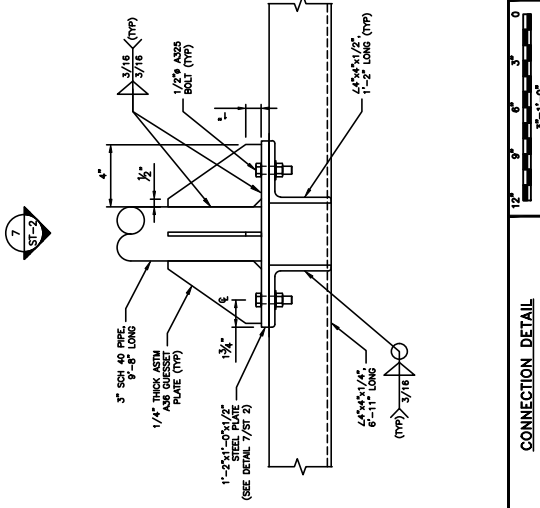
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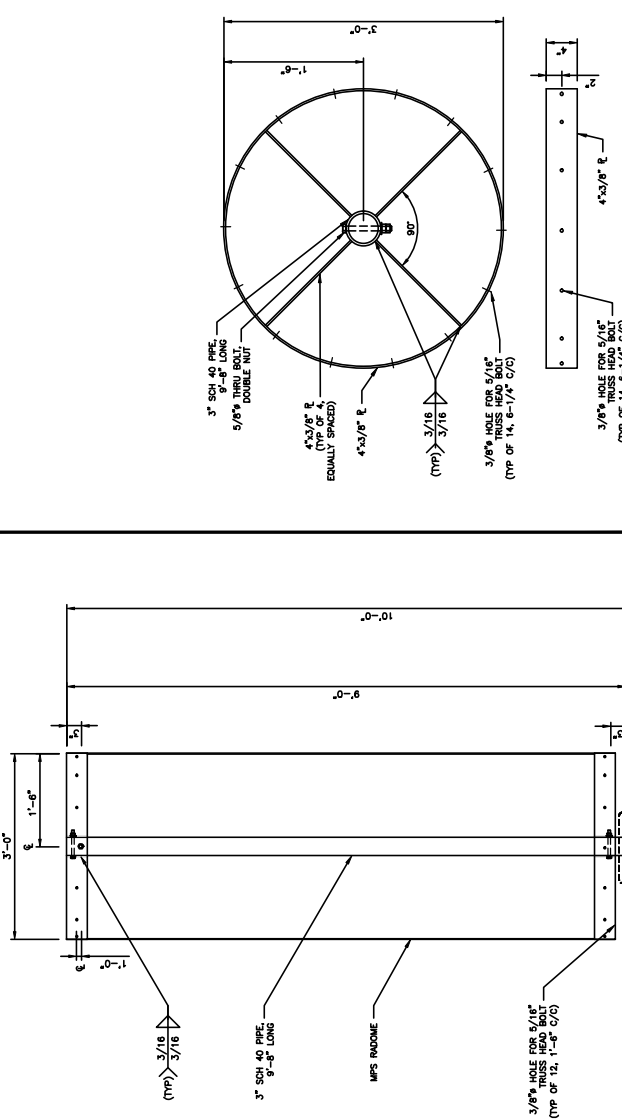
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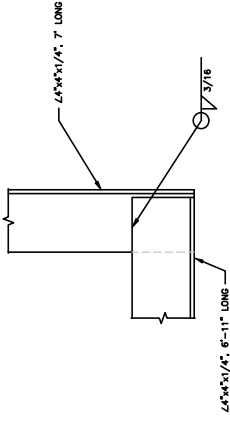
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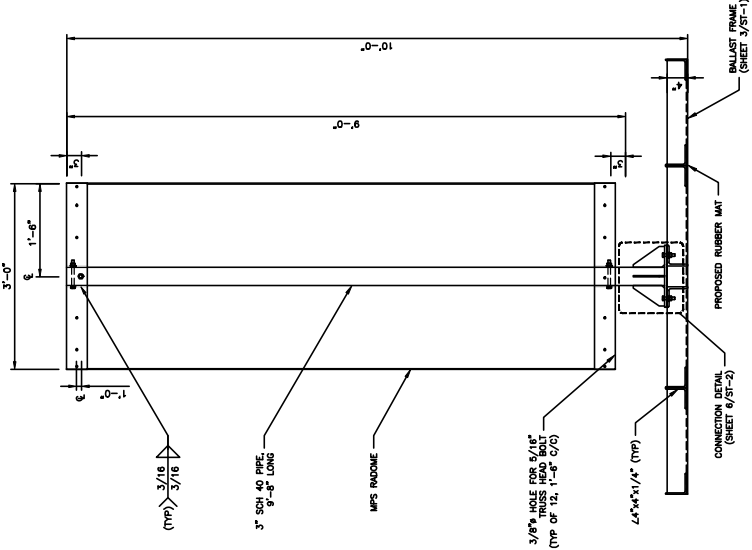
BULKHEAD DETAIL

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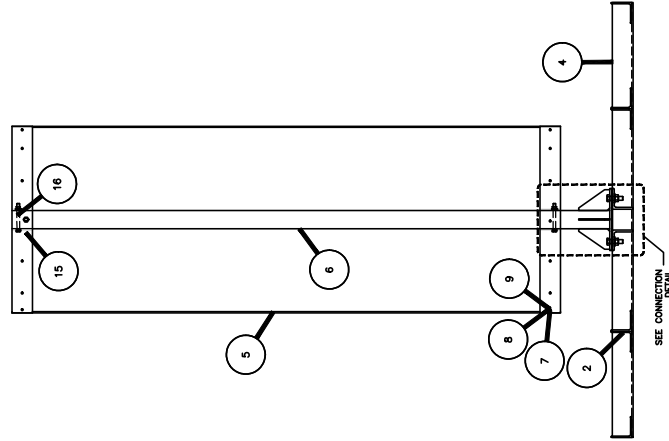
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1

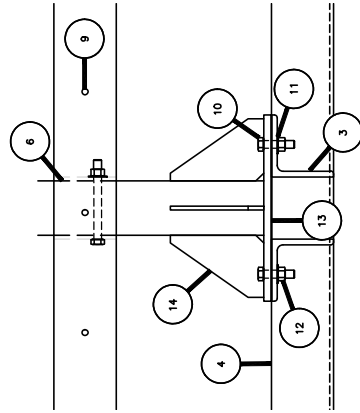


CONCEALMENT ELEVATION

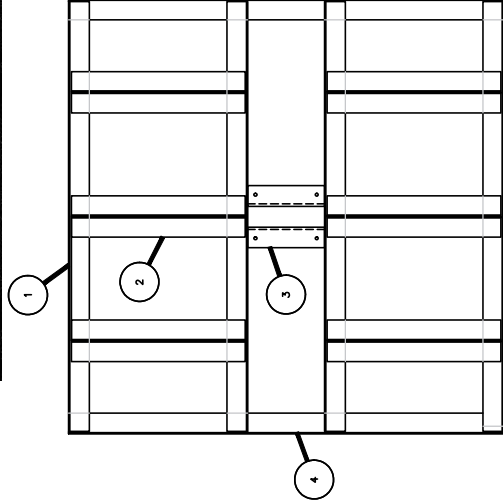
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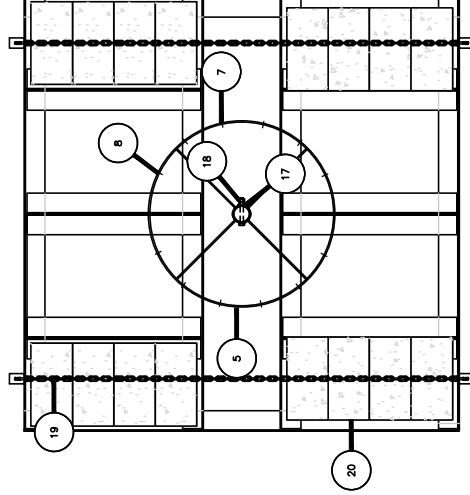
CONCEALMENT ELEVATION



CONNECTION DETAIL



OVERALL BALLAST FRAME PLAN



OVERALL CONCEALMENT PLAN

ITEM #	DESCRIPTION	SIZE	LENGTH	Part Number	QTY
1	Steel Angle	4"x4"x1/4"	6'-11"	N/A	4
2	Steel Angle	4"x4"x1/4"	2'-11"	N/A	12
3	Steel Angle	4"x4"x1/2"	1'-2"	N/A	2
4	Steel Angle	4"x4"x1/4"	7'-0"	N/A	2
5	ABS Cylinder	3'-0"x3/16"	8'-10"	N/A	1
6	Steel Pipe	3" SCH 40	9'-7"	N/A	1
7	Truss Head Bolt	5/16"Ø	1"	N/A	28
8	Washer	5/16"Ø	N/A	N/A	28
9	Hex Nut	5/16"Ø	N/A	N/A	28
10	A325 Bolt	1/2"Ø	2"	N/A	4
11	Washer	1/2"Ø	N/A	N/A	4
12	Hex Nut	1/2"Ø	N/A	N/A	4
13	Steel Plate	1'-2"x1'-0"x1/2"	N/A	N/A	1
14	Gusset Plate	6"x4"x1/4"	N/A	N/A	4
15	Steel HSS Pipe	4"x0.22"	4"	N/A	2
16	Bolt, Thru	5/8"Ø	4"	N/A	2
17	Washer	5/8"Ø	N/A	N/A	2
18	Hex Nut	5/8"Ø	N/A	N/A	4
19	Tie-Down Kit	N/A	N/A	SitePro1 BHD10-K	2
20	Hollow Conc. Block	2'-10"x1'-4"x16"	N/A	N/A	4



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 300
CHELSEA, MA 02154
(617) 554-3300



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHE	CHECKED BY:	NSB	APPROVED BY:	DRG
DATE:	01/11/24	DATE:	01/11/24	DATE:	01/11/24

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

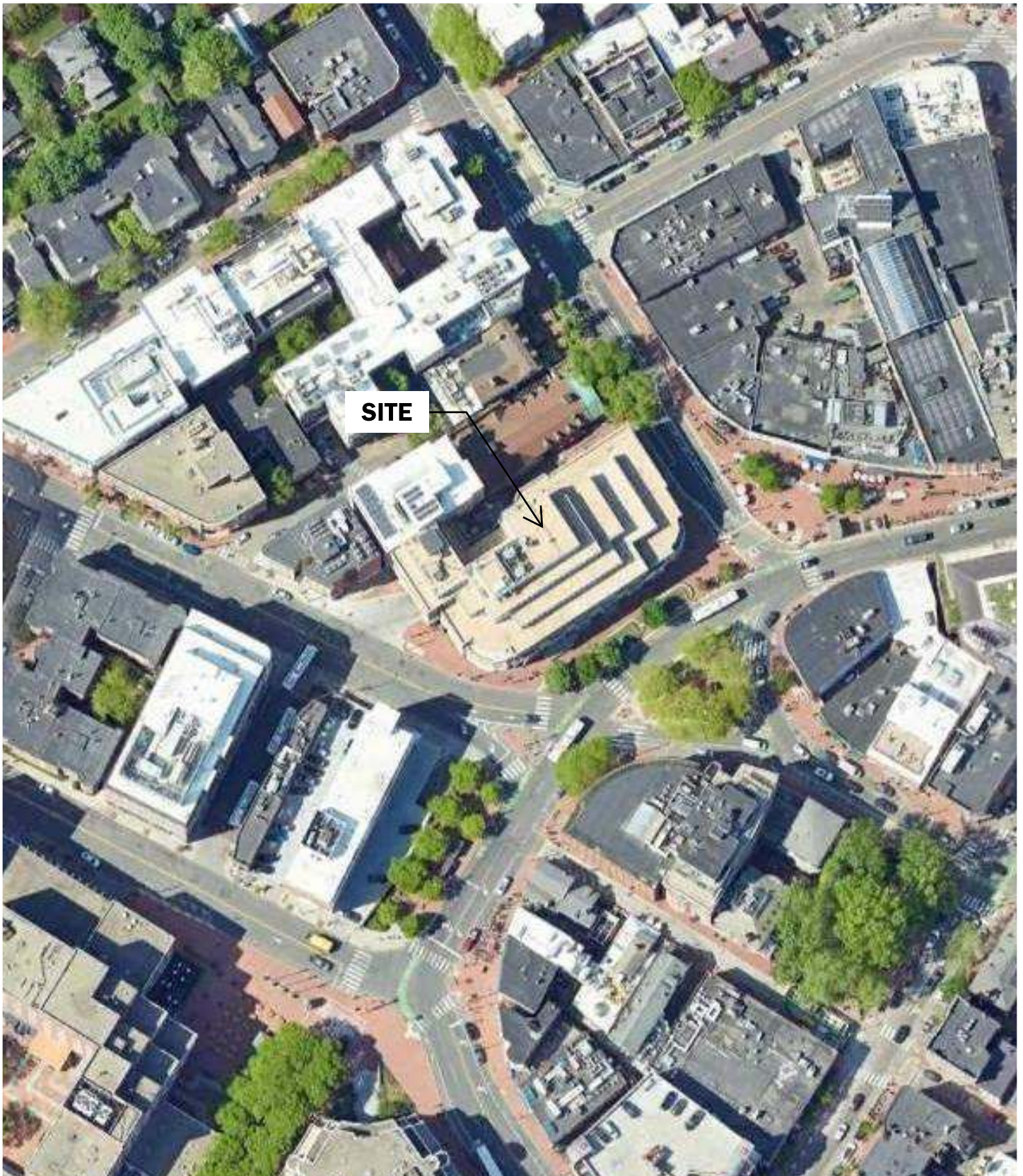
AAE PROJECT NUMBER
100753

DISH Wireless, LLC.
PROJECT INFORMATION
BOBOS00341B
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
BILL OF MATERIALS

SHEET NUMBER
ST-3

Figure 4 - Aerial Photograph



Aerial Photograph

BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Massachusetts 02138
Middlesex County



Source: Google Earth

RÄMÄKER
employee-owned

NOT TO SCALE

Figure 5 - Preliminary NEPA Review Summary



PRELIMINARY NEPA COMPLIANCE EVALUATION REPORT

PROJECT INFORMATION:

BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, MA 02138

PROJECT ID:

60991

PREPARED FOR:

Daniel Feldmann
Ramaker and Associates
855 Community Drive
Sauk City, Wisconsin 53583

REPORT DATE:

08/14/2024

TABLE OF CONTENTS:

EXECUTIVE SUMMARY
PROJECT LOCATION
EVALUATION
REFERENCES & GLOSSARY

EXECUTIVE SUMMARY

PROJECT INFORMATION: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, MA 02138

PROJECT DESCRIPTION: Proposed antenna and equipment installation on an existing building.
CDs reviewed dated: 1/11/2024; The host structure was constructed circa 1991.

FCC NEPA Category	Reference Document	Review Required
Designated Wilderness Areas	47 CFR §1.1307(a)(1)	☐
Designated Wildlife Preserves	47 CFR §1.1307(a)(2)	☐
Threatened or Endangered Species & Critical Habitats	47 CFR §1.1307(a)(3)	☐
Historic Places (Section 106)	47 CFR §1.1307(a)(4)	☒
Indian Religious Sites (TCNS)	47 CFR §1.1307(a)(5)	☒
Floodplain	47 CFR §1.1307(a)(6)	☐
Impacts to Surface Features – Wetlands, Water Diversion, Deforestation	47 CFR §1.1307(a)(7)	☐
High Intensity White Lights in Residential Neighborhoods	47 CFR §1.1307(a)(8)	☐
Human Exposure To RF Radiation	47 CFR §1.1307(b)	☒

Regardless of whether review of any of the FCC Special Interest Items as outlined in *47 CFR §1.1307(a) (1) through (8) is required*, RF emissions must also be considered as outlined in *47 CFR §1.1307(b)*. Typically this review is completed by the licensee. This review does not include a review of RF emissions.

Under 47 CFR §1.1306, construction of certain facilities are excluded from review of NEPA Special Interest Items outlined in 47 CFR §1.1307 (a), with exception to Section 106. According to 47 CFR §1.1306 Note 1, “The provisions of §1.1307(a) requiring the preparation of EAs do not encompass the mounting of antenna(s) and associated equipment (such as wiring, cabling, cabinets, or backup-power), on or in an existing building, or on an antenna tower or other man- made structure, unless §1.1307(a)(4) is applicable. Such antennas are subject to §1.1307(b) of this part and require EAs if their construction would result in human exposure to radiofrequency radiation in excess of the applicable health and safety guidelines cited in §1.1307(b) of this part. The provisions of §1.1307 (a) and (b) of this part do not encompass the installation of aerial wire or cable over existing aerial corridors of prior or permitted use or the underground installation of wire or cable along existing underground corridors of prior or permitted use, established by the applicant or others. The use of existing buildings, towers or corridors is an environmentally desirable alternative to the construction of new facilities and is encouraged. The provisions of §1.1307(a) and (b) of this part do not encompass the construction of new submarine cable systems.

Under the Stipulation V.A of the Revised Collocation Agreement, certain collocations to existing buildings and non-tower structures are excluded from Section 106 review:

“A. An antenna may be mounted on a building or non-tower structure without such collocation being reviewed through the Section 106 process set forth in the NPA, unless:

1. The building or structure is over 45 years old, and the collocation does not meet the criteria established in Stipulation VI ^[2] herein for collocations of small antennas ¹ ; or,
2. The building or structure is inside the boundary of a historic district, or if the antenna is visible from the ground level of a historic district, the building or structure is within 250 feet of the boundary of the historic district, and the collocation does not meet the criteria established in Stipulation VII ^[3] herein for collocations of small or minimally visible antennas; or,
3. The building or non-tower structure is a designated National Historic Landmark, or listed in or eligible for listing in the National Register of Historic Places based upon the review of the FCC, licensee, tower company or applicant for an antenna license, and the collocation does not meet the criteria established in Stipulation VII herein for collocations of small or minimally visible antennas; or,
4. The collocation licensee or the owner of the building or non-tower structure has received written or electronic notification that the FCC is in receipt of a complaint from a member of the public, an Indian Tribe, a SHPO or the Council, that the collocation has an adverse effect on one or more historic properties. Any such complaint must be in writing and supported by substantial evidence describing how the effect from the collocation is adverse to the attributes that qualify any affected historic property for eligibility or potential eligibility for the National Register.

[...]

C. Subsequent to the collocation of an antenna, should the SHPO/THPO or Council determine that the collocation of the antenna or its associated equipment installed under the terms of Stipulation VI has resulted in an adverse effect on historic properties, the *SHPO/THPO* or Council may notify the FCC accordingly. The FCC shall comply with the requirements of Section 106 and the NPA for this particular collocation.

¹ For purposes of this Agreement, suitable methods for determining the age of a building or structure include, but are not limited to: (1) obtaining the opinion of a consultant who meets the Secretary of Interior's Professional Qualifications Standards for Historian or for Architectural Historian (36 CFR Part 61); or (2) consulting public records."

² Stipulation VI of the Revised Collocation Agreement includes additional exclusions for collocation of small wireless antennas and associated equipment on buildings and non-tower structures that are outside of historic districts and are not historic properties.

³ Stipulation VII of the Revised Collocation Agreement includes additional exclusions for collocation of small or minimally visible wireless antennas and associated equipment in historic districts or on historic properties.

Collocation of small antennas or minimally visible antennas on a building or non-tower structure may qualify for Section 106 review exclusion under the Stipulation VII.A of the Revised Collocation Agreement.

"A. A small antenna (including associated equipment included in the definition of Antenna in Stipulation I.A .^[1]) may be mounted on a building or non-tower structure or in the interior of a building that is (1) a historic property (including a property listed in or eligible for listing in the National Register of Historic Places) or (2) inside or within 250 feet of the boundary of a historic district without being reviewed through the Section 106 process set forth in the NPA, provided that:

1. The property on which the equipment will be deployed is not a designated National Historic Landmark.
2. The antenna or antenna enclosure (including any existing antenna), excluding associated equipment, is the only equipment that is visible from the ground level, or from public spaces within the building (if the antenna is mounted in the interior of a building), and provided that the following conditions are met:
 - a. No other antennas on the building or non-tower structure are visible from the ground level, or from public spaces within the building (for an antenna mounted in the interior of a building);
 - b. The antenna that is part of the collocation fits within an enclosure (or if the antenna is exposed, within an imaginary enclosure i.e., one that would be the correct size to contain the equipment) that is no more than three cubic feet in volume; and,
 - c. The antenna is installed using stealth techniques that match or complement the structure on which or within which it is deployed;
3. The antenna's associated equipment is not visible from:
 - a. The ground level anywhere in a historic district (if the antenna is located inside or within 250 feet of the boundary of a historic district); or,
 - b. Immediately adjacent streets or public spaces at ground level (if the antenna is on a historic property that is not in a historic district); or,
 - c. Public spaces within the building (if the antenna is mounted in the interior of a building).
4. The facilities (including antenna(s) and associated equipment identified in the definition of Antenna in Stipulation I.A.) are installed in a way that does not damage historic materials and permits removal of such facilities without damaging historic materials;

5. The depth and width of any proposed ground disturbance associated with the collocation does not exceed the depth and width of any previous ground disturbance (including footings and other anchoring mechanisms). Up to four lightning grounding rods of no more than three-quarters of an inch in diameter may be installed per project, regardless of the extent of previous ground disturbance; and
6. The collocation licensee or the owner of the building or non-tower structure has not received written or electronic notification that the FCC is in receipt of a complaint from a member of the public, an Indian Tribe, a SHPO or the Council, that the collocation has an adverse effect on one or more historic properties. Any such complaint must be in writing and supported by substantial evidence describing how the effect from the collocation is adverse to the attributes that qualify any affected historic property for eligibility or potential eligibility for the National Register.

[...]

D. A small antenna mounted inside a building or non-tower structure and subject to the provisions of this Stipulation VII is to be installed in a way that does not damage historic materials and permits removal of such facilities without damaging historic materials.

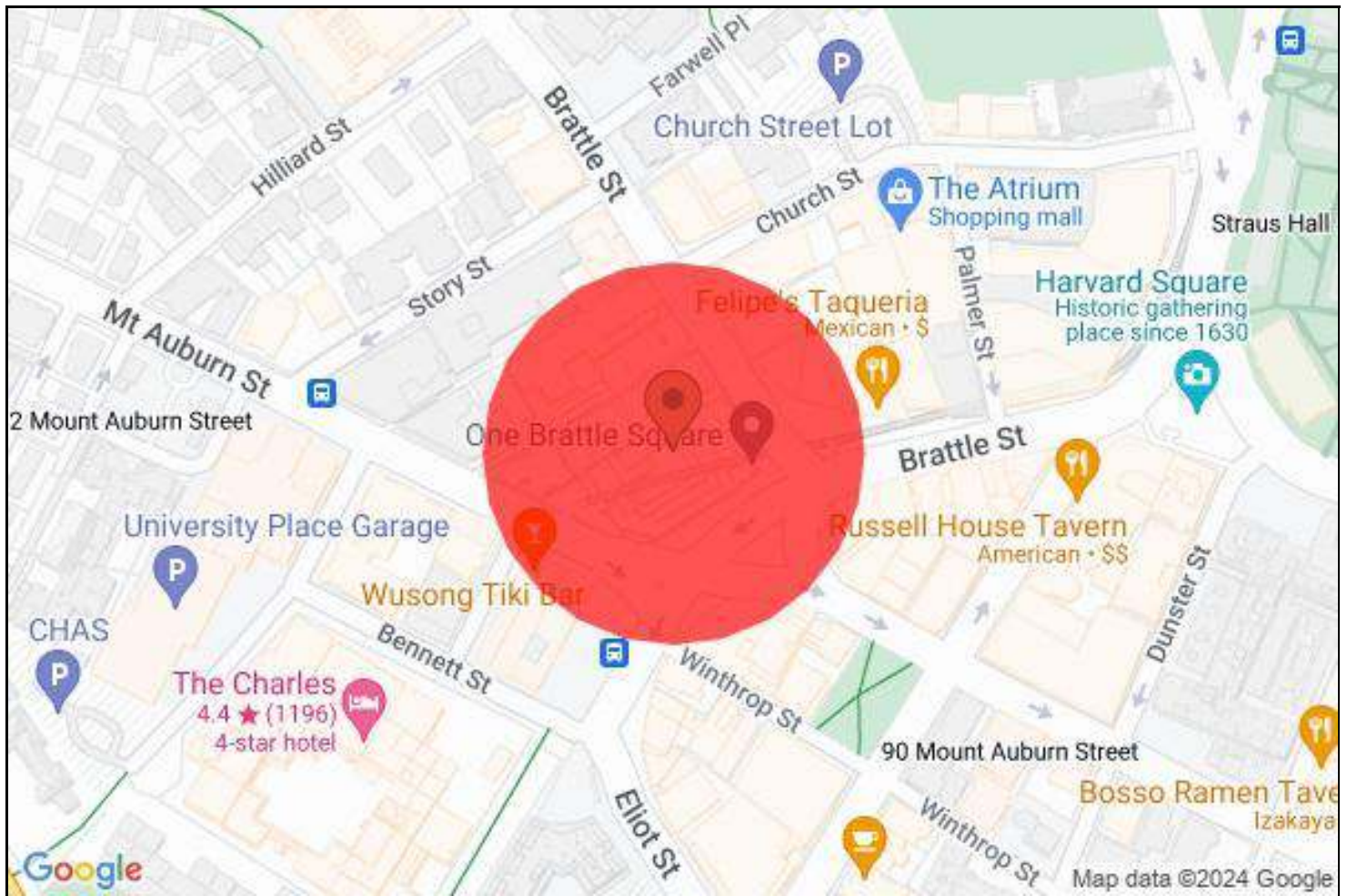
E. Subsequent to the collocation of an antenna, should the SHPO/THPO or Council determine that the collocation of the antenna or its associated equipment installed under the terms of Stipulation VI has resulted in an adverse effect on historic properties, the *SHPO/THPO* or Council may notify the FCC accordingly. The FCC shall comply with the requirements of Section 106 and the NPA for this particular collocation.”

¹ Stipulation 1.A of the Revised Collocation Agreement: “Antenna” means an apparatus designed for the purpose of emitting radio frequency (“RF”) radiation, to be operated or operating from a fixed location pursuant to Commission authorization, for the transmission of writing, signs, signals, data, images, pictures, and sounds of all kinds, including the transmitting device and any on-site equipment, switches, wiring, cabling, power sources, shelters or cabinets associated with that antenna and added to a Tower, structure, or building as part of the original installation of the antenna. For purposes of this Agreement, the term antenna does not include unintentional radiators, mobile stations, or devices authorized under Part 15 of the Commission’s rules.

PROJECT LOCATION

PROJECT INFORMATION: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, MA 02138

COORDINATES: [42.373318,-71.121494]



● 250-foot radius

EVALUATION

PROJECT INFORMATION:

BOBOS00341B (BOBOS00341B)

The following details were provided by the user for this project:

Type of Structure	NON-TOWER STRUCTURE
What is the classification of the Building/Other Non-Tower Structure?	BUILDING
Building or Structure is Historical Landmark	NO
Record of Complaints Against Collocation	NO
Site Within Historic District	YES
Antennas and Equipment Entirely Inside a Building	NO
Replacement of Small Antenna(s)	NO
Installation of Small Antenna(s)	NO

REFERENCES AND GLOSSARY

REFERENCES:

- Code of Federal Regulations: 47 CFR, §§ 1.1301-1.1319 – Procedures implementing the National Environmental Policy Act of 1969
- Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, March 16, 2001, 47 CFR, Appendix B to Part 1
- Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005 47 CFR, Appendix C to Part 1
- First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016
- Section 106 of the National Historic Preservation Act of 1966 (36 CFR Part 800)

GLOSSARY OF TERMS & ACRONYMS:

Antenna	An apparatus designed for the purpose of emitting radio frequency ("RF") radiation, to be operated or operating from a fixed location pursuant to Commission authorization, for the transmission of writing, signs, signals, data, images, pictures, and sounds of all kinds, including the transmitting device and any on-site equipment, switches, wiring, cabling, power sources, shelters or cabinets associated with that antenna and added to a Tower, structure, or building as part of the original installation of the antenna. For most services, an antenna will be mounted on or in, and is distinct from, a supporting structure such as a tower, structure or building. However, in the case of AM broadcast stations, the entire tower or group of towers constitutes the Antenna for that station. For purposes of the Nationwide Agreement, the term antenna does not include unintentional radiators, mobile stations, or devices authorized under Part 15 of the Commission's rules. <i>Source: 47 CFR, Appendix C to Part 1</i>
Applicant	A Commission licensee, permittee, or registration holder, or an applicant or prospective applicant for a wireless or broadcast license, authorization or antenna structure registration, and the duly authorized agents, employees, and contractors of any such person or entity. <i>Source: 47 CFR, Appendix C to Part 1, First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016</i>
CA	Collocation Agreement
Collocation	The mounting or installation of an antenna on an existing tower, building, or structure for the purpose of transmitting radio frequency signals for communications purposes, whether or not there is an existing antenna on the structure. <i>Source: 47 CFR, Appendix B to Part 1, 47 CFR Appendix C to Part 1</i>

Collocation Agreement	Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, March 16, 2001 (47 CFR, Appendix B to Part 1)
Commercial Strip Mall	A structure or grouping of structures, housing retail business, set back far enough from the street to permit parking spaces to be placed between the building entrances and the public right of way. <i>Source: 47 CFR, Appendix C to Part 1</i>
EA	Environmental Assessment
Facility	A tower or an antenna. The term facility may also refer to a tower and its associated antenna(s). <i>Source: 47 CFR, Appendix C to Part 1</i>
FCC	Federal Communications Commission
Historic Property	Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or NHO that meet the National Register criteria. <i>Source: 47 CFR, Appendix C to Part 1</i>
Industrial Park	A tract of land that is planned, developed, and operated as an integrated facility for a number of individual industrial uses, with consideration to transportation facilities, circulation, parking, utility needs, aesthetics and compatibility. <i>Source: 47 CFR, Appendix C to Part 1</i>
National Register	National Register of Historic Places, maintained by the Secretary of the Interior's office of the Keeper of the National Register. <i>Source: 47 CFR, Appendix C to Part 1</i>
Nationwide Agreement	Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005, 47 CFR, Appendix C to Part 1. Also commonly referred to as the NPA.
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NHO	Native Hawaiian Organization
No New Ground Disturbance	1. When the depth and width of previous disturbance exceeds the proposed construction depth and width by at least two feet. <i>Source: 47 CFR, §§ 1.1307 Note to Paragraph (a)(4)(ii), or</i> 2. When the depth and width of any proposed ground disturbance associated with the collocation does not exceed the depth and width of any previous

ground disturbance (including footings and other anchoring mechanisms). Up to four lightning grounding rods of no more than three-quarters of an inch in diameter may be installed per project regardless of the extent of previous ground disturbance. *Source: First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016*

Non-Tower Structure	Any structure built for purposes other than for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.
NPA	Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005, 47 CFR, Appendix C to Part 1. Also commonly referred to as the Nationwide Agreement.
Section 106	Section 106 of the National Historic Preservation Act
Shopping Center	A group of commercial establishments planned, constructed, and managed as a total entity, with customer and employee parking provided on-site, provision for goods delivery separated from customer access, aesthetic considerations and protection from the elements, and landscaping and signage in accordance with an approved plan. <i>Source: 47 CFR, Appendix C to Part 1</i>
SHPO	State Historic Preservation Officer
SHPO/THPO Inventory	A set of records of previously gathered information, authorized by state or tribal law, on the absence, presence and significance of historic and archaeological resources within the state or tribal land. <i>Source: 47 CFR, Appendix C to Part 1</i>
Small Wireless Antenna	Generally defined as an antenna, excluding the associated equipment, that fits within an enclosure (or if the antenna is exposed, within an imaginary enclosure, i.e., one that would be the correct size to contain the equipment) that is individually no more than tree cubic feet in volume. <i>Source: 47 CFR, §§ 1.1307(4)(ii)(A)(1), First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016</i>
Substantial Increase in the Size of the Tower	"Substantial Increase in the size of the tower" means: 1. The mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or 2. The mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology

involved, not to exceed four, or more than one new equipment shelter; or

3. The mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
4. The mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site. *Source: 47 CFR, Appendix B to Part 1*

TCNS	Tower Construction Notification System
THPO	Tribal Historic Preservation Officer
Tower	Any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities. Include the on-site fencing, equipment, switches, wiring, cabling, power sources, shelters, or cabinets associated with that tower but not installed as part of an antenna. <i>Source: 47 CFR, Appendix B to Part 1 and 47 CFR Appendix C to Part 1</i>

Figure 6 - FCC Form 621 & Supporting Documentation



July 5, 2024

**TO: Massachusetts SHPO
Interested THPOs/NHOs**

SUBJECT: Section 106 (FCC Form 621) Submittal

**PROJECT: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts 02138
Ramaker & Associates, Inc. Project #60991
TCNS Number: 281876**

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on an existing 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs). The curriculum vitae for the Principal Investigators involved in the preparation of this submittal have been included in Attachment A of the attached FCC Form 621.

GENERAL PROJECT SUMMARY

The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

DISH proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

Upon review, the facility does not qualify for an exclusion under the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005, 47 CFR, Appendix C to Part 1, the First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016, or the Code of Federal Regulations: 47 CFR, §§ 1.1301-1.1319.

The locations of the site, site photographs, and appropriate Area of Potential Effect (APE) maps have been included in Attachment B of the attached FCC Form 621.

As part of our Section 106 review, Ramaker has completed the FCC's Form 621 as outlined in the Nationwide Agreement. In so doing, Ramaker split the Section 106 review into multiple subgroups, making a "determination of effect" for each of the subgroups. The subgroups included:

- Direct APE
- Indirect APE
- Seeking comments from Indian Tribes and Native Hawaiian Organizations
- Seeking comments from the Certified Local Government (or Appropriate Alternative)
- Seeking comments from other "Potentially Interested" Parties
- Overall Determination of Effect

The following is a summary of the activities taken to avoid and/or minimize the potential for "adverse effects" that might have otherwise resulted as part of the development of the above-referenced project.

DIRECT APE

The Direct APE is limited to the area of potential ground disturbance and any property, or any portion thereof that will be physically altered or destroyed by the Undertaking. On November 24, 2008, the FCC further clarified that the Direct APE is limited to the tower or non-tower structure on which the collocation will be mounted as well as the lease area including the access route and utility corridor. As part of this project, Ramaker considered two facets of the Direct APE with respect to a collocation to a non-tower structure. As outlined by the FCC, this included the potential to impact Archaeological Resources associated with any potential ground disturbance activities as well as the historical significance of the support structure and the subsequent potential for impact to the historic integrity of the support structure as a result of the proposed collocation activities. The following is a summary of the potential for effect to the Direct APE when considering these two facets:

- Archaeological Resources: Ramaker reviewed the proposed collocation activities and identified that as part of this project there would be no new ground disturbance activities. Due to the nature of the proposed construction activities, an archaeological survey was not completed as part of this review. It is the opinion of Ramaker that the proposed undertaking will result in **"No Historic Properties Affected"** in the projects Direct APE.
- Support Structure: Similar to the Indirect APE review (below), Ramaker reviewed the SHPO's records for historically significant structures to qualify whether the support structure had been previously identified to be a structure of potential architectural and/or cultural significance. Based on the findings associated with this investigation, Ramaker has concluded that the project will result in **"No Historic Properties Affected"** in the Direct APE, when considering the antenna support structure. A more thorough review of the Direct Effect to the support structure has been included in the FCC Form 621 (see Attachment C of the hardcopy FCC Form 621 submittal).

Based on the findings associated with this investigation, Ramaker has concluded that the project will result in **“No Historic Properties Affected”** in the Direct APE.

INDIRECT APE

Due to the dense urban development and large tree growth in the surrounding area, Ramaker has determined, as authorized by Section VI (C) of the Nationwide Programmatic Agreement, and seeks your mutual agreement that an appropriate alternative APE for visual effects for this project should be an area within a 600 foot (reduced from one-half mile) radius of the project site. As part of our investigation, Ramaker has reviewed the SHPO's on-line database of historically significant structures. Any historic properties identified are further summarized in the Indirect APE review (see Attachment C of the hardcopy FCC Form 621 submittal). Included in FCC Form 621 are the APE maps utilized as part of this assessment. In addition, and when appropriate, Ramaker completed a field visit to assess the potential for effect to historically significant structures within the projects Indirect APE. Based upon the database query, and field visit (if required), Ramaker summarized the potential for effect to structures within the Indirect APE. This review included a summary of historic structures and historic districts located within the projects Indirect APE.

Based on the findings associated with this investigation, Ramaker has concluded that the project will result in **“No Adverse Effect”** to cultural or historic properties in the Indirect APE. A more complete summary of the Indirect APE review has been included in Indirect APE review, included as a portion of the Cultural Resources Review (see Attachment C of the hardcopy FCC Form 621 submittal).

INDIAN TRIBES AND NATIVE HAWAIIAN ORGANIZATIONS

Through the use of the FCC's Tower Construction Notification System (TCNS), Ramaker has attempted to increase communication with Indian Tribes and Native Hawaiian Organizations (NHOs) in the context of the review required by Section 106. The use of the TCNS system provides Tribes/NHOs with early notification of proposed towers in order to facilitate compliance with the FCC's rules, and streamlines the review process for construction of FCC undertakings, including the collocation to structures that fail to meet the guidelines of the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (Collocation Agreement).

Although Ramaker anticipates a **“No Historic Properties Affected”** finding, it should be noted that Tribes/NHOs may have a different perspective regarding historic properties of religious and cultural significance. In addition to the TCNS process, Ramaker communicates directly with Tribes/NHOs, when appropriate. While communication with the Tribes/NHOs is not complete at this stage of the project, Ramaker will follow the FCC's guidance on seeking comments from Tribes/NHOs in an attempt to facilitate dialog about the potential for impacts to sites of cultural importance to Tribes/NHOs. A complete list of the Tribes/NHOs who have expressed interest (through the TCNS “Notice of Organizations” database response) in providing comments with respect to this undertaking has been included in Attachment D. Ramaker is requesting comments from the Tribes/NHOs and will work to ensure that all Tribes/NHOs have been given the opportunity to comment.

CERTIFIED LOCAL GOVERNMENT (OR APPROPRIATE ALTERNATIVE)

As part of this Section 106 review, Ramaker has identified a delegate with the Cambridge Historical Commission to be the most appropriate appointee to fill the role of the Certified Local Government (CLG) representative. This delegate was chosen for their likelihood to be able to comment on the potential for “adverse effects” resulting from the proposed activities. Copies of the communication, including responses (when appropriate) with the CLG delegate have been included in Attachment E.

While dialog with the Cambridge Historical Commission is not complete, based on the research and reviews completed to date, Ramaker anticipates a **“No Adverse Effect”** finding regarding the proposed DISH undertaking.

OTHER "POTENTIALLY INTERESTED" PARTIES

As part of this Section 106 review, Ramaker has identified the need to identify other “potentially interested” parties who may have additional information relevant to the potential for “adverse effects” resulting from the proposed activities. As part of this Section 106 review, Ramaker has sought comments from the City of Cambridge Planning Board and History Cambridge. Copies of the communication, including responses (when appropriate) with these parties have been included in Attachment F.

In addition, Ramaker placed a public notice of the proposed undertaking in a local newspaper. A copy of this notification, including any appropriate “Section 106 related” responses has been included in Attachment G.

While dialog with the City of Cambridge Planning Board, History Cambridge, and the public comment period, is not complete, based on the research and reviews completed to date, Ramaker anticipates a **“No Adverse Effect”** finding regarding the proposed DISH undertaking.

OVERALL DETERMINATION OF EFFECT

Based on the results of this investigation, as outlined above and further detailed in the attached FCC Form 621 submittal, Ramaker has formulated a determination of **“No Adverse Effect”** finding regarding the proposed DISH undertaking.

At this point, Ramaker seeks the SHPO’s concurrence with the findings presented and asks for your support of the proposed project. The FCC Form 621 and the supporting documentation, have been included and are submitted for your review.

Please direct all correspondence to:

Ramaker & Associates, Inc.
Daniel Feldmann, Environmental Scientist
855 Community Drive
Sauk City, Wisconsin 53583
nepa@ramaker.com

Sandra Weiss, Tribal Coordinator
855 Community Drive
Sauk City, Wisconsin 53583
608-644-2297
TCNS@ramaker.com

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

Sincerely,

Ramaker & Associates, Inc.

A handwritten signature in dark ink, appearing to read "Daniel Feldmann", with a long horizontal flourish extending to the right.

Daniel Feldmann, Environmental Scientist

Cc: DISH Wireless LLC
Andrew Foreman, National Program Manager
5701 South Santa Fe Drive
Littleton, Colorado 80120

Attachments:

FCC Form 621
FCC Form 621 Associated Attachments



Section 106 Filings

FCC > Wireless > Section 106 Filings

Logged In: 0012911269 (Log Out)

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File Number: 0011145827
Form 621: Original Filing

Notification Date:
07/08/2024

Current Status: **Submitted**
Received On: **07/05/2024**

The identified Lead SHPO/THPO is not participating online. Please send a paper copy of the filing to this SHPO/THPO. Upon receiving a response, you may record the response online on behalf of the SHPO/THPO.

[Record the Response on behalf of SHPO](#) [Notify FCC](#) [Update](#) [Withdraw](#) [Email Filing](#)

[Overview](#) [Transaction Log](#) [Comments](#) [Documents](#) [History](#) [View Submission Packet](#) [Common Questions](#) [Return to My Filings](#)

FCC FORM 621 - COLLOCATION SUBMISSION

[View Submission Packet](#)

FILING INFORMATION

Applicant Name: DISH Wireless LLC

Consultant Name: Ramaker & Associates, Inc.

Site Name: BOBOS00341B (BOBOS00341B)

Positive Train Control Site(s) : No

City: Cambridge

County: MIDDLESEX

State: Massachusetts

Site Coordinates: 42° 22' 23.9" N, 071° 07' 17.4" W

UTM Coordinates: 19T, 325329.33 E, 4693405.22 N

TCNS Notification Number: 281876

EMTS Tracking Number: n/a

PARTIES INVOLVED

[View Additional Consulting Parties](#)

Lead SHPO/THPO : Massachusetts Historical Commission

SHPO/THPO 2: None

SHPO/THPO 3: None

SHPO/THPO 4: None

FCC: No

ACHP: No

SHPO/THPOs marked are not participating online

YOU ARE CURRENTLY VIEWING:

Original Filing

07/08/2024

DETERMINATION OF EFFECTS

	Visual	Direct
Filer:		
Lead SHPO/THPO:	n/a	n/a
FCC Inst:	n/a	n/a

**RECOMMENDATIONS TO
DETERMINATION OF EFFECTS****There is no Recommendation** [Add Recommendations Received Offline](#)

Federal Communications Commission
45 L Street NE
Washington, DC 20554

Phone: 1-877-480-3201
TTY: 1-717-338-2824
[Submit Help Request](#)

Notification Date: **7AM EST 07/08/2024****Collocation ("CO") Submission Packet**

See instructions for

File Number: **0011145827**

public burden estimates

General Information

1) (Select only one) (NE) NE – New UA – Update of Application WD – Withdrawal of Application	
2) If this application is for an Update or Withdrawal, enter the file number of the pending application currently on file.	File Number:

Applicant Information

3) FCC Registration Number (FRN): 0027852722
4) Name: DISH Wireless LLC

Contact Name

5) First Name: Andrew	6) MI:	7) Last Name: Foreman	8) Suffix:
9) Title: National Program Manager			

Contact Information

10) P.O. Box:	And /Or	11) Street Address: 5701 South Santa Fe Drive	
12) City: Littleton		13) State: CO	14) Zip Code: 80120
15) Telephone Number: (314)335-9743		16) Fax Number:	
17) E-mail Address: regulatoryteam@dish.com			

Consultant Information

18) FCC Registration Number (FRN): 0012911269
19) Name: Ramaker & Associates, Inc.

Principal Investigator

20) First Name: Joe	21) MI:	22) Last Name: Gallagher	23) Suffix:
24) Title: Project Manager, Architectural/Interior			

Principal Investigator Contact Information

25) P.O. Box:	And /Or	26) Street Address: c/o Daniel Feldmann 855 Community Drive	
27) City: Sauk City		28) State: WI	29) Zip Code: 53583
30) Telephone Number: (608)643-4100		31) Fax Number: (608)643-7999	
32) E-mail Address: dfeldmann@ramaker.com			

Professional Qualification

33) Does the Principal Investigator satisfy the Secretary of the Interior's Professional Qualification Standards?	(☒) <u>Y</u> es () <u>N</u> o
34) Areas of Professional Qualification: () Archaeologist () Architectural Historian () Historian (☒) Architect () Other (Specify) _____	

Additional Staff

35) Are there other staff involved who meet the Professional Qualification Standards of the Secretary of the Interior?	() <u>Y</u> es (☒) <u>N</u> o
--	--

If "YES," complete the following:

36) First Name:	37) MI:	38) Last Name:	39) Suffix:
40) Title:			
41) Areas of Professional Qualification: () Archaeologist () Architectural Historian () Historian () Architect () Other (Specify) _____			

Site Information

Tower Construction Notification System

1) TCNS Notification Number: **281876**

Site Information

2) Positive Train Control Filing Subject to Expedited Treatment Under Program Comment: () Yes (**X**) No

3) Site Name: **BOBOS00341B (BOBOS00341B)**

4) Site Address: **1 Brattle Square**

5) Detailed Description of Project:

DISH proposes to install antennas and equipment at the 90.33 foot building tower at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. Site location to follow.

6) City: **Cambridge**

7) State: **MA**

8) Zip Code: **02138**

9) County/Borough/Parish: **MIDDLESEX**

10) Nearest Crossroads: **See attached site location maps**

11) **NAD 83** Latitude (DD-MM-SS.S): **42-22-23.9** (**X**) N or () S

12) **NAD 83** Longitude (DD-MM-SS.S): **071-07-17.4** () E or (**X**) W

Collocation Information

13) Antennas will be located on (Select One):

() Communications Tower (Select One): () Guyed Lattice Tower () Self-supporting Lattice () Monopole

() Other (Describe): _____

(**X**) Non-Tower Structure (Describe Structure): **Building**

14) Tower height above ground level (including top-mounted attachments such as lightning rods): **29.7** () Feet (**X**) Meters

15) Description of Antennas to be collocated (e.g. number, type, shape, dimensions, color):

The full scope of the proposed undertaking has been outlined in the attached site and elevation plans.

16) Will the Antennas be placed at multiple levels on the structure?

(**X**) Yes () No

If "Yes", describe placement:

Some minor deviations between antenna sectors and antennas within the same antenna sector are possible. The installations will however generally follow the guidelines detailed in the attached supplemental due diligence.

If "No", specify the height of collocation above ground: _____ () Feet () Meters

17) Structure Completion Year: **1991** (YYYY)

(**X**) Check here if your year provided is approximate.

18) Has the Communications Tower or Non-Tower Structure been the subject of SHPO/THPO review? If "Yes", specify the following: Company that made the submission: _____ Date submitted: _____ SHPO/THPO Reference Number: _____	() <u>Y</u> es (X) <u>N</u> o
19) Is the Communications Tower or Non-Tower Structure eligible for listing on the National Register?	() <u>Y</u> es (X) <u>N</u> o

Collocation Status

20) Current Collocation Status (Select One): (X) Construction and/or installation has not yet commenced () Construction and/or installation has commenced, but is not completed Construction and/or installation commenced on: _____ () Construction has been completed Construction and/or installation commenced on: _____ Construction and/or installation completed on: _____

Determination of Effect

21) Direct Effects (Select One): (X) No Historic Properties in Area of Potential Effects (APE) () No Effect on Historic Properties in APE () No Adverse Effect on Historic Properties in APE () Adverse Effect on one or more Historic Properties in APE
22) Visual Effects (Select One): () No Historic Properties in Area of Potential Effects (APE) () No Effect on Historic Properties in APE (X) No Adverse Effect on Historic Properties in APE () Adverse Effect on one or more Historic Properties in APE

Tribal/NHO Involvement

1) Have Indian Tribes or Native Hawaiian Organizations (NHOs) been identified that may attach religious and cultural significance to historic properties which may be affected by the undertaking within the APEs for direct and visual effects?		(☒) <u>Y</u> es () <u>N</u> o
2a) Tribes/NHOs contacted through TCNS Notification Number: <u>281876</u>		Number of Tribes/NHOs: <u>7</u>
2b) Tribes/NHOs contacted through an alternate system:		Number of Tribes/NHOs: <u>0</u>

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Bad River Band of Lake Superior Tribe of Chippewa Indians

Contact Name

5) First Name: Lawrence	6) MI:	7) Last Name: Plucinski	8) Suffix:
9) Title: THPO			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied _____
(☒) No Reply	
() Replied/No Interest	
() Replied/Have Interest	
() Replied/Other	

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Lac du Flambeau Band of Lake Superior Chippewa Indians

Contact Name

5) First Name: Sarah	6) MI: E	7) Last Name: Thompson	8) Suffix:
9) Title: THPO			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied <u>07/03/2024</u>
() No Reply	
() Replied/No Interest	
() Replied/Have Interest	
(☒) Replied/Other	

Tribal/NHO Involvement

1) Have Indian Tribes or Native Hawaiian Organizations (NHOs) been identified that may attach religious and cultural significance to historic properties which may be affected by the undertaking within the APEs for direct and visual effects?		(☒) <u>Yes</u> (☐) <u>No</u>
2a) Tribes/NHOs contacted through TCNS Notification Number: <u>281876</u>		Number of Tribes/NHOs: <u>7</u>
2b) Tribes/NHOs contacted through an alternate system:		Number of Tribes/NHOs: <u>0</u>

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Mashpee Wampanoag Tribe

Contact Name

5) First Name: David	6) MI:	7) Last Name: Weeden	8) Suffix:
9) Title: THPO			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied _____
(☒) No Reply	
(☐) Replied/No Interest	
(☐) Replied/Have Interest	
(☐) Replied/Other	

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Narragansett Indian Tribe

Contact Name

5) First Name: John	6) MI:	7) Last Name: Brown	8) Suffix:
9) Title: THPO			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied _____
(☒) No Reply	
(☐) Replied/No Interest	
(☐) Replied/Have Interest	
(☐) Replied/Other	

Tribal/NHO Involvement

1) Have Indian Tribes or Native Hawaiian Organizations (NHOs) been identified that may attach religious and cultural significance to historic properties which may be affected by the undertaking within the APEs for direct and visual effects?		(☒) <u>Y</u> es () <u>N</u> o
2a) Tribes/NHOs contacted through TCNS Notification Number: <u>281876</u>		Number of Tribes/NHOs: <u>7</u>
2b) Tribes/NHOs contacted through an alternate system:		Number of Tribes/NHOs: <u>0</u>

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin

Contact Name

5) First Name: Marvin	6) MI:	7) Last Name: DeFoe	8) Suffix:
9) Title: THPO			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied _____
(☒) No Reply	
() Replied/No Interest	
() Replied/Have Interest	
() Replied/Other	

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Sac and Fox Nation

Contact Name

5) First Name: Audrey	6) MI:	7) Last Name: Lee	8) Suffix:
9) Title: Chief of Staff			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied _____
(☒) No Reply	
() Replied/No Interest	
() Replied/Have Interest	
() Replied/Other	

Tribal/NHO Involvement

1) Have Indian Tribes or Native Hawaiian Organizations (NHOs) been identified that may attach religious and cultural significance to historic properties which may be affected by the undertaking within the APEs for direct and visual effects?	(☒) <u>Y</u> es () <u>N</u> o
2a) Tribes/NHOs contacted through TCNS Notification Number: <u>281876</u>	Number of Tribes/NHOs: <u>7</u>
2b) Tribes/NHOs contacted through an alternate system:	Number of Tribes/NHOs: <u>0</u>

Tribe/NHO Contacted Through TCNS

3) Tribe/NHO FRN:
4) Tribe/NHO Name: Wampanoag Tribe of Gay Head-Aquinnah

Contact Name

5) First Name: Bettina	6) MI:	7) Last Name: Washington	8) Suffix:
9) Title: Senior Cultural Resource Monitor			

Dates & Response

10) Date Contacted <u>07/03/2024</u>	11) Date Replied _____
(☒) No Reply	
() Replied/No Interest	
() Replied/Have Interest	
() Replied/Other	

Other Tribes/NHOs Contacted

Tribe/NHO Information

1) FCC Registration Number (FRN):
2) Name:

Contact Name

3) First Name:	4) MI:	5) Last Name:	6) Suffix:
7) Title:			

Contact Information

8) P.O. Box:	And /Or	9) Street Address:		
10) City:		11) State:	12) Zip Code:	
13) Telephone Number:		14) Fax Number:		
15) E-mail Address:				
16) Preferred means of communication: () E-mail () Letter () Both				

Dates & Response

17) Date Contacted _____	18) Date Replied _____
() No Reply	
() Replied/No Interest	
() Replied/Have Interest	
() Replied/Other	

Historic Properties

Properties Identified

1) Have any historic properties been identified within the APEs for direct and visual effect?	(☒) <u>Y</u> es () <u>N</u> o
2) Has the identification process located archaeological materials that would be directly affected, or sites that are of cultural or religious significance to Tribes/NHOs?	() <u>Y</u> es (☒) <u>N</u> o
3) Are there more than 10 historic properties within the APEs for direct and visual effect? If "Yes", you are required to attach a Cultural Resources Report in lieu of adding the Historic Property below.	(☒) <u>Y</u> es () <u>N</u> o

Historic Property

4) Property Name:
5) SHPO Site Number:

Property Address

6) Street Address:		
7) City:	8) State:	9) Zip Code:
10) County/Borough/Parish:		

Status & Eligibility

11) Is this property listed on the National Register? Source: _____	() <u>Y</u> es () <u>N</u> o
12) Is this property eligible for listing on the National Register? Source: _____	() <u>Y</u> es () <u>N</u> o
13) Is this property a National Historic Landmark?	() <u>Y</u> es () <u>N</u> o

14) Direct Effects (Select One): ☐ No Effect on this Historic Property in APE ☐ No Adverse Effect on this Historic Property in APE ☐ Adverse Effect on this Historic Property in APE
15) Visual Effects (Select One): ☐ No Effect on this Historic Property in APE ☐ No Adverse Effect on this Historic Property in APE ☐ Adverse Effect on this Historic Property in APE

Local Government Involvement

Local Government Agency

1) FCC Registration Number (FRN):
2) Name: Cambridge Historical Commission

Contact Name

3) First Name: Charles	4) MI:	5) Last Name: Sullivan	6) Suffix:
7) Title: Executive Director			

Contact Information

8) P.O. Box:	And /Or	9) Street Address: 831 Massachusetts Avenue, 2nd Floor	
10) City: Cambridge		11) State: MA	12) Zip Code: 02139
13) Telephone Number: (617)349-4683		14) Fax Number:	
15) E-mail Address: histcomm@cambridgema.gov			
16) Preferred means of communication: () E-mail (X) Letter () Both			

Dates & Response

17) Date Contacted 07/05/2024	18) Date Replied _____
(X) No Reply	
() Replied/No Interest	
() Replied/Have Interest	
() Replied/Other	

Additional Information

19) Information on local government's role or interest (optional):
--

Other Consulting Parties

Other Consulting Parties Contacted

1) Has any other agency been contacted and invited to become a consulting party?	(☒) <u>Yes</u> (☐) <u>No</u>
--	---

Consulting Party

2) FCC Registration Number (FRN):
3) Name: City of Cambridge Planning Board

Contact Name

4) First Name: Mary	5) MI:	6) Last Name: Flynn	7) Suffix:
8) Title: Chair			

Contact Information

9) P.O. Box:	And /Or	10) Street Address: 344 Broadway		
11) City: Cambridge		12) State: MA	13) Zip Code: 02139	
14) Telephone Number: (617)349-4000		15) Fax Number:		
16) E-mail Address: planningboardcomment@cambridgema.gov				
17) Preferred means of communication: (☐) E-mail (☒) Letter (☐) Both				

Dates & Response

18) Date Contacted 07/05/2024	19) Date Replied _____
(☒) No Reply (☐) Replied/No Interest (☐) Replied/Have Interest (☐) Replied/Other	

Additional Information

20) Information on other consulting parties' role or interest (optional):

Other Consulting Parties

Other Consulting Parties Contacted

1) Has any other agency been contacted and invited to become a consulting party?	(☒) <u>Yes</u> () <u>No</u>
--	---

Consulting Party

2) FCC Registration Number (FRN):
3) Name: History Cambridge

Contact Name

4) First Name: Marieka	5) MI:	6) Last Name: Van Damme	7) Suffix:
8) Title: Executive Director			

Contact Information

9) P.O. Box:	And /Or	10) Street Address: 159 Brattle Street	
11) City: Cambridge		12) State: MA	13) Zip Code: 02138
14) Telephone Number: (617)547-4252		15) Fax Number:	
16) E-mail Address: info@historycambridge.org			
17) Preferred means of communication: () E-mail (☒) Letter () Both			

Dates & Response

18) Date Contacted 07/05/2024	19) Date Replied _____
(☒) No Reply () Replied/No Interest () Replied/Have Interest () Replied/Other	

Additional Information

20) Information on other consulting parties' role or interest (optional):

Designation of SHPO/THPO

1) Designate the Lead State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) based on the location of the tower/collocation.

SHPO/THPO

Name: **Massachusetts Historical Commission**

2) You may also designate up to three additional SHPOs/THPOs if the APEs include multiple states. If the APEs include other countries, enter the name of the National Historic Preservation Agency and any state and provincial Historic Preservation Agency

SHPO/THPO Name: _____

SHPO/THPO Name: _____

SHPO/THPO Name: _____

Certification

I certify that all representations on this FCC Form 621 Submission Packet and the accompanying attachments are true, correct, and complete.

Party Authorized to Sign

First Name: **Daniel**

MI:

Last Name: **Feldmann**

Suffix:

Signature: **Daniel Feldmann**

Date: **07/05/2024**

FAILURE TO SIGN THIS APPLICATION MAY RESULT IN DISMISSAL OF THE APPLICATION AND FORFEITURE OF ANY FEES PAID.

WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ANY ATTACHMENTS ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, Section 1001) AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

Attachments :

Type	Description	Date Entered
Additional Site Information	Project Summary	07/03/2024
Resumes/Vitae	a - Resumes (Gallagher Dickson)	07/03/2024
Map Documents	b1 - Site Maps	07/03/2024
Photographs	b2 - Site Photos	07/03/2024
Other	b3 - Site Plans	07/03/2024
Historic Properties for Direct Effects	c1 - Direct APE Summary	07/03/2024
Historic Properties for Visual Effects	c2 - Indirect APE Summary	07/03/2024
Cultural Resources Report	c3 - Cultural Resource Report	07/03/2024
Local Government Involvement	e - CLG Involvement	07/03/2024
Public Involvement	f - Interested Party Involvement	07/03/2024
Public Involvement	g - Public Notice	07/03/2024
Area of Potential Effects	c4 - APE Maps	07/05/2024
Tribal/NHO Involvement	d - Tribal Involvement	07/05/2024

Joseph C Gallagher, AIA, NCARB, LEED Green Assoc.
Lead Architect + Architectural Business Development

Education

Temple University - Philadelphia, PA
Master's Degree in Architecture - May 2012

Roger Williams University - Bristol, RI
Bachelor of Science in Architecture - May 2010
Minor in Art & Architectural History, Minor in Business + Marketing

Architecture/Design Accomplishments

Memberships & Certifications

- ARCHITECTURAL LICENSURE
 - COLORADO (ARC.00406333)
 - FLORIDA (AR100799)
 - ILLINOIS (001.025137)
 - INDIANA (AR1200072)
 - IOWA (ARC07914)
 - MINNESOTA (58132)
 - NEBRASKA (A-5230)
 - NEW JERSEY (21AI02174400)
 - NEW MEXICO (00614)
 - OHIO (ARC.2118287)
 - PENNSYLVANIA (RA409121)
 - WISCONSIN (12901-5)
 - ARIZONA, CONNECTICUT, NEW YORK ~ ~
- NCARB CERTIFICATION
 - 97448
- AIA member
 - Philadelphia, PA Chapter (May 2012 - August 2016)
 - Wisconsin Chapter (Aug 2016 - Present)
- LEED Green Associate (2014 - Present)
- Member of National Trust for Historic Preservation (2012 - Present)

Representative Historical Work/Experience

Department of Facilities Development – Madison, WI

- Responsible for Architectural drawings as part of sprinkler & fire protection project
- Architectural Consultant to CMG Engineering + Coordination with WI SHPO

Myles Development Company - West Chester, PA

"# ~ "

- Contributed to all phases of design for adaptive reuse of Farmers & Mechanics Building
- Coordination of all SHPO requirements for state of PA

- Presented at various WC HARB, Planning Commission & Borough Council Meetings

John James Audubon Center at Mill Grove - Audubon, PA

Architect & Interior Designer

- Served as the lead designer on winterization of existing pavilion at historic Audubon property
- Responsible for all aspects of project from schematic design through construction administration
- Various presentations with Audubon Society + Local historical society

Borough of Lansdale - Lansdale, PA

Architect & Interior Designer
+ Landscape Architect

- Part of Lead Design team for both projects
- 311 Performing Arts – turned historic Lansdale Masonic Lodge into Performing Arts Center
 - Façade restoration effort working with state SHPO
- Lansdale Municipal Building – Preserved historic post office/courthouse façade and ‘inserted’ modern design into its walls
 - Shored up existing walls in place to maintain historic Lansdale presence as mask to modern interior + addition
- Presented to Lansdale Borough Council, Local community and Historical society

Moland House - Hartsville, PA

Architect & Interior Designer

- Member of Warwick Historical Society from 2008-2016
- Assisted with both documentation and physical restoration efforts of the Moland House; George Washington’s Headquarters during the winter at Valley Forge
 - With Greenside Interiors + John Milner Architects

RANDY R. DICKSON
M.S. R.P.A.
MIDWEST ARCHAEOLOGICAL CONSULTANTS, INC.

Education

Master of Science - Anthropology = University of Wisconsin at Milwaukee (2002)

Graduate Studies in Anthropology University of Iowa (1988 to 1997)

Bachelor of Arts - BGS with concentration in Anthropology = University of Iowa (1987)

Professional Organizations

American Cultural Resources Association.

Association of Iowa Archaeologists.

Crossroads at Big Creek: Principal Investigator, Lead Archaeologist.

Ohio Historic Society List of Professional Consultants.

Michigan Historic Society List of Professional Consultants.

Register of Professional Archaeologists.

Wisconsin Historic Society List of Professional Consultants.

Wisconsin Archaeological Survey: Guidelines Committee Member and President of Outreach Committee.

Wisconsin Archaeological Society.

Selected Professional Experience – Historic & Prehistoric Archaeology

Date	Agency or Company	Level of Investigation	Location
1980 to 1983	University of Texas, Austin, Texas	Phase I & II	San Marcos, and Georgetown, Texas; (San Gabriel and Guadalupe Rivers)
September to November 1989	Department of Transportation	Phase I	Polk County, Iowa
December 1989	Department of Transportation	Phase I	Ainsworth, Iowa and Mount Pleasant, Iowa
April to July 1990	Federal Energy Regulatory Commission	Phase I & II for a 212-mile gas pipeline project	Ventura to Burlington, Iowa
September to October 1990	U.S. Army Corps of Engineers	Phase I (various reservoir projects)	Vilas, Oneida and Iron Counties, Wisconsin
October 1990	Department of Natural Resources	Oneonta Burials (47LC-447)	La Crosse, Wisconsin
November to December 1990	Federal Energy Regulatory Commission	Phase I & II for a 212-mile gas pipeline project	Ventura to Burlington, Iowa
May to June 1992	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Schuyler County, Illinois
1992	American Resource Group, LTD	Phase I	Polk County, Iowa

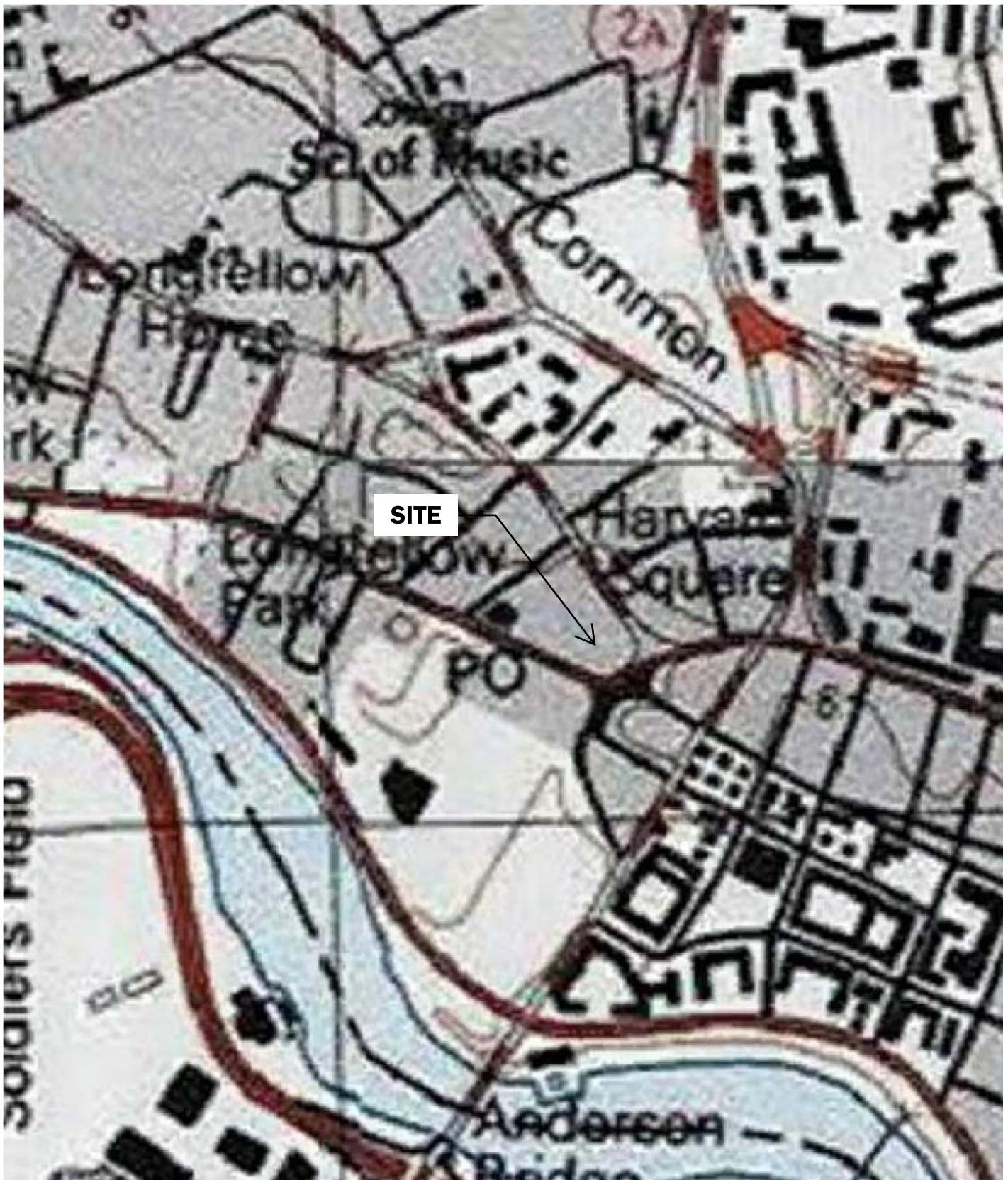
Date	Agency or Company	Level of Investigation	Location
May 1994	Department of Transportation	Phase I & II	Polk County, Iowa
June to July 1994	U.S. Army Corps of Engineers	Phase I & II	Monroe, Missouri
October to December 1994	Black Beauty Coal Company	Phase I & II	Gibson and Vigo Counties, Indiana
April 1995	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Marion, Illinois
May 1995	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Lake Carlyle, Illinois
May 1995	Department of Natural Resources	Phase I	Crab Orchard, Illinois
June 1995	Black Beauty Coal Company	Phase I & II	Davies, Knox, Gibson and Pike Counties, Indiana
September 1995	U.S. Army Corps of Engineers	Phase I & II	Lake Red Rock, Iowa
October to November 1995	Department of Transportation	Phase I & II	Camp Dodge, Johnston, Iowa
May to June 1996	Federal Energy Regulatory Commission	Phase I & II	Riverside, Iowa
August 1998	United States Department of Agriculture - Rural Development	Phase I & II (water transmission lines)	Wapello County, Iowa
August 1998	United States Department of Agriculture - Rural Development	Phase I & II (water transmission lines)	Boone, County, Iowa
November 1999	Department of Transportation	Phase I	Waupaca, Wisconsin
December 1999	Department of Natural Resources	Phase I	Kenosha, Wisconsin
May to August 2000	Teaching Assistant at University of Wisconsin - Milwaukee	Oneonta Village (47JE-904)	Lake Koshkonong, Wisconsin
September to November 2000	Wisconsin Department of Transportation - Historic Resources Management Services	Phase III (47DR-432)	Door County, WI
November 2000	Federal Aviation Administration	Phase I	Waupaca, Wisconsin
May to August 2001	Department of Transportation	Phase II (47DR-244)	Door County, Wisconsin

Date	Agency or Company	Level of Investigation	Location
May to December 2002	Department of Transportation	Phase II & III (47DR-432 and 47KE-9)	Door County and Kewaunee County, Wisconsin
June 2003	Department of Transportation	Phase I	Waupaca, Wisconsin
June to September	Department of Transportation	Phase II & III (47EC-78)	Eau Claire, Wisconsin
November to December 2004	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Boone, County, Iowa
April 2005	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Boone, County, Iowa
2005	Federal Communications Commission	Phase I	Iowa, Wisconsin and Minnesota
2006	Federal Communications Commission	Phase I	Iowa, Michigan, Wisconsin and Minnesota
February to March 2006	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Webster, County, Iowa
November 2006	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Calhoun County, Iowa
December 2006	Department of Transportation	Phase I	Portage County, Wisconsin
2007	Federal Communications Commission	Phase I	Illinois, Ohio, Iowa, Michigan, Wisconsin and Minnesota
June 2007	United States Department of Agriculture - Rural Development	Phase I (water transmission lines)	Calhoun County, Iowa
2008	Federal Communications Commission	Phase I	Missouri, South Dakota, Illinois, Ohio, Iowa,
January-December 2008	Housing & Urban Development	Phase I	Wisconsin & Iowa
June 2008	Federal Energy Regulatory Commission	Archaeological Monitoring	Minnesota
2009	Federal Communications Commission	Phase I	Missouri, South Dakota, Illinois, Ohio, Iowa, Michigan, Wisconsin and Minnesota

Date	Agency or Company	Level of Investigation	Location
March to December 2009	Department of Transportation	Phase I & II (47GL-281)	Door, Green Lake, and Juneau County, Wisconsin
January 2007	United States Department of Agriculture - Rural Development	Archaeological Monitoring	Sauk County, Wisconsin
September-October 2010	Housing & Urban Development	Phase I	Polk County, Iowa
March to December 2010	Natural Resource Conservation Service	Phase I	Wisconsin
2010	Federal Communications Commission	Phase I	Missouri, South Dakota, Illinois, Ohio, Iowa, Michigan, Wisconsin and Minnesota
2012	United States Department of Agriculture - Rural Development	Archaeological Monitoring and Phase I & II (water transmission lines)	Wisconsin
2012	Housing & Urban Development	Phase I	Polk County, Iowa
2012	Natural Resource Conservation Service	Phase I	Wisconsin
2013	Federal Communications Commission	Phase I & II	Missouri, South Dakota, Illinois, Ohio, Iowa, Michigan, Wisconsin and Minnesota
2013	United States Department of Agriculture - Rural Development	Archaeological Monitoring and Phase I & II (water transmission lines)	Wisconsin
2013	Housing & Urban Development	Phase I	Wisconsin
2013	Federal Energy Regulatory Commission	Phase I for 102 miles of transmission lines	Iowa
2014	Federal Communications Commission	Phase I & II	Colorado, Iowa, Wisconsin, Michigan and Illinois
2014	United States Department of Agriculture - Rural Development	Phase I & II (water transmission lines)	Wisconsin

Date	Agency or Company	Level of Investigation	Location
2014	Housing & Urban Development	Phase I	Polk County, Iowa
2014	Natural Resource Conservation Service	Phase I	Wisconsin
2015	Federal Communications Commission	Phase I & II	Iowa, Wisconsin, Michigan, Illinois, Minnesota, Missouri, Ohio, Maryland, Massachusetts, Pennsylvania and Texas
2015	United States Department of Agriculture - Rural Development	Phase I & II (water transmission lines)	Wisconsin
2015	Public Outreach	Phase I & II (47DR-0035 & 47DR-0428)	Door County, Wisconsin
2016	Rural Electric Cooperative	Phase I	Iowa
2016	Housing & Urban Development	Phase I	Outagamie and Winnebago Counties, Wisconsin
2016	Federal Communications Commission	Phase I & II	Iowa, Wisconsin, Michigan, Illinois, Minnesota, Missouri, Ohio, Maryland, Massachusetts, Pennsylvania and Texas
2016	Public Outreach	Phase I & II (47DR-0035 & 47DR-0428)	Door County, Wisconsin
2017	Federal Communications Commission	Phase I & II	Iowa, Wisconsin, Michigan, Illinois, Minnesota, Missouri, Ohio, Maryland, Massachusetts, Pennsylvania and Texas
2017	Department of Natural Resources	Phase I	Manitowoc County, Wisconsin
2017	United States Department of Agriculture - Rural Development	Phase II (water transmission lines)	Monroe, County, Wisconsin

Date	Agency or Company	Level of Investigation	Location
2017	Public Outreach	Phase I & II (47DR-0035 & 47DR-0428)	Door County, Wisconsin



USGS 7.5-Minute Quadrangle

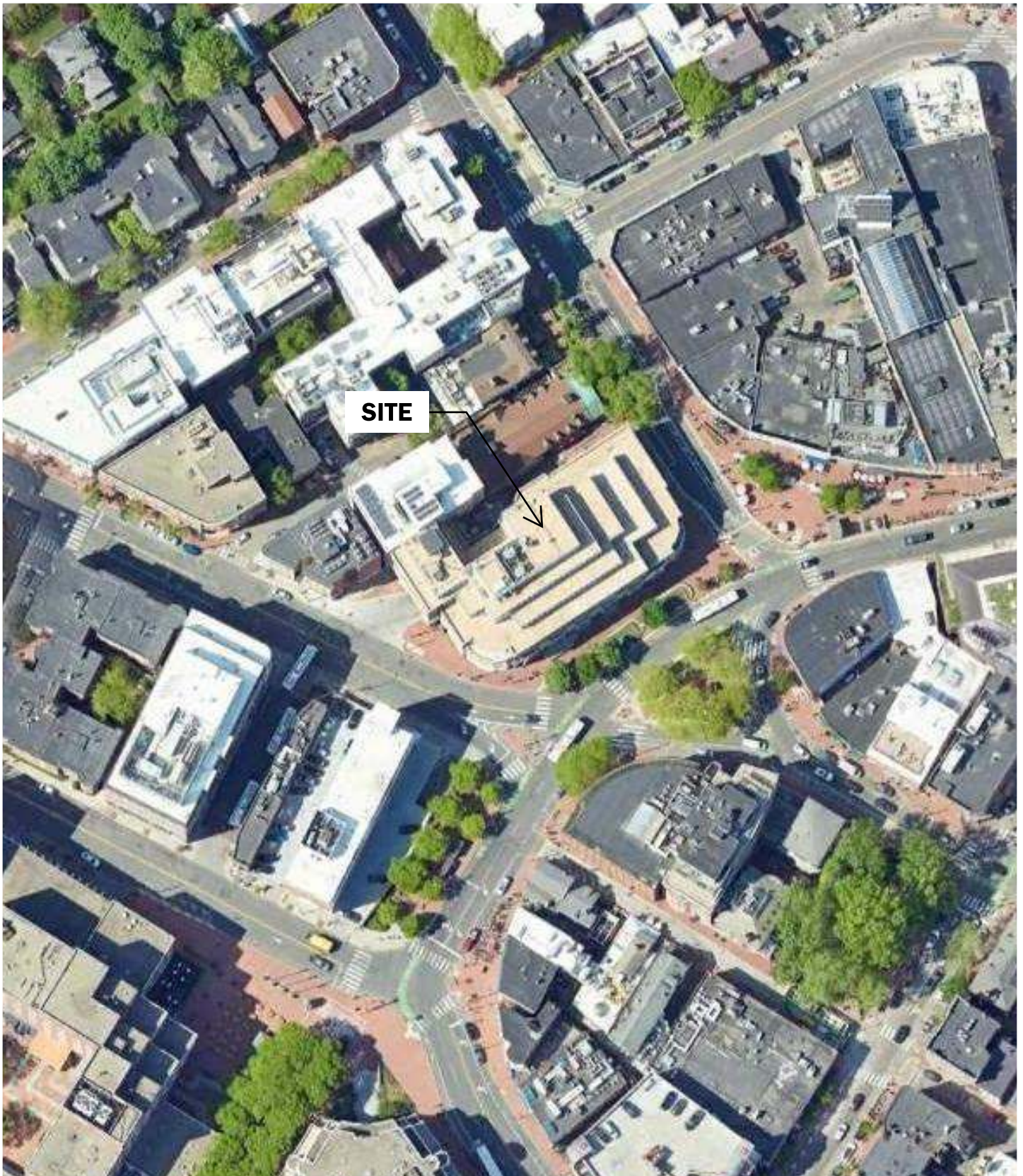
BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Massachusetts 02138
Middlesex County



Source: Google Earth

RAMAKER
employee-owned

NOT TO SCALE



Aerial Photograph

BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Massachusetts 02138
Middlesex County



Source: Google Earth

RAMAKER
employee-owned

NOT TO SCALE



1. View of the host structure facing north from Eliot Street within the Harvard Square Historic District (Boundary Expansion).

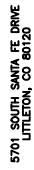


2. View of the host structure facing northwest from Brattle Street within the Harvard Square Historic District (Boundary Expansion).

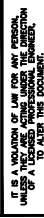


3. View of the host structure facing south from Church Street within the Harvard Square Historic District (Boundary Expansion).





NB+C ENGINEERING SERVICES, LLC.
100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308

CONSTRUCTION DOCUMENTS

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

SHEET TITLE
BUILDING
PLAN

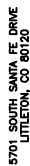
A-1

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL HIGH VOLTAGE L.C. EQUIPMENT THAT IS RESTING ON OR APPLIED TO ROOF MEMBRANE.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, L.C. ANTENNAS AND RELATED APPEARANCES TO MATCH EXISTING SURROUNDINGS.



BUILDING PLAN





IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG

CONSTRUCTION DOCUMENTS

[illegible]

**DISH Wireless LLC.
PROJECT INFORMATION
BOBOS00341B**

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
**ANTENNA PLAN,
ELEVATION AND SCHEDULE**

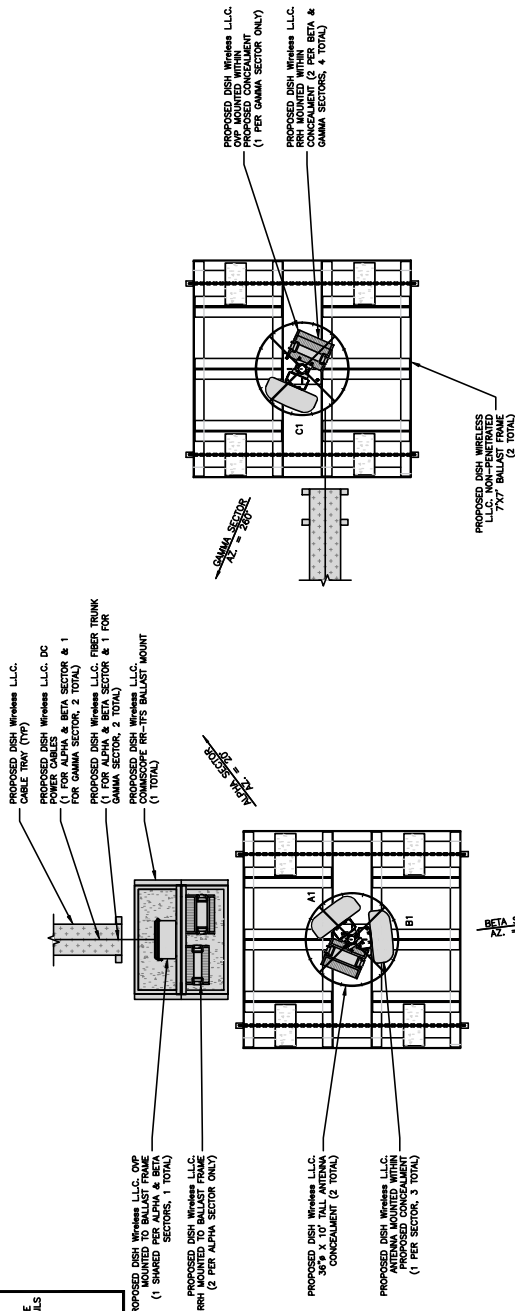
A-2

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS

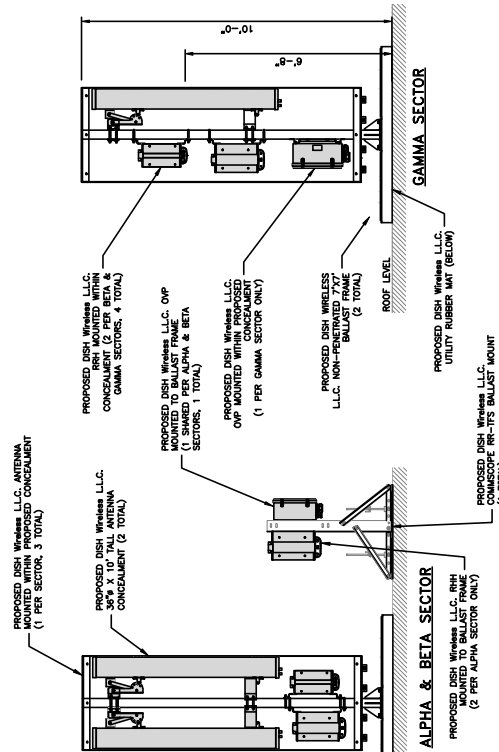
EXISTING EQUIPMENT OMITTED FOR CLARITY.

CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



GAMMA SECTOR

ALPHA & BETA SECTOR



GAMMA SECTOR

ALPHA & BETA SECTOR

[illegible]

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

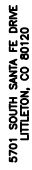
ANTENNA ELEVATION

ANTENNA SCHEDULE

10 SCALE

A-2

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC, ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



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OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

100753

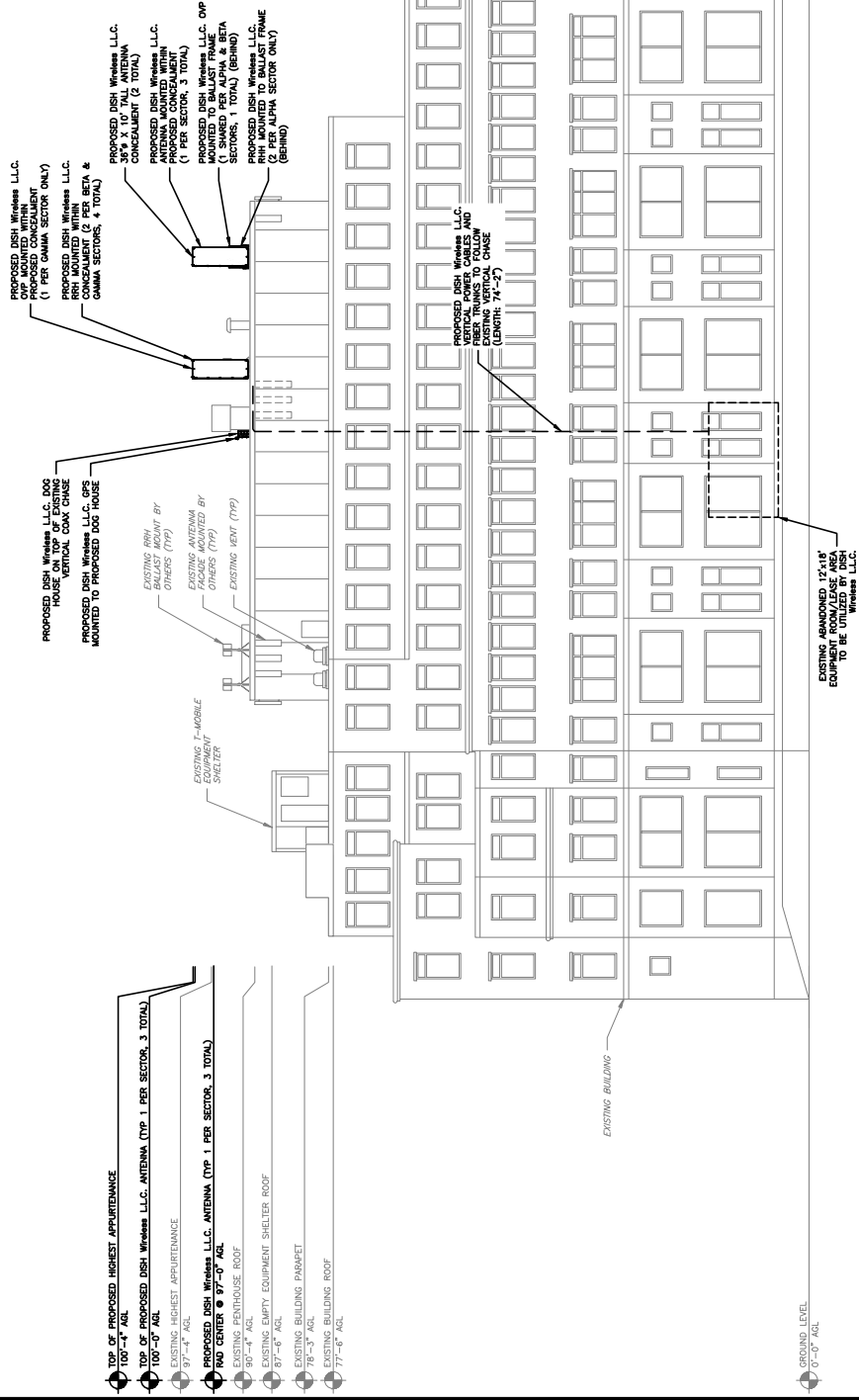
**DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B**

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE

BUILDING ELEVATION

A-3

**BUILDING ELEVATION**



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 JOLLO DRIVE
SUITE 300
CHELSEA, MA 02154
(617) 554-0300



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DATE	01/11/24
BY	DRG
CHECKED BY	NSB
DATE	0

CONSTRUCTION DOCUMENTS

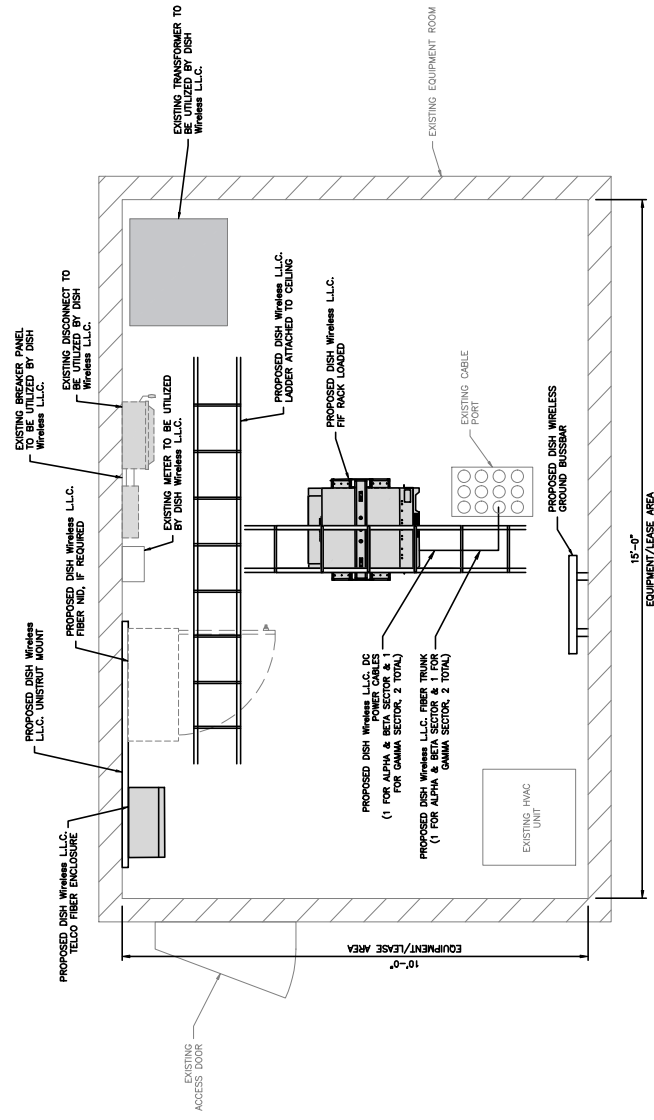
PROJECT NUMBER
100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

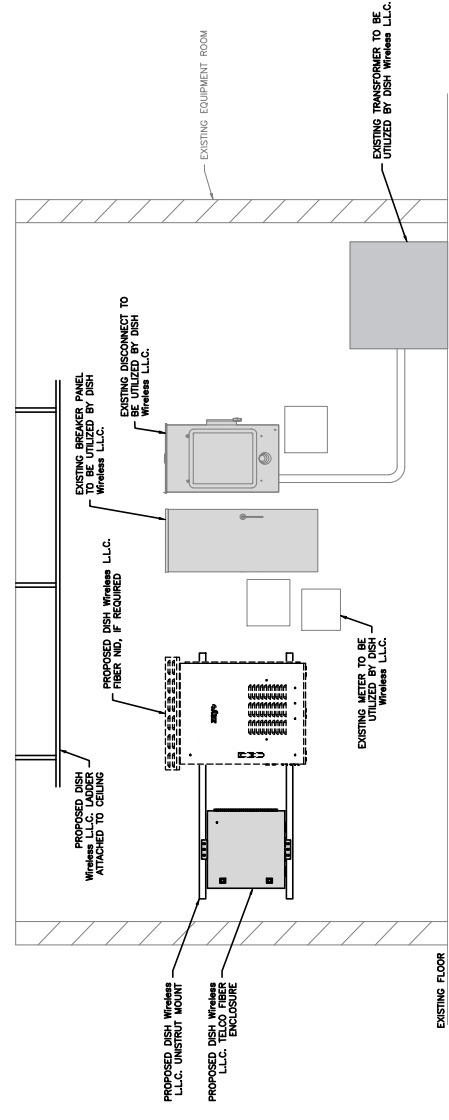
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER
A-4

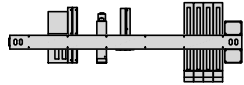
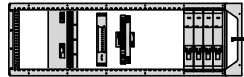


EQUIPMENT ROOM PLAN



EQUIPMENT ROOM ELEVATION

FIF RACK LOADED	
DIMENSIONS (HxWxD):	83.99"x28"x28.5"
WEIGHT:	±8900 lbs

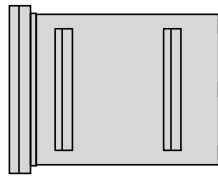
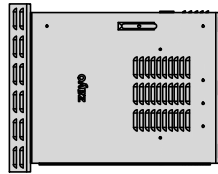
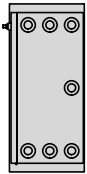


FIF RACK DETAIL

NO SCALE

1

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD):	36.1"x28"x12.8"
WEIGHT:	86 lbs

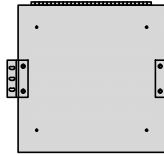
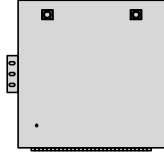
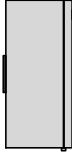


FIBER NID ENCLOSURE DETAIL

NO SCALE

4

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x8"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

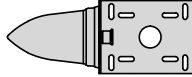
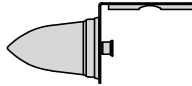


FIBER TELCO ENCLOSURE DETAIL

NO SCALE

5

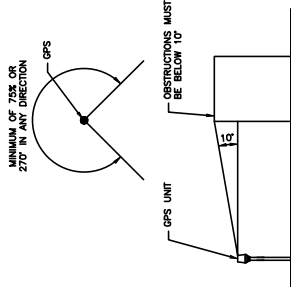
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DxHxT) MM/INCH	511.25/20.5x114.3/4.5x127.25/5
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1500 ± 30MHz



GPS DETAIL

NO SCALE

2

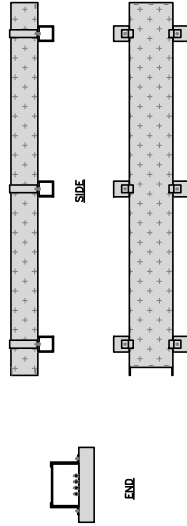


GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

3

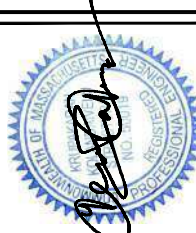
COMMSCOPE RT-CB4D ROOFTOP COVER KIT	
DIMENSIONS (HxWxD)	7"x 11.25"x 8"
WEIGHT/ VOLUME	86.98 LBS
CABLE RUN (FT)	4
MOUNTING INCLUDED PRODUCTS:	RTCB4D.01 CHANNEL (1) MT-F1586 SLEEPERS (3) RTCUH HARDWARE RTHC.01 HOLD-DOWN CLAMPS (6)



ROOFTOP CABLE TRAY DETAIL

NO SCALE

6



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DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG
RFDS REV #:	0	0

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER	100753
--------------------	--------

DISH WIRELESS, LLC
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-5

NO SCALE

9

NOT USED

NO SCALE

8

NOT USED

NO SCALE

7

NOT USED



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 02154
(617) 554-0300



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DRAWN BY: [blank] CHECKED BY: [blank] APPROVED BY: [blank]
CWE NSB DRG

RFDS REV #:

0

CONSTRUCTION DOCUMENTS

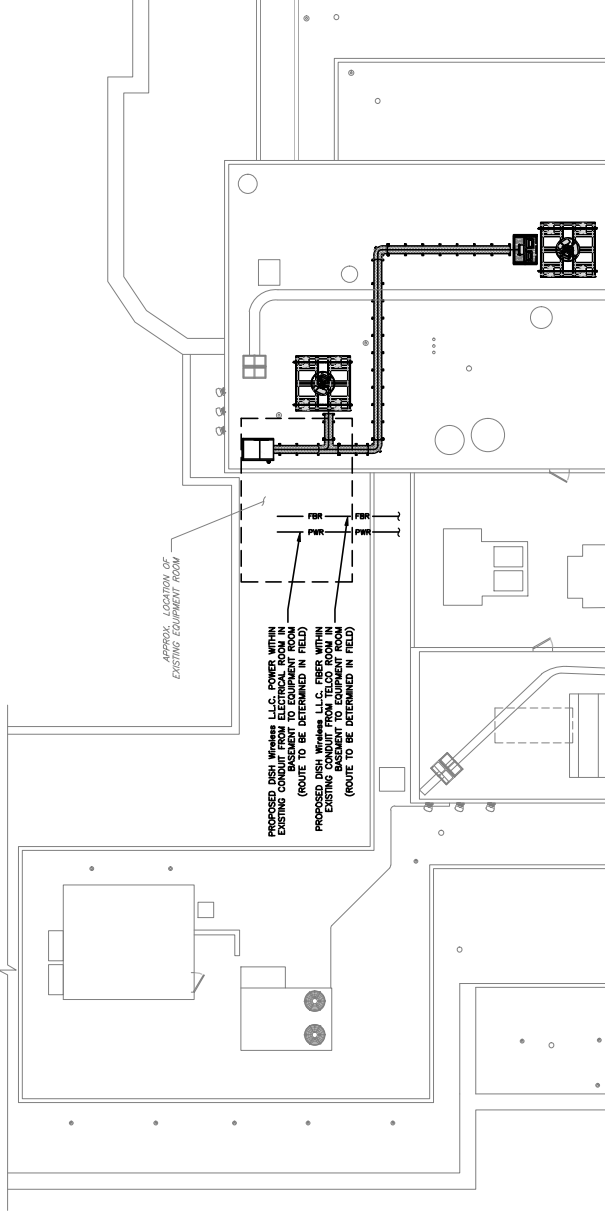
SUBMITTALS

REV DATE DESCRIPTION

0 01/1/24 REVISION FOR CONSTRUCTION

NOTES

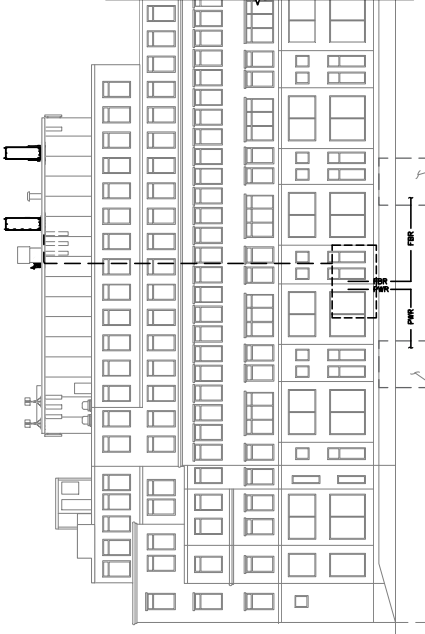
1. UTILIZE EXISTING ABANDONED CONDUITS WHERE AVAILABLE. REPLACE/INSTALL NEW CONDUIT SECTIONS AS NEEDED.
2. CONTRACTOR TO VERIFY WITH DISH WIRELESS LLC. THE LOCATION OF THE EQUIPMENT AND FIBER SOURCE PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.



UTILITY ROUTE PLAN

1

8" 4" 0 8" 16" 1/8"=1'-0"



UTILITY ROUTE ELEVATION

2

8" 4" 0 8" 16" 1/8"=1'-0"

NOT USED

3

NO SCALE

E-1

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

PROJECT INFORMATION
BOBOS00341B

DISH WIRELESS LLC.

100753

AAE PROJECT NUMBER



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



100 ARLO DRIVE
SUITE 303
CHELSEA, MA 01864
(978) 554-3300



IT IS A VIOLATION OF LAW FOR ANY PERSON
UNLESS THEY ARE A LICENSED PROFESSIONAL
TO SIGN THIS DOCUMENT.

DATE: 01/11/24
CWE: NSB
DRG: 0

CONSTRUCTION
DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

100753
A&E PROJECT NUMBER

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER
G-1

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BUS BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #6 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED
- BUS BAR INSULATOR

GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless LLC, GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
- NO EXOTHERMIC WELDING ON ROOFTOP

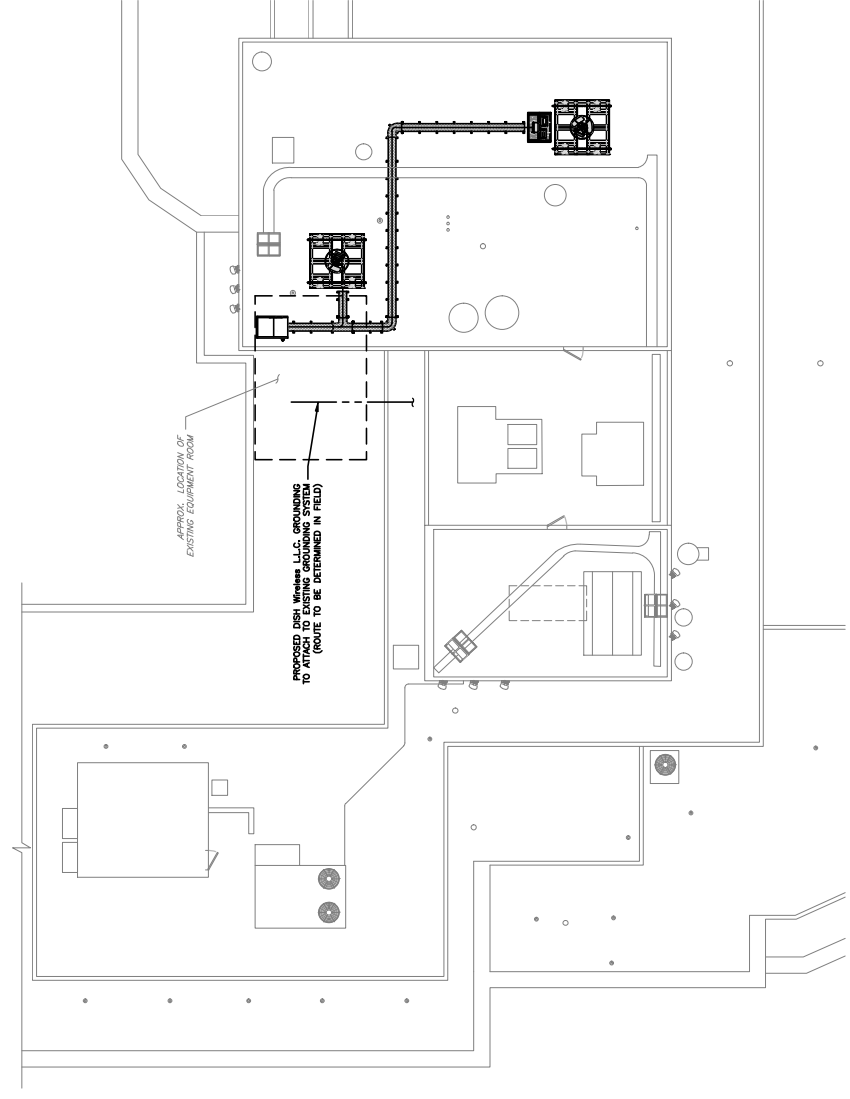
GROUNDING ROOFTOP KEY NOTES

- EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE OR 8 INCHES BELOW THE FIRST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- ROOFTOP GROUND SYSTEM: THE GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE BUILDING. ALL INTERIOR GROUND RINGS SHALL BE BOND TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING OR ROOM.
- GROUND ROD: UL LISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY 60" FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- CELL REFERENCE GROUND BAR (CGR): POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO COMMON BUILDING GROUND SYSTEM WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- HATCH PLATE GROUND BAR: BOND TO THE COMMON BUILDING GROUND SYSTEM WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH INSTALLED, THE HATCH-PLATE SHALL BE CONNECTED TO THE CELL REFERENCE GROUND BAR USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS DOWN.
- EXTERIOR CABLE ENTRY POINT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE ROOM, BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH MECHANICAL CONNECTIONS.
- TELECOM GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENT'S METAL FRAMEWORK.
- INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- FENCE AND GATE GROUNDING: METAL FENCES SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL, NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO THE BUILDING, SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM, USING #2 TINNED SOLID COPPER WIRE.
- ICE BREAKER SURGEPROT: EACH ICE BREAKER (IB) SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXTERIOR WELLS AT BOTH THE ICE BREAKER LEG AND BARE GROUND RING.
- BUILDING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS. IT SHALL BE REQUIRED THAT SERVICE AND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR.
- ROOFTOP COLLECTOR BUS BAR IS TO BE MECHANICALLY BONDED TO COMMON BUILDING GROUND SYSTEM. REFER TO DISH Wireless LLC, GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE

2



1

GROUNDING PLAN





5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 02154
(617) 554-3300



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DRAWN BY:	CHE	NSB	DRG
CHECKED BY:			

RFDS REV #:

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
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AAE PROJECT NUMBER
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DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

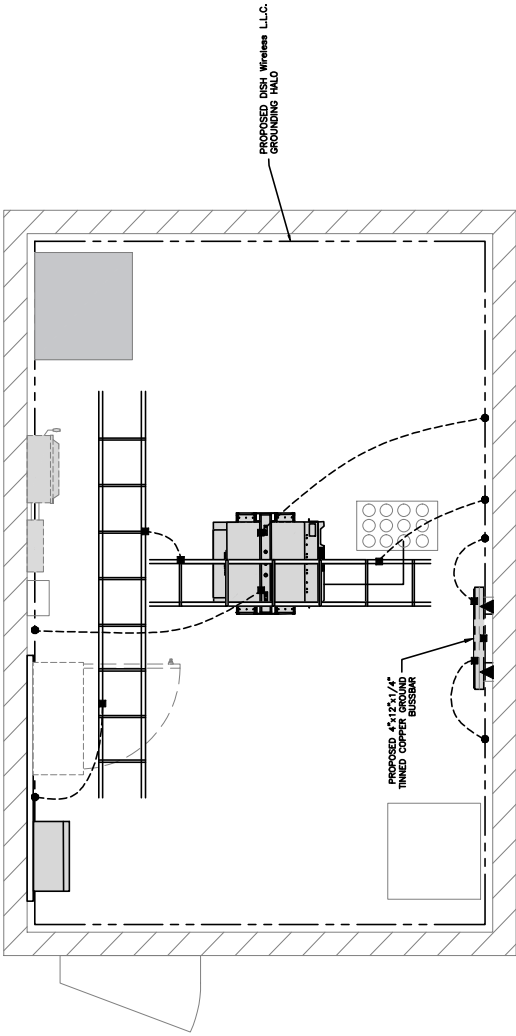
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

NOTE

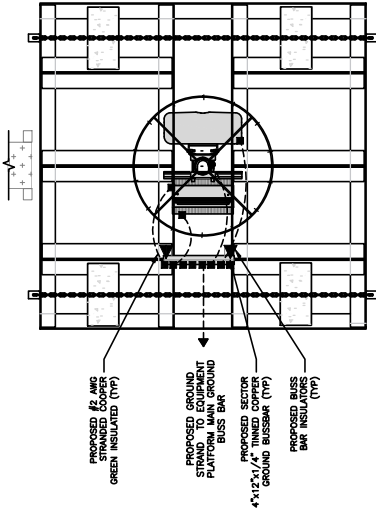
EQUIPMENT CABINET LIMITED FOR CLARITY



TYPICAL ROOFTOP EQUIPMENT GROUNDING PLAN

NO SCALE

1



TYPICAL ROOFTOP ANTENNA GROUNDING PLAN

NO SCALE

2

NOT USED

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
100 WOLLO DRIVE
SUITE 200
CHELSEA, MA 01824
(978) 265-3300



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TO ALTER THIS DOCUMENT.

DRAWN BY: [Signature]
CHECKED BY: [Signature]
DATE: 01/11/24
CWE: NSB DRG: 0

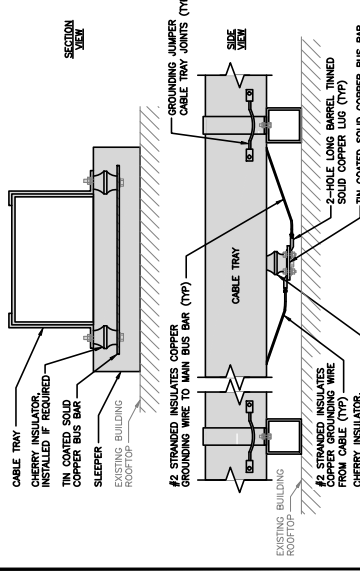
CONSTRUCTION DOCUMENTS

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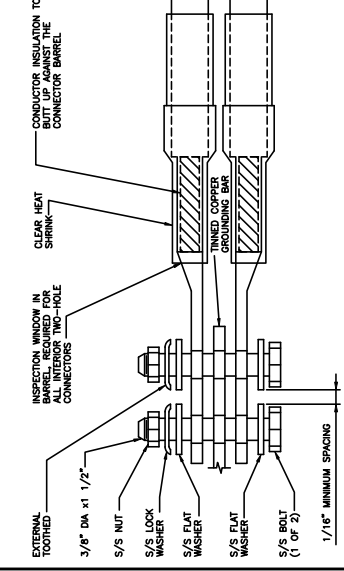
AAE PROJECT NUMBER	100753
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DISH Wireless, LLC
PROJECT INFORMATION
BOBOS00341B
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GROUNDING DETAILS
SHEET NUMBER
G-3

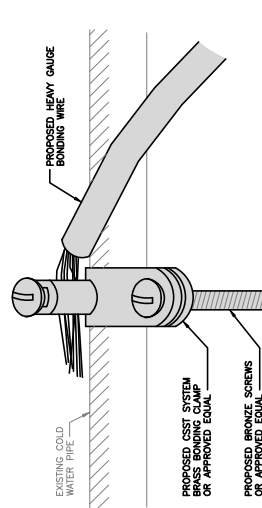


TYPICAL CABLE TRAY GROUND BUSS BAR

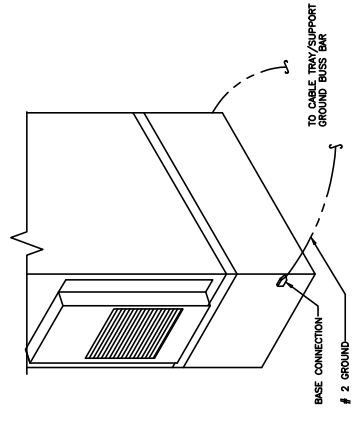


TYPICAL INTERIOR TWO HOLE LUG

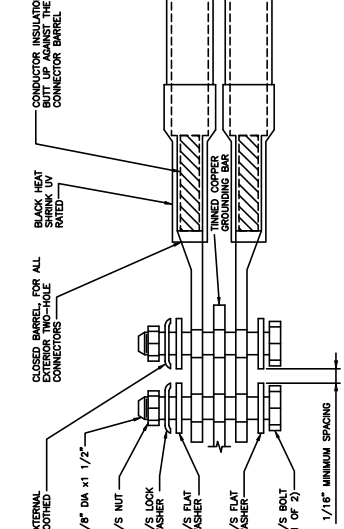
NOTE
REMOVE ANY PAINT ON PIPE OR FITTING SURFACE
UNDER BONDING CLAMP.



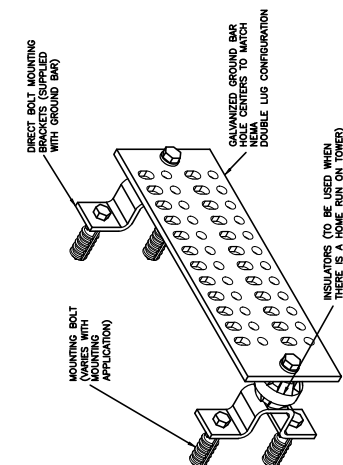
TYPICAL COLD WATER CONDUIT GROUNDING DETAIL



OUTDOOR CABINET GROUNDING



TYPICAL EXTERIOR TWO HOLE LUG

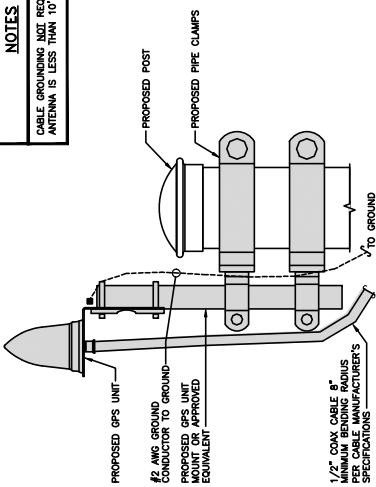


GROUND BAR DETAIL

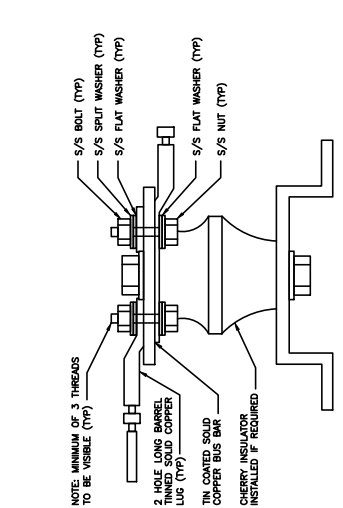
- EXOTHERMIC WELD (2) TWO #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURRED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. AN EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. AN EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER.
- FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
- ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHIMMERS).

TYPICAL GROUNDING NOTES

NOTES
CABLE GROUNDING NOT REQUIRED WHEN
ANTENNA IS LESS THAN 10' FROM CABINET

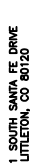


TYPICAL GPS UNIT GROUNDING



LUG DETAIL

[illegible]



1 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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CWE	NSB	DRG

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	04/14/04	RESUBMIT FOR COMPLETION

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100753

PROJECT INFORMATION
BOBOS00341B

BRATTLE SQUARE
BRIDGE MA 02138

SHEET TITLE
LEGEND AND

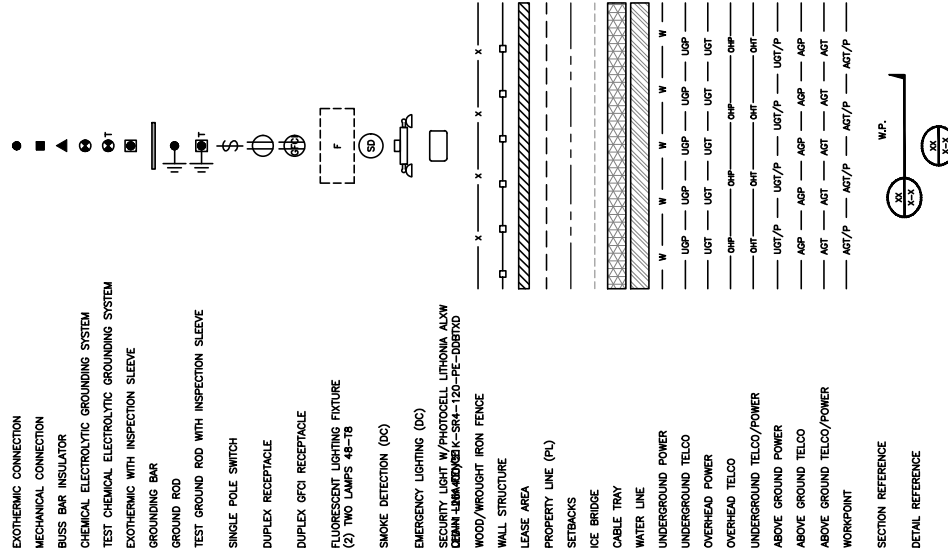
SHEET NUMBER

GN-1

AB	ANCHOR BOLT	IN	INCH
ABV	ABOVE	INT	INTERIOR
AC	ALTERNATING CURRENT	LE(S)	LINEAR FEET
ADL	ADDITIONAL	LF	LONG TERM EVOLUTION
AFF	ABOVE FINISHED FLOOR	LTE	MASONRY
AFG	ABOVE FINISHED GRADE	MAS	MAXIMUM
AGL	ABOVE GROUND LEVEL	MB	MACHINE BOLT
AIC	AMPERAGE INTERRUPTION CAPACITY	MECH	MECHANICAL
ALUM	ALUMINUM	MFR	MANUFACTURER
ALT	ALTERNATE	MGB	MASTER GROUND BAR
ANT	ANTENNA	MIN	MINIMUM
APPROX	APPROXIMATE	MISC	MISCELLANEOUS
ARCH	ARCHITECTURAL	MTL	METAL
ATS	AUTOMATIC TRANSFER SWITCH	MTS	MANUAL TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE	MW	MICROWAVE
BATT	BATTERY	NEC	NATIONAL ELECTRIC CODE
BLDG	BUILDING	NM	NEWTON METERS
BLK	BLOCK	NO.	NUMBER
BLKG	BLOCKING	#	NOT TO SCALE
BM	BEAM	NTS	NOT TO SCALE
BTC	BARE TINED COPPER CONDUCTOR	OC	ON-CENTER
BUP	BOTTOM OF FOOTING	OSH	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CAB	CABLE	OPNG	OPENING
CHAS	CHANNEL	P/C	PRECAST CONCRETE
CLS	CEILING	PCS	PERSONAL COMMUNICATION SERVICES
CLR	CLEAR	PCU	PRIMARY CONTROL UNIT
COL	COLUMN	PP	PRIMARY RADIO CABINET
COMM	COMMON	PPS	POLARIZING PRESERVING
CONC	CONCRETE	PSF	POUNDS PER SQUARE FOOT
CONSTR	CONSTRUCTION	PSI	POUNDS PER SQUARE INCH
DBL	DOUBLE	PWR	PRESSURE TREATED
DC	DIRECT CURRENT	QTY	POWER CABINET
DEPT	DEPARTMENT	R	QUANTITY
DIA	DIAMETER	RAD	RADIUS
DIA	DIAGONAL	RECT	RECTIFIER
DM	DIMENSION	REF	REFERENCE
DWG	DRAWING	RENF	REINFORCEMENT
DWL	DOWEL	REQ'D	REQUIRED
EA	EACH	RET	REMOTE ELECTRIC TILT
EC	ELECTRICAL CONDUCTOR	RF	RADIO FREQUENCY
EL	ELEVATION	RAC	RIGID METALLIC CONDUIT
ELEC	ELECTRICAL	RHH	REMOTE RADIO HEAD
EMT	ELECTRICAL METALLIC TUBING	RHU	REMOTE RADIO UNIT
ENG	ENGINEER	RWT	RACKWAY
EQ	EQUAL	SCH	SCHEDULE
EXP	EXPANSION	SHT	SHEET
EXT	EXTERIOR	SMD	SMART INTEGRATED ACCESS DEVICE
EW	EACH WAY	SPEC	SPECIFICATION
FAB	FABRICATION	SC	SQUARE
FF	FINISH FLOOR	SS	STAINLESS STEEL
FG	FINISH GRADE	STD	STANDARD
FF	FACILITY INTERFACE FRAME	STL	STEEL
FIN	FINISH(ED)	TEMP	TEMPORARY
FLOOR	FLOOR	THK	THICKNESS
FDN	FOUNDATION	TMA	TOWER MOUNTED AMPLIFIER
FDM	FACE OF CONCRETE	TN	TOP NAIL
FOM	FACE OF MASONRY	TDA	TOP OF ANTENNA
FOS	FACE OF STUD	TOP	TOP OF CURB
FOW	FACE OF WALL	TOP	TOP OF FOUNDATION
FS	FINISH SURFACE	TOP	TOP OF PLATE (PARAPET)
FOOT	FOOT	TOS	TOP OF STEEL
FTG	FOOTING	TOW	TOP OF WALL
GA	GAUGE	TSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GEN	GENERATOR	TYP	TYPICAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UG	UNDERGROUND
GLB	GLUE LAMINATED BEAM	UL	UNDERWRITERS LABORATORY
GLV	GLAZIEMED	UNO	UNLESS NOTED OTHERWISE
GPS	GLOBAL POSITIONING SYSTEM	UNPS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GND	GROUND	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
GSM	GLOBAL SYSTEM FOR MOBILE	VIF	VERIFIED IN FIELD
HGR	HOT DIPPED GALVANIZED	W	WIDE
HNGR	HANGER	W/	WITH
HMC	HEAT/VENTILATION/AIR CONDITIONING	W/	WOOD
HT	HEIGHT	WT	WEATHERPROOF
		WP	WEIGHT

ABBREVIATIONS

LEGEND



SIGN TYPES		
TYPE	COLOR	PURPOSE
NOTICE	GREEN	ADVISE THE PUBLIC OF THE PRESENCE OF RADIO FREQUENCY EMISSIONS AND THE POTENTIAL FOR EXPOSURE TO RADIO FREQUENCY EMISSIONS.
CAUTION	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	YELLOW	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless LLC.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless LLC EQUIPMENT.
- A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless LLC H-FRAME WITH A SECURE ATTACH METHOD.
- B) IF THE INFORMATION SIGN IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless LLC CONSTRUCTION MANAGER RECOMMENDATIONS.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS, PLEASE CONTACT DISH Wireless LLC CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless LLC LOGO, SEE DISH Wireless LLC DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless LLC.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless LLC APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless LLC CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE, APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREENS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-8874

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE



Transmitting Antenna(s)

Radio frequency fields beyond this point MAY EXCEED the FCC Occupational exposure limit.

ObeY all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-8874 prior to working beyond this point.

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION



Transmitting Antenna(s)

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WARNING



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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
100 HOLLO DRIVE
SUITE 200
CHELSEA, MA 01864
(978) 666-6300



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DRAWN BY: CHECKED BY: APPROVED BY:
CWE NSB DRG
RFDS REV #:

CONSTRUCTION DOCUMENTS

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REV	DATE DESCRIPTION
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AAE PROJECT NUMBER

100753

DISH Wireless LLC
PROJECT INFORMATION

BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE

RF SIGNAGE

SHEET NUMBER

GN-2

RF SIGNAGE

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH WIRELESS LLC. AND TOWER OWNER NCC & THE DISH WIRELESS LLC. AND TOWER OWNER CONSTRUCTION MANAGER.

- GENERAL NOTES:**

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER-DISH Wireless LLC

TOWER OWNER·TOWER OWNER

9. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLIANCE NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
10. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
11. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS, WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
12. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST THE FABRICATOR AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
13. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CARRIER POC AND TOWER OWNER.
14. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR 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.
15. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS; EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
16. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
17. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
18. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL UTILITIES FOR POWER, TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEDMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
20. CONTRACTOR 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.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

 dish wireless. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120	 NB+CTM TOTALLY COMMITTED. NB-C ENGINEERING SERVICES, LLC. 100 APOLLO DRIVE CHELSEA/FORD, MA 01824 (978) 894-4308	 <i>Michael J. DeRubeis</i>	IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE AN ENGINEER UNDER THE JURISDICTION OF A PROFESSIONAL BOARD OF ENGINEERS, TO ALTER THIS DOCUMENT. DRAWN BY: _____ CHECKED BY: _____ APPROVED BY: _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CWE</th> <th>NSB</th> <th>DRG</th> </tr> </thead> <tbody> <tr> <td>RPTS REV #:</td> <td></td> <td>0</td> </tr> </tbody> </table>	CWE	NSB	DRG	RPTS REV #:		0												
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CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 338, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'_c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90° AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WFF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (F_y) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT AVAILABLE AT THE LOCATION OF THE DEVICE. THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THWN, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THWN, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THWN, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE. COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMO), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREFOLD SPECIMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANOUT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE. MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. CONDUITS SHALL BE PROTECTED FROM PHYSICAL DAMAGE BY THE INSTALLATION OF PROTECTIVE COVERINGS. CONDUIT OBSTRUCTIONS ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
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SUITE 200
CHELMSFORD, MA 01824
(978) 265-3300



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DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG

NOTES REV #:

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/1/24	ISSUED FOR CONSTRUCTION

AAE PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GESS'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. 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 BITS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BITS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BITS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR SUCH AS METALLIC CONDUITS, METAL SUPPORT, CLIPS, OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED, WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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CWE NSB DRG

RFDS REV #:

CONSTRUCTION DOCUMENTS

SUBMITTALS	
REV	DATE DESCRIPTION
0	01/11/24 ISSUED FOR CONSTRUCTION

AAE PROJECT NUMBER
100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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RFD REV #:

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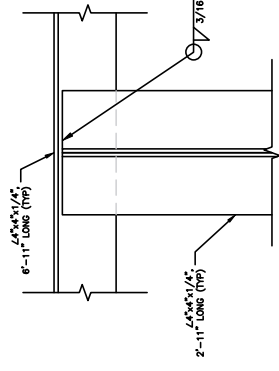
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DISH Wireless, LLC.
PROJECT INFORMATION
BOBOS00341B

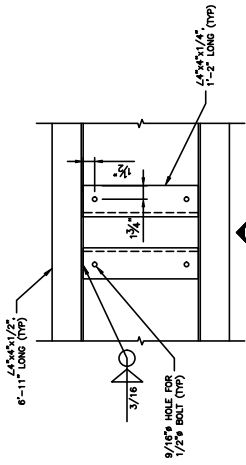
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
CONCEALMENT DETAILS &
CONCEALMENT ELEVATIONS

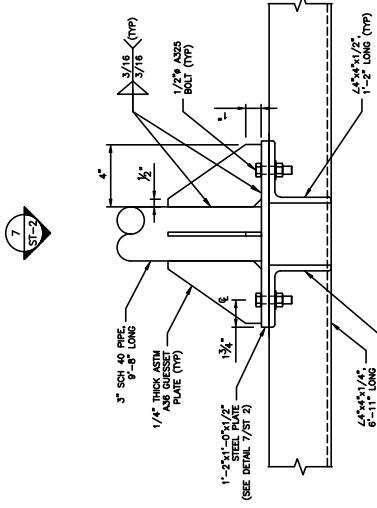
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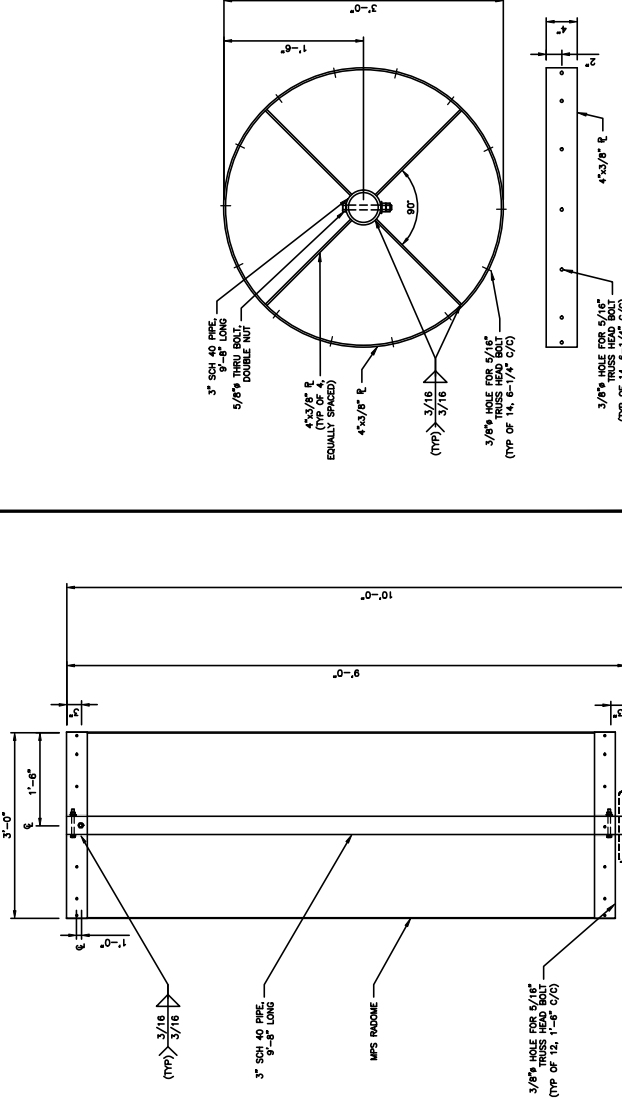
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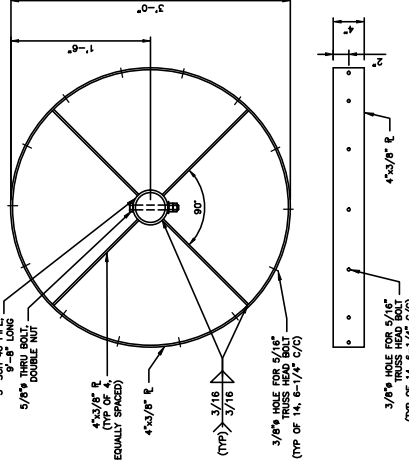
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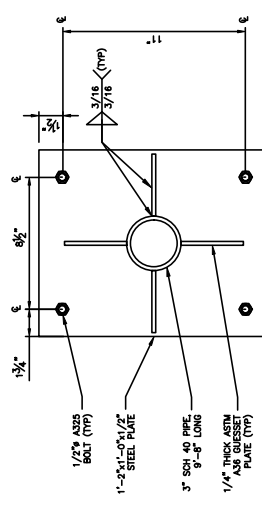
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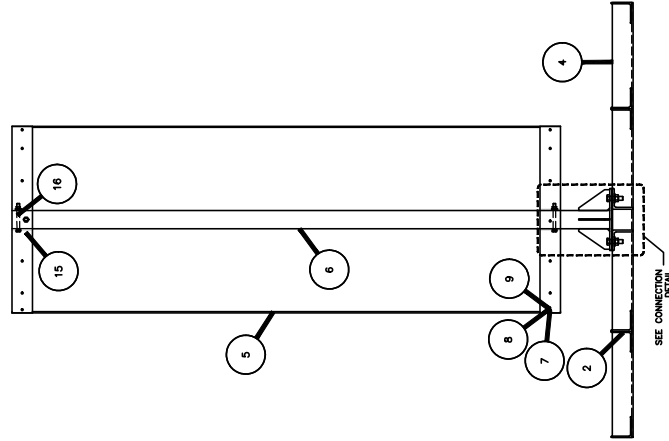
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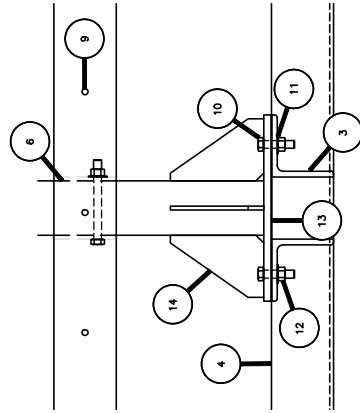
BULKHEAD DETAIL 5



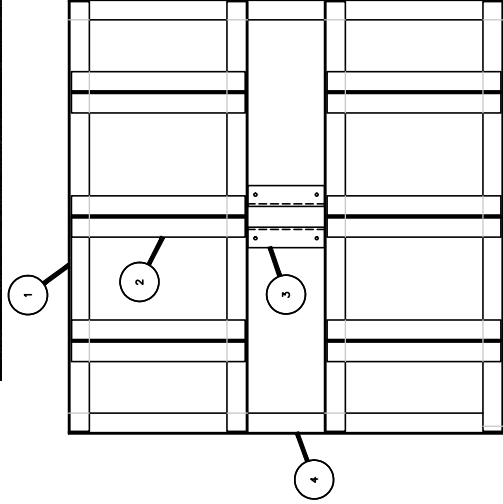
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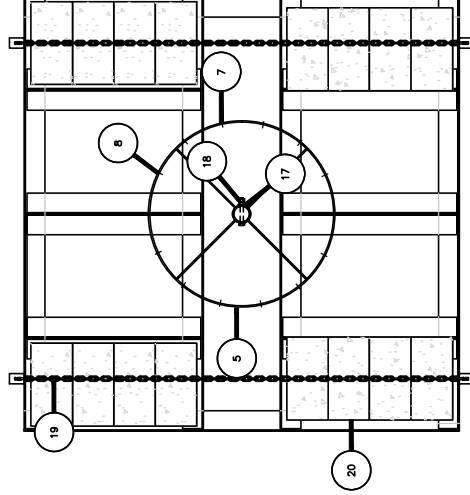
CONCEALMENT ELEVATION



CONNECTION DETAIL



OVERALL BALLAST FRAME PLAN



OVERALL CONCEALMENT PLAN

ITEM #	DESCRIPTION	SIZE	LENGTH	Part Number	QTY
1	Steel Angle	4"x4"x1/4"	6'-11"	N/A	4
2	Steel Angle	4"x4"x1/4"	2'-11"	N/A	12
3	Steel Angle	4"x4"x1/2"	1'-2"	N/A	2
4	Steel Angle	4"x4"x1/4"	7'-0"	N/A	2
5	ABS Cylinder	3'-0"x3/16"	8'-10"	N/A	1
6	Steel Pipe	3" SCH 40	9'-7"	N/A	1
7	Truss Head Bolt	5/16"Ø	1"	N/A	28
8	Washer	5/16"Ø	N/A	N/A	28
9	Hex Nut	5/16"Ø	N/A	N/A	28
10	A325 Bolt	1/2"Ø	2"	N/A	4
11	Washer	1/2"Ø	N/A	N/A	4
12	Hex Nut	1/2"Ø	N/A	N/A	4
13	Steel Plate	1'-2"x1'-0"x1/2"	N/A	N/A	1
14	Gusset Plate	6"x4"x1/4"	N/A	N/A	4
15	Steel HSS Pipe	4"x0.22"	4"	N/A	2
16	Bolt, Thru	5/8"Ø	4"	N/A	2
17	Washer	5/8"Ø	N/A	N/A	2
18	Hex Nut	5/8"Ø	N/A	N/A	4
19	Tie-Down Kit	N/A	N/A	SitePro1 BHD10-K	2
20	Hollow Conc. Block	2'-10"x1'-4"x16"	N/A	N/A	4



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 01824
(978) 554-3300



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CWE NSB DRG
RFS REV # 0

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

AAE PROJECT NUMBER
100753

DISH Wireless, LLC.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
BILL OF MATERIALS

SHEET NUMBER
ST-3

Please see the attached Cultural Resources Summary report, included as Attachment C3 of the FCC Form 621.

If you have any questions or comments, please contact our office.

Ramaker & Associates, Inc.
855 Community Drive
Sauk City, Wisconsin 53583
(608) 643-4100

Direct APE Summary & Evaluation



BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Massachusetts 02138
Middlesex County



NOT TO SCALE

Please see the attached Cultural Resources Summary report, included as Attachment C3 of the FCC Form 621.

If you have any questions or comments, please contact our office.

Ramaker & Associates, Inc.
855 Community Drive
Sauk City, Wisconsin 53583
(608) 643-4100

Indirect APE Summary & Evaluation



BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Massachusetts 02138
Middlesex County



NOT TO SCALE



July 5, 2024

**TO: Massachusetts SHPO
Interested THPOs/NHOs**

SUBJECT: Cultural Resources Report (Direct & Indirect APE Summary)

**PROJECT: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts 02138
Ramaker & Associates, Inc. Project #60991**

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on an existing 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs). The curriculum vitae for the Principal Investigators involved in the preparation of this submittal have been included in Attachment A of the attached FCC Form 621.

GENERAL PROJECT SUMMARY

The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

DISH proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

Upon review, the facility does not qualify for an exclusion under the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, March 7, 2005, 47 CFR, Appendix C to Part 1, the First Amendment to Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, August 8, 2016, or the Code of Federal Regulations: 47 CFR, §§ 1.1301-1.1319.

The locations of the site, site photographs, and appropriate Area of Potential Effect (APE) maps have been included in Attachment B of the attached FCC Form 621.

DIRECT APE EVALUATION

The Direct APE is limited to the area of potential ground disturbance and any property, or any portion thereof that will be physically altered or destroyed by the Undertaking. On November 24, 2008, the FCC further clarified that the Direct APE is limited to the tower or non-tower structure on which the collocation will be mounted as well as the lease area including the access route and utility corridor. As part of this project, Ramaker considered two facets of the Direct APE with respect to a collocation to non-tower structure. As outlined by the FCC, this included the potential to impact Archaeological Resources associated with any potential ground disturbance activities as well as the historical significance of the support structure and the subsequent potential for impact to the historic integrity of the support structure as a result of the proposed collocation activities. The following is a summary of the potential for effect to the Direct APE when considering these two facets:

Archaeological Resources: Ramaker reviewed the proposed collocation activities and identified that as part of this project there would be no new ground disturbance activities. Due to the nature of the proposed construction activities, an archaeological survey was not completed as part of this review. It is the opinion of Ramaker that the proposed undertaking will result in **“No Historic Properties Affected”** in the projects Direct APE.

Support Structure: Similar to the Indirect APE review (below), Ramaker reviewed the SHPO's records for historically significant structures to qualify whether the support structure had been previously identified to be a structure of potential architectural and/or cultural significance. The SHPO's records, and research (interviews, literature review, etc.) completed by Ramaker, failed to note any criteria that suggest that the host-structure should be NRHP-eligible. Based on the findings associated with this investigation, Ramaker has concluded that the project will result in **“No Historic Properties Affected”** in the Direct APE, when considering the antenna support structure.

In summary, and based on the findings associated with this investigation, Ramaker has concluded that the project will result in **“No Historic Properties Affected”** in the Direct APE, including both the potential for effect to Archaeological Resources and the support structure.

INDIRECT APE EVALUATION

The Area of Potential Effect (APE) for visual effects is the geographic area in which the Undertaking has the potential to introduce visual elements that diminish or alter the setting, including the landscape, where the setting is a character-defining feature of a Historic Property that makes it eligible for listing on the National Register of Historic Places (NRHP). Due to the dense urban development and large tree growth in the surrounding area, Ramaker has determined, as authorized by Section VI (C) of the Nationwide Programmatic Agreement, and seeks your mutual agreement that an appropriate alternative APE for visual effects for this project should be an area within a 600 foot (reduced from one half mile) radius of the project site. Please note, the proposed development will be minimally visible beyond 600 feet of the host structure due to the above stated reasons, as depicted in the attached APE photographs. Ramaker completed research using the SHPO's GIS database and then completed a “window

survey” of the Indirect APE so as to consider any sites that were previously unreported or potentially eligible for the NRHP. In addition, Ramaker is in the process of consulting with the Cambridge Historical Commission, the City of Cambridge Planning Board and History Cambridge. Lastly, Ramaker is in the process of soliciting public comments through the filing of public notice in the local newspaper. These activities are being completed so as to further identify any properties that had not been previously considered.

As part of the Indirect APE review, Ramaker complied with Section VI.D.1.a of the Nationwide Agreement which specifically notes:

Except to identify Historic Properties of religious and cultural significance to Indian tribes and NHOs, Applicants shall identify Historic Properties within the APE for visual effects by reviewing the following records. Applicants are required to review such records only to the extent they are available at the offices of the SHPO/THPO or can be found in publicly available sources identified by the SHPO/THPO. With respect to these properties, Applicants are not required to undertake a Field Survey or other measures other than reviewing these records in order to identify Historic Properties:

- i. Properties listed in the National Register;*
- ii. Properties formally determined eligible for listing by the Keeper of the National Register;*
- iii. Properties that the SHPO/THPO certifies are in the process of being nominated to the National Register;*
- iv. Properties previously determined eligible as part of a consensus determination of eligibility between the SHPO/THPO and a Federal Agency*
or local government representing the Department of Housing and Urban Development (HUD); and
- v. Properties listed in the SHPO/THPO Inventory that the SHPO/THPO has previously evaluated and found to meet the National Register criteria and*
that are identified accordingly in the SHPO/THPO Inventory.

This research identified several historic (Landmark, Nation Register-Eligible, etc.) features as being located within the Indirect APE. The search records for properties within the Indirect APE are detailed further in the Indirect APE Evaluation and Summary Table. When considering the potential for effect, Ramaker has concluded that the project will result in **“No Adverse Effect”** to cultural or historic properties in the Indirect APE.

FINDINGS

Based on our findings, Ramaker has concluded that the proposed DISH activities will result in **“No Historic Properties Affected”** in the Direct APE and **“No Adverse Effect”** to cultural or historic properties in the Indirect APE.

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

Sincerely,

Ramaker & Associates, Inc.



Daniel Feldmann, Environmental Scientist

Attachments:

Indirect APE Evaluation & Summary Table

Site Plan (Direct APE Map)

Indirect APE (Viewshed) Map

Site & Indirect APE Photographs

INDIRECT APE SUMMARY EVALUATION

SHPO ID Number:	Historic Name	Common Name	Site Address:	Previous NRHP Eligibility Determination:	Additional Information:
CAM.9	Boston Elevated Railway Division 7 Headquarters	MBTA Survey Phase I	112 Mount Auburn St 15-17 Bennett St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.15	Brattle Hall	Brattle Theater - Cambridge Social Union	40 Brattle St Cambridge	NRIND (1982) NRMRA (1982) NRDIS (1988) NRMRA (1988)	
CAM.16	Brattle, William House	Cambridge Social Union Building	42 Brattle St Cambridge	NRIND (1973) NRDIS (1988) NRMRA (1988) LL (1989) PR (2014)	
CAM.17	Pratt, Dexter House	Window Shop, The	54 Brattle St Cambridge	NRIND (1973) LL (1989) PR (2012)	
CAM.103		Christian Scientist Reading Room - London Harness	23-25 Church St Cambridge	LHD (1986) NRDIS (1988) NRMRA (1988)	
CAM.104		Young and Yee Restaurant	27-29 Church St Cambridge	LHD (1986) NRDIS (1988) NRMRA (1988)	
CAM.105	Cambridge Police Station	Prep Shop Clothing Store	31-33 Church St Cambridge	LHD (1986) NRDIS (1988) NRMRA (1988)	
CAM.121	Second Cambridge Savings Bank Building	Dana Chambers	11-21 Dunster St Cambridge	NRIND (1983) NRMRA (1983) NRDIS (1988) NRMRA (1988)	
CAM.137			10-12 Farwell Pl Cambridge	LHD (1986) NRDIS (1987) NRMRA (1987)	
CAM.138	Nichols House		11 Farwell Pl Cambridge	LHD (1986) NRDIS (1987) NRMRA (1987)	
CAM.139			14-16 Farwell Pl Cambridge	LHD (1986) NRDIS (1987) NRMRA (1987)	
CAM.142			18-20 Farwell Pl Cambridge	LHD (1986) NRDIS (1987) NRMRA (1987)	
CAM.316	Craigie Arms		2-6 University Rd 122 Mount Auburn St and 6 Bennett St Cambridge	NRIND (1986) NRMRA (1986)	
CAM.329	Cox - Hicks House	Harvard University Development Office	98 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988) LL (1989)	
CAM.950	Winthrop Square Park		Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.951	Winthrop Street Retaining Wall		98 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1068	Brattle Building		4 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1069	Atrium Building		9-11 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1070	Estes Block		13-15 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1071			12-16 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1072	Dow Block		17-35 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1073			18 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1074			26 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1075	Hadley Building		28-36 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1076	Cambridge Federal Savings Bank		38A Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1077			39-41 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1078			40A Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	

INDIRECT APE SUMMARY EVALUATION

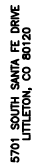
SHPO ID Number:	Historic Name	Common Name	Site Address:	Previous NRHP Eligibility Determination:	Additional Information:
CAM.1084	Washington Court		51 Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1085		Wagon Works	26-28 Church St Cambridge	NRDIS (1988) NRMRA (1988) PR (1995)	
CAM.1086	Oxford Grill		32-42 Church St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1087	Hancock - Torrey House		53 Church St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1088			54-56 Church St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1089			59-63 Church St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1090	Union Railway Car barn		25-33 Dunster St 79-83 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1096	Hotel Packard	Charlie's Restaurant	10-14 Eliot St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1097			14A Eliot St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1098			16-18 Eliot St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1108	Abbott Building		5 Kennedy St Cambridge	NRDIS (1982) NRMRA (1982)	
CAM.1109			9-25 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1110	Farwell, Levi Tenant House		10-14 Kennedy St Cambridge	NRDIS (1982) NRMRA (1982)	
CAM.1111	Read Block		18-28 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1112			29-41 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1113			30 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1114	Garage, The		34-42 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1115	Fox Club		44 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1116	Drayton Hall		48 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1117			50 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1118			52-54 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1119	Galeria		55-57 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1122			63-65 Kennedy St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1126	U. S. Post Office - Cambridge Branch		125 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1145	Read, Joseph Stacey House		1380-1382 Massachusetts Ave Cambridge	NRDIS (1982) NRMRA (1982)	
CAM.1146	Bartlett, Joseph House		1384-1392 Massachusetts Ave 4 Kennedy St Cambridge	NRDIS (1982) NRMRA (1982)	
CAM.1147	Harvard Coop Society		1400 Massachusetts Ave Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.1148	Harvard Coop Society		1400 Massachusetts Ave Cambridge	NRDIS (1988) NRMRA (1988)	

INDIRECT APE SUMMARY EVALUATION

SHPO ID Number:	Historic Name	Common Name	Site Address:	Previous NRHP Eligibility Determination:	Additional Information:
CAM.11168			95-97 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11169			99 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11170	Cantabrigia Club		100 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988) PR (1997)	
CAM.11171			102 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11172			104 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11173			110 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11175	Trinity Hall		114-120 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11176			120R Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11177	Waverly Hall		115 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11178			119-123 Mount Auburn St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11179	Coop Annex		18 Palmer St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11186			4-6 Story St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11187			8-12 Story St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11188			14-16 Story St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11190			65-67 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11192			69 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11193	PI Eta Club		89 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988) PR (1997)	
CAM.11194	PI Eta Hall		95 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.11195	Hyde, Isaac - Taylor House		96 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988) LL (1989)	
CAM.11196	Dame School		106 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.9046	Harvard Square - Gateway to Knowledge Sculpture		Mount Auburn St Mount Auburn St and Brattle St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.9047	Winthrop Square Park - Quiet Cornerstone Sculpture	Winthrop Square Park - Quiet Stone Sculpture	83 Winthrop St Cambridge	NRDIS (1988) NRMRA (1988)	
CAM.A	Cambridge Common Historic District			LHD (1986) NRDIS (1987) NRMRA (1987)	Other Educational; Other Institutional; Other Recreational; Other Religious; Residential District;

INDIRECT APE SUMMARY EVALUATION

SHPO ID Number:	Historic Name	Common Name	Site Address:	Previous NRHP Eligibility Determination:	Additional Information:
CAM.BD	Cambridge Common Historic District			NRDIS (1973) NRMRA (1973) LHD (1986)	Other Educational; Other Institutional; Other Recreational; Other Religious; Residential District;
CAM.BG	Harvard Square Historic District			NRDIS (1982) NRMRA (1982)	Other Educational; Other Governmental or Civic; Other Institutional; Residential District;



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



NB+C ENGINEERING SERVICES, LLC.
100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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CWF	NSB	DRG

SUBMITTALS			
REV	DATE	DESCRIPTION	
0	01/11/24	ISSUED FOR CONSTRUCTION	

100753

DISH Wireless LLC.
PROJECT INFORMATION
BQBQS00341B

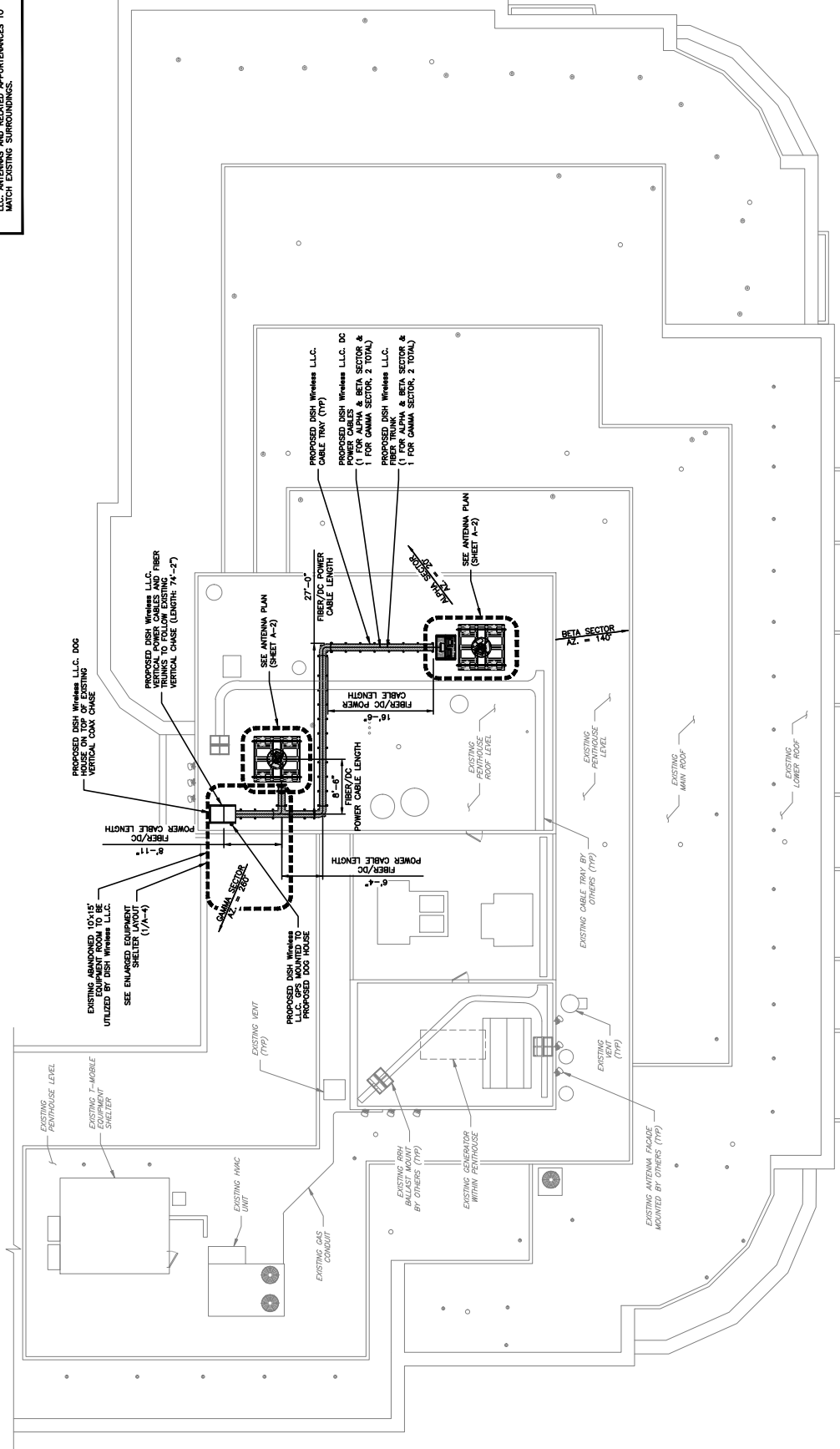
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE

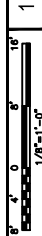
BUILDING PLAN

A-1

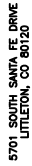
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL DISH WIRELESS LLC EQUIPMENT THAT IS RESTING ON OR AFFIRED TO ROOF MEMBRANE.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



BUILDING PLAN



1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC, ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



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CWE	NSB	DRG

CONSTRUCTION
DOCUMENTS

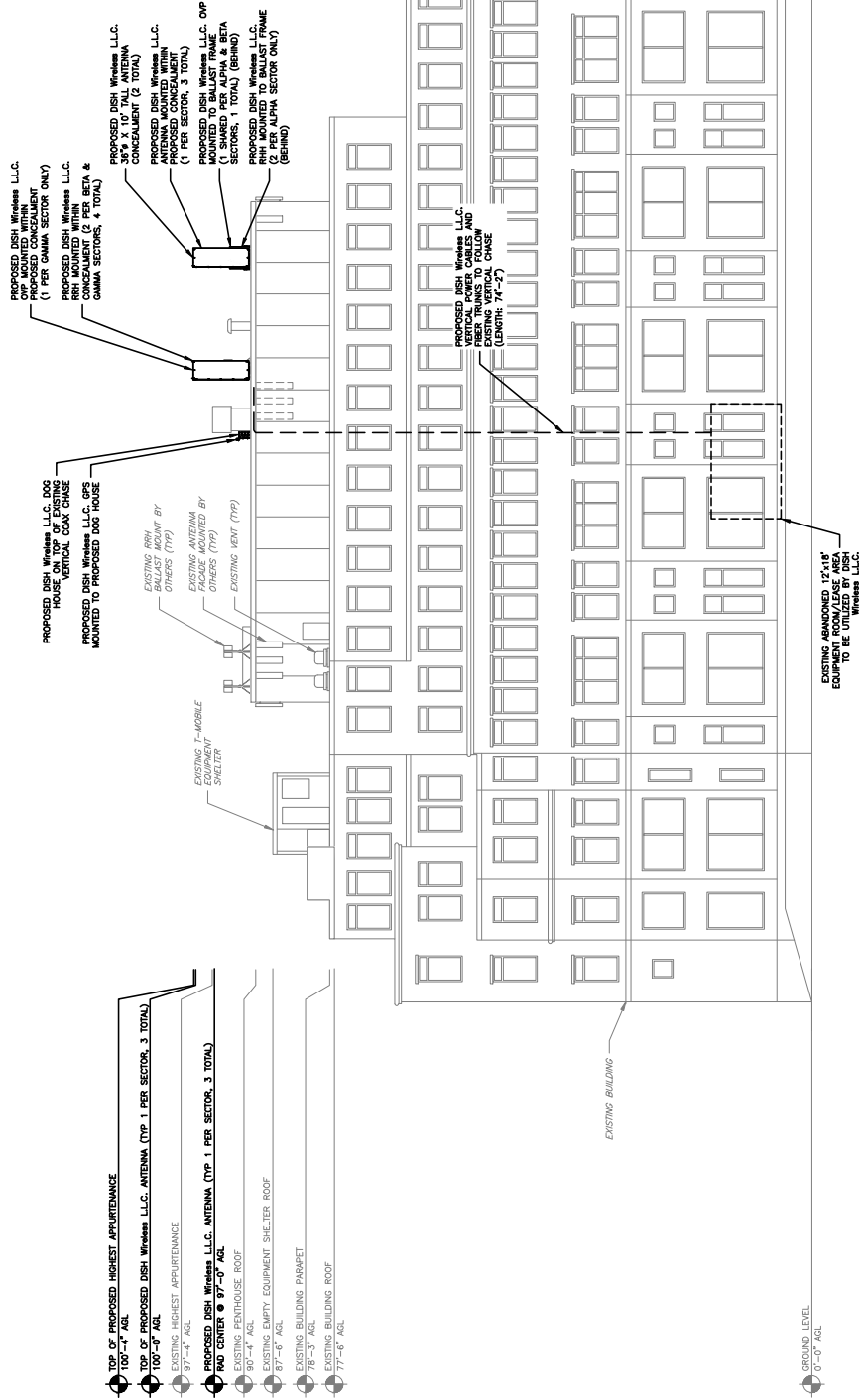
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100753
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE	BUILDING ELEVATION
SHEET NUMBER	

A-3



BUILDING ELEVATION



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



NB+C ENGINEERING SERVICES, LLC.
100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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CWE	NSB	DRG

RFDS REV #:	0
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CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

A&E PROJECT N°

100753

FILED **WISCONSIN** **11 0**

PROJECT INFORMATION

BOBOS00341B

BRATTIE SQUARE

BRIDGE, MA 02

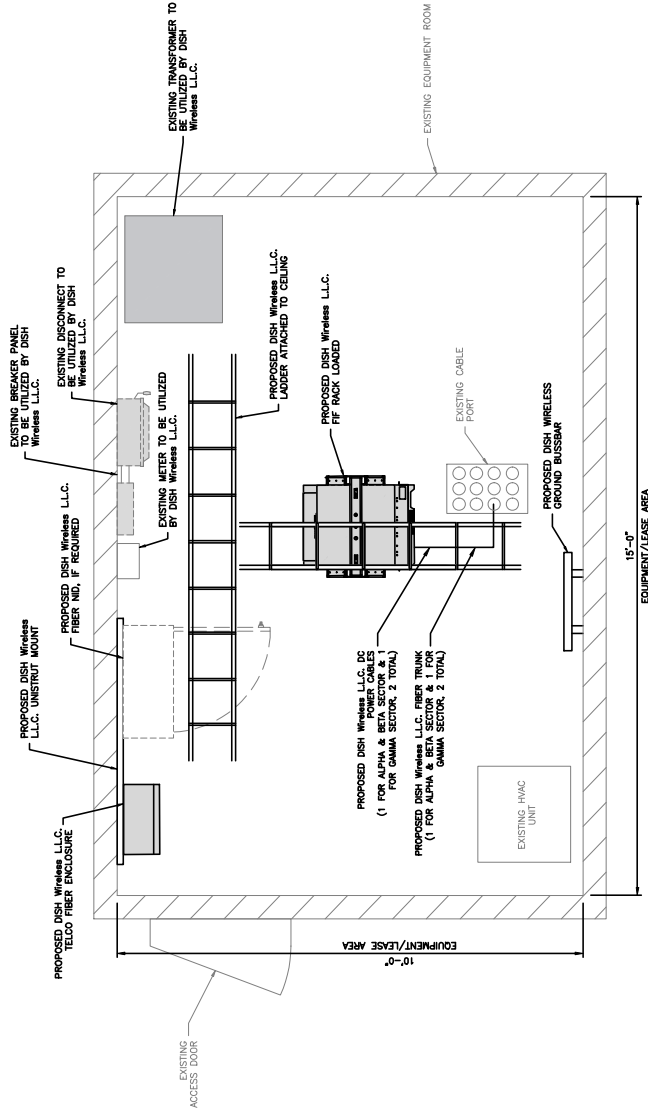
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IMPLEMENT PLATFORM

1-FRAME DETAIL

SHEET NUMBER

A-4

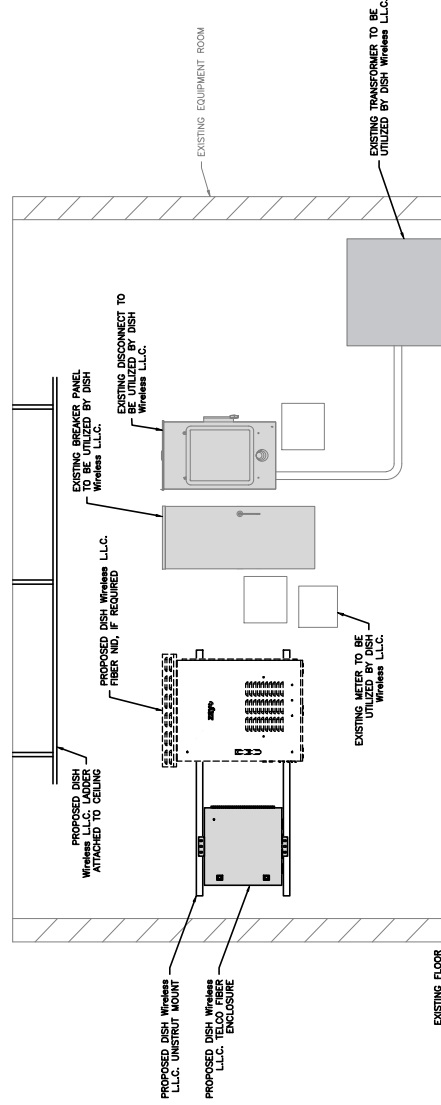


EQUIPMENT ROOM PLAN

12°	6°	0	1°	2°	3°

NOTE

1. FIF RACK OMITTED FOR CLARITY



EQUIPMENT ROOM ELEVATION

12°	6'	0	1'	2'	3'



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 02154
(617) 554-0300



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CWE NSB DRG

RFDS REV #:

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CONSTRUCTION DOCUMENTS

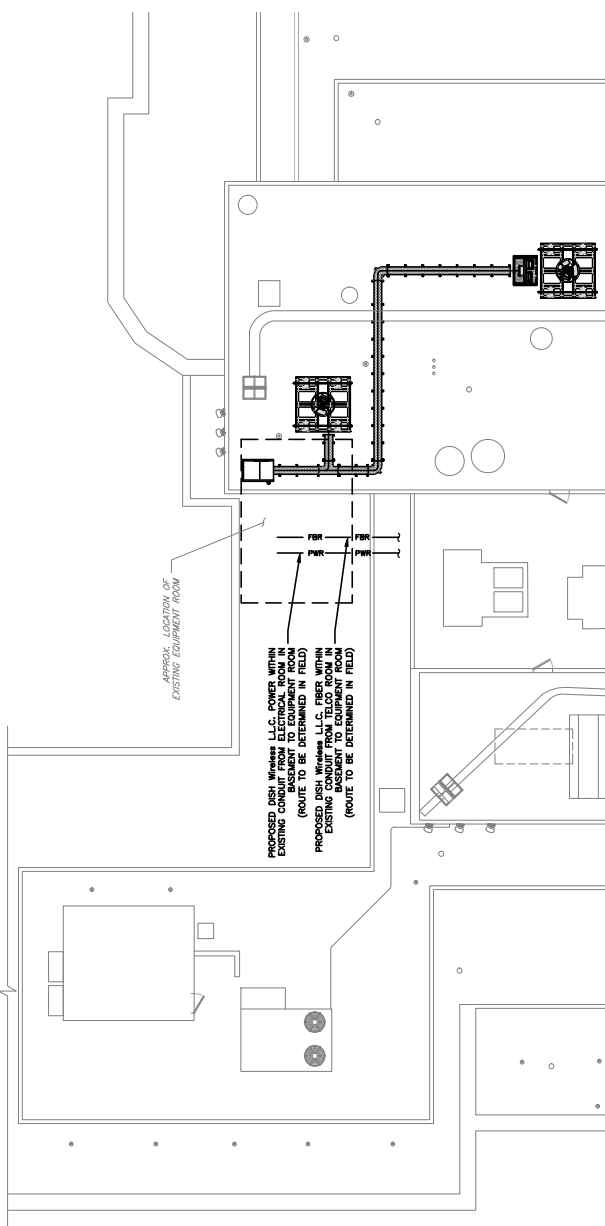
SUBMITTALS

REV DATE DESCRIPTION

0 01/1/24 REVISION FOR CONSTRUCTION

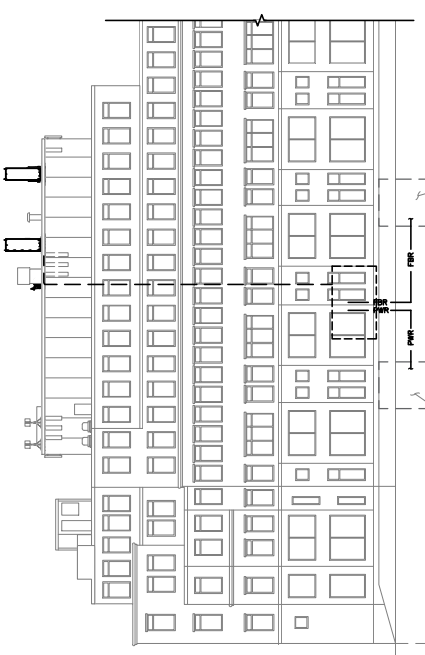
NOTES

1. UTILIZE EXISTING ABANDONED CONDUITS WHERE AVAILABLE. REPLACE/INSTALL NEW CONDUIT SECTIONS AS NEEDED.
2. CONTRACTOR TO VERIFY WITH DISH WIRELESS LLC. THE LOCATION OF THE EQUIPMENT AND FIBER SOURCE PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.



UTILITY ROUTE PLAN

1



UTILITY ROUTE ELEVATION

2



NOT USED

3

NO SCALE

E-1

SHEET NUMBER

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET TITLE

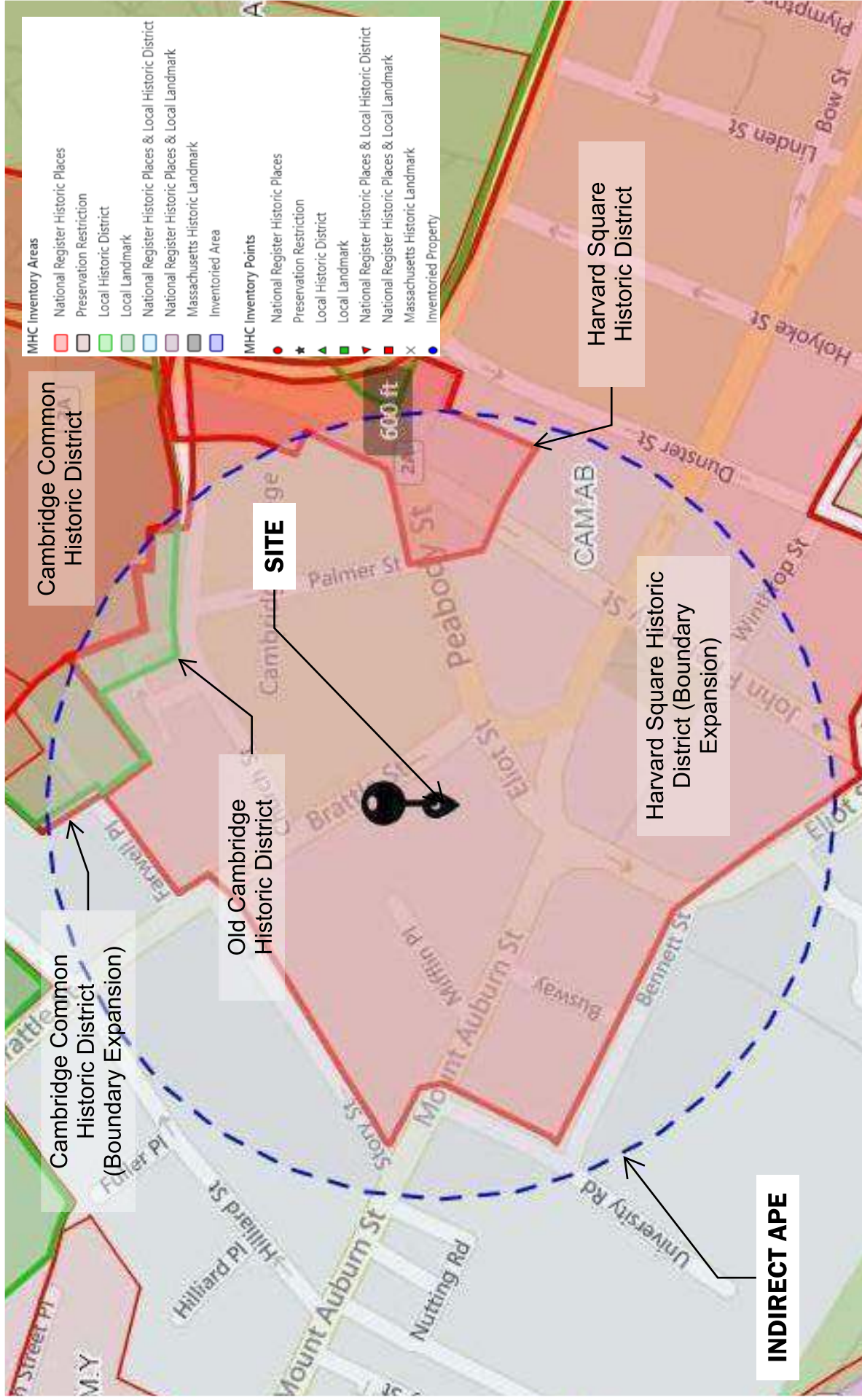
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

PROJECT INFORMATION
BOBOS00341B

DISH Wireless LLC.

100753

A&E PROJECT NUMBER



Indirect Effect APE Depicting 600 Foot Search Radius

BOBOS00341B (BOBOS00341B)
 1 Brattle Square
 Cambridge, Massachusetts 02138
 Middlesex County

RAMAKER
 employee-owned

NOT TO SCALE

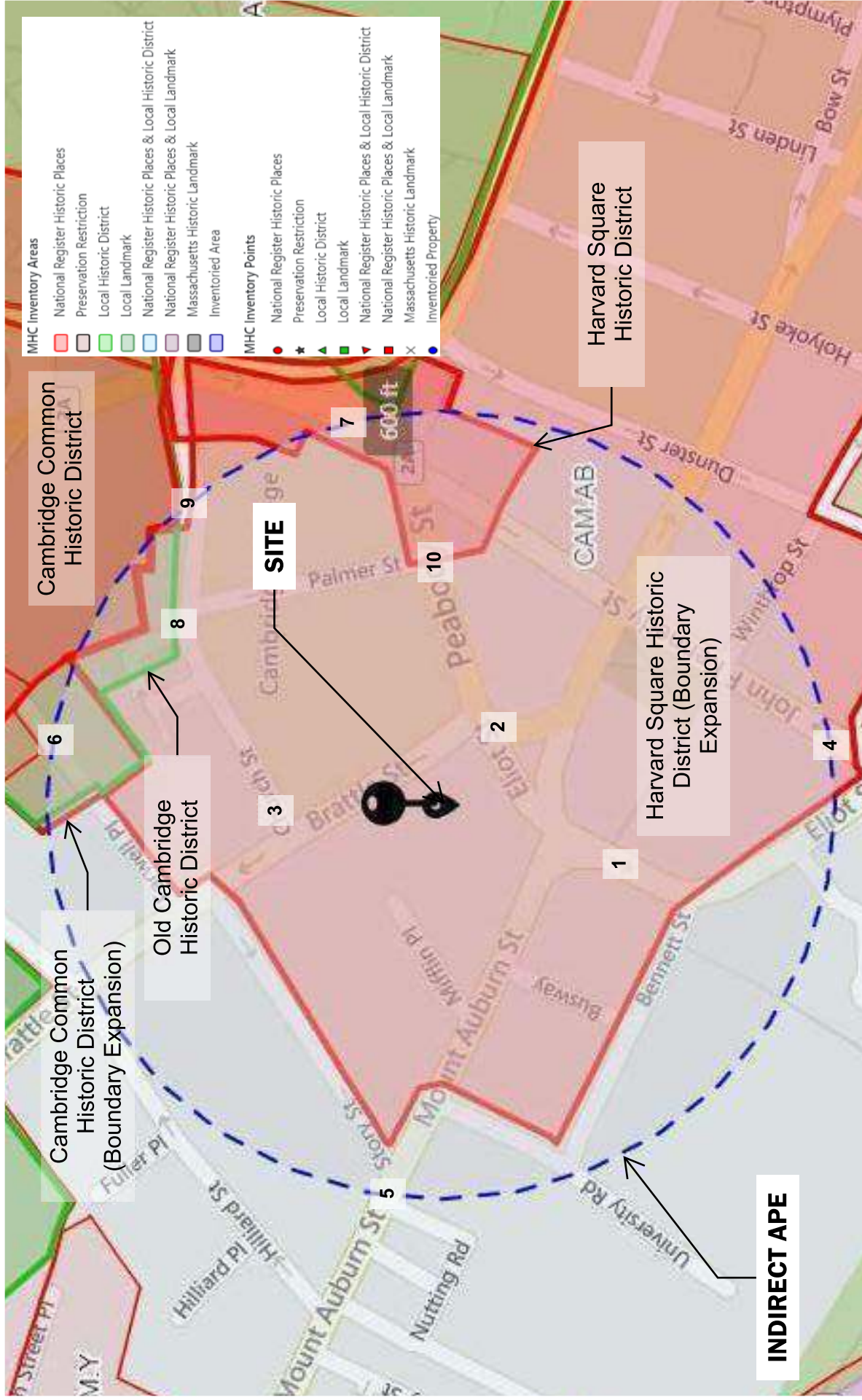


Photo Key

BOBOS00341B (BOBOS00341B)
 1 Brattle Square
 Cambridge, Massachusetts 02138
 Middlesex County



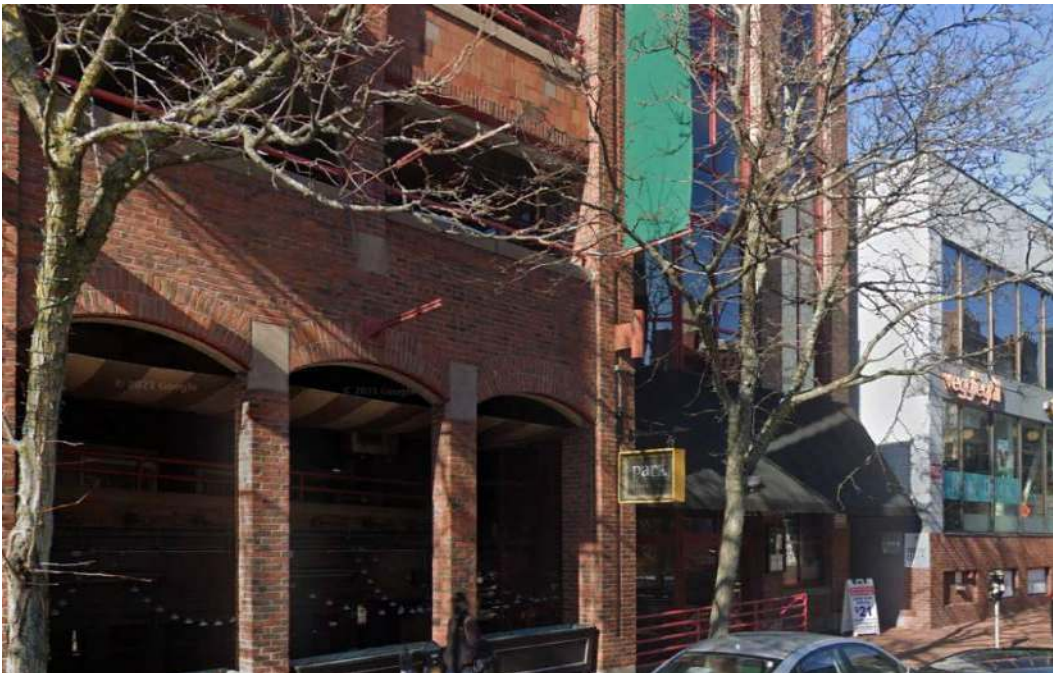
1. View of the host structure facing north from Eliot Street within the Harvard Square Historic District (Boundary Expansion).



2. View of the host structure facing northwest from Brattle Street within the Harvard Square Historic District (Boundary Expansion).



3. View of the host structure facing south from Church Street within the Harvard Square Historic District (Boundary Expansion).



4. View from the edge of the reduced APE along John F. Kennedy Street facing north-northwest towards the host structure within the Harvard Square Historic District (Boundary Expansion).



5. View from the edge of the reduced APE along Mt Auburn Street facing east-southeast towards the host structure.



6. View from the edge of the reduced APE along Farwell Pl facing S-SW within the Cambridge Common Historic District (Boundary Ex.) & Old Cambridge Historic District towards the host structure.



7. View from the edge of the reduced APE along Brattle Street facing west towards the host structure within the Harvard Square Historic District.



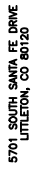
8. View from the Old Cambridge Historic District facing southwest towards the host structure along Church Street.



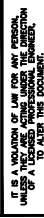
9. View from the Cambridge Common Historic District facing southwest towards the host structure along Church Street.



10. View from the Harvard Square Historic District facing west towards the host structure along Brattle Street.



NB+C ENGINEERING SERVICES, LLC.
100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



CONSTRUCTION
DOCUMENTS

A&E PROJECT NUMBER
100753

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

A-1

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL DISH WIRELESS LLC EQUIPMENT THAT IS RESTING ON OR AFFIXED TO POOL MEMBRANE.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. ANTENNAS AND RELATED APPEARANCES TO MATCH EXISTING SURROUNDINGS.

BUILDING PLAN

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULES AND TO FINAL CONSTRUCTION RFDs FOR ALL RF DETAILS.
3. EXISTING EQUIPMENT OMITTED FOR CLARITY.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. EQUIPMENT TO MATCH EXISTING SURROUNDINGS.

PROPOSED DISH WIRELESS, LLC. OVP MOUNTED TO BALLAST FRAME (1 PER SECTOR, 1 TOTAL)

PROPOSED DISH WIRELESS, LLC. RHH MOUNTED TO BALLAST FRAME (2 PER ALPHA SECTOR ONLY)

PROPOSED DISH WIRELESS, LLC. 36" X 10" TALL ANTENNA CONCEALMENT (2 TOTAL)

PROPOSED DISH WIRELESS, LLC. 70" X 70" TALL ANTENNA CONCEALMENT (1 PER SECTOR, 3 TOTAL)

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PROPOSED DISH WIRELESS, LLC. CABLE TRAY (TYP)

PROPOSED DISH WIRELESS, LLC. DC POWER CABLES (1 FOR ALPHA & BETA SECTOR & 1 FOR GAMMA SECTOR, 2 TOTAL)

PROPOSED DISH WIRELESS, LLC. FIBER TRUNK (1 FOR ALPHA & BETA SECTOR & 1 FOR GAMMA SECTOR, 2 TOTAL)

PROPOSED DISH WIRELESS, LLC. COMPOSITE RR-ITS BALLAST MOUNT (1 TOTAL)

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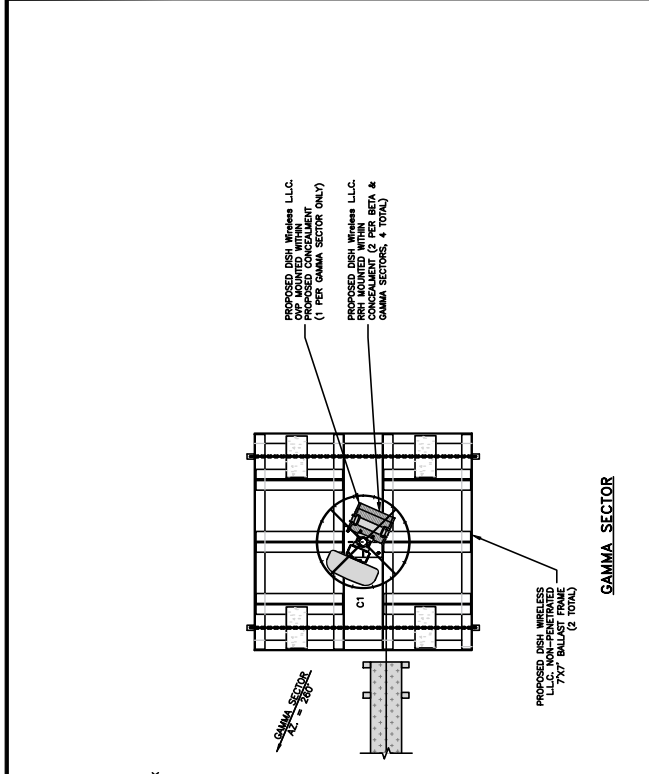
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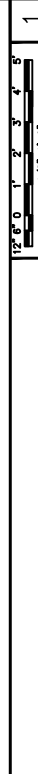
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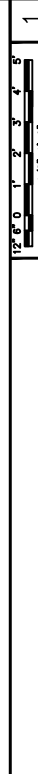
ANTENNA PLAN

ANTENNA ELEVATION

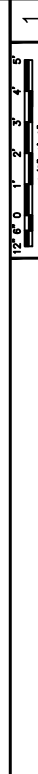
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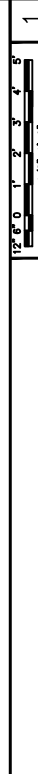
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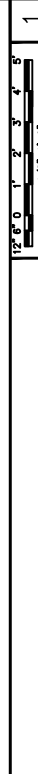
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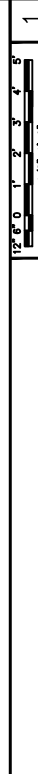
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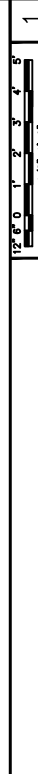
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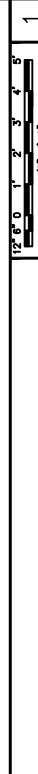
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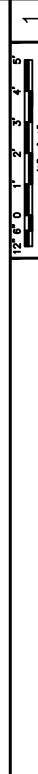
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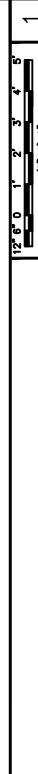
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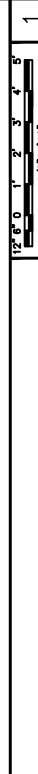
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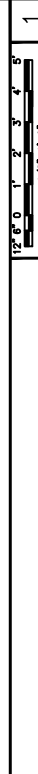
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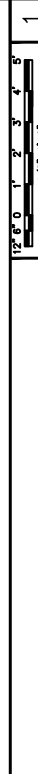
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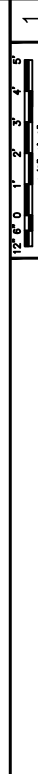
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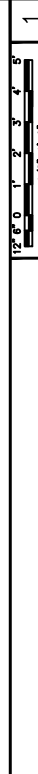
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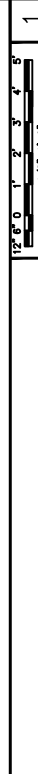
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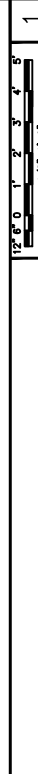
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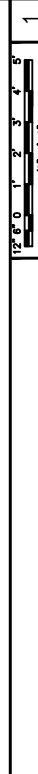
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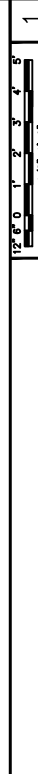
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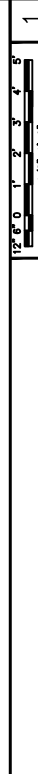
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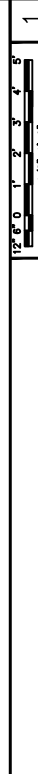
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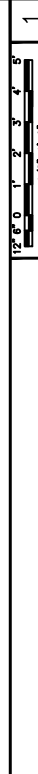
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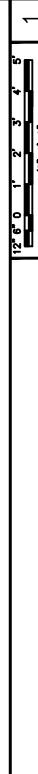
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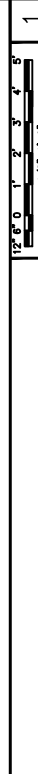
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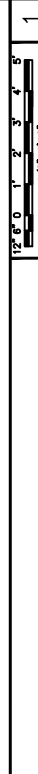
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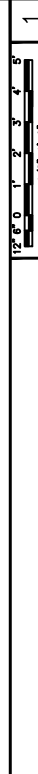
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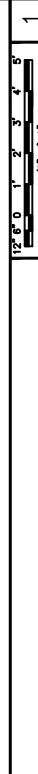
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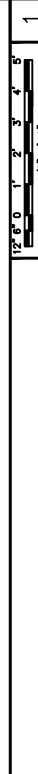
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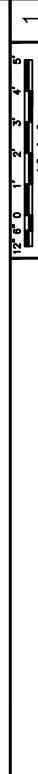
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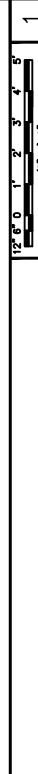
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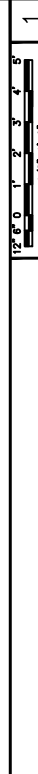
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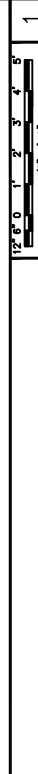
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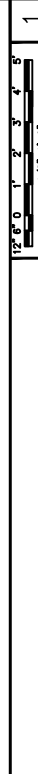
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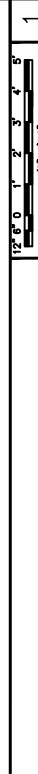
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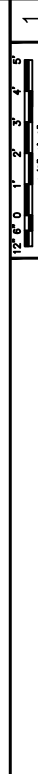
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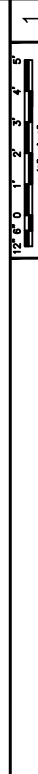
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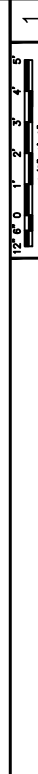
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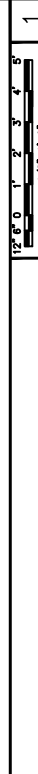
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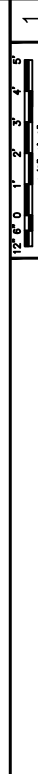
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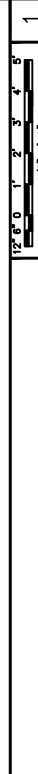
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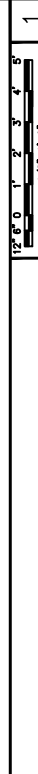
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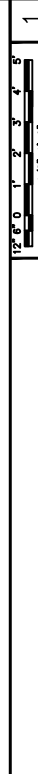
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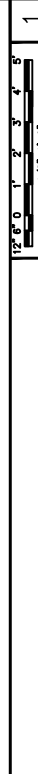
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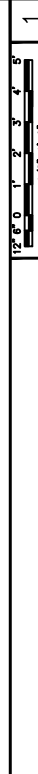
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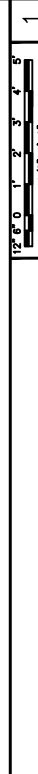
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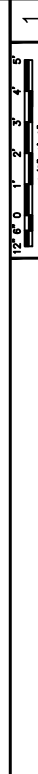
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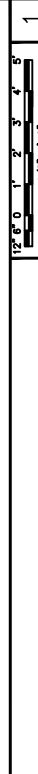
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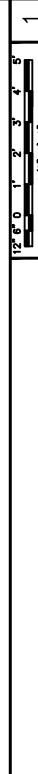
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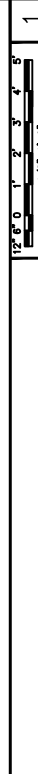
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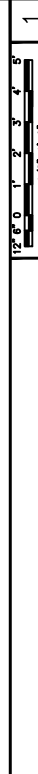
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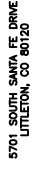
ANTENNA SCHEDULE



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IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
CWE	NSB	DRG
RFDS REV #:		

CONSTRUCTION DOCUMENTS

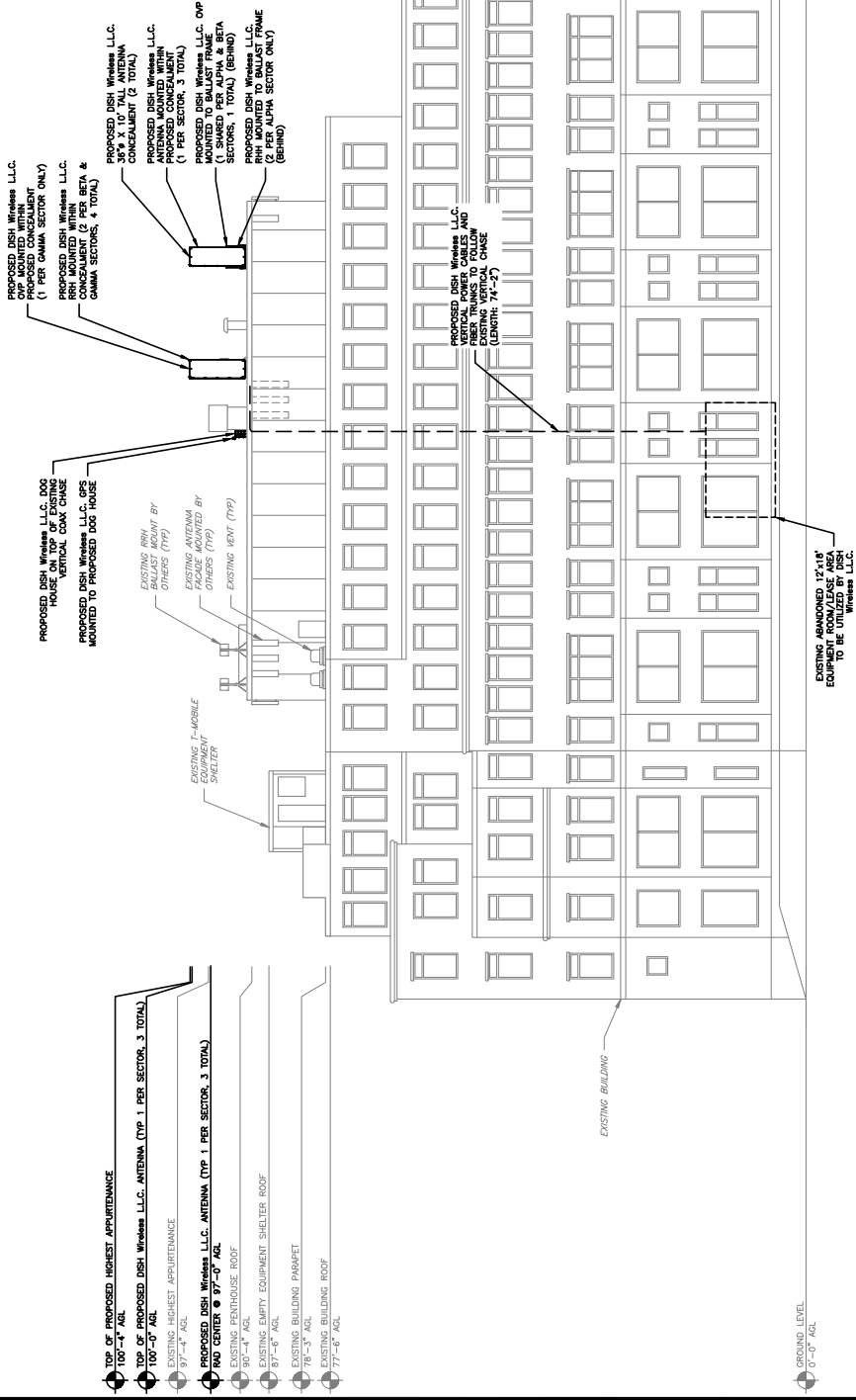
SUBMITTALS		
REV	DATE	DESCRIPTION
0	01/11/24	ISSUED FOR CONSTRUCTION

100753

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138
BOBOS00341B

SHEET TITLE	SHEET NUMBER
-------------	--------------

A-3



BUILDING ELEVATION





5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 JOLLO DRIVE
SUITE 300
CHELSEA, MA 02154
(617) 554-0300



IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: [blank] CHECKED BY: [blank] APPROVED BY: [blank]
CWE NSB DRG

RFDS REV #:

CONSTRUCTION DOCUMENTS

SUBMITTALS	
REV	DATE DESCRIPTION
0	01/11/24 REVISION FOR CONSTRUCTION

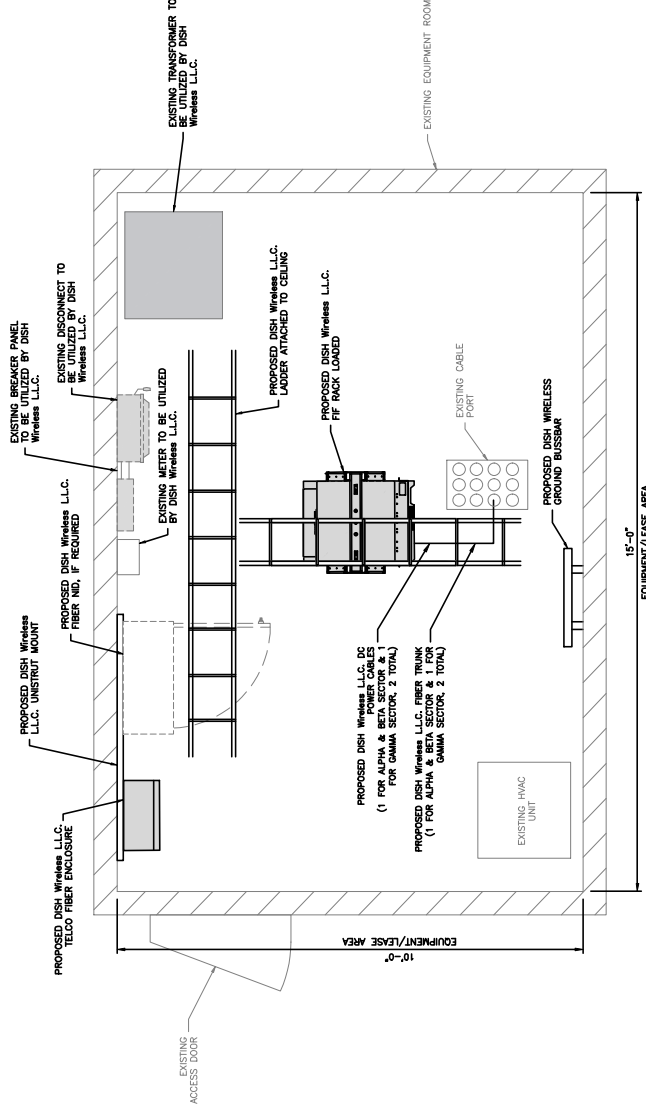
A&E PROJECT NUMBER
100753

DISH Wireless LLC
PROJECT INFORMATION
BOBOS00341B

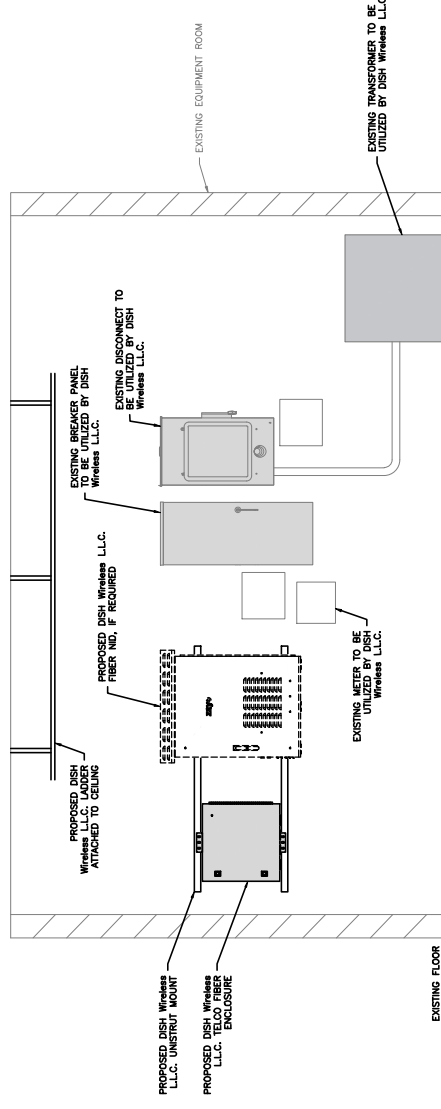
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER
A-4



EQUIPMENT ROOM PLAN



EQUIPMENT ROOM ELEVATION



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 ARLO DRIVE
SUITE 303
CHELSEA, MA 02154
(617) 554-0300



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: [blank] CHECKED BY: [blank] APPROVED BY: [blank]
CWE NSB DRG

RFDS REV #:

0

CONSTRUCTION DOCUMENTS

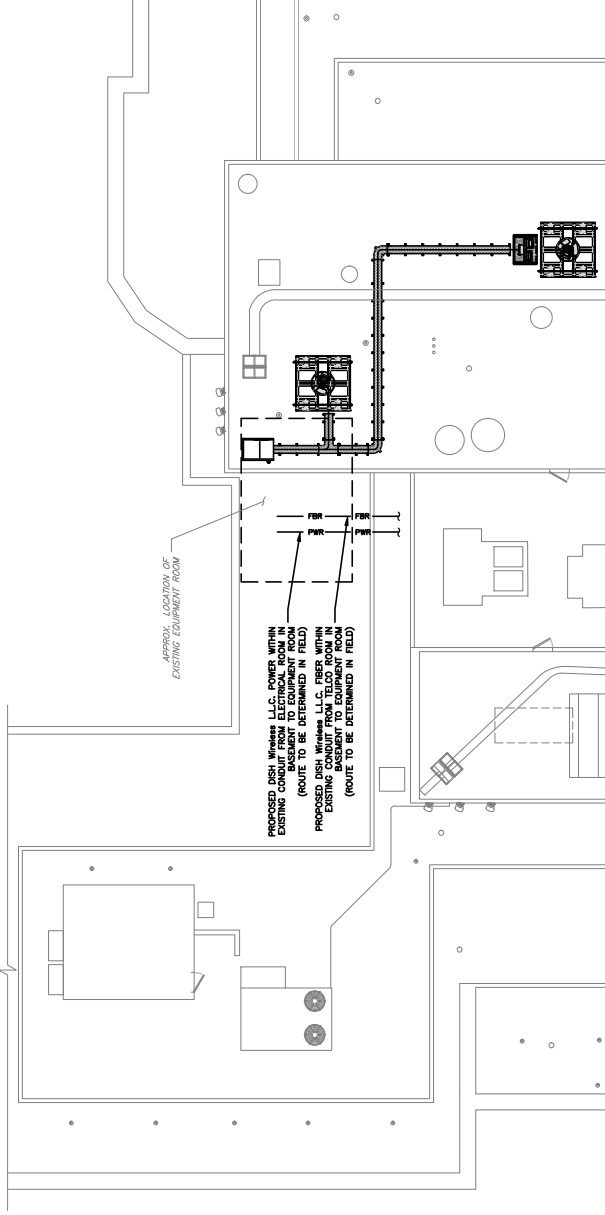
SUBMITTALS

REV DATE DESCRIPTION

0 01/1/24 REVISION FOR CONSTRUCTION

NOTES

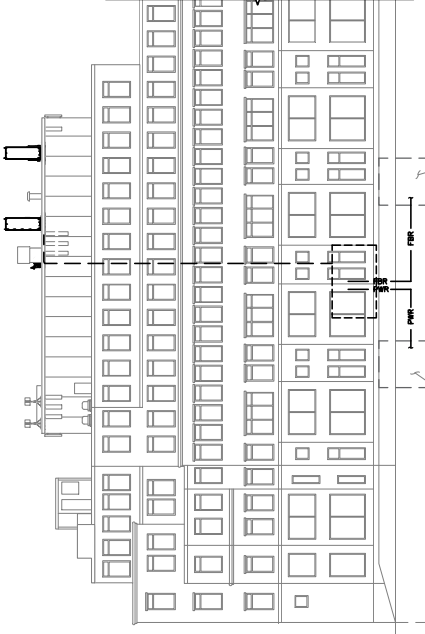
1. UTILIZE EXISTING ABANDONED CONDUITS WHERE AVAILABLE. REPLACE/INSTALL NEW CONDUIT SECTIONS AS NEEDED.
2. CONTRACTOR TO VERIFY WITH DISH WIRELESS LLC. THE LOCATION OF THE EXISTING POWER AND FIBER SOURCE PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.



UTILITY ROUTE PLAN

1

8" 4" 0 8" 16" 1/8"=1'-0"



UTILITY ROUTE ELEVATION

2

8" 4" 0 8" 16" 1/8"=1'-0"

NOT USED

3

NO SCALE

E-1

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

PROJECT INFORMATION
BOBOS00341B

PROJECT NUMBER
100753

AAE PROJECT NUMBER

AAE PROJECT NUMBER

AAE PROJECT NUMBER

AAE PROJECT NUMBER

AAE PROJECT NUMBER

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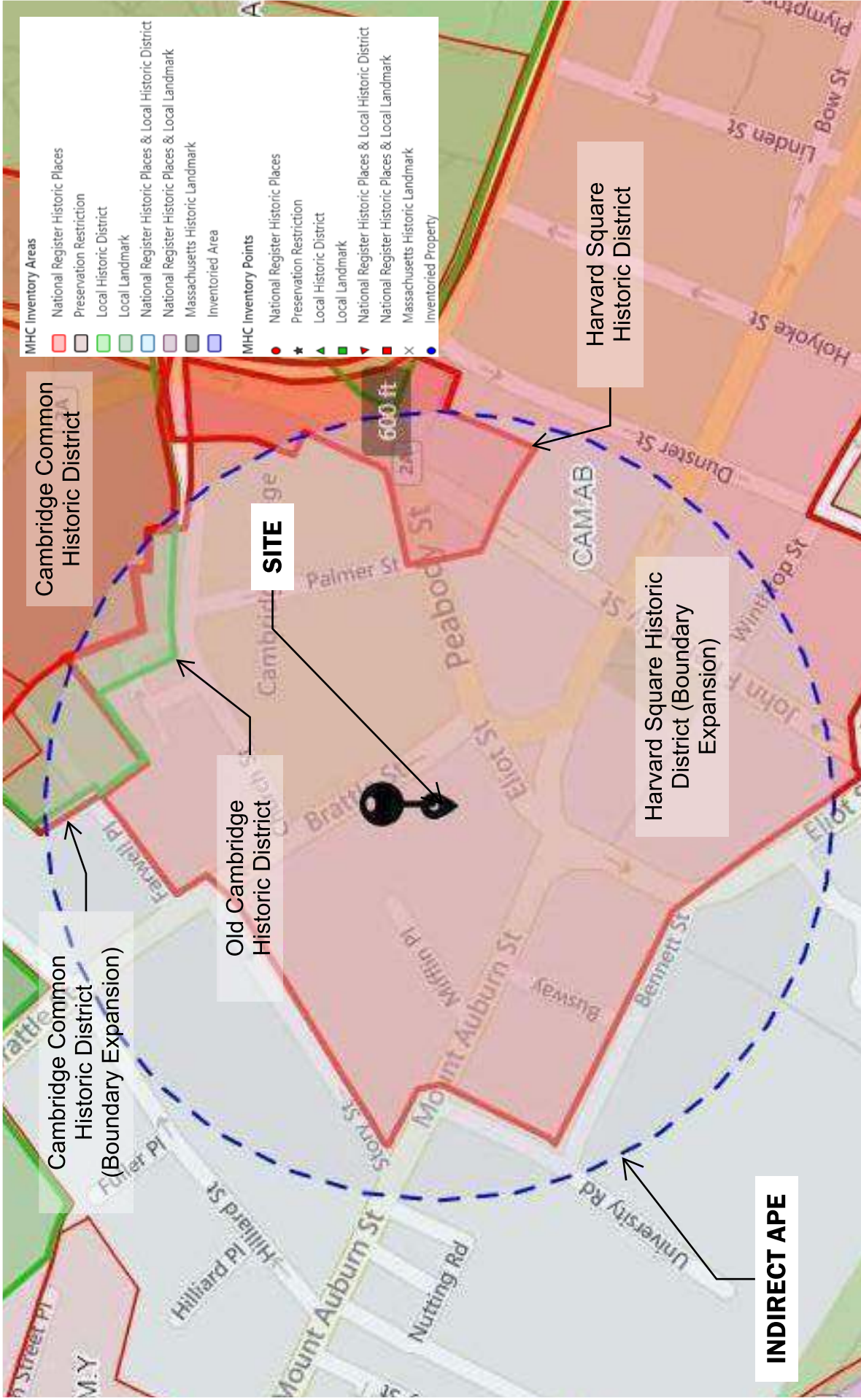
AAE PROJECT NUMBER

AAE PROJECT NUMBER

AAE PROJECT NUMBER

AAE PROJECT NUMBER

AAE PROJECT NUMBER



Indirect Effect APE Depicting 600 Foot Search Radius

BOBOS00341B (BOBOS00341B)
 1 Brattle Square
 Cambridge, Massachusetts 02138
 Middlesex County



NOT TO SCALE

FEDERAL COMMUNICATIONS COMMISSION
Wireless Telecommunications Bureau
1270 Fairfield Road
Gettysburg, PA 17325-7245

NOTICE OF ORGANIZATION(S) WHICH WERE SENT
PROPOSED TOWER CONSTRUCTION NOTIFICATION INFORMATION

DISH - BOBOS00341B (BOBOS00341B); JOB # 60991
855 COMMUNITY DRIVE
SAUK CITY, WI 53583

Date: 07/05/2024
Reference Number:

Dear Applicant:

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this electronic mail message is to inform you that the following authorized persons were sent the notification that you provided through TCNS, which relates to your proposed antenna structure. The information was forwarded by the FCC to authorized TCNS users by electronic mail and/or regular mail (letter). We note that the review period for all parties begins upon receipt of the Submission Packet pursuant to Section VII.A of the NPA and notifications that do not provide this serve as information only.

Persons who have received the notification that you provided include leaders or their designees of federally-recognized American Indian Tribes, including Alaska Native Villages (collectively "Tribal Nations"), Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs). For your convenience in identifying the referenced Tribal Nations and NHOs and in making further contacts, the City and State of the Seat of Government for each Tribal Nation and NHO, as well as the designated contact person, is included in the listing below. We note that Tribal Nations may have Section 106 cultural interests in ancestral homelands or other locations that are far removed from their current Seat of Government. Pursuant to the Commission's rules as set forth in the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission (NPA), all Tribal Nations and NHOs listed below must be afforded a reasonable opportunity to respond to this notification, consistent with the procedures set forth below, unless the proposed construction falls within an exclusion designated by the Tribal Nation or NHO. (NPA, Section IV.F.4).

The notification that you provided was forwarded to the following Tribal Nations and NHOs. A Tribal Nation or NHO may not respond until a full Submission Packet is provided. If, upon receipt, the Tribal Nation or NHO does not respond within a reasonable time, you should make a reasonable effort at follow-up contact, unless the Tribal Nation or NHO has agreed to different procedures (NPA, Section IV.F.5). In the event a Tribal Nation or NHO does not respond to a follow-up inquiry, or if a substantive or procedural disagreement arises between you and a Tribal Nation or NHO, you must seek guidance from the Commission (NPA, Section IV.G). These procedures are further set forth in the FCC's Second Report and Order released on March 30, 2018 (FCC 18-30).

1. Chief of Staff - Audrey Lee - Sac and Fox Nation - 920883 S. Hwy 99, Building A - Stroud, OK -
cos@sacandfoxnation-nsn.gov; sacandfoxtens@gmail.com - 918-968-3526 (ext: 1072) - electronic mail and regular mail

2. THPO - Lawrence Plucinski - Bad River Band of Lake Superior Tribe of Chippewa Indians - (PO Box: 39) - Odanah, WI -
thpo@badriver-nsn.gov; deputyTHPO@badriver-nsn.gov - 715-682-7123 - electronic mail

If the applicant/tower builder receives no response from the Bad River Band of Lake Superior Tribe of Chippewa Indians within 30 days after notification through TCNS, the Bad River Band of Lake Superior Tribe of Chippewa Indians has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Bad River Band of Lake Superior Tribe of Chippewa Indians in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

3. THPO - Marvin DeFoe - Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin - 88455 Pike Road, HWY 13 - Bayfield, WI - Marvin.DeFoe@redcliff-nsn.gov; Chanell.Curran@redcliff-nsn.gov - 715-779-3761 - electronic mail

Details: Boozhoo, we do not have the Red Cliff Portal site online anymore and apologize for the inconvenience.

If you have a project that has already been paid for or would like to voluntarily pay for, please email documents for project review to THPO@redcliff-nsn.gov. This address is only to be used by Consultants who are voluntarily paying for projects.

If you have any questions, please contact Marvin Defoe, THPO Manager at marvin.defoe@redcliff-nsn.gov or Chanell Curran, THPO Assistant at chanell.curran@redcliff-nsn.gov.

4. THPO - Sarah Thompson - Lac du Flambeau Band of Lake Superior Chippewa Indians - Tribal Historic Preservation Office (PO Box: 67) - Lac du Flambeau, WI - ldftppo@ldftribe.com - 715-588-2139 - electronic mail

Details: Effective Immediately:

Please send all submissions through email until further notice. Effective 3/23/2020

Please email all submissions to ldftppo@ldftribe.com

Thank you

5. THPO - John Brown - Narragansett Indian Tribe - 4425 South County Trail - Charleston, RI - tashtesook@aol.com - 401-585-0142 - electronic mail

6. Senior Cultural Resource Monitor - Bettina Washington - Wampanoag Tribe of Gay Head-Aquinnah - 20 Black Brook Road - Aquinnah, MA - thpo@wampanoagtribe-nsn.gov; thpo@wampanoagtribe-nsn.gov - 508-645-9265 (ext: 175) - electronic mail and regular mail

7. THPO - David Weeden - Mashpee Wampanoag Tribe - 483 Great Neck Rd.South - Mashpee, MA - 106Review@mwtribe-nsn.gov; David.weeden@mwtribe-nsn.gov - 508-477-0208 (ext: 102) - electronic mail

The notification that you provided was also forwarded to the following SHPOs in the State in which you propose to construct and neighboring States. The information was provided to these SHPOs as a courtesy for their information and planning. You need make no effort at this time to follow up with any SHPO that does not respond to this notification. Prior to construction, you must provide the SHPO of the State in which you propose to construct (or the Tribal Historic Preservation Officer, if the project will be located on certain Tribal lands), with a Submission Packet pursuant to Section VII.A of the NPA unless the project is excluded from SHPO review under Section III D or E of the NPA.

8. SHPO - Cara Metz - Massachusetts Historical Commission - 220 Morrissey Boulevard - Boston, MA - cara.metz@sec.state.ma.us - 617-727-8470 - electronic mail

9. Deputy SHPO - Jeffrey Emidy - Rhode Island Historic Preservation & Heritage Comm - Old State House 150 Benefit St - Providence, RI - jeffrey.emidy@preservation.ri.gov - 401-222-4134 - electronic mail

10. SHPO - Edward Sanderson - Rhode Island Historic Preservation & Heritage Comm - Old State House 150 Benefit St - Providence, RI - rgreenwood@preservation.ri.gov - 401-222-4134 - electronic mail

11. SHPO - Laura Trieschmann - Vermont Division for Historic Preservation - National Life Building Drawer 20 - Montpelier, VT - laura.trieschmann@vermont.gov - 802-828-3043 - electronic mail

TCNS automatically forwards all notifications to all Tribal Nations and SHPOs that have an expressed interest in the geographic area of a proposal. However, if a proposed communications facilities construction falls within a designated exclusion, you need not expect any response and need not pursue any additional process with that Tribal Nation or SHPO. In addition, a particular Tribal Nation or SHPO may also set forth policies or procedures within its details box that exclude from review certain facilities (for example, a statement that it does not review collocations with no ground disturbance; or that indicates that no response within 30 days indicates no interest in participating in pre-construction review).

Please be advised that the FCC cannot guarantee that the contact(s) listed above have opened and reviewed an electronic or regular mail notification. If you learn that any of the above contact information is no longer valid, please contact the FCC by emailing tcnshelp@fcc.gov. The following information relating to the proposed tower was

Letter to *DISH - BOBOS00341B (BOBOS00341B); Job # 60991 Sandra Weiss*

Date: 07/05/2024

Page 4

forwarded to the person(s) listed above:

Notification Received: 07/02/2024

Notification ID: 281876

Excluded from SHPO Review: No

Tower Owner Individual or Entity Name: DISH - BOBOS00341B (BOBOS00341B); Job # 60991

Consultant Name: Sandra Weiss

P.O. Box:

Street Address: 855 Community Drive

City: Sauk City

State: WI

Zip Code: 53583

Phone: 608-644-2297

Email: TCNS@ramaker.com

Structure Type: B - Building

Latitude: 42 deg 22 min 23.9 sec N

Longitude: 71 deg 7 min 17.4 sec W

Location Description: 1 Brattle Square

City: Cambridge

State: MASSACHUSETTS

County: MIDDLESEX

Detailed Description of Project (Optional): DISH proposes to install antennas and equipment at the 90.33 foot building tower at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. Site location to follow.

Ground Elevation: 5.2 meters

Support Structure: 27.5 meters above ground level

Overall Structure: 29.7 meters above ground level

Overall Height AMSL: 34.9 meters above sea level

If you have any questions or comments regarding this notice, please contact the FCC using the electronic Help Request form located on the FCC's website at:

<https://www.fcc.gov/wireless/available-support-services>

You may also call the FCC Support Center at (877) 480-3201 (TTY 717-338-2824). Hours are from 8 a.m. to 7:00 p.m. Eastern Time, Monday through Friday (except Federal holidays). To provide quality service and ensure security, all telephone calls are recorded.

Thank you,
Federal Communications Commission



July 5, 2024

Cambridge Historical Commission
Charles Sullivan
Executive Director
831 Massachusetts Avenue, 2nd Floor
Cambridge, Massachusetts 02139

SUBJECT: Request for Section 106 Comments = CLG Representative

**PROJECT: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts 02138
Ramaker & Associates, Inc. Project #60991**

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on a proposed 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) *Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC* (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs).

The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

It is the opinion of Ramaker that the proposed DISH undertaking will result in **"No Historic Properties Affected"** in the Direct APE and **"No Adverse Effect"** to cultural or historic properties in the Indirect APE.

Following the FCC protocols and procedures, should you wish to provide additional comments with respect to the potential to effect cultural and/or historic properties, please contact Ramaker. Additionally, if you have any information regarding other potentially interested commenting parties that should be contacted, your input on this matter would also be greatly appreciated. As the project is proposed for development in the very near future, we would appreciate receiving your comments in the next 30 days.

Please direct all correspondence to:

Ramaker & Associates, Inc.
Daniel Feldmann, Environmental Scientist
855 Community Drive
Sauk City, Wisconsin 53583
nepa@ramaker.com

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

Sincerely,

Ramaker & Associates, Inc.

A handwritten signature in dark ink, appearing to read "Daniel Feldmann", with a long horizontal flourish extending to the right.

Daniel Feldmann, Environmental Scientist

Attachments:

Site Location Maps
Site Photographs
Site Plans

CC:

City of Cambridge Planning Board
History Cambridge

Daniel Feldmann

From: Burks, Sarah <sburks@cambridgema.gov>
Sent: Monday, August 19, 2024 12:26 PM
To: Daniel Feldmann; Joseph, Swaathi
Cc: Planning Board Comment; info@historycambridge.org; HistComm
Subject: RE: BOBOS00341B (BOBOS00341B); Job # 60991 = Section 106 Request for Comment

Daniel,

I've looked over the photo sims and, in my opinion, this does not rise to a level requiring review of the Historical Commission. Thank you for providing the information needed.

Sincerely,
Sarah Burks

Sarah L. Burks
Cambridge Historical Commission
831 Massachusetts Ave., 2nd Fl.
Cambridge, MA 02139
617-349-4687
sburks@cambridgema.gov
www.cambridgema.gov/historic

From: Daniel Feldmann <dfeldmann@ramaker.com>
Sent: Wednesday, August 7, 2024 12:31 PM
To: Joseph, Swaathi <sjooseph@cambridgema.gov>; Burks, Sarah <sburks@cambridgema.gov>
Cc: Planning Board Comment <Planningboardcomment@Cambridgema.gov>; info@historycambridge.org; HistComm <HistComm@CambridgeMA.GOV>
Subject: RE: BOBOS00341B (BOBOS00341B); Job # 60991 = Section 106 Request for Comment

Hi Joseph and Sarah,

It has been awhile since your last correspondence; however, I wanted to provide photo sims DISH has provided us for the proposed undertaking (attached). DISH considered several potential antenna locations on the building; however, following detailed analysis of radio frequency (RF) coverage and capacity objectives, the current proposed antenna locations were selected to meet their technical RF requirements.

DISH will be submitting a full permitting and zoning package of the proposed undertaking to the City of Cambridge. It is our understanding that the City of Cambridge will then determine whether a special permit will be required for the proposed undertaking.

Please let me know if you have further questions.

Thank You,
Dan



Daniel Feldmann | NEPA Compliance Manager
RAMAKER | *employee-owned*
855 Community Dr, Sauk City, WI 53583
D (608) 644-2240 | M (608) 963-3049
www.ramaker.com | dfeldmann@ramaker.com



From: Joseph, Swaathi <sjoseph@cambridgema.gov>

Sent: Wednesday, July 17, 2024 12:33 PM

To: Burks, Sarah <sburks@cambridgema.gov>; Daniel Feldmann <dfeldmann@ramaker.com>

Subject: RE: BOBOS00341B (BOBOS00341B); Job # 60991 = Section 106 Request for Comment

You don't often get email from sjoseph@cambridgema.gov. [Learn why this is important](#)

CAUTION: This email originated from outside our organization.

Sarah,
Thank you for connecting me with this project.

Daniel,
Please clarify if this project will need a Board of Zoning Appeal (BZA) special permit. Planning Board may select some of the antenna BZA cases to provide comments to BZA.

Sincerely,
Swaathi

From: Burks, Sarah <sburks@cambridgema.gov>

Sent: Wednesday, July 17, 2024 1:20 PM

To: Daniel Feldmann <dfeldmann@ramaker.com>; HistComm <HistComm@CambridgeMA.GOV>

Cc: Planning Board Comment <Planningboardcomment@Cambridgema.gov>; info@historycambridge.org; Joseph, Swaathi <sjoseph@cambridgema.gov>

Subject: RE: BOBOS00341B (BOBOS00341B); Job # 60991 = Section 106 Request for Comment

Hello Daniel,

Thank you for providing this information. Could the two antenna structures be located on the next level down or further back from the corner of Brattle and Mt Auburn streets? Do you have photo renderings of the proposed placement that you could send us? I have copied Swaathi Joseph of the Community Development Department as a Planning Board contact.

Sincerely,
Sarah Burks

Sarah L. Burks
Cambridge Historical Commission
831 Massachusetts Ave., 2nd Fl.
Cambridge, MA 02139
617-349-4687
sburks@cambridgema.gov
www.cambridgema.gov/historic

From: Daniel Feldmann <dfeldmann@ramaker.com>
Sent: Friday, July 5, 2024 11:08 AM
To: HistComm <HistComm@CambridgeMA.GOV>
Cc: Planning Board Comment <Planningboardcomment@Cambridgema.gov>; info@historycambridge.org
Subject: BOBOS00341B (BOBOS00341B); Job # 60991 = Section 106 Request for Comment

Good Morning,

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on a proposed 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs).

Following the FCC protocols and procedures, should you wish to provide additional comments with respect to the potential to effect cultural and/or historic properties, please contact Ramaker. Additionally, if you have any information regarding other potentially interested consulting parties that should be contacted, your input on this matter would also be greatly appreciated. As the project is proposed for development in the very near future, we would appreciate receiving your comments in the next 30 days.

Thank You,
Dan



Daniel Feldmann | Environmental Scientist
RAMAKER | *employee-owned*
855 Community Dr, Sauk City, WI 53583
D (608) 644-2240 | M (608) 963-3049
www.ramaker.com | dfeldmann@ramaker.com





July 5, 2024

City of Cambridge Planning Board
Mary Flynn
Chair
344 Broadway
Cambridge, Massachusetts 02139

SUBJECT: Request for Section 106 Comments = Interested Party

PROJECT: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts 02138
Ramaker & Associates, Inc. Project #60991

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on a proposed 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) *Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC* (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs).

The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

DISH proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

It is the opinion of Ramaker that the proposed DISH undertaking will result in **"No Historic Properties Affected"** in the Direct APE and **"No Adverse Effect"** to cultural or historic properties in the Indirect APE.

Following the FCC protocols and procedures, should you wish to provide additional comments with respect to the potential to effect cultural and/or historic properties, please contact Ramaker. Additionally, if you have any information regarding other potentially interested commenting parties that should be contacted, your input on this matter would also be greatly appreciated. As the project is proposed for development in the very near future, we would appreciate receiving your comments in the next 30 days.

Please direct all correspondence to:

Ramaker & Associates, Inc.
Daniel Feldmann, Environmental Scientist
855 Community Drive
Sauk City, Wisconsin 53583
nepa@ramaker.com

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

Sincerely,

Ramaker & Associates, Inc.

A handwritten signature in dark ink, appearing to read "Daniel Feldmann", with a long horizontal flourish extending to the right.

Daniel Feldmann, Environmental Scientist

Attachments:

Site Location Maps
Site Photographs
Site Plans

CC:

Cambridge Historical Commission
History Cambridge



July 5, 2024

History Cambridge
Marieka Van Damme
Executive Director
159 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Request for Section 106 Comments = Interested Party

PROJECT: BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts 02138
Ramaker & Associates, Inc. Project #60991

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on a proposed 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) *Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC* (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs).

The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

DISH proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

It is the opinion of Ramaker that the proposed DISH undertaking will result in **"No Historic Properties Affected"** in the Direct APE and **"No Adverse Effect"** to cultural or historic properties in the Indirect APE.

Following the FCC protocols and procedures, should you wish to provide additional comments with respect to the potential to effect cultural and/or historic properties, please contact Ramaker. Additionally, if you have any information regarding other potentially interested commenting parties that should be contacted, your input on this matter would also be greatly appreciated. As the project is proposed for development in the very near future, we would appreciate receiving your comments in the next 30 days.

Please direct all correspondence to:

Ramaker & Associates, Inc.
Daniel Feldmann, Environmental Scientist
855 Community Drive
Sauk City, Wisconsin 53583
nepa@ramaker.com

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

Sincerely,

Ramaker & Associates, Inc.

A handwritten signature in dark ink, appearing to read "Daniel Feldmann", with a long horizontal flourish extending to the right.

Daniel Feldmann, Environmental Scientist

Attachments:

Site Location Maps
Site Photographs
Site Plans

CC:

Cambridge Historical Commission
City of Cambridge Planning Board



July 1, 2024

DISH Wireless LLC
Andrew Foreman, National Program Manager
5701 South Santa Fe Drive
Littleton, Colorado 80120

SUBJECT: PUBLIC NOTICE LANGUAGE (SECTION 106 FILING)

**SITE: BOBOS00265A (SITE NUMBER: BOBOS00265A)
RAMAKER & ASSOCIATES, INC. PROJECT NUMBER: 60908**
**SITE: BOBOS00341B (SITE NUMBER: BOBOS00341B)
RAMAKER & ASSOCIATES, INC. PROJECT NUMBER: 60991**
**SITE: BOBOS00993E (SITE NUMBER: BOBOS00993E)
RAMAKER & ASSOCIATES, INC. PROJECT NUMBER: 60992**

The following text was used to file public notice, as per the *Federal Communication Commission's (FCC's) Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission* (Nationwide Programmatic Agreement). Details of the public notice are provided below:

- **The notice was published in:** The Boston Herald Legals newspaper
- **The notice was published on:** July 8, 2024
- **The notice specifically stated:**
DISH Wireless LLC (DISH) proposes to install telecommunication antennas and associated equipment on the following existing structures in Massachusetts: a 251' building at 200 Stuart St in Boston, Suffolk County (Job #60908); a 90.33' building at 1 Brattle Square in Cambridge, Middlesex County (Job #60991); and a 166' building at 303 Bunker Hill St in Charlestown, Suffolk County (Job #60992).

In accordance with the National Historic Preservation Act of 1966 and the 2005 Nationwide Programmatic Agreement, DISH is hereby notifying the public of the proposed undertaking and soliciting comments on Historic Properties which may be affected by the proposed undertaking. If you would like to provide specific information regarding potential effects that the proposed undertaking might have to properties that are listed on or eligible for listing in the National Register of Historic Places and located within 3/4 mile of the site, please submit the comments (with Job #s) to: Ramaker, Contractor for DISH, 855 Community Dr, Sauk City, WI 53583 or via e-mail to history@ramaker.com within 30 days of this notice.

A copy of the public notice's affidavit has been included as an attachment. However, if you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

RAMAKER & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Daniel Feldmann", written over a horizontal line.

Daniel Feldmann, Environmental Scientist

AFFIDAVIT OF PUBLICATION

STATE OF MASSACHUSETTS,
Suffolk County ss:
City of Boston

Michele Sisco-Martin residing in Kingston, NY, being duly sworn, deposes and says that she is the Regional Legal Clerk of **Media News Group**, a Corporation duly organized under the laws of the State of Massachusetts; that said Corporation is the publisher of **The Boston Herald**, a daily newspaper published in the City of Boston, County of Suffolk and State of Massachusetts, and that the notice of which the annexed is a printed copy, has been regularly published in **The Boston Herald**.

Once Daily for One Day

To wit: **07/08/24**

DISH Wireless LLC (DISH) proposes to install telecommunication antennas and associated equipment on the following structures in Massachusetts: a 251' building at 200 Stuart St in Boston, Suffolk County (Job #60908); a 90.33' building at 1 Brattle Square in Cambridge, Middlesex County (Job #60991); and a 166' building at 303 Bunker Hill St in Charlestown, Suffolk County (Job #60992).

In accordance with the National Historic Preservation Act of 1966 and the 2005 Nationwide Programmatic Agreement, DISH is hereby notifying the public of the proposed undertaking and soliciting comments on Historic Properties which may be affected by the proposed undertakings. If you would like to provide specific information regarding potential effects that the proposed undertaking might have to properties that are listed on or eligible for listing in the National Register of Historic Places and located within 3/4 mile of the sites, please submit the comments (with Job #s) to: Ramaker, Contractor for DISH, 855 Community Dr, Sauk City, WI 53583 or via e-mail to history@ramaker.com within 30 days of this notice.

#NY0119046

July 8

Michele Sisco Martin

Sworn to before me this

07/08/24

Kathi L Davis
Notary Public

KATHI L DAVIS
NOTARY PUBLIC, STATE OF NEW YORK
Registration No. 01DA6410130
Qualified in Ulster County
My Commission Expires October 19, 2024

2618968 - EM: dgotthart@ramaker.com

Appendix A - SHPO Concurrence

JUL 08 2024

July 5, 2024

MASS. HIST. COMM

TO: **Massachusetts SHPO
Interested THPOs/NHOs**

SUBJECT: **Section 106 (FCC Form 621) Submittal**

PROJECT: **BOBOS00341B (BOBOS00341B)
1 Brattle Square
Cambridge, Middlesex County, Massachusetts
Ramaker & Associates, Inc. Project #60991
TCNS Number: 281876**

After review of the MHC's files and the materials you submitted, the MHC has determined that the proposed project will have "no adverse effect" on significant historic or archaeological properties.

Brona Simon 8/6/24

Brona Simon
Executive Director
Massachusetts Historical Commission
Date

Ramaker & Associates, Inc. (Ramaker) was retained by DISH Wireless LLC (DISH) to complete a NEPA and Section 106 review of a proposed antenna and equipment installation on an existing 90.33-foot building (overall height with appurtenances of 97.33 feet). Ramaker and DISH have opined that the proposed activities do not qualify for any categorical exclusions from review under Section 106 of the National Historic Preservation Act (NHPA) set forth in the Federal Communication Commission's (FCC's) Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the FCC (Nationwide Agreement) nor the Nationwide Programmatic Agreement for Collocations or the FCC's March 8, 2015 "Report & Order." Thus, a Section 106 submittal is required on behalf of the proposed DISH undertaking. The purpose of this report is to document the potential for effect to the project's Direct and Indirect Areas of Potential Effect (APEs). The curriculum vitae for the Principal Investigators involved in the preparation of this submittal have been included in Attachment A of the attached FCC Form 621.

GENERAL PROJECT SUMMARY

The proposed activity is located at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. The location of the Subject Property is depicted on the attached Boston South, Massachusetts USGS Quadrangle. The project is also identified as being located at 42° 22' 23.944" North and 71° 7' 17.378" West.

DISH proposes to install antennas and equipment on an existing building located in Cambridge, Massachusetts. As part of the proposed development DISH will install three antennas and several remote radio heads (RRH) on the building rooftop. The proposed antennas will be installed within a concealment painted to match the existing surroundings. Additionally, DISH will install associated telecommunications equipment within existing equipment rooms located inside of the building. Utilities will be routed within the building and along rooftop from the telecommunications equipment to the proposed antennas with no planned ground disturbance. Additional site development details are included in the attached figures.

The host structure is a multi-story institutional/commercial building that was constructed circa 1991. The building is located west of Brattle Street, northwest of Eliot Street, and northeast of Mt. Auburn Street. The surrounding area is characterized by residential, institutional, and commercial properties located along neighboring roadways. An online search of the Massachusetts SHPO Cultural Resource Information System (MACRIS) and the National Register of Historic Places Cultural Resources GIS database did not contain any records for the host structure; however, the host structure is located within the NRHP listed Harvard Square Historic District.

Appendix B - Tribal Coordination Summary

Site Name: BOBOS00341B (BOBOS00341B)
Site Number: 60991
TCNS Number: 281876

TCNS Tribal Review Summary

Tribal Nation	TCNS Issued	Package Sent to Tribe	Follow-up Date	FCC Referral Letter Date	Closeout Date	
Bad River Band of Lake Superior Tribe of Chippewa Indians	7/5/2024	7/10/2024	7/19/2024	N/A	8/4/2024	30 days have passed since the no further action is required. Follow-up 7/19/24 Emailed Follow-up 7/10/24 Emailed Packet
Lac du Flambeau Band of Lake Superior Chippewa Indians	7/5/2024	7/10/2024	7/19/2024	N/A	8/7/2024	8/7/24 Received Response "Unreliable" as amended, we have reviewed information provided for our review. Adverse Effect to sites of historical significance. Follow-up 7/19/24 Emailed Follow-up 7/10/24 Emailed Packet
Mashpee Wampanoag Tribe	7/5/2024	7/10/2024	7/19/2024	8/15/2024	8/30/2024	Per Proposed Construction of the project does not respond within 15 calendar days with respect to these Tribal Nation's comments. 8/13/24 Referred to FCC 7/19/24 Emailed Follow-up 7/10/24 Emailed Packet
Narragansett Indian Tribe	7/5/2024	7/10/2024	7/19/2024	8/15/2024	8/30/2024	Per Proposed Construction of the project does not respond within 15 calendar days with respect to these Tribal Nation's comments. 8/13/24 Referred to FCC 7/19/24 Emailed Follow-up 7/10/24 Emailed Packet
Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin	7/5/2024	7/10/2024	7/19/2024	8/15/2024	8/30/2024	Per Proposed Construction of the project does not respond within 15 calendar days with respect to these Tribal Nation's comments. 8/13/24 Referred to FCC 7/19/24 Emailed Follow-up 7/10/24 Emailed Packet
Sac and Fox Nation in Oklahoma	7/5/2024	7/8/2024	7/19/2024	8/15/2024	8/30/2024	Per Proposed Construction of the project does not respond within 15 calendar days with respect to these Tribal Nation's comments. 8/13/24 Referred to FCC 7/19/24 Emailed Follow-up 7/10/24 Emailed Packet



FEDERAL COMMUNICATIONS COMMISSION
Wireless Telecommunications Bureau
1270 Fairfield Road
Gettysburg, PA 17325-7245

**NOTICE OF ORGANIZATION(S) WHICH WERE SENT
PROPOSED TOWER CONSTRUCTION NOTIFICATION INFORMATION**

DISH - BOBOS00341B (BOBOS00341B); JOB # 60991
855 COMMUNITY DRIVE
SAUK CITY, WI 53583

Date: 07/05/2024
Reference Number:

Dear Applicant:

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this electronic mail message is to inform you that the following authorized persons were sent the notification that you provided through TCNS, which relates to your proposed antenna structure. The information was forwarded by the FCC to authorized TCNS users by electronic mail and/or regular mail (letter). We note that the review period for all parties begins upon receipt of the Submission Packet pursuant to Section VII.A of the NPA and notifications that do not provide this serve as information only.

Persons who have received the notification that you provided include leaders or their designees of federally-recognized American Indian Tribes, including Alaska Native Villages (collectively "Tribal Nations"), Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs). For your convenience in identifying the referenced Tribal Nations and NHOs and in making further contacts, the City and State of the Seat of Government for each Tribal Nation and NHO, as well as the designated contact person, is included in the listing below. We note that Tribal Nations may have Section 106 cultural interests in ancestral homelands or other locations that are far removed from their current Seat of Government. Pursuant to the Commission's rules as set forth in the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission (NPA), all Tribal Nations and NHOs listed below must be afforded a reasonable opportunity to respond to this notification, consistent with the procedures set forth below, unless the proposed construction falls within an exclusion designated by the Tribal Nation or NHO. (NPA, Section IV.F.4).

The notification that you provided was forwarded to the following Tribal Nations and NHOs. A Tribal Nation or NHO may not respond until a full Submission Packet is provided. If, upon receipt, the Tribal Nation or NHO does not respond within a reasonable time, you should make a reasonable effort at follow-up contact, unless the Tribal Nation or NHO has agreed to different procedures (NPA, Section IV.F.5). In the event a Tribal Nation or NHO does not respond to a follow-up inquiry, or if a substantive or procedural disagreement arises between you and a Tribal Nation or NHO, you must seek guidance from the Commission (NPA, Section IV.G). These procedures are further set forth in the FCC's Second Report and Order released on March 30, 2018 (FCC 18-30).

1. Chief of Staff - Audrey Lee - Sac and Fox Nation - 920883 S. Hwy 99, Building A - Stroud, OK -
cos@sacandfoxnation-nsn.gov; sacandfoxtens@gmail.com - 918-968-3526 (ext: 1072) - electronic mail and regular mail

2. THPO - Lawrence Plucinski - Bad River Band of Lake Superior Tribe of Chippewa Indians - (PO Box: 39) - Odanah,
WI - thpo@badriver-nsn.gov; deputyTHPO@badriver-nsn.gov - 715-682-7123 - electronic mail

If the applicant/tower builder receives no response from the Bad River Band of Lake Superior Tribe of Chippewa Indians within 30 days after notification through TCNS, the Bad River Band of Lake Superior Tribe of Chippewa Indians has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Bad River Band of Lake Superior Tribe of Chippewa Indians in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

3. THPO - Marvin DeFoe - Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin - 88455 Pike Road, HWY 13 - Bayfield, WI - Marvin.DeFoe@redcliff-nsn.gov; Chanell.Curran@redcliff-nsn.gov - 715-779-3761 - electronic mail

Details: Boozhoo, we do not have the Red Cliff Portal site online anymore and apologize for the inconvenience.

If you have a project that has already been paid for or would like to voluntarily pay for, please email documents for project review to THPO@redcliff-nsn.gov. This address is only to be used by Consultants who are voluntarily paying for projects.

If you have any questions, please contact Marvin Defoe, THPO Manager at marvin.defoe@redcliff-nsn.gov or Chanell Curran, THPO Assistant at chanell.curran@redcliff-nsn.gov.

4. THPO - Sarah Thompson - Lac du Flambeau Band of Lake Superior Chippewa Indians - Tribal Historic Preservation Office (PO Box: 67) - Lac du Flambeau, WI - ldftppo@ldftribe.com - 715-588-2139 - electronic mail

Details: Effective Immediately:

Please send all submissions through email until further notice. Effective 3/23/2020

Please email all submissions to ldftppo@ldftribe.com

Thank you

5. THPO - John Brown - Narragansett Indian Tribe - 4425 South County Trail - Charleston, RI - tashtesook@aol.com - 401-585-0142 - electronic mail

6. Senior Cultural Resource Monitor - Bettina Washington - Wampanoag Tribe of Gay Head-Aquinnah - 20 Black Brook Road - Aquinnah, MA - thpo@wampanoagtribe-nsn.gov; thpo@wampanoagtribe-nsn.gov - 508-645-9265 (ext: 175) - electronic mail and regular mail

7. THPO - David Weeden - Mashpee Wampanoag Tribe - 483 Great Neck Rd.South - Mashpee, MA - 106Review@mwtribe-nsn.gov; David.weeden@mwtribe-nsn.gov - 508-477-0208 (ext: 102) - electronic mail

The notification that you provided was also forwarded to the following SHPOs in the State in which you propose to construct and neighboring States. The information was provided to these SHPOs as a courtesy for their information and planning. You need make no effort at this time to follow up with any SHPO that does not respond to this notification. Prior to construction, you must provide the SHPO of the State in which you propose to construct (or the Tribal Historic Preservation Officer, if the project will be located on certain Tribal lands), with a Submission Packet pursuant to Section VII.A of the NPA unless the project is excluded from SHPO review under Section III D or E of the NPA.

8. SHPO - Cara Metz - Massachusetts Historical Commission - 220 Morrissey Boulevard - Boston, MA - cara.metz@sec.state.ma.us - 617-727-8470 - electronic mail

9. Deputy SHPO - Jeffrey Emidy - Rhode Island Historic Preservation & Heritage Comm - Old State House 150 Benefit St - Providence, RI - jeffrey.emidy@preservation.ri.gov - 401-222-4134 - electronic mail

10. SHPO - Edward Sanderson - Rhode Island Historic Preservation & Heritage Comm - Old State House 150 Benefit St - Providence, RI - rgreenwood@preservation.ri.gov - 401-222-4134 - electronic mail

11. SHPO - Laura Trieschmann - Vermont Division for Historic Preservation - National Life Building Drawer 20 - Montpelier, VT - laura.trieschmann@vermont.gov - 802-828-3043 - electronic mail

TCNS automatically forwards all notifications to all Tribal Nations and SHPOs that have an expressed interest in the geographic area of a proposal. However, if a proposed communications facilities construction falls within a designated exclusion, you need not expect any response and need not pursue any additional process with that Tribal Nation or SHPO. In addition, a particular Tribal Nation or SHPO may also set forth policies or procedures within its details box that exclude from review certain facilities (for example, a statement that it does not review collocations with no ground disturbance; or that indicates that no response within 30 days indicates no interest in participating in pre-construction review).

Please be advised that the FCC cannot guarantee that the contact(s) listed above have opened and reviewed an electronic or regular mail notification. If you learn that any of the above contact information is no longer valid, please contact the FCC by emailing tcnshelp@fcc.gov. The following information relating to the proposed tower was

Letter to *DISH - BOBOS00341B (BOBOS00341B); Job # 60991 Sandra Weiss*

Date: 07/05/2024

Page 4

forwarded to the person(s) listed above:

Notification Received: 07/02/2024

Notification ID: 281876

Excluded from SHPO Review: No

Tower Owner Individual or Entity Name: DISH - BOBOS00341B (BOBOS00341B); Job # 60991

Consultant Name: Sandra Weiss

P.O. Box:

Street Address: 855 Community Drive

City: Sauk City

State: WI

Zip Code: 53583

Phone: 608-644-2297

Email: TCNS@ramaker.com

Structure Type: B - Building

Latitude: 42 deg 22 min 23.9 sec N

Longitude: 71 deg 7 min 17.4 sec W

Location Description: 1 Brattle Square

City: Cambridge

State: MASSACHUSETTS

County: MIDDLESEX

Detailed Description of Project (Optional): DISH proposes to install antennas and equipment at the 90.33 foot building tower at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. Site location to follow.

Ground Elevation: 5.2 meters

Support Structure: 27.5 meters above ground level

Overall Structure: 29.7 meters above ground level

Overall Height AMSL: 34.9 meters above sea level

If you have any questions or comments regarding this notice, please contact the FCC using the electronic Help Request form located on the FCC's website at:

<https://www.fcc.gov/wireless/available-support-services>

You may also call the FCC Support Center at (877) 480-3201 (TTY 717-338-2824). Hours are from 8 a.m. to 7:00 p.m. Eastern Time, Monday through Friday (except Federal holidays). To provide quality service and ensure security, all telephone calls are recorded.

Thank you,
Federal Communications Commission

Sandra Weiss

From: towernotifyinfo@fcc.gov
Sent: Thursday, August 15, 2024 8:02 AM
To: Ramaker TCNS Consultation
Cc: tcnsweekly@fcc.gov
Subject: Proposed Construction of Communications Facilities Notification of Final Contacts - Email ID #36491

Follow Up Flag: Follow up
Flag Status: Completed

CAUTION: This email originated from outside our organization.

DISH - BOBOS00341B (BOBOS00341B); Job # 60991
Sandra Weiss
855 Community Drive
Sauk City, WI 53583

Dear Applicant:

This letter addresses the proposed communications facilities listed below that you have referred to the Federal Communications Commission (Commission) for purposes of contacting federally recognized Indian Tribes, including Alaska Native Villages (collectively Indian Tribes), and Native Hawaiian Organizations (NHOs), as specified by Section IV.G of the Nationwide Programmatic Agreement (NPA). Consistent with the procedures outlined in the Commission's Wireless Infrastructure Second Report and Order (1), we have contacted the Indian Tribes or NHOs identified in the attached Table for the projects listed in the attached Table. You referred these projects to us between 08/08/2024 and 08/15/2024. Our contact with these Tribal Nations or NHOs was sent on 08/15/2024.

Thus, as described in the Wireless Infrastructure Second Report and Order (2), if you or Commission staff do not receive a statement of interest regarding a particular project from any Tribe or NHO within 15 calendar days of 08/15/2024, your obligations under Section IV of the NPA with respect to these Tribal Nations or NHOs are complete. If a Tribal Nation or NHO responds that it has concerns about a historic property of traditional religious and cultural significance that may be affected by the proposed construction within the 15 calendar day period, the Applicant must involve it in the review as set forth in the NPA, and may not begin construction until the process set forth in the NPA is completed.

You are reminded that Section IX of the NPA imposes independent obligations on an Applicant when a previously unidentified site that may be a historic property, including an archeological property, is discovered during construction or after the completion of review. In such instances, the Applicant must cease construction and promptly notify, among others, any potentially affected Tribal Nation or NHO. A Tribal Nation's or NHO's failure to express interest in participating in pre-construction review of an undertaking does not necessarily mean it is not interested in archeological properties or human remains that may inadvertently be discovered during construction. Hence, an Applicant is still required to notify any potentially affected Tribal Nation or NHO of any such finds pursuant to Section IX or other applicable law.

Sincerely,
Jill Springer
Federal Preservation Officer
Federal Communications Commission

- 1) See Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Deployment, Second Report and Order, FCC 18-30 (Mar. 30, 2018) (Wireless Infrastructure Second Report and Order).
- 2) See id. at paras. 111-112.

LIST OF PROPOSED COMMUNICATIONS TOWERS

TCNS# 281875 Referred Date: 08/13/2024 Location: 200 Stuart Street, Boston, MA Detailed Description of Project: DISH proposes to install antennas and equipment at the 251 foot building tower at 200 Stuart Street in Boston, Suffolk County, Massachusetts. Site location maps to follow.

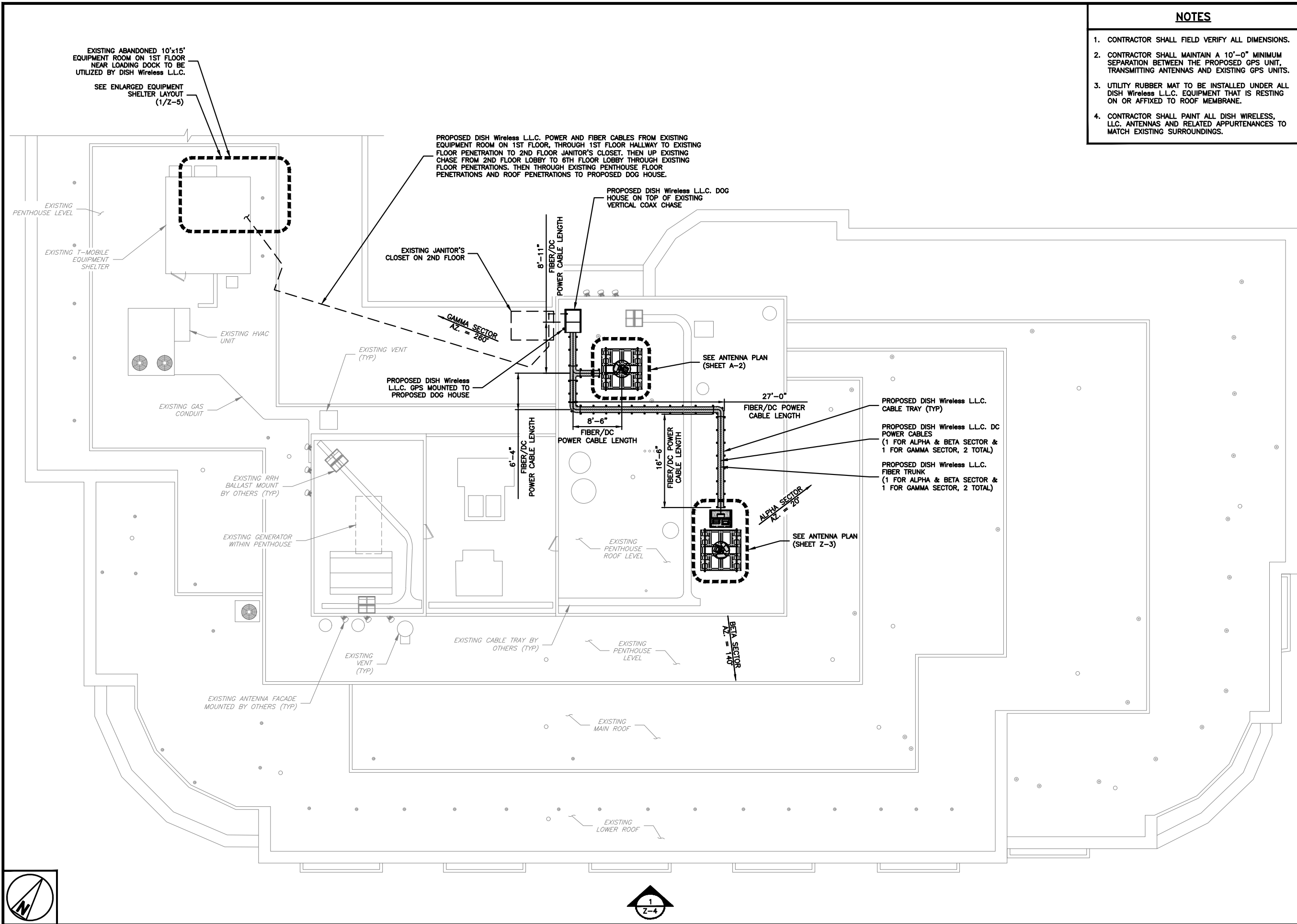
Tribe Name: Mashpee Wampanoag Tribe
Tribe Name: Narragansett Indian Tribe
Tribe Name: Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
Tribe Name: Sac and Fox Nation
Tribe Name: Wampanoag Tribe of Gay Head-Aquinnah

TCNS# 281876 Referred Date: 08/13/2024 Location: 1 Brattle Square, Cambridge, MA Detailed Description of Project: DISH proposes to install antennas and equipment at the 90.33 foot building tower at 1 Brattle Square in Cambridge, Middlesex County, Massachusetts. Site location to follow.

Tribe Name: Mashpee Wampanoag Tribe
Tribe Name: Narragansett Indian Tribe
Tribe Name: Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
Tribe Name: Sac and Fox Nation
Tribe Name: Wampanoag Tribe of Gay Head-Aquinnah

LEGEND:

* - Notification numbers are assigned by the Commission staff for sites where initial contact was not made through TCNS.



NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. UTILITY RUBBER MAT TO BE INSTALLED UNDER ALL DISH Wireless L.L.C. EQUIPMENT THAT IS RESTING ON OR AFFIXED TO ROOF MEMBRANE.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, L.L.C. ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



NB+C ENGINEERING SERVICES, LLC.

100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: KN
CHECKED BY: NSB
APPROVED BY: DRG

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/10/2024	ISSUED FOR ZONING

A&E PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
BUILDING PLAN

SHEET NUMBER
Z-2

BUILDING PLAN

8' 4' 0' 8' 16'
1/8"=1'-0"

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT OMITTED FOR CLARITY.
4. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.

PROPOSED DISH Wireless L.L.C. OVP MOUNTED TO BALLAST FRAME (1 SHARED PER ALPHA & BETA SECTORS, 1 TOTAL)

PROPOSED DISH Wireless L.L.C. RRH MOUNTED TO BALLAST FRAME (2 PER ALPHA SECTOR ONLY)

PROPOSED DISH Wireless L.L.C. 36" X 10' TALL ANTENNA CONCEALMENT (2 TOTAL)

PROPOSED DISH Wireless L.L.C. ANTENNA MOUNTED WITHIN PROPOSED CONCEALMENT (1 PER SECTOR, 3 TOTAL)

PROPOSED DISH Wireless L.L.C. CABLE TRAY (TYP)

PROPOSED DISH Wireless L.L.C. DC POWER CABLES (1 FOR ALPHA & BETA SECTOR & 1 FOR GAMMA SECTOR, 2 TOTAL)

PROPOSED DISH Wireless L.L.C. FIBER TRUNK (1 FOR ALPHA & BETA SECTOR & 1 FOR GAMMA SECTOR, 2 TOTAL)

PROPOSED DISH Wireless L.L.C. COMMSCOPE RR-TFS BALLAST MOUNT (1 TOTAL)

PROPOSED DISH Wireless L.L.C. OVP MOUNTED WITHIN PROPOSED CONCEALMENT (1 PER GAMMA SECTOR ONLY)

PROPOSED DISH Wireless L.L.C. RRH MOUNTED WITHIN CONCEALMENT (2 PER BETA & GAMMA SECTORS, 4 TOTAL)

PROPOSED DISH WIRELESS L.L.C. NON-PENETRATED 7'X7' BALLAST FRAME (2 TOTAL)

ALPHA & BETA SECTOR

GAMMA SECTOR

ANTENNA PLAN

12' 6" 0 1' 2' 3' 4' 5' 1/2"=1'-0"

1

PROPOSED DISH Wireless L.L.C. ANTENNA MOUNTED WITHIN PROPOSED CONCEALMENT (1 PER SECTOR, 3 TOTAL)

PROPOSED DISH Wireless L.L.C. 36" X 10' TALL ANTENNA CONCEALMENT (2 TOTAL)

PROPOSED DISH Wireless L.L.C. RRH MOUNTED WITHIN CONCEALMENT (2 PER BETA & GAMMA SECTORS, 4 TOTAL)

PROPOSED DISH Wireless L.L.C. OVP MOUNTED TO BALLAST FRAME (1 SHARED PER ALPHA & BETA SECTORS, 1 TOTAL)

PROPOSED DISH Wireless L.L.C. OVP MOUNTED WITHIN PROPOSED CONCEALMENT (1 PER GAMMA SECTOR ONLY)

PROPOSED DISH WIRELESS L.L.C. NON-PENETRATED 7'X7' BALLAST FRAME (2 TOTAL)

ROOF LEVEL

PROPOSED DISH Wireless L.L.C. UTILITY RUBBER MAT (BELOW)

PROPOSED DISH Wireless L.L.C. COMMSCOPE RR-TFS BALLAST MOUNT (1 TOTAL)

ALPHA & BETA SECTOR

GAMMA SECTOR

ANTENNA ELEVATION

12' 6" 0 1' 2' 3' 4' 5' 1/2"=1'-0"

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE FEED LINE TYPE AND LENGTH	RRH			OVP MANUFACTURER MODEL
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		MANUFACTURER - MODEL NUMBER	TECH	POS.	
A1	PROPOSED	JMA - MX08FRO665-21	5G	20°	97'-0"	(1) 4AWG DC POWER CABLE (1) FIBER TRUNK (LENGTH: 200'±)	SAMSUNG - MID BAND SFG-ARR3KM01DI/RF4451D-70A	5G	A1	RAYCAP
A2	--	--	--	--	--		SAMSUNG - LOW BAND SFG-ARR3J601DI/RF4450T-71A	5G	A1	RDIDC-9181-PF-48
A3	--	--	--	--	--		--	--	--	--
B1	PROPOSED	JMA - MX08FRO665-21	5G	140°	97'-0"	SHARED WITH ALPHA	SAMSUNG - MID BAND SFG-ARR3KM01DI/RF4451D-70A	5G	B1	SHARED WITH ALPHA
B2	--	--	--	--	--		SAMSUNG - LOW BAND SFG-ARR3J601DI/RF4450T-71A	5G	B1	
B3	--	--	--	--	--		--	--	--	
C1	PROPOSED	JMA - MX08FRO665-21	5G	260°	97'-0"	(1) 6AWG DC POWER CABLE (1) FIBER TRUNK (LENGTH: 160'±)	SAMSUNG - MID BAND SFG-ARR3KM01DI/RF4451D-70A	5G	C1	RAYCAP
C2	--	--	--	--	--		SAMSUNG - LOW BAND SFG-ARR3J601DI/RF4450T-71A	5G	C1	RDIDC-3045-PF-48
C3	--	--	--	--	--		--	--	--	--

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.

100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



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DRAWN BY: KN CHECKED BY: NSB APPROVED BY: DRG

RFDS REV #: 0

ZONING DOCUMENTS

REV	DATE	DESCRIPTION
0	11/16/2024	ISSUED FOR ZONING

A&E PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
ANTENNA PLAN,
ELEVATION AND SCHEDULE

SHEET NUMBER

Z-3

- TOP OF PROPOSED HIGHEST APPURTENANCE
100'-4" AGL
- TOP OF PROPOSED DISH Wireless L.L.C. ANTENNA (TYP 1 PER SECTOR, 3 TOTAL)
100'-0" AGL
- EXISTING HIGHEST APPURTENANCE
97'-4" AGL
- PROPOSED DISH Wireless L.L.C. ANTENNA (TYP 1 PER SECTOR, 3 TOTAL)
RAD CENTER ● 97'-0" AGL
- EXISTING PENTHOUSE ROOF
90'-4" AGL
- EXISTING EMPTY EQUIPMENT SHELTER ROOF
87'-6" AGL
- EXISTING BUILDING PARAPET
78'-3" AGL
- EXISTING BUILDING ROOF
77'-6" AGL

GROUND LEVEL
0'-0" AGL

EXISTING ABANDONED 10'x15'
EQUIPMENT ROOM/LEASE AREA
TO BE UTILIZED BY DISH
Wireless L.L.C.

- PROPOSED DISH Wireless L.L.C. DOG
HOUSE ON TOP OF EXISTING
VERTICAL COAX CHASE
- PROPOSED DISH Wireless L.L.C. GPS
MOUNTED TO PROPOSED DOG HOUSE
- EXISTING RRH
BALLAST MOUNT BY
OTHERS (TYP)
- EXISTING ANTENNA
FACADE MOUNTED BY
OTHERS (TYP)
- EXISTING VENT (TYP)
- PROPOSED DISH Wireless L.L.C. OVP MOUNTED WITHIN
PROPOSED CONCEALMENT
(1 PER GAMMA SECTOR ONLY)
- PROPOSED DISH Wireless L.L.C. RRH MOUNTED WITHIN
CONCEALMENT (2 PER BETA &
GAMMA SECTORS, 4 TOTAL)
- PROPOSED DISH Wireless L.L.C.
36" X 10' TALL ANTENNA
CONCEALMENT (2 TOTAL)
- PROPOSED DISH Wireless L.L.C.
ANTENNA MOUNTED WITHIN
PROPOSED CONCEALMENT
(1 PER SECTOR, 3 TOTAL)
- PROPOSED DISH Wireless L.L.C. OVP
MOUNTED TO BALLAST FRAME
(1 SHARED PER ALPHA & BETA
SECTORS, 1 TOTAL) (BEHIND)
- PROPOSED DISH Wireless L.L.C.
RRH MOUNTED TO BALLAST FRAME
(2 PER ALPHA SECTOR ONLY)
(BEHIND)

PROPOSED DISH Wireless L.L.C. POWER AND FIBER CABLES
FROM EXISTING EQUIPMENT ROOM ON 1ST FLOOR,
THROUGH 1ST FLOOR HALLWAY TO EXISTING FLOOR
PENETRATION TO 2ND FLOOR JANITOR'S CLOSET. THEN UP
EXISTING CHASE FROM 2ND FLOOR LOBBY TO 6TH FLOOR
LOBBY THROUGH EXISTING FLOOR PENETRATIONS. THEN
THROUGH EXISTING PENTHOUSE FLOOR PENETRATIONS AND
ROOF PENETRATIONS TO PROPOSED DOG HOUSE.

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. CONTRACTOR SHALL PAINT ALL DISH WIRELESS, LLC. ANTENNAS AND RELATED APPURTENANCES TO MATCH EXISTING SURROUNDINGS.

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RFDS REV #: 0

ZONING
DOCUMENTS

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0	11/18/2024	ISSUED FOR ZONING

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

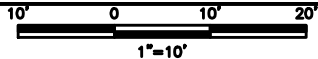
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

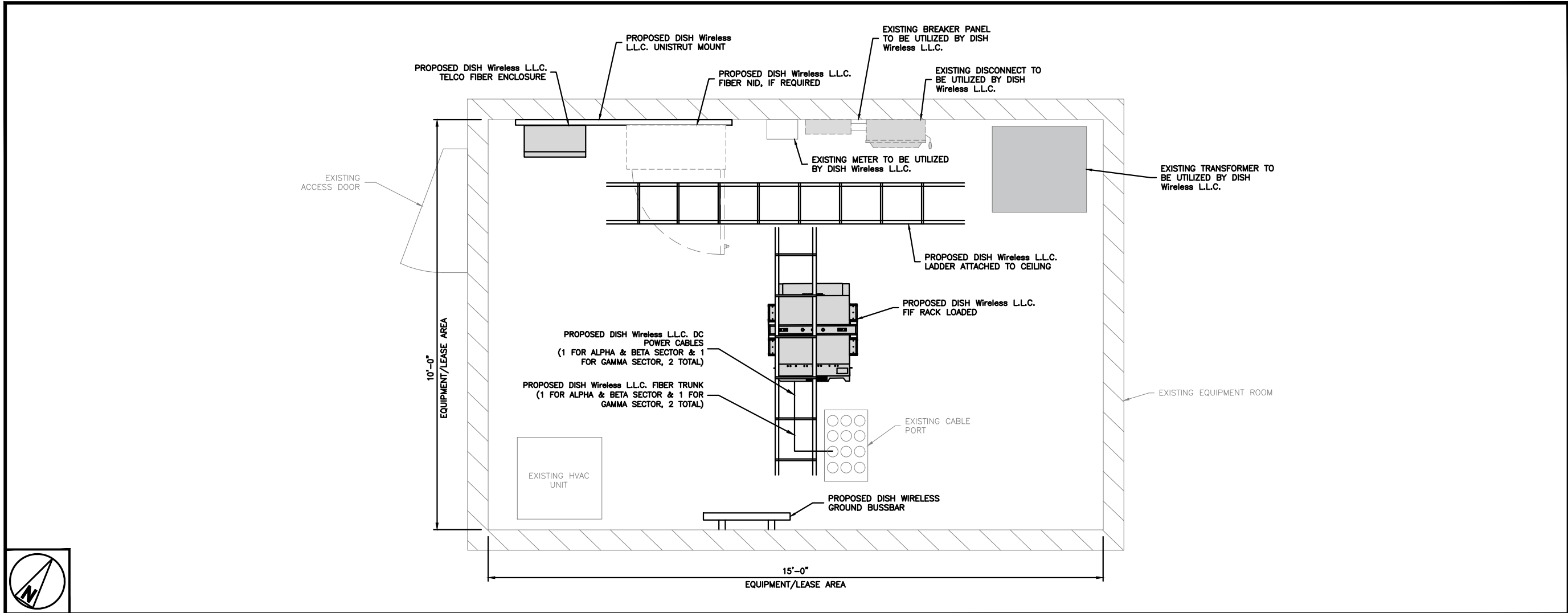
SHEET TITLE
BUILDING
ELEVATION

SHEET NUMBER

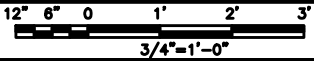
Z-4

BUILDING ELEVATION

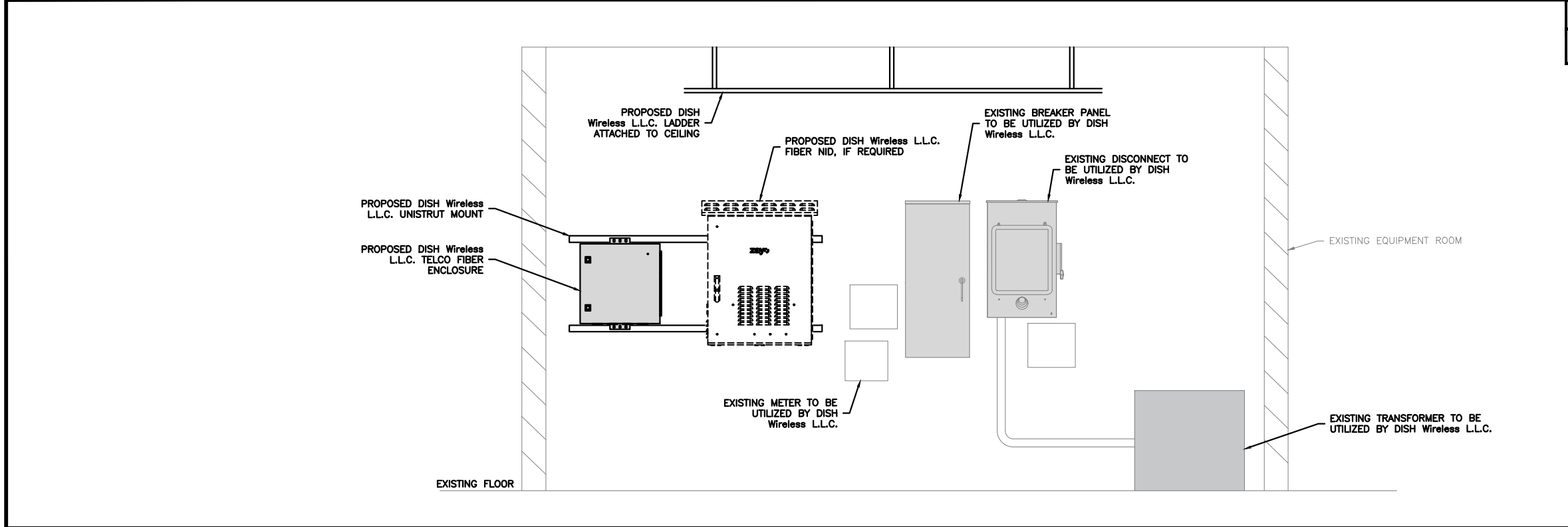




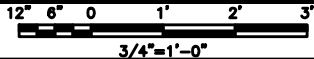
EQUIPMENT ROOM PLAN



1



EQUIPMENT ROOM ELEVATION



2

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DOCUMENTS

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REV	DATE	DESCRIPTION
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PROJECT INFORMATION
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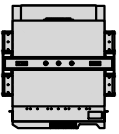
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

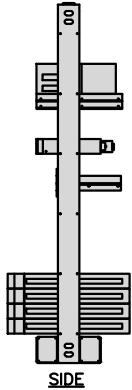
SHEET NUMBER

Z-5

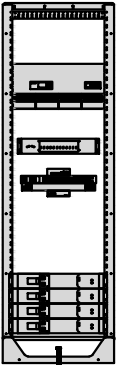
FIF RACK LOADED	
DIMENSIONS (HxWxD):	83.99"x26"x28.5"
WEIGHT:	±800 lbs



PLAN



SIDE

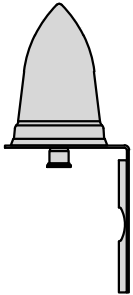


FRONT

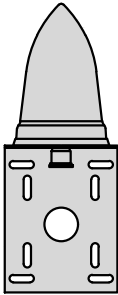
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



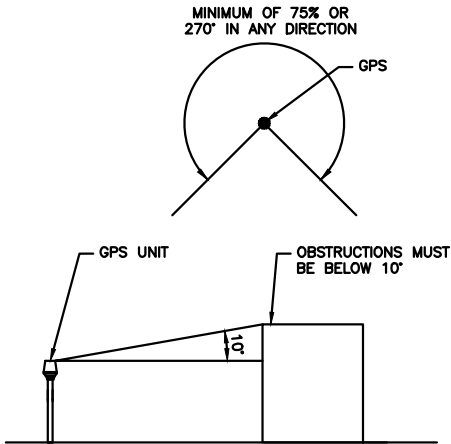
TOP



BACK



SIDE



FIF RACK DETAIL

NO SCALE

1

GPS DETAIL

NO SCALE

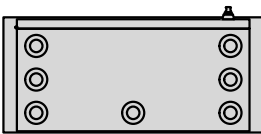
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GPS MINIMUM SKY VIEW REQUIREMENTS

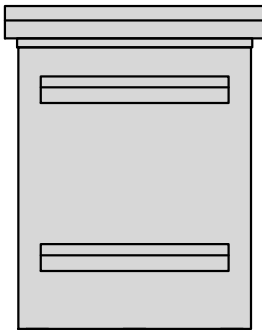
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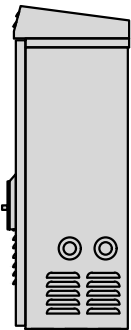
ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs



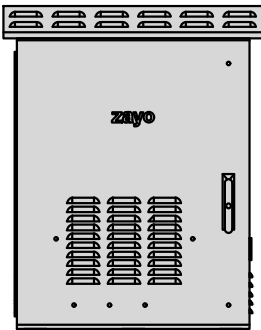
BOTTOM



BACK



SIDE

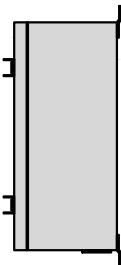


FRONT

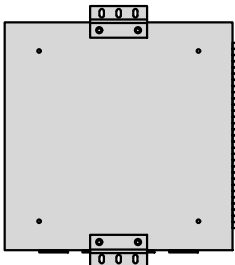
CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



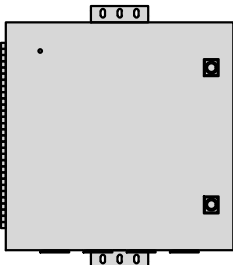
FRONT



SIDE

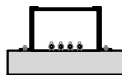


BACK

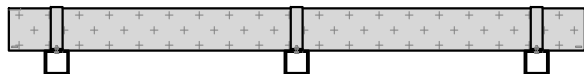


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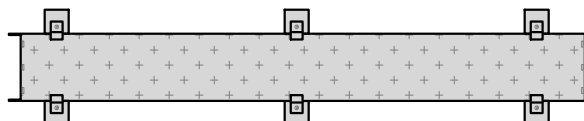
COMMSCOPE RT-CB4D ROOFTOP COVER KIT		MOUNTING	NON-PENETRATING
DIMENSIONS (HxWxL)	7"x 11.25"x 96"	INCLUDED PRODUCTS:	RTCB4D.01 CHANNEL (1)
WEIGHT/ VOLUME	85.98 LBS		MT-F1598 SLEEPERS (3)
CABLE RUN (QTY)	4		RTCUH HARDWARE
			RTHC.01 HOLD-DOWN CLAMPS (6)



END



SIDE



PLAN

FIBER NID ENCLOSURE DETAIL

NO SCALE

4

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

5

ROOFTOP CABLE TRAY DETAIL

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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KN NSB DRG

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/18/2024	ISSUED FOR ZONING

A&E PROJECT NUMBER
100753

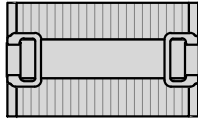
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

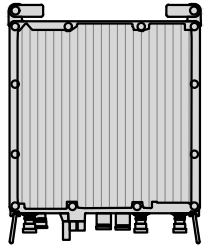
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
Z-6

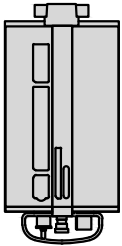
SAMSUNG – MID BAND SFG-ARR3KM01DI/RF4451D-70A	
DIMENSIONS (HxWxD)	15"x15"x8.9"
WEIGHT	61.3 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR -48VDC
INPUT VOLTAGE	(-36 to 58 VDC)



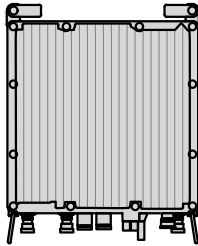
PLAN



BACK



SIDE



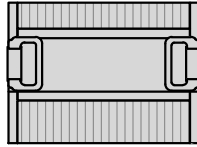
FRONT

RRH DETAIL

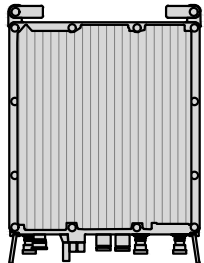
NO SCALE

1

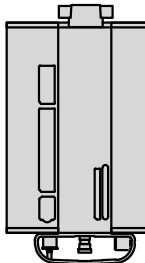
SAMSUNG – LOW BAND SFG-ARR3J601DI/RF4450T-71A	
DIMENSIONS (HxWxD)	15"x16.5"x11"
WEIGHT	94.6 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR -48VDC
INPUT VOLTAGE	(-36 to 58 VDC)



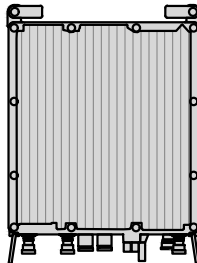
PLAN



BACK



SIDE



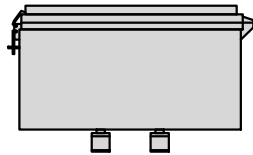
FRONT

RRH DETAIL

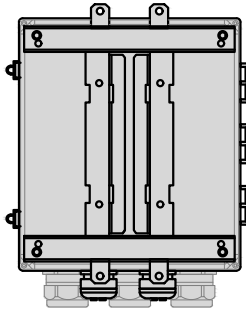
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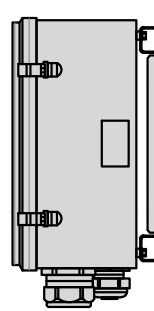
RAYCAP RDIDC-3045-PF-48 SURGE PROTECTION DEVICE (OVP)	
DIMENSIONS (HxWxD)	19.00"x16.21"x9.64"
WEIGHT	21 lbs



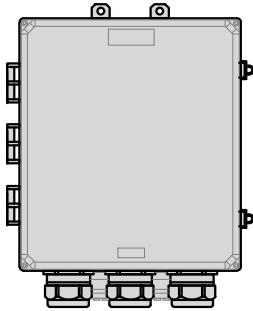
PLAN



BACK



SIDE



FRONT

SURGE PROTECTION DEVICE DETAIL (OVP)

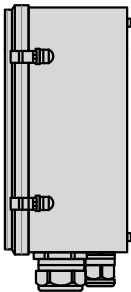
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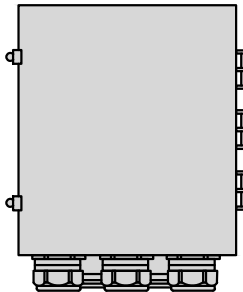
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



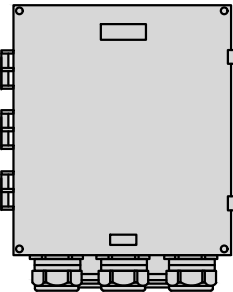
PLAN



SIDE



BACK



FRONT

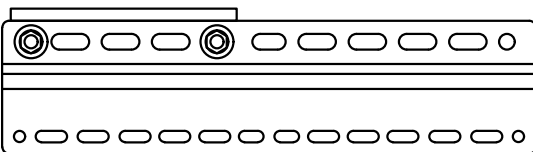
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

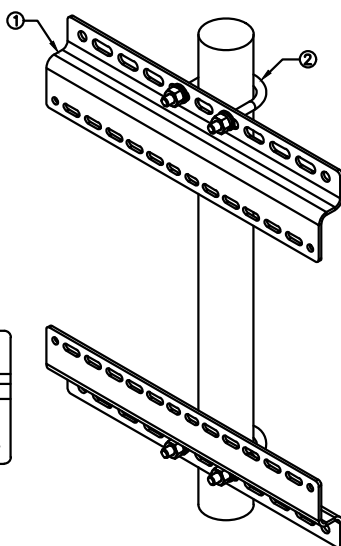
4

SABRE SINGLE Z-BRACKET C10123151	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	13.41 lbs
PACKAGE QUANTITY	2

#	DESCRIPTION
1	RRH Z BRACKET, 3/16"
2	U-BOLT ASSEMBLY, 1/2" FOR 2-7/8" PIPE



NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



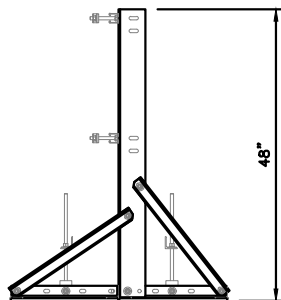
RRH MOUNT DETAIL

NO SCALE

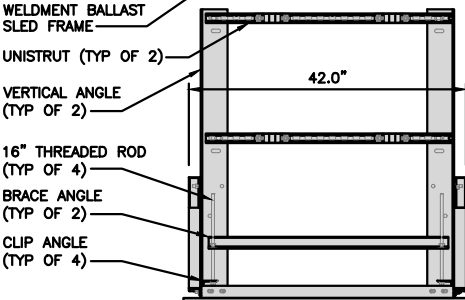
5

COMMSCOPE RR-TFS BALLAST MOUNT	
DIMENSIONS (HxWxD)	48"x42"x36.1"
WEIGHT	161.77 lb

NOTE: PROPOSED (14) TOTAL 4"x8"x16" SOLID CONCRETE BLOCKS (35 LB EACH), EVENLY DISTRIBUTED WITHIN BALLAST FRAME TRAYS (TOTAL WEIGHT: 490 LBS) DUE TO VARIABILITY IN BLOCK WEIGHT, GC TO WEIGH EACH INDIVIDUAL BLOCK TO CONFIRM ADEQUATE BALLAST.

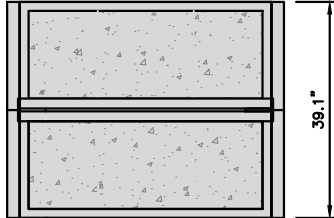


SIDE



FRONT

WELDMENT BALLAST
SLED FRAME
UNISTRUT (TYP OF 2)
VERTICAL ANGLE
(TYP OF 2)
16" THREADED ROD
(TYP OF 4)
BRACE ANGLE
(TYP OF 2)
CLIP ANGLE
(TYP OF 4)



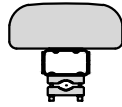
PLAN

BALLAST MOUNT DETAIL

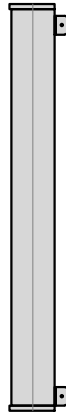
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8

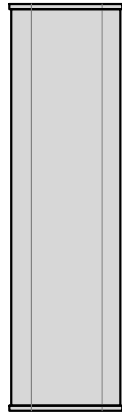
JMA MX08FR0665-21	
DIMENSIONS (HxWxD)	72.8"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



FRONT

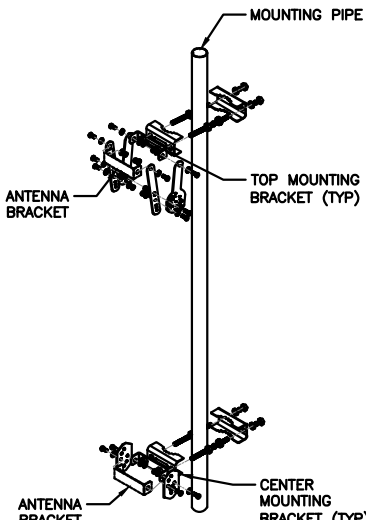
ANTENNA DETAIL

NO SCALE

6

JMA ANTENNA MOUNTING BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5 TO 4.5 INCHES

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT



ANTENNA
BRACKET

CENTER
MOUNTING
BRACKET (TYP)

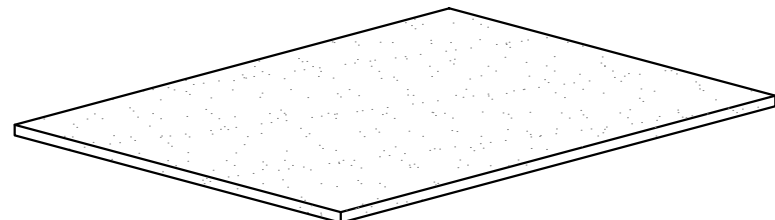
TOP MOUNTING
BRACKET (TYP)

ANTENNA DOWNTILT BRACKET DETAIL

NO SCALE

7

UTILITY RUBBER MAT, BLACK	
DIMENSIONS	4'x 3'x 1/2"
WEIGHT/ VOLUME	36.5 LB AVERAGE
MATERIAL	100% RECYCLE RUBBER



UTILITY RUBBER MAT DETAIL

NO SCALE

9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, L.L.C.

100 APOLLO DRIVE
SUITE 303
CHELMSFORD, MA 01824
(978) 856-8308



IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:

KN NSB DRG

RFDS REV #: 0

ZONING
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/18/2024	ISSUED FOR ZONING

A&E PROJECT NUMBER
100753

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00341B

1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
Z-7