



CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

2025 JUN -4 AM 11:46
OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

BZA Application Form

BZA Number: 1163946

General Information

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

Special Permit: X

Variance: _____

Appeal: _____

PETITIONER: Cambridge Redevelopment Authority / Crown Castle Fiber

PETITIONER'S ADDRESS: 255 Main St, Cambridge, MA 02142

LOCATION OF PROPERTY: 200 Main St, Cambridge, MA

TYPE OF OCCUPANCY: Streetlight

ZONING DISTRICT: Business

REASON FOR PETITION:

/Telecommunication Facility (antenna)/

DESCRIPTION OF PETITIONER'S PROPOSAL:

Crown Castle and CRA entered an agreement to replace a previously existing metal streetlight (currently down as it was hit by a car) with a new streetlight housing wireless antenna equipment to increase wireless coverage in the area.

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).

Original
Signature(s):

Brandi Spezzano

(Petitioner (s) / Owner)

Brandi Spezzano

(Print Name)

Address:

4545 E River Rd, W Henrietta, NY 14586

Tel. No.

585-445-5826

E-Mail Address:

Brandi.Spezzano@crowncastle.com

Date: 5/28/2025

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 Thomas L. Evans, Executive Director - CRA
(OWNER)

Address: 255 Main St. 8th Floor Cambridge MA 02142

State that I/We own the property located at 336 Main Street,
which is the subject of this zoning application.

The record title of this property is in the name of Cambridge
Redevelopment Authority

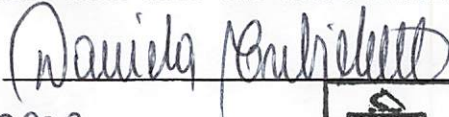
*Pursuant to a deed of duly recorded in the date 08/12/85, Middlesex South
County Registry of Deeds at Book 16577, Page 189; or
Middlesex Registry District of Land Court, Certificate No. _____
Book _____ Page _____.


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

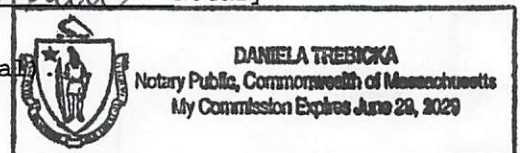
***Written evidence of Agent's standing to represent petitioner may be requested.**

Commonwealth of Massachusetts, County of Middlesex

The above-name Thomas L Evans personally appeared before me,
this 19th of May, 2025, and made oath that the above statement is true.


Notary

My commission expires June 29, 2029 (Notary Seal)



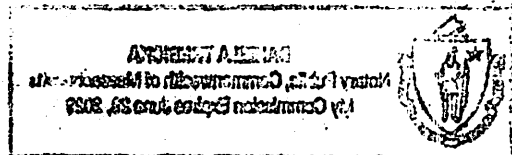
- If ownership is not shown in recorded deed, e.g. if by court order, recent deed, or inheritance, please include documentation.

substantive

2/18/12

PPH

PPH



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 200 Main St., Cambridge, MA (location) would not be a detriment to the public interest because:

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

The proposed installation of a small cell will not impair the integrity or character of the district. By replacing an existing streetlight with a visually similar structure and integrating the equipment discreetly, the project maintains context of the area. The design matches other facilities within the City of Cambridge and has been approved by Pole and Conduit Committee. The site will improve wireless coverage in the area, which is a public benefit to the area.

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

The proposed installation will not result in traffic congestion, create safety hazards, or cause any substantial alteration to the established character of the neighborhood, as the wireless equipment will be installed at the same location as the previously existing streetlight. By replacing an existing streetlight with a visually similar structure and integrating the equipment discreetly, the project maintains context of the area. The minimal visual and physical footprint ensures compatibility with the surrounding environment. The facility design has been installed in other parts of Cambridge and approved by the Cambridge Pole and Conduit Committee.

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 continued operation of the development of adjacent uses would not be adversely affected by the nature of the proposed use, because the proposed facility equipment will be installed at the location of an existing streetlight and would maintain the existing use as a utility in the right-of-way. There will be no adverse affects to the installation of this wireless equipment.

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:

No nuisance or hazard would be created to the detriment of the health safety and welfare of the citizens of the city as the proposed installation is in full compliance with all Federal Communication Commissioner regulations regarding radio frequency emissions. The site would maintain its current use as a streetlight as well.

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 proposed use would not impair the integrity of the district or adjoining districts as the proposed facility will be on an existing streetlight and is designed to have minimal visual impact, and footprint ensures compatibility with the surrounding environment. The proposed facility matches other facilities within Cambridge and design is approved by the Cambridge Pole and Conduit Committee.

***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: Cambridge Redevelopment Authority / Crown Castle Fiber
Location: 200 Main St., Cambridge, MA
Phone: 585-445-5826

Present Use/Occupancy: Streetlight
Zone: Business
Requested Use/Occupancy: Streetlight with wireless antenna

		<u>Existing Conditions</u>		<u>Requested Conditions</u>		<u>Ordinance Requirements</u>	
<u>TOTAL GROSS FLOOR AREA:</u>		0		0		N/A	(max.)
<u>LOT AREA:</u>		0		2		N/A	(min.)
<u>RATIO OF GROSS FLOOR AREA TO LOT AREA:</u> ²		N/A		N/A		N/A	
<u>LOT AREA OF EACH DWELLING UNIT</u>		N/A		N/A		N/A	
<u>SIZE OF LOT:</u>	WIDTH	N/A		N/A		N/A	
	DEPTH	N/A		N/A		N/A	
<u>SETBACKS IN FEET:</u>	FRONT	N/A		N/A		N/A	
	REAR	N/A		N/A		N/A	
	LEFT SIDE	N/A		N/A		N/A	
	RIGHT SIDE	N/A		N/A		N/A	
<u>SIZE OF BUILDING:</u>	HEIGHT	N/A		N/A		N/A	
	WIDTH	N/A		N/A		N/A	
	LENGTH	N/A		N/A		N/A	
<u>RATIO OF USABLE OPEN SPACE TO LOT AREA:</u>		N/A		N/A		N/A	
<u>NO. OF DWELLING UNITS:</u>		N/A		N/A		N/A	
<u>NO. OF PARKING SPACES:</u>		N/A		N/A		N/A	
<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'.



PROJECT: VWZ 4G NODE RELOCATION

SITE CASCADE: CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE TYPE: 28'-2" METAL GUY POLE

DRAWING DESCRIPTION: PERMIT DRAWING

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

SITE INFORMATION

EXISTING NODE:

LATITUDE	LONGITUDE
42°21'43.9"	71°05'01.9"
42.3622	-71.083858

PROPOSED NODE:

LATITUDE	LONGITUDE
42°21'43.9"	71°05'01.9"
42.3622	-71.083858

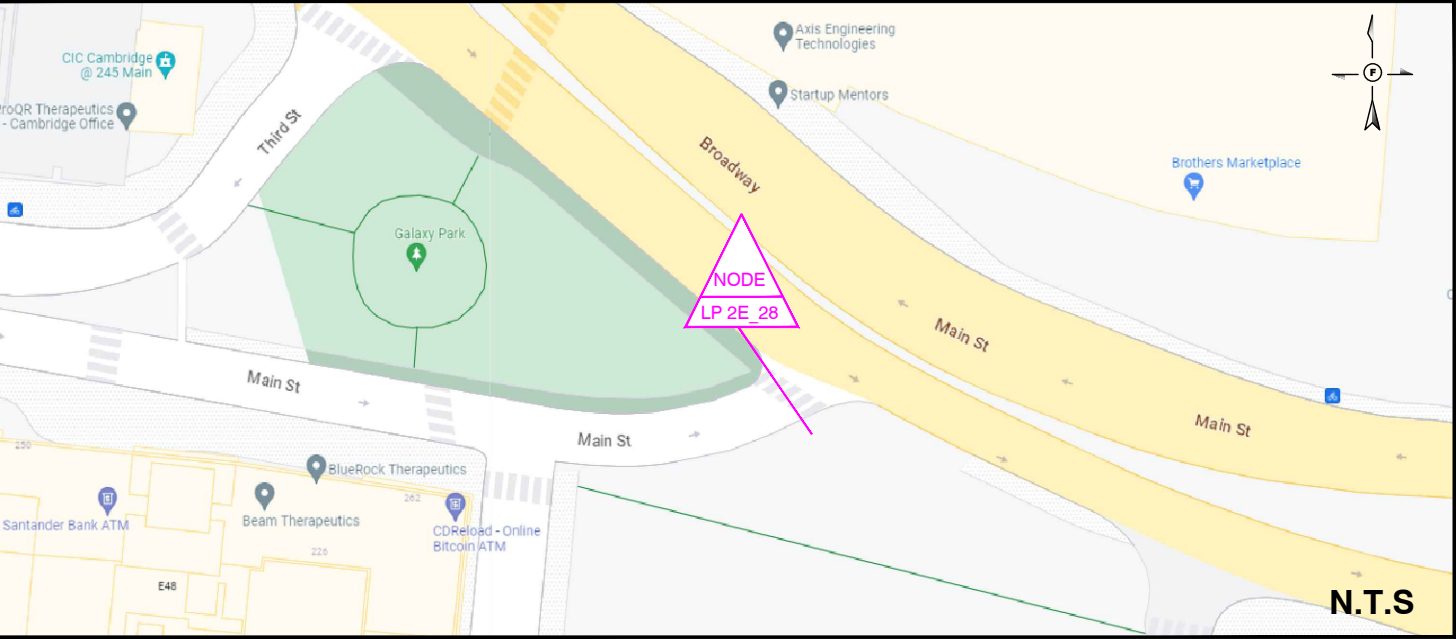
COUNTY:
SUFFOLK

ZONING JURISDICTION:
CITY OF CAMBRIDGE

ZONING DISTRICT:
CAMBRIDGE

POWER COMPANY:
EVERSOURCE

LOCUS MAP



INDEX OF DRAWING

SHT NO.	DESCRIPTION
01	TITLE SHEET
02	GENERAL NOTES
03	OVERALL SITE PLAN
04	EXISTING POLE DETAILS
05	PROPOSED POLE DETAILS
06	PHOTAGRAPHIC SIMULATION
07	SHROUD DETAILS
08	ANTENA DETAILS
09	EQUIPEMENT DETAILS
10	FIBER DIAGRAM
11	ELECTRIC WIRING DIAGRAM
12	STRUCTURAL

PROJECT EQUIPMENT

NEW CROWN CASTLE INSTALLED EQUIPMENT

- CHARLES COLO-702322

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

TITLE SHEET

SHEET:

01

PROJECT TEAM

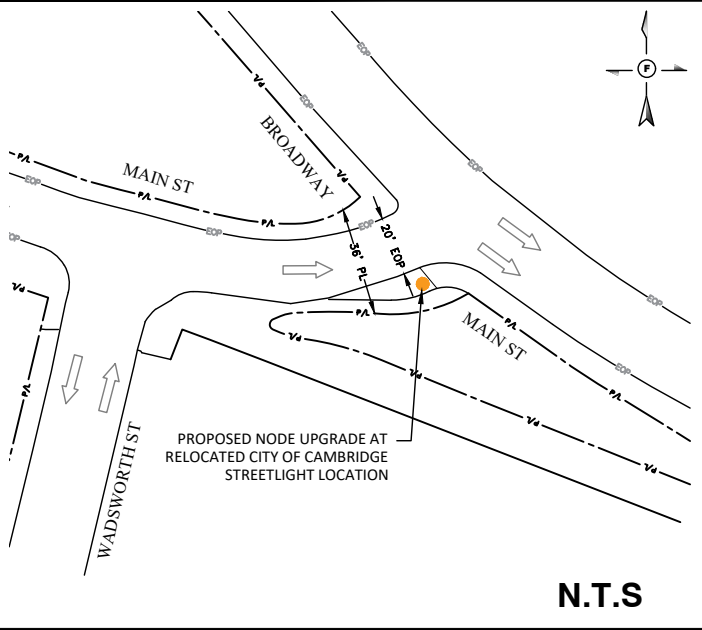
BACKHAUL PROVIDER:
CROWN CASTLE FIBER

CROWN CASTLE PROJECT MANAGER:
THOMAS TADDEO

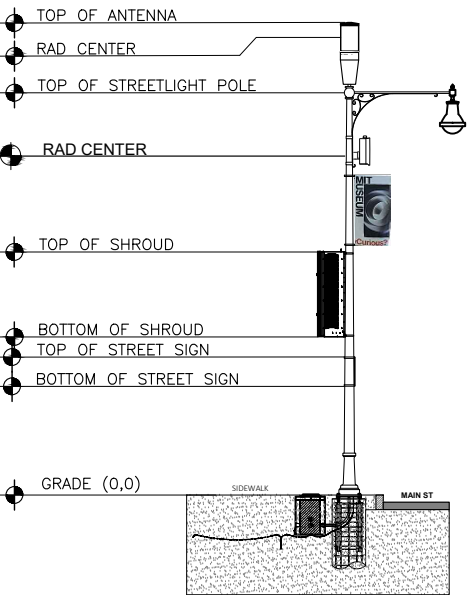
DO NOT SCALE DRAWING

SUBCONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & FIELD CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SITE PLAN



TYPICAL SITE ELEVATION



GENERAL PLAN NOTES:

1. THE CONTRACTOR SHALL BE PREPARED TO REPAIR/REPLACE ANY WORK DEEMED TO BE SUBSTANDARD OR ONE WITHOUT INSPECTION SIGN-OFF BY THE GOVERNING DIVISION OF ENGINEERING AND CONSTRUCTION.
2. STREET OPENING PERMIT FOR RIGHT OF WAY CONSTRUCTION
- DEFINITION:
ANY CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY FOR THE PURPOSES OF INSTALLING NEW OR REPAIRING/UPGRADING EXISTING PRIVATE AND PUBLIC FACILITIES SHALL BE GOVERNED BY THE REQUIREMENTS OF THIS PERMIT. THE STREET OPENING PERMIT IS REQUIRED FOR THE REMOVAL OR REPLACEMENT OF ANY AND ALL EXISTING CITY INFRASTRUCTURE, INCLUDING ROADWAYS, SIDEWALKS, CURB, ADA RAMPS, TRAFFIC SIGNALIZATION AND APPURTENANCES, PUBLIC OWNED SEWER, WATER AND ELECTRICAL UTILITIES NECESSARY FOR THE PURPOSES OF CONSTRUCTION OR DAMAGED DURING CONSTRUCTION. PRIOR TO MEETING THE REQUIREMENTS AND ACQUIRING THIS PERMIT, THE CONTRACTOR DOES NOT HAVE THE PERMISSION TO REMOVE AND/OR REPLACE ANY PORTION OF SAID "INFRASTRUCTURE". A SIDEWALK PERMIT IS REQUIRED FOR THE REPAIR AND REPLACEMENT OF EXISTING SIDEWALKS, APRONS, CURBING, AND ADA RAMPS.
3. NO OBSTRUCTIONS SHALL BE PLACED IN FRONT OR INTERFERE WITH ANY FIRE HYDRANT OR FIRE ALARM BOX.
4. INTERSECTION CROSSOVERS MUST BE SQUARED OFF AND MAY INCLUDE GRINDING AND RESURFACING OF THE ENTIRE INTERSECTION
5. ADA COMPLIANT CURB RAMPS SHALL BE CONSTRUCTED AT INTERSECTIONS ADJACENT TO ROADWAY AND SIDEWALK PAVEMENT RESTORATION WORK AND AS PER THE DIRECTION OF THE COMMISSIONER OF ENGINEERING AND CONSTRUCTION.
6. CONTRACTOR MUST COORDINATE FOR CITY INSPECTION OF CONSTRUCTION, INCLUDING RESTORATION WORK AND BACKFILLING, AT LEAST 5 BUSINESS DAYS IN ADVANCE.
7. PRIVATE/PUBLIC UTILITIES AND TRAFFIC SIGNALS:
CARE SHALL BE TAKEN TO NOT DAMAGE UNDERGROUND UTILITIES, INCLUDING BURIED TRAFFIC SIGNAL EQUIPMENT, AND HAND DIGGING SHALL BE UTILIZED WHERE NECESSARY TO PREVENT DAMAGE TO UNDERGROUND UTILITIES.
8. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING, DIGSAFE, 611, MISS DIG OR OUPS, AND OTHER UTILITY COMPANIES, AT LEAST 46 HOURS BEFORE DIGGING.
9. DIRECTION DRILLING/BORING RESTRICTIONS:
DIRECTIONAL DRILLING AND/OR BORING IS NOT PERMITTED WITHOUT SPECIAL APPROVAL FROM THE LOCAL AUTHORITIES.
10. AS-BUILT DRAWING REQUIREMENTS:
AS-BUILT DRAWINGS WILL BE SUBMITTED TO CROWN CASTLE AND THE ENGINEER.
11. SIDEWALK AND OBSTRUCTION PERMITS
ALL REPAIRS ARE TO BE PERFORMED PER THE LOCAL CITY STANDARDS AND DETAIL DRAWINGS WHICH WILL BE PROVIDED WITH THE SIDEWALK PERMIT OR UPON REQUEST.
12. CITY STANDARDS SIDEWALK, DRIVEWAY AND APRON REPAIRS
SIDEWALK, DRIVE WALK AND APRON REPLACEMENTS ARE TO BE DONE IN CONCRETE WITH AN AIR ENTRAINED CONCRETE MIX THAT HAS A MINIMUM OF 650 LBS. CEMENT PER CUBIC YARD. FULL SLAB REPAIRS ARE REQUIRED, JOINT-TO-JOINT WITH A BROOM FINISH AND TO LOCAL CODE SPECIFICATIONS. CONCRETE SHALL BE PLACED ON COMPACTED 2" THICK BASE OF SAND OR GRAVEL. PREMIUM FILL MATERIAL SHALL BE PLACED AND COMPACTED IN LIFTS OF 6 INCHES AT ALL AREAS UNDER THE SIDEWALK THAT THE SUB GRADE HAS BEEN EXCAVATED. NEW CURB/CORNER CONCRETE PAVERS MUST HAVE APPROVAL PRIOR TO INSTALLATION. FULL SANDSTONE SLABS MAY BE RELAYED/RESET IF NOT BROKEN OR IF THE SURFACE IS DISHED OR WORN SMOOTH. ALL SIDEWALK REPAIRS IN THE CENTRAL BUSINESS DISTRICT MUST BE 6-INCH THICKNESS. SIDEWALK REPAIRS IN RESIDENTIAL AREAS ARE TO BE 4-INCH THICKNESS AND ALL RESIDENTIAL DRIVEWAY APRONS ARE TO BE 6-INCH THICKNESS. AT ALL CHANGES IN SLAB THICKNESS 1/2"THICK EXPANSION JOINT MATERIAL SHALL BE PLACED AND ALSO AT MINIMUM OF 30' INTERVALS. ALL AREAS OF NEW CONSTRUCTION SHALL BE PROTECTED AND BARRICADED UNTIL THE AREA CAN BE OPENED TO PEDESTRIAN OR VEHICLE TRAFFIC WITHOUT DAMAGE. ALSO, REFER TO LOCAL JURISDICTION SPECIFICATIONS.
13. CURB REPAIRS
MAY BE CONCRETE OR IN KIND MATERIAL; THIS VARIES IN WHICH CITY DISTRICT THE REPAIRS ARE TO BE MADE.
14. THE PLAN SHOWS SOME SUBSURFACE STRUCTURES, ABOVE-GROUND STRUCTURES AND/OR OTHER FEATURES FROM FIELD MEASUREMENTS AND RECORD MAPPING. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATION INDICATED. IN PARTICULAR THE CONTRACTOR IS WARNED THAT THE EXACT LOCATION OF SUCH EXISTING FEATURES IN THE AREA MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN, AND IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROCEED WITH THE GREATEST CARE IN EXECUTING ANY WORK.
15. CONTRACTOR SHALL CONTACT A SUBSURFACE UTILITY LOCATOR FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL VERIFY EXISTING UTILITY LOCATIONS BY TEST PIT AS NECESSARY. LOCATION OF UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE AND FOR PLANNING PURPOSES ONLY.
16. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
17. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTORS WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
18. WORK SHALL COMPLY WITH CURRENT ISSUES OF ALL APPLICABLE STATE AND LOCAL CODES, ORDINANCES, AND REGULATIONS, THE LATEST EDITION THEREOF.
19. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM ALL APPLICABLE GOVERNMENTAL AGENCIES. THE RIGHT OF WAY PERMIT HAS BEEN APPLIED FOR BY CROWN CASTLE AND WILL BE PICKED UP BY THE CONTRACTOR AT THE PERMITS OFFICE.
20. ANY PERMITS WHICH MUST BE OBTAINED SHALL BE THE CONTRACTORS RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
21. THE ENGINEER HAS NOT CONDUCTED, NOR DOES IT INTEND TO

CONDUCT ANY INVESTIGATION TO DETERMINE THE PRESENCE OF ANY HAZARDOUS MATERIAL INCLUDING BUT NOT LIMITED TO ASBESTOS.

- LEAD PAINT, AND PCBs WITHIN THE CONFINES OF THIS PROJECT. THE ENGINEER WILL NOT ACCEPT ANY RESPONSIBILITY FOR TH ABATEMENT OR RESULTING CLAIMS FOR DAMAGES OR LOSSES AS A RESULT OF THE PRESENCE OF HAZARDOUS MATERIALS. IF EVIDENCE OF HAZARDOUS MATERIALS IS DISCOVERED, SUSPEND WORK AS REQUIRED BY GOVERNING STATUTES, AND NOTIFY CROWN CASTLE REPRESENTATIVE. DO NOT PROCEED WITH WORK UNTIL INSTRUCTED BY CROWN CASTLE REPRESENTATIVE.
22. ALL MATERIAL FURNISHED UNDER THIS CONTRACT SHALL BE NEW UNLESS OTHERWISE NOTED. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF TWELVE MONTHS FOLLOWING SUBSTANTIAL COMPLETION OF PROJECT OR AS SPECIFIED. THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS EXPENSE ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIALS OR WORKMANSHIP WITHIN THE WARRANTY PERIOD.
23. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR ARE TO BE RESPONSIBLE FOR VERIFYING EXISTING SITE CONDITIONS, DIMENSIONS, AND THE LOCATION OF BURIED UTILITIES AT THE JOB SITE PRIOR TO THE COMMENCEMENT OF WORK. NO CLAIMS FOR EXTRA COMPENSATION FOR WORK RESULTING FROM CONFLICTS AND OMISSIONS WHICH COULD HAVE BEEN DISCOVERED BY FIELD VERIFICATION AND INSPECTION. WHETHER INDICATED IN THE CONTRACT DOCUMENTS OR NOT WILL BE ENTERTAINED OR PAID.
24. FOLLOW MANUFACTURERS' PRINTED SPECIFICATION AND INSTRUCTIONS EXCEPT WHERE SPECIFIED OR INDICATED ON CONTRACT DOCUMENTS. COMPLY WITH THE MOST STRINGENT INSTRUCTIONS.
25. THE CONTRACTOR SHALL VERIFY AND COORDINATE SIZE AND LOCATION OF ALL OPENINGS FOR STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, AND/OR ARCHITECTURAL WORK.
26. THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO CONFLICTS AMONG THE LOCATIONS OF ANY MECHANICAL, ELECTRICAL, PLUMBING, OR STRUCTURAL ELEMENTS AND THAT ALL REQUIRED CLEARANCES AND CONSTRUCTION TOLERANCES FOR INSTALLATION AND MAINTENANCE ARE PROVIDED. NOTIFY CROWN CASTLE REPRESENTATIVE OF ANY CONFLICTS. CROWN CASTLE REPRESENTATIVE RESERVES THE RIGHT TO MAKE MINOR MODIFICATIONS TO THE DESIGN WITHOUT ALTERING THE CONTRACT PRICE.
27. DO NOT SCALE DRAWINGS. DIMENSIONS ARE EITHER TO THE FACE OF FINISHED ELEMENTS OR TO THE CENTERLINE OF ELEMENTS. UNLESS NOTED OTHERWISE. CRITICAL DIMENSIONS SHALL BE CONFIRMED WITH SITE MEASUREMENTS. VERIFY WITH THE CUSTOMERS REPRESENTATIVE AS APPLICABLE.
28. THE CONTRACTOR IS RESPONSIBLE FOR DAILY CLEANUP OF THE SITE AND REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS. AT COMPLETION OF THE PROJECT THE CONTRACTOR SHALL THOROUGHLY CLEAN THE SITE AND ANY OTHER SURROUNDING AREAS TO THE SATISFACTION OF CROWN CASTLE AND THE LANDLORD.
29. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION. AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES.
30. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL (OSHA), STATE AND LOCAL CODES, STANDARDS, ORDINANCES, RULES AND REGULATIONS.
31. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES TO THE EXISTING FACILITY AND INSTALLATION RESULTING FROM CONSTRUCTION AND GENERAL NEGLIGENCE. REPAIR ALL DAMAGES AND RESTORE FACILITY AND INSTALLATIONS TO THE SATISFACTION OF CROWN CASTLE AND LANDLORD AT NO EXTRA CHARGE. NOTIFY THE CUSTOMERS REPRESENTATIVE AND TOWER OWNER OF ANY SUCH DAMAGES PROMPTLY. REFUSE TO 100% SATISFACTION IMMEDIATELY.
32. WHERE ONE DETAIL IS SHOWN FOR ONE CONDITION, UNLESS NOTED OTHERWISE, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS, EVEN THOUGH NOT SPECIFICALLY MARKED IN THE DRAWINGS.
33. THE CUSTOMERS REPRESENTATIVE IS RESPONSIBLE FOR APPLYING FOR COMMERCIAL POWER CONNECTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF UTILITY INSPECTIONS AND POWER COMPANY INSTALLATION. THE GENERAL CONTRACTOR IS REQUIRED TO KEEP ALL DOCUMENTATION RECEIVED FROM THE POWER COMPANY. WRITTEN AND VERBAL DISCUSSIONS WITH THE POWER COMPANY ETC.
34. THE CUSTOMERS REPRESENTATIVE SHALL OBTAIN WRITTEN CONFIRMATION OF THE EXPECTED DATE OF COMPLETION OF THE POWER CONNECTION FROM THE POWER COMPANY. CONTRACTOR WILL PROVIDE TEMPORARY POWER FOR CONSTRUCTION. GENERAL CONTRACTOR AND HIS SUBCONTRACTORS ARE NOT ALLOWED TO CONNECT TO ANY EXISTING UTILITIES ON THE SITE.
35. DRAWINGS FORMING THIS SET ARE COMPLIMENTARY AND MUST BE READ AS ONE TOTAL DOCUMENT. DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF CROWN CASTLE. THESE DRAWING WERE PREPARED TO SUBMITTED TO GOVERNMENTAL BUILDING AUTHORITIES FOR REVIEW FOR COMPLIANCE WITH APPLICABLE BUILDING CODES. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO EXECUTE CONSTRUCTION AS INDICATED HEREIN ACCORDING TO APPLICABLE BUILDING CODES.
36. THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS SHALL BE INTERPRETED TO BE A MINIMUM ACCEPTABLE STANDARD FOR CONSTRUCTION. THESE DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR, SUBCONTRACTOR, AND/OR SUPPLIER/MANUFACTURER FROM PROVIDING A COMPLETE AND CORRECT INSTALLATION SHOULD ADDITIONAL ITEMS AND DETAILS BE REQUIRED FOR PROPER AND SAFE INSTALLATION.
37. THESE CONTRACT DOCUMENTS AND SPECIFICATIONS DO NOT CREATE A CONTRACTUAL RELATIONSHIP OF ANY KIND BETWEEN THE CROWN CASTLE REPRESENTATIVE AND THE CONTRACTOR.
38. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT DESCRIBED HEREON.
39. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE CROWN CASTLE REPRESENTATIVE TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
40. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
41. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT AND MAINTAIN EXISTING CONDITIONS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
42. THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC IN ALL AREAS IN ACCORDANCE WITH THE STATE'S DEPARTMENT OF TRANSPORTATION STANDARDS FOR TRAFFIC CONTROL.

43. THE CONTRACTOR SHALL NOTIFY THE CROWN CASTLE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY
- PORTION OF THE WORK THAT IS IN CONFLICT UNTIL IT IS RESOLVED BY THE CROWN CASTLE REPRESENTATIVE. CONTRACTOR SHALL FOLLOW ALL APPLICABLE CROWN CASTLE SMALL CELL DESIGN AND CONSTRUCTION STANDARDS.
44. CONTRACTOR TO PROVIDE TEMPORARY TOILET FACILITIES FOR DURATION OF PROJECT.
45. CONTRACTOR SHALL COORDINATE ALL UTILITY CONNECTIONS WITH APPROPRIATE UTILITY OWNERS.
46. THESE PLANS ARE NOT FOR RECORDATION OR CONVEYANCE.

GENERAL UTILITY NOTES:

1. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES IMMEDIATELY AFTER BID IS AWARDED AND ENSURE THE UTILITY COMPANIES HAVE THE ESSENTIALS REQUIRED FOR COMPLETE SERVICE INSTALLATION. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER AND ENGINEER OF ANY TIME FRAMES ESTABLISHED BY UTILITY COMPANIES WHICH WILL NOT MEET OPENING DATE.
2. CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, INVERT ELEVATION, AND CONDITION OF EXISTING UTILITIES WHICH ARE INTENDED TO BE UTILIZED AS A CONNECTION POINT FOR ALL PROPOSED UTILITIES. PRIOR TO ANY CONSTRUCTION, CONTRACTOR TO ENSURE EXISTING UTILITIES ARE IN GOOD CONDITION AND FREE FLOWING (IF APPLICABLE). IF ELEVATIONS, SIZE OR LOCATION DIFFER FROM WHAT IS SHOWN, CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY.
3. WHERE PLANS PROVIDE FOR PROPOSED WORK TO BE CONNECTED TO, OR CROSS OVER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING THE PROPOSED WORK. IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE RESULTS IN A CHANGE IN THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED WORK WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY. PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT ITEM.

MAINTENANCE OF ACCESS AND TRAFFIC

1. DURING THE CONSTRUCTION PERIOD; SIDEWALKS, SHOULDERS, TRAVEL LANE(S), OR STREETS MAY HAVE TO BE TEMPORARILY CLOSED OR RESTRICTED FOR THE UNLOADING / LOADING OF EQUIPMENT OR AS A RESULT OF CONSTRUCTION ACTIVITIES THEMSELVES. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE DIRECTLY WITH THE LOCAL GOVERNING AUTHORITIES ON ANY SUCH CLOSURES AND MUST OBTAIN WRITTEN PERMISSION FROM THE APPROPRIATE AUTHORITIES PRIOR TO IMPLEMENTING SUCH CLOSURES OR RESTRICTIONS. ANY CLOSURE OR RESTRICTION MUST COMPLY WITH THE STATE MANUAL OF UNIFORM CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (LATEST EDITION AND REVISION), AND WITH ANY AND ALL ADDITIONAL APPLICABLE CITY, VILLAGE, OR COUNTY REQUIREMENTS.
2. IF TRAFFIC PLANS NOT INCLUDED IN THE CONSTRUCTION DRAWING SET, THE CONTRACTOR SHALL PREPARE AND SUBMIT A FORMAL TRAFFIC CONTROL / MOT PLAN TO THE LOCAL GOVERNING AUTHORITIES IF REQUESTED. ALL REQUIRED CONSTRUCTION TRAFFIC MAINTENANCE DEVICES SHALL BE PROVIDED, ERECTED AND MAINTAINED, AND ULTIMATELY REMOVED BY THE CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN SAFE AND SATISFACTORY ACCESS TO ALL ADJUTING PROPERTIES AND INTERSECTING STREET AT ALL TIMES DURING THE CONSTRUCTION OF THE IMPROVEMENTS ANTICIPATED. DRIVEWAYS MUST BE MAINTAINED AND ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH WORK DAY. PER THE STATE MUTCD AND OTHER APPLICABLE APPROPRIATE GOVERNING REQUIREMENTS, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, SATISFACTORY BARRIERS, CONES, SIGNAGE, BARRELS, MESSAGE BOARDS, LIGHTING, FLAGMEN, LAW ENFORCEMENT OFFICERS, ETC. TO AVOID DAMAGE AND / OR INJURY TO VEHICLES AND PERSONS TRAVERSING THE CONSTRUCTION AREA.

GENERAL NOTES:

ELECTRIC 120V POWER SUPPLY TO NODE:

1. CONTRACTOR SHALL CO-ORDINATE WITH POWER COMPANY AND VERIFY EXISTING TRANSFORMER SHORT CIRCUIT RATING, CAI CUI ATE FAUI T CURRENT AT PANE], AND VERIFY A1 1 EXISTING BREAKERS AND NEW BREAKERS HAVE AJO RATING THAT EXCEEDS FAULT CURRENT AT SOURCE. CONTRACTOR SHALL INFORM CONSTRUCTION MANAGER AND FOR REPAIRING BREAKERS ARE NOT RATED FOR AVAILABLE SHORT CIRCUIT.
2. NOTE: NEW ELECTRICAL CONDUIT WITH POWER SUPPLY CABLE MUST BE INSTALLED PER NATIONAL ELECTRIC SAFETY CODE, LATEST EDITION.
3. CROWN CASTLE CONTRACTOR TO PLACE WRAP AROUND IDENTIFICATION TAG ON NEW CONDUCTOR CABLE.
4. CROWN CASTLE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN LABOR, EQUIPMENT, MEASUREMENTS AND THE FURNISHING AND INSTALLING OF ALL NECESSARY MATERIALS TO COMPLETE THE POWER SUPPLY CIRCUIT
5. CROWN CASTLE CONTRACTOR TO PLACE MULETAPE WITH SEQUENTIAL FOOTAGE MARKINGS MINIMUM 1800 LBS. STRENGTH.
6. THE CROWN CASTLE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF THE NEW CABLE AND TO THE MOTORING AND PEDESTRIAN TRAFFIC WHERE IT IS NECESSARY TO FIGURE 9" THE CABLE DURING THE PLACEMENT PROCESS.
7. WHERE APPLICABLE, UPON COMPLETION OF PLACEMENT OF CABLE AT EACH MANHOLE THE NEW CROWN CASTLE CABLE ENTERING AND EXITING THE MANHOLE IS TO BE CAREFULLY POSITIONED TO THE APPROPRIATE WALL OF THE MANHOLE. POSITIONING ON THE MANHOLE WALL WITH MANHOLE RACK (HOOKS) AND SECURED TO THE HOOK(S) WITH A PLASTIC TIE(S). AT NO MANHOLE IS THE NEW CROWN CASTLE CABLE OR CABLE COIL TO BE LEFT ON THE MANHOLE FLOOR.
8. CROWN CASTLE CONTRACTOR IS RESPONSIBLE FOR ACCURATELY RECORDING THE CABLE FOOTAGE MARKING OF THE NEW CABLE AT BOTH THE TERMINATION POINT AND ORIGIN AND PLACING THAT INFORMATION ON THE FIELD PRINTS TO BE GIVEN TO CROWN CASTLE.
9. WHERE APPLICABLE, CROWN CASTLE CONTRACTOR IS RESPONSIBLE FOR ACCURATELY RECORDING THE STORAGE LOOP FOOTAGE PLACED AT EACH SPECIFIED LOCATION AND PLACING THAT INFORMATION ON THE HELD PRINTS TO BE GIVEN TO CROWN CASTLE.
10. CROWN CASTLE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN LABOR, MEASUREMENTS AND THE FURNISHING AND INSTALING OF ALL NECESSARY MATERIALS TO COMPLETE THE COMMUNICATION CONDUIT PATH BETWEEN THE PROPOSED NODE LOCATION AND EXISTING SERVICE POINT.
11. CONTRACTOR TO COORDINATE WITH CROWN CASTLE TO VERIFY THE EXACT LOCATION OF EXISTING SERVICE POINT.
12. THE INSTALLATION OF 120V ELECTRICAL SUPPLY CONDUIT & CABLES, INSTALLATION OF COMMUNICATION CONDUIT & CABLE, ALL 1E51 ING, INCLUDING BUT NOT LIMITED TO ALL MATERIAL CABLE TERMINATIONS, SPLICES, GROUND CABLE CONNECTIONS, TRENCHING AND RESTORATION ARE TO MEET AND/OR EXCEEDED THE GREATER OF THE FOLLOWING GOVERNING AUTHORITY, THE NATIONAL ELECTRIC SAFETY CODE LATEST ADDITION, ALL OSHA SAFETY REQUIREMENTS, ALL GOVERNING RIGHTS-OF-WAY POLICIES AND PROCEDURES AND THE POLCY AND PRACTICES SET FORTH BY CROWN CASTLE.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN LABOR, EQUIPMENT, SAFETY, TRAFFIC CONTROL, MEASUREMENTS AND THE FURNISHING AND INSTALLING OF ALL NECESSARY MATERIALS REQUIRED. TOO FULLY INSTALL AND EXECUTE THE INSTALLMENT OF THE CROWN CASTLE PROJECT.
14. CONTRACTOR IS RESPONSIBLE FOR THE CONTACTING OF AND COORDINATION WITH: LOCAL UTILITY PROTECTION SERVICES ELECTRIC POWER PROVIDER GOVERNING DMISION OF ENGINEERING & CONSTRUCTION GOVERNING DMISION OF TRAFFIC & ENGINEERING GOVERNING DMISION OF POLICE & TRAFFIC AND ALL PRIVATE UTILITIES 48 HOURS BEFORE YOU DIG. CONTRACTOR TO SUPPLY CROWN CASTLE DIG TICKET NUMBER BEFORE START OF CONSTRUCTION.
15. ALL ITEMS REFERENCED THROUGHOUT (THIS RMAN) ARE ONLY A GUIDELINE AND AS SUCH DOES NOT COVER EVERY POSSIBLE CONTINGENCY THAT MAY OCCUR. THIS GUIDELINE/PLAN IF PROPERLY FOLLOWED SHOULD ALLOW THE CONTRACTOR TO PLAN AND EXECUTE THE OPERATIONS TO CONSTRUCT THE CROWN CASTLE PROJECT. HOWEVER, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ITS OPERATION AND SHALL REMAIN SOLELY LIABLE INCLUDING BUT LIMITED TO THE FOLLOWING ITEMS: ALL SAFETY REQUIREMENTS INCLUDING BUT NOT LIMITED TO PUBLIC AND WORKER SAFETY, SAFETY OF EXISTING AND PUBLIC UTILITIES, CONTACTING THE OHIO UTILITY PROTECTION SERVICE BEFORE WORK BEGINS, LOCATING AND VERIFYING ALL PUBIC AND PRIVATE UTILITIES, MAINTENANCE OF TRAFFIC WHEN APPLICABLE, ALL REQUIRED PERMITS AND/OR FEES, PERMANENT TRAFFIC CONTROL ITEMS, WATERSHED PROTECTION, SEDIMENT AND EROSION CONTROL, PROTECTION OF ENDANGERED SPECIES, QUALITY OF MATERIAL, CRAFTSMANSHIP, RESTORATION OF EXISTING UTILITIES FACILITIES, RESTORATION TO THE ENVIRONMENT EQUAL TO OR BETTER THAN ORIGINAL CONDITION BEFORE CONSTRUCTION ACTIVITIES BEGAN, AND TO ALL ADVERSE PUBLIC AND PRIVATE ENVIRONMENTAL IMPACTS CAUSED BY ITS OPERATIONS.
16. INFORMATION ON THESE SI-ILE IS HAVE BEEN PREPARED FROM THE BEST AVAILABLE INFORMATION AND SOURCES. EXISTING UTILITIES FACILITIES LOCATIONS ARE BASED ON RECORDS/VERBAL INFORMATION AND PHYSICAL FEATURES AT THE TIME OF THE SURVEY.

GROUNDING NOTES:

(REFERENCE CROWN STANDARD - 337910 GROUNDING AND BONDING REQUIREMENTS FOR SMALL CELL NODES)

1. ALL CROWN PLANTS SHALL BE GROUNDED IN COMPLIANCE WITH NEC, NESC AND/OR G095 (CALIFORNIA). LOCAL ORDINANCES, STATE CODES OR UTILITY STANDARDS MAY EXCEED NESC/NEC/G095 AND CROWN GROUNDING STANDARDS.
2. ALWAYS COMPLY WITH THE REQUIREMENTS OF THE UTILITY POLE OWNER:
3. CROWN CASTLE REQUIRES (1) MAIN VERTICAL GROUND RISER

- (VGR) CONDUCTOR FROM THE ANTENNA MOUNTING BRACKET AT THE TOP/SIDE OF THE POLE TO THE GROUNDING ELECTRODE SYSTEM AT THE BASE OF THE POLE. MAIN VGR SHALL CONSIST OF A MINIMUM # 8 AWG CONDUCTOR. THE MAIN VGR SHALL BE PROTECTED FOR THE FIRST 8 FEET OF THE POLE WITH A U-GUARD OR NON-CONDUCTIVE CONDUIT. THE VGR SHALL EXTEND TO THE TOP OF THE POLE AND STAPLED EVERY 24" WITH CORROSION RESISTANT GALVANIZED STAPLES. SECURE ON WOODEN POLES. FOR CONDUCTIVE POLES, SECURE THE VGR USING A NON-CONDUCTIVE CONDUIT SYSTEM, STRAIN RELIEF AND NON-CONDUCTIVE ATTACHMENTS METHODS. WHERE POSSIBLE, MAINTAIN A MINIMUM 2" SEPARATION BETWEEN THE VGR AND ANY OTHER UNWARRANTOR. ALWAYS USE JACKETED CABLE VGR ON CONDUCTIVE POLES.
4. GROUND ROD(S) SHALL BE A MINIMUM 5/8" DIAMETER, 8' IN LENGTH, AND COPPER-CLAD STEEL. WHEN ADDING A SECOND GROUND ROD, INSTALL THE ADDITIONAL ROD A MINIMUM OF 6' APART FROM THE FIRST ROD. GROUND ROD(S) SHALL BE INSTALLED IN ACCORDANCE WITH NESC/NEC/G095 (CALIFORNIA) CODES WITH REGARDS TO DEPTH AND DISTANCE FROM POLE. AT A MINIMUM, 8 FT. OF GROUND ROD(S) MUST BE INSTALLED BELOW THE FROST LINE. FOR EXAMPLE, IF THE FROST LINE IS 10 FT. DEEP, THE LINE OF 2 FT. OTHERWISE, TOP OF THE GROUND ROD(S) AND ASSOCIATED BONDING CONDUCTORS SHALL BE BURIED MINIMUM OF 4" BELOW GRADE. A MINIMUM #8 AWG MAIN VERTICAL GROUND RISER SHALL BE ATTACHED DIRECTLY TO THE CLOSEST GROUND ROD.
5. WHERE A MAIN GROUND BAR (MGB) IS INSTALLED IN ORDER TO TERMINATE AVAILABLE GROUNDING CONDUCTORS, THE MGB SHALL BE PRE-CONFIGURED TO ACCEPT 2-HOLE GROUND LUGS. THE MGB SHOULD BE MOUNTED UTILIZING INSULATING STANDOFFS TO AVOID UNWARRANTED CONTACT WITH CURRENTS AND CONTACT BETWEEN DISSIMILAR METALS.
6. THE VERTICAL GROUND RISER (VGR) SHALL BE ATTACHED DIRECTLY TO THE ANTENNA BRACKET VIA A 316-STAINLESS STEEL BOLT. THE DISSIMILAR METALS SHOULD NOT BE IN DIRECT CONTACT, WITHOUT A LISTED COMPONENT, SUCH AS STAINLESS-STEEL COMPONENTS. REMOVE PAINT AS REQUIRED TO CREATE A PROPER BOND TO THE CONDUCTIVE SURFACE. IF THE ANTENNA HAS A GROUND TERMINAL, BOND THE ANTENNA TO THE VGR WITH A #8AWG GROUND CONDUCTOR. THE GROUND RISER IS CONNECTED TO HAVE A FACTORY GROUND TERMINAL. THEN DO NOT ADD ONE. IN THIS CASE, GROUND THE ANTENNA BRACKET.
7. COAXIAL CABLES SHALL BE GROUNDED USING A GROUND KIT INSTALLED BEFORE THE DRIP LOOP AT THE ENTRY TO THE RADIO CABINET. FOR TOP ENTRY RADIOS WHEN RF SURGE PROTECTIVE DEVICES (SPDS) ARE INSTALLED, GROUNDING THE SPD WILL SUFFICE
8. MGB SHALL BE MOUNTED ADJACENT TO OR WITHIN THE RADIO EQUIPMENT CABINET ON NON-CONDUCTIVE POLE. ON A CONDUCTIVE POLE, THE MGB MAY BE MOUNTED INSIDE THE POLE WITHIN THE RADIO CABINET OR ON THE EXTERIOR SURFACE OF THE POLE. MOUNT THE MGB WHERE IT BEST SUITES THE APPLICATION, SUCH AS UNDER THE RADIO CABINET AND NOT AT A HEIGHT LOWER THAN 5'6" ELEVATION. WHEN GROUNDING EQUIPMENT INSIDE A SHROUD, CONTACT TO THE SHROUD MANUFACTURERS GROUND BUS OR MGB IF LOCATED THERE.
9. ALL POLE MOUNTED DEVICES, INCLUDING BUT ANTENNA MOUNTS, ANTENNAS WITH FACTORY GROUND TERMINAL MOUNTING BRACKETS, AND RADIO EQUIPMENT CABINETS SHALL BE BONDED WITH A #6 AWG STRAP/JUMPER TO THE MAIN VGR CONDUCTOR WITH IRREVERSIBLE COMPRESSION CLAMPS. INSTALL BONDING JUMPER TO THE VGR WITH MINIMUM 8" BENDING RADIUS AND IN A DOWNWARD DIRECTION TOWARD THE MGB AND ITS ASSOCIATED SITE GROUNDING ELECTRODE SYSTEM. ALL METALLIC COMPONENTS SHOULD HAVE AN INTENTIONAL BOND. AVOID GROUND LOOPS FROM THE EQUIPMENT CHASSIS TO THE CONDUCTIVE SHROUD VIA NON-CONDUCTIVE BACKING PLATE.
10. WHERE AN MGB IS INSTALLED, ALL CONNECTIONS TO THE MGB SHALL UTUIZE 2-HOLE CONNECTOR LUG(S).
- 10.1. CONNECTOR LUGS MUST ATTACH TO THE BUS BAR WITH TWO HOLES FACING UP AND OUT WITH THE BOLT HEADS ON THE BACK SIDE OF THE BUS BAR.
- 10.2. STACKING OF CONNECTOR LUGS IS PROHIBITED.
- 10.3. ANY MODIFICATION TO THE CONNECTOR LUGS IS PROHIBITED, INCLUDING BUT NOT LIMITED TO GRINDING, CUTTING OR BENDING.
- 10.4. CONNECTOR LUGS MUST BE PLACED WITH EVEN SPACING AND MUST NOT COME IN CONTACT WITH ANOTHER CONNECTOR LUG.
- 10.5. SLOTTED HOLE OF THE CONNECTOR LUG SHOULD BE PLACED ON THE SLOTTED HOLE OF THE MOB.
- 10.6. IF POSSIBLE, ALL CONNECTOR LUGS SHALL HAVE TWO (2) COMPRESSIONS PER LUG.
- 10.7. ALL CONNECTOR LUGS MUST HAVE NO-OX APPLIED TO WHEN CONTACTING ANOTHER METAL SURFACE, SUCH AS THE MGB OR ANY OTHER METALLIC SURFACES, TO REDUCE OXIDATION.
- 10.7.1. ONLY SIMILAR METALS CAN BE IN DIRECT CONTACT.
- 10.7.2. USED MATERIALS, SUCH AS STAINLESS STEEL, SHALL BE USED WHEN DISSIMILAR METALS ARE IN DIRECT CONTACT, SUCH AS COPPER TO STEEL, OR COPPER TO ALUMINUM.
- 10.8. ALL CONNECTOR LUGS SHOULD BE ATTACHED USING MINIMUM 3/8" HARDWARE X 2 PER EACH LUG AND IN THE FOLLOWING MANNER:
- 10.8.1. PLACE CONNECTOR LUG ON FRONT SIDE OF MOB AND IN DIRECT CONTACT WITH MGB.
- 10.8.2. PLACE BOLT THROUGH THE BACK THROUGH MOB AND CONNECTOR LUG. SIZE BOLT HEAD TO AVOID THE NEED OF A FLAT WASHER.
- 10.8.3. PLACE NUT AND LOCK WASHER ON BOLT. ALL NUTS ON CONNECTOR BOLTS MUST BE TIGHTENED SO THAT THE LOCK WASHERS ARE COMPLETELY COMPRESSED. FOLLOW PROPER TORQUE SPECIFICATIONS.
11. NO OTHER MECHANICAL CONNECTIONS ARE ACCEPTABLE EXCEPT IN THE EVENT OF MECHANICAL FITTINGS BEING AN INTEGRAL PART OF THE PRODUCT FROM THE FACTORY.
12. ALL BONDING ABOVE GRADE LEVEL TO THE VERTICAL GROUND RISER, SHALL BE MADE WITH IRREVERSIBLE CLAMPS. EXOTHERMIC WELDS IS PREFERRED TO CONNECT THE VERTICAL GROUND RISER TO THE SITE'S GROUNDING

ELECTRODE SYSTEM.

13. FOR CONDUCTIVE POLES, ALL METALLIC COMPONENTS AND THE CONDUCTIVE POLE ITSELF SHOULD HAVE AN INTENTIONAL BOND TO THE VGR. FOR ELECTRIC METERS, SERVICE DISCONNECT AND RADIO EQUIPMENT INSTALLED ON CONDUCTIVE POLES, AVOID UNINTENTIONAL BONDING THROUGH THE CHASSIS AND THE METAL POLE BY INSTALLING NON-CONDUCTIVE ATTACHMENT HARDWARE AND A NON-CONDUCTIVE BACKING PLATE BETWEEN ENERGIZED EQUIPMENT AND A CONDUCTIVE SHROUD BODY.
14. ONLY ONE NEUTRAL - GROUND BOND IS TO BE MADE AT ONE OF THE THREE ALLOWABLE LOCATIONS: (1) AT SERVICE ENTRANCE (WEATHERHEAD IF AERIAL POWER HANDHOLE IF UNDERGROUND) (2) IN THE METER ENCLOSURE OR (3) AT THE SERVICE DISCONNECT. FIRST DISCONNECTING MEANS. LOCATION (3) IS ALWAYS PREFERRED. WHERE LOCATIONS (1) OR (2) ARE SELECTED BY THE AUTHORITY HAVING JURISDICTION (AHJ), AN EQUIPMENT GROUNDING CONDUCTOR (EGC) SHALL BE INSTALLED FROM THE NEUTRAL - GROUND BOND TO THE GROUND BUS IN THE ELECTRICAL SERVICE DISCONNECT. WHERE AN EGC IS INSTALLED, IT MUST BE ENCLOSED IN THE SAME NON-CONDUCTIVE CONDUIT BODY ALONG WITH ITS ASSOCIATED PHASE AND NEUTRAL CONDUCTORS.

PART 2 - TESTING AND DOCUMENTATION

2.1 TESTING

1. THE FIRST TEST TO BE CONDUCTED IS THE EARTH GROUND RESISTANCE MEASUREMENT. FOR A NEWLY INSTALLED GROUND ELECTRODE SYSTEM, THE METHOD TO CONDUCT EARTH GROUND RESISTANCE READINGS STARTS FIRST WITH THE USE OF A 3-POINT, 62% FALL POTENTIAL GROUND METER. THE METER IS SETUP TO READ THE SITE GROUND RESISTANCE OF INSTALLED GROUND ROD(S) IN OHMS, PRIOR TO ATTACHING THE MAIN VERTICAL GROUND RISER TO THE SITE GROUNDING ELECTRODE SYSTEM. IF THE READING RESULT IS GREATER THAN 25 OHMS, THEN THE INSTALLER WILL NEED TO ADD AND BOND A CODE COMPLIANT ELECTRODE SUCH AS A GROUND ROD A MINIMUM OF 8' AWAY, IN ORDER TO BE NEC COMPLIANT.
2. A SECOND TEST OF THE EARTH GROUND RESISTANCE MEASUREMENT SHOULD BE CONDUCTED ONCE THE MAIN VERTICAL GROUND RISER IS CONNECTED TO THE MGB WITH THE ELECTRICAL GRID SERVICE AND ALL OTHER EQUIPMENT ON THE POLE. IF ALL BONDING CONNECTIONS ARE PROPERLY MADE, USING 3-POINT, 62% FALL POTENTIAL GROUND METER THE GROUND RESISTANCE READING SHOULD BE 5 OHMS OR LESS AFTER CONNECTION TO THE POWER SYSTEM NEUTRAL.
3. THE THIRD TEST IS A BONDING AND OBJECTIONABLE CURRENT TEST THAT MUST BE PERFORMED BEFORE SITE ACCEPTANCE WITH SITE POWER HOT AND EQUIPMENT ENERGIZED. THE TEST CAN BE CONDUCTED WITH A CLAMP-ON EARTH GROUND METER. THE READING AT EACH ABOVE GRADE GROUND BONDING CONDUCTOR (GREEN WIRE) SHOULD YIELD A 'LOOP' READING. ANY READING BELOW 1 OHM IS ALSO AN ACCEPTABLE BONDING READING. OR EQUIVALENT TO A LOOP MORE THAN ONE BOND READING SHOULD BE TAKEN, AT OTHER GROUND CONDUCTORS ALONG THE POLE, ASSURING THAT LOOPS ARE PRESENT AND THAT THE SITE IS SAFE FOR FUTURE WORKERS.
- 3.1 OBJECTIONABLE CURRENT IS DEFINED AS ANY CURRENT FLOW OVER CONDUCTORS NOT DESIGNED TO NORMALLY CARRY CURRENT.
- 3.2. OBJECTIONABLE CURRENT ON GROUNDING AND BONDING PATHS OCCUR WHEN AN IMPROPER NEUTRAL TO GROUND BOND CREATES A PARALLEL PATH FOR NEUTRAL CURRENT TO RETURN TO THE POWER SUPPLY VIA METAL PARTS OF THE ELECTRICAL SYSTEM IN VIOLATION OF NEC 250.142.
- 3.3. ON SMALL CELL AND ODAS NODES, OBJECTIONABLE CURRENT WILL BE PRESENT WHEN MORE THAN ONE NEUTRAL TO GROUND BOND IS INSTALLED ON THE NODE EQUIPMENT. A CORRECT NODE WIRING AND GROUNDING/BONDING DESIGN IF IMPLEMENTED BY THE NODE CONTRACTOR AS SPECIFIED WILL PREVENT THE OCCURRENCE OF OBJECTIONABLE CURRENT AT THE NODE.

GROUNDING AND BONDING PATHS SHALL BE TESTED FOR OBJECTIONABLE CURRENT BEFORE NODE ACCEPTANCE. A CLAMP ON AMMETER IS USED TO 1E51 GROUNDING AND BONDING CONDUCTORS. ANY CURRENT MORE THAN 250 MILLIAMPS SHOULD BE ADDRESSED AND CORRECTED.

4. THE FOURTH TEST IS A CONTACT VOLTAGE TEST
- CONTACT VOLTAGE IS DEFINED BY THE IEEE AS FOLLOWS: 'A VOLTAGE RESULTING FROM ABNORMAL POWER SYSTEM CONDITIONS THAT MAY BE PRESENT BETWEEN TWO CONDUCTIVE SURFACES THAT CAN BE SIMULTANEOUSLY CONTACTED BY MEMBERS OF THE GENERAL PUBLIC AND/OR THEIR ANIMALS. CONTACT VOLTAGE IS CAUSED BY POWER SYSTEM FAULT CURRENT AS IT FLOWS THROUGH THE IMPEDANCE OF AVAILABLE FAULT CURRENT PATHWAYS. CONTACT VOLTAGE IS NOT RELATED TO NORMAL SYSTEM OPERATION AND CAN EXIST AT LEVELS THAT MAY BE HAZARDOUS. NOTE: 'CONDUCTIVE SURFACES' AS USED IN THIS DEFINITION ARE INTENDED TO INCLUDE THE EARTH AND/OR EXTENSIONS OF THE EARTH SUCH AS CONCRETE SIDEWALKS AND METAL FLOOR DRAINS.
- 4.1. CONTACT VOLTAGE CAN OCCUR ANYWHERE BUT IS MORE UKELY TO BE PRESENT IN URBAN ENVIRONMENTS WITH AGING ELECTRICAL INFRASTRUCTURE. AT SPUCE POINTS IN UNDERGROUND WIRE INSTALLATIONS NEAR SIDEWALKS, STREETLIGHTS AND MANHOLE COVERS.
- 4.2. THE DANGER FROM CONTACT VOLTAGE IS A FUNCTION OF BODY RESISTANCE, (HOW CONDUCTIVE YOU ARE) DURATION OF EXPOSURE, AND HOW MUCH CURRENT CAN BE SUPPLIED. BEING BAREFOOT OR WET CAN INCREASE THE HAZARD.
- 4.3. CONTACT VOLTAGE WILL RESULT FROM UNINTENTIONAL ENERGIZATION OF A METALLIC OBJECT WHEN AN ELECTRICAL OR PHASE CONDUCTOR COMES IN CONTACT. THE RESULTING ELECTRICAL POTENTIAL CAN RANGE ANYWHERE FROM A FEW VOLTS UP TO THE PHASE VOLTAGE, 120V OR MORE.
- 4.4. CROWN POLICY IS TO TEST FOR CONTACT VOLTAGE ON ALL AVAILABLE CONDUCTIVE (INCLUDING CONCRETE) SURFACES VIA A HANDHELD FOREIGN VOLTAGE DETECTOR, BY ALL PERSONNEL UPON APPROACHING A NODE LOCATION.
- 4.5. WHEN PERFORMING THIS TEST IF ANY VOLTAGE PRESENT IT SHOULD BE REPORTED, INVESTIGATED BEFORE LEAVING THE SITE.

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

GENERAL NOTES

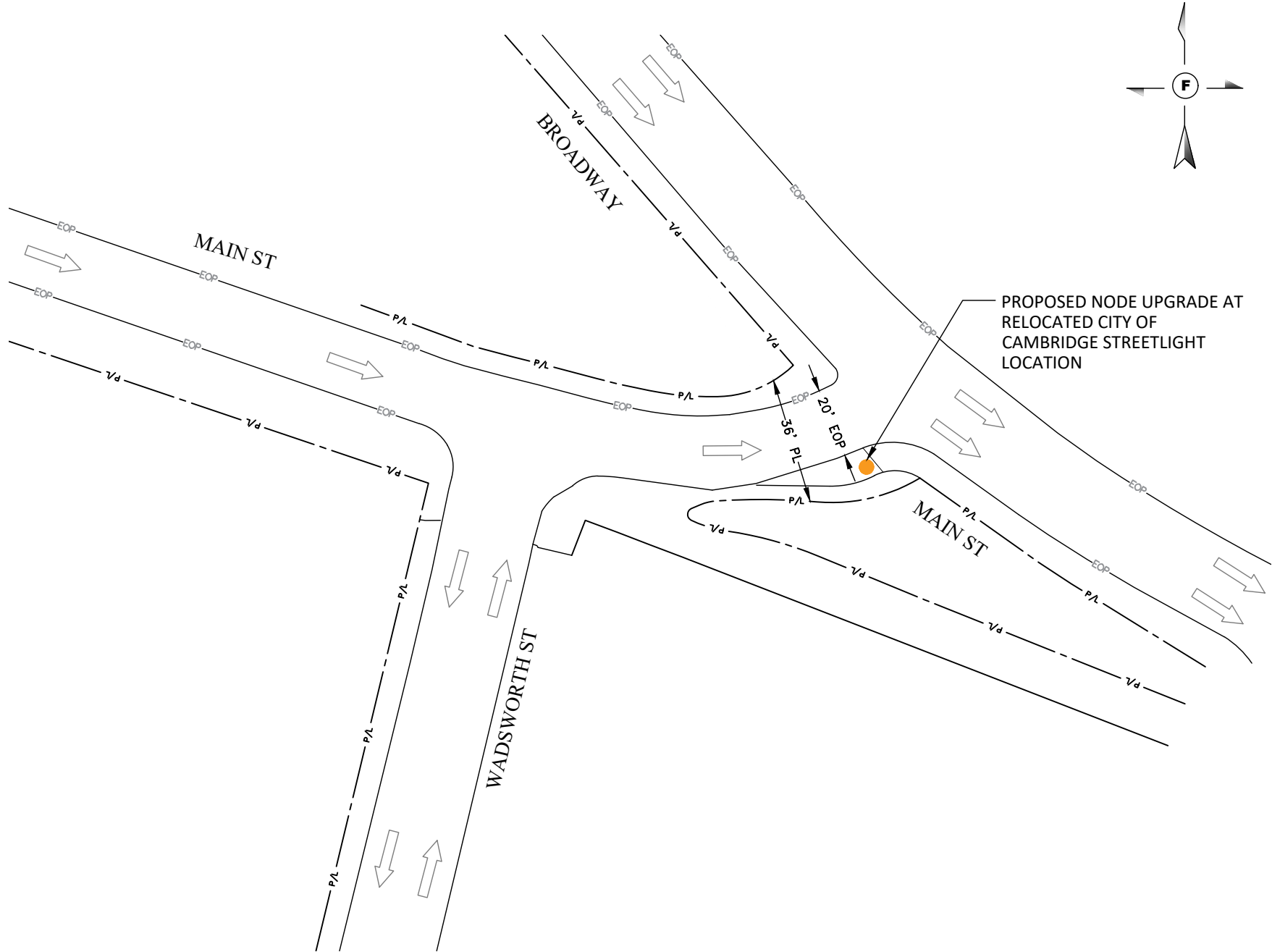
SHEET:

NOTE:
THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL STREET LIGHTING FACILITIES EXISTING IN THE WORK AREA, SHOULD DAMAGE TO STREET LIGHTING SYSTEM OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RELEVANT CITY STREET LIGHT AUTHORITY.

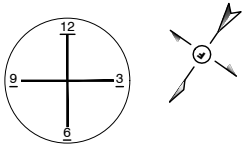
THE CONTRACTOR SHALL ARRANGE FOR THE IMMEDIATE REPAIR AND RESTORATION OF THE DAMAGED STREET LIGHTING SYSTEM AT NO COST TO THE CITY. A LICENSED ELECTRICAL CONTRACTOR IS REQUIRED TO MAKE ALL REPAIRS NECESSARY TO THE STREET LIGHTING FACILITIES.

THE CONTRACTOR SHALL EXERCISE PROPER CAUTION WHEN WORKING NEAR ELECTRICAL FACILITIES.

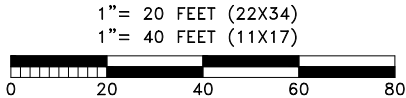
THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND MAKE ALL NECESSARY NOTIFICATIONS TO LOCAL PERMITTING AUTHORITIES AND UTILITIES PRIOR TO COMMENCING WORK.



TOP VIEW PROFILE
QUADRANT LOCATION EQUIPMENT



STREET SIDE



NOTE:
RIGHT OF WAY AND CENTER LINE INFORMATION
TAKEN FROM BOSTON GIS DATA

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

OVERALL SITE PLAN

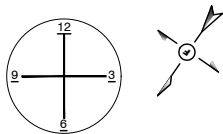
SHEET:

03

NOTES:

1. ALL ATTACHMENTS INSTALLED SHALL MEET ALL CLEARANCE REQUIREMENTS FROM OVERHEAD POWER LINES AS SPECIFIED IN THE LATEST EDITION OF THE NESC AND BY LOCAL UTILITY REGULATIONS.
2. ABSOLUTELY NO FIELD CORING / DRILLING / CUTTING OR METALLIC POLES TO BE ALLOWED.
3. POWER SUPPLY SERVICE CONNECTION AND FIBER OPTIC CABLE CONNECTION TO BE FED UNDERGROUND.
4. NO EXISTING OR FUTURE AERIAL SPANNING ATTACHMENTS ARE TO BE MADE TO THIS POLE.
5. ALL NEW EQUIPMENT / UNITS SHALL BE PAINTED TO MATCH EXISTING LUMINAIRE, POLE OR ARM TO COMPLY WITH THE CURRENTS SURROUNDING AESTHETICS / REQUIREMENTS.
6. THE COMMUNICATIONS UNITS SHALL BE A COLOR MATCHING THE EXISTING LUMINAIRE, POLE OR ARM OR BE WHITE, BROWN, GRAY OR BEIGE.

TOP VIEW PROFILE
QUADRANT LOCATION EQUIPMENT



STREET SIDE

ENGINEERING NOTES:

1. THIS DOCUMENT AND ALL DETAILS, DRAWINGS, AND PROPOSALS CONTAINED HEREIN ARE STRICTLY FOR PERMITTING PURPOSED ONLY.
2. THIS DRAWING IS NOT TO BE USED AS A CONSTRUCTION DOCUMENT. BEFORE ANY WORK BEGINS CONTRACTOR SHALL REQUEST FULL CONSTRUCTION DRAWINGS AND STRUCTURAL ANALYSIS FOR THIS PROPOSED SITE FROM CROWN CASTLE CONSTRUCTION MANAGER AND/ OR THEIR DESIGNATED ENGINEER.
3. CONTRACTOR SHALL REVIEW EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. POLE, FOUNDATION AND ACCOMPANYING HARDWARE SHALL BE EVALUATED FOR STRUCTURAL SOUNDNESS. CONTRACTOR SHALL CEASE CONSTRUCTION IF A DETERMINATION IS MADE BY A QUALIFIED PERSON THAT THE POLE FOUNDATION, OR ACCOMPANYING HARDWAY IS UNABLE TO ACCOMMODATE THE MITIGATION AGREED UPON PRIOR TO CONSTRUCTION.
4. EXISTING POLES, FOUNDATION, AND ACCOMPANYING HARDWARE MUST BE INSPECTED BY A RESPONSIBLE TECHNICIAN IN ORDER TO ENSURE THAT THEY ARE NOT DAMAGED OR DECAYED AND ARE NOT LEANING OR MOVING EXCESSIVELY BEFORE ANY WORK IS STARTED.

NOTES:

FROM TIME TO TIME IT MAY BE NECESSARY TO MAKE MINOR ADJUSTMENTS TO ACCOMMODATE, LEVEL OR SPACE ANTENNA MOUNTS AND EQUIPMENT. TWO SUCH EXAMPLES WOULD BE: ADDING A WASHER OR SHIM TO LEVEL OUT A BRACKET OR MOUNT TO MEET SPECIFICATIONS, AND OFFSETTING OR SPACING A BRACKET OR MOUNT DUE TO FLANGES AND/OR SMALL PROTRUSIONS ON A POLE TOP ASSEMBLY. ANY MATERIALS, NUTS, BOLTS, SHIMS OR SPACERS USED TO ACCOMMODATE ADJUSTMENTS TO ANTENNA MOUNTS AND EQUIPMENT MUST BE PERMANENTLY AFFIXED, BOLTED TO THE MOUNT, BRACKET OR POLE; AS NEVER TO BECOME A FALL HAZARD. ALL MATERIALS NUTS, BOLTS, SHIMS OR SPACERS USED IN MINOR ADJUSTMENTS, MUST BE EITHER STAINLESS STEEL OR GALVANIZED; HALF WASHERS ARE PROHIBITED. ANY MINOR ADJUSTMENTS TO ACCOMMODATE ANTENNA MOUNTS AND EQUIPMENT SHOULD BE DONE IN A PROFESSIONAL MANNER WITH SAFETY AND AESTHETICS IN MIND. SHOULD YOU HAVE ANY QUESTIONS CONTACT YOUR ASSIGNED CONSTRUCTION PROJECT MANAGER OR ENGINEER FOR GUIDANCE.

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

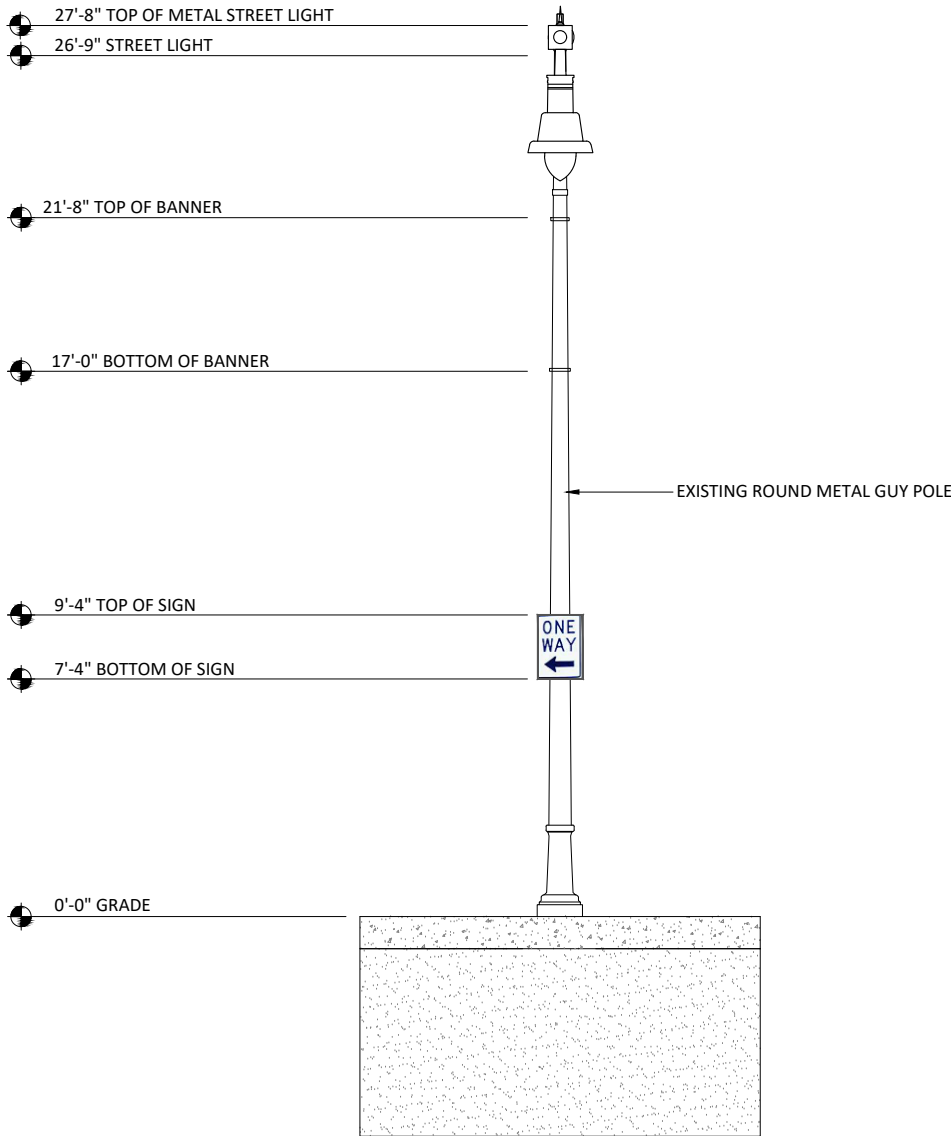
200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

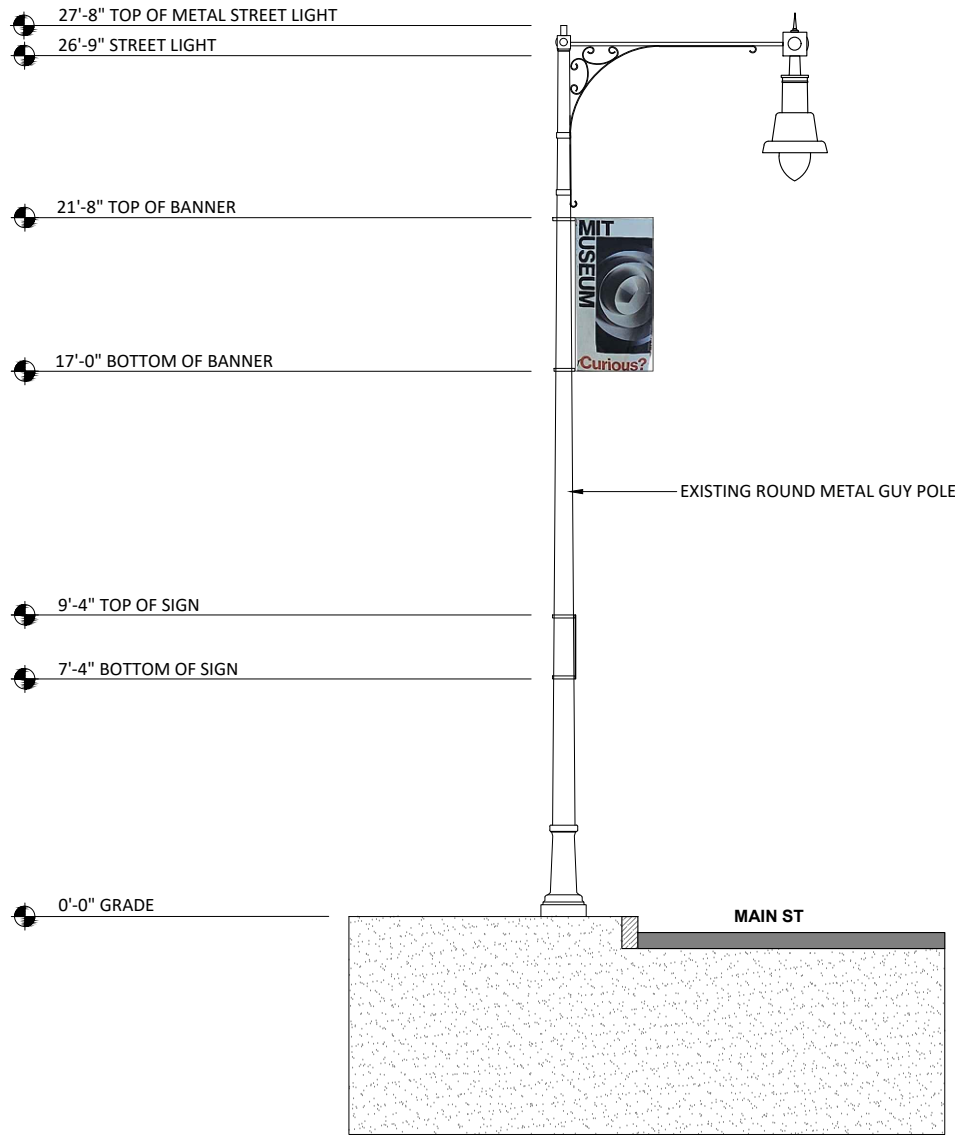
EXISTING
POLE DETAILS

SHEET:

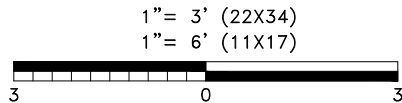
04



EXISTING PROFILE FRONT VIEW
QUADRANT # 6



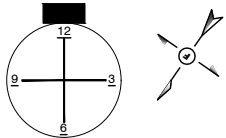
EXISTING PROFILE SIDE VIEW
QUADRANT # 9



NOTES:

1. ALL ATTACHMENTS INSTALLED SHALL MEET ALL CLEARANCE REQUIREMENTS FROM OVERHEAD POWER LINES AS SPECIFIED IN THE LATEST EDITION OF THE NESC AND BY LOCAL UTILITY REGULATIONS.
2. ABSOLUTELY NO FIELD CORING / DRILLING / CUTTING OR METALLIC POLES TO BE ALLOWED.
3. POWER SUPPLY SERVICE CONNECTION AND FIBER OPTIC CABLE CONNECTION TO BE FED UNDERGROUND.
4. NO EXISTING OR FUTURE AERIAL SPANNING ATTACHMENTS ARE TO BE MADE TO THIS POLE.
5. ALL NEW EQUIPMENT / UNITS SHALL BE PAINTED TO MATCH EXISTING LUMINAIRE, POLE OR ARM TO COMPLY WITH THE CURRENTS SURROUNDING AESTHETICS / REQUIREMENTS.
6. THE COMMUNICATIONS UNITS SHALL BE A COLOR MATCHING THE EXISTING LUMINAIRE, POLE OR ARM OR BE WHITE, BROWN, GRAY OR BEIGE.

TOP VIEW PROFILE
QUADRANT LOCATION EQUIPMENT



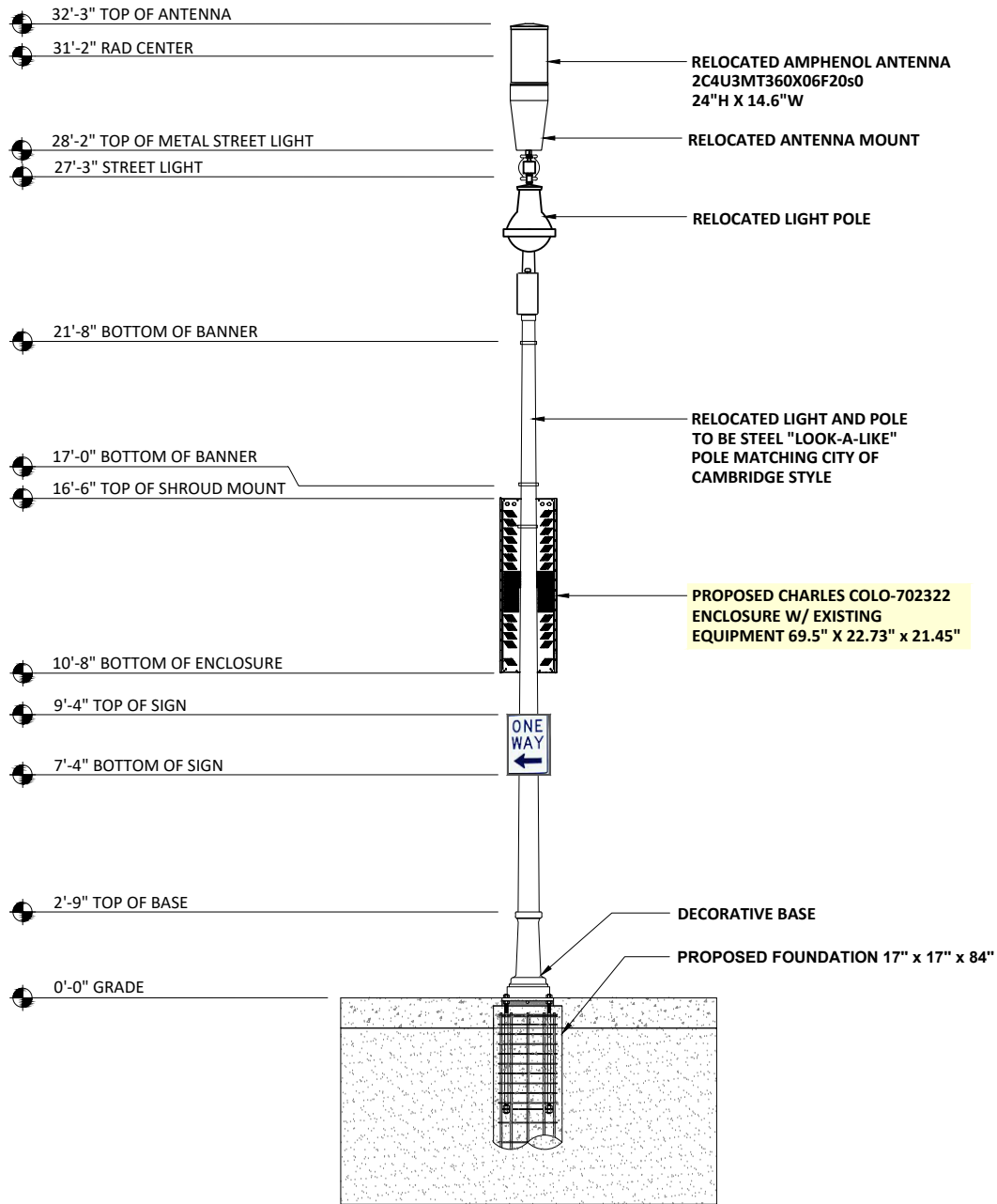
STREET SIDE

ENGINEERING NOTES:

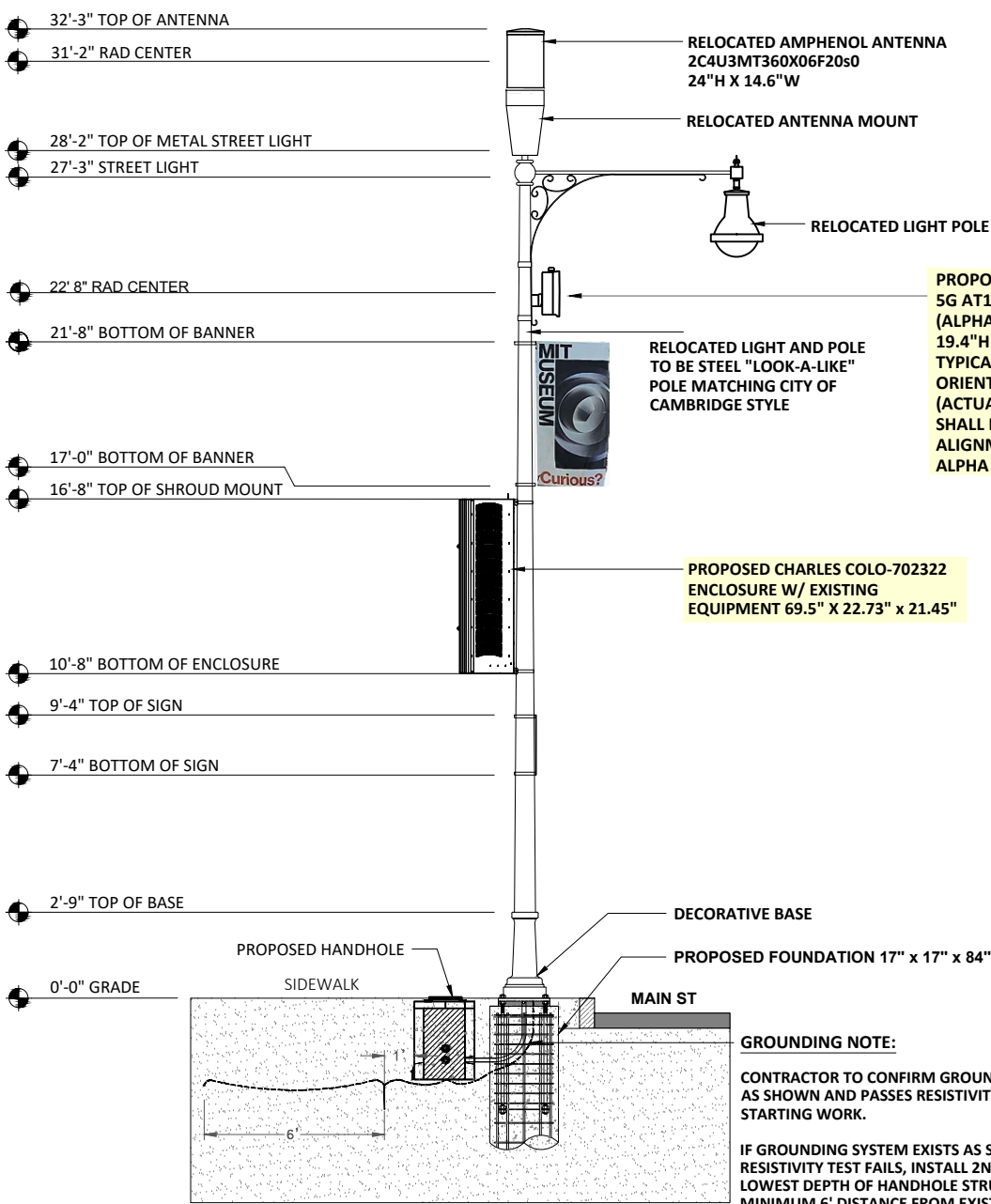
1. THIS DOCUMENT AND ALL DETAILS, DRAWINGS, AND PROPOSALS CONTAINED HEREIN ARE STRICTLY FOR PERMITTING PURPOSED ONLY.
2. THIS DRAWING IS NOT TO BE USED AS A CONSTRUCTION DOCUMENT. BEFORE ANY WORK BEGINS CONTRACTOR SHALL REQUEST FULL CONSTRUCTION DRAWINGS AND STRUCTURAL ANALYSIS FOR THIS PROPOSED SITE FROM CROWN CASTLE CONSTRUCTION MANAGER AND/ OR THEIR DESIGNATED ENGINEER.
3. CONTRACTOR SHALL REVIEW EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION, POLE, FOUNDATION AND ACCOMPANYING HARDWARE SHALL BE EVALUATED FOR STRUCTURAL SOUNDNESS. CONTRACTOR SHALL CEASE CONSTRUCTION IF A DETERMINATION IS MADE BY A QUALIFIED PERSON THAT THE POLE FOUNDATION, OR ACCOMPANYING HARDWAY IS UNABLE TO ACCOMMODATE THE MITIGATION AGREED UPON PRIOR TO CONSTRUCTION.
4. EXISTING POLES, FOUNDATION, AND ACCOMPANYING HARDWARE MUST BE INSPECTED BY A RESPONSIBLE TECHNICIAN IN ORDER TO ENSURE THAT THEY ARE NOT DAMAGED OR DECAYED AND ARE NOT LEANING OR MOVING EXCESSIVELY BEFORE ANY WORK IS STARTED.

NOTES:

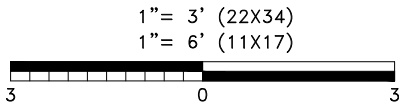
FROM TIME TO TIME IT MAY BE NECESSARY TO MAKE MINOR ADJUSTMENTS TO ACCOMMODATE, LEVEL OR SPACE ANTENNA MOUNTS AND EQUIPMENT. TWO SUCH EXAMPLES WOULD BE: ADDING A WASHER OR SHIM TO LEVEL OUT A BRACKET OR MOUNT TO MEET SPECIFICATIONS, AND OFFSETTING OR SPACING A BRACKET OR MOUNT DUE TO FLANGES AND/OR SMALL PROTRUSIONS ON A POLE TOP ASSEMBLY. ANY MATERIALS, NUTS, BOLTS, SHIMS OR SPACERS USED TO ACCOMMODATE ADJUSTMENTS TO ANTENNA MOUNTS AND EQUIPMENT MUST BE PERMANENTLY AFFIXED, BOLTED TO THE MOUNT, BRACKET OR POLE; AS NEVER TO BECOME A FALL HAZARD. ALL MATERIALS NUTS, BOLTS, SHIMS OR SPACERS USED IN MINOR ADJUSTMENTS, MUST BE EITHER STAINLESS STEEL OR GALVANIZED; HALF WASHERS ARE PROHIBITED. ANY MINOR ADJUSTMENTS TO ACCOMMODATE ANTENNA MOUNTS AND EQUIPMENT SHOULD BE DONE IN A PROFESSIONAL MANNER WITH SAFETY AND AESTHETICS IN MIND. SHOULD YOU HAVE ANY QUESTIONS CONTACT YOUR ASSIGNED CONSTRUCTION PROJECT MANAGER OR ENGINEER FOR GUIDANCE.



PROPOSED PROFILE FRONT VIEW
QUADRANT # 6



PROPOSED PROFILE SIDE VIEW
QUADRANT # 9



PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

PROPOSED
POLE DETAILS

SHEET:

05



EXISTING PHOTOGRAPHIC VIEW



PROPOSED PHOTOGRAPHIC SIMULATION

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

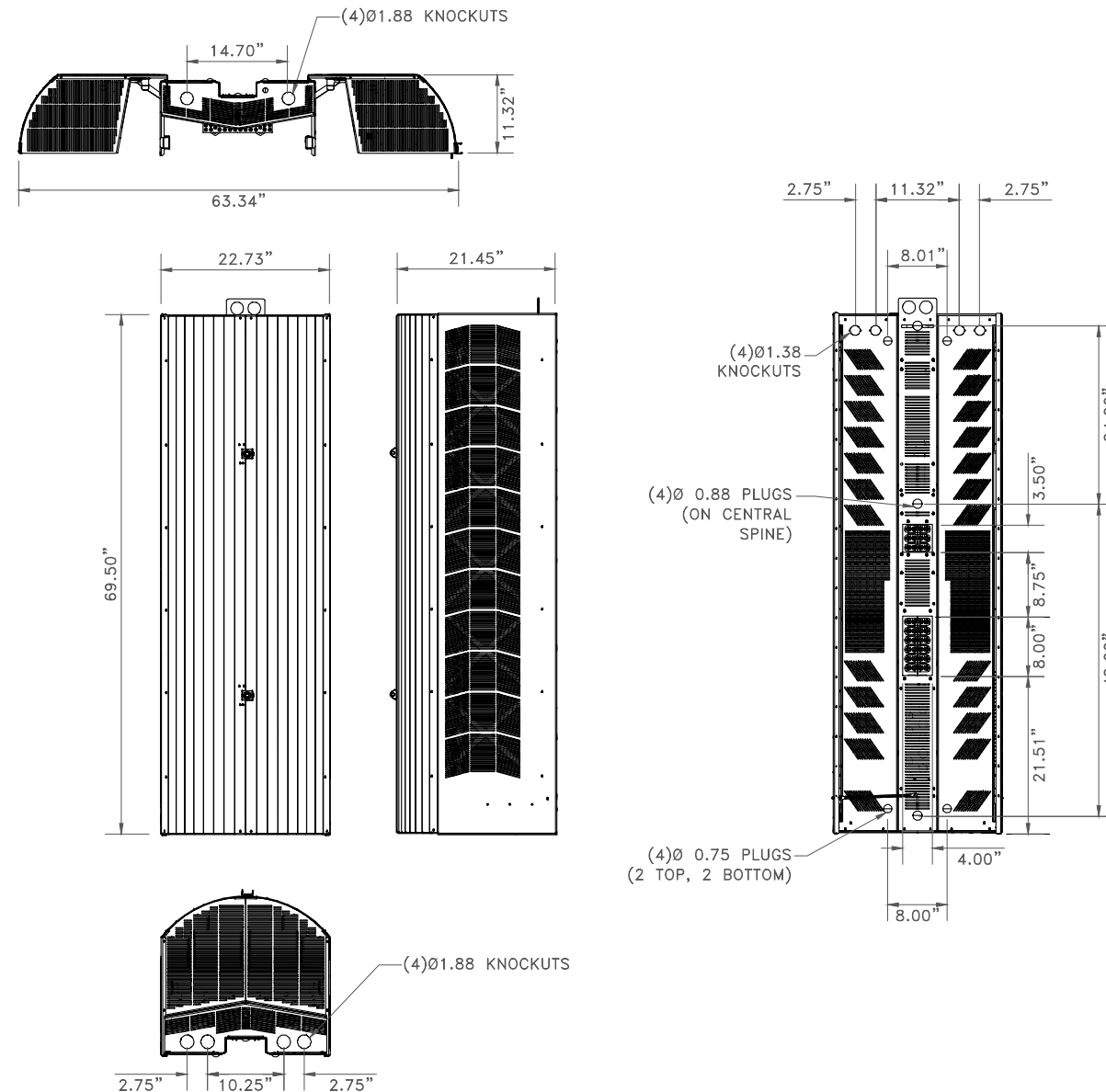
SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

PHOTOGRAPHIC
SIMULATION

SHEET:



CHARLES COLO-702322 ENCLOSURE

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE
0	ORIGINAL	DS	04-05-2021

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

SHROUD DETAIL

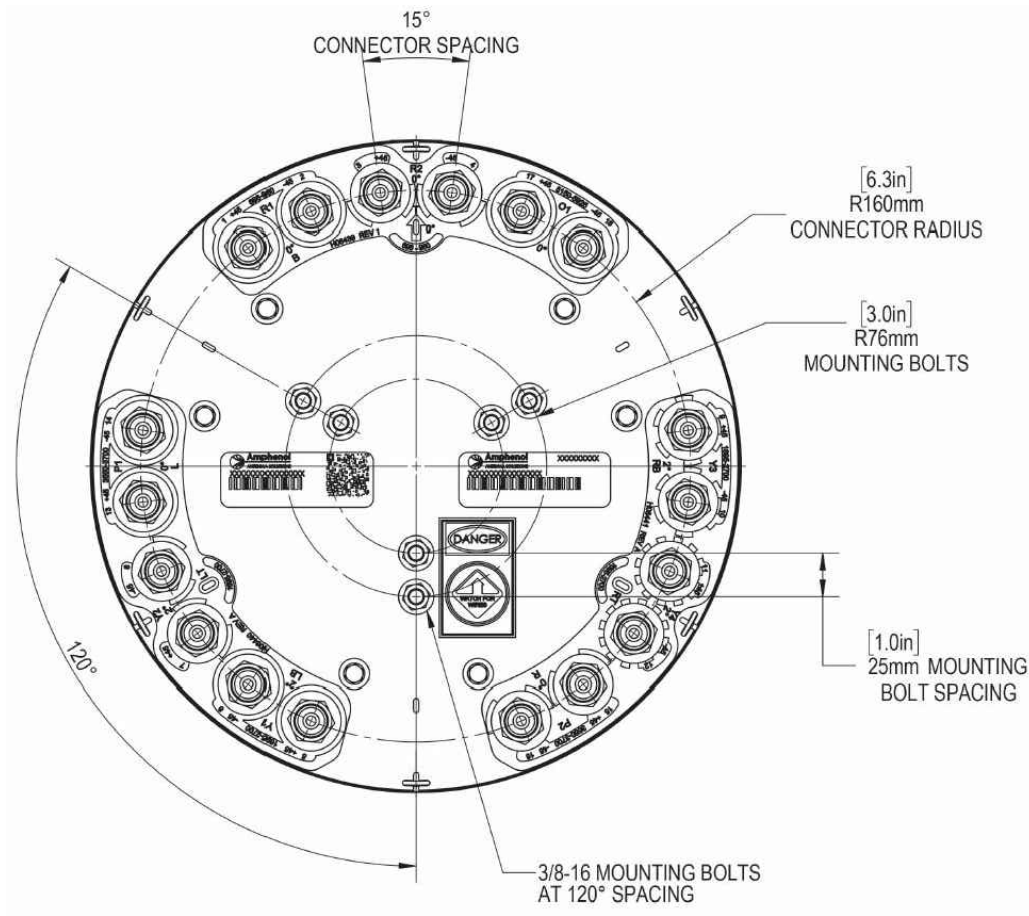
SHEET:

07

MECHANICAL SPECIFICATIONS

Antenna	Height	mm (in)	612 (24.1)
	Diameter	mm (in)	371 (14.6)
Net Weight - Antenna Only		kg (lbs)	11.3 (25.0)
Windload	Calculation	km/h (mph)	160 (100)
	Frontal	N (lbf)	191 (43)
Survival Wind Speed		km/h (mph)	241 (150)
Wind Area		m ² (ft ²)	0.22 (2.4)
Volume		m ³ (ft ³)	0.07 (2.3)
Connector	Type	---	4.3-10 Female
	Quantity	---	18
	Position	---	Bottom
Radome Color		---	Grey (Pantone 420 C), Brown (Pantone 476 C), Black (RAL 9011)
Lightning Protection (Grounding Type)		---	Direct Ground

MECHANICAL SPECIFICATIONS
(2C4U3MT360X06F20s0)



BOTTOM VIEW - CONNECTOR DIAGRAM
(2C4U3MT360X06F20s0)



ANTENNA
(2C4U3MT360X06F20s0)

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE
0	ORIGINAL	DS	04-05-2021

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

ANTENNA DETAILS

SHEET:

08



CBC626T-DL-4310 | E11F13P04
Twin Diplexer 555-960/1695-2690MHz,DC Low,4.3-10

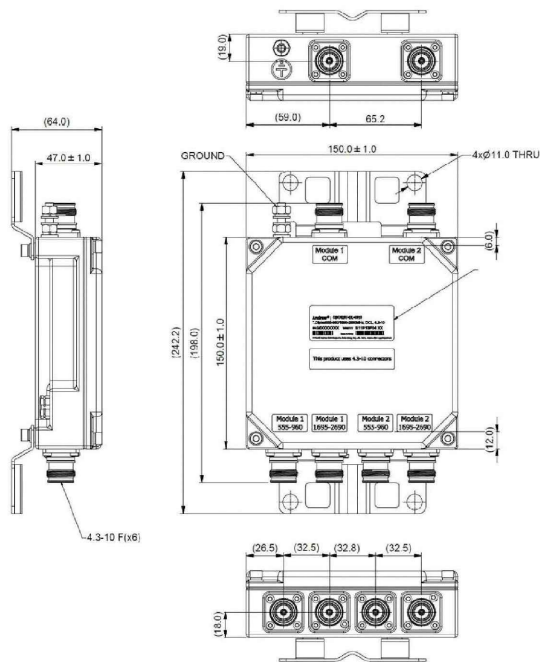
- Full performance in a fraction of the size
- High power handling
- Includes 600 MHz and AWS-3/4 bands
- New 4.3-10 connectors for improved PIM performance and size reduction
- dc/AISG pass-through on low frequency port
- Twin configuration

Mechanical Specifications

RF Connector Interface	4.3-10 Female
RF Connector Interface Body Style	Long neck
Color	Gray
Finish	Painted

Dimensions

Height	150.0 mm		5.9 in
Width	150.0 mm		5.9 in
Depth	47.0 mm		1.9 in
Weight	1.8 kg		4.0 lb



7825719-0002 | CAP H 7E/80-85/17E/19 F-AC-F1



Carrier Access Point with 4-Band Support for High Power LMR 750, USA 700, USA 750, SMR 800, CEL 850, AWS 1700 and PCS 1900 Applications, Fiber Fed with Fan Kit

Product Classification

Product Type	Access point
Product Brand	ERA®

General Specifications

Minimum Software Requirement	ION-E SW V2.7
Mounting	Pole Wall
Note	Detailed Product Specifications are available. Please contact your local CommScope representative.
Power Type	High
RF Antenna Port Interface	4.3-10 Female
RF Antenna Port, quantity	1

Dimensions

Height	824 mm 32.441 in
Width	176 mm 6.929 in
Depth	220 mm 8.661 in

Electrical Specifications

ALC Default Threshold	-45 dBm
Electrical Safety Standard	IEC 62368 UL 62368
Electrical Safety Standard Note	This is not a consumer device. Additional information for US FCC on product label.
Electromagnetic Compatibility (EMC)	EN 301489
Flatness, inband link	±2 dB
Impedance	50 ohm
License Band	AWS 1700 CEL 850 LMR 750 PCS 1900 SMR 800 USA 700 USA

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE
0	ORIGINAL	DS	04-05-2021

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

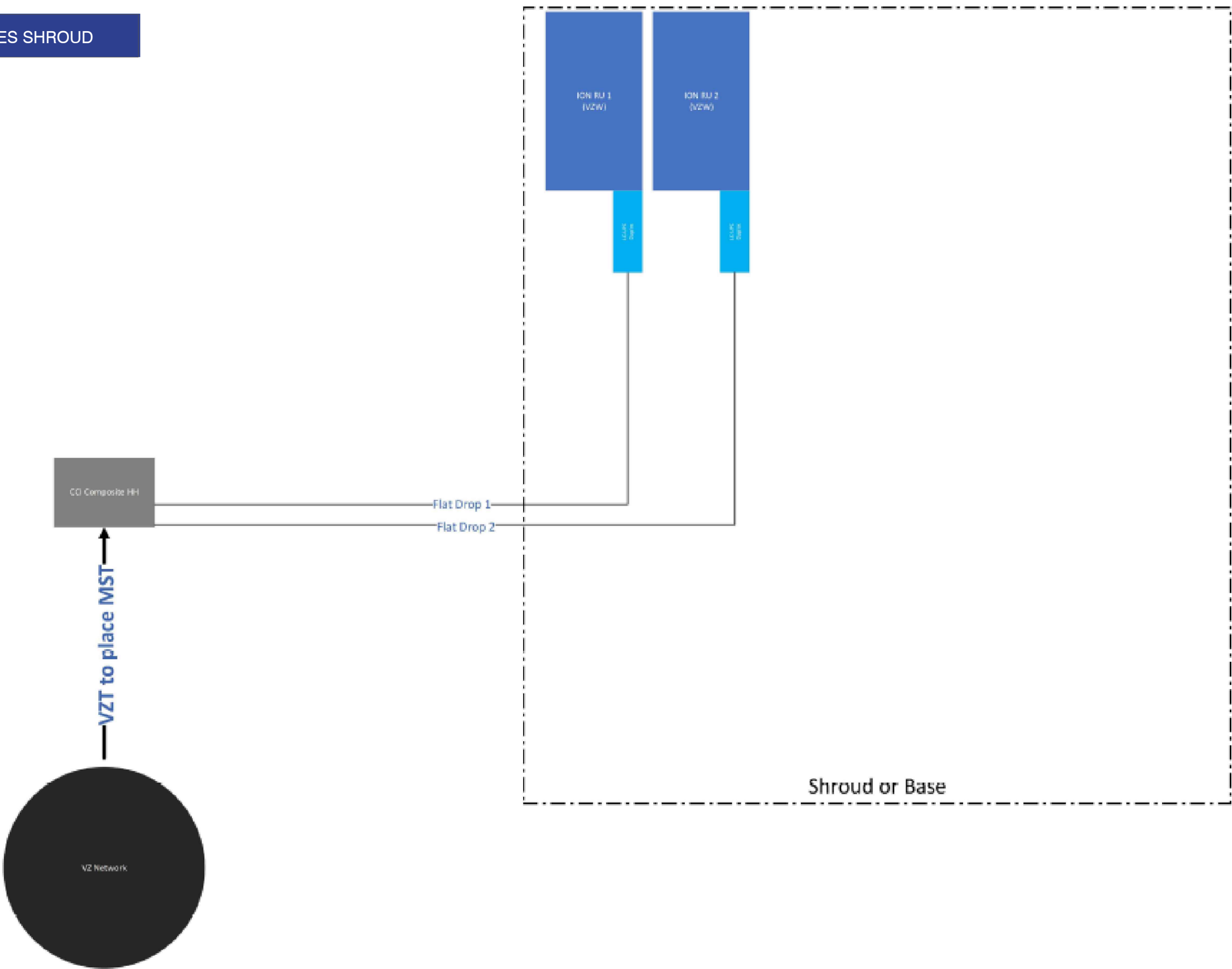
SHEET DESCRIPTION:

EQUIPMENT
DETAILS

SHEET:

09

HSQ-CHARLES SHROUD



NOTE:
FIBER ROUTING DIAGRAM PROVIDED BY CROWN CASTLE

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE
0	ORIGINAL	DS	04-05-2021

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

FIBER DIAGRAM

SHEET:

10



NOTE:

POWER ROUTING DIAGRAM PROVIDE BY CROWN CASTLE

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE
0	ORIGINAL	DS	04-05-2021

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

ELECTRICAL WIRING DIAGRAM

SHEET:

11

NB+C Engineering Services

Raycap|STEALTH® Light Pole Design

Prepared for Raycap|STEALTH® Concealment – Crown Castle New Site Build

SITE INFORMATION

Address Boston, MA
Crown Castle Site Name Harvard Square
Raycap|STEALTH® Project Number CC21-01000W-17R0
NB+C Project Number 100111
Date June 8, 2021

NB+C Engineering Services

Prepared by: Victoria Gulino, E.I.T.

Respectfully submitted by:
Krupakaran Kolandaivelu, P.E.
Director of Engineering
MA PE License #50019



NB+C ES Standard Calculation Sheet 1
6095 Marshalee Drive, Suite 300 Date: 6/8/2021
Elkridge, MD 21075 Raycap|Stealth® Lightpole TIA-222-G.xmcd 100111

PURPOSE / ASSUMPTIONS

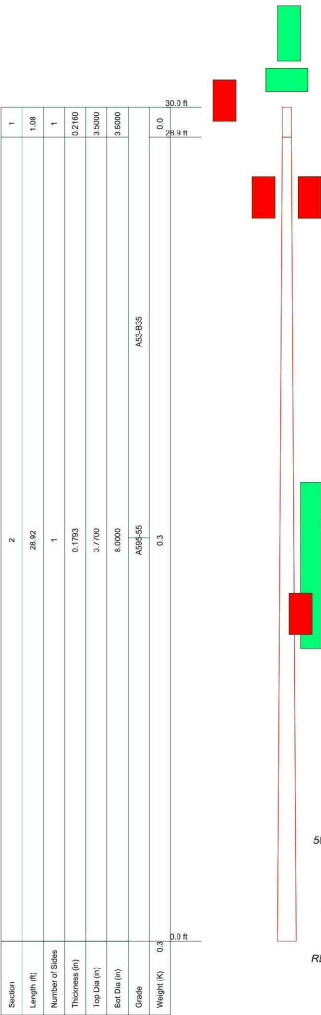
The purpose of these calculation is to design light pole located in Boston, MA for supporting the new panel antennas. Contractor to verify the site specific conditions prior to fabrications)

Code	- 2015 IBC and ANSI/TIA-222-G
Ultimate Windspeed	- 129 mph
Exposure Category	- D
Site Class	- II
Ice Thickness	- 0.75in
Ice Windspeed	- 50mph

STEALTH® Pole Mount Pole Design Summary:

Base Pole	- 8" diameter Bot. 3.96" diameter Top. 7GA A.595 Gr. A stressed at 76.5%
Base Plate	- 1.25" A36 thick base plate, 12.0" square stressed at 57.6%
Anchor Bolts	- (4) 1.25" ϕ F1554 55 bolt with bolt center 23" stressed at 60.7%

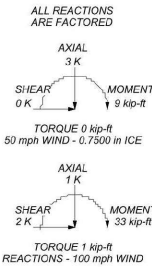
Structural Analysis : Passing



DESIGNED APPURTENANCE LOADING			
TYPE	ELEVATION	TYPE	ELEVATION
2CAUMT3000SPKYS4	31	AELUB 5G Antenna w/ ASD	26
Transition Shroud	31	AELUB 5G Antenna w/ ASD	26
Light	28	AELUB RCEN-SLM-361812	13.5
Light Arm (8'x2 1/2")	28	Motor Box	11
AELUB 5G Antenna w/ ASD	26	36"x24" Road Sign	8.25

MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B35	35 ksi	60 ksi	A36-55	55 ksi	65 ksi

- TOWER DESIGN NOTES**
- Tower designed for Exposure D to the TIA-222-G Standard.
 - Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
 - Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
 - Deflections are based upon a 60 mph wind.
 - Tower Structure Class II.
 - Topographic Category 1 with Crest Height of 0.00 ft
 - TOWER RATING: 76.5%



NB+C Engineering Services		Harvard Square	
8601 Six Forks Road		Project: 100111	
Raleigh, NC		Client: Raycap Stealth	
Phone: (919) 657-9131		Drawn by: Victoria Gulino	
FAX:		Date: 06/08/21	
		Scale: NTS	
		Dwg No: E-1	

tnxTower NB+C Engineering Services 8601 Six Forks Road Raleigh, NC Phone: (919) 657-9131 FAX:	Job	Harvard Square	Page	1 of 17
	Project	100111	Date	16:19:58 06/08/21
	Client	Raycap Stealth	Designed by	Victoria Gulino

Tower Input Data

- The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:
- ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
 - Basic wind speed of 100 mph.
 - Structure Class II.
 - Exposure Category D.
 - Topographic Category 1.
 - Crest Height 0.00 ft.
 - Nominal ice thickness of 0.7500 in.
 - Ice thickness is considered to increase with height.
 - Ice density of 56 pcf.
 - A wind speed of 50 mph is used in combination with ice.
 - Temperature drop of 50 °F.
 - Deflections calculated using a wind speed of 60 mph.
 - A non-linear (P-delta) analysis was used.
 - Pressures are calculated at each section.
 - Stress ratio used in pole design is 1.
 - Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|-------------------------------------|-------------------------------------|---|
| Consider Moments - Legs | Distribute Leg Loads As Uniform | Use ASCE 10 X-Brace Ly Rules |
| Consider Moments - Horizontals | Assume Legs Pinned | Calculate Redundant Bracing Forces |
| Consider Moments - Diagonals | Assume Rigid Index Plate | Ignore Redundant Members in FEA |
| Use Moment Magnification | Use Clear Spans For Wind Area | SR Leg Bolts Resist Compression |
| Use Code Stress Ratios | Use Clear Spans For KL/r | All Leg Panels Have Same Allowable |
| Use Code Safety Factors - Guys | Retention Guys To Initial Tension | Offset Girt At Foundation |
| Escalate Ice | Bypass Mast Stability Checks | Consider Feed Line Torque |
| Always Use Max Kz | Project Wind Area of Appurt. | Include Angle Block Shear Check |
| Use Special Wind Profile | Autoeale Torque Arm Areas | Use TIA-222-G Tension Splice Exemption |
| Include Bolts In Member Capacity | Add IBC 6D+W Combination | Poles |
| Leg Bolts Are At Top Of Section | Sort Capacity Reports By Component | Include Shear-Torsion Interaction |
| Secondary Horizontal Braces Leg | Triangulate Diamond Inner Bracing | Always Use Sub-Critical Flow |
| Use Diamond Inner Bracing (4 Sided) | Treat Feed Line Bundles As Cylinder | Use Top Mounted Sockets |
| SR Members Have Cut Ends | Ignore KL/ry For 60 Deg. Angle Legs | Pole Without Linear Attachments |
| SR Members Are Concentric | | Pole With Shroud Or No Appurtenances |
| | | Outside and Inside Corner Radii Are Known |

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	

PLANS PREPARED FOR:



PLANS PREPARED BY:



FOR PERMITTING
PURPOSES ONLY

ENGINEERING SEAL:

DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF CROWN CASTLE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF CROWN CASTLE.

REVISIONS:

REV	DESCRIPTION	BY	DATE
0	ORIGINAL	DS	04-05-2021

SITE CASCADE:

CRAN_RCTB_0002E_28
CROWN ID: ODAS_2E-28
SCU #406348

SITE ADDRESS:

200 MAIN ST
CAMBRIDGE, MA 02142

SHEET DESCRIPTION:

STRUCTURAL

SHEET:

12

200 Main St.



200 Main St.

Petitioner

44-102
CAMBRIDGE REDEVELOPMENT AUTHORITY
255 MAIN ST 4TH FLOOR
CAMBRIDGE, MA 02142

44-100
BARRETT, DAVID, EDWARD H. LINDE ET-AL
C/O BOSTON PROPERTIES INC
800 BOYLSTON ST SUITE 1900
BOSTON, MA 02199

CROWN CASTLE FIBER
C/O BRANDI SPEZZANO
1800 WEST PARK DRIVE
WESTBOROUGH, MA 01581

47-97-90-88
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
C/O MIT INVESTMENTS MANAGEMENT CO
ONE BROADWAY, SUITE 09-200
CAMBRIDGE, MA 02142

14-26
MIT 139 MAIN ST FEE OWNER LLC C/O MIT
INVESTMENT MGMT CO
ONE BROADWAY, 9TH FL, SUITE 200
CAMBRIDGE, MA 02142

14-59
MIT 165 MAIN ST FEE OWNER LLC C/O MIT
CAMBRIDGE REAL ESTATE LLC
ONE BROADWAY, SUITE 09-200
CAMBRIDGE, MA 02142

14-58
MIT ONE BROADWAY FEE OWNER, LLC
C/O MIT INVESTMENT MANG.
ONE BROADWAY, 9TH FL. SUITE 200
CAMBRIDGE, MA 02142

47-94
MIT 238 MAIN STREET FEE OWNER LLC
C/O MIT CAMBRIDGE REAL ESATE LLC
ONE BROADWAY 09-200
CAMBRIDGE, MA 02142

46-12
OMD OWNER LLC
ONE METLIFE WAY
WHIPPANY, NJ 07981

29-51
MIT VOLPE FEE OWNER LLC
ONE BROADWAY
9TH FL STE 200
CAMBRIDGE, MA 02142

This site, located within Galaxy Park near 200 Main St, has been approved by the Land Owner, with an agreement entered into by both parties, Cambridge Redevelopment Association and Crown Castle Fiber LLC. A pre-existing streetlight will be replaced with a new streetlight holding the wireless equipment that will be owned and operated by Crown. This will enhance the wireless coverage in this area, allowing increased capacity for area businesses and residents. This structure and proposed equipment abides by all components in the Small Cell Wireless Policy within the City of Cambridge.