



# Extenet Systems, Inc.

SOUTH END LANDMARK DISTRICT COMMISSION- 11/05/20

DAVID HOOGASIAN

# Scope of Work:

- ▶ Attach a wireless communications antenna at the top of the new pole along with related equipment side mounted below. Utilities to be brought underground to the new pole.
- ▶ This replacement will be done in accordance with the Agreement between the Applicant and the City of Boston.

# 135 Dartmouth St.

NE-MA-BOSTD3M1-03001  
(CRAN\_RCTB\_00003\_1004)







## Alternate Site Analysis:

An Extenet application was originally approved to the Northwest across the street to this proposal at 126 Dartmouth St., however, at the time of installation it was discovered that the node sits directly on top of the MBTA tunnel. The existing Streetlight is attached to the roof of the tunnel and Extenet determined it was not in the best interest to attach the new foundation and new SL pole to the tunnel roof. Moving south from 126 Dartmouth to avoid the tunnel, there is already an existing small cell facility, so the subject of this application was chosen across the street at 135 Dartmouth.



**PROJECT DESCRIPTION:**

THESE PLANS REPRESENT A PORTION OF A PROPOSED SMALL CELL BUILD INVOLVING THE INSTALLMENT OF AN ANTENNA AND RADIO EQUIPMENT ON AN EXISTING WOODEN UTILITY OR REPLACEMENT METAL STREETLIGHT POLES.

**EXTENET SYSTEMS  
135 DARTMOUTH ST  
BOSTON, MA 02116  
(EAST SIDE OF DARTMOUTH ST )**

**CRAN\_RCTB\_00003\_01  
NE-MA-BOSTD3M1-03001**

**PROJECT INFORMATION**

**INDEX:**

1	COVER PAGE
2	SIDE PROFILE
3	REAR PROFILE
4	DETAILS - ANTENNA AND RADIOS
5	DETAILS - RADIO SHROUD
6	DETAILS - CONCRETE FOUNDATION
7	EXISTING PHOTO / WIRING DIAGRAM

POLE OWNER: CITY OF BOSTON

CONTACT: RICK ANGELINI  
3030 WARRENVILLE RD  
SUITE 340  
LISLE, IL 60532  
NOC: (866) 892-5327

LOCATION: BOSTON, MA  
SUFFOLK COUNTY

**NOTES:**

PREPARED FOR:



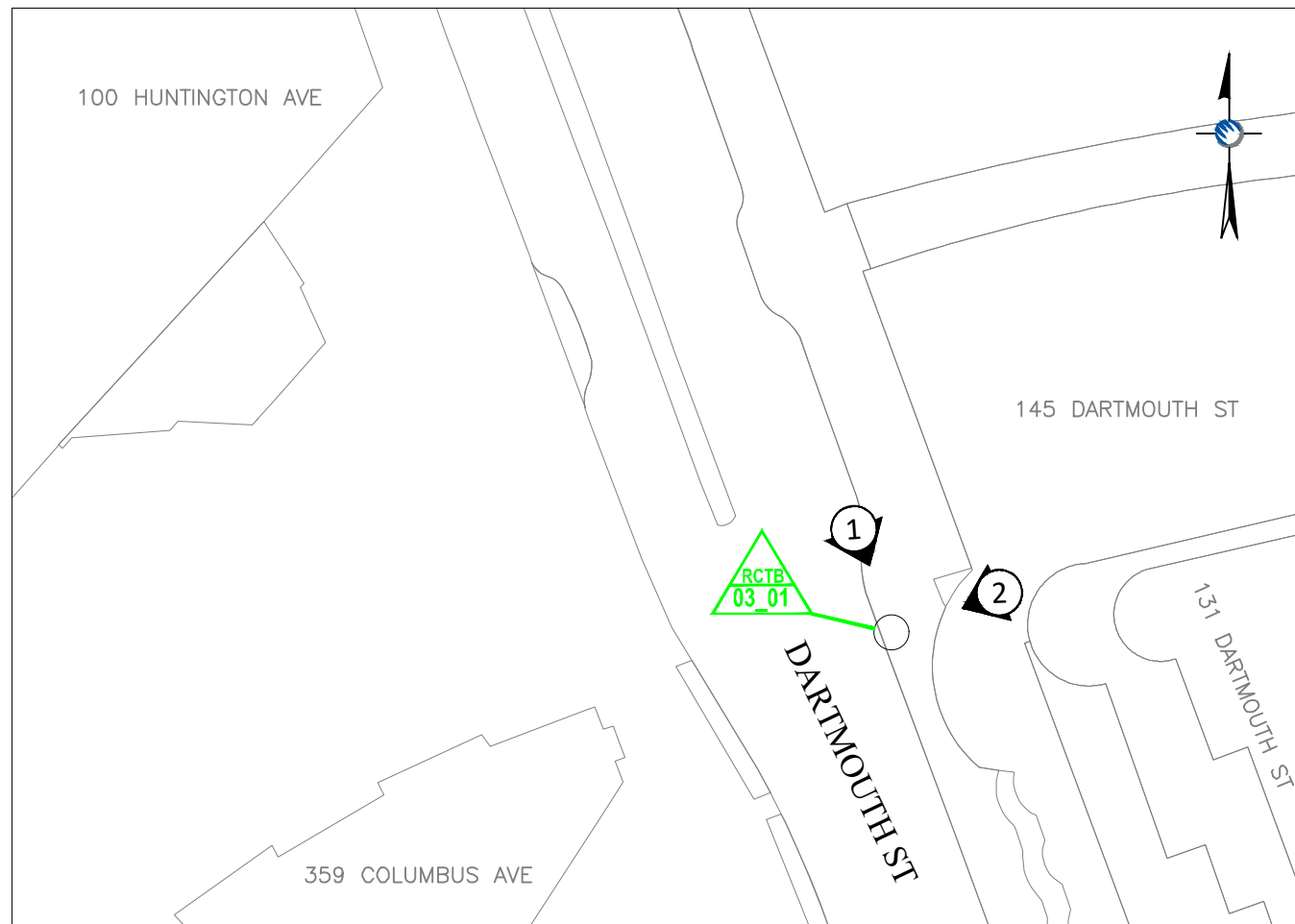
PREPARED BY:



**NODE  
RCTB-03\_01  
COVER PAGE**

REVISIONS		
REV	DESCRIPTION	DATE
1	NEW NODE LOCATION	11/25/19

DRAFTER: MMS  
SCALE: AS SHOWN  
ISSUE DATE: 03/27/18  
INDEX NAME: RCTB-03\_01  
SHEET #: 1 OF 7



**LOCATION MAP**

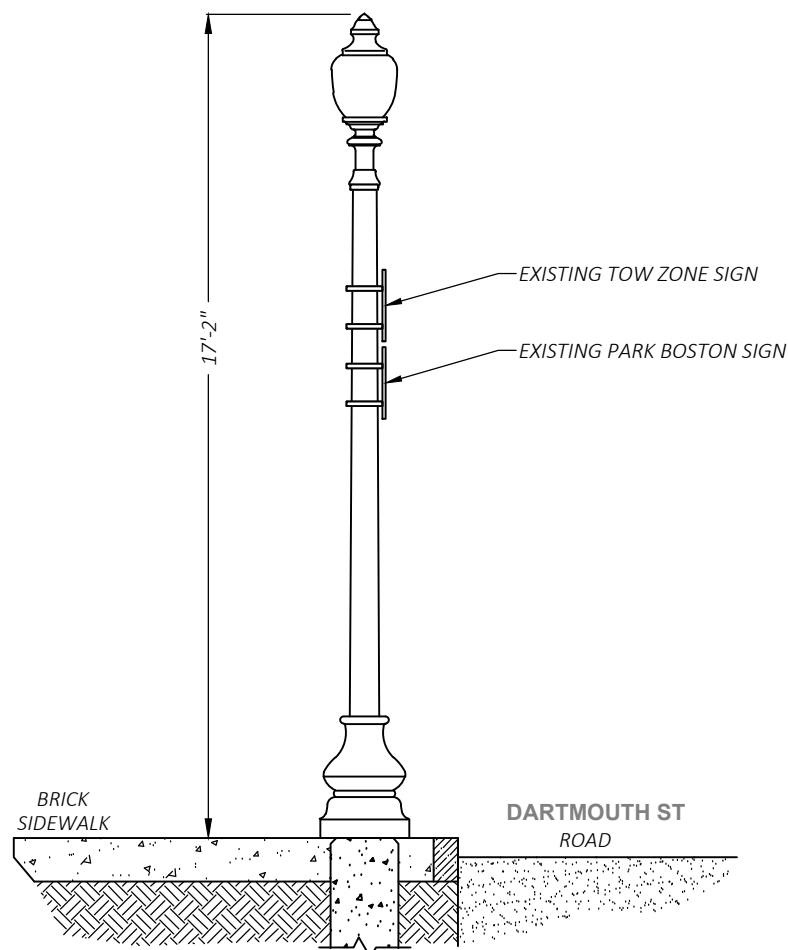
LATITUDE: 42.347059° LONGITUDE: -71.075733°  
ELEVATION: 9.84' AGL  
SCALE: 1" = 50'



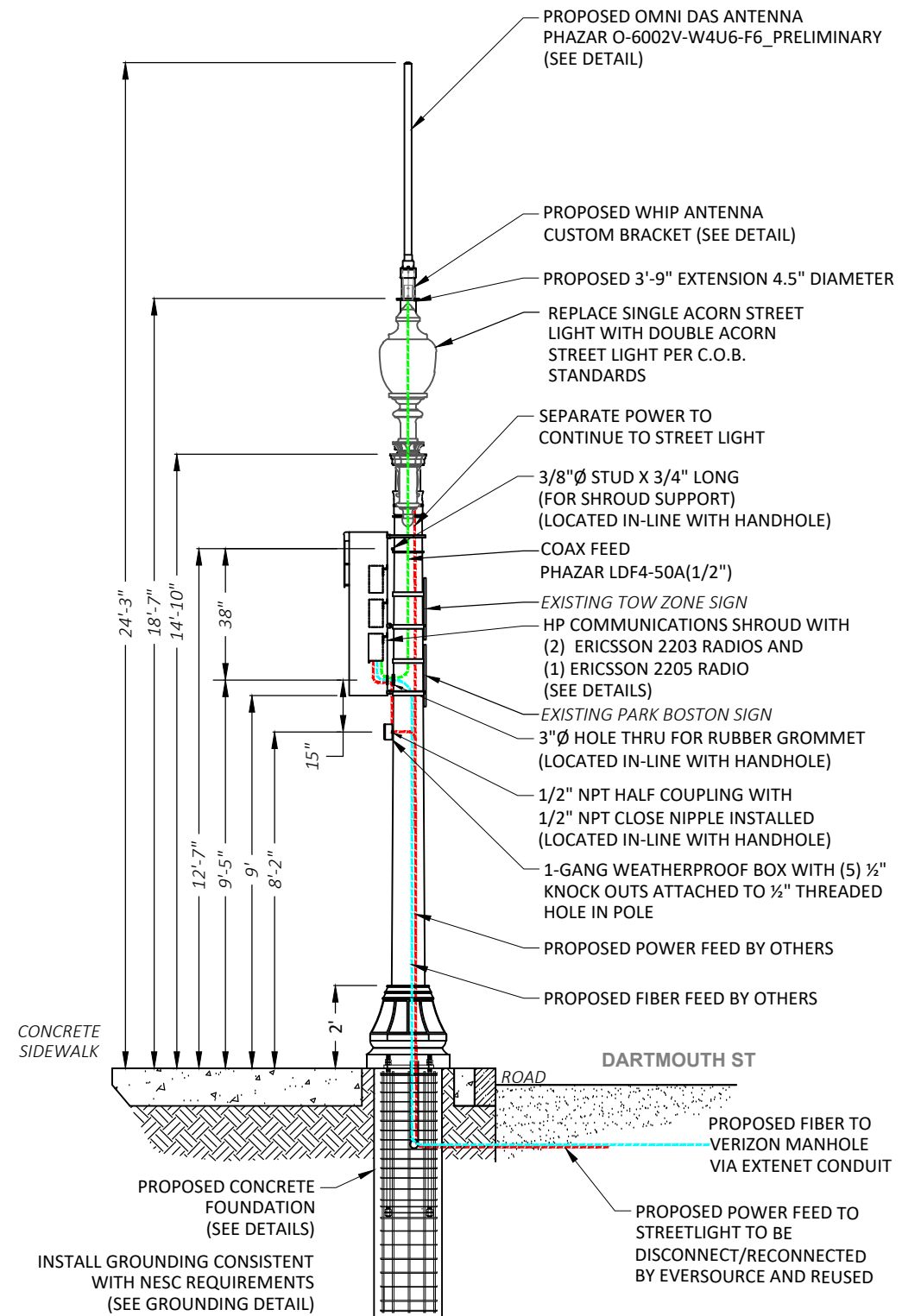
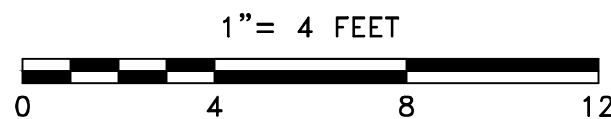
**LOCUS MAP**

PROJECT LOCATION - NODE RCTB-03\_01  
SCALE: 1" = 500'

# NODE RCTB-03\_01 135 DARTMOUTH ST, BOSTON, MA SIDE PROFILE



① EXISTING PROFILE - SIDE VIEW  
LOOKING SOUTHEAST ALONG DARTMOUTH ST



① PROPOSED PROFILE - SIDE VIEW  
LOOKING SOUTHEAST ALONG DARTMOUTH ST

LOCATION:  
BOSTON, MA  
SUFFOLK COUNTY

NOTES:

PREPARED FOR:



PREPARED BY:



NODE  
RCTB-03\_01  
SIDE PROFILE

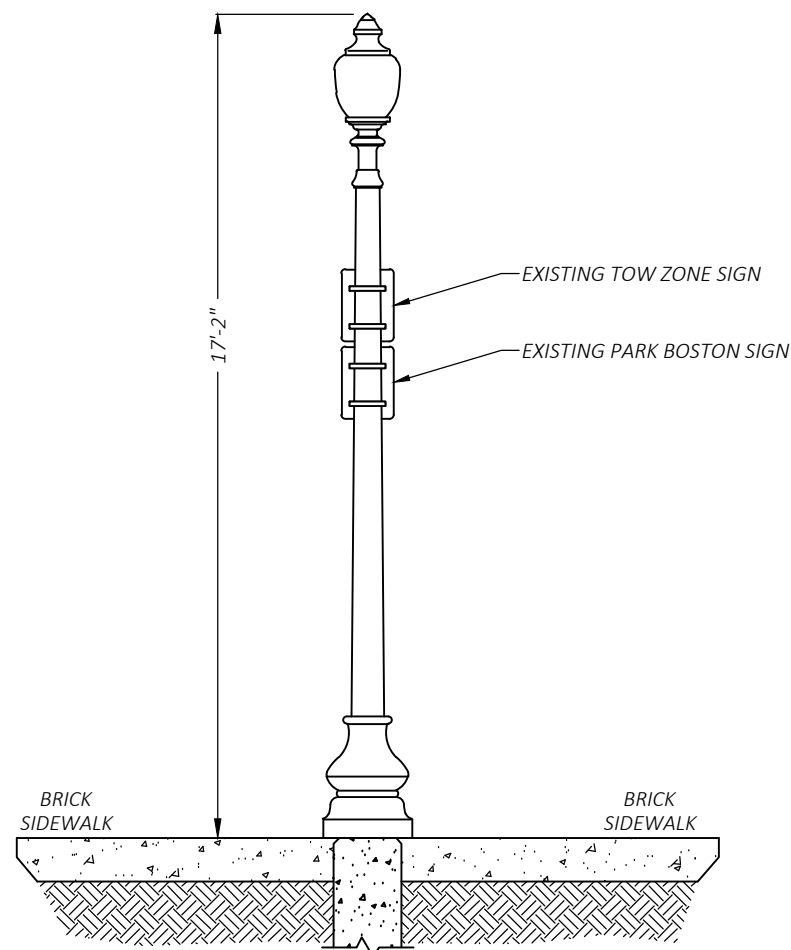
REVISIONS		
REV	DESCRIPTION	DATE
1	NEW NODE LOCATION	11/25/19

DRAFTER: MMS  
SCALE: SEE SCALE BAR  
ISSUE DATE: 03/27/18  
INDEX NAME: RCTB-03\_01  
SHEET #: 2 OF 7

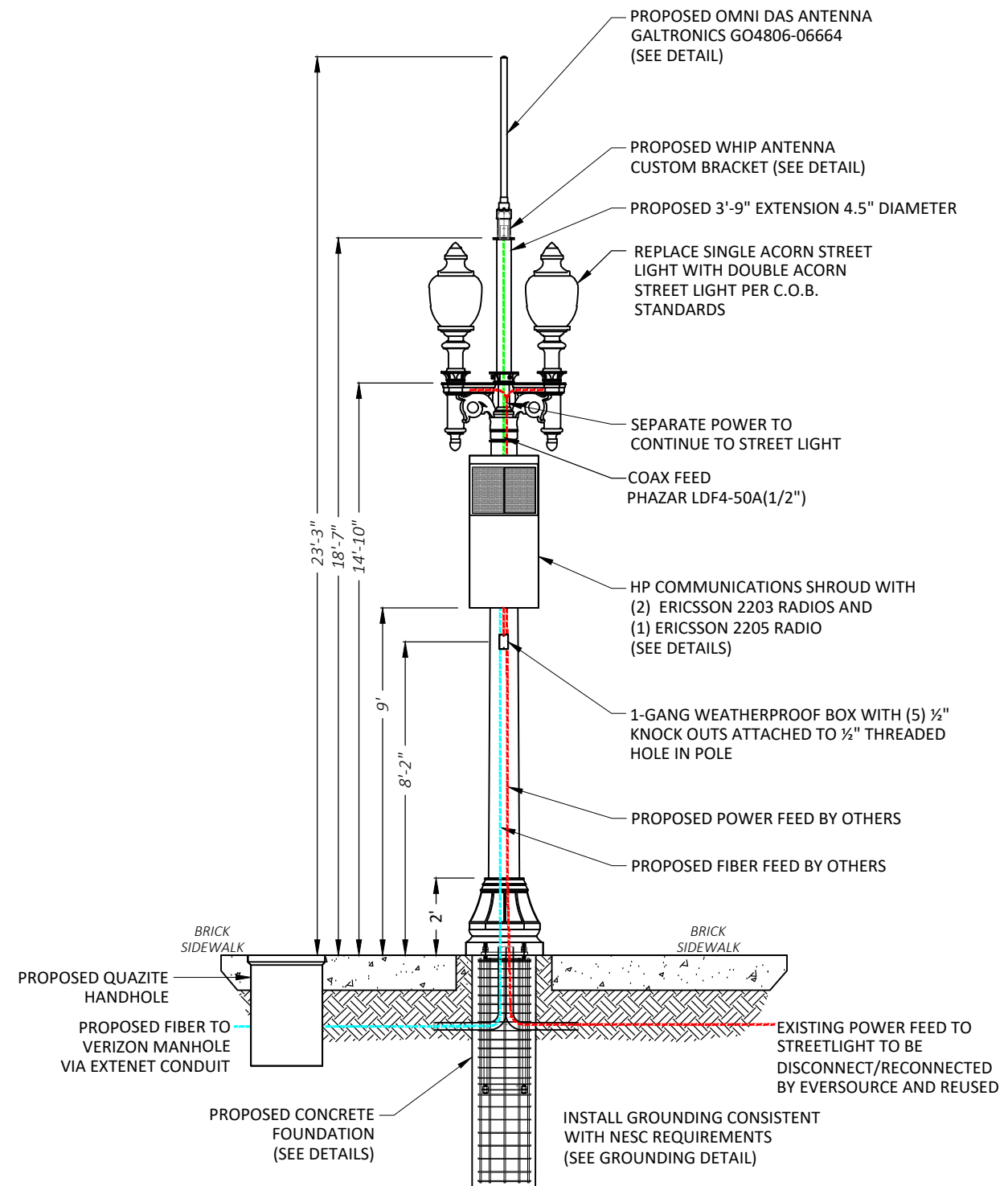
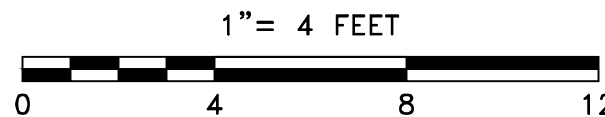
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# NODE RCTB-03\_01 135 DARTMOUTH ST, BOSTON, MA REAR PROFILE



② EXISTING PROFILE - REAR VIEW  
LOOKING SOUTHWEST TOWARDS DARTMOUTH ST



② PROPOSED PROFILE - REAR VIEW  
LOOKING SOUTHWEST TOWARDS DARTMOUTH ST

LOCATION:  
BOSTON, MA  
SUFFOLK COUNTY

NOTES:

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**extenet** SYSTEMS  
YOUR NETWORK EVERYWHERE.

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21 OXFORD RD  
MANSFIELD, MA 02048  
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NODE  
RCTB-03\_01  
REAR PROFILE

REVISIONS		
REV	DESCRIPTION	DATE
1	NEW NODE LOCATION	11/25/19

DRAFTER: MMS  
SCALE: SEE SCALE BAR  
ISSUE DATE: 03/27/18  
INDEX NAME: RCTB-03\_01  
SHEET #: 3 OF 7

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# Preliminary

## Quad Port WCS and 2 Port 5 GHz BAND ANTENNA

- Outdoor Whip Antenna
- 1 Year Guarantee

**WIRELESS**



### Model O-6002v-W4U6-F6

Part Number: 1509-XXXX-2XX

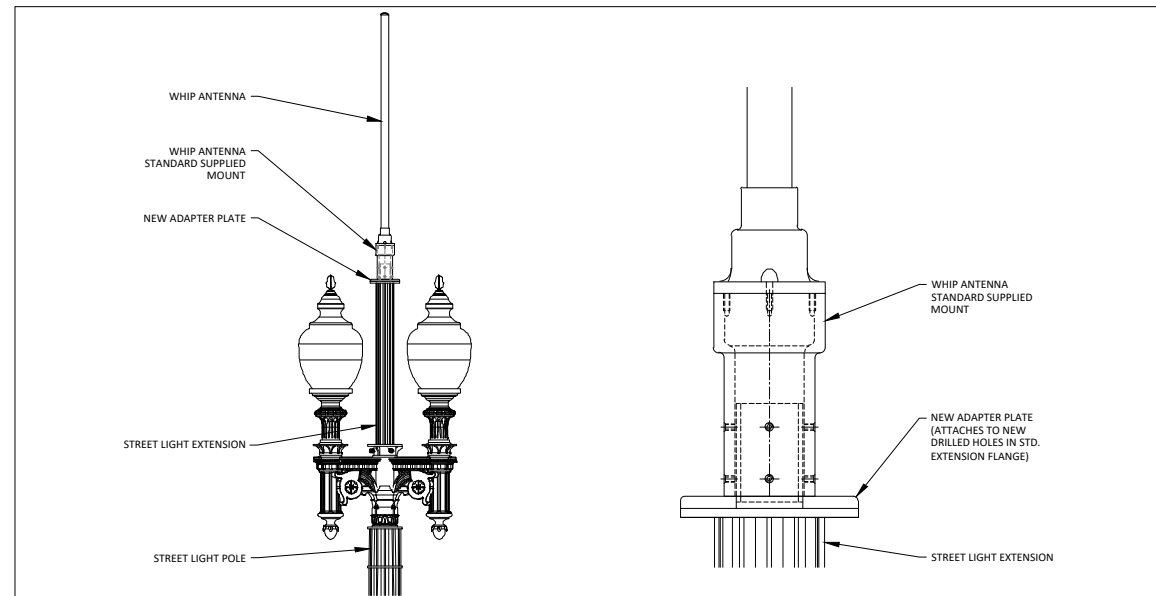
Colors: -201 White #17875, -202 Silver #26373, -203 Black #20038, -204 Brown #10049, -205 Green #14062, -206 Gray #16099, -207 Dark Green RAL-6012

ELECTRICAL SPECIFICATIONS	
SPECS	PERFORMANCE
Frequency Range	1695-2360 MHz 5150-5925 MHz
VSWR (typ)	1.5:1
Gain	4.6 dBi nom. WCS Band; 6 dBi nom. 5 GHz
PIM	> -150 dBc WCS Band
Isolation (typ)	> -19 dB
Polarization	Vertical (WCS), Dual Slant (+- 45°, 5 GHz)
Elevation 3 dB Beamwidth (nom.)	38° WCS Band; 33° 5 GHz
Azimuth 3 dB Beamwidth	360°
Power Input	200 Watts

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS	
SPECS	PERFORMANCE
Connector	4.3-10 (6 each)
Mounting	Top Mount (fits over 3" tube) (side mount also available)
Dimensions (L x W)	60 Inches x 2 Inches
Weight	~3 lbs
Lightning Protection	Direct Ground

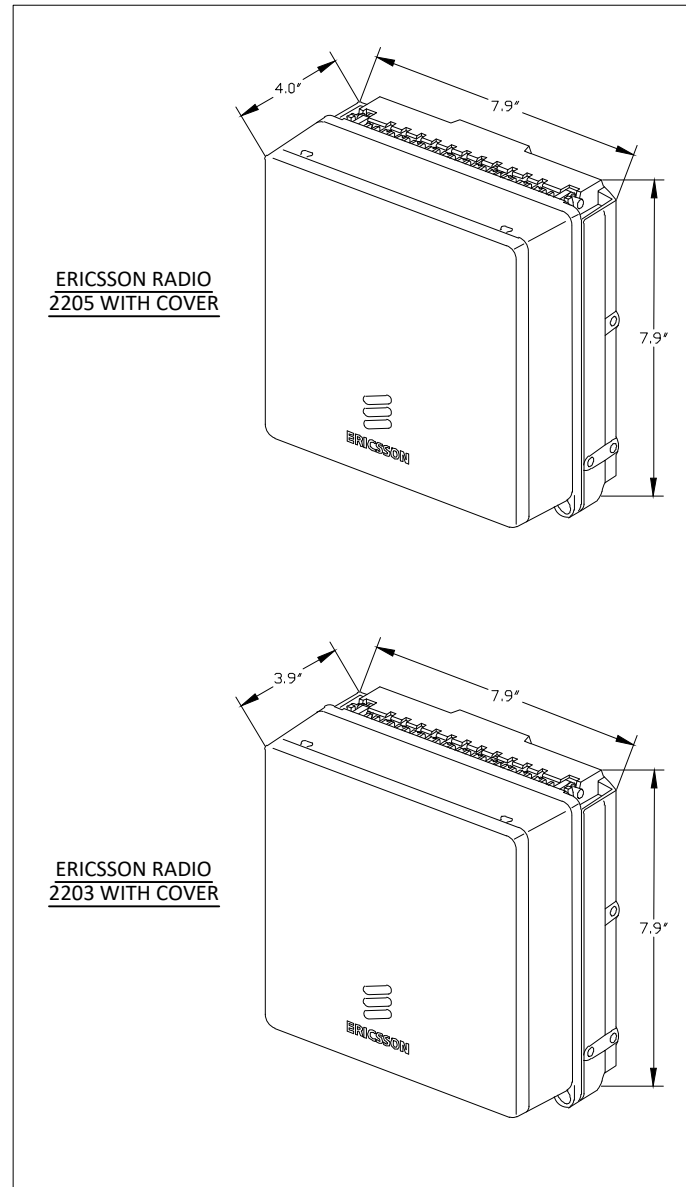
## PHAZAR O-6002v-W4U6-F6 PRELIMINARY ANTENNA

SCALE: NTS



## WHIP ANTENNA CUSTOM BRACKET

SCALE: NTS



## ERICSSON 2203 & 2205 RADIOS WITH COVER POLE MOUNT REMOTE UNIT

SCALE: NTS

LOCATION:  
BOSTON, MA  
SUFFOLK COUNTY

NOTES:

PREPARED FOR:



PREPARED BY:

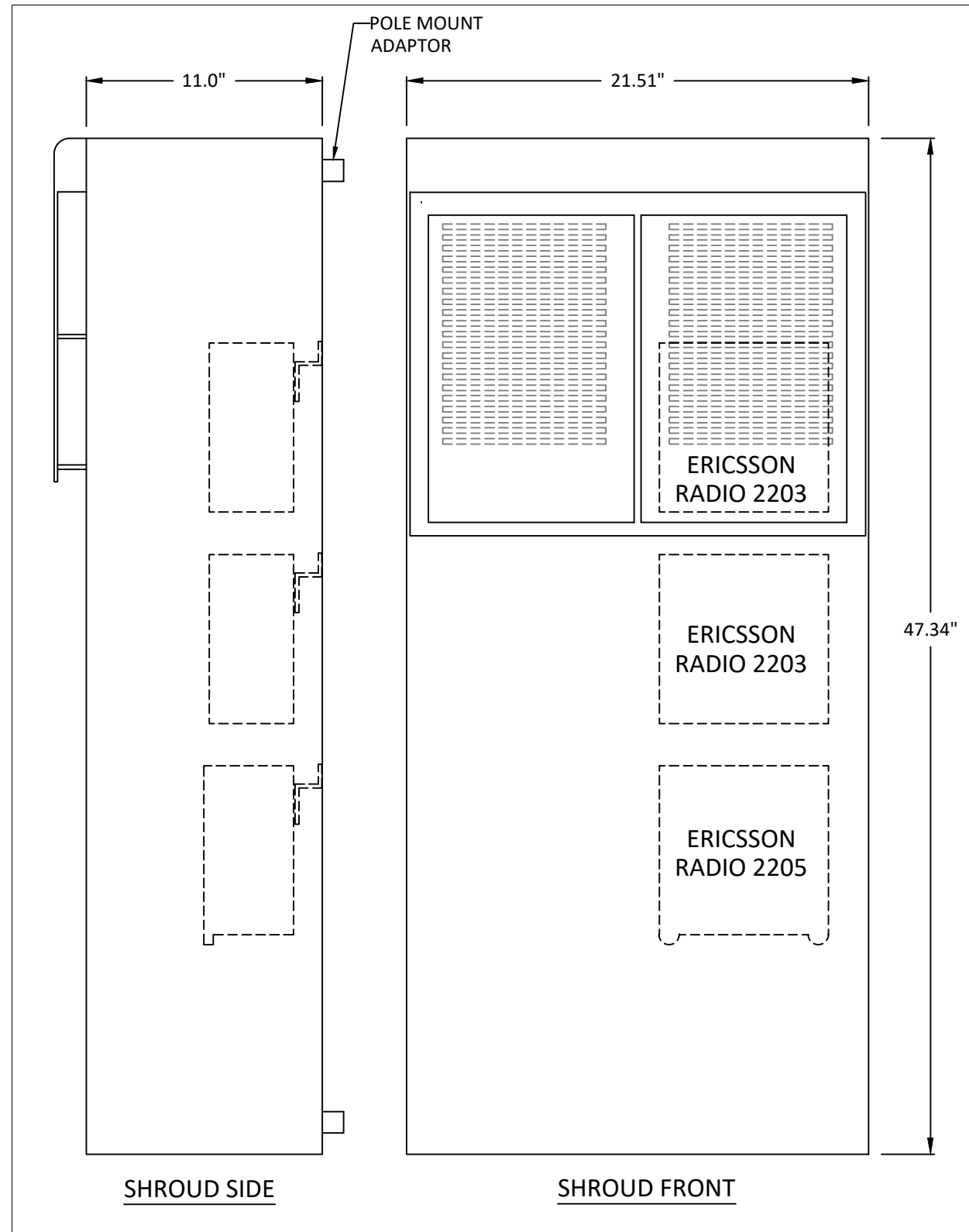


NODE  
RCTB-03\_01  
DETAILS - ANTENNA AND RADIOS

REVISIONS		
REV	DESCRIPTION	DATE
1	NEW NODE LOCATION	11/25/19

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SHEET #: 4 OF 7





**HP COMMUNICATIONS SHROUD**  
 6.48 CUBIC FEET  
 SCALE: NTS

LOCATION: BOSTON, MA  
 SUFFOLK COUNTY

NOTES:

PREPARED FOR:



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NODE  
 RCTB-03\_01  
 DETAILS - RADIO SHROUD

REVISIONS		
REV	DESCRIPTION	DATE
1	NEW NODE LOCATION	11/25/19

DRAFTER: MMS  
 SCALE: NTS  
 ISSUE DATE: 03/27/18  
 INDEX NAME: RCTB-03\_01  
 SHEET #: 5 OF 7

**GENERAL NOTES**

1. CONTRACTOR IS RESPONSIBLE FOR CHECKING AREA FOR UNDERGROUND FACILITIES PRIOR TO EXCAVATING ANY MATERIALS.
2. CONTRACTOR SHALL INSPECT AND REMOVE ALL DEBRIS FROM BOTTOM OF EXCAVATION.
3. CONTRACTOR SHALL VERIFY ANCHOR BOLT LAYOUT PRIOR TO, AND IMMEDIATELY AFTER PLACING CONCRETE. ANCHOR BOLT LAYOUT IS CRITICAL FOR MONOPOLE INSTALLATION.
4. CONTRACTOR SHALL USE AND PROVIDE DEFORMED REINFORCING BARS CONFORMING TO ASTM A615 GR. 60 (60,000 PSI MIN. YIELD). CONTRACTOR SHALL USE STEEL WIRE TO HOLD REINFORCING BARS TOGETHER. IF WELDING REBAR IS PREFERRED, SUBSTITUTE USING A706 GR. 60 DEFORMED BARS.
5. CONTRACTOR SHALL USE AND PROVIDE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI. CONCRETE SHALL USE 1" MAXIMUM STONE AGGREGATE. MIX DESIGN: 6 1/2 SACKS OF CEMENT MINIMUM PER CUBIC YARD, 5" MINIMUM AND 7" MAXIMUM CONCRETE SLUMP.
6. CONCRETE SHALL BE CONSOLIDATED USING VIBRATORY METHODS THROUGHOUT DEPTH OF FOUNDATION. VIBRATING LOWER DEPTHS MAY BE ACCOMPLISHED BY TOUCHING REBAR CAGE WITH VIBRATOR.
7. CONTRACTOR SHOULD ANTICIPATE THE USE OF A FULL-LENGTH TEMPORARY CASING TO STABILIZE THE EXCAVATION. THE CASING SHALL BE WITHDRAWN DURING THE PLACEMENT OF CONCRETE IN THE EXCAVATED HOLE. CONCRETE SHALL BE PLACED USING CONVENTIONAL METHODS TO MINIMIZE SEGREGATION OF CONCRETE AND AGGREGATE. CONCRETE SHALL NOT FREE FALL MORE THAN 5 FT. CONCRETE MAY BE PLACED BELOW WATER USING TREME METHODS.
8. CONCRETE SHALL BE PLACED TO THE DEPTH INDICATED, AND THE ABOVE GRADE PORTION SHALL BE FORMED. THE REBAR CAGE, ANCHOR BOLTS, AND CONCRETE SHALL BE PLACED WITHIN 24 HOURS OF COMPLETING THE EXCAVATION. COLD JOINTS ARE NOT ALLOWED.
9. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ADEQUATE CONCRETE COVERAGE OVER REINFORCING BARS TO MINIMIZE CORROSION POTENTIAL. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL USE 3" CONCRETE COVER OVER REBAR. TOP OF FOOTING SHALL BE TROWELLED LEVEL AND SMOOTH.
10. DRILLED PIER FOUNDATION DESIGN PER 2009/2012 IBC, TABLE 1806.2, CLASS 4 MATERIAL.
11. TOTAL VOLUME OF CONCRETE REQUIRED FOR THIS FOUNDATION IS APPROXIMATELY 1.1 CU. YDS.

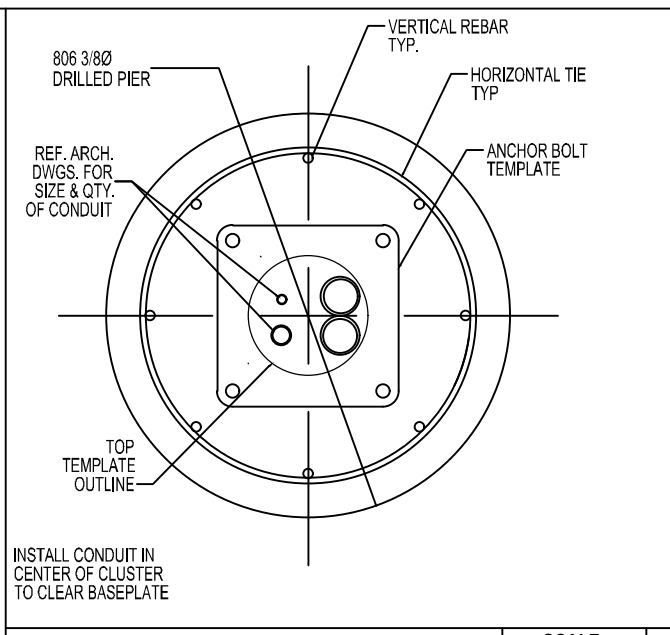
**FACTORED BASE REACTIONS**

MOMENT = 30.9 ft-kips  
 SHEAR = 2.46 kips  
 VERTICAL = 1.67 kips

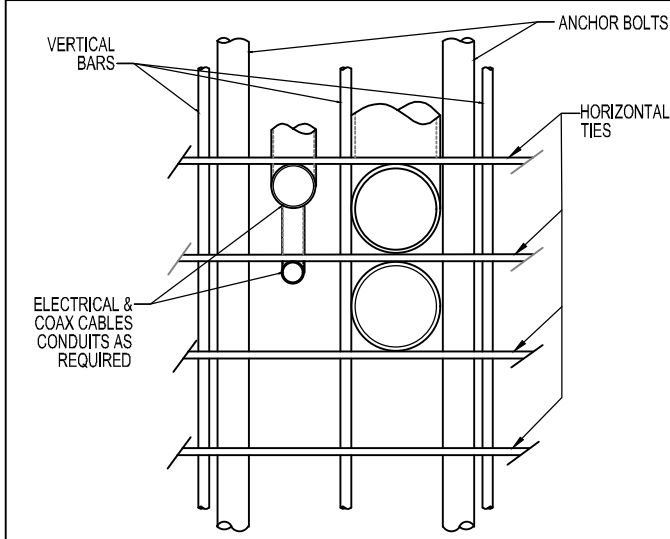
**SPECIAL INSPECTIONS**

SPECIAL INSPECTION: THE FOLLOWING ELEMENTS OF CONSTRUCTION SHALL REQUIRE SPECIAL INSPECTION PER 2009/2012 IBC, SECTION 1704

ITEM	DESCRIPTION	INSPECTION BY	MATERIAL
1	PIER EXCAVATION LATERAL BEARING CAPACITY	SOILS ENGINEER	300 PSF/FT LATERAL
2	PIER CONSTRUCTION REINFORCING STEEL BAR SIZES AND INSTALLATION	SPECIAL INSPECTOR	ASTM A615 GR. 60
3	ANCHOR BOLTS BOLT SIZE AND LENGTHS INSTALLATION	SPECIAL INSPECTOR	ASTM F1554 GR. 55
4	CONCRETE TEST SPECIMENS PLACEMENT OF CONCRETE	SPECIAL INSPECTOR	f <sub>c</sub> = 4,000 PSI TYPE II CEMENT

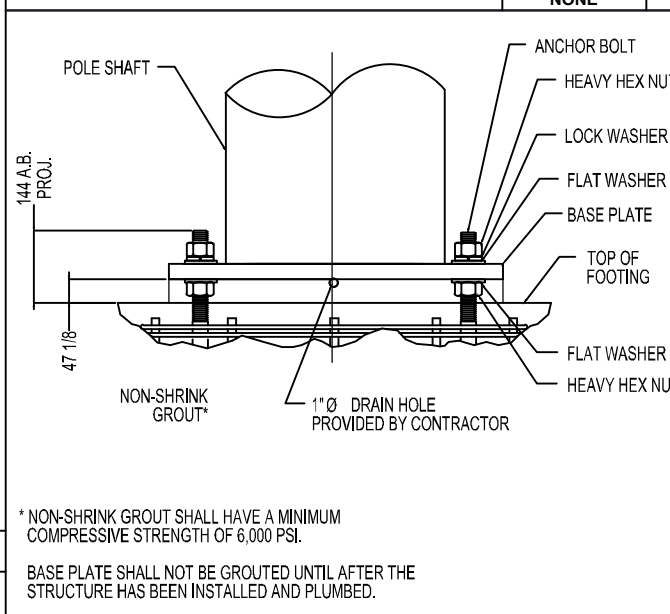


CONDUIT DETAIL @ PIER SECTION SCALE: NONE 1

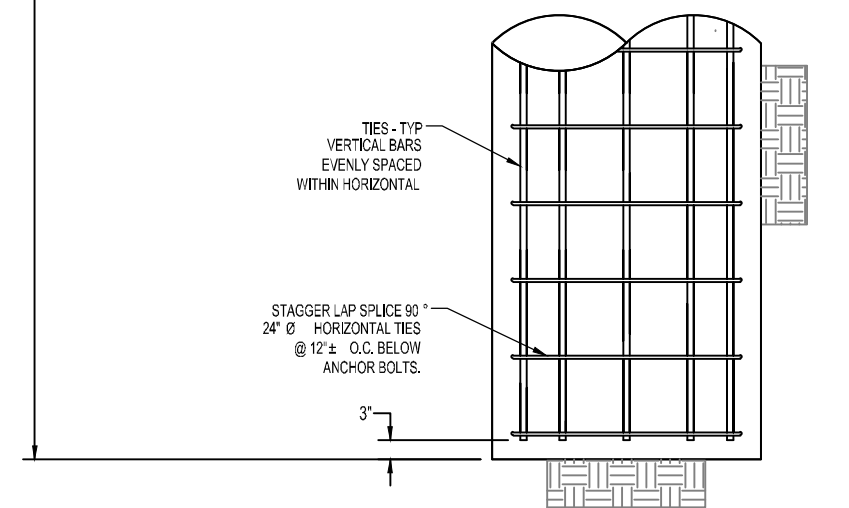
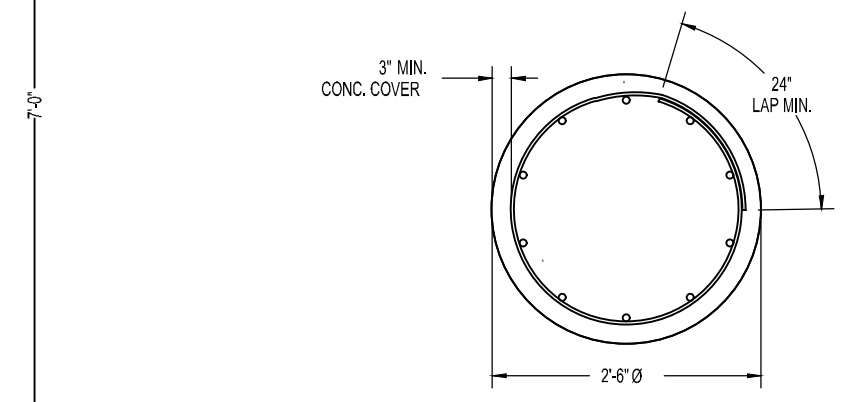
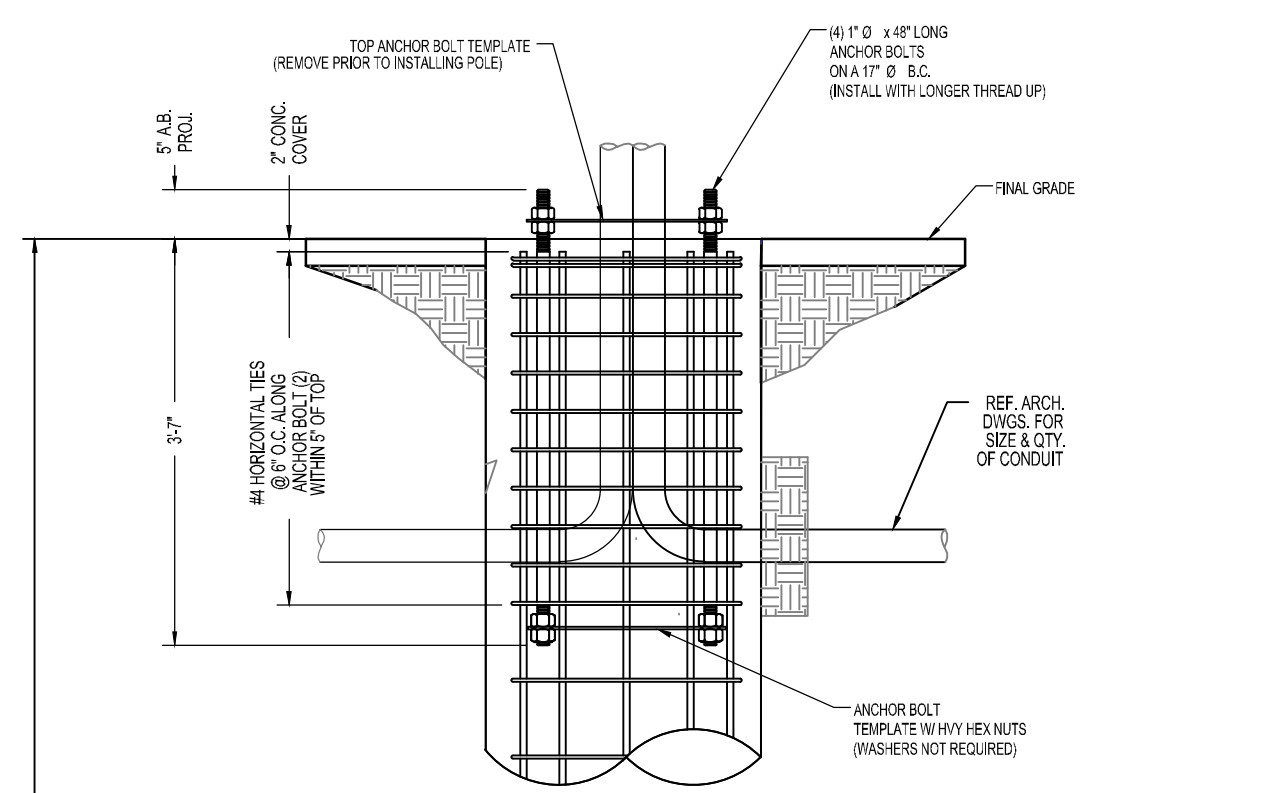


\* ADJUST REBAR AS NEEDED TO ACCOMMODATE CONDUIT. SEE REINFORCEMENT SUMMARY FOR SIZE, QUANTITY AND LOCATION OF VERTICAL BARS AND HORIZONTAL TIES.

CONDUIT DETAIL SCALE: NONE 2



BASE GROUTING DETAIL SCALE: NONE 3



PIER FOUNDATION INSTALLATION

DESCRIPTION	QTY.	SIZE	LENGTH	WEIGHT	OVERLAP
VERTICAL BARS	8	#6	5'-6"	66 LBS.	N/A
HORIZONTAL TIES	10	#4	8'-4"	55 LBS.	2'-0"

LOCATION: BOSTON, MA  
 SUFFOLK COUNTY

NOTES:

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NODE  
 RCTB-03\_01  
 DETAILS - CONCRETE FOUNDATION

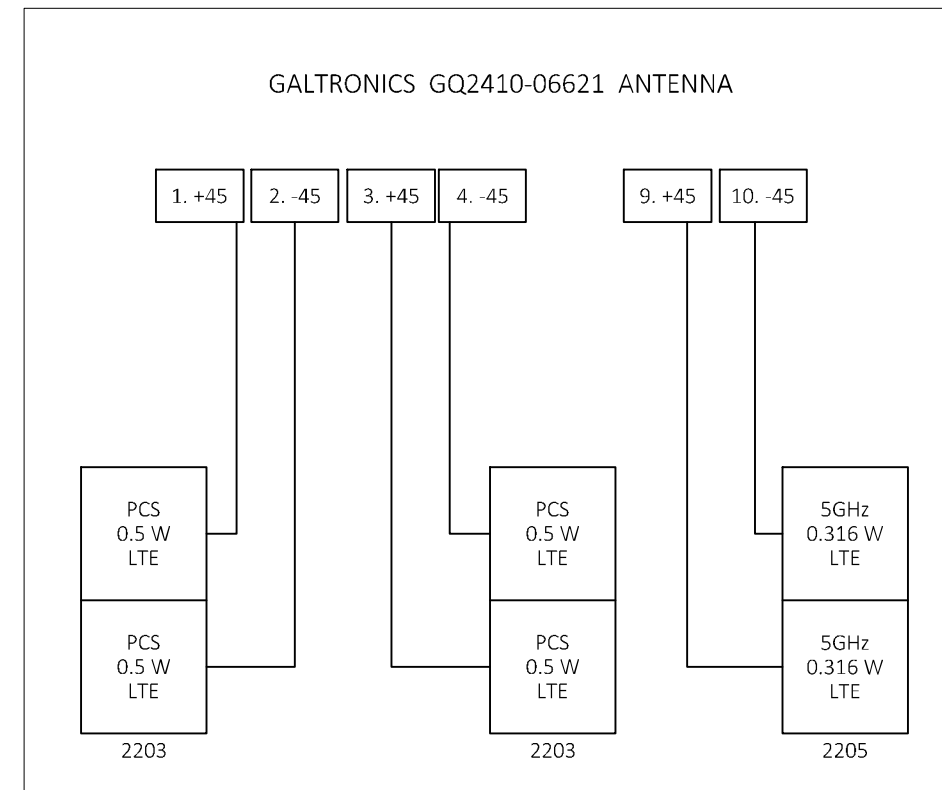
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REV	DESCRIPTION	DATE
1	NEW NODE LOCATION	11/25/19

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 SCALE: NTS  
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 INDEX NAME: RCTB-03\_01  
 SHEET #: 6 OF 7

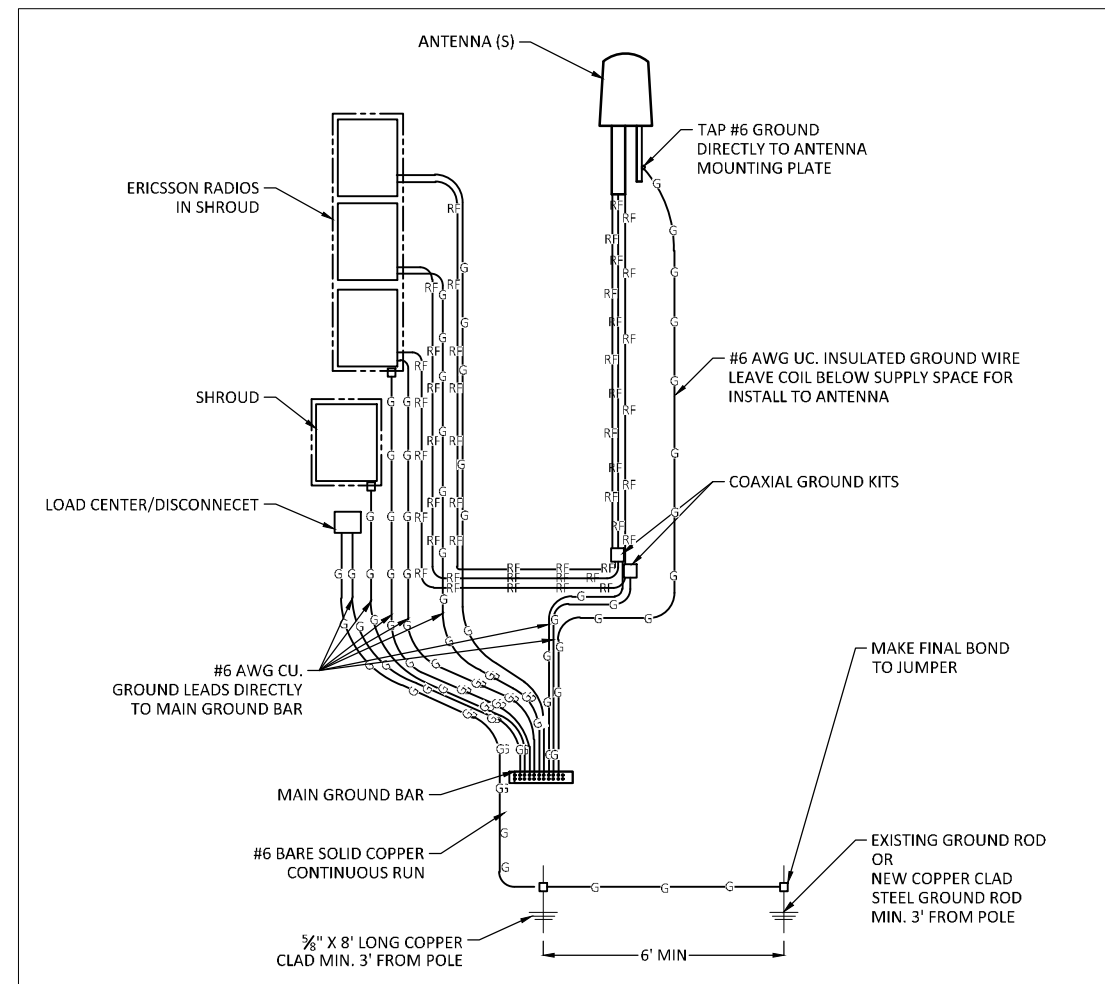




**EXISTING POLE**  
SCALE: NTS



**WIRING DIAGRAM**  
SCALE: NTS



**GROUNDING DIAGRAM**  
SCALE: NTS

LOCATION: BOSTON, MA  
SUFFOLK COUNTY

NOTES:

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**NODE**  
**RCTB-03\_01**  
EXISTING PHOTO/WIRING DIAGRAM

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SHEET #: 7 OF 7