



PROPOSED SMALL CELL NODE UPGRADE

NODE ID: ODAS_2F-27
T-MOBILE ID: NE0403BA_31LAB
SCU#: 406464
 2 CONCORD ST, MALDEN, MA 02148
 MIDDLESEX COUNTY

LATITUDE: 42.430236°
N 42° 25' 48.8"
LONGITUDE: -71.067350°
W 71° 04' 02.5"



Know what's below.
Call before you dig.

ENGINEERING FIRM



APPLICANT



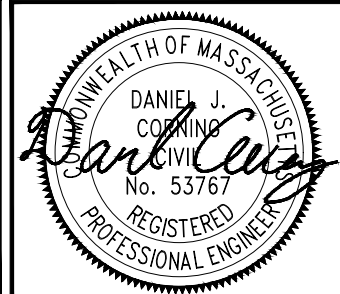
SITE INFORMATION

ODAS_2F-27
2 CONCORD ST,
MALDEN MA 02148
MIDDLESEX COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
0	11/07/23	FINAL	CM

PROFESSIONAL STAMP



ENGINEER

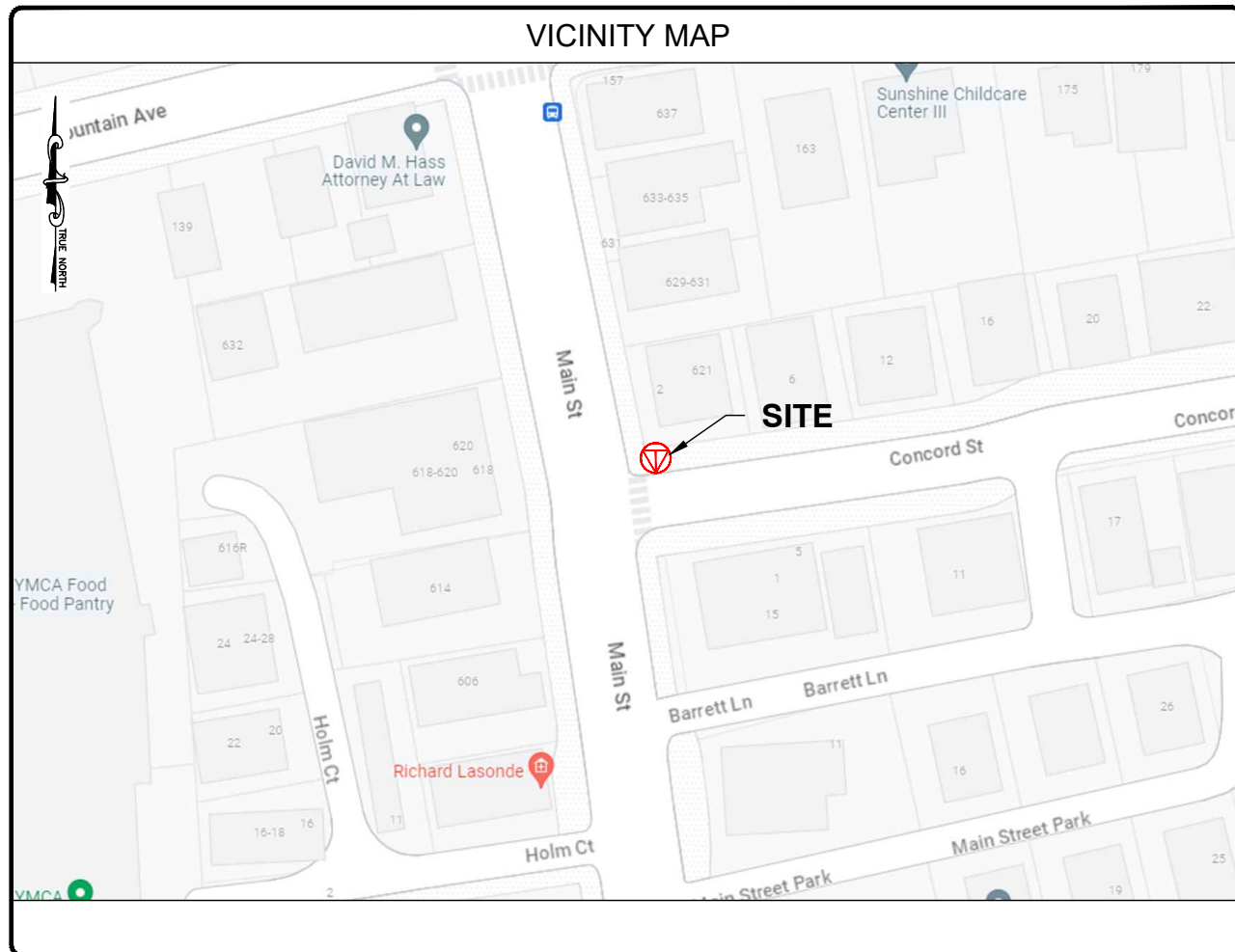
DANIEL J. CORNING, P.E.
 MA PROFESSIONAL ENGINEER LIC #53767

SHEET TITLE

TITLE SHEET

SHEET NUMBER

SHEET
01 OF 08



PROJECT INFORMATION	
PROJECT NAME:	EVERETT MA TID 00038_39 NODES
JURISDICTION:	MALDEN
CROWN CASTLE PROJECT MANAGER:	JOHN KROGUL 1800 W PARK DRIVE WESTBOROUGH, MA 01581 (508) 621-9145
ELECTRIC COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	VERIZON

CODE COMPLIANCE	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.	
<ul style="list-style-type: none"> 2015 INTERNATIONAL BUILDING CODE (MASSACHUSETTS AMENDED 9TH EDITION) 2023 NATIONAL ELECTRICAL CODE NFPA 1-2015 EDITION 2015 IFC - REFERENCE 527 CMR AMERICAN CONCRETE INSTITUTE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION 13TH EDITION 	<ul style="list-style-type: none"> ANSI/TIA-222-G TIA 607 INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81 IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION TELECordia GR-1275 ANSI/T 311

DRAWING INDEX	
01	TITLE SHEET
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04	ELEVATIONS & NOTES
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06	ANTENNA & EQUIPMENT DETAILS
07	GROUNDING DETAILS & WIRING DIAGRAM
08	TRAFFIC MANAGEMENT PLAN

GENERAL NOTES:

- 1. THE CONTRACTOR SHALL GIVE ALL NOTICE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.

ELECTRICAL NOTES:

- 1. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.

- D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.

GROUNDING NOTES:

- 1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.

GROUNDING GUIDELINES:

ALL EQUIPMENT THAT IS INSTALLED AND MAY CAUSE ANY KIND OF ELECTRICAL CHARGE OR BUILD UP MUST HAVE PROPER AND ADEQUATE GROUNDING IN PLACE TO PREVENT FROM EQUIPMENT DAMAGE AND SHOCK HAZARDS.

WEATHER SEAL GUIDELINES:

- 1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED. 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.

HEAT SHRINK

- 1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED. 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.

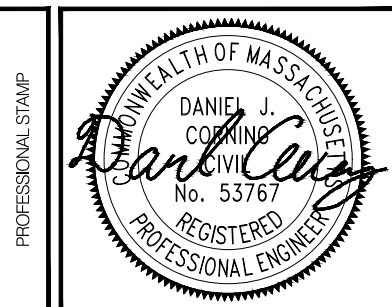
PPC BOOT

- 1. PLACE BOOT OVER CABLE BEFORE CONNECTOR IS ATTACHED TO CABLE. THIS IS ONLY RATED FOR PPC TYPE CONNECTORS. (NOTE: IF THIS STEP IS SKIPPED OR NOT COMPLETED BEFORE MAKING A CONNECTOR THE SUBCONTRACTOR WILL NOT BE ABLE TO USE THE BOOT STYLE DEVICE TO SEAL THE CONNECTOR. IT IS NOT RECOMMENDED TO WASTE A CONNECTOR AND CUT IT OFF AND START AT STEP NO. 1 AGAIN. SINCE PPC CONNECTORS ARE NOT REUSABLE AND CAN GET QUITE EXPENSIVE. DO NOT TRY TO STRETCH THE BOOT TO SLIDE IT OVER THE CONNECTION.)



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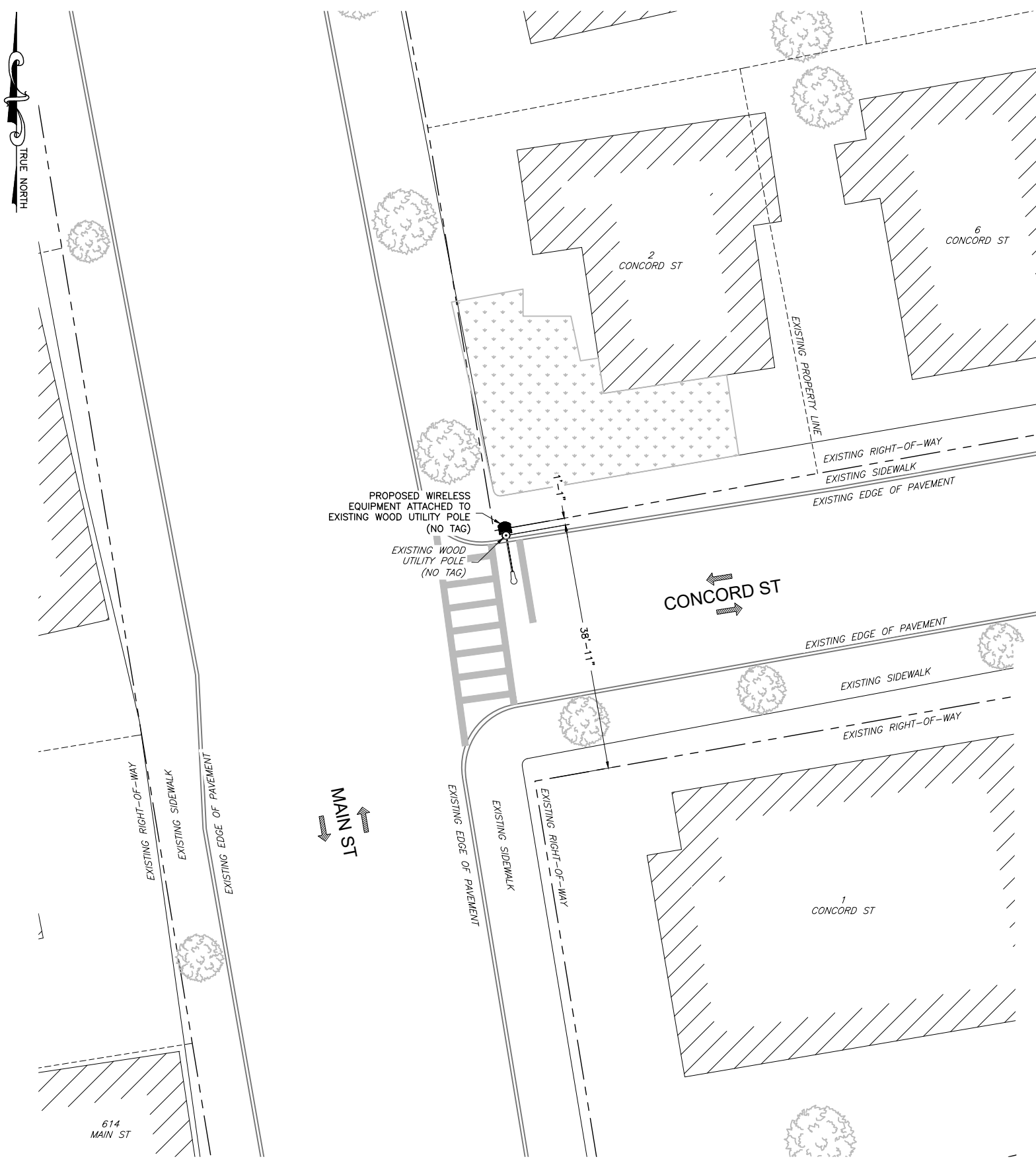
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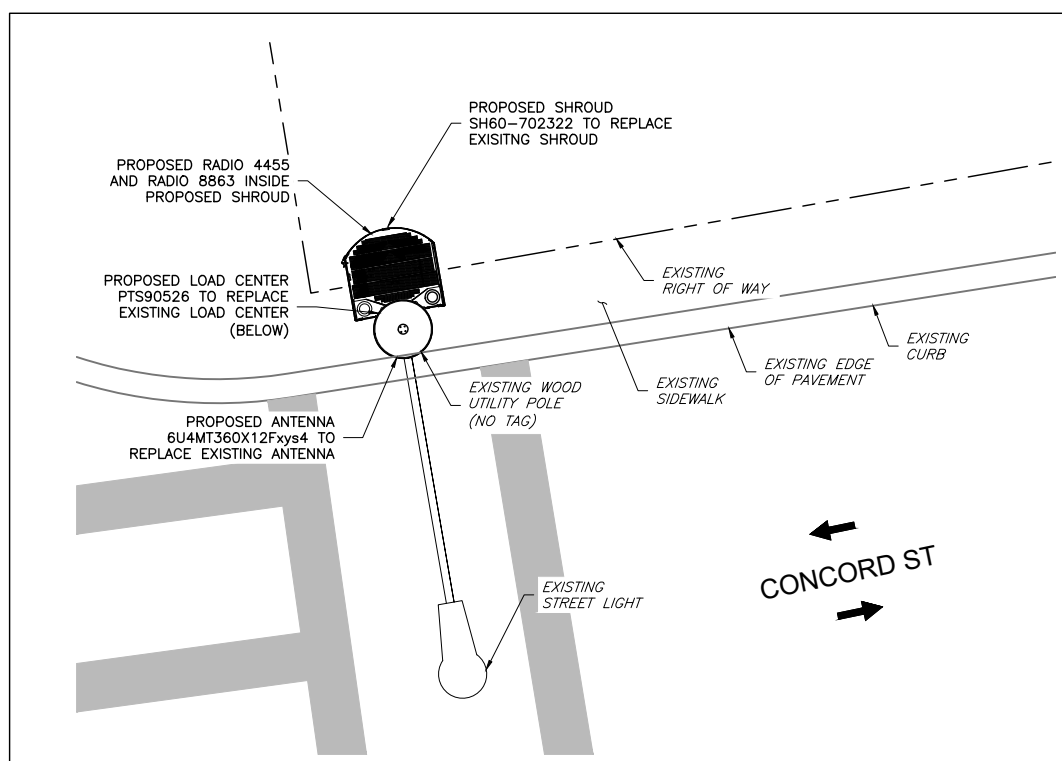
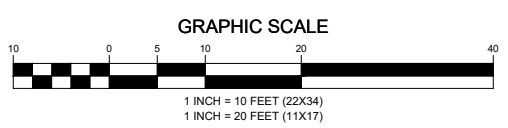
DANIEL J. CORNING, P.E.
MA PROFESSIONAL ENGINEER LIC #53767

NOTES

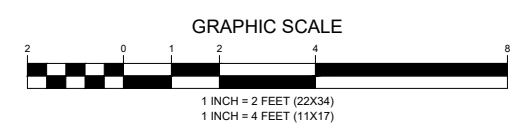
ENGINEERING FIRM, APPLICANT, SITE INFORMATION, DESIGN RECORD, PROFESSIONAL STAMP, ENGINEER, SHEET TITLE, SHEET NUMBER



SITE PLAN



EQUIPMENT ORIENTATION PLAN



ENGINEERING FIRM	<p>TOTALLY COMMITTED.</p> <p>NB+C ENGINEERING SERVICES, LLC. 100 APOLLO DRIVE, SUITE 303 CHELMSFORD, MA 01824 (978) 956-8308</p>												
APPLICANT	<p>CROWN CASTLE</p> <p>CROWN CASTLE FIBER, LLC 1800 W PARK DRIVE WESTBOROUGH, MA 01581 (508) 621-9144</p>												
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DESIGN RECORD	<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>11/07/23</td> <td>FINAL</td> <td>CM</td> </tr> </tbody> </table>	REVISIONS				REV	DATE	DESCRIPTION	BY	0	11/07/23	FINAL	CM
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PROFESSIONAL STAMP													
ENGINEER	<p>DANIEL J. CORNING, P.E. MA PROFESSIONAL ENGINEER LIC #53767</p>												
SHEET TITLE	<p>SITE PLAN & EQUIPMENT ORIENTATION PLAN</p>												
SHEET NUMBER	<p>SHEET 03 OF 08</p>												

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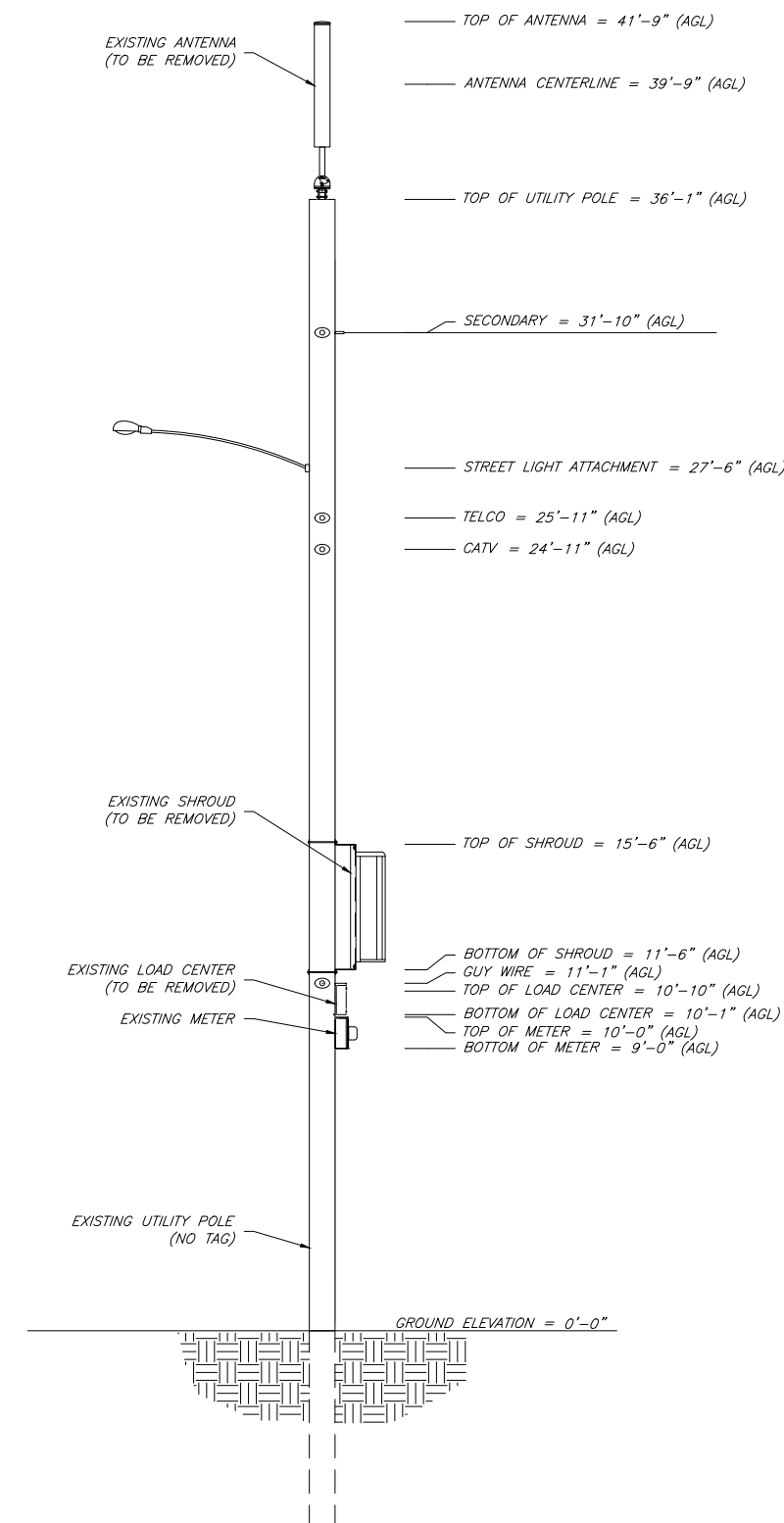


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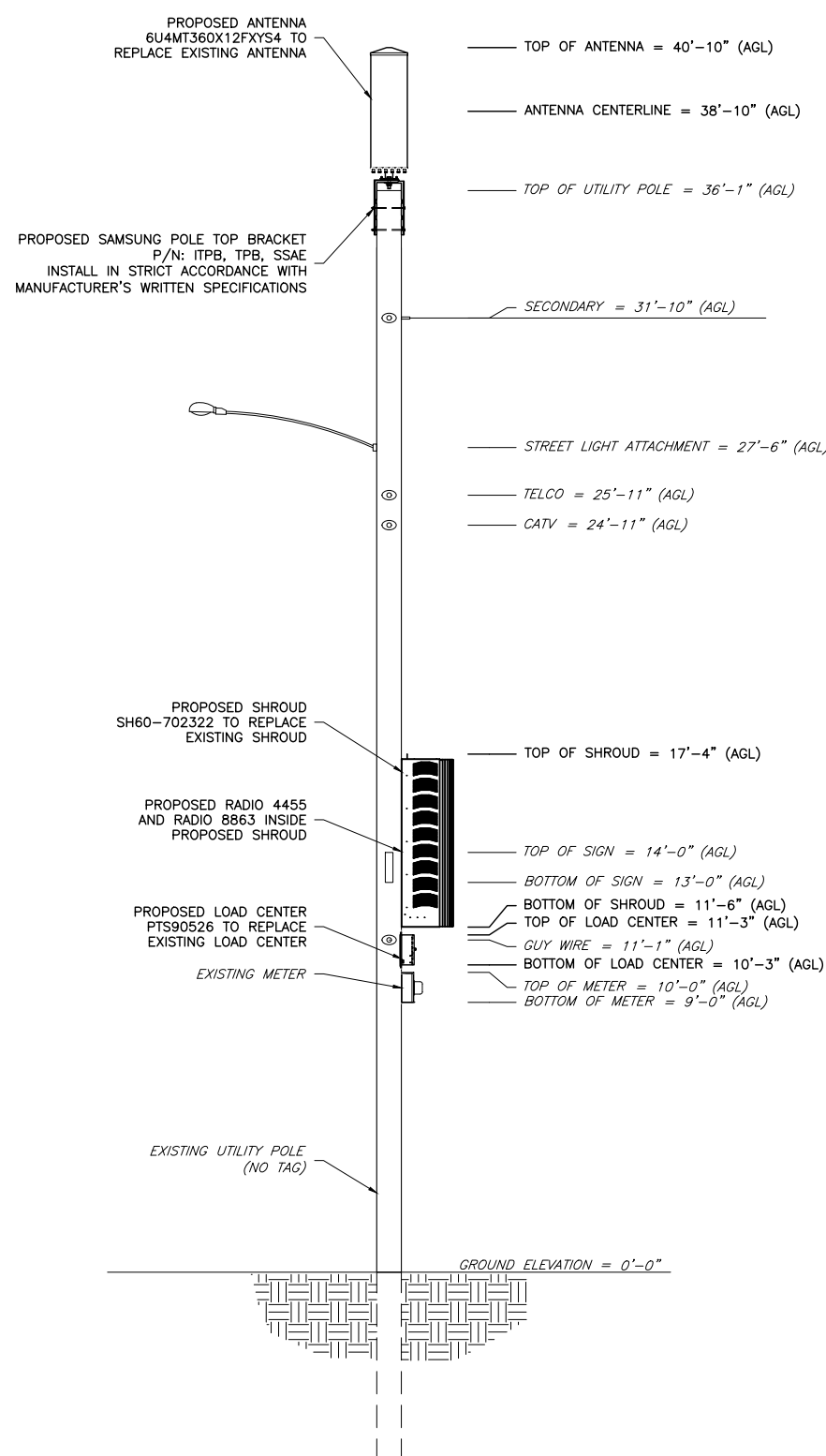
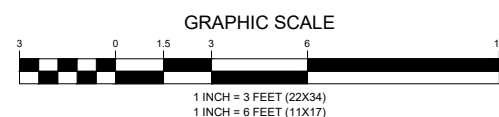
ELEVATIONS & NOTES

NOTES:

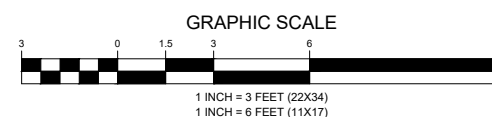
- EQUIPMENT ELEVATION IS SUBJECT TO MAKE READY PERFORMED BY POLE OWNER.
- NEW PLACARD SHALL BE OSHA COMPLIANT AND DISPLAY THE FOLLOWING INFORMATION: TRANSMITTING SYSTEM, EQUIPMENT OWNER & PROPER CONTACT INFORMATION. INSTALL PER UTILITY COMPANY REQUIREMENTS AND VERIFY EXACT MOUNTING HEIGHT IN FIELD.
- MAINTAIN MINIMUM OF 42" FROM TOP COMMUNICATION ATTACHMENT TO BOTTOM SECONDARY POWER ATTACHMENT.
- MAINTAIN MINIMUM OF 48" CLEARANCE IN ANY DIRECTION FROM ANTENNA AND MOUNTING BRACKET TO NEAREST SECONDARY POWER CONNECTION.
- MAINTAIN MINIMUM OF 12" FROM TOP COMMUNICATIONS LINE TO ANY ADDITIONAL COMMUNICATIONS LINE.
- MAINTAIN MINIMUM OF 5' FROM GROUND LEVEL TO CENTER OF METER SOCKET.
- MAINTAIN MINIMUM OF 6' CLEARANCE IN ANY DIRECTION FROM ANTENNA AND MOUNTING BRACKET TO NEAREST PRIMARY POWER CONNECTION.
- MAINTAIN MINIMUM OF 2'-7" FROM LOWEST COMMUNICATION CABLE TO TOP OF SHROUD.
- EQUIPMENT TO BE INSTALLED ON OPPOSITE SIDE OF TRAFFIC FLOW.
- POWER SUPPLY & WEATHERHEAD SHOULD BE INSTALLED ON THE SAME SIDE OF THE POLE WITH THE SECONDARY(S) AND COMMUNICATION CABLE(S) TO ACCOMMODATE CLIMBING OF THE POLE.
- PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION TO THE EXISTING STRUCTURE, CONTRACTOR SHALL REFER TO THE LATEST STRUCTURAL ANALYSIS COMPLETED BY: NETWORK BUILDING + CONSULTING, LLC.



EXISTING ELEVATION (LOOKING WEST)



PROPOSED ELEVATION (LOOKING WEST)





EXISTING CONDITIONS



PROPOSED CONDITIONS

ENGINEERING FIRM

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
100 APOLLO DRIVE, SUITE 303
CHELMSFORD, MA 01824
(978) 556-5308

APPLICANT

CC CROWN CASTLE
CROWN CASTLE FIBER, LLC
1800 W PARK DRIVE
WESTBOROUGH, MA 01581
(508) 621-9144

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PROFESSIONAL STAMP



ENGINEER

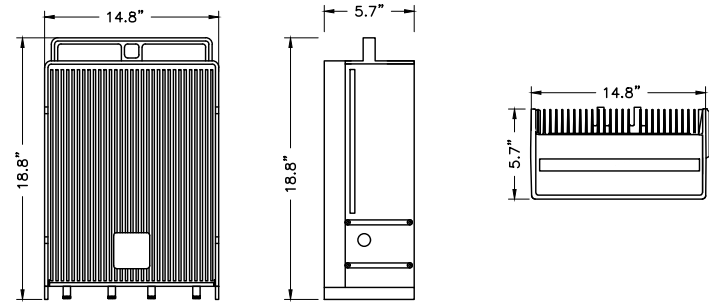
DANIEL J. CORNING, P.E.
MA PROFESSIONAL ENGINEER LIC #53767

SHEET TITLE

PHOTO
SIMULATION

SHEET NUMBER

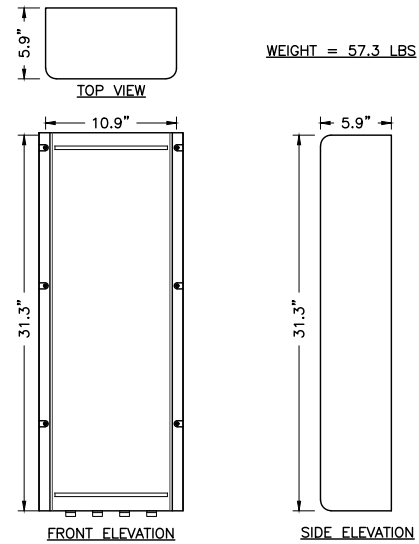
SHEET
05 OF 08



SIZE AND WEIGHT TABLE

RRU	HEIGHT	WIDTH	DEPTH	WEIGHT (W/FAN UNIT)
RADIO 8863 B41	18.8"	14.8"	5.7"	50.9 LBS.

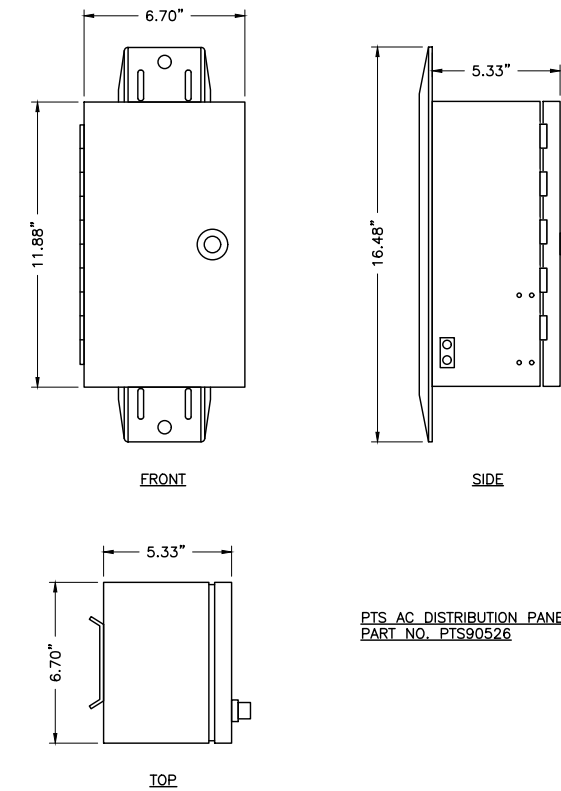
1 ERICSSON REMOTE RADIO UNIT (RRU)
06 NTS



SIZE AND WEIGHT TABLE

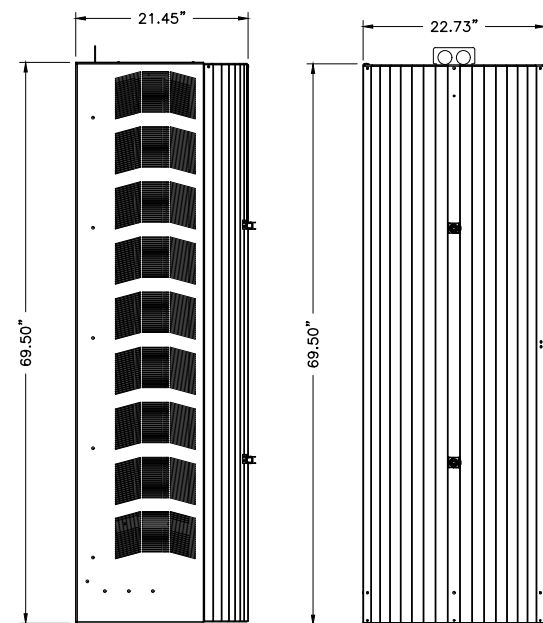
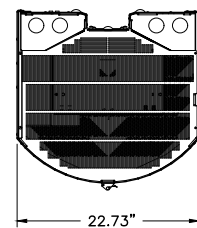
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT
RADIO 4455 B2/B25	10.9"	5.9"	31.3"	57.3 LBS

2 RADIO 4455 DETAIL
06 NTS

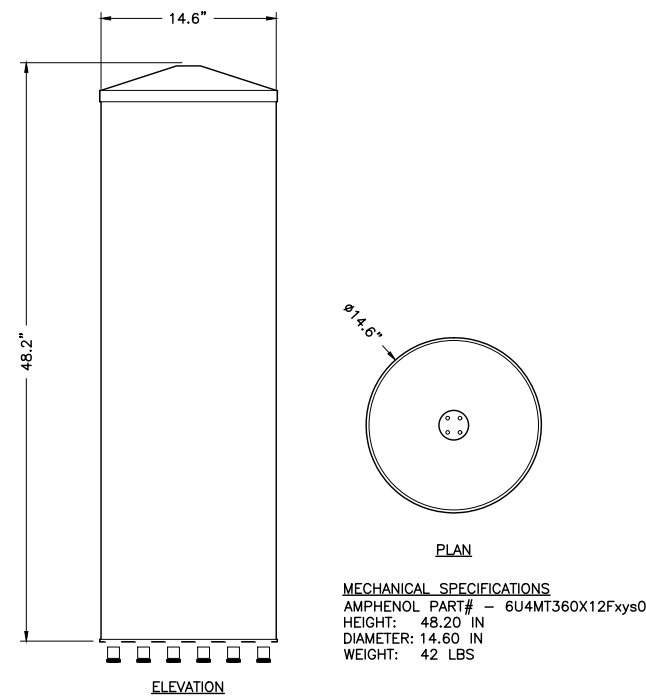


3 AC LOAD CENTER DETAIL
06 NTS

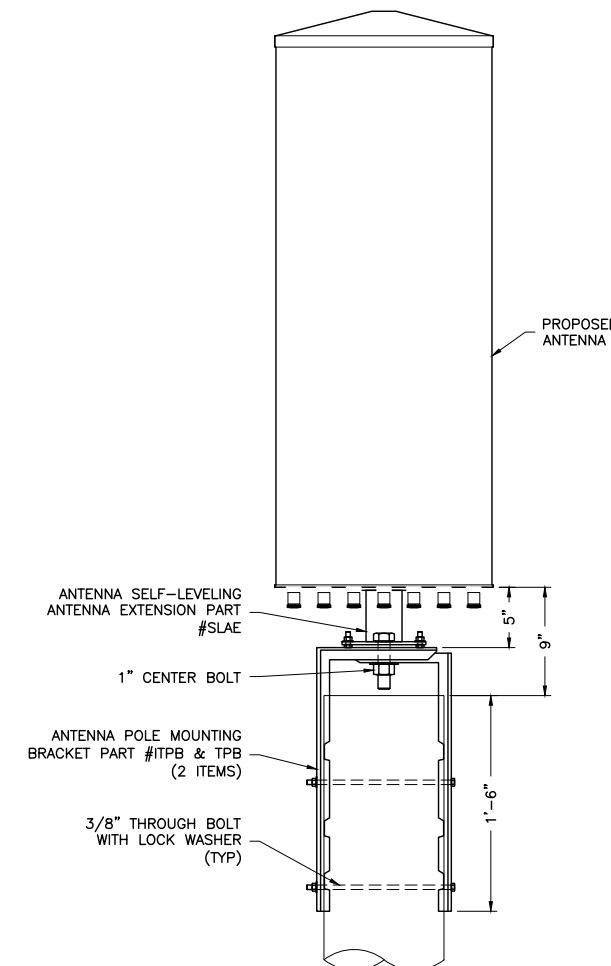
CHARLES INDUSTRIES INC. SHROUD
PART NO. COLO-702322
HEIGHT: 69.50 IN
WIDTH: 22.73 IN
DEPTH: 21.45 IN



4 SHROUD DETAIL
06 NTS



5 ANTENNA DETAIL
06 NTS



6 ANTENNA MOUNTING DETAIL
06 NTS

ENGINEERING FIRM

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MA PROFESSIONAL ENGINEER LIC #53767

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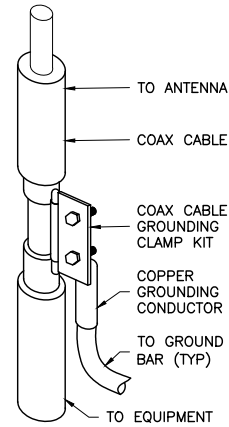
ANTENNA & EQUIPMENT DETAILS

SHEET NUMBER

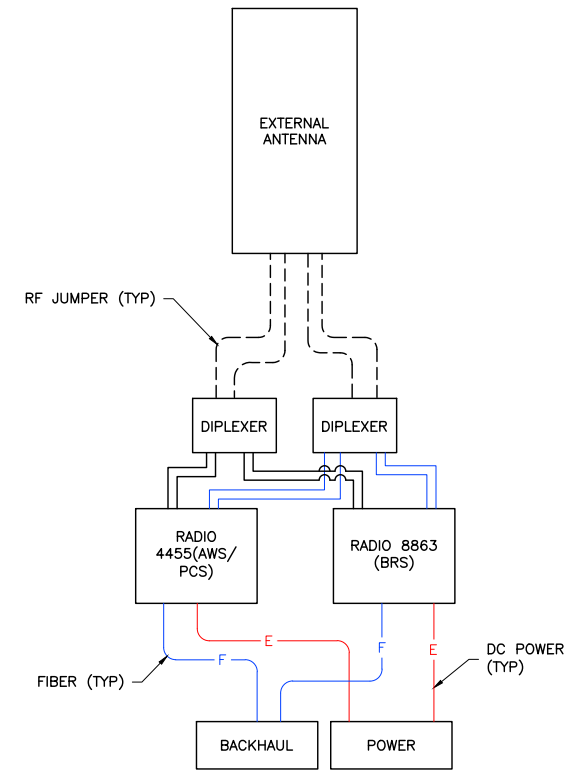
SHEET
06 OF 08

GENERAL NOTES:

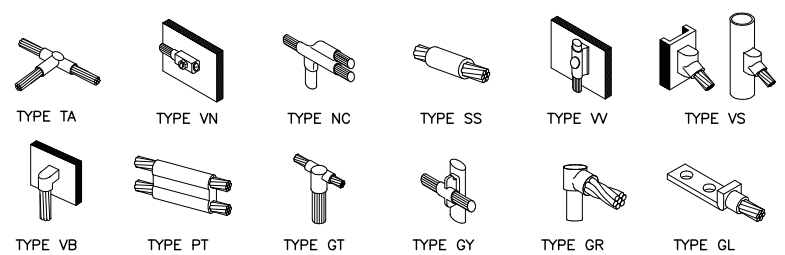
- METAL TO METAL CONTACT IS NOT ALLOWED WITHOUT AN INTENTIONAL BOND.
- DISSIMILAR METALS IN DIRECT CONTACT, CAUSE CHEMICAL REACTION BETWEEN THE METALS, LEADING TO CORROSION.
- ALL ABOVE GROUND CONNECTIONS TO THE VERTICAL GROUND RISER (VGR) SHALL BE IRREVERSIBLE CLAMP TYPE AND WEATHER PROOFED.
- WHERE APPLICABLE EARTH GROUND RESISTANCE OF 5 OHMS OR LESS IS PREFERRED. 25 OHMS IS ACCEPTABLE SEE NEC 250.53.
- ALL METALLIC SURFACES AND/OR GROUND COMPONENTS INSTALLED W/IN 6" OF EACH OTHER MUST BE PROPERLY BONDED TO VGR, INCLUDING BUT NOT LIMITED TO, RADIO SHROUD, ANTENNA BRACKETS, STREET LIGHTS AND THE METER/LOAD CENTER OF THE AC SERVICE.
- RF GROUND KITS ARE NOT REQUIRED WHERE RF SURGE PROTECTION DEVICES (SPDS) ARE INSTALLED AHEAD OF THE RF CABLES ENTRY POINT INTO THE SHROUD. GROUND AVAILABLE SPDS TO VGR.
- WHEN A NEW FOUNDATION IS INSTALLED, BOND THE AVAILABLE REBAR TO THE SITE GROUNDING.
- WHEN GROUNDING EQUIPMENT INSIDE A SHROUD, CONNECT TO THE SHROUD MANUFACTURER'S GROUND BUSS BAR, AND WATERFALL THE GROUND WIRE FROM THE SHROUD IN A DOWNWARD SWEEPING MOTION TO THE VGR. AVOID GROUND LOOPS THROUGH THE EQUIPMENT CHASSIS TO THE METALLIC SHROUD.
- FOR METAL POLES BOND THE POLE TO THE VGR. FOR ELECTRIC METERS INSTALLED ON METAL POLES, AVOID UNINTENTIONAL BONDING THROUGH THE CHASSIS OF THE METER AND THE METAL POLE. ALL BONDS SHOULD BE INTENTIONAL.
- THE NEUTRAL GROUND BOND SHOULD IDEALLY BE AT THE FIRST LOAD CENTERING MEANS AFTER THE ELECTRICAL SERVICE. SEE NEC CODE 250.24 FOR NEUTRAL GROUND BONDING CONNECTION.
- WHEN SITE IS POWERED UP, BEFORE ACCEPTANCE, TEST FOR OBJECTIONABLE CURRENT AND FOREIGN VOLTAGE.



1 COAX CABLE GROUNDING
07 NTS



3 WIRING DIAGRAM
07 NTS



2 GROUNDING CONNECTION DETAILS
07 NTS

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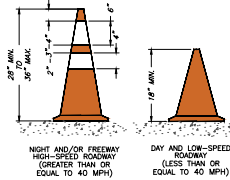
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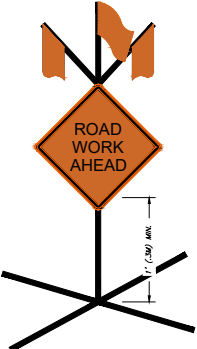
**GROUNDING
DETAILS &
WIRING DIAGRAM**

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07 OF 08



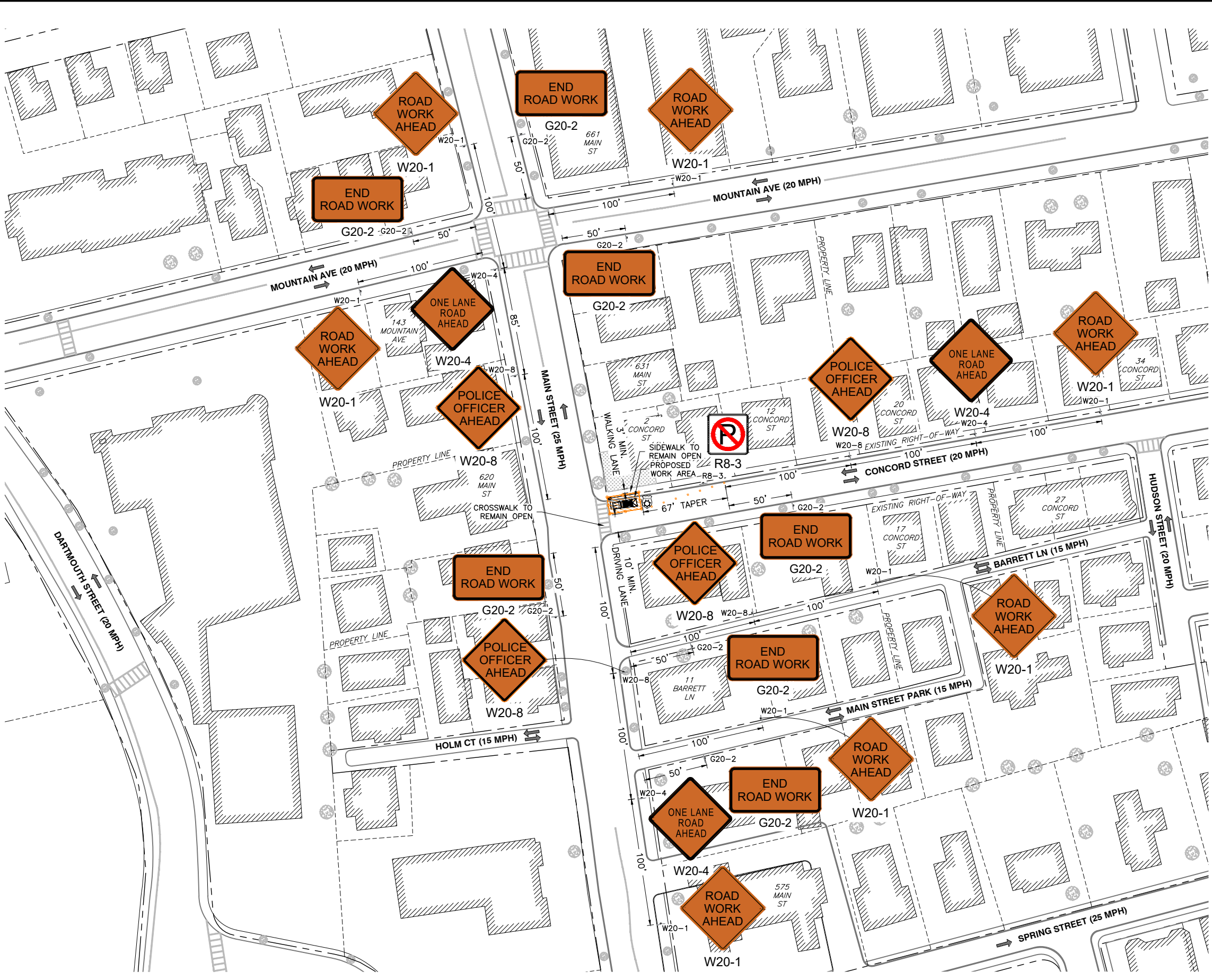
CHANNELIZING DEVICES - CONES (NTS)



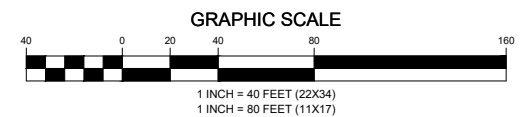
FREE STANDING SELF SUPPORT SIGN (TYP.) (NTS)

NOTE: ALL WORK SIGNAGE TO BE MOUNTED ON SELF-SUPPORTING STANDS OR BE ATTACHED TO EXISTING FIXTURES.

TRAFFIC LEGEND	
	FLAGGER
	WORK ZONE
	PROPOSED TRENCH
	CHANNELIZING DEVICE (CONE)
	DRUM
	SIGN
	POLICE DETAIL
	SINGLE PARKING METER
	DOUBLE PARKING METER
	VARIABLE MESSAGE BOARD
	ARROW BOARD
	TYPE 3 BARRICADE
	HIGH LEVEL WARNING DEVICE
	CONSTRUCTION VEHICLE
	TRUCK MOUNTED ATTENUATOR
	PEDESTRIAN TRAFFIC FLOW
	VEHICLE TRAFFIC FLOW
	2 WAY TRAFFIC
	EXISTING MBTA BUS STOP
	RELOCATED MBTA BUS STOP



TRAFFIC MANAGEMENT PLAN



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TRAFFIC MANAGEMENT PLAN

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08 OF 08