

FOR CONSTRUCTION

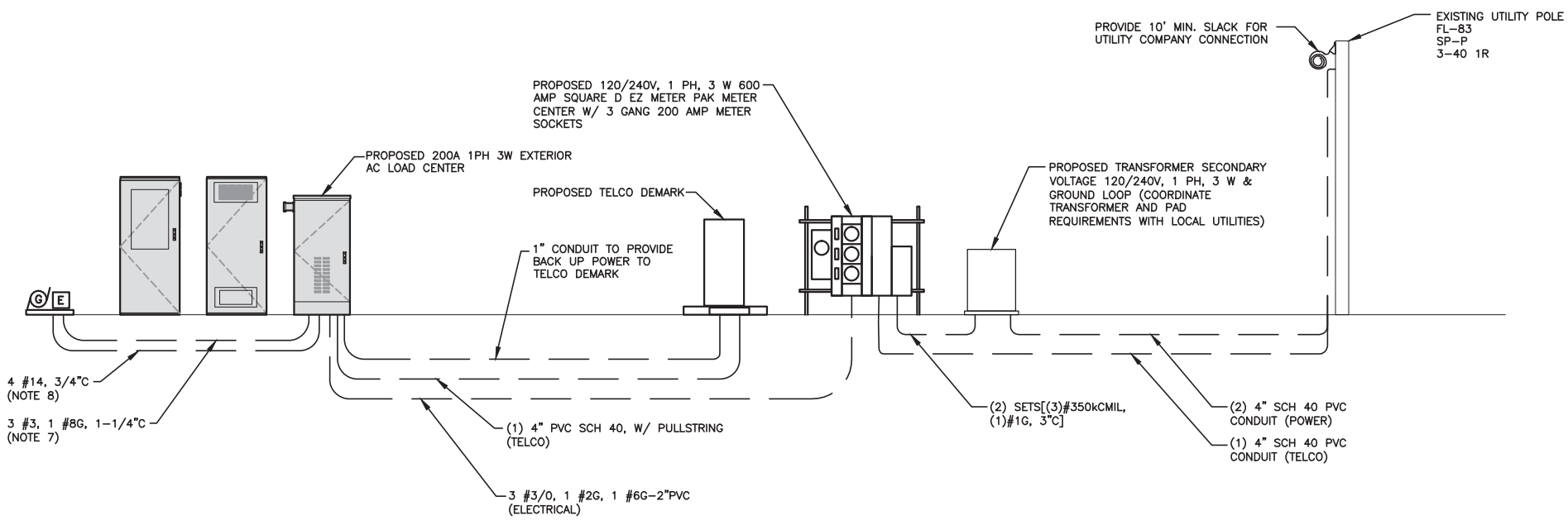
PREPARED FOR:



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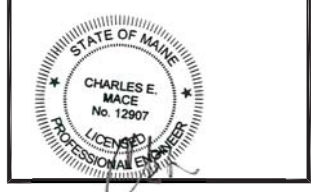
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BUILDING 20 NORTH, SUITE 3090  
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**POWER & TELEPHONE RISER DIAGRAM** 1  
22x34 SCALE: N.T.S. E-2

- NOTES:**
- EXACT LOCATIONS OF ALL EQUIPMENT SHALL BE DETERMINED IN FIELD. ALL NEC CLEARANCE REQUIREMENTS SHALL BE MET.
  - REFER TO "A" AND "C" DWGS FOR EXACT ROUTING OF ALL CONDUITS.
  - VERIZON CONSTRUCTION MANAGER SHALL COORDINATE ALL ELECTRICAL WORK WITH UTILITY COMPANY.
  - REFER TO DETAILS ON DWG E-3 FOR ADDITIONAL INFORMATION. TYPICAL BURIED CONDUIT DETAIL SHALL APPLY TO ALL UNDERGROUND CONDUIT.
  - #350 KCMIL CONDUCTORS HAVE BEEN SELECTED FOR VOLTAGE DROP. THE LOCATION OF THE TRANSFORMER HAS BEEN ASSUMED TO BE NEAR THE CELL SITE ENCLOSURE. IF THE LOCATION IS CLOSER TO THE ACCESS ROAD THE CONDUCTORS SHALL BE ADJUSTED WITH APPROVAL OF THE ENGINEER.
  - INSTALL (2) PULL STRINGS AND CAP THE TELCO CONDUITS INSIDE THE VAULT AND MESA CABINET TO AVOID WATER/ICE FILL UP.
  - LOCATION OF GENERATOR ASSUMED TO BE WITHIN 10'-0" OF PROPOSED LOAD CENTER. IF LOCATION OF GENERATOR IS CHANGED, CONDUCTOR SIZE SHALL BE RESIZED BASED ON DC CABLE TYPE AND SIZING TABLE ON E-1
  - CONFIRM EXACT AUTO-START REQUIREMENTS WITH MANUFACTURER.
  - PROVIDE SERVICE GROUNDING IN ACCORDANCE WITH NEC ARTICLE 250.

- GROUNDING NOTES**
- ALL GROUND WIRE SHALL BE BARE COPPER #2 AWG UNLESS OTHERWISE NOTED.
  - ALL GROUND WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
  - ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
  - EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MIGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS.
  - PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE (TYPICAL FOR FOUR MOUNTING PIPES PER SECTOR).
  - ANTENNA GROUND KITS SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
  - COORDINATE NEW LICENSEE GROUND SYSTEM WITH EXISTING SITE GROUND SYSTEM.
  - EACH SECTION OF CABLE TRAY, ICE BRIDGE AND ICE SHIELD SHALL BE CONNECTED IN A FASHION TO PROVIDE A CONTINUOUS GROUND.
  - AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANELS AND FRAMES OF EQUIPMENT, AND WHERE EXPOSED FOR GROUNDING, CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE WITH STAINLESS STEEL SELF-TAPPING SCREWS.
  - ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
  - ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH LICENSEE PROJECT MANAGER.
  - ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
  - INSTALL GROUND BUSHINGS ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUS IN THE PANELBOARD.
  - GROUND ANTENNA BASES, FRAMES, CABLE RACKS AND OTHER METALLIC COMPONENTS WITH #2 GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
  - GROUND COAXIAL SHIELD AT BOTH ENDS USING
  - REINFORCEMENT IN EQUIPMENT SLAB TO BE WELDED AND REINFORCEMENT TO BE BONDED TO GROUNDING RING.
  - CONCRETE-ENCASED ELECTRODES GREATER THAN 20 S.F. OF SURFACE AREA & 1/2" OR GREATER REINFORCING STEEL MUST BE BONDED TO THE GROUNDING RING PER NEC 250.50. MANUFACTURER'S GUIDELINES.



CHECKED BY: JX

APPROVED BY: DPH

**SUBMITTALS**

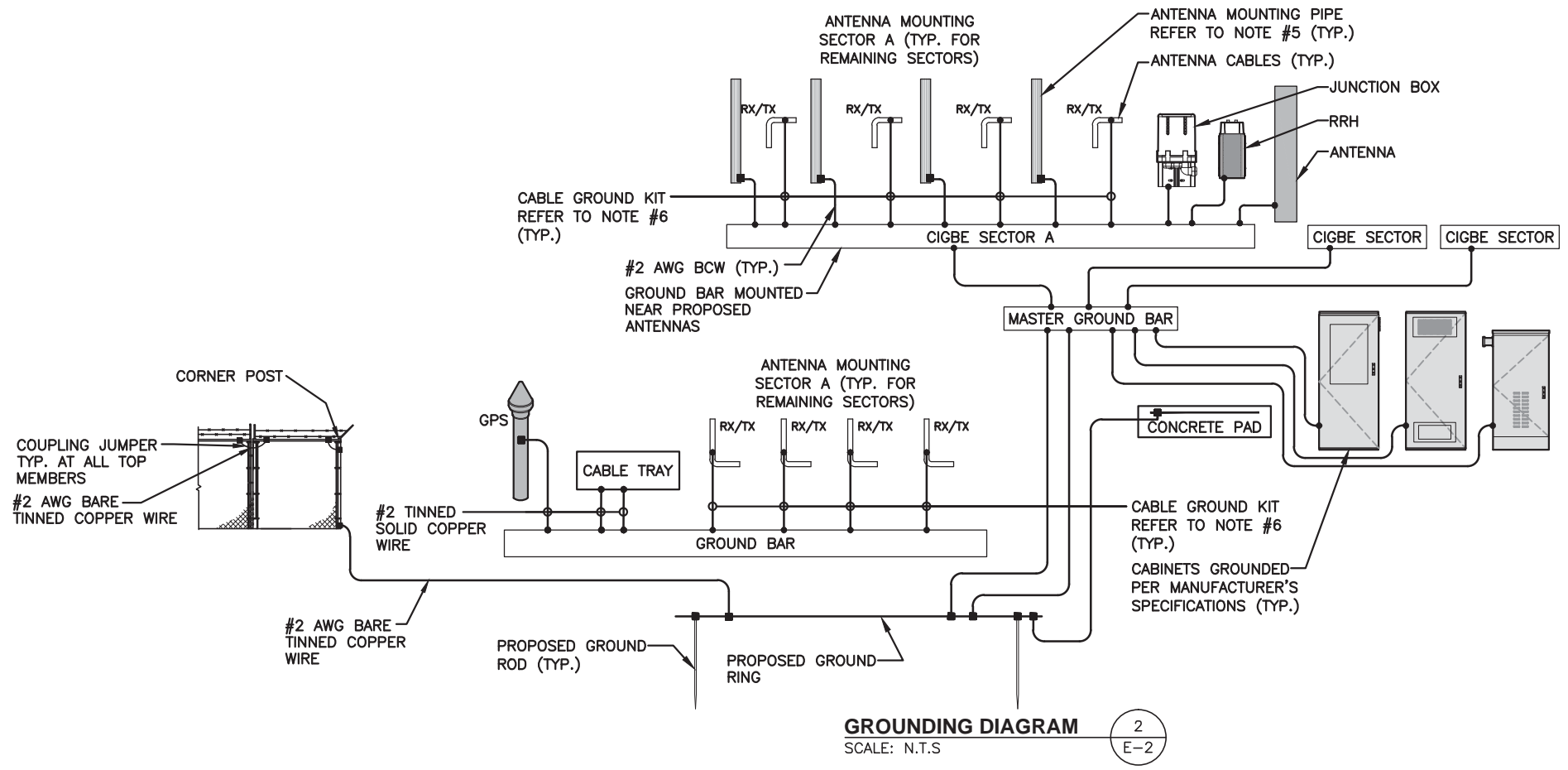
REV.	DATE	DESCRIPTION	BY
1	01/28/16	FOR CONSTRUCTION	MR
0	07/31/15	FOR CONSTRUCTION	HH

SITE NAME:  
**PORTLAND 3 ME**

SITE ADDRESS:  
476 SUMMIT STREET  
PORTLAND, ME 04103

SHEET TITLE  
**ELECTRICAL/  
GROUNDING  
RISER DIAGRAM**

SHEET NUMBER  
**E-2**



**GROUNDING DIAGRAM** 2  
SCALE: N.T.S. E-2

- GROUNDING LEGEND**
- EXOTHERMIC TYPE CONNECTION
  - COMPRESSION TYPE CONNECTION
  - #2 SOLID TINNED COPPER WIRE UNLESS OTHERWISE NOTED
  - ⊗ 5/8" x 10'-0" COPPER CLAD GROUND ROD
  - ⊠ GROUND WELL