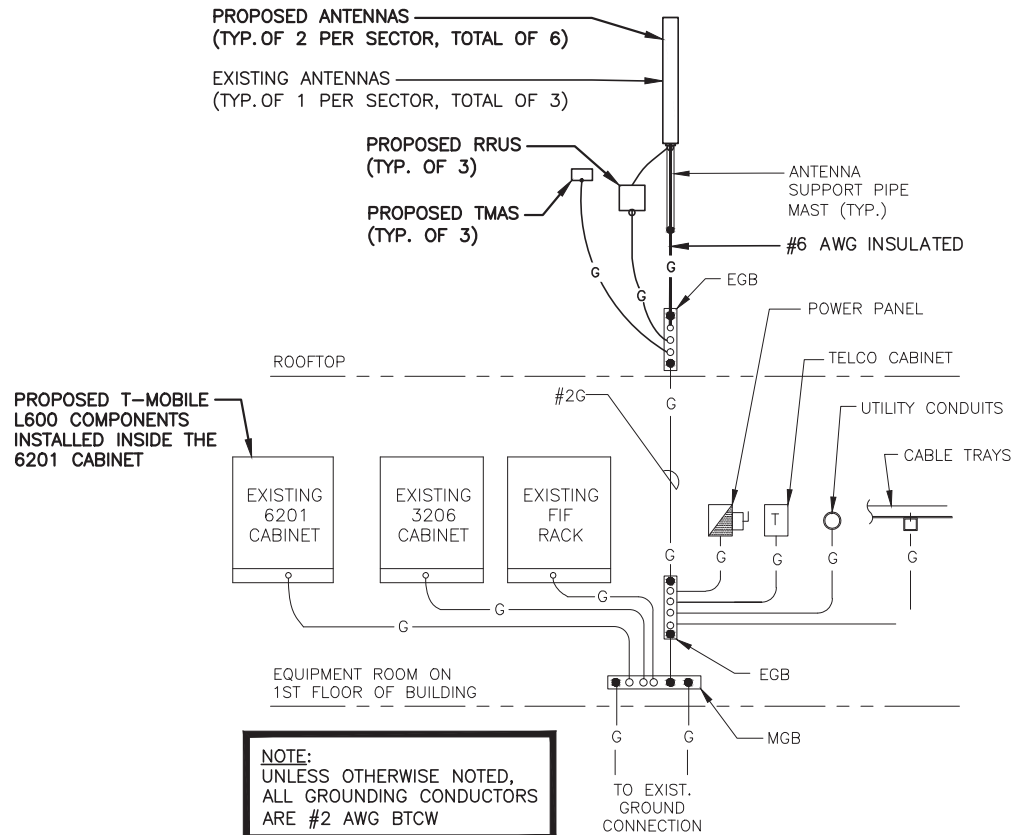


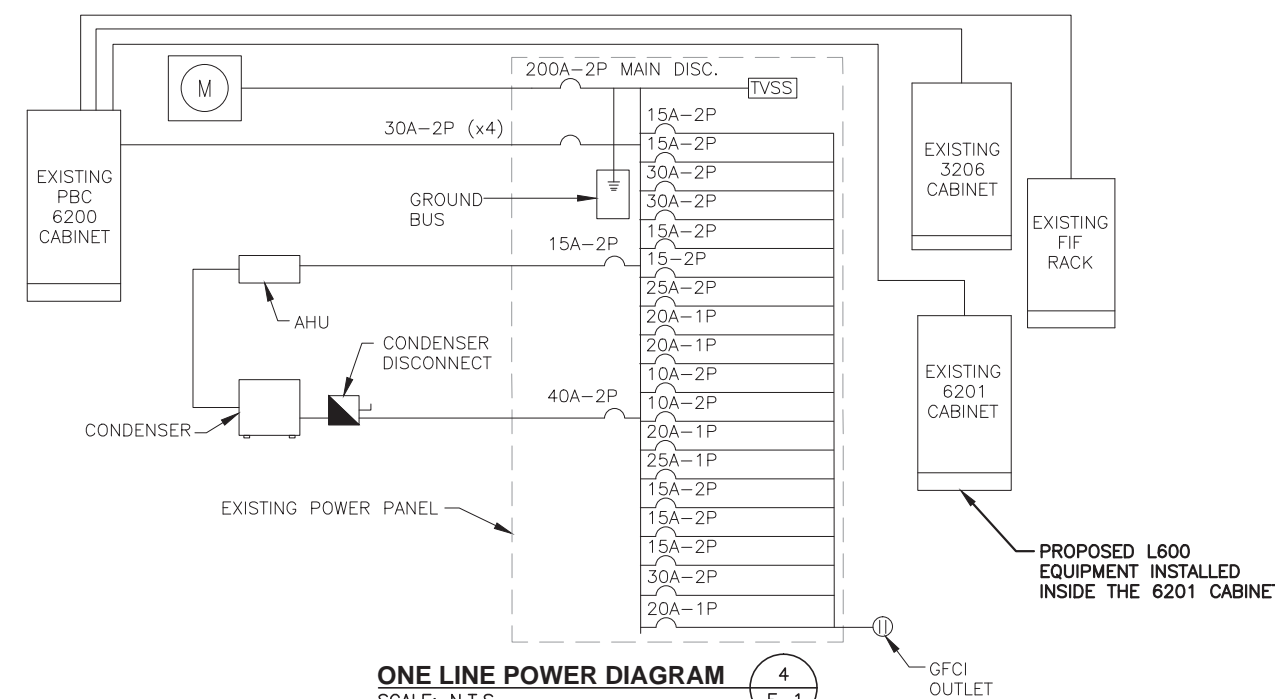
NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER AGB/EGB, LOWER EGB, AND MGB.

1
E-1



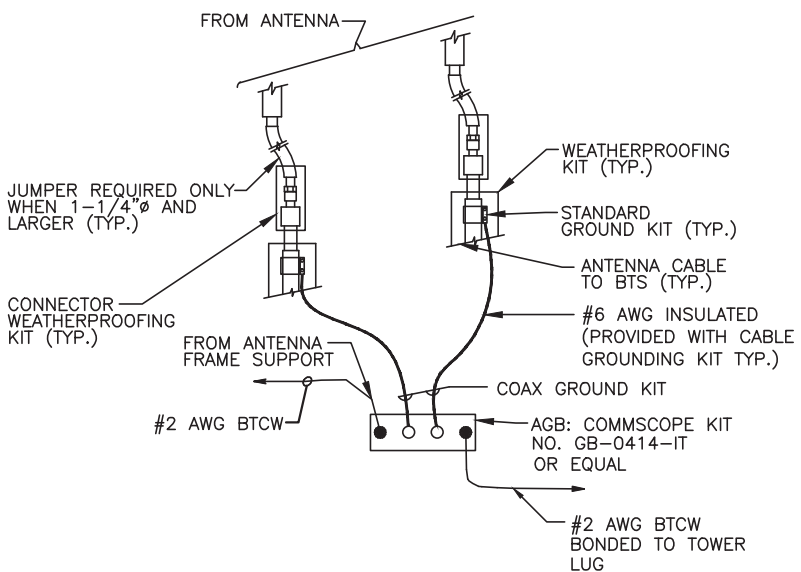
NOTE:
UNLESS OTHERWISE NOTED,
ALL GROUNDING CONDUCTORS
ARE #2 AWG BTCW

2
E-1



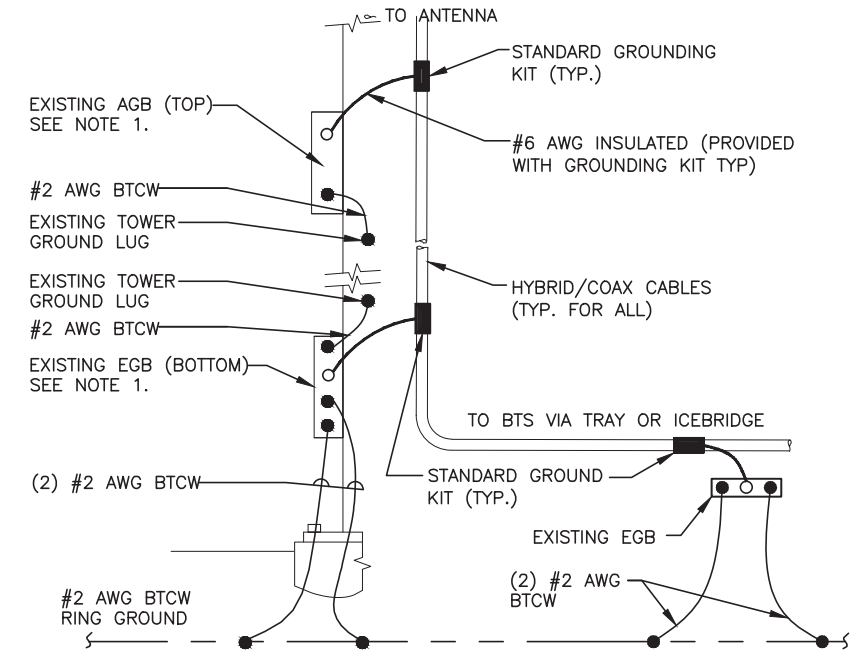
ELECTRICAL & GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH FULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH FULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- GROUNDING SHALL COMPLY WITH NEC ART. 250.
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.



NOTE:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND
AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB.

3
E-1



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE ADDITIONAL AGB/EGB AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

5
E-1

ELECTRICAL LEGEND

A	AMPERE	○	MECHANICAL CONNECTION
V	VOLT	●	CADWELD CONNECTION
KWH	KILOWATT - HOUR	○	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR
C	CONDUIT	○	GROUND COPPER WIRE, SIZE AS NOTED
GRC	GALVANIZED RIGID CONDUIT	○	EXPOSED WIRING
BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTES OTHERWISE)	○	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)
G	GROUND	○	5/8" COPPER CLAD STAINLESS STEEL GROUND ROD
MGB	GROUND	○	EXOTHERMIC (CAD WELD) OR MECHANICAL CONNECTION
○	MASTER GROUND BAR	○	MECHANICAL CONNECTION
○	AGB/EGB	○	MECHANICAL CONNECTION
○	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR	○	MECHANICAL CONNECTION
○	GROUND COPPER WIRE, SIZE AS NOTED	○	MECHANICAL CONNECTION
○	EXPOSED WIRING	○	MECHANICAL CONNECTION
○	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)	○	MECHANICAL CONNECTION
○	5/8" COPPER CLAD STAINLESS STEEL GROUND ROD	○	MECHANICAL CONNECTION
○	EXOTHERMIC (CAD WELD) OR MECHANICAL CONNECTION	○	MECHANICAL CONNECTION
○	POWER PROTECTION CABINET	○	MECHANICAL CONNECTION
○	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL	○	MECHANICAL CONNECTION

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TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF MAINE
DEREK J. CREASER
NO. 12752
REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	10/19/17	ISSUED FOR PERMITTING	VP

SITE NUMBER:
4PB0247A
SITE NAME:
PB247/
ROOSEVELT ARMS
SITE ADDRESS:
226 STEVENS AVENUE
PORTLAND, ME 04102
CUMBERLAND COUNTY

SHEET TITLE
ONE-LINE DIAGRAM & GROUNDING DETAILS (L600)

SHEET NUMBER
E-1

- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
- TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
- BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.