

**ELECTRICAL GENERAL NOTES:**

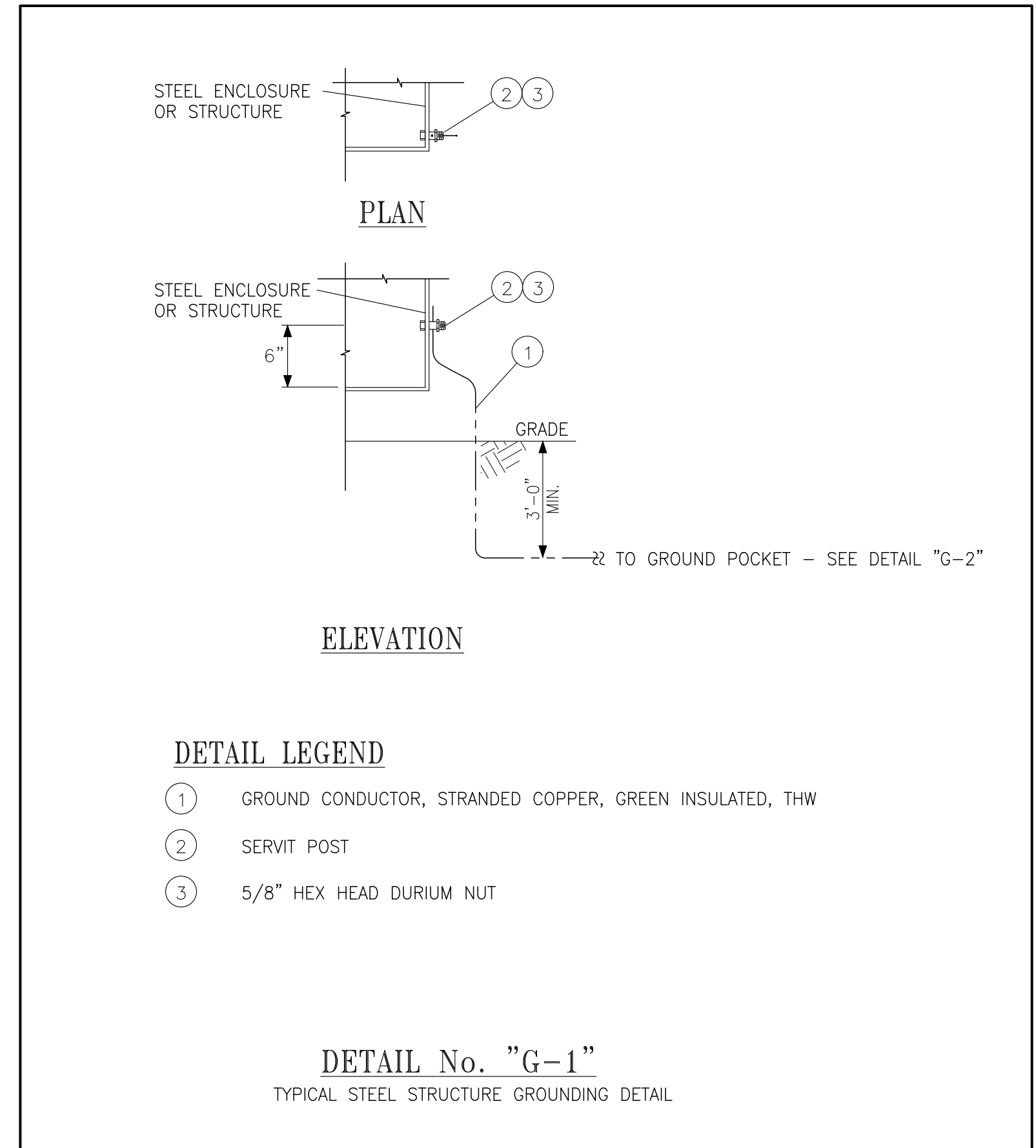
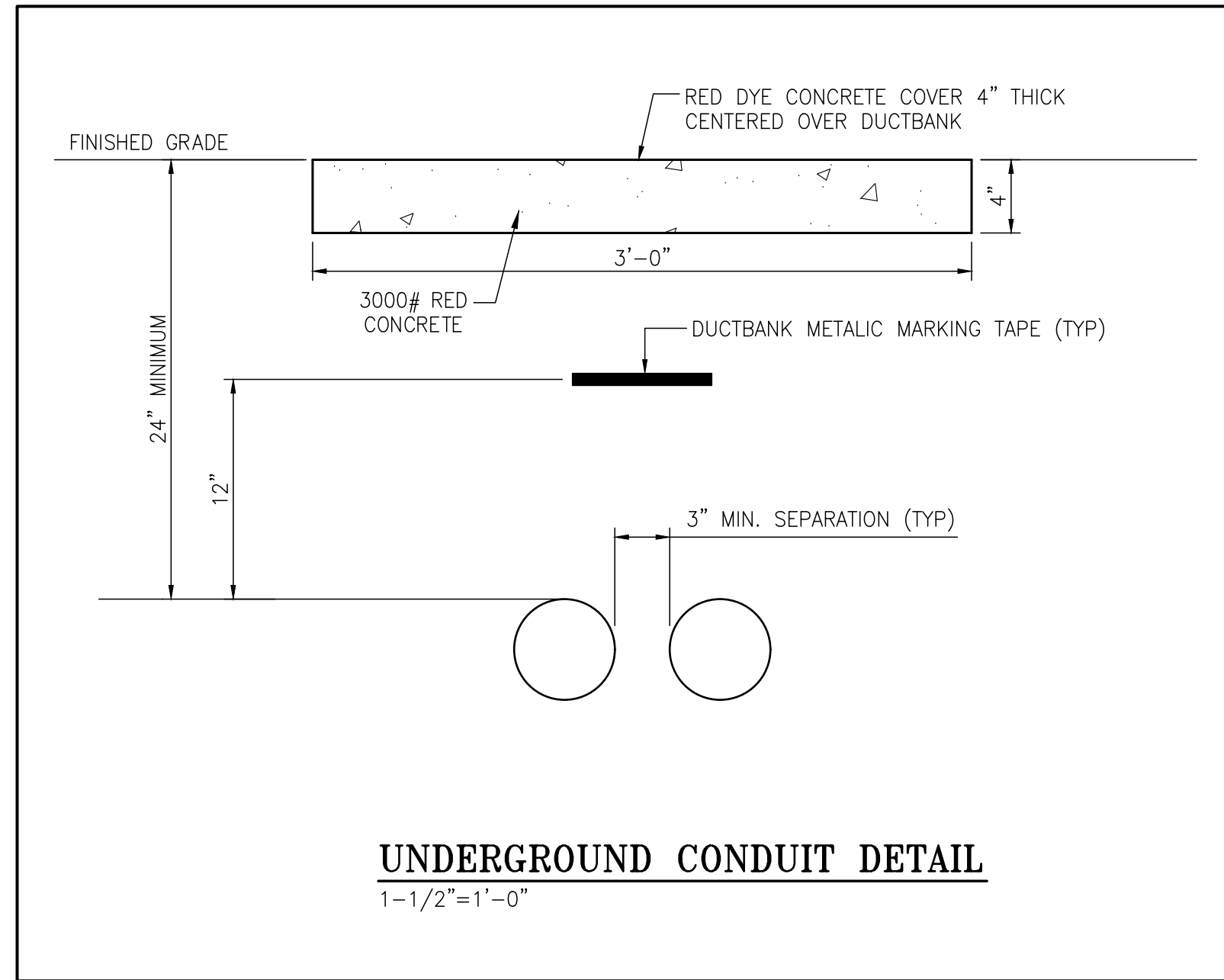
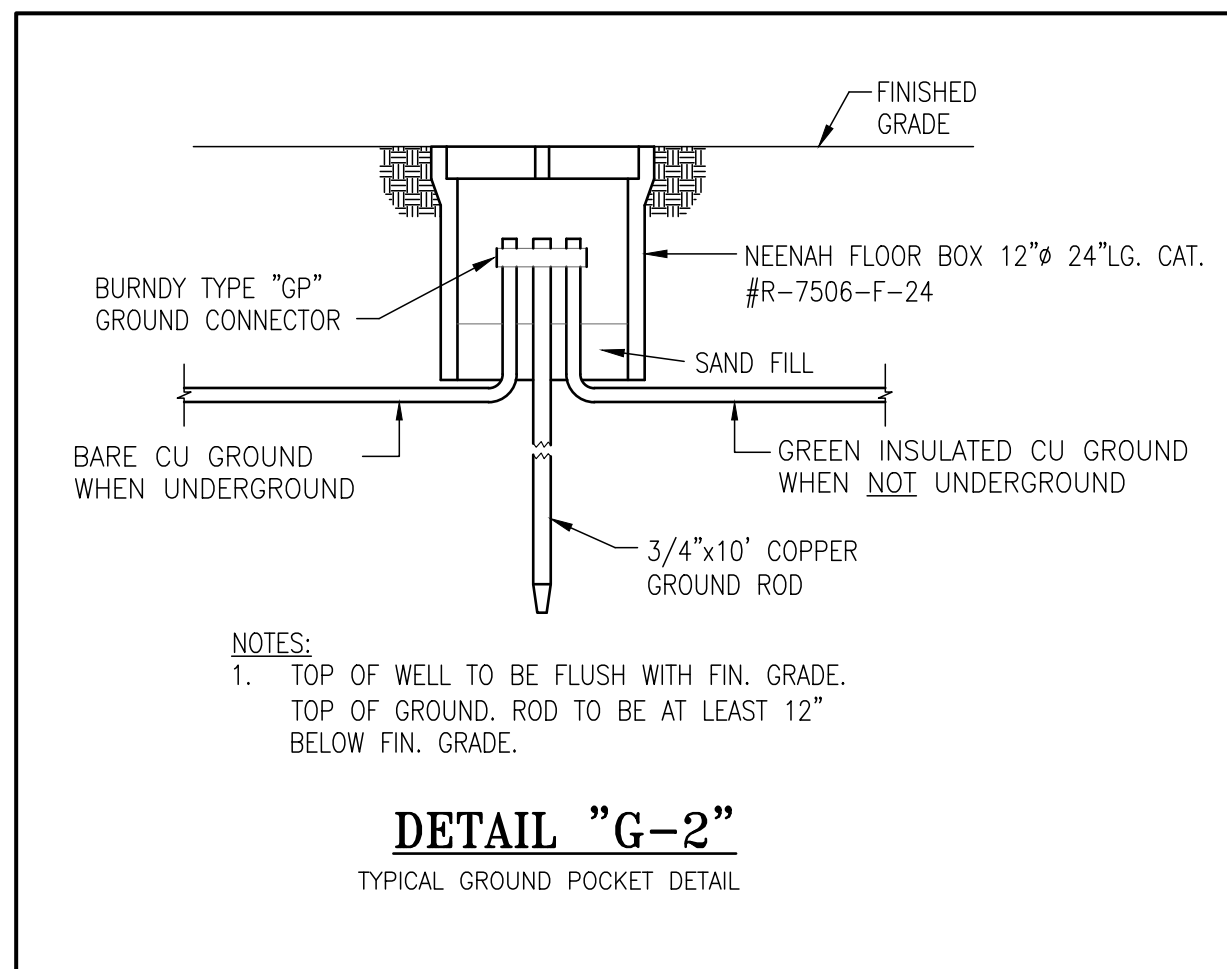
1. ALL ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70) OF THE NATIONAL FIRE AND PREVENTION ASSOCIATION (NFPA), THE NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARDS, NATIONAL ELECTRICAL SAFETY CODE AND RULES/REGULATIONS OUTLINED IN ALL APPLICABLE FEDERAL AND STATE LAWS AND LOCAL ORDINANCES/CODES.
2. PRIOR TO BID THE PROJECT ELECTRICAL CONTRACTOR (CONTRACTOR) SHALL FIELD VERIFY THE JOB SITE AND BECOME FAMILIAR WITH THE EXTENT OF WORK REQUIRED TO COMPLETE THE JOB.
3. CONTRACTOR SHALL PROVIDE ALL PERMITS AND INSPECTIONS AS REQUIRED BY FEDERAL AND STATE LAWS AND LOCAL ORDINANCES. CONTRACTOR SHALL PROVIDE ALL TEMPORARY POWER REQUIRED FOR CONSTRUCTION PURPOSES.
4. **CAUTION:** UNCHARTED AND/OR UNDOCUMENTED OBSTRUCTIONS MAY EXIST. PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL POSSIBLE UNDERGROUND UTILITIES THAT ARE NOT SHOWN ON THE CONTRACT DOCUMENTS.
5. ALL NECESSARY FIELD CHANGES TO DRAWINGS SHALL BE RECORDED AND BROUGHT TO OWNER'S AGENT'S ATTENTION. AT THE END OF CONSTRUCTION, CONTRACTOR SHALL RETURN ONE SET OF PRINTS WITH ALL FIELD CHANGES INDICATED ON THEM.
6. ALL ABOVE GROUND CONDUIT AND FITTINGS SHALL BE RIGID GALVANIZED STEEL (RGS) WITH A MINIMUM OF 3/4" IN DIAMETER (TRADE). ALL UNDERGROUND CONDUIT SHALL BE SCH. 80 PVC AND UNDERGROUND CONDUIT ELBOW FITTINGS SHALL BE RGS. CONDUIT FITTINGS SHALL BE FORM 7 AND ALL CONDUIT BENDS 1 1/2" AND LARGER SHALL BE FACTORY LONG RADIUS ELBOWS. ALL UNDERGROUND CONDUIT SYSTEMS SHALL BE INSTALLED AT A MINIMUM OF 30" BELOW GRADE AND SHALL BE COVERED IN FOUR INCHES MINIMUM RED CONCRETE.
7. FACTORY AND FIELD CUT CONDUIT THREADS SHALL BE CLEANED WITH A DEGREASER, THEN COATED WITH PENETROX "A" BEFORE MAKING JOINTS. CONDUIT JOINTS SHALL BE SCREWED TIGHT TO ENSURE GOOD CONDUCTIVITY.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUIT FITTINGS, DRAINS, BREATHERS, ETC. NOT SHOWN BUT REQUIRED FOR A COMPLETE ELECTRICAL INSTALLATION CONSISTENT WITH GOOD ENGINEERING PRACTICE AND THE REQUIREMENTS DEFINED IN THE LATEST EDITION OF THE NEC.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SUPPORT STEEL FOR THE ELECTRICAL INSTALLATION. WHERE FEASIBLE, CONDUIT SUPPORTS SHALL BE UNISTRUT P-1000 OR P-1001, WITH UNISTRUT PIPE CLAMPS FOR MULTIPLE CONDUIT RUNS. ALL CONDUIT SUPPORTS SHALL BE HOT DIPPED GALVANIZED. ALL WELDS AND ALTERATIONS OF ADDED STEEL SHALL BE TOUCHED UP WITH A COLD GALVANIZED SPRAY.
10. FIELD ROUTED CONDUIT AND SUPPORTS SHALL BE INSTALLED TO AVOID INTERFERENCES WITH MECHANICAL EQUIPMENT.
11. ALL CONDUIT FITTINGS, PULL BOXES AND JUNCTION BOXES SHALL BE INSTALLED IN READILY ACCESSIBLE LOCATIONS WITH THE COVERED OPENING ORIENTED FOR MAXIMUM ACCESSIBILITY.
12. CONDUITS SHOWN ON DRAWINGS, REFLECT THE DIAGRAMMATICAL ROUTING. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED BY THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE.
13. CONDUIT CONNECTIONS TO SHEET METAL ENCLOSURES SHALL BE MADE WITH GROUNDING MYERS HUB FITTINGS (OR APPROVED EQUALS).
14. ALL UNDERGROUND CONDUIT SYSTEMS SHALL BE INSPECTED BY THE SITE CONSTRUCTION MANAGER PRIOR TO ENCASEMENT IN CONCRETE OR OTHER BACKFILL.
15. REFERENCE THE FOLLOWING ELECTRICAL SPECIFICATIONS INCLUDED WITH THIS PROJECT:
  - 15.1. 01100 GENERAL PROVISIONS
  - 15.2. 16000 ELECTRICAL GENERAL
  - 15.3. 16060 GENERAL GROUNDING
  - 15.4. 16100 BASIC MATERIALS
  - 15.5. 16375 UNDERGROUND ELECTRICAL WORK
16. **CABLE:**
  - 16.1. MEDIUM VOLTAGE (MV) CONDUCTORS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 311.
  - 16.2. MEDIUM VOLTAGE CABLES INSTALLED UNDERGROUND SHALL BE IN ACCORDANCE WITH NEC ARTICLE 300.50
  - 16.3. 23KV CABLE CATALOG NUMBER FOR THIS PROJECT SHALL BE PROVIDED BY OWNER AND SUPPLIED BY THE CONTRACTOR.

**GENERAL GROUNDING NOTES:**

1. ALL GROUNDING SHALL FOLLOW NEC ARTICLE 250 AND ALL APPLICABLE REFERENCES WITHIN.
2. GROUNDING CONNECTIONS ABOVE GRADE SHALL BE OF THE MECHANICAL TYPE. CONNECTIONS SHALL BE CLEANED TO BRIGHT METAL AND COATED WITH CORROSION INHIBITOR (T&B KOPR-SHIELD OR APPROVED EQUAL) PRIOR TO MAKE UP. CONNECTION SHALL THEN BE CLEANED AND SPRAYED WITH EPOXY ENAMEL AFTER MAKE UP.
3. GROUNDING CONNECTIONS UNDERGROUND SHALL BE EXOTHERMIC TYPE WELDS.
4. GROUND CONDUCTORS ROUTED THROUGH A CONCRETE SLAB OR WALL SHALL BE INSTALLED IN A 2" DIA. SCHEDULE 80 PVC CONDUIT SLEEVE. CONDUIT SLEEVE SHALL EXTEND 3" BEYOND THE FINISHED SURFACE. CONTRACTOR SHALL PROVIDE SUFFICIENT AMOUNT OF GROUND CONDUCTOR TO COMPLETE THE GROUNDING SYSTEM ABOVE GRADE WITHOUT SPLICES.
5. INSTALL GROUND POCKET IF AN EXISTING GROUNDING SYSTEM IS NOT AVAILABLE. SEE DETAIL G-2 THIS DWG.

**23KV DEADEND STRUCTURE REFURBISHMENT:**

1. 23KV INCOMING POWER DEADEND STRUCTURE EQUIPMENT AND WIRING INCLUDING RECLOSER SWITCHES, FUSE HOLDERS, FUSES, CONTACTORS, INSULATORS AND SURGE ARRESTORS SHALL BE REFURBISHED AND RECONDITIONED TO ASSURE RELIABILITY OF THE EXISTING EQUIPMENT. DEVICES SHALL BE ADJUSTED OR REPLACED AS REQUIRED.
2. **23KV DEADEND STRUCTURE REFURBISHING & RECONDITIONING EXPECTATIONS:** THE SPECIFIC REFURBISHING PROCEDURE SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
  - 2.1. REPLACING, REPAIRING OR RETROFITTING OF COMPONENTS AS NECESSARY. (SWITCHES, FUSES, BREAKERS, CABLES, ETC.)
  - 2.2. CLEANING, VACUUMING AND WIPING COMPONENTS WITH A SUITABLE SOLVENT.
  - 2.3. CHECKING COMPONENTS FOR PHYSICAL DAMAGE AND CONTACT WEAR.
  - 2.4. CHECKING COMPONENTS FOR PROPER ALIGNMENT AND CALIBRATION.
  - 2.5. OIL AND LUBRICATE COMPONENTS AS REQUIRED BY MANUFACTURERS INSTRUCTIONS.
  - 2.6. TESTING PROPER OPERATION OF ALL COMPONENTS.
  - 2.7. VERIFY SAFETY INTERLOCKS ARE IN PLACE AND WORKING.
  - 2.8. CONDUCT TESTING IN ACCORDANCE WITH THE NATIONAL ELECTRICAL TESTING ASSOC. APPROVED GUIDELINES.
  - 2.9. AFTER REASSEMBLY AND TESTING, CERTIFY THE EQUIPMENT AS RECONDITIONED.
  - 2.10. PROVIDE DOCUMENTATION TO THE OWNER WITH WARRANTY, EXCEPTIONS AND LIMITATIONS DEFINED.



**DETAIL LEGEND**

- ① GROUND CONDUCTOR, STRANDED COPPER, GREEN INSULATED, THW
- ② SERVIT POST
- ③ 5/8" HEX HEAD DURUM NUT

**DRAWING LIST**

- E1 ELECTRICAL DETAILS, GENERAL NOTES AND GROUNDING
- E2 23KV POWER PULL BOX LAYOUT AND ELEVATIONS



CLIENT DWG NO:

McDUFFIE COAL TERMINAL  
23KV INCOMING POWER CABLE REPLACEMENT  
DETAILS, GENERAL NOTES AND GROUNDING

FOR: ALABAMA STATE PORT AUTHORITY

PROJECT NO: DWG NO: E1 REV: A



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DRAWN: WMB CK'D: APPD: DATE: 07/01/21 SCALE: AS NOTED

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