

## SECTION 26 0526 - GROUNDING

## PART 1 - GENERAL

## 1.1 SCOPE OF WORK: Grounding Details

## PART 2 - PRODUCTS

## 2.1 SYSTEM GROUNDING:

- A. Bond and ground main service neutral, cabinets, equipment, conduits, etc., per the latest edition of NEC.
- B. Ground conductors - 98% conductivity copper, either bare or with green THW insulation. Other conductor requirements same as described for low voltage, 600 volts, conductors.
- C. Ground Connections:
  - 1. Make with mechanical connectors where accessible and with "Cadweld" or approved equivalent where inaccessible.
  - 2. Use high alloy cast copper and/or silicon bronze mechanical connectors with Hex or Allen head bolts where permitted.
  - 3. Use Burndy "GAR" or approved equivalent. Size as required for piping connections.
  - 4. Thoroughly clean prior to installation of clamps and/or lugs.
  - 5. Use bolted or screwed on mechanical connectors. Do not use clip-on connections.
  - 6. Bond ground conductor to metal raceway at each end of the run.
  - 7. Seal connections between dissimilar metals (i.e.: bronze to steel), with approved epoxy resin.
  - 8. Coat connections with "No-OXID-A" compound as manufactured by Dearborn Chemical Company.
- D. Provide lighting and power circuits with green covered ground wire sized per NEC, or as shown, except not smaller than #12 AWG. Bond ground wire to all outlet boxes, junction and pull boxes, cabinets, equipment, etc., with self-tapping screw or bolt and appropriate lug. See Section covering "Raceways" for use of grounding bushing.

## 2.2 DRIVEN GROUND SYSTEM:

- A. Provide driven ground rods and buried ground conductor interconnecting ground rods as shown.
- B. Ground rods 3/4"x10'-0" copperclad steel, Thompson #558 or approved equal. Ground rods installed with tops driven to 1'-6" minimum below grade. Connect ground wire to ground rod with Thompson #493 "U" bolt bronze clamp.
- C. Exterior buried ground conductor #2/0, soft drawn, bare, tinned copper, installed 2'-0" minimum below grade.
- D. Bond all masses of metal, i.e.: pipes, conduits, fence posts, etc., within 6'-0" of the buried ground conductor to ground conductor with #6 AWG bare, solid, tinned copper wire, attached to object with appropriate clamp, lug, etc., (Cadweld or equal). Obtain complete set of drawings to determine quantity and location of required connections.
- E. All connectors lugs, hardware, etc., for building ground system similar to that for other grounding as described above.

## PART 3 - EXECUTION

## 3.1 EQUIPMENT GROUND 'GREEN WIRE CONCEPT':

- A. Ground electrical equipment enclosures and conductor enclosures including metal raceways, outlet boxes, cabinets, switch boxes, motor frames, diesel engine frame, transformer cases, and metallic enclosures for all electrical equipment.
- B. Provide separate grounding conductor for all circuits to insure adequate ground fault return path.
- C. Install separate ground conductors in heavy wall PVC conduit.

- D. Bond green wire to equipment enclosure at source and at apparatus served.
- E. Insulate grounding conductors size to carry ground fault current safely. Minimum size for green wire grounding lead per N.E.C. Table 250-95, or as indicated.
- F. Do not use grounded current return conductors (neutrals) for equipment grounding. Connect common grounding lead to supply side of service disconnect unit only.
- G. Do not ground neutral conductor after it has been grounded at service entrance, transformer or generator.
- H. Maintain electrical continuity of conduit systems by threaded fittings with joints made-up wrench tight. Install insulated bushing and locknuts on terminating conduits. Provide conduits containing ground wires with grounding bushings bonded to ground wire with short full size jumper.
- I. Provide receptacles with approved green covered bonding jumper from the grounding terminal screw connected to outlet box.
- J. Install ground rods in quantity to provide a maximum of 15 ohms ground resistance. Where multiple rods required, separate a minimum of 6 feet and interconnect with wire of ground size shown.
- K. Test ground systems as specified in Section Electrical General.

END OF SECTION