SECTION 260526

GROUNDING AND BONDING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Grounding electrodes and conductors.

B. Equipment grounding conductors.

C. Bonding.

1.2 RELATED SECTIONS

A. Section 26 41 00 - Lightning Protection Systems.

1.3 REFERENCES

A. NFPA 70 - National Electrical Code.

B. NFPA 99 - Health Care Facilities.

C. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).

1.4 GROUNDING ELECTRODE SYSTEM

A. Metal underground water pipe.

B. Metal frame of the building, including footing.

C. Rod electrodes.

1.5 PERFORMANCE REQUIREMENTS

A. Grounding System Resistance: 10 ohms.

1.6 SUBMITTALS FOR CLOSEOUT

A. Test Reports: Indicate overall resistance to ground and resistance of each electrode.

B. Accurately record actual locations of grounding electrodes.

PART 2 PRODUCTS

2.1 ROD ELECTRODE

A. Material: Copper or Copper-clad steel.

B. Diameter: 3/4 inch.

C. Length: 10 feet.

2.2 MECHANICAL CONNECTORS

A. Manufacturers:
   1. Burndy, Hy-Ground.

B. Material: Bronze.

C. Listing: U.L.

2.3 EXOTHERMIC CONNECTIONS

A. Manufacturers:
   1. Cadweld.

2.4 WIRE

A. Material: Stranded copper.

B. Grounding Electrode Conductors: Size to meet NFPA 70 Requirements. See plans for minimum sizes.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

A. Install Products in accordance with the manufacturer's instructions.

B. Install rod electrodes at locations required by local authority. Install additional rod electrodes as required to achieve specified resistance to ground.

C. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing. Bond steel together.

D. Provide bonding to meet Regulatory Requirements.

E. Bond together metal siding not attached to grounded structure, bond to ground.

F. Bond together reinforcing steel and metal accessories in pool and fountain structures.

G. Bond transformer neutrals to adjacent metal structure with “grounding electrode conductors” per NEC Article 250.

H. Provide grounding and bonding in patient care areas to meet requirements of NFPA 99 and NFPA 70.

I. Provide bonding of the above ground portion of the gas piping system inside the building to meet the requirements of NFPA 54 and NFPA 70.

J. Provide bonding of shielding cable serving fire alarm addressable adapter modules on all exterior equipment. Provide bonding of exterior equipment device lugs.

K. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

L. Interface with lightning protection system installed under Section 26 41 00.

3.3 FIELD QUALITY CONTROL

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

B. Perform inspections and test listed in NETA ATS, Section 7.13.

C. Test grounding systems in patient care areas in accordance with Section 6.3.3.1 of NFPA 99 using a “Hampden” meter. The voltage limit shall be 20 mV. The impedance limit shall be 0.1 ohm.

END OF SECTION