

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION

- A. Provide and test equipotential grounding system in all patient care areas including but not limited to Operating Rooms, Recovery, Pre-op Patient Areas, Patient Rooms, Exam rooms, and Treatment rooms. Although such work (ground wires, raceways, etc.) is not specifically shown or specified, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 26 24 21 - Isolated Power Systems.

1.4 QUALITY ASSURANCE

- A. Codes and Standards:
 - 1. System shall meet all requirements of NFPA 99 Chapters 4 and 8 and NFPA 70 (NEC) Section 517, for Patient Care Areas.

1.5 ELECTRICAL EQUIPMENT MAINTENANCE MANUAL

- A. Manual shall include the reports of the tests required under this section.

PART 2 - PRODUCTS

2.1 GROUND WIRES

- A. As specified in Section 26 05 19 – Low-Voltage Electrical Power Conductors & Cables.

2.2 GROUND CONNECTIONS

- A. All exposed conductive surfaces shall have a metallic path connecting the exposed surface with the grounding system. When a conductive path does not exist, provide a bonding conductor. A minimum size bonding conductor shall be #10 AWG.

PART 3 - EXECUTION

3.1 DEFINITIONS

- A. For the purpose of satisfying the requirements of this section, NFPA 99 Chapter 3 Definitions, and NEC Article 517-19, the "reference grounding point" shall be the equipment grounding bus in the isolated power panelboard or a grounding point in the patient care area under test that is electrically remote from the receptacles, or the grounding contact of a

receptacle that is powered from a different branch circuit than the receptacle under test. The "Patient Vicinity" is the space not less than 6' beyond the perimeter of the bed or operating table and extending vertically not less than 7'-6" above the floor. The "Patient Care Area" is any portion of the hospital where in patients are intended to be examined or treated. This includes floors 2, 4, & 5 of this project. Refer to NEC Article 517-2 for further definitions.

3.2 TESTING

- A. Test Equipment: Voltage measurements shall be made with an instrument having an input resistance of 1000 ohms +/- 10 percent at frequencies of 1000 Hz or less.
- B. Testing Procedure: After the rooms are finished and all devices are installed the following tests shall be performed:
 - 1. Potential difference between the reference grounding point and exposed conductive surfaces (including ground contacts of receptacles) in the patient vicinity. Correct bonding of any items with a reading over 20 millivolts.
 - 2. Impedance between the reference point and the grounding contact of each receptacle in the patient vicinity. Correct grounding of any circuits with a reading over 0.1 ohms (exception: For isolated ground receptacles the limit shall be 0.2 ohms.)
 - 3. Record all test values and include them in the maintenance manual information.
- C. Submit a copy of the test results to the Engineer no longer than one week after tests are completed along with a letter stating that the installed equipotential grounding meets the requirements of the plans and specifications.
- D. In conjunction with these tests, the maintenance aspects and recommended testing procedures shall be explained to Owner's personnel.

END OF SECTION