

MEA No.: 181001

SECTION 16700 - ELECTRICAL - COMPLETION AND TESTING

1.1 GENERAL

- A. All applicable requirements of SECTION 16000 - ELECTRICAL, GENERAL shall apply to this entire Section and shall have the same force and effect as if fully included herein.

1.2 SCOPE

- A. This Section of the Specifications covers the furnishing of all labor, materials and accessories necessary for, but not necessarily limited to, the completion of the contract and testing of all electrical work performed on this project.

1.3 SERVICE

- A. The Contractor shall, after acceptance, provide any service incidental to the proper performance of the systems during the warranty period outlined in SECTION 16000 - ELECTRICAL, GENERAL.

1.4 FINAL ADJUSTMENTS

- A. Panelboard covers shall be adjusted to be plumb and level with all cover catches engaged and tight.
- B. Doors of all panelboards, switchgear, junction boxes, enclosures, etc. shall swing free for 90 degrees or greater and be adjusted so that all locks, clasps and catches can be easily operated.
- C. Install plugs in any unused conduit opening in panelboards, switchboards and other enclosures.
- D. Install space cover plates in any unused circuit breaker positions in all panelboards.

1.5 FINAL CLEANING

- A. Remove soil, stain and adhered extraneous materials from adjacent surfaces.
- B. Clean all soil, extraneous materials, stains, fingerprints, etc. from all lighting fixtures, panels, plates and any other exposed portion of electrical work installed under this project so that no cleaning is required by the Owner.
- C. Remove and replace items or materials that cannot be satisfactorily cleaned.
- D. Remove any remaining protective covers, tapes or packing materials.

1.6 TESTING OF UNDERGROUND PVC CONDUIT SYSTEMS

- A. All underground PVC conduit systems, as noted on the Drawings, shall be tested at a compressed air pressure of not less than 10 PSI. The conduit system shall be without leaks at this pressure for a 24-hour time period.
- B. The test shall be conducted by the Contractor and witnessed by the Owner's Representative. The test shall be performed at no additional cost to the Owner and shall be performed prior to concrete concealment.

- C. All fittings, joints, etc. shall be carefully examined for leakage during the tests. A soap solution or other equally effective means shall be used as a leak detection medium. Any defective conduits, joints, etc. shall be replaced by the Contractor at no additional cost to the Owner.

1.7 SYSTEM INSPECTION

- A. Upon completion of the work, all electrical work shall be inspected by the local Authority Having Jurisdiction, an inspection group selected by the local Authority Having Jurisdiction, or an independent inspection agency such as the Middle Department Inspection Agency. All costs related to same shall be paid for by the Electrical Contractor.
- B. The Contractor shall correct and reinspect, at no additional cost to the Owner, any work failing to pass inspection.
- C. Final inspection certificates shall be issued in triplicate and shall be delivered to the Owner's Representative.

1.8 ELECTRICAL SYSTEM TESTING

- A. Upon completion of the work, all manually operable components of the electrical system such as switches, control devices, circuit breakers, etc. shall be operated a minimum of three times. Operation of devices shall cause the appropriate function as herein specified. Testing shall be performed in the presence of the Owner or his representative.
- B. Upon completion of the work, all wiring of the electrical installation shall be tested and proved free of unwarranted grounds and other defects. Final tests shall be accomplished by use of a megger or as covered in this Specification. The values of all secondary wiring insulation shall meet or exceed the aforementioned Regulatory Bodies. A complete report of this test shall be submitted to the Owner's Representative in triplicate, upon request.
- C. Upon completion of the work, test the grounding system to assure continuity and that the resistance to ground is not excessive. The maximum resistance to ground of the grounding system shall not exceed 10 ohms under normally dry conditions. Test each ground rod for resistance to ground before making any connections to the rod; then tie entire grounding system together and test for resistance to ground. Make resistance measurements in normally dry weather, not less than 48 hours after rainfall. Submit written results of each test to the Owner's Representative and indicate the location of the rods as well as the resistance and soil conditions at the time the measurements were made.
- D. At the time of testing, all overload devices, including equipment furnished under other contracts, shall be set and adjusted to suit the load conditions.
- E. Adjustable settings of molded case breakers shall be set per manufacturer's recommendation. Devices with three poles shall be adjusted to the same setting.
- F. Relays and circuit breaker electrostatic trip units shall be tested and set using a manufacturer approved test set by an electrical test technician with five years continual experience.
- G. Megger all service cables and feeder cables #2 and larger before energizing.
- H. All equipment and manpower required to perform testing shall be provided by the Contractor at no additional cost to the Owner.
- I. Any devices, equipment or wiring failing to pass testing procedures shall be replaced and re-tested by the Contractor at no additional cost to the Owner.

- J. Enlist the cooperation of the equipment manufacturer where needed to obtain proper equipment test performances.

1.9 COMPLETION

- A. Upon completion of the work, the Contractor shall remove all his excess materials, machinery and equipment from the premises.
- B. Upon completion of the work, the Contractor shall return all keys, badges, passes or parking permits issued by the Owner for use during the project.

END OF SECTION 16700