

**SECTION 26 08 13**

**~~~ PROJECT NOTE ~~~~~**

*ARCHITECT OF RECORD/ENGINEER OF RECORD IS RESPONSIBLE FOR REVIEWING THIS SPECIFICATION SECTION IN DETAIL FOR COORDINATION WITH THE PROJECT SCOPE OF WORK.*

*ALL "PROJECT NOTE" TEXT IS TO BE REMOVED FOLLOWING REVIEW OF THE CONTENT OF EACH NOTE BY THE ARCHITECT OF RECORD/ENGINEER OF RECORD.*

*EDIT THE DOCUMENT FOOTER TO INCLUDE THE PROJECT NAME AND NUMBER.*

*EDIT THE DOCUMENT HEADER TO INDICATE THE ARCHITECT OF RECORD PROJECT ISSUE" DATE. THE "CPS CONTROL" DATE SHOULD NOT BE EDITED.*

*ANY MODIFICATIONS TO THE TECHNICAL STANDARDS IN THIS SECTION - INCLUDING THE REMOVAL OR ADDITION OF MANUFACTURERS - MUST BE APPROVED BY CPS.*

*REQUESTS FOR MODIFICATION ARE TO BE SUBMITTED TO THE DESIGN MANAGER DURING THE DESIGN PHASE FOR REVIEW AND APPROVAL.*

**~~~ END OF PROJECT NOTE ~~~~~**

**TESTING OF ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Requirements for Electrical Testing including, but not limited to:
  - 1. Insulation resistance test.
  - 2. Continuity test.
  - 3. Voltage test.
  - 4. Phase relationship verification.
- B. Testing of electrical components and systems including:

**~~~ PROJECT NOTE ~~~~~**

*INCLUDE SYSTEMS/COMPONENTS TO BE TESTED BELOW*

**~~~ END OF PROJECT NOTE ~~~~~**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- C. Correction of defective components or systems.
- D. Retest of corrected components, systems.

**1.02 REFERENCE STANDARDS**

- A. Chicago Electrical Code - Municipal Code of the City of Chicago, Building/Electrical Code Requirements; 2018.
- B. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2017.

**1.03 SUBMITTALS**

- A. Test reports: Submit six (6) copies of all test reports to Architect/Engineer of Record (3 copies), General Contractor (1) and the Principal and/or School Engineer.
  - 1. Type each test report on 8-1/2" x 11" paper. Include:
    - a. Project title and location.
    - b. Test performed.
    - c. Data performed

- d. Test equipment used.
  - e. Contractor's name, address and telephone number.
  - f. Testing firm's name, address and telephone number.
  - g. Names and titles of persons:
    - 1) Performing the test.
    - 2) Observing test
    - 3) Statement verifying each test.
    - 4) Nameplate data from each motor and equipment item tested.
    - 5) Test results.
    - 6) Retest results after correction of defective components, systems.
    - 7) Dates and time of test.
2. For each copy, assemble all test reports and bind them in a folder. Label each folder, "Electrical Test Reports" and include Chicago Board of Education Project Number, title and location.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS:**

- A. Furnish all equipment, manpower and casual labor to perform specified testing.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Ensure that all electrical work is completed and ready for testing.
- B. Disconnect all devices or equipment that may be damaged by application of test voltages, voltage or reversed phase sequence or other procedures.

### **3.02 TESTING:**

- A. Conduct tests and adjust equipment to verify compliance with specified performance.
- B. Comply with NETA ATS.

### **3.03 INSULATION RESISTANCE TESTS**

- A. Resistance measured: line-to-ground.
- B. Perform testing on the following items:
  1. Item Tested: No. 2 and Larger Cables (600V).
    - a. Minimum Acceptance Voltage of Test: 1000V.
    - b. Resistance in Mega ohms: 50.

### **3.04 CONTINUITY TESTS:**

- A. Test branch circuits and control circuits to determine continuity of wiring and connection.

### **3.05 VOLTAGE TESTS**

- A. Make and record voltage tests and record at the following listed points. Conduct tests under normal load conditions.
  1. Terminals of all motors.
  2. Terminals of all equipment, i.e., UPS, refrigeration compressors, etc.

### **3.06 PHASE RELATIONSHIP**

- A. Examine connections to equipment for proper phase relationships. Verify proper motor rotation.

### **3.07 CORRECTION OF DEFECTS**

- A. When tests disclose any unsatisfactory workmanship or equipment furnished under this Contract, correct defects and retest. Repeat tests until satisfactory results are obtained.
- B. When any wiring or equipment is damaged by tests, repairs or replace such wiring or equipment. Test repaired items to ensure satisfactory operation.

**3.08 CONTRACTOR STARTUP AND REPORTING**

- A. Contractor shall prepare and submit a complete set of test reports as outlined in this section.

**END OF SECTION 26 08 13**