

SECTION 26 05 45

UTILITY SERVICES FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish and install electric and telephone services and associated equipment at the Site.
2. CONTRACTOR shall furnish and install the following Work regarding electric service:
 - a. transformer concrete pads and associated grounding.
 - b. secondary cable and terminations, conduits, and associated underground ductbanks.
 - c. Trenching for utility primary underground duct.
 - d. Meter cabinet and CT cabinet.
 - e. Transformer grounding.
3. Electric utility company, will furnish and install the following:
 - a. primary cable, terminations, and splices.
 - b. Transformers.
4. Provide telephone terminal board complete with backboard and an underground telephone duct from telephone riser pole to the location shown or indicated. Telephone cable will be furnished and installed by the telephone company.
5. Work in connection with electric and telephone services shall be in accordance with requirements of the electric utility company and telephone company.

B. Coordination:

1. CONTRACTOR shall coordinate with electric utility company and local telephone company relative to electric and telephone service connections and requirements. CONTRACTOR shall make all necessary arrangements with electric utility and telephone company.
2. The Contract Price as awarded includes all costs associated with providing electric service and telephone service to the Site.

C. Related Section:

1. Section 26 05 13, Medium Voltage Cables

1.2 REFERENCES

A. Standards referenced in this Section are:

1. ANSI C37.35, Guide for the Application, Installation, Operation and Maintenance of High Voltage Air Disconnecting and Load Interrupter Switches.

2. ANSI C37.46, Specifications for Power Fuses and Fuse Disconnecting Switches
3. ANSI/IEEE C62.11, IEEE Metal Oxide Surge Arresters of AC Power Circuits.

1.3 QUALITY ASSURANCE

A. Pre-installation Conference:

1. Prior to transmitting submittals for materials and equipment related to electrical service or telephone service, and prior to installing materials and equipment associated with electrical service or telephone service, arrange a conference at the Site with the following:
 - a. Electric utility company and telephone company.
 - b. Supplier representatives (as required) for materials and equipment associated with electrical service or telephone service.
 - c. Installers of other work related to and adjacent to electric and telephone services Work.
 - d. ENGINEER and Resident Project Representative (as applicable).
 - e. Other representatives directly concerned with performance of electric service and telephone service Work.
2. Review at the conference the following relating to electrical service and telephone service Work:
 - a. Review Project requirements including Contract Documents, approved Shop Drawings and other submittals, requests for interpretation transmitted by CONTRACTOR to ENGINEER, and other pertinent documents.
 - b. Review scope of Work and scope of utility company work.
 - c. Review required samples and submittals, both completed and to be completed.
 - d. Review proposed costs for work that will be invoiced by utility companies.
 - e. Review status of Work related to utility services and Progress Schedule related to utility services.
 - f. Review availability of materials, tradesmen, equipment, and facilities required for progress, to avoid delays, and to protect the Work from damage.
 - g. Review required inspection, testing, certifying, and quality control procedures.
 - h. Review methods for complying with requirements of utility companies.
3. Reconvene conference at earliest opportunity if additional information must be developed to conclude the required topics of the conference.
4. Record in writing discussions of conference and decisions and agreements and disagreements; and revisions or changes agreed upon, reasons therefore, and parties agreeing or disagreeing with them. Furnish copy of record to each party attending and the OWNER.

1.4 SUBMITTALS

A. Action Submittals: Submit the following:

1. Shop Drawings:
 - a. Drawings showing proposed layout of electrical utility service.
 - b. Drawings showing proposed layout of telephone service.
2. Product Data:
 - a. Manufacturer's literature and technical information, including technical specifications, indicating compliance with the Contract Documents for materials and equipment and construction procedures specified in this Section.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Fused Loadbreak Cutouts:
 1. Provided by the local utility.
- B. Lightning Arresters:
 1. Arresters: Arresters shall be standard distribution class valve arresters, metal-oxide type, suitable for operation on both overhead and underground distribution systems. Arresters shall be capable of cross arm mounting and shall have line and ground terminals capable of accepting copper or aluminum conductors from No.6 solid to No. 2 stranded. Test arresters in accordance with ANSI C62.11.
 2. Ratings: Arresters shall be rated for 5 KV.
 3. Identification: Provide each arrester unit with permanent nameplate that shall include the following:
 - a. Manufacturer.
 - b. Model.
 - c. Voltage rating.
 - d. Date of manufacturer.
 - e. Duty cycle rating.
 4. Manufacturers: Provide products of one of the following:
 - a. Cooper Power Systems.
 - b. ABB Company.
 - c. Approved equivalent.
- C. Cable Terminators:
 1. Terminators: Shall be slip-on type porcelain; factory assembled and shall include built-in stress relief and insulating material for bracket mounted on metering/ riser pole. Equip each terminator with adapter kits and connectors suitable for use with copper shielded cable of type specified in Section 26 05 13, Medium Voltage Cables.
 2. Ratings: Suitable for operation on a 5 KV supply. Current rating to be the same as for the cable.
 3. Manufacturers: Provide products of one of the following:
 - a. G and W Electric Company.
 - b. Joslyn Manufacturing Company.

- c. Approved equivalent.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install electric service materials and equipment in accordance with requirements of electric utility company, and install telephone service materials and equipment in accordance with requirements of telephone company. Install materials and equipment in accordance with NESC.
- B. Install equipment in accordance with manufacturer's written recommendations.

3.2 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Provide field testing and inspection of the load break switches. Field testing shall be in accordance with the manufacturer's recommendations and shall be performed by manufacturer's authorized representative.
 - 2. After installation and before equipment is energized; the load break switches shall be inspected, adjusted, and tested. The manufacturer's representative shall inform OWNER and ENGINEER if the equipment has been correctly installed, adjusted, and tested. No equipment is to be energized without the permission of OWNER.
 - 3. Perform the following tests and inspections before energizing load break switches. Provide test equipment and services for testing load break switches.
 - 1. Inspect the physical and mechanical conditions.
 - 2. Inspect all electrical connections to ensure connections are clean and tight, using a calibrated torque wrench.
 - 3. Perform operational checks and tests recommended by the equipment manufacturer. Verify that switches operate open and close correctly after they are energized.
- B. Supplier's Services:
 - 1. Provide services of qualified factory trained specialists from manufacturer to instruct OWNER's operations and maintenance personnel in recommended operation and maintenance of gang-operated load break switches. Training requirements, duration of instruction, and qualifications requirements shall be in accordance with Section 01 79 23, Instruction of Operations and Maintenance Personnel.

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