SECTION 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section and to all of Divisions 26.

1.2 SUMMARY

A. Section Includes general requirement applicable to components and systems included in Electric Contract

B. Products Installed but Not Furnished Under This Section

1. Make electrical connections to equipment shown on Drawings and furnished by other Contractors. Obtain approved wiring diagrams and location drawings for roughing in and final connections from Contractor furnishing equipment.

1.3 REFERENCES

A. AIA American Institute of Architects
B. ADA Americans with Disabilities Act
C. AISC American Institute of Steel Construction
D. ANSI American National Standards Institute
E. ASTM ASTM International
F. IBC International Building Code
G. IEEE Institute of Electrical and Electronics Engineers, Inc. (The)
H. IES Illuminating Engineering Society of North America
I. NEC National Electrical Code
J. NEMA National Electrical Manufacturers' Association
K. NETA International Electrical Testing Association
L. NFPA National Fire Protection Association
M. UL Underwriters' Laboratories, Inc.

1.4 DEFINITIONS

A. “Existing”: Equipment depicted on Drawings with an “E” designation denotes existing equipment to remain.

B. “Modify”: Disconnect equipment, remove circuitry to a point beyond demolition and tag for reuse, store equipment for reuse and reinstall as specified in Contract Documents. Modify/extend circuitry to new equipment locations and reconnect with necessary control/monitoring wiring (in Conduit) as required. The Contractor is responsible for protecting equipment from damage during removal, storage and reinstallation.

C. "Replace": Existing equipment to replace. Refer to relevant Drawing Project Manual Specification for additional information and requirements.

1.5 SYSTEM DESCRIPTIONS

A. Design Requirements - Provide complete systems, properly tested, balanced, and ready for operation including necessary details, items and accessories although not expressly shown or specified, including (but not limited to):

1. Wiring and raceway for work specified in Project Manual and/or shown on Drawings.
2. Electrical devices and equipment for work specified in Project Manual and/or shown on Drawings.
3. Systems included, but not limited to:
   a. Electrical utility connection to include metering cabinet and disconnect as required by utility company installation guidelines.
   b. Electrical connections including providing local disconnecting switches for the equipment to be served.
   c. Control system. Provide connecting conduit-wiring to respective VFDs for Pump Motor systems and signals to instruments or control devices.
   d. Communications equipment. Provide conduit-wiring to respective communications devices and for status signals and alarms that the communications device serves.
   e. Lighting and lighting controls.
   f. Convenience receptacles

B. Electric Layouts: Arrange control devices disconnect switches, equipment, raceways, and similar components neatly, orderly and symmetrically. Arrangements shown on Drawings are diagrammatic only; provide and adjust raceways, wiring, and other components as required.

C. Power Connection: Coordinate scheduling of power connection with the Utility Company. The incoming power drop and associated equipment must be inspected by the local Authority Having Jurisdiction prior to coordinating with Utility Company.

1.6 SUBMITTALS

A. General Division 26 submittal requirements:

1. Comply with requirements of SECTION 01 33 00 – SUBMITTAL PROCEDURES and as modified below.

2. Product Data: Submit product data for items listed in individual technical section. Clearly identify manufacturer, pertinent design, function, materials, construction and performance data specifically addressing specification description and Contract Document requirements of item. Strike out products that are not applicable to item being submitted, where more than one product is indicated on manufacturer product literature.

   a. Cover Sheet: Attach cover sheet, identified in Section 01 33 00, to Product Data of each item submitted. Provide cover sheet for only one type of item with related accessories, equipment with related components. Do not combine unrelated items under the same cover sheet.

b. Specified Equivalent Product Data: Submit manufacturer's product information including product literature, technical specifications and descriptions, performance data and, and similar items to demonstrate compatibility with Basis-of-Design Equipment as specified.

3. Shop Drawings: Submit detailed drawings for electrical equipment layouts, showing exact sizes and locations for approval before beginning work.

   a. Do not proceed with installation of systems in each area until agreement is reached with all concerned on exact arrangements for each room or area, unless otherwise directed by Architect/Engineer. If Contractor proceeds prior to resolving conflicts, Contractor shall modify installed Work as required to permit other systems to proceed with a coordinated installation.
   b. Specified Equivalent Drawings: Submit detailed drawings of proposed Specified Equivalents, indicating proposed installation of equipment and showing maintenance clearances, required service removal space other pertinent revisions to arrangement and configuration shown in Contract Documents.

4. Samples: On all submittals, indicate standard factory color and factory finish surfaces. Where more than one color is available, selection will be made by Architect from manufacturer's full range of colors. Electronically transmitted color samples are not acceptable.

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for sleeves and sleeve seals. Include rated capacities, and furnished specialties and accessories.

   1. Penetration firestopping materials.
   2. Penetration firestopping assembly drawings.

1.8 QUALITY ASSURANCE

A. Regulatory Requirements:

   1. Codes and Standards: Comply with applicable Federal, State and local building and electrical codes, laws, ordinances, and regulations, and comply with applicable NFPA, National Electrical Code and utility company requirements and regulations. Provide Underwriters Laboratories Seal on all materials.
   2. Permits and Inspections: Obtain approvals, tests, and inspections required by Architect, Engineer, local electrical inspector, agent or agency specified in Project Manual, or National, State, or local codes and ordinances.

      a. Schedule electrical inspection by an agency acceptable to the local Authority Having Jurisdiction and submit final inspection certificate to Architect/Engineer.
      b. Furnish materials and labor necessary for tests and pay costs associated with tests and inspections.

c. Conduct tests under load for load balancing and where required by codes, regulations, ordinances, or technical Specification.

3. Electrical Components, Devices, and Accessories: UL Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to Authorities Having Jurisdiction and marked for intended use.

1.9 DELIVERY, STORAGE AND HANDLING

A. Storage and Protection:

1. Take precautions to store materials and products to protect finishes and not permit dust and dirt to penetrate equipment.
2. Replace equipment damaged beyond reasonable repair as required by Architect/Engineer.
3. Refinish any equipment with marks, stains, scratches, dents, and other aesthetic damage that doesn't impede operation of equipment as required by Architect/Engineer.

1.10 COORDINATION OF WORK

A. New Construction:

1. Openings, Chases, Recesses, Sleeves, Lintels and Bucks (required for admission of Electric Contract systems and components): Coordinate requirements with General Contractor for inclusion in General Contract. Furnish necessary information (e.g. locations and sizes) to General Contractor in ample time for installation of systems and components included in Electric Contract.
2. Anchor Bolts: Deliver to Contractor responsible for General Work anchor bolts required for Electric Contract construction that are to be installed in construction included in General Contract.
3. Locate settings, check locations as installation in General Contract progresses, and provide templates or holding fixtures as required to maintain proper accuracy.

PART 2 - PRODUCTS

2.1 SLEEVE AND SLEEVE SEALS

A. Comply with requirements for sealants in fire rated penetrations specified in Section 26 05 44; "Sleeve and Sleeve Seals for Electrical Systems."

B. Submit Manufacturers Product Data Sheets for each type of product selected. Certify that Firestop Material is free of asbestos and lead paint and complies with local regulations.

1. Certification by firestopping manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs) and are nontoxic to building occupants.

C. Submit system design listings, including illustrations from qualified testing and inspection agency that is applicable to each firestop configuration.

D. Submit a project specific Penetration Firestopping Schedule indicating where each firestop configuration will be used.

2.2 GROUT

A. Description: ASTM C 1107, Grade B, non-shrink, non-metallic, high strength grout, suitable for interior and exterior, above and below grade applications.

1. Characteristics: Post-hardening, volume-adjusting, non-staining, non-corrosive, non-gaseous, and recommended for interior and exterior applications.
2. Design Mix: 5000-psi, 28-day compressive strength.
3. Packaging: Premixed and factory packaged.

2.3 SEALANTS

A. Comply with requirements for sealants in non-fire rated penetrations specified in Section 07 92 00 "Joint Sealants."

B. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Building Systems; Omniplus.
b. Dow Corning Corporation; 786 Mildew Resistant.
c. GE Advanced Materials - Silicones; Sanitary SCS1700.

2.4 ACCESS DOORS

A. Provide Access Panels and Doors for Electrical Items that are behind the finished surfaces or otherwise concealed. Access Doors and Frames shall be located in coordination with Work of other trades and/or Project Architect/Engineer.

2.5 PAINT AND FINISHES

A. Provide painting and finishing of electrical assemblies per manufacturer’s recommendations.

PART 3 - EXECUTION

3.1 CUTTING AND PATCHING

A. Do not cut waterproofed floors or walls for admission of any equipment or materials and do not pierce any structural members without written permission from Architect/Engineer.

B. Furnish and install sleeves, inserts, panels, raceways, boxes, and similar infrastructure, ahead of general construction work and maintain Contractor personnel at Site during installation of general construction work to be responsible for and to maintain these items in position.

C. Unless otherwise noted elsewhere in Contract Documents, bear expense of cutting, patching, repairing or replacing of work of other trades made necessary by any fault, error or tardiness on part of Electrical Contract or damage done by Electric Contract. Employ and pay Contractor whose work is involved.

3.2 DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS

A. Thoroughly demonstrate and instruct Owner's designated representative in care and operation of electrical systems and equipment furnished and installed in Electric Contract.

1. System Operator: Maintain competent operator at building for at least 2 days in 2 consecutive weeks after Owner takes occupancy of major parts of building to operate systems and equipment in presence of Owner's representative.

2. Factory Representative: In addition to demonstration and instruction specified above, provide technically qualified factory representatives from manufacturers of major equipment, to train Owner's representatives in care and operation of applicable products as specified in applicable technical sections of Division 26.

3. Coordinate and schedule time and place of all training through the Architect/Engineer at the Owner’s convenience.

4. Submit letters attesting to satisfactory completion of instruction, including date of completion of instruction, names of persons in attendance, and signature of Owner’s authorized representative.

5. Architect's representative must be present when Owner's representatives participate in instruction.

6. The following equipment and systems are included:

   a. Diesel generator system.
   b. Pump control system and instrumentation, including VFDs and or starters.
   c. Auto Dialer system.
   d. Lightning protection system.

3.3 GROUTING

A. Mix and install grout for electrical equipment base bearing surfaces, other equipment base plates, and anchors.

B. Clean surfaces that will come into contact with grout.

C. Provide forms as required for placement of grout.

D. Avoid air entrapment during placement of grout.

E. Place grout, completely filling equipment bases.

F. Place grout on concrete bases and provide smooth bearing surface for equipment.

G. Place grout around anchors.

H. Cure placed grout.

3.4 SEALANTS

A. Install sealants according to the requirements of Manufacturer's Instructions of Joint Sealant Materials to be used.

3.5 FIRESTOPPING

A. Install firestopping according to the requirements of Manufacturer's Instructions of Penetration Firestopping to be used.

B. Applied Fireproofing:

1. Coordinate the installation of hangers, supports and accessories from the structural steel with the fireproofing installation. Install all hangers and supports prior to installation of fireproofing.
2. Repair or replace existing fireproofing removed as a part of Electrical Work installation.

    a. Employ the services of an approved fireproofing contractor to repair or replace the fireproofing by patching any areas that have been removed or damaged due to the installation of work after the completion of the fireproofing.

C. Repaired or replacement fireproofing shall match the fireproofing adjacent to the repaired area. All warranties shall be maintained.

END OF SECTION