

## **SECTION 26 05 05.00 - EXISTING CONDITIONS**

### **PART 1 - GENERAL**

#### **1.1 GENERAL REQUIREMENTS**

- A. Perform a detailed pre-bid walk-through field inspection to review the existing structures and premises, to determine existing conditions, and to determine scope of required electrically related work. Include applicable accessible ceiling cavity areas in this inspection.
- B. It is not the intent of this section, or of drawings, that existing conditions be accurately shown. Existing electrical work is shown to a very limited extent on drawings and is shown for general planning reference only. Locations and information were derived from cursory visual observations or from portions of documents that were prepared for previously installed work (not from record drawings or "as-builts").
- C. Do not reuse removed electrical materials unless specifically indicated in project manual or on drawings. Existing wiring systems may be utilized only to the extent indicated in project manual, or on drawings, or as directed by Owner's Representative in field.
- D. Hold routing of new raceways in existing buildings as tightly as possible to the structure above. Obtain approval of Owner's Representative prior to installation.
- E. If required to accommodate construction related activities temporarily remove, store in protected location on site, and reinstall conflicting electrical equipment, luminaires, or devices that are to remain or to be relocated. The following applies to electrical materials that will remain or be reused under this project.
  - 1. Protect during construction activities.
  - 2. Clean and re-lamp luminaires immediately prior to occupancy of the finished construction area.
  - 3. Clean and service (if service is required) equipment in the construction area immediately prior to occupancy of the area.
- F. Effect on Adjacent Occupied Areas:
  - 1. Maintain existing electrical service and feeders to occupied areas and operational facilities, unless otherwise indicated, or when authorized otherwise in writing by Owner's Representative. Provide temporary service during interruptions to existing facilities. Schedule momentary outages when necessary for replacing existing wiring systems with new wiring systems. When that "cutting-over" has been successfully accomplished, remove related wiring that has been abandoned.
  - 2. Carefully coordinate work and system shutdowns in advance with Owner's Representative, and with affected trades so that normal building activities and other construction trades are minimally affected. Perform electrically related construction

work, which will affect an occupied area (including those which are located outside the immediate area of project work) at special times as directed by Owner's Representative in field.

3. Provide work in a manner that ensures existing systems and components remain fully operational in occupied spaces during occupied periods.
4. Provide and maintain temporary partitions and dust barriers adequate to prevent the spread of dust and dirt to adjacent finished areas and other system components. Protect adjacent installations during cutting and patching operations. Remove protection and barriers after demolition operations are complete.
5. Interim Air Quality (IAQ) Work: Prevent airborne dust and particulate matter resulting from electrical work from entering occupied spaces, and from entering air intakes to operating HVAC systems. Make required electrical openings through walls and floors immediately prior to installation of work. Properly and permanently seal electrical openings immediately after installation of work. Provide temporary seals for applications where penetrations are made but cannot be permanently sealed within four hours.

## 1.2 EXISTING POWER DISTRIBUTION EQUIPMENT

- A. This subsection applies for adding components to existing power distribution equipment. Unless specifically indicated otherwise on drawings or in specifications provide new breaker in instances where new circuits or feeders are shown connected to existing circuit breaker type power distribution equipment.
  1. Provide factory-assembled, molded-case circuit breakers of frame sizes, characteristics, and ratings including RMS symmetrical interrupting ratings required. Provide breakers with permanent thermal and instantaneous magnetic trip, and with fault-current limiting protection, ampere ratings as indicated. Construct breakers for mounting and operating in any physical position, and operating in a minimum ambient temperature of 40 deg C. Provide breakers with mechanical screw type removable connector lugs, AL/CU rated. All branch circuit breakers shall be full ambient compensated thermal magnetic molded case with quick-make and quick-break action and positive handle trip indication, both on manual and on automatic operation.
  2. Breakers shall be of the over-the-center toggle operating type with the handle going to a position between "on" and "off" to indicate automatic tripping. All circuit breakers shall be full size. Do not use "tandem" or "split" breakers. All multi-pole breakers shall have internal common trip with all load side box lugs of one breaker in the same gutter. All circuit breakers shall have sealed cases to prevent tampering.
  3. All 15 and 20 ampere branch circuit breakers shall be UL Listed as SWD (switching duty). All 15-70 ampere branch circuit breakers shall be HACR Type. All branch circuit breakers serving all ballasted (fluorescent/HID) lighting loads shall be HID rated. Provide handle lock-on devices of the non-padlocking type for life safety, special systems and other essential circuits.

- B. Provide components that are manufactured by the same manufacturer as the existing equipment in which they will be installed, and that are intended by the manufacturer to be installed in said equipment. Provide components with fault current (A.I.C.) ratings that meet or exceed the ratings of the existing power distribution equipment. In existing buildings where fault current values are not indicated on drawings, coordinate with existing “upstream” distribution equipment, and provide equipment AIC ratings that meet or exceed same.
- C. Determine which existing branch circuits must remain active. Reconnect (or maintain in operation as applicable) and schedule them. Completely re-type panelboard directories for panelboards affected by this project using accurate “as-built” information. Where applicable for multi-wire branch circuits that are reused to feed new or replacement equipment designated on drawings, replace existing single-pole breakers with multi-pole breakers compliant with NFPA 70. Where applicable ensure that reconnected shared neutrals are properly balanced with the correct phase conductors. Where applicable, provide correct color-coding for insulation of reconnected conductors in a manner compliant with NEC. All specific scheduling shown on drawings is shown to indicate new branch circuiting requirements. Exact numbering sequence of circuits shall be determined by this contractor in field after this contractor has made adjustments as may be necessary for load balancing.

### **1.3 PRE-EXISTING CODE VIOLATIONS**

- A. Inspect existing electrical work in areas accessed under this project and bring into compliance with current NEC. This applies only to the extent that such work is uncovered in the immediate project areas affected by construction activities, and only to the limited extent that it applies to pre-existing general installation methods such as missing J.B. plate, open J.B. knockout, minor conduit re-anchoring and minor exposed wiring/connections. If more extensive code or safety violations are discovered, immediately bring them to the attention of the Owner's Representative (detailed in writing) along with proposed cost for corrections and impact (if any) on the construction schedule.

### **1.4 POWER CONTINUITY REQUIREMENTS**

- A. The following notes broadly define some of the specialty base bid scope of work required to provide special temporary power for existing facilities to accommodate utility power interruptions. Field-verify all specifics and provide materials, normal time labor, premium time labor, services, safety measures, etc. for all work under base bid, including but not limited to the following.
  - 1. Minimize risks to individuals and property throughout the duration of the project. Keep full electrical services online during all periods of time that any affected facility is occupied. Coordinate with and obtain approval from the Owner and Design Professionals for all materials, methods, steps, locations, installations, etc. prior to commencement of work. Comply with NFPA 70E. Determine and employ means and methods as required to safely and securely implement all related work.

2. Do not interrupt electrical utility service(s) to the facility, or any part thereof, unless permitted under the following conditions, and then only after providing temporary electrical service(s)/feeds.
  - a. Notify Owner and Design Professionals no fewer than fourteen days in advance of each proposed interruption of an electrical service.
  - b. Do not proceed with interruption of an electrical service without Owner's written permission.
  - c. Do not energize any new work without notification to, and subsequent permission from, the Owner.
3. During construction related electrical outages, switchovers, disconnections, reconnections, etc., provide all temporary insulated conductors, taps, jumpers, etc. to and from existing and new or temporary electrical equipment, including but not limited to, conductors, splices, lug fittings, rework, etc.
4. Schedule outages in advance with Owner, at days of week and times of day or night as directed by Owner, as necessary to accommodate all construction related electrical outages, switchovers and related connections and disconnections.

**END OF SECTION 26 05 05.00**