

**SECTION 16010**

**BASIC ELECTRICAL REQUIREMENTS**

**Part 1 -Design Directives**

The electrical design package shall be prepared with adequate detail to convey the specific requirements outlined in this document. The package of drawings shall include as a minimum the following:

Separate plan views of power and lighting device locations for each level of the building. It is the joint responsibility of the Architect and Engineer to carefully coordinate the location of outlets for power, telephone, data, CATV, and fire alarm with building finishes and furnishings.

Power drawings shall include the fire alarm and telephone/data/catv equipment locations and associated cable tray. A separate layer showing only fire alarm devices will be necessary to meet the as-built documentation requirements of section 16721.

Lighting drawings shall show all lighting panels and controls/dimming panels even if they also appear on the power drawing. A fixture schedule that includes fixture quantities shall be included

Single-line riser diagram including lighting and power distribution systems

Single-line riser diagram for telephone/data/CATV systems

Single-line diagram for fire alarm system

Elevation drawing showing typical mounting heights and locations for standard devices such as receptacles, switches, fire alarm devices, access control equipment, panelboards and all other wall mounted components, interior and exterior.

Typical details for constructing and mounting trapeze type conduit hangers.

A single line drawing of the building grounding electrode system showing the main grounding bus and all conductors that attach to grounding electrodes and separately derived systems. The details shall include size and type of wire and conduit for all grounding electrode conductors and the point and method of connection to each device or electrode.

Connection details for motors and other equipment that require flexibility in the electrical connection.

The engineer shall provide all connection details outlining materials and methods for modular office furnishings that require flexible connections to the permanent building wiring system.

Careful coordination is required in the design phase when planning for the installation of pre-wired modular office furnishings. Care must be given to the placement of junction boxes that will provide the interface to the building wiring system. Consult the telephone/data/CATV specification section for details of interface with modular furnishings.

Buildings requiring telephone service shall have a ground wire installed from the building grounding electrode system to the telephone equipment board. The ground shall be a minimum of #6 copper and shall have an impedance to ground no greater than ten ohms. Final connection of the ground wire to the telephone apparatus shall be performed by DC-Telephone services.

Access control, surveillance, intrusion detection systems (collectively referred to as security systems), and building automation systems shall be installed in covered cable tray or metallic conduit. Bridal rings are not acceptable.

If the project is to be commissioned, the contractor is required to work with the commissioning agent and related sub-contractors as necessary to fulfill the requirements of section 18000. The costs associated with this requirement shall be included in the contractor's base bid.

**Part 2            -Products**

See section 16050

**Part 3            -Execution**

See section 16050