



SECTION 16180

EQUIPMENT WIRING SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Electrical connections to equipment specified under other Sections, including connections to built-in residential appliances and mechanical HVAC equipment.

1.2 RELATED WORK

- A. Division 11 - Appliances.
- B. Division 13 - Sprinkler System
- C. Division 15 - Mechanical Equipment.
- D. Section 16111 - Conduit.
- E. Section 16120 - Wire and Cable.
- F. Section 16130 - Boxes.
- G. Section 16441 - Disconnect Switches.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

PART 2 - PRODUCTS

2.1 DISCONNECT SWITCHES

- A. Provide disconnect switches as specified under Section 16441.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.



3.2 PREPARATION

- A. Review equipment submittals prior to installation and electrical rough-in. Verify location, size, and type of connections. Coordinate details of equipment connections with supplier and installer.

3.3 INSTALLATION

- A. Use wire and cable with insulation suitable for temperatures encountered in heat-producing equipment.
- B. Make conduit connections to mechanical equipment using flexible cable or flexible conduit.
- C. Make wiring connections in control panel or in wiring compartment of pre-wired equipment in accordance with manufacturer's instructions. Provide interconnecting wiring where indicated.
- D. Install all controllers, control stations, and control devices such as limit switches, speed switches, and temperature switches that are supplied with equipment items. Connect with conduit and wiring.
- E. Provide a local means of disconnect for all motor loads except where factory supplied controllers are provided which contain disconnecting means.
- F. Reference to specification Section where control connection and wiring provisions are specified.

3.4 MECHANICAL SYSTEMS EQUIPMENT CONNECTIONS

- A. Except where provided as an integral element by the equipment manufacturer, provide a combination type magnetic motor starter for all 208-volt fans and/or pumps. Mount starters locally at equipment item as shown on Drawings. Starters shall be as specified under Section 16481.
- B. Except where provided as an integral element by the equipment manufacturer, provide a SPST manual motor starter switch for all 120-volt motors that are part of mechanical systems equipment items. Mount manual switches locally at motors. Manual switches shall be as specified under Section 16481.
- C. Where noted on the Drawings that an equipment item is to be connected with a local speed switch, make all necessary connections to the speed switch (furnished under Division 15) and to the equipment motor.
- D. Provide an emergency cut-off boiler switch at all doors to the Boiler Room and interlock switches such that turning off any switch shall shut off all oil-fired boilers and other oil-fired equipment.



- E. Interlock the elevator shaft smoke relief vent with the fire alarm system as directed by <sup>1</sup> local fire department.

### 3.5 ELEVATOR OPERATION COORDINATION

- A. Interlock alarm system heat detectors at the top and bottom of the elevator shaft, and in the Elevator Machine Room with the elevator power service shunt trip such that an alarm condition at any of these detectors shall automatically disable the associated elevator electrical service feeder. Provide an interlock between the fire alarm system smoke detectors at the Elevator Lobbies on each floor and the smoke detector in the Elevator Machine Room, such that:
1. An alarm activation by detectors at the second, third or fourth floor level lobbies, or at the detector in the elevator machine room, shall automatically send the elevator to the ground floor lobby.
  2. An alarm condition activated by the ground floor lobby smoke detector shall automatically send the elevator car to the second level lobby.
- B. Interlock fire alarm system with the relief vent at the top of the elevator shaft such that an alarm condition caused by any house initiating device shall automatically open the relief vent.
- C. Interlock the smoke damper at the elevator shaft to an auxiliary contact at the Lobby smoke detectors.

END OF SECTION