

SECTION 16141
WIRING DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES:

- A. Wall switches.
- B. Wall dimmers.
- C. Receptacles.
- D. Device plates.
- E. Floor box service fittings.
- F. Poke-through service fittings.

1.2 REFERENCES

- A. NEMA WD 1 - General Purpose Wiring Devices.
- B. NEMA WD 6 - Wiring Device Configurations.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years experience.

1.5 ALLOWANCES

- A. Provide for twenty additional receptacles as directed in field. Allowance includes purchase, delivery and installation of box, receptacle cover plate, wire and 100 feet of conduit for each receptacle.

PART 2 PRODUCTS

2.1 WALL SWITCHES

- A. Single Pole Switches shall be 20 amps, 120/277 volts, industrial, heavy duty, specification grade, back and side wired, toggle type, and ground screw. Switches may be single pole, double pole, three-way, four-way, indicator type, locator type, key type, and pilot lighted as shown on the plans. Switches for normal lighting shall be ivory color (unless otherwise specified) and switches for emergency lighting shall be red color.
- B. Manufacturers:
 - 1. Hubbell.
 - 2. Leviton.
 - 3. Pass & Seymour.
 - 4. Substitutions: Under provisions of Section 01600.
- C. Time Delay Light/Fan Switch:
 - 1. Penn Ventilator Model Airminder AM-12.
 - 2. Substitutions: Under provisions of Section 01600.

2.2 WALL DIMMERS

- A. Manufacturers:
 - 1. Lutron.
 - 2. Leviton.
 - 3. Substitutions: Under provisions of Section 01600.

- B. Description: NEWA WD1, semiconductor dimmer for incandescent lamps, type as indicated on Drawings or Schedule.
- C. Device Body: Ivory plastic with linear slide.
- D. Voltage 120 volts.
- E. Power Rating: Match load shown on Drawings; 600 watts minimum.

2.3 RECEPTACLES

- A. Receptacles shall be 20 amps, 125 volts grounding type, industrial, specification grade, back and side wired, and with ground screw. Receptacles shall be single, duplex, quaderplex, GFCI, and surge protected as shown on the plans.
- B. General convenience receptacles shall be ivory color (unless otherwise specified), receptacles supplied by branch circuits via emergency generator backed panels shall be red color, and receptacles for communication systems equipment (computers) shall be gray color.
- C. Heavy-duty special receptacle outlets for dryers, kiln, and ranges as specified on the plans.
- D. Surge protected receptacles shall be UL 1449 listed (second edition), shall have metal minimum of four metal oxide varistors protecting phase-neutral, phase-ground, and neutral-ground. These receptacles shall have power-on indicator light and damage alert light or sound features.
- E. Manufacturers:
 - 1. Hubbell.
 - 2. Leviton.
 - 3. Pass & Seymour.
 - 4. Substitutions: Under provisions of Section 01600.

2.4 WALL PLATES

- A. Decorative Cover Plate: Stainless steel type 302 satin finished, non-magnetic.
- B. Weatherproof Cover Plate: Cast type, UL listed for wet and damp locations.
 - 1. Sierra.
 - 2. Hubbell.
 - 3. Leviton.
 - 4. Pass & Seymour.
 - 5. Substitutions: Under provisions of Section 01600.

2.5 POKE-THROUGH FITTINGS

- A. Manufacturers:
 - 1. Hubbell.
 - 2. Steel City.
 - 3. Leviton.
 - 4. Pass & Seymour.
 - 5. Substitutions: Under provisions of Section 01600.
- B. Description: Assembly comprising service fitting, poke-through component, firestops and smoke barriers, and junction box for conduit termination.
- C. Fire Rating: Code requirement.
- D. Service Fitting:
 - 1. Type: Pedestal or Flush
 - 2. Housing: Satin aluminum
 - 3. Device Plate: Stainless steel
 - 4. Substitutions: Under provisions of Section 01600.

2.6 TIME CLOCKS

- A. Manufacturers:
 - 1. Intermatic.
 - 2. Paragon.

3. Tork.
 4. Substitutions: Under provisions of Section 01600.
- B. Enclosure: NEMA ICS 2; Type as required to meet conditions of installation unless indicated on the Drawings.
- C. Time clocks to be a 7-day, 24-hour, day skipping with minimum 12-hour carryover.

2.7 PHOTOCELL SWITCH

- A. Manufacturers:
1. Intermatic.
 2. Paragon.
 3. Tork.
 4. Substitutions: Under provisions of Section 01600.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify conditions under provisions of Section 01039.
- B. Verify outlet boxes are installed at proper height.
- C. Verify wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify floor boxes are adjusted properly.
- E. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.2 PREPARATION

- A. Provide extension ring to bring outlet boxes flush with finished surface.
- B. Clean debris from outlet boxes.

3.3 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install devices plumb and level.
- C. Install switches with OFF position down.
- D. Install wall dimmers to achieve full rating specified and indicated after de-rating for ganging as instructed by manufacturer.
- E. Do not share neutral conductor on load side of dimmers.
- F. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.
- G. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- H. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
- I. Provide one GFCI receptacle, minimum, in janitorial closets, adjacent to roof mounted equipment and pad mounted air conditioning equipment.
- J. Any receptacle within eight feet of a sink shall be a GFCI type.
- K. Receptacles on science work islands and adjacent to locker room shower and drying areas shall be GFCI type.
- L. When GFCI is specified, use only GFCI receptacles. Do not protect "down stream" receptacles with GFCI receptacles.
- M. Do not install receptacles and/or switches in-group toilets. Light shall be controlled from the nearest custodial space by a toggle switch with pilot light.
- N. Switches in classroom and teachers workrooms for exhaust fans and contactors, shall have a pilot light.
- O. Do not use push-in connections on any device.

3.4 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations of outlet boxes provided under Section 16130 to obtain mounting height specified and indicated on Drawings.
- B. Install wall switch 46" to center above finished floor.
- C. Install convenience receptacle 18" to center above finished floor.
- D. Install convenience receptacle 6" above backsplash of counter.
- E. Install dimmer 46" to center above finished floor.
- F. Install telephone jack 18" to center above finished floor.
- G. Install telephone jack for wall telephone 46" to center above finished floor.
- H. Install outdoor receptacles 60" to center above finished grade.

3.5 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch with circuit energized and verify proper operation.
- C. Verify that each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.

3.6 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

END OF SECTION