

SECTION 16140
WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the contract including General and Special Conditions and General Requirements shall apply to all work under this Section.

1.2 DESCRIPTION OF WORK

A. Provide wiring devices including receptacles, switches and device plates.

1.3 RELATED WORK IN OTHER SECTIONS

A. Related work in other sections:

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|----------------------------------|---------------|
| 1. Electrical General Provisions | Section 16010 |
| 2. Raceways and Boxes | Section 16110 |
| 3. Wire and Cable | Section 16120 |
| 4. Electrical Identification | Section 16195 |
| 5. Grounding | Section 16450 |

1.4 STANDARDS

A. Except as modified by governing codes and by the Contract Documents, comply with the latest applicable provisions and latest recommendations of the following:

1. Switches
 - a) Federal Specification Standard WS-896E.
2. Receptacles
 - a) N.E.M.A. Standard WD-1, 3.2 through 3.10
 - b) U.L. Standard 498 Federal Specification WC596-D.
 - c) ANSI

1.5 SUBMITTALS

A. Submit manufacturer's catalog cuts and specifications for all wiring devices and plates.

PART 2 - PRODUCTS

2.1 SWITCHES

2.2 Provide specification grade, flush mounting, quiet-operating AC type, with toggle operator, heat-resistant plastic housing and self grounding metal strap. Silver or silver alloy contact. Rated 20A at 120-277V and capable of full capacity on tungsten or fluorescent lamp load. Design for side or back wiring with up to Number 10 wire. Verified by UL to meet or exceed Federal specification WS-896E. Use single-pole, double-pole, 3-way, 4-way, lighted, pilot or keyed type, as indicated on drawings or required. Provide Ivory color unless otherwise noted.

20A 120/277V Switch	Arrow Hart	Hubbell	Leviton
1 pole	1221I	HBL1221I	1221-2I
2 pole	1222I	HBL1222I	1222-2I

3 way	1223I	HBL1223I	1223-2I
4 way	1224I	HBL1224I	1224-2I
1 pole locking	1991L	HBL1221L	1221-2LI
3 way locking	1993L	HBL1223L	1223-2LI
1 pole pilot	1991PL	HBL1221PL	1221-PL
1 pole lighted	1991IL	HBL1221IL	1221-LHI

A. Occupancy sensor switches shall be Passive infrared.

1. Wall mounted sensors shall be 120/277V, 0 to 1500 Watt for incandescent or fluorescent lighting and shall have off/auto/on switch, photocell with ambient light control adjustable 1 to 1000 FC, 1 to 20 minute adjustable time delay, LED sensing indicator.

Occupancy sensor	Arrow Hart	Hubbell	Leviton
1 pole wall mount		WSS1200	

2.3 DUPLEX CONVENIENCE RECEPTACLES

A. Provide receptacles with nylon face, high grade brass alloy triple wipe contacts. Conform to NEMA WD1 and WD6. UL listed to Federal Spec WC-596-F

2.4 Provide 2 pole, 3 wire grounding type with a green colored brass hexagonal equipment grounding screw. Grounding system shall be rivetless, single piece brass with no mechanical connections in the primary path between point of ground wire termination and ground blades. Provide isolated ground type where indicated on the drawings.

2.5 Use 15 Amp rated devices except where other devices are indicated on the drawings. Also provide 20 Amp rated devices for single receptacles on 20 Amp circuits. All devices connected to the emergency system are to be red in color.

Duplex receptacle	Arrow Hart	Hubbell	Leviton
15A 125 Vac 2P 3W	5252I	5262-I	5262AI
20A 125 Vac 2P 3W	5352I	5362-I	5362AI
15A 125 Vac 2P 3W GFCI	GF5242I	GF5262I	6599I
20A 125 Vac 2P 3W GFCI	GF5342I	GF5362I	6899I

2.6 FACEPLATES

A. Provide cover plates for wall receptacles, outlets, and switches of 302 stainless steel with satin finish, unless otherwise noted. When two or more switches or devices are shown in one location, mount under a common plate.

2.7 OUTDOOR LOCATIONS

2.8 Provide weather proof covers for devices located outdoors.

PART 3 - EXECUTION

3.1 SWITCHES

A. Where switches are indicated to be installed near doors, corner walls, etc., mount same not less than 2 inches and not more than 18 inches from trim. Verify exact locations with the Architect.

- B. Carefully coordinate the location of switches to insure locations at the strike side of doors.
- C. Furnish and install an engraved legend for each switch that controls exhaust fans, motors, equipment systems, etc., not located within sight of the controlling switch.

3.2 RECEPTACLES

- A. Unless otherwise noted, mount receptacle vertically with U-shaped ground position on bottom.

3.3 GROUND FAULT INTERRUPTERS

- A. Swab all conduits clear of moisture.
- B. Do not combine G.F.I. protected circuits with other circuits in same raceway.
- C. Limit maximum number of G.F.I. protected circuits in any one raceway to a maximum of one circuit.
- D. GFCI devices shall be arranged to be easily located.
 - 1. Label downstream receptacles to indicate the GFCI location where receptacles are more than 20 feet from the GFCI device.
 - 2. GFCI devices located in restrooms shall not feed through to protect devices in other rooms.

3.4 INSTALLATION

- A. All devices shall be flush-mounted except as otherwise noted on the drawings.
- B. Locations
 - 1. Comply with layout drawings for general location; contact Owner's Representative for questions about locations and mounting methods.
 - 2. Relocate outlets obviously placed in a location or manner not suitable to the room finish.
- C. Avoid placing outlets behind open doors.
- D. Align devices vertically and horizontally. Device plates shall be aligned vertically with a tolerance of 1/16". All four edges of device plates shall be in contact with the wall surface.
- E. Mounting Heights as indicated on the Drawings and according to ADA requirements.
- F. Ganging of Switches - provide barriers between ganged 277 volt switches of different phases.
- G. Fastening - securely fasten devices into boxes and attach appropriate cover plates.
- H. Power Outlets - install power outlets complete with back boxes, where installed in existing buildings or extensions of existing buildings. Coordinate phase connections for rotating equipment with connections in existing building.
- I. Install device plates on all outlet boxes. Provide blank plates for all empty, spare and boxes for future devices.
- J. Caulk around edges of outdoor device plates and boxes when rough wall surfaces prevent a raintight seal. Use caulking material as approved by the Architect/Engineer.

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