

SECTION 26 27 26
WIRING DEVICES

PART 1 GENERAL

1.01 THE CONTRACTOR IS REFERRED TO THE “SPECIAL NOTICE TO CONTRACTORS”; SPECIAL CONDITIONS, THE “FORM OF PROPOSAL”; THE “FORM OF BID BOND”; “DIVISION 01 - GENERAL REQUIREMENTS” OF THE CONTRACT SPECIFICATIONS”; THE “CONTRACT DRAWINGS” AND ALL AMENDMENTS AND ADDENDA THERETO; ALL OF WHICH GOVERN THE WORK OF THIS SECTION. THESE SPECIFICATIONS COMPLEMENT AND SUPPLEMENT THE CONTRACT DRAWINGS. ANY VARIATIONS, DISCREPANCY OR CONFLICTING INFORMATION FOUND BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF NYCHA FOR RESOLUTION.

1.02 SECTION INCLUDES

- A. Wall switches.
- B. Wall dimmers.
- C. Receptacles.
- D. Wall plates.
- E. Device plates
- F. Outlet Boxes
- G. Smoke and carbon monoxide detectors

1.03 RELATED REQUIREMENTS

- A. Section 26 - Basic Electrical Requirements
- B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- C. Section 26 05 35 - Surface Raceways: Surface raceway systems, including multioutlet assemblies.
- D. Section 26 05 37 - Boxes.
- E. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
- F. Section 26 09 23 - Lighting Control Devices: Devices for automatic control of lighting, including occupancy sensors.
- G. Section 27 10 05 - Structured Telecommunications Cabling and Enclosures: Voice and data jacks.

1.04 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for; Federal Specification; Revision G, 2001.
- B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification); Federal Specification; Revision F, 1999.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- D. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.

- E. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2010).
- F. NEMA WD 6 - Wiring Device -- Dimensional Specifications; National Electrical Manufacturers Association; 2012.
- G. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- I. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.
- J. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.
- K. UL 1917 - Solid-State Fan Speed Controls; Current Edition, Including All Revisions.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
 - 3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
 - 4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
 - 5. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.
- B. Sequencing:
 - 1. Do not install wiring devices until final surface finishes and painting are complete.

1.06 SUBMITTALS

- A. See Section 01 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
 - 1. Wall Dimmers: Include derating information for ganged multiple devices.
- C. Samples: One for each type and color of device and wall plate specified.
- D. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Operation and Maintenance Data:
 - 1. Wall Dimmers: Include information on operation and setting of presets.
 - 2. GFI Receptacles: Include information on status indicators and testing procedures and intervals.
- F. Project Record Documents: Record actual installed locations of wiring devices.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 - Product Requirements, for additional provisions.
 - 2. Extra Wall Plates: One of each style, size, and finish.

1.07 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.08 DELIVERY, STORAGE, AND PROTECTION

- A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hubbell Incorporated: www.hubbell-wiring.com.
- B. Leviton Manufacturing Company, Inc: www.leviton.com.
- C. Lutron Electronics Company, Inc: www.lutron.com.
- D. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- E. Substitutions: See Section 01 - Product Requirements.
- F. Source Limitations: Where possible, for each type of wiring device furnish products produced by a single manufacturer and obtained from a single supplier.
- G. Source Limitations: Where wall controls are furnished as part of lighting control system, provide accessory matching receptacles and wallplates by the same manufacturer in locations indicated.

2.02 APPLICATIONS

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
- C. **Provide weather resistant GFI receptacles with specified weatherproof covers for all receptacles installed outdoors or in damp or wet locations.**
- D. Provide GFI protection for all receptacles installed within 6 feet of sinks.
- E. Provide GFI protection for all receptacles installed in kitchens.
- F. Provide GFI protection for all receptacles serving electric drinking fountains.
- G. Provide isolated ground receptacles for all receptacles serving computers.
- H. Unless noted otherwise, do not use combination switch/receptacle devices.

2.03 ALL WIRING DEVICES

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- B. Finishes:
 - 1. All Wiring Devices: Coordinate with NYCHA
 - 2. Wiring Devices Installed in Finished Spaces: Coordinate with NYCHA
 - 3. All Wiring Devices: White with white stainless steel wall plate unless otherwise indicated.
 - 4. Wiring Devices Installed in Finished Spaces: White with white stainless steel wall plate unless otherwise indicated.

5. Wiring Devices Installed in Unfinished Spaces: Gray with stainless steel wall plate unless otherwise indicated.
6. Wiring Devices Installed in Wet or Damp Locations: White with specified weatherproof cover unless otherwise indicated.
7. Isolated Ground Convenience Receptacles: White with isolated ground triangle mark on device face.

2.04 WALL SWITCHES

- A. Manufacturers:
 1. Hubbell Incorporated: www.hubbell-wiring.com.
 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 3. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- B. Manufacturer's Catalog Numbers:

Switch Type	Arrow-Hart	Hubbell	Leviton	P&S
Single Pole	1991	1221	1201	20AC1
Double Pole	1992	1222	1202	20AC2
3-Way	1993	1223	1203	20AC3
4-Way	1994	1224	1204	20AC4

- C. Substitutions: See Section 01 - Product Requirements.
- D. All Wall Switches: quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated.
 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- E. Standard Wall Switches: Commercial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw or three way as indicated.
- F. Lighted Wall Switches: Commercial specification grade, 20 A, 120/277 V with illuminated standard toggle type switch actuator and maintained contacts; illuminated with load off; single pole single throw or three way as indicated.
- G. Switches shall be U.L. Listed.
- H. Lighting switches shall be provided as indicated on plans. Where several switches and/or receptacles are shown at the same location, multiple gang boxes and plates shall be used.
- I. Switch plates shall be code gauge steel primed ready for painting.
- J. Check final door swings so the switches are on strike side of door.
- K. Wall mounted light switches shall be toggled mounted in flush boxes and shall be rated "Specifications grade" – (Fed. Spec. WS-896E) A.C. type Ivory plastic and rated at 15 amp. At 125-277 volt.

2.05 WALL DIMMERS

- A. Manufacturers:
 1. Leviton Manufacturing Company, Inc: www.leviton.com.
 2. Lutron Electronics Company, Inc; Maestro Series: www.lutron.com.
 3. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- B. All Wall Dimmers: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD

6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.

- C. Control: Slide control type with separate on/off switch.
- D. Power Rating, Unless Otherwise Indicated or Required to Control the Load Indicated on the Drawings:
 - 1. Fluorescent: 600 VA.
- E. Provide locator light, illuminated with load off.
- F. Provide accessory wall switches to match dimmer appearance when installed adjacent to each other.

2.06 RECEPTACLES

- A. Manufacturers:
 - 1. Hubbell Incorporated: www.hubbell-wiring.com.
 - 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 - 3. Lutron Electronics Company, Inc; Designer Style: www.lutron.com.
 - 4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
 - 5. Substitutions: See Section 01 - Product Requirements.
 - 6. Source Limitations: Where wall controls are furnished as part of lighting control system, provide accessory matching receptacles and wallplates by the same manufacturer in locations indicated.
- B. All Receptacles: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
 - 2. NEMA configurations specified are according to NEMA WD 6.
 - 3. 120 Volt, 2 Pole, 3 Wire Grounding
 - 4. Receptacles shall be constructed of a completely molded case with the back and sides formed of one (1) piece. Receptacles shall be assembled with screws, rivets or eyelets
- C. Convenience Receptacles:
 - 1. Standard Convenience Receptacles: Commercial specification grade, 15A, 125V, NEMA 5-15R; single or duplex as indicated on the drawings.
 - 2. Isolated Ground Convenience Receptacles: Industrial specification grade, 15A, 125V, NEMA 5-15R, with ground contacts isolated from mounting strap; single or duplex as indicated on the drawings.
 - a. Products:
 - 1) Substitutions: See Section 01 - Product Requirements.
- D. GFI Receptacles:
 - 1. All GFI Receptacles: Provide with feed-through protection, light to indicate ground fault tripped condition and loss of protection, and list as complying with UL 943, class A.
 - a. Provide test and reset buttons of same color as device.
 - 2. Standard GFI Receptacles: Commercial specification grade, duplex, 15A, 125V, NEMA 5-15R, rectangular decorator style.
 - a. Products:

	Leviton	Hubbell	P&S
Double	8899	GFR5352	2094

- 1) Substitutions: See Section 01 - Product Requirements

3. Weather Resistant GFI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

2.07 WALL PLATES

- A. Manufacturers:
 1. All device plates shall have beveled edges and shall be installed vertically and with all four edges in continuous contact with finished wall surface without the use of mats or similar devices. In kitchens and toilets provide non-conductive plates. All plates shall be oversized type.

	Arrow-Hart	Hubbell	P & S
Candelabra			
Receptacle	1711	432	427
Red Jewel	87	736	3850

2. Hubbell Incorporated: www.hubbell-wiring.com.
 3. Leviton Manufacturing Company, Inc: www.leviton.com.
 4. Lutron Electronics Company, Inc: www.lutron.com.
 5. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
 6. Substitutions: See Section 01 - Product Requirements
- B. All Wall Plates: Comply with UL 514D.
 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 2. Size: Oversized.
 3. Screws: Metal with slotted heads finished to match wall plate finish.
 - C. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
 - D. Weatherproof Covers for Damp Locations: Gasketed, cast aluminum, with self-closing hinged cover and corrosion-resistant screws; listed as suitable for use in wet locations with cover closed.
 - E. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected.

2.08 SMOKE AND CARBON MONOXIDE (CO) DETECTORS

- A. See section 28 3100 for requirements and as indicated below.
- B. CO Detectors must have a battery backup. CO Detectors shall be electrochemical type.
- C. Smoke Detectors must have a battery backup. Smoke Detectors shall be photoelectric type.
- D. Smoke detectors shall be tied into Existing Fire Alarm System. Provide programming as needed.
- E. Hard wire all carbon monoxide detectors and smoke detectors as per LL7/04

2.09 OUTLET BOXES

- A. See specification section 26 05 37 for requirements and as indicated below.
- B. Zinc treated pressed steel outlet boxes # 1900 with corresponding raised covers shall be provided and installed for all outlets, switches, receptacles, telephones etc., except where otherwise specified Outlet boxes shall be made flush with new gypsum board surface. Lighting boxes shall be 4" bar type boxes.

- C. All outlet boxes that contain receptacles shall be anchored so that the box is rigid when installed and support directly by the wall structure. The outlet box shall be installed so that the receptacle is flush with the surrounding wall. The outlet box for the floor mounted receptacles shall be installed so that the receptacle is surfaced mounted on the floor.
- D. Outlet boxes shall be securely fastened in place and provided with covers and fixture supports where required. The box shall have no other outlet than that required to admit the wiring.
- E. Outlet boxes shall not be installed on wet surfaces. Used only rigid galvanized boxes and provide spacer behind box at 1/2" (min) off wall.
- F. Should job conditions make it necessary to change the location of any of the new outlets the exact location shall be determined by the Housing Authority. Relocate outlets as much as 36" in any direction without increase in cost to the Housing Authority. No outlets are to locate on exposed brick walls, unless otherwise directed to be such by the Housing Authority.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 05 37 as required for installation of wiring devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor.
 - b. Wall Dimmers: 48 inches above finished floor.
 - c. Receptacles: 18 inches above finished floor or 6 inches above counter.
 - 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
 - 3. Where multiple receptacles are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
 - 4. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
 - 5. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.
- C. Install wiring devices in accordance with manufacturer's instructions.

- D. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- E. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- F. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- G. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.
- H. Provide GFI receptacles with integral GFI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.
- I. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- J. Install wall switches with OFF position down.
- K. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
- L. **Do not share neutral conductor on branch circuits utilizing wall dimmers.**
- M. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- N. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- O. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.
- P. Wiring devices shall be firmly screwed to their outlet boxes without depending on wall plates to pull them tight.
- Q. Identify wiring devices in accordance with Section 26 05 53.

3.04 FIELD QUALITY CONTROL

- A. Perform field inspection, testing, and adjusting in accordance with Section 01.
- B. Inspect each wiring device for damage and defects.
- C. Operate each wall switch with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. All testing shall be witnessed by NYCHA.
- G. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust presets for wall dimmers according to manufacturer's instructions as directed by Architect.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION