PART 1 - GENERAL

1.01 SECTION INCLUDES:
   A. Single and duplex receptacles, ground-fault circuit interrupters, integral surge suppression units, and isolated-ground receptacles.
   B. Single- and double-pole snap switches and dimmer switches.
   C. Device wall plates.
   D. Pin and sleeve connectors and receptacles.
   E. Floor service outlets, poke-through assemblies, service poles, and multi-outlet assemblies.

1.02 RELATED WORK SPECIFIED ELSEWHERE:
   A. Identification: Section 26 05 53
   B. Conductors: Section 26 05 19
   C. Boxes: Section 16130

1.03 DEFINITIONS:
   A. EMI: Electromagnetic interference.
   B. GFCI: Ground-fault circuit interrupter.
   C. PVC: Polyvinyl chloride.
   D. RFI: Radio-frequency interference.
   E. TVSS: Transient voltage surge suppressor.
   F. UTP: Unshielded twisted pair.

1.04 SUBMITTALS:
   A. Product Data: For each type of product indicated.
   B. Field quality-control test reports.

1.05 QUALITY ASSURANCE
   A. Source Limitations: Obtain each type of wiring device through one source from a single manufacturer.
B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Wiring Devices:
   b. Hubbell Incorporated; Wiring Device-Kellems.
   c. Leviton Mfg. Company Inc.
   d. Pass & Seymour/Legrand; Wiring Devices Div.

2. Wiring Devices for Hazardous (Classified) Locations:
   b. EGS/Appleton Electric Company.
   c. Killark Electric Manufacturing Co./Hubbell Incorporated.

3. Multi-outlet Assemblies:
   a. Hubbell Incorporated; Wiring Device-Kellems.
   b. Wiremold Company (The).

4. Poke-Through, Floor Service Outlets and Telephone/Power Poles:
   a. Hubbell Incorporated; Wiring Device-Kellems.
   b. Pass & Seymour/Legrand; Wiring Devices Div.
   c. Square D/Groupe Schneider NA.
   d. Thomas & Betts Corporation.
   e. Wiremold Company (The).

2.02 RECEPTACLES
A. Straight-Blade-Type Receptacles: Comply with NEMA WD 1, NEMA WD 6, DSCC W-C-596G, and UL 498. “Decora or style line” type in white color.

B. Straight-Blade and Locking Receptacles: Heavy -Duty/Industrial grade.

C. Straight-Blade Receptacles: Hospital grade/Institutional grade.

D. GFCI Receptacles: Straight blade, feed -through type, Heavy-Duty/Industrial grade, with integral NEMA WD 6, Configuration 5-20R duplex receptacle; complying with UL 498 and UL 943. Design units for installation in a 2-3/4-inch deep outlet box without an adapter.

E. Isolated-Ground Receptacles: Straight blade, Heavy-Duty/Industrial grade, duplex receptacle, with equipment grounding contacts connected only to the green rounding screw terminal of the device and with inherent electrical isolation from mounting strap.
   1. Devices: Listed and labeled as isolated-ground receptacles.
   2. Isolation Method: Integral to receptacle construction and not dependent on removable parts.

F. TVSS Receptacles: Straight blade, NEMA WD 6, Configuration 5-20R, with integral TVSS in line to ground, line to neutral, and neutral to ground.
   1. TVSS Components: Multiple metal-oxide varistors; with a nominal clamp level rating of 500 volts and minimum single transient pulse energy dissipation of 140 J line to neutral, and 70 J line to ground and neutral to ground.
   2. Active TVSS Indication: Visual and audible with light visible in face of device to indicate device is "active" or "no longer in service."
   3. Receptacle Type: Hospital grade, with isolated-ground terminal.
   4. Identification: Distinctive marking on face of device to denote TVSS-type unit.

G. Industrial Heavy-Duty Pin and Sleeve Devices: Comply with IEC 309-1.

H. Hazardous (Classified) Location Receptacles: Comply with NEMA FB 11.

2.03 PENDANT CORD/CONNECTOR DEVICES

A. Description: Matching, locking-type plug and receptacle body connector, NEMA WD 6, Configurations L5-20P and L5-20R, Heavy-Duty grade.

2.04 CORD AND PLUG SETS
A. Description: Match voltage and current ratings and number of conductors to requirements of equipment being connected.

1. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and equipment-rating ampacity plus a minimum of 30 percent.


2.05 SWITCHES


B. Snap Switches: Heavy-Duty grade, quiet type.

C. Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on/off switches and audible frequency and EMI/RFI filters.

1. Control: Continuously adjustable slider; with single-pole or three-way switching to suit connections.

2. Incandescent Lamp Dimmers: Modular, 120 V, 60 Hz with continuously adjustable, or slider; single pole with soft tap or other quiet switch; EMI/RFI filter to eliminate interference; and 5-inch wire connecting leads.

3. Use fluorescent lamp dimmer switches below with compatible dimming-type ballasts. Coordinate with Division 16 Section "Interior Lighting." Use uniform ballast and lamp types to obtain consistent dimming characteristics.

4. Fluorescent Lamp Dimmer Switches: Modular; compatible with dimmer ballasts; trim potentiometer to adjust low-end dimming; dimmer-ballast combination capable of consistent dimming with low end not greater than 10 percent of full brightness and 1 percent in areas where projection equipment is utilized.

2.06 WALL PLATES

A. Single and combination types to match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.

2. Material for Finished Spaces: 0.035-inch thick, satin-finished stainless steel.


4. Material for Wet Locations: Cast aluminum with spring-loaded lift cover, with gasket between box and plate, and listed and labeled for use in "wet locations."
2.07 FLOOR SERVICE FITTINGS

A. Type: Modular, flush-type, dual-service units suitable for wiring method used.
B. Compartments: Barrier separates power from voice and data communication cabling.
C. Service Plate: Round, die-cast aluminum with satin finish.
D. Power Receptacle: NEMA WD 6, Configuration 5-20R, gray finish, unless otherwise indicated.
E. Voice and Data Communication Outlet: Blank cover with bushed cable opening, Two modular, keyed, color-coded, RJ-45 Category 3 jacks for UTP cable or Two modular, keyed, color-coded, RJ-45 Category 5 jacks for UTP cable.

2.08 POKE-THROUGH ASSEMBLIES

A. Description: Factory-fabricated and -wired assembly of below-floor junction box with multi-channeled, through-floor raceway/firestop unit and detachable matching floor service outlet assembly.
   1. Service Outlet Assembly: Pedestal type with services indicated, Flush type with two simplex receptacles and space for two RJ-45 jacks or Flush type with four simplex receptacles and space for four RJ-45 jacks.
   2. Size: Selected to fit nominal 4-inch cored holes in floor and matched to floor thickness.
   3. Fire Rating: Unit is listed and labeled for fire rating of floor-ceiling assembly.
   4. Closure Plug: Arranged to close unused 4-inch cored openings and reestablish fire rating of floor.
   5. Wiring Raceways and Compartments: For a minimum of four No. 12 AWG conductors; and a minimum of 4-pair, Category 5 voice and data communication cables.

2.09 MULTI-OUTLET

A. Components of Assemblies: Products from a single manufacturer designed for use as a complete, matching assembly of raceways and receptacles.
B. Raceway Material: Base, cover and end plates shall be constructed of extruded aluminum #6063-T5, 0.060-inch minimum wall thickness. Finish shall be clear anodized #AA-C22A31, Class 2.
C. Wire: No. 12 AWG.
2.10 SERVICE POLES

A. Description: Factory-assembled and -wired units to extend power and voice and data communication from distribution wiring concealed in ceiling to devices or outlets in pole near floor.

1. Poles: Nominal 2.5-inch- square cross section, with height adequate to extend from floor to at least 6 inches above ceiling, and with separate channels for power wiring and voice and data communication cabling.

2. Mounting: Ceiling trim flange with concealed bracing arranged for positive connection to ceiling supports; with pole foot and carpet pad attachment.

3. Specify final finish in first subparagraph below if known.


5. Wiring: Sized for minimum of five No. 12 AWG power and ground conductors; and a minimum of four, 4-pair, Category 5 voice and data communication cables.


7. Voice and Data Communication Outlets: Four RJ-45 Category 5 jacks.

2.11 FINISHES

A. Color:

1. Wiring Devices Connected to Normal Power System: Gray as selected by the University, unless otherwise indicated or required by NFPA 70.


3. TVSS Devices: Blue.

4. Isolated-Ground Receptacles: As specified above, with orange triangle on face.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install devices and assemblies level, plumb, and square with building lines.

B. Install wall dimmers to achieve indicated rating after derating for ganging according to manufacturer's written instructions.
C. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' written instructions.

D. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical, and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.

E. Remove wall plates and protect devices and assemblies during painting.

F. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.02 IDENTIFICATION

A. Comply with Section 26 05 53 “Tests and Identifications”.
   1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.03 CONNECTIONS

A. Ground equipment according to Division 16 Section "Grounding and Bonding."

B. Connect wiring according to Division 16 Section "Conductors and Cables."

C. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.04 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:
   1. After installing wiring devices and after electrical circuitry has been energized, test for proper polarity, ground continuity, and compliance with requirements.
   2. Test GFCI operation with both local and remote fault simulations according to manufacturer's written instructions.

B. Remove malfunctioning units, replace with new units, and retest as specified above.

END OF SECTION 26 27 26