SECTION 27 11 00

COMMUNICATIONS ROOMS EQUIPMENT FITTINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section and the other sections of Division 27.

1.02 SUMMARY

A. This Section includes the following:
   1. Cable Management
   2. Entrance protection for copper
   3. Floor-standing equipment racks
   4. Mounting of owner-furnished equipment in equipment racks
   5. Rack mounted power protection and power strips
   6. Terminal blocks and patch panels

B. Refer to following Specification Sections:
   1. Division 6 Section “Rough Carpentry” for wood framing and blocking for installation of wall-mounted equipment racks.
   2. Division 7 Sections for fire-stopping materials and installation at penetrations through walls, ceilings, and other fire-rated elements.
   3. Division 26 Sections for supports, anchors, identification products, electrical service and connections.

C. Provide cabinets and racks in accordance with the Contract Documents. Where conflicting data is indicated, verify mounting and equipment requirements prior to ordering.

D. This section contains specific parts selected by Owner and Technology Consultant. In the event that the parts specified are not available, Owner and Technology Consultant shall be contacted to specify replacements.

1.03 COORDINATION

A. This contractor shall be responsible for all coordination with the general and electrical contractor and data and voice vendors to provide a complete operational system.

B. Coordinate layout and installation of equipment racks with adjacent construction.

1.04 SUBMITTALS

A. Product Data: For copper protection devices, cabinets and equipment racks, termination blocks and patch panels, cable management devices, UPSs, and power strips.

B. Shop Drawings: Show fabrication and installation details of components for cabinets, equipment racks, and their associated parts and pieces to make a complete system.

C. Show rack elevations for review and approval by the Owner and Technology Consultant.

D. Allow sufficient time in project scheduling for Owner and Technology Consultant review.

E. Submittals shall be checked by the supplier and made as complete systems including all required accessories and any special tools.

F. Manufacturer's installation and maintenance instructions.

1.05 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of enclosure through one source from a single manufacturer.

B. All work shall be in accordance with the latest edition of all applicable State, and Federal regulations and codes. Further, all work shall also be in accordance with EIA/TIA Standards, the BICSI TDMM manual, latest edition and with the manufacturer’s recommendations.

1.06 SEQUENCING AND SCHEDULING

A. Sequence all work to support the installation of the structured cabling system, electrical work and all cable tray systems installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available manufacturers are listed in subparagraphs for each Part 2 article below.

B. Proposed substitutions shall be submitted WITH THE BID and must be approved by the Owner and Technology Consultant.

C. Requests for substitution are only permitted for materials specified with an "or approved equivalent" clause or other language of same effect in the Contract Documents.

2.02 ENTRANCE PROTECTION

A. Shall be wall-mounted 110-type.
   1. Use Circa Telecom, Part #1880ENA1/NSC-50 or approved equivalent

B. Acceptable manufacturers are:
   1. Avaya
   2. Circa Telecom,
   3. Marconi
   4. TII Network Technologies
   5. Approved equivalent

C. All protection modules are to be solid state.

D. Acceptable modules are:
   1. Circa Telecom, Part #4B1S-300 or approved equivalent

E. Provide a tie cable from the protector block to a rack-mounted 110 panel.
   1. Use Ortronics Panel, Part #OR-302003251

2.03 RACKS

A. Floor Distribution Frame; for rack mounted installations in Main Distribution Frame (MDF) and Intermediate Distribution Frame (IDF) Rooms, the installer shall use a 7-foot high 19-inch seismic rated equipment rack.

B. The racks shall:
   1. Be made by an ISO 9001 and 14001 Certified Manufacturer.
   2. Have cable access holes on side rails, which allow cables to be routed between adjacent racks.
   3. Have standard 19-inch ANSI/EIA-310-C mounting holes having a full 45 RU on front and back of rails.
   4. The racks shall have floor mounting holes and a ground lug for 0-6 gauge ground cable provided.
   5. Use CPI/Chatsworth Products Inc., Part #13853-703.
   6. Ensure product submittal includes all accessories and ensures system compatibility.

2.04 VERTICAL CABLE MANAGERS

A. The racks shall have vertical cable management channels 8” W x 6.38”D x 7’H (end of rack rows) & 12”W x 6.38D x 7’H (between all rack pairs). Channels will be located between racks and on the end of each row. The channel shall include cable retainers, which can be hinged left or right and be located in any position along the channel.

B. The vertical cable managers shall utilize black grommets at all cable openings, including unused cable openings.
   1. Use CPI/Chatsworth Product Inc., Part #13704-703

C. Ensure product submittal includes all accessories and ensures system compatibility.

2.05 HORIZONTAL CABLE MANAGER

A. Provide horizontal cable managers, 2 RU in height. Provide one horizontal cable manager per patch panel. Mount above and below switches and/or between switches as directed by the owner or technology consultant.
   1. Use CPI/Chatsworth Product Inc., Part #30130-719

2.06 RACK MOUNT POWER STRIP

A. Provide rack-mounted power strips 1 RU in height with 8 outlets and 10’ cord.
   1. CPI/Chatsworth Product Inc., Part #13239-753. Provide one per rack.

2.07 CABLE LADDER RUNWAY

A. Cable runway shall be included as shown and as required for cable routing and overhead seismic restraint.

B. Provide cable runway radius drops, pathway dividers, junctions, splices, supports, and all necessary appurtenances for a complete installation.

C. Cable runway mounted over racks shall be designed specifically for use over 19” wide racks and vertical cable managers wherein the runway cross-members are spaced to align over the vertical cable channels.

D. Use CPI or approved manufacturers

1. CPI Part #31472-718 where 18” ladder is indicated on drawings
2. CPI Part #31472-724 where 24” ladder is indicated on drawings

E. Cable runway for telecommunication room usage other than specified above shall be:
1. CPI Part #10250-718 where 18” ladder is indicated on drawings.
2. CPI Part #10250-724 where 24” ladder is indicated on drawings.

PART 3 EXECUTION

3.01 LIGHTNING PROTECTION

A. All copper cables, either multi-pair or coaxial, are to be terminated on lightning protection within 50 feet of the entrance into the building.

B. All pairs of inter-building twisted pair copper cable are to be protected on both ends to lightning protection blocks.

C. Lightning Protection Blocks are to be grounded to the nearest Telephone Main Grounding Bar (TMGB) or Telephone Grounding Bar (TGB).

3.02 RACKS

A. Preparation
1. Coordinate requirements for riser bases, raised floor riser feet, anchors, bracing, and blocking to ensure adequate means for installation of racks/cabinets.
2. Coordinate requirements for electrical cable pathways from overhead cable trays and management systems.

B. Installation
1. Install racks in compliance with manufacturer's written instructions and shop drawings.
2. Floor-standing racks/cabinets in the telecommunication rooms shall be securely attached to the concrete floor using minimum 3/8” in diameter hardware utilizing an approved length.
a. Contractor shall abide by any regional seismic requirements for rack type and installation.

3. Install equipment racks at locations and heights indicated on Drawings. Rows of racks/cabinets shall be placed with a 36-inch (minimum) clearance from the walls on all sides of the rack, unless otherwise indicated on Drawings. When mounted in a row, maintain a minimum of 36 inches from the wall behind and in front of the row of racks/cabinets. Where racks/cabinets are shown side by side, securely connect together using manufacturer’s ganging hardware to provide a stable system. Supply all miscellaneous parts and pieces to make a complete system.
4. Rack and runway installation shall comply with local seismic bracing requirements.
5. All racks/cabinets shall be grounded to the ground bus bar in accordance with the drawings and other Sections of this document.
6. Rack mount screws not used for installing patch panels, keys and other hardware shall be bagged and left with the rack upon completion of the installation.
7. Horizontal wire managers shall be installed between patch panels as described in Section 271600. The contractor shall provide an equal number of wire managers in the electronics racks as was required for the patch panels and install them in the same configuration for the owner to use with their electronics.
8. Vertical cable managers shall be installed on both sides (left and right) of each rack in the telecommunications rooms.

9. Horizontal cable jumper tray shall be in the uppermost position and have the radius section adjusted to transition optical fiber to the vertical cable channel.

3.03 OWNER FURNISHED EQUIPMENT

A. Owner furnished in the LSU Medical SIM Building by others including:
   1. Network Switches
   2. UPS and batteries
   3. Wireless Access Points
   4. VoIP Telephones

END OF SECTION