

- A. Provide rack mounted horizontal and vertical cable management for all horizontal, backbone and patch cables.
- B. Panels shall have front and back channels with removable covers.
- C. Cable management panels shall be plastic and have integral wire retaining fingers.
- D. Management panels shall mount to any standard 19" rack and include all required mounting brackets and screws.
- E. Design Make: Vertical -Panduit FMPV series
- F. Horizontal - Panduit WMP series
- G. Acceptable manufacturers:
 - 1. Panduit
 - 2. Hubbell

2.5 FIBER PATCH PANEL

- A. Shall be rack mounted or wall mounted as required or called for.
- B. Shall be constructed with 16 gauge steel.
- C. Provide adapter panels with duplex LC couplers, mounted in housing, for all fiber cables installed
- D. Rack mounted housings shall have splice organizer drawers that are removable or held open at 30-degree angle and translucent latching hinged front cover.
- E. Wall mounted housings shall have a lockable hinged door enclosing the cable loop and termination section and a latchable hinged door enclosing the connector section of the housing.
- F. Organizer drawers and wall mount cabinets shall come complete with routing rings for cable management and cable tie-down bars for support of main cable.
- G. Shall accommodate 24, 48, 72 or 96 fibers as called for on the rack elevations.
- H. Design make: Design make: Hubbell FCR series with FSP series adapter panels (rack mounted)
 - 1. 24/48 port - Hubbell FCR525P
 - 2. 72/96 port LI - Hubbell FCR700P.
 - 3. 6 Pack Adapter MM/SM Panels - Hubbell FSPSCD3.
- I. Acceptable Manufacturers:
 - 1. AMP
 - 2. Siecor

- A. Shall meet or exceed all Enhanced Category 6a UTP specifications outlined section 271600.
- B. Terminated in accordance with T568B Pin Configuration
- C. Provide only 48 port panels
- D. Paired punch down sequence to allow pair twist within ½" of the termination
- E. Rack or wall mounted as called for.
- F. 19" rack mounting or wall bracket mounting if required
- G. UL listed File # E129878
- H. .09" thick rolled edge black anodized aluminum construction.
- I. Beryllium copper with minimum 50 micro-inch gold plating
- J. 110 termination with tin lead plated IDC
- K. Design Make: Hubbell
- L. Acceptable Manufacturers:
 - 1. Hubbell
 - 2. Panduit
 - 3. Leviton

- A. Provide ladder rack from wall to rack for horizontal cable support.
- B. Provide ladder rack from all sleeves to the equipment racks for horizontal and backbone cable support inside the communication equipment room.
- C. Racks shall have solid side bars nominally 3/8" thick by 1 ½ "H with rungs 9" on center.
- D. Include all hardware for securing trays to each other, to the rack and to the wall
- E. Racks shall be painted black.

- A. Shall be 4x8x 3/4" CDX, fire rated plywood
- B. Shall be painted with gray, acrylic, interior, fire, retardant paint. Manufacturer: Pratt & Lambert "Stormy Sea #2233.

- C. 2"D" Rings Part numbers: Senior Industries SI-4754 shall be used for cross connects above blocks and SI-4755 for routing Category 5 cables vertical and horizontally. Owner to review in field before installation.

2.9 CABLE SUPPORTS

- A. Provide wall mounted "D" rings for wall mounted vertical and horizontal cable management.
- B. Design Make: Senior Industries -SI-4754 - cross connect wiring, SI-4755 Vertical and Horizontal Category 5 cable.
- C. Acceptable manufacturers:
 1. Approved equal

PART 3 - EXECUTION

3.1 FLOOR MOUNTED CABINET

- A. Provide vertical and horizontal cable management in the front and back.
- B. Mount cabinet a minimum of 36" from wall when orientated parallel to wall and tight to wall when perpendicular to wall.
- C. Ground the cabinet to the equipment ground bar with a #6 copper wire.

3.2 CABLE MANAGEMENT

- A. Provide (2) rack mounted 3.5" horizontal cable managers at TOP OF EACH RACK INSTALLED. ALSO provide 4 vertical cable managers two sided for each rack installed. If two or more racks are installed side by side, install one vertical management between the racks and one vertical cable managers on the outside or end of racks.
- B. Provide one 3.5" horizontal cable manager for each 48 UTP port panel and fiber patch panel installed.

3.3 CABLE SUPPORTS

- A. Provide "D" rings 2 ft. on center for all exposed vertical cable runs.
- B. Provide split rings 4 ft. on center for all exposed horizontal cable runs.
- C. Keep Horizontal wall mounted cable runs to a minimum. In general horizontal runs shall be in wall mounted ladder rack.
- D. Provide cable brackets 4' on center supported to building structure for all cable runs above ceilings where cable tray is not called for.

3.8 GROUNDING AND BONDING

- A. Provide pre-drilled tin plated copper bus bar, with standard NEMA bolt hole sizing and spacing for connectors being used, in all communication equipment rooms.
- B. All connectors and clamps shall be mechanical type made of silicon bronze.
- C. Terminals shall be solderless compression type, copper long-barrel NEMA two bolt.
- D. Provide #6 AWG conductor from the bus bar to the electrical system equipment ground.
- E. Bond the ground bar in the main communication equipment room to dedicated communications equipment panelboard where applicable.
- F. Bond metallic equipment racks and cabinets to the ground bar.
- G. Bond the shield of shielded cable to the ground bar in communications rooms and spaces.

3.9 CROSS CONNECT

- A. The Town of Greece uses a color-coded Tel/Data cabling scheme. Contractors are required to follow the below outlined scheme for all work related to IT and Tel/Data provisions as associated with the Project. Furthermore, all associated punch down keystones in patch panel's as well as associated J-Boxes are required to follow the same outline color scheme.

<u>Description</u>	<u>Color</u>
Data	Black
Voice	White
Wireless Access Points	Red
Security Camera	Orange
Door Access Control	Purple
Misc.	Purple

- B. Provide a description of color coding and labeling on the wall adjacent to the punch down blocks.

3.10 UTP Patch Panels.

- A. Provide rear wire manager near the top of panel.
- B. Route cables from the back of patch panel through coupler openings and attach cable to the wire manager with cable ties.
- C. Do not untwist cable more than 0.5 in. when terminating.
- D. Locate so that combined length of cables and cords from panel to hub does not exceed 3m.

END OF SECTION

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