1 General

1.1 Scope of work

1.1.1 The Contractor is held responsible to be familiar with the provisions contained herein and with other Sections of this Specification as applicable to the completion of the installation.

1.1.2 Work covered by this Section shall consist of furnishing labor, equipment, supplies, materials, and testing unless otherwise specified, and in performing the following operations recognized as necessary for the installation, termination, and labeling of all telecommunications infrastructure as described on the Drawings and/or required by these specifications.

1.2 Intent of the drawings and specifications

1.2.1 These Specifications, together with the Drawings accompanying them, are intended to depict the installation requirements necessary to support this Project.

1.2.2 Contractor shall furnish materials shown and/or called for on the Drawings but not mentioned in the Specifications, or vice versa, that are necessary for the installation and support of the described work, whether or not specifically called for in both.

1.2.3 Contractor shall provide incidental equipment and materials required for the completion of systems included in this contract whether or not specified or shown on the Drawings.

1.3 Communication

1.3.1 It is Purdue’s expectation that the A/E of Record will work jointly with Purdue’s Telecommunication representatives to address specific technical issues and Owner requirements.

1.3.2 All questions, deviations, comments concerning guideline(s) interpretation, content, and/or use must be submitted in writing to the Project Manager for approval.

1.3.3 No deviations from these guidelines shall be incorporated into the project without written approval from the Project Manager and Purdue Telecommunications representative.

2 Products

2.1 Copper, Fiber, and Coax Riser Cable Labels in TRs

2.1.1 Panduit #T050X000VPC-BK, 0.5” height, black lettering on white vinyl tape or Owner approved equal.

2.2 Copper, Fiber, and Coax Horizontal Cable Labels in TRs and behind faceplates

2.2.1 Panduit #S100X150VAC, 1.0” wide x 1.5” length, white, print-on vinyl label or Owner approved equal.

3 Execution

3.1 All horizontal cable labeling

3.1.1 Cables shall be labeled with self-laminating marking tape, Panduit LS8 labeler or Owner approved equal labeling system.

3.1.1.1 Size of letters and numbers shall be no less than 5/16” high by 1/8” wide.

3.1.2 Horizontal voice and data cables at the BDF/IDF end cables shall be labeled with the information indicating termination of the opposite end of the cables.

3.1.2.1 This shall include room location and jack designation.

3.1.2.2 Place label on a visible part of cable within 12” of termination point for ease of identification after termination.

3.1.2.3 All faceplate labeling shall be labeled left to right, top to bottom. A specific voice line shall always be labeled last in the series, unless a TV jack is present in which case the voice jack shall precede the TV jack.

Examples:

- At the BDF/IDF end the 4-pair data cables for the 1st location in room 1137 would be labeled: 1137-A and 1137-B.
- At the BDF/IDF end the 4-pair voice cable for the 1st location in room 1137 would be labeled: 1137-1

3.1.3 Horizontal voice and data cables at the rooms cables shall be labeled 1-3” from termination.
with the following:

**BDF/IDF TR** room # - room # - Jack

### 3.1.3.1 Labels shall be visible by removing outlet cover plate.

### 3.1.3.2 For rooms with multiple outlet locations, identification would begin with the first receptacle to the left of the main entrance to the room and continuing clockwise around the room.

- **Examples:** 1106-1137-A, 1106-1137-B, 1106-1137-1.

### 3.1.4 Horizontal fiber cables at the BDF/IDF end shall be labeled with the information indicating termination of the opposite end of the cables.

- **3.1.4.1** Label shall include room location, fiber type (“S” for single-mode, “M” for multimode), and jack designation.

- **3.1.4.2** Place label on a visible part of cable within 12” of termination point for ease of identification after termination.

- **Example:** At the BDF/IDF end the 2-strand fiber cable for the first location in room 1137 would be labeled: 1137FOS-A with the “FO” indicating fiber optic cable and the “S” indicating single-mode fiber type.

**Note:** Fiber is labeled in pairs. (Blue and Orange strands would be treated as jack “A”)

### 3.1.5 Horizontal fiber cables at the rooms shall be labeled 4” from termination with the following:

- **BDF/IDF Telecom** room # - room # - FO(S or M)- Jack

- **Example:** 1106-1137FOS-A, 1106-1137FOS-B.

### 3.1.6 The label shall be visible by removing outlet cover plate.

### 3.1.7 For rooms with multiple outlet locations, identification would begin with the first receptacle to the left of the main entrance to the room and continuing clockwise around the room.

**Note:** Fiber is labeled in pairs. (Blue and Orange strands would be treated as jack “A”)

### 3.2 CATV cables

#### 3.2.1 CATV cables at the BDF/IDF shall be labeled at each end with the information indicating termination of the opposite end of the cables.

- **3.2.1.1** This shall include Cable system, room number, and cable number at opposite end.

- **3.2.1.2** Place label on a visible part of cable 12” from end of cable for ease of identification after termination.

- **Example:** MRDH has a BDF TR (room B009A) and IDF TR (room 285S). In this case room 285S distributes cable to room 236SE.

**At the IDF end the horizontal cable from the room would be labeled:** TV236SE-1.

#### 3.2.2 CATV cables at the rooms shall be labeled 4” from termination with the following:

- **BDF/IDF TR** room # - TVroom # - Jack

- **Example:** 285S-TV236SE-1. This shall be visible by removing outlet cover plate. For rooms with multiple outlet locations, identification would begin with the first receptacle to the left of the main entrance to the room and continuing clockwise around the room.

### 3.3 Room numbers used for PIC labeling shall only contain preceding zeros when an alpha character precedes the zeros.

- **Examples:**
  - The PIC in room G002 would be labeled as G002-A/B/1
  - The PIC in room 002 would be labeled as 2-A/B/1

### 3.4 Copper Riser Cable Labeling

#### 3.4.1 All riser cables shall be labeled with self-laminating marking tape, Panduit LS8 labeler, Brady TLS2200 labeler, or Owner approved equal labeling system.

#### 3.4.2 At the BDF and IDF, the copper riser cables shall be labeled at each end with the information indicating termination of the opposite end of the cables. This shall include building acronym and cable number and room location.

- **3.4.2.1** Place label on a visible part of cable close to wiring block for ease of identification after termination.

- **Example:** LYLE has a BDF TR, room B036, and an IDF TR, room 1006.
At the IDF end the 1st cable would be labeled:  LYLE01-B036
At the BDF end the 1st cable would be labeled:  LYLE01-1006

Note: Multiple riser cables between the BDF and IDFs are to be labeled as the same cable. e.g. Riser cables FS01 consists of (2) 100-pair cables (FS01, 1-100; FS01, 101-200). The cable label along with the pair count shall be labeled at each end of the wiring blocks.

3.5 Fiber Riser Cable Labeling
3.5.1 All fiber optic riser cables shall be labeled at each end with the information indicating:
- **Building**
- **Cable number**
- “FO” indicating a fiber and opposite end of cable.
  - “S” shall be used after the FO to indicate the use of single-mode fiber.
  - “M” shall be used after the FO to indicate the use of multi-mode fiber.

3.5.2 Fiber type shall be labeled on the front of the fiber enclosure: SMF for single mode fiber; MMF for multimode fiber.

3.5.3 Verify cable number with a Purdue IT Infrastructure Services Representative before labeling.

- **Example**: In BDF room B098A, PHYS (Physics): PHYS01-FOM226 = the first 12-strand, multimode fiber riser cable to IDF room 226.

3.6 Copper Riser 110-Block Labeling
3.6.1 At the BDF and IDF, voice riser cables are terminated on their respective 110 blocks. Label only 1st and last pairs on each row of 110 blocks. Place cable number of riser cable on wiring block label in center of label.

3.7 Coax Riser Labeling (CATV)
3.7.1 At the BDF and IDF, CATV riser cables shall be labeled at each end with the information indicating termination of the opposite end of the cables.

3.8 Horizontal 110-Block Labeling (Critical Circuits)
3.8.1 At the IDF, voice horizontal cables are terminated on their respective S110 blocks, with pairs on the blocks labeled in ascending room number order.
3.8.2 All horizontal cables from same room should be terminated in sequential order on S110 blocks. Single 4-pair cables will be labeled with a room location and a jack designation. e.g. 1113-1 = a single voice jack in room 1113.
3.8.3 Size of letters and numbers on labels for 110 wiring blocks shall be no less than 3/8” high.
3.8.4 Horizontal Patch Panel Labeling (Data)
3.8.5 At the IDF, data horizontal cables are terminated on their respective patch panels, with jacks on the panels labeled in ascending room number order.
3.8.6 All horizontal cables from same room should be terminated in sequential order at the patch panels.
3.8.7 Size of letters and numbers on labels for patch panels shall be no less than 3/32” high by 1/16” wide.

- **Example**: Single 4-pair cables will be labeled with a room location and a jack designation. e.g. 1137-A = a single data jack in room 1137.

3.9 Faceplate Labeling:
3.9.1 At the rooms, the jacks will be labeled on the faceplates using the plastic insert to cover a printed identification tag with room number and proper jack designation as follows:
- **Example**: 1195-A = 1st data jack in room 1195
- **Example**: 1195-1 = 1st voice jack in room 1195
3.9.3 Size of letters and numbers on labels for faceplates shall be no less than 3/8” high.

3.9.4 At the rooms, the fiber jacks will be labeled on the faceplates using the plastic insert to cover a printed identification tag with room number and proper jack designation as follows:

3.9.5 Jack designation:
- Fiber = A through ZZ.

   **Example:**
   
   1195FOM-A = 1st multimode fiber jack in room 1195
   1195FOM-B = 2nd multimode fiber jack in room 1195
   1195FOM-AA = 27th multimode fiber jack in room 1195
   1195FOM-AB = 28th multimode fiber jack in room 1195.

3.9.6 At the rooms, the coax jacks will be labeled on the faceplates using the plastic insert to cover a printed identification tag with room number and proper jack designation as follows:

   Jack designation: TVrm#-1

   **Example:**
   
   TV236SE-1, 1st coax jack in room 236SE

3.10 Wall Mounted Fiber Box Labeling:

   3.10.1 All wall mounted fiber termination boxes shall be labeled with cable information on the inside of the fiber termination box door using manufacturer’s label.

3.11 Equipment Frame Fiber Enclosure Labeling:

   3.11.1 All equipment frame fiber enclosures shall be labeled with cable information on the labeling panel below the enclosure using manufacturer’s label.

   3.11.2 All frame labeling shall be coordinated with Purdue IT Infrastructure Services Representative prior to label placement

3.12 Wireless Access Point PICs:

   3.12.1 At the BDF/IDF end, the PICs installed for wireless access points (AP) data horizontal cables shall be labeled with the information indicating termination of the opposite end of the cables. This shall include room location and jack designation.

   **Example:**
   
   At the BDF/IDF end the 4-pair data cable for the WAP in room 1137 would be labeled: 1137AP-A and 1137AP-B

   3.13 Special Labeling Installations

   3.13.1 Contractor is responsible for contacting a Purdue IT Infrastructure Services Representative so that Purdue may provide instruction for labeling of elevator phones, fire alarms, ETS phones, Fiber Optic PICs, and other special circuits. Failure to contact a Purdue IT Infrastructure Services Representative to clarify labeling requirements may result in re-labeling at the cost of the contractor. Submission of a RFI is required to document that contact with a Purdue IT Infrastructure Services Representative was made.

   3.13.2 Departmental cables where data is distributed within the same room and not from the BDF or IDF shall be labeled as follows:

     3.13.2.1 At the remote equipment cabinet or enclosure, data horizontal cables are terminated on their respective patch panels, with jacks on the panels labeled in alphabetic order.

     **Example:** Single 4-pair cable will be labeled with a jack designation. DPT-A = a single data jack within the room. DPT-B = next jack within the room. Place label on visible part of the cable within 4” of the termination.

3.13.3 Departmental cables shall be labeled differently than cables distributed from the telecom room so they can easily be identified. Contact a Purdue IT Infrastructure Services Representative for special labeling and patch panel termination
instructions at least 48 hours prior to the start of labeling.

3.13.4 Above Ceiling PICs for applications other than wireless access points which are located above 6’ AFF shall be labeled as room #AC - Jack and room # - Jack

- **Example:** At the BDF/IDF end the 4-pair data cable for the above ceiling data PIC in room 1137 would be labeled: 1137AC-A and 1137AC-B

**Note:** The above ceiling PICs shall be labeled in each room starting from A/B. These PICs do not fall within the alphanumeric order of the normal PICs within the same room.

3.14 PIC Re-labeling

3.14.1 Contractor is responsible for re-labeling all existing PICs that are moved or changed. This includes but is not limited to any PICs with rooms in which the room number has changed as part of the construction project. This also includes all termination hardware (110 blocks, patch panels, cables, and faceplates).

3.14.2 All PIC relabeling shall follow the guidelines within this section.

3.14.3 Existing identification shall be recorded and submitted with as-built documentation.

3.14.4 Old labels on the cabling, faceplate, and/or patch panel shall be completely removed and replaced with new labels when a PIC requires re-labeling.

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**Typical PIC Labeling**

**Patch Panel in Telecom Room B200**

**Faceplate in Room 101**

**Category 6A Data Cable**

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