

## SECTION 27 05 53

### IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. This Section includes requirements for identification/administration of the Communications Cabling System.

##### 1.02 SUBMITTALS

- A. Comply with the Submittal portions of Division 27 Specification Sections *Basic Communications Requirements* and *Communications - General Requirements*. Provide submittal information for the following:
  - 1. Identification and Administration (see *Part 2 – Materials: Identification and Administration* herein):
    - a. Provide a list of proposed hand-carried or computer software based identification/label makers, and a list of proposed materials for identifiers/labels.
    - b. Provide actual samples of labels to be created for each system component to be labeled.

#### PART 2 - MATERIALS

##### 2.01 IDENTIFICATION AND ADMINISTRATION

- A. Identifiers (labels) shall be as recommended in TIA/EIA 606-A, unless noted otherwise herein.
- B. Labels shall be permanent (i.e. not subject to fading or erasure) and permanently affixed. Handwritten labels are not acceptable.
- C. For identification of materials and equipment interior to the facility:
  - 1. For cables: Labels shall be created by a hand-carried label maker or an equivalent computer/software-based label making system.
    - a. For horizontal cables: Labels shall include a clear vinyl adhesive wrapping applied over the label in order to permanently affix the label to the cable. Using transparent tape to affix labels to cables is not acceptable.
    - b. For backbone cables: Labels shall be affixed or engraved on hard plastic markers.
- D. For identification of materials and equipment in the outside plant:
  - 1. Labels shall be waterproof (even when submerged) and engraved on hard plastic markers. Lettering shall be black, markers shall be white.

#### PART 3 - EXECUTION

##### 3.01 GENERAL

- A. Work shall comply with the Governing Requirements as defined in Division 27 Specification Section *Basic Communications Requirements*. Governing Requirements of particular relevance to this Section include, but are not limited to:
  - 1. Identification and Administration:
    - a. TIA/EIA 606-A: The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
  - 2. All permanently installed cable and network infrastructure labels shall be machine generated on labels manufactured for that purpose, and designed to outlast the elements to which they attach.
  - 3. It is the responsibility of the Contractor to label all elements of the network cabling system with permanent, machine-generated labels according to:
    - a. Circuit naming conventions already established at Denver Public Schools.

- b. Guidelines established in the TIA 606-B Standard.
  - c. Any project-specific instructions associated with particular jobs.
4. On specific projects, Contractor shall bring to the attention of DoTS PM anywhere these standards, guidelines and instructions may be in conflict for clarification and resolution.
  5. The following are general points regarding how Denver Public Schools cabling shall be labeled:
    - a. Label each cable, work area outlet location, fiber enclosure, etc. with a computer generated or machine printed label. Each label shall be easily visible and made of materials designed to outlast the elements to which they are attached
    - b. Handwritten labels for anything besides temporary place-holders prior to placement of permanent machine-generated labels will not be accepted and must be corrected at Contractor's expense.
  6. Racks will need to be numbered to conform to DPS/DoTS labeling requirements. For example, rack 0 should be installed closest to the wall and allowing for outward growth. The label shall be placed at the top and centered on the rack.
  7. All racks will be labeled on the front and rear with 1" high continuous black on white vinyl tape.
  8. All WAP locations will be labeled with orange tape w/black lettering. All labeling must be 1" large label tape and placed so that it is readable from floor standing position. Drop ceiling locations labels will be placed on grid. Wall mount locations will require the label to be placed on the biscuit jack or faceplate.

**3.02 IDENTIFICATION AND ADMINISTRATION**

**A. General**

1. The Contractor is solely responsible for the completeness, accuracy, and placement of identifiers (labels). Incorrectly identified components are the sole responsibility of the Contractor.
  - a. Where questions arise regarding the correct identifier for a given component, the Contractor shall notify the Owner and Engineer and await direction prior to proceeding.
2. The Contractor shall install identifiers where indicated and at locations for best viewing convenience without interfering with the operation and maintenance of equipment.
3. The Contractor shall coordinate names, abbreviations, colors, and other designations with the corresponding designations indicated in the Construction Documents and as required by codes and standards.
4. The Contractor shall use consistent identifiers throughout the Project.
5. The Contractor shall clean surfaces of dust, loose material, and oily films before applying self-adhesive identifiers.
6. Two weeks prior to a particular component or group of components being labeled, the Contractor shall review the proposed identification scheme, label(s), and procedure for affixing label(s) with the Owner and Engineer. Contractor shall not proceed with labeling until the Owner and Engineer have approved the proposed identification scheme, label(s), and procedure for affixing label(s).
7. The Contractor shall physically verify that the component to be identified matches the label to be affixed, prior to affixing the label.

**B. Comply with Owner’s Telecommunications labeling standards.** Obtain standards from Owner and coordinate labeling scheme with Owner prior to defining, procuring, printing, and installing labels.

1. Ports: Ports shall be labeled sequentially by number, left to right, top to bottom. For example, a four port outlet shall have port labels as follows:
  - 1 2
  - 3 4

- a. Cables:
    - 1) The structured cabling system is based on a structured wiring design of two (2) - UTP Category 6 cables to each teacher/student outlet location. The cables shall be designated by TR room, rack, row, and position (i.e. A.2.14.24, B.2.5.15).
    - 2) All additions to legacy data cables will be labeled at both ends utilizing the alpha MDF/IDF designation (i.e. A212, A213).
    - 3) All cable labels shall be of the wrap around self-laminating type. It is Contractor's responsibility to confirm the label size is appropriate for the cable installed.
  - b. Termination Blocks:
    - 1) Termination Block (66-style)
      - a) Pairs (first and every fifth pair, e.g. "1", "5", "10", "15", "20", "25", etc.) shall be labeled sequentially (top to bottom). Pair labels shall be continuous from block to block. For example, the first 66 block shall have pairs labeled "1" through "25", the second shall have pairs labeled "26" through "50", etc. If more than 100-pairs are terminated, the top right-most pins of the first 66 block shall be labeled with "101" and continuing down the right side of the 66 block.
  - c. Patch Panels:
    - 1) All patch panels located in the TRs will be identified by using rack-row-position specific to the drop location using permanent, pressure sensitive (sticky), machine generated labels designed to fit in the plates that snap into the front of the patch panels.
    - 2) Components Specific to Fiber Patch Panels:
      - a) Connector Panels/Adapter Plates: Connector panels are typically pre-labeled by the manufacturer with labels such as "A", "B", etc. or "1", "2", etc. For connector panels which are not pre-labeled, connector panel labels shall be of the form "X" where "X" is an alphabetical letter identifying the sequential connector panel within the patch panel.
      - b) The black enclosures shall be labeled with "From - To" information. All ports shall be labeled with strand numbers.
2. Outside Plant Cables and Equipment:
    - a. Copper Building Entrance Protectors:
      - 1) Campus Backbone Distribution:
        - a) Outside the panel: BEP's shall be labeled on the outside with one-inch lettering which clearly indicates the originating building(s).
        - b) Inside the panel: The BEP shall have a label which details for each cable terminating in the panel: the cable identifier, the originating building, intermediary UCV's (vaults, manholes, etc.) between the originating building and the building at which the patch panel is located, the cable count, and any pairs cut dead.
      - 2) Outside Horizontal Distribution:
        - a) Station Entrance Protectors: Label with the horizontal outlet identifier (per 606B).
    - b. Copper and Fiber Splice Enclosures: Enclosures shall be labeled with the cable identifiers of the cables entering and exiting the enclosure.
    - c. Cable: Labels at each end of the cable shall identify the Building and Telecommunications Room at the far end.

C. Outlet References and Labels Spreadsheet

1. An Outlet Reference Spreadsheet shall be maintained by the Contractor throughout construction. This spreadsheet shows outlet and patch panel port names, based upon the outlets shown on the Drawings, and is intended for the Owner’s use for patching and cross-connecting purposes during move-in.
2. The Contractor shall maintain the electronic copy of the spreadsheet with up-to-date as-built information on a minimum two week interval throughout construction.
  - a. The Contractor shall provide the Owner or Engineer an electronic copy of the up-to-date spreadsheet upon request during the course of construction.
3. The Contractor shall be solely responsible for the completeness and accuracy of the spreadsheet throughout construction and upon delivery to the Owner and Engineer.
4. Pre-Substantial Completion: Three weeks prior to Substantial Completion, the Contractor shall submit the final version of the spreadsheet to the Owner and Engineer. The final version of the spreadsheet shall incorporate all as-built information and any changes from the original Drawings.

**PART 4 - EQUIPMENT SCHEDULE**

**4.01 – IDENTIFICATION EQUIPMENT SCHEDULE**

<b>27 05 53 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS</b>		
<b>DESCRIPTION</b>	<b>PANDUIT</b>	<b>Special Rqmt/Notes</b>
EASY MARK LABELING SOFTWARE	PROG-EM2GO	
PANTHER HAND HELD LABEL PRINTING KIT	LS8EQ-KIT-ACS	
FACEPLATE LABEL	C195X040Y1J	
FACEPLATE LABEL	C261X035Y1J	
FACEPLATE LABEL	C195X040Y1C	
FACEPLATE LABEL	C261X035Y1C	
SELF-LAMINATING CABLE LABEL	S100X150YAJ	
SELF-LAMINATING CABLE LABEL	S100X150VAC	
LABEL FOR INDOOR ARMORED 12 AND 24 STRAND CABLE	S100X650YAJ	
LABEL FOR INDOOR ARMORED 12 AND 24 STRAND CABLE	S100X650VAC	
LABEL FOR OUTDOOR ARMORED 12 AND 24 STRAND CABLE	S100X400YAJ	
LABEL FOR OUTDOOR ARMORED 12 AND 24 STRAND CABLE	S100X400VAC	
LASER PRINTABLE SELF LAMINATING LABELS	S100X160YAJ AND NWSLC-3Y	For FZE/FXE jumpers.
LASER PRINTABLE SELF LAMINATING LABELS	S100X160VAC AND NWSLC-	For FZE/FXE jumpers.
LASER PRINTABLE SELF LAMINATING LABELS	S100X220YAJ AND NWSLC-7Y	For FZD/FXD jumpers.
LASER PRINTABLE SELF LAMINATING LABELS	S100X220VAC AND NWSLC-	For FZD/FXD jumpers.
1" HIGH BLACK ON WHITE	T100X000VPC-BK	For labeling racks and cabinets.
1" BY 4" WHITE	C400X100YJT	For labeling racks and cabinets.

**END OF SECTION 27 05 53**