SECTION 27-11-19
COMMUNICATIONS TERMINATION BLOCKS AND PATCH PANELS

PART 1 – GENERAL

1.01 DESCRIPTION
A. The work covered by this section of the Specifications shall include all labor necessary to perform and complete such construction, all materials and equipment incorporated or to be incorporated in such construction and all services, facilities, tools and equipment necessary or used to perform and complete such construction. The work of this section shall include, but is not limited to, the following:

1. ER/TR station cable termination system complete with all necessary installation hardware and labeling.

2. Wall mounted termination systems shall not be allowed unless approved by the Cal Poly ITS Telecomm group at their sole discretion.

1.02 QUALITY ASSURANCE
A. Refer to Section 27-00-00 for general details.

B. As noted in Section 27-00-00, all contractors and installers working on structured cabling system elements must hold a current manufacturer’s certification for each individual component they install.

1.03 CODES AND STANDARDS
A. Except as modified by governing codes and by the Contract Documents, comply with the applicable provisions and recommendations in Section 27-00-00.

B. TIA/EIA-568-B.1

C. TIA/EIA-568-B.2 (including 568-B.2-10)

D. ISO/IEC 11801 (including all current amendments)

E. UL listed

F. Cal Poly ITS Telecomm group Labeling, Design and Syntax Standard in Appendix B.

1.04 SUBMITTALS
A. Also refer to Section 27-00-00.

B. Shop Drawings:

1. Shop drawings shall show the locations of all termination blocks and the location of each end of every cable that shall be terminated on them.
C. Submit Manufacturer’s Cut Sheets for the following:

1. Any products not specifically listed in the PRODUCTS section shall require a submittal of the manufacturer’s cut sheets and approval of the Cal Poly ITS Telecomm group.

1.05 IDENTIFICATION

A. Termination blocks shall be labeled as shown in the Labeling, Design and Syntax Standards in Appendix B. Details for terminal block labeling shall be reviewed and approved by a Cal Poly ITS Telecomm group representative. (See Fig. #121 & 122 in Appendix B)

B. Patch panels shall be labeled with ½” white permanent polyester with black labeling. Details shall be provided by a Cal Poly ITS Telecomm Labeling, Design & Syntax Standard in Appendix B. (See Fig. #104, 105 & 147 in Appendix B)

C. Refer to Section 27-05-53 for additional details.

1.06 DEFINITIONS

A. All patch panels shall be 48 Port. No other size is acceptable.

1.07 WARRANTY

A. Refer to Section 27-00-00 for general details.
PART 2 – PRODUCTS

2.01 PRODUCT CONSISTENCY

A. Product Consistency: Any given item of equipment or material shall be the product of one manufacturer throughout the facility. Multiple manufacturers of any one item shall not be permitted.

2.02 RACK MOUNT PATCH PANELS

A. The product shall be rack mountable in standard, 2 post 19” equipment rack. *(See Fig. #104 & 145 in Appendix B)*
B. The product shall meet or exceed ANSI/TIA-568-C.2 Category 6 Category specifications.
C. The product shall be provided in 48-port configuration (only) featuring universal A/B labeling. *(See Fig. #104 & 105 in Appendix B)*
D. Use 110 connector terminations on rear of panel allowing installation of 22 to 24 AWG cable.
E. Be black powder covered high-strength aluminum panel with a removable rear mounted cable management bar.
F. Shall include preprinted jack position numbers on the front panel and customizable cable ID labels above each position.
G. Be backward compatible with Category 5e and 5 patch cords and cables.
H. Include a 20-Year Extended Warranty as part of a registered structured cabling system.
I. Approved Manufacturer: AMP, Inc. or Cal Poly ITS Telecomm approved equal.

EXECUTION

2.04 GENERAL

A. Location and placement of wall-field shall be as shown on the Drawings or defined in these specifications and schedules.
B. Supplied termination hardware shall accommodate 30% growth in cable terminations per floor.
C. Termination hardware and patch panels shall be assembled and installed as per the manufacturers’ printed instruction.
D. *Do not install termination blocks until after their installation location has been approved by the Cal Poly ITS Telecomm group representative.*

2.05 QUANTITIES

A. Quantities of wall field and components, patch panels, etc. shown on the Drawings are illustrative only and are meant to indicate the general configuration of the work. The Contractor shall be responsible for providing the correct quantities of blocks, connectors, etc. necessary to terminate, cross-connect and patch the volume of cable described herein and shown on the Drawings.

2.06 INSTALLATION

A. Installation Pattern
1. **A minimum installation pattern shall be composed of one 4U rack mountable patch panel with 48 ports. Patch panels with other than 48 ports shall not be acceptable.**

2. For additional station cables, add a second patch panel below the first. Include all required vertical and horizontal wire management. Increase the number of patch panels as necessary to a maximum of six per rack (192 cables).

3. For additional station cables beyond 192, expand to a second equipment rack adding panels from the top down with a maximum of six 48 port patch panels (192 cables) and so on as necessary. Vertical and horizontal wire management shall be provided as required. *(See Fig. #148 in Appendix B)*

4. Sufficient patch panel space shall be provided to allow for a 30% growth in cable terminations per floor.

5. See the Cal poly ITS Telecomm Labeling, Design and Syntax Standards in Appendix B.

2.07 **GROUNDING & BONDING**

   A. All wall patch panels shall be individually grounded to the TGB/TMGB with a #6 AWG copper bonding conductor.

   B. Refer to Section 27-05-26 for additional details.

2.08 **TESTING**

   A. Devices shall be tested as part of the required system testing for the cabling they support.

2.09 **ACCEPTANCE**

   A. Any deviation from the provided drawings or the Labeling, Design & Syntax Standards shall require submission and approval of a revised shop drawing by Cal Poly ITS Telecom group before the installation begins.

   B. Once the installation and testing has been completed and the Cal Poly ITS Telecom group representative is satisfied that all work is in accordance with the Contract Documents, the representative shall notify the Contractor and/or Cal Poly Project Manager in writing or via email.

2.10 **RECORD (AS-BUILT) DRAWINGS**

   A. The Project Record Drawings shall show the types and locations of installed cable termination hardware.

END OF SECTION
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