SECTION 27 15 13
COPPER HORIZONTAL STATION CABLES

PART 1 – GENERAL

1.01 DESCRIPTION

A. The work covered by this section of the Specifications includes 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. A complete structured cabling system composed of Category 6A unshielded twisted pair horizontal station cabling system with all cables, termination hardware, outlets and necessary installation and supporting hardware in accordance with the strictest manufacturer written recommendation, specification, and CSU, Chico standards.

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, STANDARDS AND GUIDELINES

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

1.04 SUBMITTALS

A. Refer to Section 27 00 00 for general details.

B. Shop Drawings:

1. None Required

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.

D. Manufacturers Testing:

1. Submit as testing results as required by Section 27 08 13.

E. Documentation supporting the proposed warranty and all terms and conditions.
F. All certifications (individual and company) as required by guarantor of the above mentioned warranty shall be submitted. These certifications shall only include those persons with direct association with this project and includes the expiration date and full name of each individual for which the certification is issued.

### 1.05 IDENTIFICATION

A. Cable labels shall be placed on all cables.

B. 3/4” white nylon with black lettering cable labels.

C. Labels containing a unique cable number shall be placed on both ends of all cables, 6 inches from the termination and/or terminal block.

D. Subsequent to placing and terminating cables, the Contractor shall place the appropriate cable label as noted above.

E. If at any time during the job the cable label becomes illegible or removed for whatever reason, the Contractor shall immediately replace it with a duplicate pre-printed cable label at the Contractor’s expense.

F. All cable labels shall be easily accessible, both physically and visually, upon completion of the job.

G. Refer to Section 27 05 53 for additional details.

### 1.06 DEFINITIONS

A. N/A

### 1.07 WARRANTY

A. Refer to Section 27 00 00 for general details.

B. All components used in horizontal station cabling systems shall be warranted for a minimum period of 20 years from the date of installation against defects in materials, equipment and workmanship. This warranty shall also include the performance of these systems. This warranty shall include transmission requirements as specified in applicable ANSI/TIA/EIA/IEC/ISO standards for each cable system specified. This warranty shall also include all current and future applications designed for and available for each cable system.

1. Warranty must be guaranteed by a single reputable manufacturer such as
   a. CommScope for the Systimax Solutions
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 will not be permitted, unless specifically noted otherwise.

2.02 COPPER HORIZONTAL STATION CABLES – GENERAL

A. Cable jacket marking: Must be legible and shall contain the following information:

1. Manufacturer’s name and/or trade mark.
2. Copper Conductor Gauge.
3. Pair Count.
4. UL listing.
5. Category rating.
6. Sequential distance markings, in one foot increments.
7. Environmental Space rating.

2.03 CATEGORY 6A HORIZONTAL STATION CABLE (TYPICAL LOCATIONS)

A. UTP Horizontal Station Cable for voice and data: 4 unshielded twisted pairs of 23 AWG solid copper conductors. Each pair shall have a conductor separator and all pairs will be separated by a cross insulator.

B. Individually insulated conductors under a common sheath.

C. Cable must be plenum rated.

D. Cable must meet requirements for Category 6A of ANSI/TIA/EIA-568-C.2.

E. Cable jacket shall white.

F. Manufacturer/Product: Commscope Model# 2091B WH
PART 3 – EXECUTION

3.01 GENERAL

A. Location and placement of termination blocks, patch panels and other distribution hardware shall be shown on the Drawings or defined herein.

B. Do not install cross-connects until after the horizontal station cable test reports have been accepted by a campus telecommunications representative.

C. Station cable is to be designed and installed so that the installed length is a maximum of 270 feet from a telecommunications room.

3.02 QUANTITIES

A. Quantities of system elements shown on the drawings are illustrative only and are meant to indicate the general configuration of the work. The Contractor is responsible for providing the correct quantities of materials to construct a system that meets the intent of these Specifications and the relevant codes.

3.03 INSTALLATION

A. The Contractor shall install each cable as an uninterrupted conductor section between the designated termination points, unless otherwise directed by the cable installation specifications. There shall be no splices or mechanical couplers installed between the cable points of origin and termination.

B. Unless otherwise noted, all cables shall be routed through the building cable tray or conduit.

C. All horizontal station cables shall be plenum rated except where run under the slab or exposed to moisture. Cables run under the slab or exposed to moisture shall be OSP cable, see 27 13 14 for more details.

D. Common cable runs shall not be tie-wrapped to any supporting devices (including cable trays, wire basket, conduit, etc.), except when supported by ladder racking within the telecommunications room.

E. At the same time cable is pulled into a pathway, also install a pull string to facilitate future cable pulls.

1. Pull string shall be nylon with 210 lb pulling tension. Pull string is to be tied off at each end.

F. Install station cabling, outlets and jacks as detailed in the specifications and Drawings. The typical configuration for outlets shall be three Category 6A cables, unless otherwise noted.

G. Non Typical Station Outlets:

1. Security Cameras, Access Point Locations, Wall Phones, Card Access Devices, KeyBoxes and other special use outlets may require differing quantities of station cable and have different termination requirements.

2. See campus provided detailed drawings for specific devices.

H. Terminate all four pairs of each cable on one outlet jack.

I. Leave 12” of slack for each cable measured from the face of the wall, at each jack location.
J. Leave 6” of slack at any transition or pull point to maintain cable bend radius, and prevent damage to the cable.

K. Leave 12” of slack for the pull string at the faceplate end, and 36” of slack at the far end of the pathway.

L. Cable Termination
   1. Cable shall terminate in the specific telecommunications facility designated on the drawings to serve that location.
   2. Cable shall terminate on the proper column of the wallfield provided for that floor or area.
   3. Leave 6” of slack for each cable at the point of termination.
   4. Maintain pair twists of horizontal station cable up to within 1/2 inch of the point of termination. Under no circumstances shall cable pairs be untwisted or otherwise altered prior to termination.
   5. Do not bend horizontal station cables to a radius of less than four (4) times the cable diameter.
   6. Cabling installation must meet all manufacturer’s written instructions.
   7. See Specification Section 27-11-19 for more detail on wallfield termination.

3.04 GROUNDING & BONDING
   A. Refer to Section 27 13 14 - 3.04 for additional details.
   B. Refer to Section 27 05 26 - for additional details.

3.05 TESTING
   A. For testing details see Section 27-08-13.

3.06 ACCEPTANCE
   A. Upon receipt of the Contractor’s documentation of testing, campus telecommunications representatives will review/observe the installation and may randomly request tests of the cables/wires installed. Once the installation and testing has been completed and the campus telecommunications representative is satisfied that all work is in accordance with the Contract Documents, the representative will notify the Contractor and/or campus project manager in writing or via email.

3.07 RECORD (ASBUILT) DRAWINGS
   A. The Project Record Drawings shall show the types and locations of all horizontal station cabling. Drawings should include identifying information from the cable identification labels.
   B. Refer to Section 27-05-53 for cable identification formatting.

END OF SECTION
# DOCUMENT VERSION CONTROL

<table>
<thead>
<tr>
<th>REVISION</th>
<th>DATE</th>
<th>AUTHOR</th>
<th>REASON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08/07/2012</td>
<td>C. WHITEHOUSE</td>
<td>INITIAL DOCUMENT CREATION</td>
</tr>
<tr>
<td>2</td>
<td>02/19/2013</td>
<td>CJW &amp; CLC</td>
<td>PRIMARY REVIEW COMPLETE</td>
</tr>
<tr>
<td>3</td>
<td>08/28/2017</td>
<td>MAS &amp; CLC</td>
<td>2017 REVISION DRAFT</td>
</tr>
<tr>
<td>4</td>
<td>09/12/2017</td>
<td>MAS &amp; CLC</td>
<td>2017 REVISION COMPLETE</td>
</tr>
</tbody>
</table>