

SECTION 27-20-10 WIRELESS DATA COMMUNICATIONS SYSTEM (WIFI)

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. A complete and operable WIFI, Wireless Data Communications System.
- B. All install locations, product configurations, and/or graphics must be approved by the Product Manufacturer and the Cal Poly ITS Telecomm group.

1.02 QUALITY ASSURANCE

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

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.
- B. UL/CSA 60950
- C. FCC Regulations 47CFR part 68
- D. The Cal Poly ITS Telecomm group, Telecommunications Standards Document and the Labeling, Design and Syntax Standards in Appendix B.

1.04 SUBMITTALS

- A. Refer to Section 27-00-00 for general details.
- B. Shop Drawings:
 - 1. All system designs and Drawings shall be provided by the Manufacturer. System specifications shall be provided by the Manufacturer and/or the Cal Poly ITS Telecomm group. All system designs and drawings shall be reviewed and approved by the Cal Poly ITS Telecomm group prior to purchasing material and/or start of installation.
- C. Submit Manufacturer's Cut Sheets for the following:
 - 1. Use only the approved campus standard products and Manufacturer for this system. Submit designs and cut sheets for all equipment and materials proposed for use in the system for approval by the Cal Poly ITS Telecomm group.
- D. Provide Manufacturer's Warranty statement.
- E. Provide all user/installation/programming/service manuals for all installed equipment.

1.05 IDENTIFICATION

- A. All cables, junction boxes, faceplates, Wireless Access Points (WAPs), patch bays and other communications infrastructure shall be labeled per Cal Poly ITS Telecomm Labeling, Design and Syntax Standards in Appendix B.
- B. Refer to Section 27-05-53 for additional details.

1.06 DEFINITIONS

- A. WIFI System shall provide an enterprise level signal to all areas of the specified project. Connected loading requirements (number of users supported at the same time) shall be provided by the University.

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 WIFI system equipment shall not be permitted.

2.02 WIFI – WIRELESS DATA SYSTEM

- A. GENERAL
 - 1. Aruba Networks - No Alternate
 - 2. The Contractor shall work with Aruba Networks and bring them to the project site for the purposes of evaluating the site and developing a system design that delivers to the University a site-wide enterprise level signal that supports the loading characteristics specified by the University.
 - 3. The University shall purchase and have delivered to the Contractor, the Manufacturer specified active components for the Contractor to install.
 - 4. All other construction materials necessary to create the complete specified system shall be the sole responsibility of the Contractor to purchase and install.
 - 5. The wireless access point network design shall be approved by The Cal Poly ITS Telecomm group before any materials are purchased and/or any work begins.
 - 6. The Wireless Access Point System Controller shall be from Aruba Networks and shall be located in a building designated by the Cal Poly ITS Telecomm group. Aruba Products shall be purchased by and provided to the installer by the University.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Installation at minimum shall be as specified by the manufacturer.

- B. Do not install wireless access point devices until after the installation locations and cable test results have been approved by the Cal Poly ITS Telecomm group.
- C. Contractor shall provide all conduits, cable, boxes and other passive materials to deliver a fully functional system that is constructed within the bounds of all codes, restrictions and Specifications.
- D. Electrical circuits used to provide power to each wireless access point installation shall be full time Power-over- Ethernet (PoE) connections provided by the project via a University installed network switch.
- E. All wireless access points (WAPs) shall be installed per manufacturer's installation instructions.
- F. Wireless Access Point (WAP) controllers shall be provided/purchased with project funds but shall be installed and connected to the campus fiber backbone by the Cal Poly ITS Telecomm group. **Dual CAT 6 Structured Cables shall be provided by the Project/Contractor to each WAP location.**
- G. Post Project Cleanup
 - 1. Remove rubbish, debris, and waste materials and legally dispose of such at an off-campus site.
 - 2. Restore any landscape, concrete, asphalt or aesthetic elements disturbed during installation.

3.02 QUANTITIES

- A. Quantities of system elements shown on the drawings shall be illustrative only and are meant to indicate the general configuration of the work. The Contractor shall be 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 GROUNDING & BONDING

- A. N/A

3.04 TESTING

- A. Testing shall require a heat map proving proper functioning of all WAPs (before the system can be accepted/approved). A random evaluation or demonstration of certain WAPs (up to 10%) shall be provided at no additional cost by the Contractor at the request of and in the presence of a Cal Poly ITS Telecomm group representative.

3.06 ACCEPTANCE

- A. Upon receipt of the Contractor's testing documentation, the Cal Poly ITS Telecomm group representative will review/observe the installation and randomly request tests of the device as installed. Once the installation, testing and repairs (if necessary) have been completed and the final "heat map" has been received and approved by the Cal Poly ITS Telecomm group representative, the Cal Poly ITS Telecomm group representative will notify the Contractor and/or the Cal Poly Project Manager in writing or via email of approval.
- B. **All installation locations, product configurations, labeling and test data must be approved by Cal Poly ITS Telecomm group.**

3.05 RECORD (AS-BUILT) DRAWINGS

- A. The Project Record Drawings shall show the type and location of each WAP device.

END OF SECTION

DOCUMENT VERSION CONTROL

REVISION	DATE	AUTHOR	REASON
1	02/20/2014	R. VOLK	INITIAL DOCUMENT DEVELOPMENT
	02/20/2014	DW & MH	PRIMARY REVIEW COMPLETE