

SECTION 27 21 33 WIRELESS ACCESS INFRASTRUCTURE

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes: support infrastructure and installation requirements for Owner-furnished wireless access points (APs), including horizontal cabling terminations, installation of Owner-furnished AP mounting accessories, patch cords, labeling, testing, and documentation where APs are indicated. AP mounting accessories are Owner-furnished and Contractor-installed per §1.2; they are not furnished under this Section.

1.2 OWNER-FURNISHED ACCESS POINTS AND MOUNTING ACCESSORIES

A. KU will provide wireless access points (APs), and the AP mounting accessory for each AP location, for Contractor installation at locations shown on construction drawings. KU IT selects and procures each mounting accessory to suit the Owner-furnished AP model and the ceiling type and construction at that location, at the time the Owner's active equipment is procured.

B. The Contractor shall mount/install each AP and its Owner-furnished mounting accessory at the specified location and document installation by recording each AP serial number and installation location and providing this information to KU IT in written and electronic form.

C. Ceiling type and construction at AP locations (required for mount procurement): Because KU IT must select and procure each AP mounting accessory before installation, and because AP mounting accessories are specific to the ceiling system and are not universal, the Drawings shall identify, for each AP location, the ceiling type and construction and any condition affecting the mount, in sufficient detail to select the correct mounting accessory. At minimum: (1) for accessible suspended-tile ceilings, the suspension grid system and its exposed face width and profile (for example, 15/16-inch standard, 9/16-inch narrow/slim, or slotted grid), the ceiling panel edge profile (square lay-in/flat, or tegular/reveal-edge/recessed), and the panel size; (2) for hard, inaccessible, or exposed-structure ceilings, the ceiling construction and the required drop or pendant length below structure; and (3) any decorative or applied ceiling treatment (such as wood slat, baffle, or cloud systems) at or near the AP, including its depth below structure and clearance to the AP. This information is established by the Architect's reflected ceiling plan, ceiling/finish schedules, and the Division 09 acoustical ceiling requirements; it is identified here so it reaches KU IT in time to procure the correct mounting accessory, and this Paragraph does not itself specify the ceiling system. This information shall be confirmed with the Professional and the Architect during design review under Section 27 05 00 §1.10 and reflected on the reflected ceiling plan and in the Division 27 Project Schedule (§1.10.E) before the project is issued for bid. Where confirmation has not been received, Division 27 shall identify it as pending confirmation in its design-review submissions so the open item remains visible.

D. Where the ceiling type or construction encountered in the field differs from that shown on the Drawings, or where the AP location conflicts with a ceiling treatment, light fixture, diffuser, sprinkler, or other ceiling element, notify KU IT and the Professional before installing the AP; do not relocate an AP or substitute a mounting method without KU IT approval. Coordination of a field condition under this Paragraph does not by itself change the Contract Sum or Contract Time (see Section 27 05 00 §1.11.D and §1.11.F).

E. AP support structure (Division 26 coordination): Where an AP is mounted from a hard, inaccessible, or exposed-structure ceiling and requires a pendant, drop pipe or rod, outlet/quad box, or similar support to receive the Owner-furnished mounting accessory, that support shall be shown on the Drawings, coordinated with the Architect and the reflected ceiling plan per Paragraph C, and is furnished and installed under Division 26 (Electrical) unless the Contract Documents assign it otherwise. Division 27 installs the Owner-furnished mounting accessory and the AP on the support provided. This Paragraph applies only where such support is required; APs mounted directly to an accessible suspended-tile ceiling grid or directly to structure using the Owner-furnished mounting accessory do not require support under this Paragraph. Deliverable: Show the AP support type, drop length, and attachment to structure on the Drawings.

PART 2 – PRODUCTS

2.1 AP OUTLET ENCLOSURE (“BISCUIT BOX”)

A. Provide a surface-mounted or recessed enclosure suitable for terminating the AP horizontal cable in a Category 6A modular jack. KU Campus Standard: Legrand/Ortronics HDJ “biscuit box” enclosure, P/N OR-404HDJ2-88; project-specific deviation compatible with the selected jack system and eligible for the manufacturer-registered structured cabling system warranty.

2.2 AP PATCH CORDS

A. Provide factory-terminated GREEN Category 6A patch cords from the same manufacturer/system family as the selected structured cabling system. For ceiling-mounted APs, provide a GREEN device patch cord minimum 3 feet in length (or as directed by KU IT). For hospitality-style/in-room wall-jack AP connections (when indicated), provide a short GREEN device patch cord 6 inches nominal and not exceeding 12 inches unless otherwise approved by KU IT.

PART 3 – EXECUTION

3.1 INSTALLATION AND CABLING (AP INFRASTRUCTURE)

A. Provide one (1) Category 6A CMP cable (GREEN jacket per campus data standard) from the serving MDF/IDF to each wireless access point (AP) location unless otherwise indicated on the Drawings. Each AP shall be served by a dedicated home-run cable.

B. Terminate the AP-end horizontal cable in a Category 6A modular jack installed in the biscuit box enclosure specified in Part 2. Provide a factory-terminated GREEN Category 6A patch cord from the jack to the AP as specified in Part 2.

C. Terminate each AP horizontal cable on Category 6A patch panel ports in the serving MDF/IDF.

D. Service loop (horizontal cable): Where accessible ceiling space is available at the AP location, provide an accessible service loop consisting of a minimum of ten (10) feet of horizontal cable above the accessible ceiling, or as directed by KU IT, and maintain bend radius. Where the AP is served from a hard, inaccessible, or exposed-structure ceiling, coil and support the service loop at the nearest accessible point on the cable route (for example, in accessible ceiling space, a cable tray or pathway, or the serving telecommunications room), maintain bend radius, and record its location in the closeout deliverables; do not coil service loop where it is inaccessible, where it would be exposed to view, or where it would obstruct a ceiling element. Adjust loop length as required based on ceiling constraints with KU IT approval. For AP outlets, this service loop satisfies the horizontal maintenance slack requirement of Section 27 15 00 §3.1.E; do not provide duplicate service loops unless directed by KU IT.

E. Labeling: Label the AP cable jacket at the patch-panel termination and label the serving patch panel port in accordance with Section 27 05 53 §3.2 and KU IT standards. Because APs are typically located in ceilings, corridors, and other common or non-assigned spaces, the patch panel port labeling identifier shall be confirmed with KU IT in accordance with Section 27 05 53 §3.2.E prior to final labeling.

F. Testing: Test each AP horizontal cable as a Category 6A permanent link and provide PASS results in the same closeout format required for all copper links.

G. Documentation: Record each AP serial number, MAC address, serving closet/patch panel port, and installed location (room/area) and include in the closeout deliverables.

H. Coordination: Coordinate final AP locations, mounting details, drop/pendant length, orientation, and ceiling conditions with the Architect, the General Contractor, and KU IT before installation. Mount each AP so that the Owner's intended coverage orientation is maintained and the AP is not obstructed by, recessed into, or concealed behind a ceiling treatment, fixture, or other element, and so that the AP remains reachable for service.