

ANNEX "D" MC – WIRELESS NETWORK WIRING STANDARD

PART 1 – GENERAL

A. RELATED DOCUMENTS:

1. Division 16 Basic Materials and Methods Sections and the Intra-Building Data/Communications Cabling Section 16751 shall apply to work specified in this Annex. The Associate and Contractor are responsible to be familiar with the provisions contained therein.

B. SCOPE OF WORK:

1. Provide wiring as required to support the "wireless" network. Note each AP will receive 2 Category XP 6A Superior Essex cables, tested for 6A performance.
2. Furnish, install and test as required all conduit, conduit boxes, pull boxes, conduit bushings, sleeves, cabling, cable supports, firestopping, patch cords, connectors, patch panels, organizers, component and cable labels, designation strips, equipment racks, equipment cabinets, equipment shelves, etc. as required for a complete and functioning system.
3. The components, materials and methods of Section 16751 shall apply as applicable.
4. The "wireless" network being provided for is a wireless local area network (WLAN) serving a group of users and their computing devices in a common space, office area or building, as per IEEE 802.11 a/g/b/ac.
5. "Wireless" network wiring shall be a standards based infrastructure similar to the Section 16751 Campus Network cabling except for the specialized, dedicated outlets for the wireless access points as described herein.

C. COMPLIANCE:

1. The "wireless" network installation shall conform to the latest edition of the N.E.C., national, state and local code which apply.
2. The "wireless" network installation shall comply with all NFPA, NEMA, EIA/TIA, IEEE, ANSI, ISO and U.L. standards as applicable. All components and materials shall be U.L. listed.

PART 2 – DESCRIPTION

A. GENERAL:

1. Active "wireless" network components such as access points, power supplies, antenna, etc. shall be furnished by the Owner and installed by the Contractor.

B. ACCESS POINT (AP):

1. The access point shall be plenum rated or housed in a plenum rated enclosure.
2. The access point shall support or have accessories for supporting "in-line" power (DC power over twisted pair Ethernet).
3. The access point shall have adjustable control of the 2.4 GHz and/or 5.15 GHz data signal output strength for a variable cell size.
4. The access point shall have various directional antenna options to accommodate various cell shapes.
5. The Owner shall provide network switches with compatible in-line power coordinated to the access points to be provided.

C. SITE SURVEY:

1. The Owner shall provide construction documents to a Third Party Associate for the purpose of providing a computer generated site survey indicating the locations for the installation of Access Points (AP).
 - a. The Owner shall provide third party developed site survey information to the Associate for locating APs in the facility.
 - 1) The 25' of service slack in cable at the AP outlet location is intended for "fine tuning" the location per the site survey.

PART 3 – PRODUCTS

A. GENERAL:

1. Workmanship and design shall be in accordance with the requirements of the "wireless" network vendor and manufacturer.
2. All active equipment and components shall be provided and installed by the Owner unless otherwise noted.

B. COMPONENTS:

1. Outlet Box shall be a standard 2-gang deep box with a single gang plaster ring and a 3/4" non-metallic conduit nipple (Arlington #NM502) installed, or 1"C stubbed up and out per Specification Section 16741.
2. Faceplate shall be a single-gang, single port, stainless steel faceplate (Hubbell #SSF11) with one (1) Cat-6 data jack (blue) installed as per the project standard.

3. "Wireless" Data Jacks shall be Category 6a per Specification Section 16751.

PART 4 – EXECUTION

A. INSTALLATION:

1. Install standard data cabling from the "wireless" access point receptacle to the standard data patch panels, the same as standard data cabling per Specification Section 16751. Note each AP will receive 2 Category XP 6A Superior Essex cables, tested for 6A performance. A dedicated patch panel will be designated by a member of the UT Network Department on per project basis especially in cases of adds, retro fits and new installations. The prototype for wireless 6A cables at the IT closet end shall be placed in the first rack below the Fiber feeds and assigned to a dedicated switch for wireless purposes. Circuits are labeled per Annex A as WAP-wireless access points.
2. Intermixed routing of cables with standard data cables is permissible.
3. The "wireless" network cabling shall support the (IEEE 802.11a/g/n/ac standard for 11 Mb/s @ 2.4 GHz) and IEEE 802.11a standard for 54 Mb/s @ 5.15 GHz.
4. When and/or where available, the Owner shall provide a "site survey" identifying the required final locations for wireless access points.
 - a. The "Wireless AP" outlet shall be provided with a 10' service loop at or above the outlet. The additional length shall be coiled at 200% of the recommended minimum bend radius or 24" diameter coil, whichever is larger. The coil shall be loosely cable tied and attached to a nearby support. The coil shall be located, if possible, above the outlet, individually bundled and tagged with the cable identifiers.
 - b. The "Wireless AP" outlet service loop shall be utilized to "fine tune" the "AP" location upon installation of the "Wireless AP" system by others.
5. Above ceiling outlet boxes shall be a double-gang handy box with single-gang plaster ring, utilizing a single-gang, single port stainless steel faceplate with one (1) data jack installed.
6. The outlet box shall be anchored to building structure utilizing a beam clamp, dedicated drop wire and drop wire clip, "T-Bar" and "T" bar clip, etc. as required.
7. Provide grommeting and strain relief for the cables at the outlet box.

8. Outlet, jack and cable identification shall be provided per the UT Standard, Annex "A". Implement the same as data outlets.

PART 5 – TESTING

A. "Wireless" network cabling shall be tested for 6A compliance as per standard Specification Section 16751 methods, procedures and standards.

1. Include the "wireless" network test reports in alphanumeric sequence with the Campus Network Cabling Reports per Specification Section 16751.

END OF ANNEX "D"

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