

## PART 1 - GENERAL

- 1.01 Communications systems are expected to be important over the life of campus buildings. In order for new communications technologies to be installed and maintained cost-effectively, provide adequate physical infrastructure within campus buildings. This infrastructure includes riser systems, conduit, cable trays, and utility closets.
- 1.02 The recommended distribution infrastructure is designed to be general purpose and flexible enough to accommodate a variety of technologies. Space is needed for cable installation and interconnection and for electronic equipment in support of various communication technologies. Most communications utilities can share the same spaces since the physical topology and wiring requirements are similar.
- 1.03 Lay out the communications raceway system to conform to programmed use of space. Verify layout with OIT and UAF Facilities Services. Allow adequate and appropriate space for local switchgear.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

- 3.01 Riser system: The riser system is a closed conduit system except in those areas where cable trays are specifically allowed.
  - A. Mount a pull box on every floor sufficient to carry the conduits in the riser with the lid to the pull box secured with security screws.
  - B. Enclose risers in areas where aesthetics are an issue in a soffit that allows access to the pull boxes.
  - C. All floor and ceiling penetrations shall be appropriately sleeved and fire stopped with 4-inch conduit sleeves of the appropriate number extending up wall and stopping 6" to 12" below cable tray.
- 3.02 Conduit general:
  - A. Conduit or approved cable tray required between the SHR and each SER. Conduit or approved cable tray required from the SER to each floor distribution point.
  - B. In certain areas conduit used to support and protect horizontal cables from the communication outlet location or Cabling Access Point to a SER, as well as interconnecting SERs, SHRs, and the UAFnet backbone.
  - C. Conduits from a single communication outlet shall be a minimum of 1/2-inch EMT. Conduits from a standard faceplate (three ports) shall be minimum 3/4-inch EMT.
  - D. Maximum size of a single conduit not to exceed 4-inches. If the number of horizontal cable bundles requires additional conduit beyond 4-inches, then install additional 4-inch conduits

to accommodate.

- E. Any conduit carrying horizontal cable(s) will have a maximum of 270 degrees of bend. A 50' length of conduit with two (2) 90-degree bends is considered equivalent to 270 degrees of bend; install a pull box in the conduit run.

3.03 Cable trays general:

- A. If large numbers of horizontal cables run to a central location, use cable tray to collect the cable bundles and route them to the SER.
- B. Bond all feeder conduits directly to the cable tray. Bond all cable trays to a grounded conduit.
- C. The conduit opening must face toward the cable tray.
- D. The use of conduit and pull boxes for routing large groups of horizontal cable bundles is permissible only when it is not possible to use a cable tray.
- E. A cable tray may be routed through other spaces if sufficient corridor space is not available.
- F. Size main distribution cable trays with a minimum of 20% spare capacity.
- G. Use (multiple) 4 inch conduits for cable tray transitions through firewalls. Increase number of conduits as needed for spare capacity of 20%. Indicate on the drawings that the conduits must be fire sealed prior to substantial completion.

3.04 Open cable trays:

- A. Open cable trays may be used inside of SERs, SHR, and ceilings.
- B. All conduits terminating at an open cable tray must terminate at the near side of the tray and above the tray.
- C. The preferred termination of conduit horizontal distance is 6 inches and the preferred termination of conduit vertical distance is 3 inches.

3.05 Pull boxes:

- A. Minimum pull box size for a single horizontal cable bundle 6" X 6" X 4".
- B. The use of electrical boxes that do not maintain the minimum bend radius not allowed. LB joints are not recommended.
- C. Security screws securing the lids for boxes mounted in public areas.

END OF SECTION