

**27 00 00 - TELECOMMUNICATIONS & VOICE DATA SYSTEMS**

## A. General

1. The CSU ACNS/Telecom and Housing IT are co-responsible for managing the Housing and Dining telecommunications network. This includes determining suitability of proposed uses, compliance with appropriate codes and standards, periodic removal and/or replacement of network components, and extensions and additions to the network. Telecommunications Standards can be viewed on their Colorado State University web site at the following address:

<http://www.telecom.colostate.edu/pdfs/Telecom-Standards-2017-02-17.pdf>

2. Housing IT and CSU ACNS/Telecom shall be consulted, through the University Project Manager/Representative, during the project design phase. They will provide design parameters for the distribution system and for the systems in individual buildings prior to construction.

## B. Procedures:

## 1. Planning

- a. Housing IT will provide the University ACNS/Telecom with floor plan drawings for new building construction and/or major remodel projects.
- b. Housing IT and ACNS/Telecom personnel will meet with building occupants and any other interested parties to determine the communications requirements for specific projects.
- c. The preliminary plans shall be marked to show service locations and space requirements; then returned to Housing IT for inclusion in the final plans.
- d. During design a network RF computer model for wireless access points (WAP) will be developed by the Design/Build contractor in conjunction with Housing IT. This model will be used to layout WAP's for optimal coverage during construction.
- e. The University will reserve the right to include any or all portions of the telecommunications work on projects for which bids are being sought.

## 2. Implementation:

- a. Contractors performing telecommunications work on University projects will ensure that all material and equipment meet the requirements of the above listed codes and standards.
- b. Upon request, by the University Project Manager/Representative, contractors will provide catalog numbers and samples of materials and equipment to be supplied; along with the manufacturer's name, address, and telephone number.
- c. This information will also indicate that the material and equipment meet all the above-mentioned codes and standards.
- d. University building officials, through the University Project Manager/Representative, must approve the use of specific material and equipment.

## C. Network closets:

1. IDF's with less than 96 ports

- a. Single rack with cable management on both sides - room size 6' wide x 8' deep\*.
  - i. \*Room depth may be reduced by 2' if the space is provided with double door access in front of the rack.
- b. For any IDF room that also contains BAS/ CATV/Access Control cabinet(s) or interfaces add 1' to overall room depth. (Rear wall mounted equipment)
  - i. Allows for 36" clearance front and rear and 32"-34" side clearance for access.
- c. Cooling – transfer fan or dedicated cooling to maintain room <75 degree F
- d. Fire stopping and dampers required in all rated wall assemblies

Exceptions:

- Small IDF's in non-dedicated space(s) must have fully enclosed dedicated climate/environmental/security control for IT equipment.
- Remote IDF's with less than 24 ports may be enclosed in an adequately sized NEMA 4 Hoffman Box or equal with filtered ventilation fans for climate control.

2. IDF's with between 97-192 ports

- a. Double rack with 3 cable management spaces - room size 8' wide x 8' deep\*.
  - i. \*Room depth may be reduced by 2' if the space is provided with double door access in front of the rack.
- b. For any IDF room that also contains BAS/ CATV/Access Control cabinet(s) or interfaces add 1' to overall room depth. (Rear wall mounted equipment)
  - i. Allows for 36" clearance front and rear and 32"-34" side clearance for access.
- c. Cooling – transfer fan or dedicated cooling to maintain room <75 degree F
- d. Fire stopping and dampers required in all rated wall assemblies

1. Construction Notes:

1. A plywood backboard is required in telecommunications distribution terminal areas. Provide 3/4-inch A/C grade, painted white with two coats of fire-resistant matte finish on one designated wall within the network closet. The backboard shall be sized to fit the specific location and secured to the wall with appropriate anchors.
2. A Specification Grade 120V double duplex convenience outlet with two separate circuits is required at the lower right or lower left corner of the backboard, 12 inches above finished floor.
3. Lighting in telecommunications distribution terminal areas shall be switched at all doors and shall provide a minimum of 75 fc.
4. When conduit is required from the service jack location to the associated terminal closet, it shall be minimum 3/4 inch EMT. All open conduit ends must be reamed and have bushings installed.
5. Unless otherwise specified, each telecommunications service outlet shall be a 4-plex w/ring J-box type outlet with a 1 inch EMT conduit stubbed above the suspended ceiling.
6. Other specific requirements for floor spaces, wall space, conduits, raceways, racks and distribution infrastructure shall be specified in coordination with CSU ACNS/Telecom.
7. Energy conservation measures require that individual cooling systems be installed to accommodate telecommunications room cooling loads independent of the major building systems. Generally equipment BTU loads are assumed to be as follows: Main Distribution

- Frames (MDF) 3650 BTUs and Intermediate Distribution Frames (IDF) 725 BTUs per hour.
8. All conduits shall be sized as shown and include a #200 nylon pull cord.
  9. Service entrance conduits shall be spaced a minimum of 12 inches from the electrical service.
  10. Conduit runs shall not have more than the equivalent of three 90-degree bends between outlets and pull boxes. All conduits shall have bushings.

**27 40 00 – AUDIO VIDEO SYSTEMS****A. General**

1. Design and construction of audio and video systems shall be coordinated with Housing IT

**B. Video Display: TV's and digital signs**

1. Locate a recessed wall 110-volt duplex outlet and signal cable outlet at each video display location inches above floor (or just below ceiling level). Each box to include provision for power, network and coax connection.
2. Provide conduit for signal cable from equipment room to the video display signal outlet.
3. Install a 2" conduit pathway from the monitor to a junction box mounted 16" AFF for remote connection.
4. Use locking wall-mount brackets. Projecting brackets and displays shall be designed so no part is lower than 80" above the finished floor unless projection is less than 4" from the wall. Monitors may also be located in recessed wall cavities.