27 20 00 Data Communications

Revision 01/04/2019

Purpose:

The Architect and/or Engineer shall incorporate the Rice specific requirements indicated in this standard's section into their design. The Architect and/or Engineer shall further produce project specifications in line with industry standards that are updated to reflect these Rice specific requirements.

1. General Requirements

a. Specialty contracts
   i. Data cable installation will be contracted directly through Rice IT. On a per project basis, the option to have data installation subcontracted through a general contractor will be open for review.
   ii. Data cable (which is separate from all items listed here) may be procured and contracted separately through Rice IT or in part of a cabling installation contract.
   iii. Information systems hardware purchase and installation shall be contracted independently through the Rice IT department.

b. Data jack locations
   i. Architect/Engineer shall coordinate with Rice Project Manager and IT Manager prior to 100% DD to develop a schedule of all data drops to include room number, walls/floors/ceilings and quantity of Ethernet connections
   ii. Be sure to also include all mechanical/electrical/elevator, etc. spaces and all BMS and PM system connection points.
   iii. Standard cable service loop of 10' for each data jack

c. MDF /IDF closets
   i. Locations
      1. MDF closet to be located on 2nd floor or above where possible
      2. IDF closets to be on each floor as defined during design process
      3. Closets to be centrally located preferably one above the other.
      4. The longest cable run from IDF switch to wall jack shall be 270'.
   ii. Room requirements
      1. No Ceiling
      2. No Carpet – sealed concrete
      3. MDF closet size to be a minimum of 8' by 10'
      4. IDF closets size to be a minimum of 7' by 8'
      5. Fire rated plywood on four walls 8' vertical starting 10" above floor
      6. Lights, water lines and air conditioning shall not be located directly above racks.
      7. Use racks, ladders and cable trays in rooms

8. Provide four 4” conduit penetrations per wall or alternative such as EZPath as identified per project and cabling density for horizontal cabling
9. Two 4” conduits between MDF/IDFs
10. Lighting shall be LED lights.

iii. Electrical
1. Standard convenience outlets on wall
2. Rack power per rack (Confirm on case by case basis)
a. Two 208V outlets
b. One 110 quad outlet

iv. Access door control panels (CBORD)
1. Mount control panels on walls
2. For each door access control panel
a. One 110 V– 20 A dedicated circuit
3. Refer to Access Control specifications in 28 13 00

v. Cooling
1. The primary cooling will be from the Building HVAC with cooling only – No heat/reheat.
2. The backup cooling will be from a DX unit. Capacity shall be ½ ton per rack with a one ton minimum.

vi. Special project requirements for the above to be defined by Rice project manager in coordination with Rice OIT. Items to review but not exclusively:
1. Standby circuit power requirements
2. Additional cooling requirements

d. Building distribution
i. Service entrance to MDF closet.
1. From the point that campus distribution data feeds enter the building to the interior of the MDF, these feeds shall be run in Conduit. EMT is NOT acceptable.
2. Shall be two 4” conduits directly to MDF

ii. Exposed ceilings areas
1. Cable trays shall be used in areas with exposed ceilings.
2. Cable trays shall be Cablofil or University approved equivalent
3. 4” x 12” minimum cross section in halls
4. 4” x 6” minimum cross section in labs
5. Cable trays shall be single tier and kept at the same elevation.
6. Maximum fill is 50%

iii. Finished ceilings
1. Arlington loops for runs above drop ceilings
2. Areas that are inaccessible need to be supported with two 4” conduits between accessible areas.

3. Plans for routing IT above hard-deck ceiling shall be approved by Rice Project Manager and Rice IT manger prior to 100% DD.

iv. Mechanical, electrical, utility rooms
    1. All data connectivity in these rooms shall be in Conduit/EMT.
v. Access Controlled doors
    1. Refer Electronic Access Control and Intrusion Detection in 28 10 00

e. Standard data conduit to be 1 ¼" unless otherwise identified
f. Wall receptacle
    i. Double gang boxes with single gang faceplates
    ii. Faceplates to have dual data ports unless otherwise identified.
    iii. Route 1 ¼" conduit from box to be open ended above ceiling with no more than 90 degrees in bends.
    iv. Provide pull string in conduits.
    v. Above ceiling 2" sleeved wall penetration to main cabling pathways
g. Floor receptacles
    i. Power and data shall be in separate boxes. No combined service boxes allowed.
    ii. Floor boxes shall be FSR metal Products group FL500P.
h. Cameras
    i. Architect/engineer shall assume that every exterior door will have a camera viewing it from the inside.
    ii. Appropriate boxes and conduits shall be included (Double gang box with blank faceplate).
    iii. Locations to be coordinated with Rice Project Manager, Rice University Police Department and Rice IT Manager prior to 100% DD.
    iv. Refer to Video Surveillance specifications 28 23 00
i. Wireless Access Points
    i. Architect to coordinate locations during design development.
    ii. Wireless access points to retain a 30' cabling service loop
j. Specialty systems
    i. Unique specialty systems need to be identified during Design Development.
    ii. These include, but limited to: intercoms, cameras, digital signage, intrusion alarms, etc.)
        1. Access Control 28 13 00
        2. Video Surveillance 28 23 00
        3. Audio-Video Communications 27 40 00
k. Furniture coordination
    i. Wireports shall be fully coordinated with electric and with final furniture layout, by 50% construction documents
l. Near Building services.
    i. Parking Gates and Bluelight security poles shall be fed from the nearest buildings.