SECTION 270528 – DATA, VOICE AND VIDEO PATHWAYS AND SPACES

1.0 The design shall provide and document all pathways required for data, voice, and video systems. The system design shall be based on the University of Pennsylvania’s “Construction Specifications for Data, Voice, and Video Communication Networks at the University of Pennsylvania”.

2.0 All design pathways shall be closely coordinated with the University’s ISC Networking Group and the Telecommunications Group and approved by same.

3.0 The design shall document service entrance raceways, as well as raceways and pathways within the building. Wiring and devices will be provided by the University.

4.0 Pathways shall include trade size 1 conduit drops from above accessible ceiling to voice/data wiring device locations. Double gang boxes shall be provided at all wiring device locations as typical. Single gang boxes are permitted under restrictive space constraints.

5.0 Provide cable trays above suspended ceilings and in MDF and IDF rooms for backbone cabling and horizontal distribution. Cable trays shall be ladder type with both siderails supported. Center hung tray is unacceptable. All cable trays shall have a #6 AWG copper ground conductor run through the tray. Cable tray sizing shall consider that cable trays shall be occupied primarily by augmented Category 6 cable as well as secondary cables that may include fiber optic, copper, video, security and distributed antenna systems. Cable trays shall be sized to allow for 100 percent expansion of telecommunications wiring, without violating the applicable NEC rules governing cable tray fill limits.

6.0 IT spaces shall be provided with the following:

A. Rack space: Allow a 3 ft W X 2 ft D footprint area for each rack. Allow for 6 in. side clearance to a wall and 2 ft clearance in front of each rack.

B. Fire rated AC plywood on all four walls

C. Air conditioning or ventilation – as directed by the University Engineering Department.

D. Lighting: Fixtures to be positioned at the front and rear of all racks – 50 fc at 3 ft. illumination level.

E. Grounding: Wall mounted 4” X ½” copper bus bar, mounted on insulated stand-offs, connected directly to building ground grid via insulated #6 AWG copper ground conductor.

F. Wall construction to be 1 HR rated.

G. No ceilings.

H. Provide, as a minimum, 4 Hilti CP635 Speed Sleeves or UL listed equivalent at all wall and floor penetrations. Design shall include 50% additional penetration sleeve capacity beyond the “day one” requirement.

I. Electrical receptacles: Provide receptacles circuited to conditioned generator power, where available. Typical requirements will include quad 5-20R on a dedicated branch circuit at each rack location. Branch circuits shall originate from a dedicated electrical distribution panelboard.