SECTION 27 00 00 – TECHNOLOGY

The following is the Technology outline specifications, which defines the scope of work of the Technology system.

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Examine all other Sections of the Specifications for requirements that affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 COMMUNICATIONS

A. Communications services comprise the following:

1. Voice and Data: Infrastructure for voice and data transmission and telephone equipment.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Project Manager, Layout, installation supervision and testing by BICSI certified personnel.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Communications Systems

2. Cable Supports: Support brackets, lacing bars, spools, J-hooks, and D-rings.
3. Cable Trays: Metal, electroplated zinc galvanized.
   a. Basket cable trays.
4. Conduit and boxes. Flexible metal conduit shall not be used.
5. UTP Cabling:
   a. Horizontal: Category 6, Communications Plenum Rated, 100-ohm, four-pair cable.
   b. Backbone: Category 5e, Communications Riser Rated, 100-ohm, multi-pair cable.
   c. Work area outlet cords and patch cords.
6. UTP Cable Hardware:
b. Patch Panels.
d. Workstation Outlets: Multi-port-connector assemblies mounted in single or multigang faceplate.

7. Optical Fiber Cabling:
a. Multimode, OM4 50/125.
b. Singlemode, OS2 8.3/125.
c. Patch cords.

8. Optical Fiber Hardware:
a. Connectors: Duplex, Type LC.
b. Patch Panels.

9. Coaxial Cabling:
a. Horizontal: RG-6, Communications Plenum Rated, 75-ohm, 18 AWG, Quad shielded with 100 percent aluminum-foil shield and 40 percent aluminum braid.
b. Backbone: RG-11, Communications Plenum Rated, 75-ohm, 14 AWG, Quad shielded with 95 percent aluminum braid.

10. Racks:
a. Floor-mounted relay racks.
b. Floor-mounted equipment racks.
c. Floor-mounted server cabinets
d. Modular wall cabinets.

11. Horizontal and Vertical Cable management for racks.

12. Power Distribution Units: 0 rack unit vertical, NEMA L5-30P input, (20) NEMA 5-20R output.

13. Grounding:

14. Identification: Preprinted or computer-printed labels for Class 2 level of administration.

2.2 COMMUNICATIONS SYSTEMS

A. The project will result in a wired and wireless network throughout the facility. The wired locations will be limited, generally supporting fixed computing equipment locations. Wireless network connectivity will be provided throughout the project. The project will support the district's continued movement toward virtualized desktop computing and mobile network access.

B. Provisions will be made for the termination and demarcation of utility cables such as campus and/or utility telephone service cables, cable TV, cables, etc. Appropriate space will be provided to allow organized interconnection between utility feeds and internal systems.

C. The MDF is the main communications room for the building. This space will include the cable demarcations and the core network equipment, switches etc. Building riser cables will be terminated in this room.
D. The IDF rooms are the intermediate wiring rooms. The IDF rooms will be located throughout the building to ensure that the station cable lengths remain within the distance standards. These rooms will house the racks and patch panels for the cable termination and will provide space, power and cooling for the network electronics.

E. The technology cabling system will consist of fiber optic backbone cables and Category 6 station cables.

F. Pathways: the project will provide sufficient access, flexibility and capacity for cable routing throughout the life of the building. Access to cable tray and pathways will be provided.

2.3 INSTALLATION - COMMUNICATIONS SYSTEMS

A. Wiring Method: In raceways.

B. Identification: ANSI/TIA-606-A Class 2 level of administration.

2.4 WARRANTY

A. Communications System
   1. UTP Warranty Period: Twenty years from date of Substantial Completion.

PART 3 - EXECUTION

3.1 OPERATION MANUALS AND MAINTENANCE MANUALS

A. When the project is completed, the Contractor shall provide operation and maintenance manuals to the Owner.

3.2 RECORD DRAWINGS AND CONTROL DOCUMENTS

A. When the project is completed, an as-built set of drawings, showing requirements from contract and addendum items will be provided to the Owner.

END OF SECTION