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BuildingName
The Description of the Project
P00000000 0000

SPECIFICATION DIVISION 27

NUMBER SECTION DESCRIPTION

DIVISION 27 COMMUNICATIONS
SECTION 272000 - VOICE AND DATA COMMUNICATIONS

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DIVISION 27 COMMUNICATIONS
SECTION 272000 - VOICE AND DATA COMMUNICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, Standard General and Supplementary General Conditions, Division 01 Specification Sections, and other applicable Specification Sections, in particular the Related Sections listed below, apply to this Section.

B. Related Sections:

1. Section 017823 - Operation and Maintenance Manuals.
2. Section 019100/019110 - Commissioning.
3. Section 260513 - Medium, Low & Control Voltage Cables.
4. Section 260526 - Grounding and Bonding for Electrical.
5. Section 260533 - Electrical Materials and Methods.
6. Section 260543 - Underground Services for Electrical Systems.

1.2 SCOPE OF WORK

A. Section Includes:

1. Communications underground ducts, manholes, cable trays, conduits, floor sleeves, J-hooks, surface raceways, outlet boxes and cable pull strings as shown on the drawings.
2. Lighting, power and grounding in Building Entrance (BE) rooms and Telecommunications Rooms (TRs) as shown.

B. Work Not Included:

1. Communications backboards, equipment racks, equipment, cable ladders, cable managers, cables, terminations, jacks and outlet cover plates will be provided by others.

1.3 DEFINITIONS

A. The Building Entrance room (BE) is the main termination point for interconnecting cables external to the building with cables internal to the building. In addition, the BE may house communications equipment and electronic equipment of other systems. A BE may also serve as a combination BE and TR and serve local telecommunication work outlets.

B. Telecommunications Rooms (TRs) are distribution and termination rooms that serve the telecommunication work outlets in the immediate area. TRs may house communications equipment and electronic equipment of other systems.

1.4 QUALITY ASSURANCE

A. Manufacturers and Products: The products and manufacturers specified in this Section establish the standard of quality for the Work. Subject to compliance with all requirements, provide specified products from the manufacturers referenced in Part 2.

B. Reference Standards: Products in this section shall be built, tested, and installed in compliance with the specified quality assurance standards; latest editions, unless noted otherwise.

1. ANSI/TIA/EIA-568-C Commercial Building Standards for Telecommunications Cabling Standards.
2. ANSI/TIA/EIA-569-C Commercial Building Standards for Telecommunications Pathways and Spaces.
3. ANSI/TIA/EIA-607-B Commercial Building Grounding and Bonding Requirements for Telecommunications.

1.5 WARRANTY

A. Provide a complete warranty for parts and labor for a minimum of one year from the date of Substantial Completion.

PART 2 - PRODUCTS

A. Communications pathways, lighting, power and grounding shall be in accordance with the Related Sections.

B. Equipment rack power strips shall be 125 volt, 20 amp, 3 wire, single circuit type with 10 NEMA 5-20R single receptacle outlets on 6" centers, Wiremold #V24GB506.

PART 3 - EXECUTION

3.1 RACEWAY INSTALLATION REQUIREMENTS

A. Minimum conduit size shall be 1” for serving one outlet box. Daisy chaining of outlet boxes is unacceptable. Instead, multiple outlets may be served from an appropriately sized junction box. The conduit feeding the junction box shall be sized as follows:

1. 1-1/4" for serving two outlet boxes.
2. 2" for serving three outlet boxes.
3. 1-1/4" for serving up to three outlets in a surface raceway.

B. Communications ducts and conduits entering the building from the outside shall transition to galvanized rigid steel conduit or intermediate metal conduit at the building wall, and shall continue as galvanized rigid steel conduit or intermediate metal conduit until entering the BE room or TR. Maximum conduit length to meet Code shall be 50'. Notify the Project Manager if this length is exceeded.

C. Riser conduits and sleeves connecting BE rooms and TRs shall be 4". Install conduits and sleeves as close as possible to the walls, at the locations shown. Stub up floor conduits and sleeves 4" AFF. Stub wall conduits and sleeves 4" into the room, and cable trays 6" into the room.

D. When conduits are needed to bypass a large interference in a cable tray run, the cross sectional area of the conduits shall equal or exceed the cross sectional area of the cable tray. These bypass conduits shall have sweeps and bends as noted below, and shall be braced well to allow pulling of communication cables.

E. Conduit bends and offsets shall be made with sweeps or manufactured elbows. Conduits shall not have more than the equivalent of 2 ninety-degree bends between pull points. Pull boxes shall not be used to make directional changes. Provide pull boxes in straight sections of conduit only.

F. Provide insulated bushings on both ends of conduits.

G. Provide double gang sheet metal outlet boxes 2-1/8" deep, and provide double gang plaster rings.

H. Bond the entire raceway system together and connect it to the ground system.

I. Provide nylon pull strings in conduits and sleeves. Label pull strings with room number and wall (N, S, E, or W) of the outlet.

3.2 BE ROOM AND TR REQUIREMENTS

A. Provide ceiling-hung lighting with a wall switch at the door.

B. Provide power to HVAC equipment.

C. Provide dedicated 120 volt, 20 ampere circuits to duplex receptacles 48" AFF and 10' apart on the plywood backboards. Plywood backboards are by others.

D. Provide dedicated 120 volt, 30 ampere circuits to NEMA L5-30R receptacles and provide dedicated 120 volt, 20 ampere circuits to power strips on the telecom equipment racks. See Standard Detail 27200003.

E. In rooms with DAS equipment plywood backboards, provide two dedicated 120 volt, 20 ampere circuits to quad receptacles on each DAS backboard.

F. Provide one 120 volt, 20 ampere normal power circuit to a duplex receptacle on the wall near the door.

G. Coordinate all receptacle locations with ITSComm.

H. Provide a 1" wide x 12" long x 1/4" thick copper ground bus bar where shown. Connect it to the unit substation room ground bus bar and to the ground bus bars in the receptacle panels feeding the telecom room receptacles. Ground cables shall be No. 6 AWG green insulated, stranded, copper. The resistance to building ground shall be 1 ohm maximum.

3.3 COMMISSIONING

A. Perform Commissioning activities per Related Sections above.

END OF SECTION 272000