SECTION 16740 – TELEPHONE, DATA AND CATV SYSTEMS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish all labor, materials, equipment, and supplies, and perform all operations necessary to complete the telephone, data and CATV system work in accordance with the drawings and these specifications to include but not be limited to the following:

1. Provide a telephone service entrance conduit with pull wire from utility pole underground to the distribution board at telephone demarcation point the building.
2. Provide plywood distribution boards on spacers.
3. Telephone service conductors and building entrance terminals will be installed by the local telephone company.
4. The telephone company will provide telephone lines to be used as required by the Owner.
5. Provide one cable television service entrance conduit with pull wire and all required service items per local cable company to the demarcation location in the building.
6. Provide station outlets for each system, cable paths, patch panels, testing, certification, etc. as required for complete and functional systems.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Distribution Boards shall be 3/4" marine-grade plywood, eight feet (8') long by four feet (4') high with standoffs. Provide as shown on plans. Paint all sides and edges with two coats of fire rated paint. Channels shall be 1-1/2" x 3" x 12 gauge, Kindorf B-903 or approved equal.

B. Voice Outlets and Cabling: Provide 110 style blocks, Category 5e eight position eight-wire outlet modules, wall plates, wall phone mounting plates and blank inserts for all empty wall plate positions and all other necessary materials to make the wall plate location complete.

C. Provide Category 5e - 4 pair 24 AWG (minimum) twisted pair for voice station cabling.

D. Terminate all cabling on Category 5e outlet modules. The installed outlet module shall be rated to accept 6 position or 8 position modular plugs. Install the voice outlet modules in the top left position in a two position single gang wall-plate.

1. All Category 5e cabling for voice will be terminated on wall mount 110 blocks. The cables shall be terminated in ascending order. Provide wall mount 110-cable management.
2. Provide cross wiring between the horizontal cabling termination blocks and the service providers termination blocks to provide phone service to each unit as required by the owner. Provide cable spools to neatly route and support cross-wiring between termination fields.

E. Data Cabling and outlets.
1. Provide 110 style blocks, Category 5e eight position eight-wire outlet modules, wall plates, and blank inserts for all empty wall plate positions and all other necessary materials to make the wall plate location complete.
2. Provide Category 5e - 4 pair 24 AWG (minimum) twisted pair for data station cabling.
3. Terminate all cabling on Category 5e outlet modules. Install the data outlet modules in the top right position in a two position single gang wall-plate.
4. All Category 5e cabling for data will be terminated on wall mount 24-port patch panels. The cables shall be terminated in ascending order. Provide a rear mount strain relief bar for each patch panel installed to support the cable being terminated to the patch panel. Provide a one-position cable manager above the top patch panel and a two-position cable manager between each panel and below the bottom panel.

F. Provide patch cables between the patch panels and the service providers' terminations to provide data service to each unit as required by the owner. Provide cable spools to neatly route and support cross-wiring between termination fields.

G. CATV Cabling and outlets.
1. Provide listed and rated 75-ohm RG-11 CATV cable from each cable outlet location to the Cable demarc location at the service entrance. Provide Commscope #5912R or approved equal.
2. All RG-11 video cabling shall have ten feet of service slack left neatly coiled at the demarc location. Neatly dress the service slack at the demarc location and separate from the other systems cabling.
3. Provide all cable, F type connectors, wall plates, F adapter bulkheads for the wall plates and any other materials need to complete the CATV cabling.

a. Terminate both ends of all CATVcables with compression type F connectors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The distribution boards shall be bolted to two back-to-back structural spacer channels extending from the floor to the ceiling and shall be installed to provide 3" space from rear of plywood to wall. The relative lengths of the back boards will be one foot less than the length of the wall on which they are mounted, leaving a six inch space on either end. Spacer channels shall be horizontally spaced a maximum of 16" apart on center.

B. Install raceways and distribution boards as shown on the drawings.

C. The conduits shall be run in the shortest straight runs wherever possible. No section of conduit run shall be longer than 100 feet or contain more than two 90 degree bends. (A double offset is equal to one 90 degree bend.). For sections of conduit runs longer than 100'-0" or containing more than two 90 degree bends, or containing a reverse bend, pull boxes shall be provided and installed.

D. Minimum radius of telephone conduit bends shall be as follows:

Size (Inches)	Radius (Inches)

3/4	6
1	9
1-1/4	14
1-1/2	17
2	21
2-1/2	25
3	31
3-1/2	36
4	45

E. Do not run conduits in the floor slab unless specifically shown on the Drawings.

F. All conduits shall be left clean, dry, and free of debris or other obstructions.

G. A fish tape shall be left in all spare conduit runs. Fish tape shall be rated for 250lbs.

H. Minimum conduit size shall be 3/4", but not less than shown on the drawings

I. All conduit ends shall be equipped with insulated bushings.

J. All telephones that are mounted on walls shall be installed so that the highest device necessary to operate the telephone is 48" AFF, unless noted otherwise on the drawings.

K. Underground Conduit shall be PVC, rigid steel or IMC. In those areas without pavement that are subject to vehicular traffic conduit shall be encased in concrete to a minimum thickness of 3" around the conduit. All conduits shall be capped after installation to protect them from the weather and debris. Telephone conduit shall be a minimum of two feet from power conduit.

L. At all fire walls, all conduit openings shall be sealed with a fire barrier sealant conforming to the electrical code (such as 3M fire barrier sealer) to assure a positive seal against rodents, moisture, smoke or gas penetration.

M. Install cable in conduit from the backboard to the fire alarm system panel for the two required dedicated fire alarm lines.

N. Grounding:

1. Refer to Div 16 grounding spec for requirements.

O. All blocks, cables and outlets locations shall be mechanically labeled with a unique identifications scheme. Including the unit number and a unique identifier for each location.

P. Provide all telephone, data and CATV cabling, outlets, connections, and equipment to form complete working systems. Coordinate with utility companies for their requirements and comply with all utility requirements.

END OF SECTION 16740