

SECTION 27 00 00

GENERAL COMMUNICATIONS REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish all materials, labor, tools, transportation, incidentals, and appurtenances to complete in every detail and leave in working order all items of work called for herein or shown on the accompanying drawings, including work related to:
 - 1. Cable television system, including outlets and wiring.
 - 2. Voice/data network system including wiring, equipment racks, outlets and wiring.
- B. Include any minor items of work necessary to provide a complete and fully operative electrical system.
- C. The Contractor for this work is referred to Bidding Requirements, General Conditions, Special Conditions, Temporary Services and other pertinent Sections of these Specifications. These sections describe work that is a part of this Contract as contained in Division 01. The following General Provisions amplify and supplement these Sections of Specifications. In cases of conflicting requirements, the stipulations set forth in Division 01 supersede and must be satisfied by the Contractor.

1.2 RELATED SECTIONS

- A. Section 26 05 26 – Grounding.
- B. Section 26 05 33 – Raceway and Boxes for Electrical Systems.
- C. Section 28 13 00 – Door Access Control System.
- D. Section 28 31 13 – Fire Alarm System.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.
- B. OSHA 1910 - Occupational Safety and Health Act.

1.4 GENERAL REQUIREMENTS

- A. Contractor shall read the entire specifications covering other branches of work. He is responsible for coordination of his work with work performed by other trades.
- B. Consult all Contract drawings which may affect the location of any equipment or apparatus furnished under this work and make minor adjustments in location as necessary to secure coordination. Contractor shall consult architectural interior elevations for mounting heights of telecommunications outlets and clocks.

- C. System layout is schematic and exact locations shall be determined by structural and other conditions. This shall not be construed to mean that the design of the system may be arbitrarily changed. The equipment layout is to fit into the building as constructed and to coordinate with equipment included under other Divisions of work.
- D. Contractor shall contact the Owner's Representative immediately if he notices any discrepancies or omissions in either the drawings or the specifications, or if there are any questions regarding the meaning or intent thereof.
- E. Submit all changes, other than minor adjustments, to the Architect for approval before proceeding with the work.

1.5 SUBMITTALS

- A. Submit under provisions of the following and Division 01.
- B. Submittal shall include complete Specifications, including type of materials, electrical characteristics, capacities, performance and power requirements to determine compliance with Contract Documents. All data submitted shall be complete and shall apply only to this specific project. All extraneous material shall be deleted or marked out. Items to be supplied shall be specifically indicated using a method that will be visible after photocopying.
- C. Regardless of any information included in the submittal submitted for review, the requirements of the Drawings and Specifications shall not be superseded in any way by the review. Review by the Architect-Engineer does not relieve responsibility for submittal errors or from meeting the requirements of the Contract Documents.
- D. It is intended that Submittal data be complete and accurate at the first submission. If the Submittal is returned marked "Resubmit" only one additional submission will be permitted.
- E. Submit related Submittal at one time. **SUBMIT ALL ITEMS IN A SPECIFICATION SECTION AT THE SAME TIME.** Incomplete submittal will be held until a complete submittal is accumulated or may be rejected without further review and returned to the applicable parties. Include a copy of the Specification Paragraphs pertaining to the items submitted.
- F. If proposed equipment deviates from the Specifications or Drawings, indicate in writing on Company letterhead those differences and provide sufficient data to justify acceptance. **FAILURE TO INDICATE DEVIATIONS OR SUBSTITUTIONS IMPLIES FULL COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.**
- G. The term "by others" or similar wording shall not be used on Submittal. Submittal shall state by whom related items of work are to be provided. Where not indicated, it is implied that the work or item is provided under this Section.
- H. Shop Drawings: Provide shop drawings as required by the individual Specification Sections. Submit shop drawings indicating physical size and arrangement, (plans and elevations) construction details, provisions for conduits, access requirements for installation and maintenance, finishes, and materials used in fabrication for all equipment. Supplement shop

drawings with wiring diagrams for all systems with wiring connections for multiple components.

- I. Submittals shall be made as paper copies. Submittals transmitted only by electronic email shall not be accepted.

1.6 REGULATORY REQUIREMENTS

- A. Complete installation shall conform with all applicable Federal, State and Local laws, Codes and Ordinances, included but not limited to latest approved editions of the following:
 - 1. State Building Codes.
 - 2. Specific Construction Safety Requirements, State Industrial Commission.
 - 3. National Electrical Code - NFPA 70.
 - 4. Occupational Safety and Health Act (OSHA) of 1971 and all amendments thereto.
- B. Nothing contained in the drawings and specifications shall be construed to conflict with these laws, codes and ordinances, and they are thereby included in these specifications. All work shall comply with the 2008 edition of NFPA 70, The National Electrical Code. It shall be the Contractor's responsibility to assure that electrical work is in full compliance with the NEC.
- C. The Contractor shall visit the site to become familiar with all existing conditions affecting this work. No claim will be recognized for extra compensation due to failure of contractor to familiarize himself/herself with the conditions and extent of proposed work.
- D. Obtain and pay for all necessary permits. Request inspections from authority having jurisdiction.

1.7 RECORD DRAWINGS

- A. Record any changes in location of equipment items, telecommunications outlets, and similar construction items on a set of prints and deliver them to the Owner's Representative upon completion of the work.

1.8 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Provide a Complete Instruction and Maintenance Manual: Prepare in the form of an instructional manual for use by Owner's personnel. Provide one (1) draft copy and two (2) final copies.
 - 1. Format:
 - a. Size: 8-1/2" x 11", 20 lb. minimum weight white paper for typed pages, either manufacturer's printed data, or neatly typewritten.
 - b. Drawings: Provide reinforced punched binder tab, bind in with text. Fold larger drawings to size of text pages. Clear plastic "binding tape" (not "Scotch" tape) applied to edge of sheet and then punched is acceptable.
 - c. Single-sheet product literature and contractor-prepared pages: Provide reinforced punched binder tab. Clear plastic "binding tape" (not "Scotch" tape) applied to edge of page and then punched is acceptable.
 - d. Provide indexed tabs and flyleaf for each separate product, or each piece of operating equipment. Include typed description of product, and major component parts of equipment.

- e. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".
- f. Binders:
 - 1) Commercial quality three-ring binders with durable and cleanable plastic covers, 1" minimum, 2" maximum ring size.
 - 2) When multiple binders are used, collate the data into related consistent groupings and provide a spine label that includes the volume number and contents of the binder.

B. Provide content as listed in separate Sections of Division 27 of these specifications.

1.9 PROJECT/SITE CONDITIONS

A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Architect/Engineer before proceeding.

1.10 COORDINATION WITH WORK PROVIDED UNDER DIVISION 26

A. Telecommunications work shall be coordinated with associated work being provided under Division 26. Work provided under Division 26 shall include the following:

- 1. Raceway and Boxes for wiring.
- 2. 120-volt power circuits.

1.11 COORDINATION WITH WORK PROVIDED UNDER OTHER DIVISIONS

A. Division 14 - Elevator: Provide communications outlets and associated wiring as required by the elevator supplier for the Elevator Machine Room and for the elevator cab.

B. Division 28 – Alarms: Provide communications wiring and connections to the fire alarm control panel as specified under Section 28 31 13.

C. Division 28 – Door Access Control: Provide communications wiring and connections to the door access control system as specified under Section 28 13 00.

1.12 COORDINATION WITH OWNER FURNISHED ITEMS

A. Provide structured cable wiring and connections to owner furnished network switches. Also provide network wiring and connections between owner furnished network switches and owner furnished modular furniture partitions.

1.13 SUBSTANTIAL AND FINAL COMPLETION

A. Refer to General Conditions and Supplementary Conditions.

B. Substantial Completion shall not be considered unless all systems are tested and verified for adherence with Contract Documents and any work remaining is less than one percent of the total Contract Value of this Section.

1. Record Drawings, Operation and Maintenance Manuals, Acceptance Demonstrations, Owner personnel training, spare parts or extra materials required, test reports, warranties and certifications of installation inspections shall be submitted and accepted prior to Substantial Completion.
- C. Final Completion shall be when all work under this Section is completed as defined by the Contract Documents and accepted by the Architect-Engineer.
- D. When Architect-Engineer determines Work is complete, close out submittals will be considered.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Furnish new and undeteriorated materials and of a quality not less than what is specified.
- B. The selection of materials and equipment to be furnished shall be governed by the following:
 1. Where single trade name, brand of manufacturer or material is listed in the specification, the exact equipment listed shall be used in the bid.
 2. Where more than one name is listed, Contractor may select any one of the several brands specified.
 3. Where trade name, brand of manufacturer of equipment or material is listed in the specification followed by the word "or approved equal," the Contractor may substitute product of equal quality from another manufacturer for consideration by the Engineer.
- C. Conduit shall be as specified under Section 26 05 33.

PART 3 - EXECUTION

3.1 PROTECTION AND CLEANING

- A. Protect all telecommunications work and products against damage during construction and pay the cost of repair or replacement of telecommunications products made necessary by failure to provide suitable safeguards or protection. After all work has been inspected and approved, thoroughly clean all equipment, provided under this work.

END OF SECTION 27 00 00