

## SECTION 27 00 00

GENERAL COMMUNICATIONS PROVISIONS  
(COMMUNICATIONS)

---

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.02 SUMMARY

- A. This Section includes the following scope of work:
  1. Intent of Drawings.
  2. Pre-Bid Site Visit.
  3. Definitions.
  4. General Standards of Materials.
  5. Products and Substitutions.
  6. Applicable Codes.
  7. Guarantees and Certificates.
  8. Quiet Operation and Vibration Control.
  9. Temporary Shutdown of Existing Systems.
  10. Coordination.
  11. Shop Drawings, Product Data, and Samples.
  12. Owner Instruction.

## 1.03 SCOPE OF WORK

- A. The scope of the work included under Division 27 of the specifications shall include complete systems as shown in the Contract Documents and specified herein. Any work reasonably inferable or required to result in a complete installation or the intended operation and performance of the systems, shall be included in the Base Bid except where there is specific reference to exclusion and incorporation in other quotations.

## 1.04 INTENT OF DRAWINGS

- A. Provide complete and functional systems for the project. The systems shall conform to the details stated in the specifications and shown on the drawings. Items or work not shown or specified, but required for complete systems, shall be provided and conform with accepted trade practices. The drawings and specifications are presented to define specific system requirements and serve to expand on the primary contract requirements of providing complete systems. The drawings are diagrammatic and indicate the general arrangement and routing of the systems included in this contractors work.
- B. Do not scale the drawings. Because of the scale of the drawings, it is not possible to indicate offsets, fittings, valves, or similar items which may be required to provide complete operating systems. Carefully investigate conditions affecting the work

associated with this project. Check and verify dimensions and existing conditions at the site. Install systems in such a manner that interferences between pipes, conduit, ducts, equipment, architectural and structural features are avoided. Provide items required to meet the project conditions without additional cost to the owner.

- C. These documents may not explicitly disclose final details required for a complete systems installation; however, contractors shall possess the expertise to include the necessary appointments of complete operating systems.
- D. Contractors shall be "Experienced" (as defined in Division 1) in this type of construction and realize the extent of the work required.
- E. BICSI Certification of Workers
  - 1. The contractor will employ a minimum of one Registered Communications Distribution Designer (RCDD) certified by and in good standing with BICSI. This RCDD must be a direct full time employee of the contractor and the contractor will continue a minimum of one RCDD throughout the duration of the project. An RCDD shall remain assigned to the project from start to finish and be available to provide guidance to the installation team.
  - 2. Ortronics/Berk-Tek must be able extend a NetClear 25-year Static, Dynamic and Applications Warranty to the end user once the Telecommunications contractor fulfills all requirements under Ortronics and Berk-Tek OASIS Program. At least 30 percent of the copper installation and termination crew must be certified by Berk-Tek and Ortronics or by BICSI with a Technician Level of training.

#### 1.05 PRE-BID SITE VISIT

- A. Bidders shall visit the site and become completely familiar with existing conditions prior to submitting their bid. No extra charges shall be allowed as a result of existing conditions

#### 1.06 DEFINITIONS

- A. Specific terminology, as used herein, shall have the following meanings:
  - 1. "Finished Space" ...Space other than mechanical rooms, electrical rooms, furred spaces, pipe chases, unheated spaces immediately below roof, space above ceilings, unexcavated spaces, crawl spaces, tunnels, and interstitial spaces.
  - 2. "Conditioned" ...Spaces directly provided with heating and cooling.
  - 3. "Unconditioned" ...Spaces without heating or cooling including ceiling plenums.
  - 4. "Indoors" ...Located inside the exterior walls and roof of the building.
  - 5. "Outdoors" ...Located outside the exterior walls and roof of the building.

#### 1.07 GENERAL STANDARDS OF MATERIALS

- A. Equipment and materials, unless otherwise noted, shall be new and of first quality, produced by manufacturers who have been regularly engaged in the manufacture of these products for a period of not less than five years.
- B. Equipment of one type shall be the products of one manufacturer; similar items of the same classification shall be identical, including equipment, assemblies, parts and components.

- C. Materials furnished shall be determined safe by a nationally recognized testing organization, such as Underwriters' Laboratories, Inc., or Factory Mutual Engineering Corporation, and materials shall be labeled, certified or listed by such organizations. Where third party certification is required for packaged equipment, the equipment shall bear the appropriate certification label.
- D. With respect to custom made equipment or related installations which are constructed specially for this project, the manufacturer shall certify the safety of same on the basis of test data. The Owner shall be furnished copies of such certificates.

#### 1.08 PRODUCTS AND SUBSTITUTIONS

- A. Where a specific manufacturer's product is specified, the Contract Amount shall be based on that product only. Any substitutions from the specified product shall be offered as a Substitution Request. Refer to Division 1 for requirements. Substitutions shall not be permitted after the bidding phase without a Substitution Request Form included with the bid.
- B. Where several manufacturer's products are specified, the Contract Amount shall be based upon the specified products only. Any substitutions from the specified products shall be offered as a Substitution Request. Refer to Division 1 for requirements. Substitutions shall not be permitted after the bidding phase without a Substitution Request Form included with the bid.
- C. Where only one manufacturer's product is specified, the associated systems have been designed on the basis of that product. Where several manufacturer's products are specified, the associated systems have been designed on the basis of the first-named manufacturer's product. When products other than those used as the basis of design are provided, the contractor shall pay additional costs related to submissions review, redesign, and system and/or structure modifications required by the use of that product.
- D. It is the intent of these specifications that service organizations follow the above substitution procedures.

#### 1.09 APPLICABLE CODES

- A. Materials furnished and work installed shall comply with applicable codes listed in Division 1, with the requirements of the local utility companies, and with the requirements of governmental departments or authorities having jurisdiction.

#### 1.10 GUARANTEES AND CERTIFICATES

- A. Defective equipment, materials or workmanship, including damage to the work provided under other divisions of this contract resulting from same, shall be replaced or repaired at no extra cost to the Owner for the duration of the stipulated guarantee periods.
  - 1. Unless specifically indicated otherwise, the duration of the guarantee period shall be one (1) year following the date of Substantial Completion. Temporary operation of the equipment for temporary conditioning, testing, etc., prior to occupancy will not be considered part of the warranty period.

## 1.11 QUIET OPERATION AND VIBRATION CONTROL

- A. Equipment and associated items shall operate under conditions of load without sound or vibration deemed objectionable by the Architect. In the case of moving equipment, sound or vibration noticeable outside of the room in which it is installed, or noticeable within the room in which it is installed, shall be deemed objectionable. Sound or vibration deemed objectionable shall be corrected in an approved manner at no extra cost to the Owner. Vibration control shall be provided by means of approved vibration isolators and installed in accordance with the isolator manufacturer's recommendations.
- B. The sound pressure levels around mechanical and electrical equipment (fans, pumps, motors, etc.) in equipment spaces shall not exceed 85 dBA at any point three (3) feet from the equipment, with all equipment in the room operating. The sound criteria applies to the complete range of each piece of equipment.

## 1.12 TEMPORARY SHUTDOWN OF EXISTING SYSTEMS

- A. Plan installation of new work and connections to existing work to insure minimum interference with regular operation of existing systems. Some temporary shutdown of existing systems may be required to complete the work.
- B. Submit to the Owner in writing for approval, proposed date schedule, time, and duration of necessary temporary shutdowns of existing systems. Submit schedule at least fifteen (15) calendar days in advance of intended shutdown. Shutdowns shall be made at such times as shall not interfere with regular operation of existing facilities and only after written approval of Owner. The Owner reserves the right to cancel shutdowns at any time prior to the shutdowns. To insure continuous operation, make necessary temporary connections between new and existing work. Bear costs resulting from temporary shutdowns and temporary connections. No additional charges shall be allowed for Owner-canceled shutdowns that must be rescheduled.
- C. Shutdowns must be performed by the Owner. Do not shut-down any system. The Owner reserves the right to require a walk-through of any shutdown prior to the shutdown. Following electrical shutdowns, verify that affected motors are rotating in the proper direction. Bear costs associated with reverse rotated motors.

## 1.13 COORDINATION

- A. Coordinate and furnish in writing to the Architect information necessary to permit the work to be installed satisfactorily and with the least possible interference or delay.
- B. Coordination drawings shall be prepared as defined in Division 1. No installation of permanent systems shall proceed until the coordination drawings are reviewed by the Architect. No extra charges shall be allowed for changes required to accommodate installation of systems provided under other divisions of this contract.
- C. Coordination drawings shall be developed from individual system shop drawings and contractor fabrication drawings. Electronic or other reproduced engineering design drawings used as coordination drawings are not acceptable.

- D. When work is installed without proper coordination, changes to this work deemed necessary by the Architect shall be made to correct the conditions without extra cost to the Owner.
- E. The value of the coordination drawings shall be identified as a line item in the Schedule of Values. If the coordination drawings are not submitted as required, their value shall be credited to Owner in accordance with the provisions of Article 7 of the General Conditions. The value of coordination drawings shall be a minimum of two (2.0) percent of this Contract Amount.

#### 1.14 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. Shop drawings, product data, and samples shall be submitted in accordance with the provisions of Division 1.
- B. The following shall be submitted by the Contractor for review:
  - 1. Scale shop drawings showing system components with sizing indicated, including but not limited to:
    - a. equipment locations
    - b. raceways
    - c. insert and sleeve locations
    - d. hangers, anchors and guides
    - e. expansion joints
    - f. access doors
  - 2. Product data for system components and materials (including construction standards).
  - 3. Samples of finishes and trim exposed to view, such as fixture trim, escutcheon plates and similar items.
- C. The value of shop drawings, product data and samples shall be identified as a line item in the Schedule of Values. If the shop drawings, product data and samples are not submitted as required, their value shall be credited to Owner in accordance with the provisions of Article 7 of the General Conditions. The value of these items shall be a minimum of one (1.0) percent of this Contract Amount.

#### 1.15 OWNER INSTRUCTION

- A. After final tests and adjustments have been completed, furnish the services of qualified personnel to instruct representatives of the Owner in the operation and maintenance procedures for equipment and systems installed as part of this project. Operation and maintenance instructions for major items of equipment shall be directly supervised by the equipment manufacturer's representative. Supply qualified personnel to operate equipment for sufficient length of time as required to meet governing authorities' operation and performance tests and as required to assure that the Owner's representatives are properly qualified to take over operation and maintenance procedures. Minimum instruction period shall be 20 man hours. The instruction period shall be broken into segments at the discretion of the Owner.
  - 1. Notify the Architect, the Owner's representative and equipment manufacturers' representatives, by letter, as to the time and date of operating and maintenance instruction periods approved by the Owner at least one (1) week prior to conducting same.

2. Forward to the Architect the signatures of all those present for the instruction periods.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)