

## SECTION 270500 – COMMUNICATIONS GENERAL PROVISIONS

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

#### 1.2 CONTRACT DOCUMENTS

- A. All contract documents including drawings; alternates, addenda and modifications preceding this division of this specification are applicable to contractors, subcontractors, and material suppliers.

#### 1.3 SPECIFICATION FORM AND DEFINITION

- A. These Specifications are abbreviated form and contain incomplete sentences. Omissions of words or phrases such as "the Contractor shall", "shall be", "as noted on the drawings", "according to the drawings", "a", "an", "the" and "all" are intentional. Omitted words and phrases shall be supplied by inference.
- B. Engineer, wherever used in these specifications shall mean LATIMER, SOMMERS & ASSOCIATES, P.A., ENGINEERS, 3639 SW Summerfield Drive, Suite A, Topeka, Kansas 66614, 785-233-3232, FAX 785-233-0647.
- C. Contractor and/or Telecommunications Contractor hereinafter abbreviated T/C, wherever used in these specifications, shall mean the Company that enters into contract with Owner to perform this work.
- D. When a word, such as "proper", "satisfactory", "equivalent", and "as directed" is used, it required Engineer's review.
- E. "Provide" means furnish and install.
- F. Architect-Engineer hereinafter abbreviated A/E shall mean both the Design Architects and the Design Engineers.
- G. Equipment and/or materials manufacturer hereinafter abbreviated E/M shall mean the manufacturer of equipment or materials specified or referred to.

#### 1.4 QUALIFICATIONS

- A. The contractor(s) responsible for work under this section shall have completed a job of similar scope and magnitude within the last 3 years. They shall provide a list of said projects including Project Name, Project Address, Contact Name, Contact Telephone and Project Status.
- B. The contractor(s) shall employ an experienced, competent and adequate work force licensed in their specific trade and properly supervised at all times. Unlicensed workers and general laborers shall be adequately supervised to insure competent and quality work and workmanship required by this contract and all other regulations, codes and practices.
- C. At all times the contractor(s) shall comply with all applicable local, state and federal guidelines, practices and regulations. Contractor may be required to submit a statement of qualifications upon request before any final approval and selection. Failure to be able to comply with these requirements is suitable reason for rejection of a bid.

- D. The Telecommunications contractor must have vendor approved and certified technicians that will install the cable system. **A copy of certification documents must be submitted with the quote in order for such quote to be valid.** The Telecommunications Contractor is responsible for workmanship and installation practices in accordance with the specific vendor solution that is proposed.
- E. The lead technician on the job site shall be certified by the manufacturer in the installation of the product and /or hold a BICSI, Technicians Level I or II certification.
- F. The T/C shall have a BICSI Certified Registered Communications Distribution Designer (RCDD) employed by their company (on their staff not a contract employee) that will be involved with the installation and project management of the job. The RCDD's name and company must be verifiable on the BICSI website and match the company name of bidder. **A copy of certification documents must be submitted with the quote in order for such quote to be valid.** Telecommunications Contractors that do not have an RCDD on staff may submit a list of (3) project references that include contact information, and project manager qualifications to Engineer prior to bid date to be considered. Submittal of references does not mean the Telecommunications Contractor will be approved to bid. Only the contractors receiving the invitation to bid, listed on a addendum, or approved in writing by Engineer will be considered.
- G. The RCDD shall be required to inspect the installation on a regular basis and submit in writing that they certify the installation to meet all EIA/TIA and NEC standards and codes.
- H. The RCDD shall review the individual cable test results and certify that they are within the acceptable parameters.
- I. The RCDD shall also be required to put into writing that the installation was built per the specifications and construction drawings.

#### 1.5 LOCAL CONDITIONS

- A. Visit site and determine existing local conditions affecting work in contract.
- B. Failure to determine site conditions or nature of existing or new construction will not be considered basis for granting additional compensation.

#### 1.6 CONTRACT CHANGES

- A. Changes or deviations from contract, including those for extra or additional work must be submitted in writing for review of Architect-Engineer. No verbal orders will be recognized.

#### 1.7 LOCATIONS AND INTERFERENCES

- A. Locations of equipment, conduit and other telecommunications work are indicated diagrammatically by telecommunications drawings. Layout work from dimensions on Architectural and Structural Drawings. Verify equipment size from manufacturers shop drawings.
- B. Study and become familiar with contract drawings of other trades and in particular general construction drawings and details in order to obtain necessary information for figuring installation. Cooperate with other workers and install work in such a way to avoid interference with their Work. Minor deviations, not affecting design characteristics, performance or space limitation may be permitted if reviewed prior to installation by A/E.
- C. Should the requirements of work or systems installed by other trades require specific placement of conduit, apparatus, appliances or other telecommunications item, these requirements shall be adhered to. Should these requirements result in major deviations in placement from that indicated on the plans or specifications, the condition shall be reviewed by A/E prior to the placement of the work.

- D. Any conduit, apparatus, appliance or other telecommunications item interfering with proper placement of other work as indicated on drawings, specified, or required, shall be removed and if so shown relocated and reconnected without extra cost. Damage to other Work caused by this contractor, subcontractor, workers or any cause whatsoever, shall be restored as specified for new work.
- E. Do not scale telecommunications drawings for dimensions. Accurately layout work from dimensions indicated on Architectural drawings unless such is found in error.

1.8 PERFORMANCE

- A. Final acceptance of work shall be subject to the condition that all systems, equipment, apparatus and appliances operate satisfactorily as designed and intended. Work shall include required adjustment of systems and control equipment installed under this specification division.

1.9 WARRANTY

- A. T/C warrants to Owner and Engineer the quality of materials, equipment, workmanship and operation of equipment provided under this specification division for a period of one year from and after completion of building and acceptance of telecommunications systems by Owner.
- B. Contractor warrants to Owner and Engineer that on receipt of notice from either of them within one year of warranty period following date of acceptance all defects that have appeared in materials and/or workmanship, shall be promptly corrected to condition required by contract documents at T/C's expense.
- C. The warranty above expressed shall not supersede any separately stated warranty or requirements required by law or by these specifications.

1.10 ALTERNATES

- A. Refer to General Requirements and description for alternate bid items.

1.11 MATERIALS AND EQUIPMENT SUBSTITUTION

- A. The intent of these specifications is to allow ample opportunity for Contractor to use ingenuity and ability to perform the work to his and Owner's best advantage, and to permit maximum competition in bidding on standards of materials and equipment required.
- B. Material and equipment installed under this contract shall be first class quality, new, unused and without damage.
- C. In general, these specifications identify required materials and equipment by naming first the manufacturer whose product was used as the basis for the project design and specifications. The manufacturer's product, series, model, catalog and/or identification numbers shall set quality and capacity requirements for comparing the equivalency of other manufacturer's products. Where other manufacturers names are listed they are considered an approved manufacturer for the product specified, however; the listing of their names implies no prior approval of any product they may propose to furnish as equivalent to the first named product unless specific model or catalog numbers are listed in these specifications or in subsequent addenda. Where other than first named products are used for Telecommunications Contractor base bid proposal it shall be the responsibility of the Telecommunications Contractor to determine prior to bid time that the proposed materials and equipment selections are products of approved manufacturers which meet or exceed the specifications and are acceptable to the Engineer.
- D. Where materials or equipment are described but not named, provide required items of first quality, adequate in every respect for intended use. Such items shall be submitted to Architect-Engineer for review and approval prior to procurement.

- E. If the Contractor wishes to incorporate products other than those named in the Base Bid Specifications they shall submit a request for approval of equivalency in writing no later than (10) ten calendar days prior to bid date. Substitutions after this may be refused at Engineers option. Equivalents will ONLY be considered approved when listed by addendum.
- F. Materials and equipment proposed for substitution shall be equal to or superior to that specified in construction efficiency, utility, aesthetic design, and color as determined by Architect-Engineer whose decision shall be final and without further recourse. Physical size of substitute brand shall be no larger than space provided including allowances for access, forward two copies of complete descriptive and technical data including manufacturer's name, model and catalog number, photographs or cuts, physical dimensions, operating characteristics and any other information needed for comparison.
- G. Within 10 working days after bids are received, apparent low bidder shall submit to A/E for approval three copies of a list of all major items of equipment he intends to provide. As soon as practicable and within 3 working days after award of contract, Contractor shall submit shop drawings for equipment and materials to be incorporated in work for Architect/Engineer's review. Where 30 working day limit is insufficient for preparation of detailed shop drawings on major equipment or assemblies, Contractor shall submit manufacturer's descriptive catalog data and indicate date such detailed shop drawings will be submitted along with manufacturer's certifications that order was placed within 30 working day limit.

#### 1.12 DRAWINGS, OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Contractor shall furnish a minimum of two (2) sets of shop drawings of all materials and equipment. Architect/Engineer will retain one (1) set.
- B. Where catalog cuts are submitted for review, conspicuously mark or provide schedule of equipment, capacities, controls, sizes, etc., that are to be provided. Mark each submitted item with applicable section and paragraph numbers of these specifications, or plan sheet number when item does not appear in specifications or specified equivalent, mark submittals with applicable alternate numbers, change order number or letters of authorization. Each submittal shall contain at least two (2) sets of original catalog cuts. Each catalog sheet shall bear equipment manufacturer's name, address and phone number. All shop drawings on materials and equipment listed by UL shall indicate UL approval on submittal.
- C. Contractor shall check all shop drawings to verify that they meet specifications and/or drawing requirements before forwarding submittals to the Architect/Engineer for their review.
- D. All shop drawings submitted to Architect/Engineer shall bear Contractor's approval stamp which shall indicate that Contractor has reviewed submittals and that they meet specification and/or drawing requirements. Contractor's submittal review shall specifically check for but not be limited to the following: telecommunications and electrical characteristics, provisions for supply, and drainage connections to building systems. All shop drawings not meeting contractor's approval shall be returned to supplier for resubmittal.
- E. No shop drawing submittals will be considered for review by the Architect/Engineer without Contractor's approval stamp, or that have extensive changes made on the original submittal as a result of contractor's review.
- F. Architect/Engineer will not be responsible for or the cost of returning shop drawing submittals that are submitted to them without Contractor's review and approval stamp.
- G. Architect/Engineer's review of shop drawings will not relieve Contractor of responsibility for deviations from drawings and specifications unless such deviations have been specifically approved in writing by Owner or the representative, nor shall it relieve Contractor of responsibility for error in shop drawings. No work shall be fabricated until A/E's review has been obtained. Any time delay caused by correcting and resubmitting shop drawings will be Contractor's responsibility.

- H. Submit with shop drawings of equipment, two (2) sets of operating and maintenance instructions and parts lists for all items of equipment provided. Instructions shall be prepared by equipment manufacturer.
- I. Keep in safe place, keys and wrenches furnished with equipment under this contract. Present to Owner and obtain receipt for same upon completion of project.
- J. Prepare a complete brochure, covering systems and equipment provided and installed under his contract. Submit brochures to Architect/Engineer for review before delivery to Owner. Contractor at his option may prepare this brochure or retain an individual to prepare it for him. Include cost of this service in bid. Brochures shall contain following:
- K. Certified equipment drawings/or catalog data with equipment provided clearly marked as outlined under Section this specification.
- L. Complete installation, operating, maintenance instructions and parts lists for each item of equipment.
- M. Special emergency operating instructions with a list of service organizations (including addresses and telephone numbers) capable of rendering emergency service to various parts of system.
- N. The drawings are to include cable routes and outlet locations. Outlet locations shall be identified by their sequential number as defined elsewhere in this document. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. The Owner will provide floor plans in paper and electronic (DWG, AutoCAD 2007) formats on which as-built construction information can be added. These documents will be modified accordingly by the telecommunications contractor to denote as-built information as defined above and returned to the Owner/Owner's Representative.
- O. The Contractors shall annotate the base drawings and return a hard copy (same plot size as originals) and compact disk (AutoCAD 2007) format.
- P. Provide brochure bound in black vinyl three-ring binders with metal hinge. Reinforce binding edge of each sheet of loose-leaf type brochure to prevent tearing from continued usage. Clearly print on label insert of each brochure:
  - 1. Project name and address.
  - 2. Section of work covered by brochure, i.e., Telecommunications, Paging, etc.

#### 1.13 CUTTING AND PATCHING

- A. Contractor shall do cutting and patching of building materials required for installation of work herein specified. Cut no structural members without Architect/Engineer's approval and in a manner approved by him.
- B. Patching shall be by mechanics of particular trade involved and shall meet approval of Architect/Engineer.
- C. Drilling and cutting of openings through building materials requires Architect's review and approval. Make openings in concrete with concrete hole saw or concrete drill. Use of star drill or air hammer for this work will not be permitted.

#### 1.14 MUTILATION

- A. Mutilation of building finishes, caused by installation of telecommunications equipment, fixtures, outlets and other telecommunications devices shall be repaired at Contractor's expense to approval of Architect.

1.15 SETTING, ADJUSTMENT AND EQUIPMENT SUPPORTS

- A. Work shall include mounting, alignment and adjustment of systems and equipment. Set equipment level on adequate foundations and provide proper anchor bolts and isolation as shown or specified. Level, shim, and grout equipment bases as recommended by manufacturer. Equipment failures resulting from improper installation shall be repaired or replaced by Contractor at no cost to Owner.
- B. Provide each piece of equipment or apparatus suspended from ceiling or mounted above floor level with suitable structural support, platform or carrier in accordance with Building Industry Consulting Services International (BICSI) Telecommunications Distribution Methods Manual (TDM) and/or best recognized industry practice. Telecommunications contractor shall arrange for attachment to building structure, unless otherwise indicated on drawings or as specified. Provide hangers with vibration eliminators where required. Contractor shall verify that structural members of building are adequate to support equipment. Submit details of hangers, platforms and supports together with total weights of mounted equipment to Architect/Engineer for review before proceeding with fabrication or installation.

1.16 FINAL CONSTRUCTION REVIEW

- A. At final construction review, Telecommunications Contractor and major sub-contractors shall be present or shall be represented by a person of authority. Contractor shall demonstrate, as directed by Architect/Engineer, that the work complies with purpose and intent of plans and specifications. Contractor shall provide labor, services, instruments or tools necessary for such demonstrations and tests.

1.17 OPENINGS, ACCESS PANELS AND SLEEVES

- A. Contractor shall provide all boxes, access panels and sleeves for openings required to install his work, except structural openings incorporated in the structural drawings unless noted otherwise. Sleeves shall be installed for all cables passing through structural slabs and walls. Contractor shall set and verify the location of sleeves as shown on structural plans that pass through beams, only if so shown. All floor and wall penetrations shall be sealed to meet fire rating requirements.

END OF SECTION 270500