

SECTION 15000 - MECHANICAL - GENERAL

PART 1 – GENERAL

1.01 CONTRACT DOCUMENTS

- A. Refer to and comply with all provisions of the General Conditions, Supplementary Conditions, Division 1, General Requirements, Information for Bidders, and other technical sections of these Specifications in the installation of all mechanical work, as they may apply. Mechanical work includes HVAC, plumbing, and fire protection
- B. Drawings are diagrammatic, due to scale, therefore, all offsets, fittings, valves and accessories are not shown. Plan work around building details and other crafts. Furnish coordination drawings as necessary for the installation.
- C. In case of interference between trades, Architect-Engineer will decide which work is to take precedence regardless of work that might be installed.

1.02 CODES, ORDINANCES, INSPECTIONS, PERMITS AND STANDARDS

- A. Work is to be executed and inspected in accordance with local and state codes, laws, ordinances, rules and regulations applicable to particular class of work, and any fees in connection therewith are to be paid by Contractor.
- B. Should any part of Drawings or Specifications be found to be in conflict with applicable codes or ordinances, notify the Architect-Engineer, in writing, 72 hours prior to receiving of bids. After the receiving of bids, any discovery of code violations shall be promptly reported to the Architect-Engineer. Any work performed knowingly in violation of codes shall be corrected without additional expense to the Owner or his representative.
- C. Arrange with County, City, or State, if City has no ordinances covering work, for complete inspection, paying all charges pertaining thereto. Give proper authority all requisite notice relating to work under such; afford Architect-Engineer and all responsible parties proper notice for all violations of law. Upon completion of work, have work inspected, if required, obtaining certificate of inspection and approval from inspecting agency and deliver such certificate to Architect-Engineer.
- D. Wherever applicable, work shall conform to the latest standards of OSHA, NFPA, UL, ASTM, ANSI, AGA, ASME, ASHRAE, SMACNA and ADA.

1.03 SHOP DRAWINGS AND SUBMITTALS

- A. Submit within 30 days after Notice to Proceed, manufacturer's catalog sheets and/or shop drawings covering all phases of work included in this contract.
- B. Submittals shall be complete, arranged in sets, indexed and bound in folders. No loose sheets or partial submittals will be acceptable.
- C. All submittals shall bear written certification to the effect that the Contractor has examined them and found them to be in accordance with specifications and to be dimensionally correct with reference to available space and to related trades.
- D. Submittals are required even though equipment being furnished is exactly as specified.

1.04 COORDINATION DRAWINGS

- A. The HVAC Contractor shall prepare and submit for approval coordination drawings for mechanical rooms and other high interference areas when requested. The drawings shall include fire protection, plumbing, electrical and other divisions of work as necessary to achieve coordination between the various divisions of work. See Section 15800 for other requirements.
- B. The HVAC Contractor shall obtain the necessary information from the other divisions of work as necessary to coordinate these trades with the HVAC.
- C. The coordination drawings shall be drawn to minimum of quarter inch per foot scale, and shall show plan views, elevations and sections as needed to coordinate the work. Equipment room drawings shall be minimum one-half inch per foot scale.
- D. The coordination drawings shall be submitted to the other divisions of work for approval prior to submission to the Architect. Furnish six (6) sets for review by the architect.
- E. Coordination drawings shall also be furnished to show approved deviations from the construction documents when requested.

1.05 SUBSTITUTION OF MATERIALS

- A. Final decision as to whether or not a specific piece of equipment meets specifications shall rest with Architect-Engineer.
- B. Any proposed substitutions of equipment shall be accompanied by Shop Drawings showing revised equipment layouts, piping diagrams, and structural modifications. Where substituted equipment furnished requires use of larger, more, or differently arranged connections, such connections shall be installed to the complete satisfaction of Architect-Engineer, without additional cost to Owner.
- C. Should a substitution be accepted and subsequently proven unsatisfactory for the service intended within the warranty period, the contractor shall replace this material or equipment with that as originally specified, or corrected as directed by Architect-Engineer, at no additional cost to the Owner.

1.06 LOCAL SITE CONDITIONS

- A. Before bidding, make complete investigation at Site in order to be informed as to location of utilities and as to conditions under which work is to be performed. Locations of existing above ground and underground utilities and structures shown were obtained from surveys and/or as built drawings and are not to be assumed as being accurate.
- B. Make determination of soil conditions before bidding. These specifications and accompanying drawings in no way imply as to condition of soil to be encountered.

1.07 GUARANTY-WARRANTY

- A. All materials and equipment shall carry a full year's warranty from time Owner accepts building or the date of substantial completion, whichever is earlier, regardless of start-up date of equipment, unless a longer warranty period is specified under other sections.
- B. The HVAC equipment installation shall be completed in a timely manner, such that the system can be operated to "dry out" the building to permit application of the final building finishes during the construction. Additional air filters shall be furnished as needed during the construction phase.

1.08 RECORD SET DRAWINGS

- A. At completion of this project, the Contractor shall provide Architect-Engineer with an electronic copy (AutoCAD) plus one hard copy of all drawings showing all work installed by him as well as work connected to manholes.
- B. These drawings shall incorporate all changes made in the course of the project so as to enable the Owner to properly maintain, operate and repair both exposed and concealed work.

1.09 OWNERS OPERATING AND MAINTENANCE MANUALS

- A. Furnish operating and maintenance data for all mechanical equipment.

1.10 CLEAN UP

- A. Do not allow waste material or rubbish to accumulate in or about job site.
- B. At completion of work, remove all rubbish, tools, scaffolding and surplus materials from and about building, leaving work clean and ready for use without further cleaning required. Clean all equipment, piping, valves, fixtures, and fittings of grease, metal cuttings, insulation cement, dust, dirt, paper labels, etc.
- C. Any discoloration or other damage to buildings, their finishes or furnishings due to failure to properly clean or keep clean mechanical systems shall be repaired without cost to Owner.

1.11 CUTTING AND PATCHING

- A. Provide all cutting and patching required to perform the Mechanical work.
- B. All patching will be done by workmen skilled in the trade required.

1.12 EXCAVATION, TRENCHING, AND BACKFILLING

- A. All excavation, trenching and backfilling in connection with the Mechanical System is included as part of this Division.
- B. All excavation required shall be done as part of the Bid Price regardless of any implied conditions on the Plans or in these Specifications.
- C. Do not carry excavation below required level unless indicated otherwise on the Drawings. Excess excavation below required level shall be backfilled at no expense to Owner with earth, sand, gravel or concrete, as directed by Architect-Engineer and thoroughly compacted. Remove any unstable soil and replace with clean sand or soil and thoroughly compact. Architect-Engineer will determine the depth of removal of any unstable soil encountered. Grade ground adjacent to excavations to prevent water running in. Remove by pumping or other means any water accumulated in excavation.
- D. Banks of trenches shall be vertical or as shown on the Drawings. Width of trench to be 5" minimum, 8" maximum on each side of pipe bell. Bottom of trench for sewers and culverts shall be rounded so that an arc of circumference equal to 0.6 of outside diameter or pipe rests on undisturbed soil wherever practicable. Excavate bell holes accurately to size by hand. In rock, excavations shall be carried 8" below bottom of pipe. Use loose earth or gravel for backfill and tamp thoroughly.
- E. Bracing, sheathing and shoring shall be performed as necessary to complete and protect excavations as required for safety and to conform to governing laws.
- F. After piping, conduit, ducts, etc. have been installed, inspected, tested and approved by governing agency, backfill trenches with clean, stable soil free from stones. Place backfill in 4" layers, tamped under and around pipe and conduit to height of at least 2'-0" above pipe. Tamping shall be done in such manner as not to disturb underlying work. Remainder of trenches and excavations shall be backfilled with clean, stable earth, deposited in 8" layers and brought up to rough grade, with each layer compacted to density of surrounding soil. Remove sheathing and shoring as backfill is placed and fill space with dry sand.
- G. Replace existing appurtenances removed or damaged in connection with work, and restore to original conditions, unless otherwise directed.

END OF SECTION 15000