

## SECTION 15010 - GENERAL PROVISIONS

### PART 1 - GENERAL

#### 1.1 DIVISION OF SPECIFICATIONS

- A. For Bidder's convenience only, this Division of the Specifications is divided into the following parts:

15010 GENERAL PROVISIONS  
15050 BASIC MATERIALS AND METHODS  
15150 AIR SYSTEM TESTING AND BALANCING  
15200 MECHANICAL INSULATION  
15300 WATER SUPPLY  
15370 GAS DISTRIBUTION  
15450 PLUMBING  
15700 AIR CONDITIONING  
15800 AIR DISTRIBUTION  
15900 TEMPERATURE CONTROLS

#### 1.2 GENERAL CONDITIONS

- A. The General Conditions of the Architectural Specifications along with supplementary conditions, special conditions, information to bidders, and any other pertinent information and documents shall apply the same as if repeated herein.

#### 1.3 SCOPE OF WORK

- A. Furnish labor, materials and equipment necessary to provide and install the complete mechanical portion of this contract, including plumbing, air conditioning, heating, and ventilating systems as called for herein and on accompanying drawings. Parts of the mechanical division may be bid separately or in combination at the contractor's option; however, it shall be the responsibility of the General Contractor to assure himself that all items covered in the Mechanical Division have been included if he chooses to accept separate bids.
- B. Contractor shall refer to the Architectural, Structural, and Electrical drawings and install all equipment, piping, etc., to meet building and space requirements. **No equipment shall be bid on or submitted for approval if it will not fit in space provided or coordinated with other trades involved on the project.**
- C. It is the intention of these Specifications that all mechanical systems shall be furnished complete with all necessary valves, controls, insulation, piping, devices, equipment, etc., necessary to provide a satisfactory installation in working order.

- D. Contractor shall visit the site and acquaint himself thoroughly with all existing facilities and conditions which would affect his portion of the work. Failure to do so shall not relieve the contractor from the responsibility of installing his work to meet conditions.

#### 1.4 LOCAL CONDITIONS

- A. Location and elevation of all services is based on information obtained from the Owner. However, this shall serve as a general guide only and the contractor shall visit the site and verify the location and elevation of this service to his own satisfaction in order to determine the amount of work required for the execution of the contract.
- B. Contractor shall contact the various utility companies, determine the extent of their requirements and cooperate with the utility company in reaching a finished product. Contractor shall pay charges by Utility Company for extensions and connections.
- C. In case major changes are required, this fact, together with the reasons therefore, shall be submitted to the Architect, in writing, not less than seven days before the date of bidding. Failure to comply with this requirement will make the contractor liable for any changes, additions and expenses necessary for the successful completion of the project.

#### 1.5 CUTTING AND PATCHING

- A. Initial cutting and patching shall be the responsibility of the General Contractor with the Mechanical Contractor responsible for laying out and marking any and all holes required for the reception of his work. No structural beams or joists shall be cut or thimble without first receiving the approval of the Architect. After initial surfacing has been done, any further cutting, patching and painting shall be done at this contractor's expense.
- B. Cutting and patching shall be done in such a manner that the surrounding work will be restored to its original condition.

#### 1.6 CODES AND STANDARDS

- A. The entire mechanical work shall comply with the rules and regulations of the City, Parish and State in which this project is being constructed including the State Fire Marshal and State Board of Health. All modifications required by these authorities shall be made without additional charge to the Owners. The Mechanical Contractor shall report these changes to the Architect and secure his approval before work is started.

- B. In addition to the codes mentioned, all mechanical work and equipment shall conform to the applicable portions of the following Specifications, codes and regulations:
1. American Society of Heating, Refrigeration and Air Conditioning Engineers
  2. National Electric Code
  3. National Fire Protection Association
  4. American Society of Mechanical Engineers
  5. Underwriters's Laboratories
  6. American Gas Association
  7. Energy Code for Commercial and High Rise Residential Buildings
  8. International Energy Conservation Code
  9. International Building Code
  10. Louisiana State Plumbing Code
- C. Materials, equipment and accessories installed under this contract shall conform to all rules, codes, etc., as recommended by National Associations governing the manufacturer, rating and testing of such materials, equipment and accessories. Materials shall be new and of the best quality and first class in every respect. Whenever directed by the Architect, contractor shall submit a sample for approval before proceeding.
- D. Where laws or local regulations provide that certain accessories such as gauges, thermometers, relief valves and parts be installed on equipment, it shall be understood that such equipment be furnished complete with the necessary accessories whether or not called for in these Specifications.
- E. Unfired pressure vessels shall be built in accordance with the ASME Code and so stamped. Furnish shop certificates for each vessel.

#### 1.7 MINOR DEVIATIONS

- A. Plans and detail sketches are submitted to limit, explain and define conditions, specified requirements, pipe sizes and manner of erecting work. Structural or other conditions may require certain modifications from the manner of installation shown and such deviations are permissible and shall be made as required, but, specified sizes and requirements necessary for satisfactory operation shall remain unchanged. It may be necessary to shift ducts or pipes or to change the shape of ducts and these changes shall be made as required. All such changes shall be referred to the Architect for approval before proceeding. Extra charges shall not be allowed for these changes.
- B. No structural beams or joists shall be cut or thimble without first receiving the approval of the Architect. After initial surfacing has been done, any further cutting, patching and painting shall be done at the Mechanical Contractor's own expense.

- C. Contractor shall realize that the drawings could delve into every step, sequence or operation necessary for the completion of the project without drawing on the contractor's experience or ingenuity. However, only typical details are shown on the plans. In cases where the contractor is not certain about the method of installation of his work, he shall ask for details. Lack of details shall not be an excuse for improper installation.
- D. In general, the drawings are diagrammatic and the contractor shall install his work in a manner so that interferences between the various trades are avoided. In cases where interferences do occur, the Architect is to state which equipment, piping, etc., is to be relocated regardless of which item was first installed.

#### 1.8 WORKMANSHIP

- A. Workmanship shall be of highest grade, and all construction shall be done according to the best practice of the trade. Work shall be completed to satisfaction of the Architect.

#### 1.9 COORDINATION

- A. Coordinate work of the different trades to avoid interferences between mechanical and all other work. All piping, ductwork, etc., shall be installed in lines as required to accomplish this end whether or not shown on the plans.
- B. There will be a certain amount of work which must be coordinated with the Owner. This contractor shall coordinate required work with the Owner through the General Contractor using procedures acceptable to the Architect and Owner. The contractor shall maintain documentation of coordinated work.
- C. This contractor shall coordinate and confirm that all equipment requiring electric service will be adequately and properly serviced by Electrical Contractor. Any conflicts shall be brought to the attention of the Architect/Engineer prior to ordering the equipment.
- D. This contractor shall coordinate the space clearances required for the HVAC ductwork with the structure, ceilings, lights, sprinklers, etc. In some cases, due to space limitations, it may be necessary to re-size ductwork to meet the conditions of the project. Any resizing required shall be part of this project and done without any additional cost to the Owner. DO NOT MAKE DUCTWORK WITHOUT COORDINATION.
- E. This contractor shall coordinate the installation of sewer lines with all parts of the structural foundation system. Provide sleeves through graded beams at all conflicts. All points of penetration of foundation shall be reviewed by the Architect prior to rough-in.

## 1.10 REVIEW OF MATERIALS

- A. Whenever manufacturers or trade names are mentioned in these plans or Specifications, the words "or approved equivalent" shall be assumed to follow whether or not so stated. Manufacturers or trade names are used to establish a standard of quality only and should not be construed to infer a preference. Equivalent products which meet the Architect's approval will be accepted; however, these requests for acceptance of products must be received by the Architect a minimum of ten days prior to bid date. Submission shall include manufacturer's name, model number, rating table and construction features. Upon receipt and checking of this submittal, the Architect will issue an addendum listing items which are approved as equivalent to those specified. The contractor shall base his bid solely on those items specified or included in the "Prior Approval Addendum" as no other item will be acceptable. Prior approval of a particular piece of equipment does not mean automatic final acceptance and will not relieve the contractor of the responsibility of assuring himself that this equipment is in complete accord with plans and Specifications and will fit into the space provided. Submit shop drawings on all items of equipment for approval as hereinafter specified.
- B. Should a substitution or variation occur, the better quality or greater quantity of material or work shall be furnished. This also does not preclude other manufacturers if they meet the following criteria:
1. Product proposed for substitution shall be equal or superior to that specified in construction, efficiency, utility and function.
  2. Physical size of substitute brand shall not be greater than space provided for it.
  3. Profile of substitution shall be same concerning size, shape, indentations, recesses, etc.
  4. Complete illustrations, specifications and description of substitution shall be submitted for approval.
  5. Availability and proximity of manufacturer's service representative shall be factors considered in substitution approval.
  6. Substitution and/or variations shall be reviewed and allowed when there is no change in cost to the project.

## 1.11 SHOP DRAWINGS

- A. Drawings shall be presented in a clear and thorough manner.
- B. Details shall be identified by reference to sheet detail, schedule or room numbers shown on contract and drawings.

- C. Drawings shall contain the following information:
1. Date.
  2. Number of the drawing or revision.
  3. Name of project or facility.
  4. Name of contractor and subcontractor.
  5. Clear identification of contents and location of work.
- D. Preparation:
1. Clearly mark each copy to identify pertinent products or models.
  2. Show performance characteristics and capacities.
  3. Show dimensions and clearances required.
  4. Show wiring or piping diagrams and controls.
  5. Show weights and mounting data.
  6. Provide letter documentation confirming that all coordination with other trades effected have been done. This is especially necessary with the electrical requirements and rough-in requirements.
- E. Manufacturer's standard schematic drawings and diagrams:
1. Modify drawings and diagrams to delete information which is not applicable to the work.
  2. Supplement standard information to provide information specifically applicable to the work.
- F. Office samples shall be of sufficient size and quantity to clearly illustrate:
1. Functional characteristics of the product, with integral related parts and attachment devices.
  2. Full range of color, texture and pattern.
- G. **HVAC ductwork shop drawings shall be prepared showing all conditions of installation coordinated with structure, lights, sprinklers, ceiling, etc. These shop drawings shall be prepared within 45 days of the award of the general contract for the project. Drawings shall be done at minimum 1/8 inch scale on 24 inch x 36 inch sheets.**
- H. Equipment shop drawing shall be prepared by the contractor/supplier. These shop drawing shall include the manufacturer's performance data and installation manuals. In addition, the shop drawings shall show the installation specific to this project.
- I. Assemble certificates, executed by each of the respective manufacturers, suppliers, and subcontractors.
- J. All submittals shall be submitted prepaid and in ample time for review before installation.

- K. Six copies of each submittal shall be submitted to the Architect.
- L. These shop drawings shall be supplied as part of this contractor's contract. Any drawings not approved shall be resubmitted until approved. Submit all shop drawings at the same time. No separate items will be accepted (except in the case of the HVAC ductwork shop drawings).
- M. Time necessary for review of samples, certificates, test reports, and shop drawings is at least 30 calendar days after receipt of the item. All materials installed in the work shall match the reviewed submittals. After a submission has been reviewed, no substitutions will be permitted without written approval by the Architect.
- N. The Architect's review of shop drawings shall not relieve the contractor from the responsibility of incorrectly figured dimensions or any other errors that may be contained in these drawings. The omission from the shop drawings or specifications, even though approved by the Architect, shall not relieve the contractor from furnishing and erecting same.
- O. Any delays caused by contractor not submitting shop drawings within a timely manner shall be the problem of the responsible subcontractor and the General Contractor.

#### 1.12 UTILITIES

- A. Connect all mechanical utilities at the points indicated on the drawings and extend such utilities to the building and to equipment or facilities requiring same.
- B. Contractor shall pay all service and connection charges required by utilities companies.
- C. Contractor shall include all costs required by utility companies to extend utilities to the site. It is the responsibility of the contractor to obtain these fees from the utility companies and include those costs in the bid.

#### 1.13 REPAIRING ROADWAYS AND WALKS

- A. Where this contractor cuts or breaks roadways or walks to lay the piping, he shall repair or replace these sections to meet the Architect's approval.

#### 1.14 EXCAVATION AND BACK FILL

- A. Trench and excavation work shall include excavating, preparing of trenches, and backfilling as specified. Contractor shall install caution tape 12 inches above all piping, conduit, etc., as backfilling processes.
- B. Trench and excavation work shall not include pavement breaking, cutting of holes through foundation walls and floors, removal of obstructions,

relaying and/or repairing of floors, and repaving, which work shall be the responsibility of the General Contractor.

- C. Contractor shall do all necessary trenching, excavation and backfilling for the proper installation of his work. Care shall be taken not to excavate below depth required, that trench beds are well rounded and that ground under pipe line is firm and secure before any pipe is laid. Trenches shall be excavated where bells of pipe occur in order to insure a pipe resting on the entire length of the bottom of the trench.
- D. Unless otherwise noted, minimum cover over underground lines shall be 2-1/2 feet, except under streets of parking lots where minimum cover shall be 3 feet.
- E. The width of the trench shall be sufficient to permit thorough compaction of the backfill under and around the pipe but not exceeding the external diameter of the pipe by more than 12 inches. Excavation for pipes shall be by hand and/or machine and as specified herein and shall conform to the lines and elevations indicated on the plans.
- F. The pipe shall be placed on a uniformly firm bed, carefully shaped to support the pipe at the desired grade and so that any reaction will be distributed as nearly uniform as possible over a horizontal width of not less than six-tenths (6/10) of the outside diameter and all possibility of concentration of the reaction at or near the vertical diameter eliminated. The bed shall be shaped as to fit the lower part of the pipe exterior for at least 10 percent of its overall height.
- G. The pipe shall be placed on a firm foundation. Any muck or other objectionable material found during excavation and preparation of the bed shall be removed and replaced with suitable bed material directed by the Architect.
- H. All trenches and excavation shall be backfilled in a reasonable time after the pipes are installed unless otherwise directed by the Architect. Special care shall be taken in placing the backfill and extra care shall be used to obtain compaction under and along sides to the top of the pipe.
- I. The backfill shall be placed in loose layers not exceeding 6 inches in depth under and around the pipe and not exceeding 8 inches over the pipe. Each layer shall be compacted to the compaction requirements as specified by the Architect.
- J. Compaction shall be by hand and pneumatic tampers and the successive layers shall be added and compacted until the trench is completely filled and brought to elevation as directed. Back-filling shall be done in such a manner as to avoid injurious top or side pressures on the pipe.

- K. Improper backfilling and compacting shall be cause to have the trench opened to expose the pipe for inspection then properly backfilled and compacted with fill material.
- L. Where trenching is for piping, the bottom of the trench shall have minimum 95 percent compaction or bedded with compacted sand on undisturbed soil.

#### 1.15 MATERIALS

- A. Work materials shall be new and the best of their respective kinds, and shall bear the label of NFPA, ASME Code, AGA, and UL where such standard has been established for the particular item of equipment used.

#### 1.16 MATERIAL STORAGE

- A. General: Provide space for storage of material and equipment at ground level. Roof surfaces shall not be used for storage of materials or equipment. Any storage within the building shall be approved by the Architect prior to use of the space.
- B. Exterior: Pipe, fitting, or other materials stored outside of building shall be set on wood or steel racks or platforms at least 12 inches above grade. All necessary provisions shall be made to keep water and debris away from such stored material. Ends of pipes and valves shall be kept sealed until used.
- C. Warehousing: Equipment subject to rusting shall be kept warehoused until just prior to setting.
- D. Offsite warehousing shall be approved by the Architect and Owner only.
- E. Any warehousing used shall be approved by the Owner and an insurance certificate naming the Owner as insured shall be provided to the Owner.

#### 1.17 GROUNDS AND CHASES

- A. Contractor shall see that all required chases, sleeves, grounds, holes and accessories necessary for the installation of his work are properly built in as the work progresses; otherwise he shall bear the cost of providing them.

#### 1.18 MACHINERY GUARDS

- A. Contractor shall provide v-belt guards for each v-belt drive or other hazardous drive. Guard shall enclose the drive entirely and shall have a hole for taking tachometer reading.

#### 1.19 SPECIAL TOOLS

- A. Special tools required for proper operation or maintenance of any mechanical equipment provide under this contract shall be delivered to the Owner at the completion of the project.

#### 1.20 FILL AND CHARGES FOR EQUIPMENT

- A. Fill and charge with materials or chemicals all devices or equipment as required to comply with the manufacturer's guarantee or as required for proper operation of the equipment.

#### 1.21 EQUIPMENT ACCESS

- A. Large equipment to be installed in building, which is too large to permit access through doorways, shall be brought to the job by the contractor and placed before enclosing structure. Equipment shall be cribbed up from the floor by the contractor and covered where necessary or directed.

#### 1.22 EQUIPMENT IDENTIFICATION

- A. Stenciling: All items of major mechanical equipment such as air conditioning units, fans, etc., shall be neatly and clearly stenciled in letters not less than 1 inch high, with the same designation as appears on drawing. Location and color of such stenciling shall be appropriate for ready identification and/or as directed by the Architect. One set of compatible metal interlocking stencil letters and numbers shall be turned over to the Owner at the completion of the job.
- B. Pipe Coding: All piping, etc., both insulated and bare, shall be color coded with a general purpose pipe marker for interior locations and a 6 inch enamel painted ban for exterior locations, and stenciled as to service and characteristics on the 10 foot centers and/or as directed. Directional arrows not less than 1/2 inch wide and not less than 6 inches long shall be permanently stenciled on each line at each stencil location. Stenciling shall be located such that it is clearly visible from floor or adjacent service platform. Coding shall be as per schedule approved by Owner through submittal to Architect.

#### 1.23 TEMPORARY USE OF EQUIPMENT

- A. The permanent equipment installation shall not be used for temporary purposes by the contractor for temporary conditioning of the building during construction. Contractor shall provide temporary dehumidification and drying equipment as required to maintain clean, dry air during construction.
- B. Acceptable Use Without Specific Authorization: Temporary use shall not be construed to mean "bumping" of electric motors on equipment to verify

rotation direction nor short time operation of systems for test purposes, operation of refrigeration and heating system for short periods to adjust controls and temperature regulation, or the operation of fans for air balance.

#### 1.24 CLEANING AND ADJUSTING

- A. Upon completion of his work, the contractor shall clean and adjust all equipment, controls, valves, etc. Clean all piping, ductwork, etc., and leave entire installation in good working order.

#### 1.25 PAINTING

- A. General: Except for standard factory finishes, all pipe, pipe covering, ducts, equipment, supports, hangers, etc., exposed inside and outside building or in equipment room shall be painted. This contractor shall prepare surface of material to receive first coat of paint. All subsequent coatings shall be prepared by Painting Subcontractor. Requirements covering paints, workmanship and preparation of surfaces as stated in Architectural Specifications shall govern. Colors shall be approved by Owner. All submittals for review shall be through Architect.
- B. Damage: Where standard equipment factory finishes have been damaged or scratched, the damaged area shall be repaired or replaced by the contractor to match the original finish.
- C. Preparation: Thoroughly clean surfaces of all rust, scale, cement, and dirt from all equipment, piping or other work installed and leave ready for finish painting.

#### 1.26 NOISE VIBRATION

- A. General: Take the utmost precautions in the installation of the equipment, piping, and duct systems to prevent noise and vibration transmission. Noise levels determined by octave band analysis with all components of the mechanical system operating and the building completely furnished shall not exceed NC-35 in operations and office areas, and shall not exceed NC-45 in equipment areas. Where equipment and installations do not meet these limits, the contractor must provide necessary attenuation to reduce net noise levels to the above requirements.
- B. Isolation of equipment: Equipment that would tend to cause noise or vibration shall be isolated to prevent noise transmission to the building or to other equipment.
- C. Equipment Connections: Piping, conduit, or other connections to equipment shall be isolated. The contractor shall be responsible for the prevention of noise and vibration transmission through these connections to equipment.

#### 1.27 PERMITS, INSPECTIONS AND TESTS

- A. Contractor shall obtain and pay for permits, fees, etc., for the installation, inspection, service connections, verifying location or construction of the work which are required by any authority and/or agencies having jurisdiction.
- B. Contractor shall arrange and pay for inspections, examinations and tests required to obtain complete and final acceptance of all mechanical systems. Contractor shall deliver certificates of all such inspections to the Architect.
- C. Contractor shall notify Architect and local governing authorities before any tests are made and tests are not to be drawn off a line covered or insulated until examined and approved by the authorities. In the event defects are found, these shall be corrected and the work shall be retested.
- D. Prior to requesting final inspection by the Architect, the contractor shall have a complete coordination and adjustment meeting of all of his subcontractors directly responsible for the operation of any portion of the system. At the time of this meeting, each and every sequence of operation shall be checked to assure proper operation. Notify the Architect in writing ten days prior to this meeting instructing him of the time, date and whom you are requesting be present. This project shall not be accepted until the above provisions are met to the satisfaction of the Architect.

#### 1.28 TRAINING OF MAINTENANCE PERSONNEL

- A. Contractor shall provide on the job training for Owner's personnel upon completion of the work including testing and adjustment. Forty hours of on site training shall include maintenance checks, lubrication of components, adjustment of control set points, and trouble shooting techniques of the air conditioning unit.

#### 1.29 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Provide Owner with four copies of printed instructions indicating various pieces of equipment by name and model number complete with parts lists and maintenance and repair instructions. This information shall be bound in plastic covered notebooks. Submit the manuals to the Architect for approval.
- B. Include all warranty certificates or statements in a separate section of the manuals.

### 1.30 GUARANTEE

- A. Contractor shall guarantee all materials, equipment and workmanship for a period of one year from the date of final acceptance of the project. This guarantee shall include furnishing of all labor and material necessary to make any repairs, adjustments or replacement of any equipment, parts, etc., necessary to restore the project to first class condition. This guarantee shall exclude only the changing or cleaning of filters.
- B. If the contractor's office is in excess of a 50 mile radius of the project, he shall appoint a local qualified contractor to perform any emergency repairs or adjustments required during the guarantee period. The contractor appointed to provide emergency services shall be submitted to the Architect for his approval.

### 1.31 WARRANTIES

- A. Assemble warranties executed by each of the respective manufacturers, suppliers, and subcontractors into a warranty book and prepare a table of contents.
- B. Two original signed copies of each warranty are required.
- C. Provide complete information for each item including:
  - 1. Product and work item.
  - 2. Local supplying firm or manufacturer's dealer, with name of principal, address and telephone number.
  - 3. Scope of warranty.
  - 4. Date of beginning of warranty.
  - 5. Duration of warranty.
  - 6. Provide information for Owner:
    - a. Proper procedure to evoke the warranty in case of failure.
    - b. Instances which might affect the validity of the warranty.
  - 7. Contractor, name of responsible principal, address and telephone number.
  - 8. All contractors and manufacturers equipment warranties shall start at the acceptance of the project by the Owner.

### 1.32 DEMOLITION

- A. This contractor shall do all demolition as shown on the plans. The contractor shall make the areas ready for the new construction work. All demolition debris, piping, equipment, etc., shall be removed from the site by this contractor. All demolition work shall be scheduled through the General Contractor to prevent interruption of any existing services. Do not start any demolition which would interrupt the building operation

without scheduling with the Owner (schedule through the General Contractor).

- B. The Owner shall retain first salvage rights to anything within the demolition area. If the Owner selected an item to be retained, then this contractor shall remove it with care and deliver the item to the Owner designated location on site. Anything not retained by the Owner shall become the property of the contractor and be removed from the site.

1.33 MATERIALS CONTAINING HAZARDOUS SUBSTANCES OR COMPONENTS

- A. This contractor shall not provide any material or component of equipment which contains asbestos, lead based paint or PCBs. The contractor shall provide certificates or manufacturer's statements/letters to show that the products and/or building materials do not contain asbestos, lead based paint or PCBs.
- B. If any product or building material is found to contain asbestos, lead based paint or PCBs, the contractor shall bear all cost for removal, abatement, and disposal of materials in accordance with all state and federal regulations. The contractor shall install replacement materials to the satisfaction of the Architect at no additional cost to the project.

END OF SECTION 15010