

DIVISION 23
HEATING, VENTILATING & AIR CONDITIONING SYSTEMS SPECIFICATIONS (HVAC)

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230500
GENERAL DESCRIPTION AND SCOPE - HVAC

1.0 General Description - These plans and specifications cover furnishing and installing all equipment, materials, transportation and labor to provide complete and operative heating, ventilating and air-conditioning systems at Highland Falls Senior Center.

Included also are specific detailed instructions as may be later issued by the engineer.

2.0 Scope - The entire installation shall consist of but not be limited to furnishing and installation of the following:

1. Dampers, diffusers and louvers.
2. Meeting of all codes and ordinances.
3. Coordination with utility company, meeting inspection requirements and payments of all fees.

230505
GENERAL CONDITIONS - HVAC

- 1.0 Governing Conditions - Governing Conditions of the Heating, Ventilating and Air-Conditioning Contract shall be in accordance with all provisions of the Bid Documents, Contract Documents, Specifications and Supplementary General Conditions, including "Standard General Conditions of the Construction Contract" (NSPE/ACED-56465, latest edition) and/or "General Conditions of the Contract for Construction" (AIA Document A201, latest edition).

Supplementary General Conditions may be provided for all mechanical work and are contained in the General Construction Documents. This contractor should read and understand these conditions.

- 2.0 Drawings, Specifications, Bid Documents - System layout and details shown on drawings - HVAC series. Scale as noted. Do not scale drawings. Refer to architectural drawings for actual dimensions. Follow drawings as far as practical and supplement by actual field conditions.

All work within this Section shall be subject to all provisions of the bidding documents, contract documents, specifications and all Supplementary General Conditions thereto.

Provide all labor, materials, equipment, apparatus, tools, services, appliances, plant, permanent and temporary facilities required in performing all operations necessary for the complete installation of heating, ventilating and air conditioning facilities as called for within this Section of the specifications and drawings.

Provisions within this Section of the specifications are complementary to all other Sections of the specifications, to the drawings, and to the site and job conditioning.

It is the intention that these specifications, and drawings accompanying same, shall provide for the furnishing and installing of the heating, ventilating and air-conditioning systems complete as specified and shown. Any work shown on the drawings and not particularly described in the specifications or vice versa, or any work changes which may be evidently necessary to complete the installation shall be furnished by this contractor.

- 3.0 Shop Drawings and Approvals - Furnish shop drawings for all major items of equipment. Items requiring shop drawings:

Ductwork - new and alterations to existing
Diffusers and grilles

Submit six copies of shop drawings for approval and cuts of all equipment and appliances prior to start any work. No items of equipment will be permitted on the site until this approval has been given. HVAC contractor shall allow ample time for checking and processing and shall assume responsibility for delays incurred due to rejected items.

- 4.0 Workmanship - Provide neat, mechanical appearance. Provide minor alterations to suit job conditions to accomplish. Special attention shall be given to headroom requirements where ducts and piping are exposed.
- 5.0 Materials - Provide best-accepted industry standard equipment as per manufacturer and catalog numbers shown. Piping materials shall meet ASME test codes. Cooling equipment ratings should be per ARI standards. All equipment shall be new and corrosion protected.
- 6.0 Guarantee - Contractor shall guarantee all workmanship, materials and correct operation for a period of one year and shall repair promptly any leaks or breakdowns during that period. Where specific items have greater manufacturer's guarantee period, this guarantee is in addition to manufacturer's liability. Guarantee shall be in writing to the Owner. All air conditioning compressors shall be guaranteed for five years. The contractor shall promptly correct any defects upon notice from the owner to do so, without cost to the owner.
- 7.0 Codes, Permits and Inspections - Comply with all building code requirements of New York State Building Code, National Electrical Code, NFPA, and all applicable Federal, State and Municipal laws, ordinances and regulations. This contractor shall apply for and obtain all required permits and inspections and pay all fees.
- 8.0 Openings, Chases, Cutting and Patching, Cleanup - General Contractor shall provide all openings, chases, and recesses necessary for this work. HVAC Contractor shall be responsible for furnishing all necessary information to General Contractor, such as locations and sizes, in ample time prior to installation of his work.

Furnish the GC with sleeves, inserts, etc. ahead of the general construction work so that they may be installed by him. Supervise the placing of these items.

In no case may floor or walls that are waterproofed be cut for admission of any equipment nor any structural member be pierced without written permission of the (architect, engineer, owner). All cutting and patching of existing or installed construction shall be by HVAC contractor.

HVAC contractor shall do all cutting and patching of his work which may be required to make various parts come together properly and fit it to receive or be received by work of other contractors as shown or reasonably implied by the contract drawings and specifications for completed work; and, he shall make good after them as the architect may direct.

Any additional costs caused by defective or ill-timed work by the HVAC contractor shall be borne by him.

HVAC contractor shall not endanger any work by cutting, excavating or otherwise altering the work and shall not cut or alter the work of any other contractor save with written permission of the architect.

HVAC contractor shall at all times keep all areas void of packing, rubbish, etc., and shall clean up project as soon as completed.

- 9.0 Accessibility - HVAC contractor shall fully inform himself regarding any and all peculiarities and limitations of the space available for the installation of all work and materials furnished and installed under the contract. Due care shall be exercised so that all parts of his work are made quickly and easily accessible. All concealed equipment, valves, controls, etc., provided with access doors of sufficient size and as approved by architect.
- 10.0 Protection of Apparatus - All pipe and duct openings shall be protected by temporary covers to exclude entrance of debris or other foreign matter during construction. All equipment shall be properly protected from damage during the course of building construction.
- 11.0 Mechanical Identification – All piping and equipment shall be labeled with industry standard labels and stamps.

SUPPLEMENTAL GENERAL CONDITIONS (HVAC)

- 1.0 Contractual Relationship with Owner - Upon award of this contract, the contractor shall save harmless the owner and his agents from any or all causes of action arising out of the contractor's negligence.
- 2.0 O.S.H.A. - All work on this project shall be accomplished in accordance with Federal Statutes such as the Occupational Safety and Health Act (1970).
- 3.0 Other General Conditions -

- 1. Intent - It is the intent of these plans and specifications to provide alterations and/or new construction as indicated on the drawings and in the specifications to provide complete new systems in every respect, capable of operating as designed. It is not intended that every fitting, minor detail or feature be shown on drawings.

The contractor shall be responsible for any detail necessary for completion of these systems in accordance with good practice.

Installation shall be executed so as to contribute to efficiency of operation, minimum maintenance, accessibility and sightliness. The installation shall conform and accommodate itself to the building structure, its equipment and its usage. No piping or equipment shall be installed in such a manner as to interfere with the operation of any doors or windows.

Requirements specified herein shall govern applicable portions of mechanical and electrical sections whether so stated herein or not.

- 2. Regulations and Certificates - All work shall be done in strict accordance with rules and regulations of local and state authorities having jurisdiction over such work, utility companies operating where apparatus is being installed, National Fire Protection Association, IEEE and insurance companies. Where discrepancies occur between above regulations and these plans and specifications, requirements of the regulations shall take precedence, except that these specifications shall be minimum requirements and that no changes shall be made without approval of the engineer.

Complete approval of all above mentioned authorities shall be secured and their certificates of approval shall be delivered to the owner before final acceptance. Any and all drawings or documents required (in addition to contract drawings) shall be furnished in order to secure above-mentioned approvals.

- 3. Drawings and Measurements - Contract drawings for mechanical and electrical work are in part diagrammatic, intended to cover the general design and extent of the systems and indicate general arrangement of equipment, ducts, conduits, piping and approximate sizes and locations of equipment and outlets.

Drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. Where drawings are required for these purposes or have to be made from field measurements, they shall be prepared by the various trades and coordinated by the contractor.

Where job conditions require reasonable changes from indicated locations and arrangements, such changes shall be made without cost to the owner.

Exact locations of all grilles, registers, plumbing fixtures, electrical fixtures, panelboards, etc., shall be governed by plans, elevations and details.

4. Record Drawings - During the course of construction the respective contractor shall keep a careful record (in drawing form) of all deviations from the work as shown on the contract drawings on the installation of pipes, ducts, electric outlets, equipment, invert elevations, etc. These drawings shall be delivered to the engineer before the final certificate of payment is issued.
5. Accessibility - Locate all equipment which must be serviced, operated or maintained, in fully accessible position. Equipment shall include but not be limited to valves, traps, cleanouts, motors, controllers, drain points, etc. Furnish access doors where required. Minor deviations from the drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval.
6. Access Doors and Panels - Furnish flush type door or panel with metal frame for all dampers, valves, cleanouts or apparatus located in chases, walls or floors. Finish shall be prime coat.
7. Quiet Operation - All equipment shall operate under all conditions of load without any sound or vibration which is objectionable to the opinion of the engineer. In case of moving machinery, sound or vibration noticeable outside of room in which it is installed or annoyingly noticeable inside its own room will be considered objectionable. Sound or vibration conditions considered objectionable by the engineer shall be corrected in approved manner by the contractor at the latter's expense.
8. Covering of Work - No pipe fittings or other work of any kind shall be covered up or hidden from view before it has been examined or approved by the engineer or other authority having jurisdiction. Any unfaithful or imperfect work or material which may be discovered shall be removed and corrected immediately before being condemned, and other work and materials shall be furnished which shall be satisfactory to the engineer.
9. Waterproofing - Where any work pierces waterproofing, the installation shall be as approved by the engineer. Contractor shall furnish all necessary sleeves, caulking and flashing as required to make the openings absolutely watertight.
10. Excavation and Backfill - All excavation and backfill shall be by the contractor who is furnishing and installing the respective equipment. Cleanup, resurface and resod all disturbed areas.

11. Site Conditions-Prior to bid submission, this contractor shall familiarize himself with the site and understand all the conditions under which he will be obligated to operate in performing his part of the contract. No allowance will be subsequently made in this connection to this contract or for any errors through omission or negligence on his part.
- 4.0 Equipment Returns-As part of this contract, contractors shall ensure that suppliers of any and all equipment supplied for this project agree to accept the return of any equipment on this project that is in undamaged condition and has not been put into service with a maximum restocking fee of 25%, up until the date of certified substantial completion of the project.
- 5.0 Coordination of Trades – It is understood that coordination between all of the trades on this project is the responsibility of the construction manager (if any), the general contractor (if any) and the trades themselves. This coordination will include meetings and discussions as needed among the parties noted above, and preparation of coordination drawings as needed. The cost of this coordination work shall be included in the contractors' bids. It is not the responsibility of the engineer to perform this coordination. No extra charges will be paid to any contractor that is due to additional work being performed due to lack of coordination between the trades.

AIR HANDLING AND COOLING SYSTEMS AND EQUIPMENT

- 1.0 Description - Heating, ventilating and air conditioning systems for this project shall consist of various electrically fueled systems as hereinbefore described in the General Description, detailed on plans hereinafter described.
- 2.0 Grilles, Registers, Diffusers - See drawings for sizes, manufacturer, catalog numbers.

Provide and connect with ductwork in an approved manner all registers and grilles and diffusers shown on drawings. The exact locations of all registers and grilles shall be obtained from the architectural drawings. The right is reserved to vary the location of any register, grille or diffuser to a reasonable extent without extra cost to the owner.