

SECTION 23 00 00

HEATING, VENTILATING AND AIR CONDITIONING (COMMERCIAL)

PART 1 - GENERAL

1.01 DESCRIPTION

A. The heating work of this Contract includes all work necessary for complete installation of TWO gas-fired heating, air conditioning and ventilation systems.

1. Removal of selected existing heating systems and equipment;
2. Installation/venting of furnaces;
3. Direct venting of furnaces to the exterior;
4. Installation of new and modification of existing ductwork to remain;
5. Connection of gas piping to gas-fired equipment;
6. Installation of thermostats;
7. Installation of condensers;
8. Installation of registers;
9. Servicing of existing gas-fired hot water tank including inspection of flue;
10. All other items required for a complete and operating HVAC system.

1.02 QUALITY ASSURANCE

A. Qualifications of Installers:

1. For the actual fabrication, installation and testing of work under this Section, use only thoroughly trained and experienced workers completely familiar with the items required and the manufacturer's current recommended methods of installation.
2. In acceptance or rejection of installed work, the Architect will make no allowance for lack of skill on the part of the workers.

B. Codes and Standards:

In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in "Duct Manual and Sheet Metal Construction for Ventilating and Air Conditioning Systems", latest edition, as published by the Sheet Metal and Air Conditioning Contractor's National Association.

1.03 SUBMITTALS

A. Shop Drawings:

Within 35 days after award of Contract, and before any materials of this Section are delivered to the job site, submit complete Shop Drawings to the Architect.

B. Materials Lists:

Accompanying the Shop Drawings, submit a complete list of all materials proposed to be furnished and installed under this Section, giving the manufacturer's name and catalog number for each item. This shall in no way be construed as permitting substitution for specified items without prior approval by the Architect.

C. Record Documents:

During progress of the Work, maintain an accurate record of installation of the HVAC system including all changes system from the layout and materials shown on the approved submittals.

1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the materials of this Section before, during and after the installation and to protect the Work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.05 WARRANTY

A. Provide manufacturer's standard warranty for the furnaces, 1-year parts/minimum 20-years on the heat exchanger.

B. Provide manufacturer's standard warranty for the condensers, 1-year parts/minimum 5- years on the compressor

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. General

For the ease of maintenance and parts replacement, to the maximum extent possible, use equipment of a single manufacturer or approved equal. The Manufacturer given below is Bryant.

B. Furnaces:

1. Main Floor: 96% efficient, Model #925SA66120E24 100,000 BTU with 2 zones
2. Basement: 96% efficient, Model # 925SA42060E17 60,000 BTU

C. Condensing Units:

1. Main Floor: 16 SEER, Model 116BNA06000 5 ton with matching coil
2. Basement: 16 SEER, Model 116BNA030000 2 1/2 ton with matching coil

D. Filters:

Provide one (1) additional disposable fiberglass filter for future use by Owner.

E. Thermostat:

Provide one NEST thermostat for each unit (available at selected Lowes stores)

F. Ductwork:

1. Commercial ductwork shall be 24 gauge sheet metal for rectangular ducts up to 30" in largest dimension,
2. Flexible insulated duct of equal carrying capacity as approved by Architect shall not exceed 6' in length; rigid metal elbows are to be used at all 90-degree bends.

G. Gas Piping:

Gas piping used to connect the new furnaces to existing gas feeds is to comply with the latest edition of the *Mechanical, Plumbing and Gas Fuel Codes of NYS*.

H. Registers:

Registers are to be installed at floors and ceilings, equipped with adjustable dampers, and arranged to disperse air properly.

2.02 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SERVICING

- A. The work of this Contract includes all work necessary for servicing the existing gas-fired domestic hot water tank to be reused, evaluating the condition of the parts including gas piping, combustion air supply and miscellaneous items for a complete and proper installation.
- B. Servicing of existing equipment shall be according to manufacturer's recommendations.
- C. Contractor is to insure that the flues are clear of debris, patched, and functions to the satisfaction of the local utility company.

3.02 SURFACE CONDITIONS

- A. Inspection:
 - 1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
 - 2. Verify that the work of this Section may be completed in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the manufacturer's recommendations.
- B. Discrepancies:
 - 1. In the event of discrepancy, immediately notify the Architect.
 - 2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

3.03 LAY OUT

- A. Lay out the heating ducts and gas piping using only the minimum number of bends to produce a satisfactorily functioning system.
- B. Provide complete isolation of all dissimilar metals.

3.04 INSTALLATION OF GAS PIPING

- A. Verify the size of the existing service and branch piping is sufficient for the new load.

B. Firmly anchor all pipes in position.

3.05 INSTALLATION OF EQUIPMENT

A. Locations:

Install all equipment in the locations shown on the approved Shop Drawings, except where specifically otherwise approved on the job by the Architect.

B. Interferences:

Avoid interference with structure and with work of other trades, preserving adequate headroom and clearing all doors and passageways to the approval of the Architect.

C. Inspection:

Check each piece of equipment in the system for defects, verifying that all parts are properly furnished and installed, that all items function properly, and all adjustments have been made.

3.06 INSTALLATION OF DUCTWORK

A. Existing Ductwork to be Reused:

1. Clean and remove debris from ductwork.
2. Ensure that ductwork is hung securely and properly.
3. Seal the perimeter of joints in ductwork

B. New Ductwork:

1. Fabricate and install all ductwork in strict accordance with the approved Shop Drawings and the referenced standards.
2. Firmly anchor all pipes and ductwork in position; flexible ducts to be supported by 1" straps every 4'-0" o.c. horizontally.
3. Seal joints in metal ductwork.
4. Provide joints, connections, hangers, and supports in strict accordance with manufacturer's recommendations.

3.07 INSTALLATION OF REGISTERS

Install and connect all registers in the locations shown on the approved Shop Drawings, securely anchoring each item in place and sealing with rubber gaskets to prevent leakage.

3.08 CLEANING THE SYSTEM

A. Ductwork:

After the ductwork has been tested and proved tight, thoroughly clean all components of the ductwork and remove all dirt, scale, oil, and other foreign substances which may have accumulated during the installation process.

B. Equipment:

After the equipment has been started and proved operational, carefully clean all accessible parts of each piece of equipment thoroughly removing all traces of dirt, oil, grease, and other foreign substance.

3.09 CLOSING-IN OF UNINSPECTED WORK

A. General:

Do not allow or cause any of the work of this Section to be covered up or enclosed until it has been inspected, tested, and approved by the Architect and by all other authorities having jurisdiction.

B. Uncovering:

Should any of the work of this Section be covered up or enclosed before it has been completely inspected, tested, and approved, do all things necessary to uncover all such work. After the work has been completely inspected, tested and approved, provide all materials and labor necessary and make all repairs necessary to restore the work to its original and proper condition at no additional cost to the Owner.

3.10 COOPERATION WITH OTHER TRADES

A. Do all things necessary to cooperate with other trades in order that all systems in the Work may be installed in the best arrangement. Coordinate as required with all other trades to share space in common areas and to provide the maximum of access to each system.

B. Coordinate all electrical wiring with electrical subcontractor to insure that manufacturer's printed instructions for gas-fired furnace are followed.

3.11 TESTING & ADJUSTING

Provide all necessary personnel, equipment, and services and perform all tests necessary to demonstrate the integrity of the completed installation to the approval of the Architect and all other authorities having jurisdiction. Make all adjustments necessary to balance the completed system.

Owner: Media Alliance, Inc
Project: Sanctuary for Independent Media

Date: 6/4/12
Project #: 053,042.03

END – Heating, Ventilating and Air Conditioning

Insulation

All ductwork located in unheated spaces shall be wrapped with enough insulation to provide the following R-values (insulation only, excluding film resistance) as per the Energy Conservation Construction Code of NYS: (values are for 6894 heating degree days—Capital Region)

Commercial Acceptable Practice Method (Sec. 803.2.8):

- Hot Air Supply in unconditioned spaces R-5
- Hot Air Supply outside building envelope R-8
- Return Air in unconditioned spaces R-5
- Return Air outside building envelope R-8

Duct insulation shall be flexible fiberglass insulation with vinyl or reinforced aluminum foil vapor-retarding facing, as manufactured by Johns Manville, Owens-Corning, Certain-Teed, Armstrong, or approved equal. All joints, penetrations for supports, and rips or tears shall be sealed vapor-tight with 4" wide aluminized duct tape.

At all locations where ductwork is run in an exterior or cold wall, the stud bay(s) behind the ductwork shall receive 1" minimum rigid foam insulation. All seams and perimeter of insulation at studs/plates shall be sealed with duct tape.