

4 August 2010

ADDENDUM #1 to Plans and Specifications for
LAURENTIAN ENVIRONMENTAL CENTER
LODGE AND OFFICE ENERGY IMPROVEMENT PACKAGES
8950 Peppard Rd.
Britt, MN 55710

Owner: Independent School District No. 621 (Mounds Views Schools District)

This Addendum includes revisions, additions, and changes to the Construction Documents issued for Bids for the above-referenced project and shall become part of the Contract Documents.

Bidders are requested to include items listed in this Addendum as part of their bid.

Acknowledge receipt of this Addendum in the Bid submission. Failure to do so may disqualify the Bidder.

Changes to the Drawings and specifications:

1. **Sheet A1.6 Mechanical Plan**, part of Package #1, has been revised and dated 8/3/10. The revised sheet shall replace the Sheet A1.6 dated 7/23/2010, issued with the original bid documents.
2. **Specification Section 23 54 00 Furnaces**
This specification section shall be added to Division 15 Mechanical. It defines the furnace called out in Drawing A1.6.

Clarification: The related section "Motors" referenced in 23 54 00 Section 1.02.B.1. does not exist. The furnace specified shall have an ECM motor.

Report of Lead Testing:

1. The Mounds View School District had the Lodge and Office tested for the presence of lead. The Report will be available from Nick Temali, Director.
2. Lead was found only in the finish on the exterior window trim of Lodge Hall windows.
3. The Scope of Work on the Lodge Hall includes removal of the windows and all exterior trim.
4. This work does not fall under the recently-issued EPA rules for renovation with lead-based paint present. The Laurentian Center is not required to follow the federal requirements for lead-based paint removal because although it is an educational facility, it is not a school or child-care facility and rarely has children present who are younger than the age of 6.
5. EPA-recommended practices for the removal and disposal of finishes containing lead are recommended.

End of Addendum #1.

SECTION 23 54 00 FURNACES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Specifications Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes furnaces and accessories listed below, complete with controls.
 - 1. Gas-Fired Furnaces
 - 2. Air Cleaners
 - 3. Controls
- B. Related Section: The following Sections contain requirements that relate to this Section:
 - 1. Section "Motors" for motors used in furnaces.

1.03 DEFINITIONS

- A. AFUE: Minimum annual fuel utilization efficiency certified by an independent testing agency in accordance with US Dept. of Energy Test Procedures.
- B. Control Wiring: Wire, conduit and miscellaneous materials for mounting and connecting electric control devices.
- C. Furnace: A self-contained, indirect-fired or electrically heated appliance, with or without cooling coils, that supplies conditioned air through ducts to spaces that require it.

1.04 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.
- B. Product Data including weights and dimensions and data on features and components. Include plan and elevation views of units, minimum clearances, and data on ratings and capacities.
- C. Maintenance Data for products for inclusion in "Operating and Maintenance Manual" specified in Division 01.
- D. Wiring Diagrams from manufacturers detailing electrical requirements for power and control wiring for furnaces. Include ladder-type wiring diagrams for interlock and control wiring required for field installation. Differentiate between portions of wiring that are factory installed and portions that are to be field installed.

1.05 QUALITY ASSURANCE

- A. Comply with NFPA 70, "National Electrical Code."
- B. NRTL Listing: Provide electrical components specified in this Section that are listed and labeled.
 - 1. Terms "Listed" and Labeled": As defined in the "National Electrical Code," Article 100.
 - 2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

1.06 MAINTENANCE SERVICE

- A. Maintenance Service: Provide maintenance of furnaces for a period of 12 months commencing with substantial completion, using factory-authorized service representatives.
- B. Basic Services: A minimum of two systematic, routine maintenance visits on a seasonal basis at times coordinated with the Owner. In addition, respond to service calls within 24 hours of notification of trouble. Adjust and replace defective parts and components with original manufacturer's replacement items. At each visit, perform maintenance services recommended by the manufacturer for the maintenance interval and season existing at the time. Repeat adjustment required under "Commissioning" article in Part 3 of this Section as needed to improve heating results.

1.07 EXTRA MATERIALS

- A. General: Furnish extra materials matching products installed, as described below, packaged with protective covering for storage, and identified with labels clearly describing contents.
 - 1. Disposable Air Filters: Furnish a quantity equal to 200% of the number of filters installed.
 - 2. Fan Belts: Furnish quantity equal to 15% of the number of belts installed for furnace fans, but not less than one set.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Gas Furnaces: Armstrong Air Conditioning, Inc.; Bryant BDP Div., United Technologies; Carrier Corp.; Lennox Industries, Inc.; Rheem Mfg. Co.; The Trane Co.; Thermo-Pride; The Williamson Co.; King National; Industrial Air.

2.02 FURNACES, GENERAL

- A. Type: Gas-fired, high efficiency.
- B. Configuration: Vertical.
- C. Configuration: Upflow.

C. Gas-Fired Furnaces and Accessory Items: NFPA

1. AGA Approval: Furnaces shall bear the label of the American Gas Association.
2. Type of Gas: Furnaces shall be listed for use with gas.

2.03 GAS-FIRED FURNACES, HIGH EFFICIENCY

- A. General: Comply with ANSI Z21.47, Gas-Fired Central Furnaces.
- B. Efficiency: AFUE 92%, minimum.
- C. Ignition: Electric spark with flame sensor, or direct-sensing, silicon carbide hot surface igniter.
- D. Automatic Fan Thermal Switch: Delays fan start until discharge air is heated. Delays fan shutdown until air cools to comfort threshold.
- E. Control Transformer: 120 VAC/24 VAC.
- F. Heat Exchanger: Aluminized steel.
- G. Combustion Air Source: Outside via combustion air inlet pipe.

2.06 CONTROLS

- A. General: Include control components required for satisfactory operation of furnaces and auxiliary equipment in all seasons, including:
 1. Control Transformer: 24 VAC output, factory-installed, and wired in furnace.
 2. Thermostat: 24 VAC solid-state, digital, microprocessor-based wall-mounting unit and battery backup protection of program settings against power failure.
- B. Wire and Cable: Thermostat cable, #19 AWG two and three-conductor. Listed for plenum use where used.

2.07 AIR CLEANING

- A. Filter: 1", disposable, fiberglass type in sheetmetal rack.

PART 3 - EXECUTION

3.01 INSTALLATION & CONNECTION

- A. Installation and connection of gas-fired furnaces and associated fuel and vent features and systems shall be in accordance with NFPA, applicable local codes and regulations, and manufacturer's published installation instructions.

1. Vents, Outside Air Pipe Connections, and Drains: Where PVC piping is used, install in accordance with Section "Basic Piping Materials and Methods." Install vent terminal designed to protect against entrance of birds, insects, and dirt.
- F. Controls: Install thermostats where indicated.
1. Control Wiring: Install in compliance with NEC. Install cables and conductors simultaneously where more than one can be installed with the same routing. Bundle cables neatly together. Conceal all cable in finished spaces. Install exposed cable parallel and perpendicular to surfaces or exposed structural members, and follow surface contours, where possible. Make splices and connections only within junction boxes and equipment enclosures. Use connectors, which are compatible with conductor material. Make terminations so there is no bare conductor at terminals. Provide substantial support for wiring and run clear of equipment access paths.
- G. Connect ducts in accordance with Section "Metal Ductwork."

3.02 COMMISSIONING

- A. Test functions, operations, and control sequences and protective features. Adjust to assure operation is in accordance with specifications.
- B. Correct deficiencies identified by tests and observations and retest until specified requirements are met.

3.03 CLEANING & ADJUSTING

- A. Cleaning: Upon completion of installation, inspect furnaces and associated components. Remove paint splatters and other spots, dirt and debris. Touch up scratches and mars of finish to match original finish. Clean unit internally using methods and materials recommended by manufacturer.
- B. Adjusting: Make control, burner and other adjustments for optimum heating performance and efficiency. Adjust heat distribution features, including shutters, dampers, and relays to provide optimum heating performance and system efficiency.

3.04 DEMONSTRATION

- A. Training: Arrange and pay for the services of a factory-authorized service representative to demonstrate adjustment, operation and maintenance of furnaces and to train Owner's personnel.
- B. Conduct a minimum of 2 hours of training as specified under "Instructions to Owner's Employees" in the "Project Closeout" Section of these specifications.
- C. Schedule training with at least seven days' advance notification.

END OF SECTION

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CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA

REGISTRATION # _____
NAME _____
SIGNATURE _____ DATE _____

PROJECT:
**Laurentian EC
PACKAGE #1**
Lodge Exterior
Improvement Package

REVISION/ISSUE	DATE
BID SET	7/23/2010
REVISED	8/3/10

SHEET NAME:
**MECHANICAL
PLAN**

SHEET #:
A1.6

