



DELAWARE STATE UNIVERSITY

OFFICE OF PLANNING & CONSTRUCTION

1200 N. DuPont Highway
Dover, Delaware 19901-2277

Addendum # 2

Date: October 27, 2017
Project: Wellness Center Water Heater Replacement
Contract: PC-17-030

The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

Clarifications:

None.

Changes to Specifications:

1. *Specification 23 51 00 – BREECHINGS, CHIMNEYS, AND STACKS* – New specification added.

Changes to Drawings:

1. *Drawing P10.1* – Revise intake and exhaust venting material. PVC exhaust / intake venting is not acceptable. Provide double-wall AL29-4C / stainless steel, manufactured exhaust breeching and provide single-wall stainless steel, manufactured intake breeching per newly added Specification 23 51 00.

General Information:

1. **Bids are due no later than Wednesday, November 1, 2017 at 3:00 PM at the Facilities Management Building in Room 101 of the Delaware State University, Dover Campus.**

Attachments:

1. Specification 23 41 00 – BREECHINGS, CHIMNEYS, AND STACKS

END

SECTION 23 51 00
BREECHINGS, CHIMNEYS, AND STACKS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated breechings.
- B. Manufactured breechings.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping.
- B. Section 23 05 13 - Motor Requirements for HVAC and Plumbing Equip: Induced draft fan motor.
- C. Section 23 07 16 - HVAC Equipment Insulation.
- D. Section 26 27 17 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

- A. ANSI Z21.66 - American National Standard for Automatic Damper Devices for Use with Gas-Fired Appliances.
- B. ASME B16.5 - Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard.
- C. ASME B16.21 - Nonmetallic Flat Gaskets for Pipe Flanges.
- D. ASME B31.9 - Building Services Piping.
- E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- F. ASTM A181/A181M - Standard Specification for Carbon Steel Forgings, for General - Purpose Piping.
- G. ASTM A193/A193M - Standard Specification for Alloy - Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.
- H. ASTM A194/A194M - Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
- I. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
- J. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- K. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- L. ASTM C401 - Standard Classification of Alumina and Alumina-Silicate Castable Refractories.
- M. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation.
- N. NEMA MG 1 - Motors and Generators.
- O. NFPA 31 - Standard for the Installation of Oil Burning Equipment.
- P. NFPA 54 - National Fuel Gas Code.
- Q. NFPA 70 - National Electrical Code.
- R. NFPA 82 - Standard on Incinerators and Waste and Linen Handling Systems and Equipment.

- S. NFPA 211 - Guide for Smoke and Heat Venting.
- T. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible.
- U. UL 103 - Factory-Built Chimneys for Residential Type and Building Heating Appliances.
- V. UL 127 - Standard for Factory-Built Fireplaces.
- W. UL 378 - Standard for Draft Equipment.
- X. UL 641 - Type L Low Temperature Venting Systems.
- Y. UL 959 - Medium Heat Appliance Factory Built Chimneys.

1.04 DEFINITIONS

- A. Breeching: Vent Connector.
- B. Chimney: Primarily vertical shaft enclosing at least one vent for conducting flue gases outdoors.
- C. Smoke Pipe: Round, single wall vent connector.
- D. Vent: That portion of a venting system designed to convey flue gases directly outdoors from a vent connector or from an appliance when a vent connector is not used.
- E. Vent Connector: That part of a venting system that conducts the flue gases from the flue collar of an appliance to a chimney or vent, and may include a draft control device.

1.05 DESIGN REQUIREMENTS

- A. Factory built vents and chimneys used for venting natural draft appliances shall comply with NFPA 211 and be UL listed and labeled.

1.06 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the installation of breeching and venting with size, location and installation of service utilities.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.
- C. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.07 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating factory built chimneys, including dimensional details of components and flue caps, dimensions and weights, electrical characteristics and connection requirements.
- C. Shop Drawings: Indicate general construction, dimensions, weights, support and layout of breechings. Submit layout drawings indicating plan view and elevations where factory built units are used.

1.08 QUALITY ASSURANCE

- A. Designer Qualifications: Design stacks under direct supervision of a Professional Structural Engineer experienced in design of the type of work specified and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.09 REGULATORY REQUIREMENTS

- A. Conform to applicable code for installation of natural gas burning appliances and equipment.
- B. Conform to NFPA 31 for installation of oil burning appliances and equipment.

- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Pro Tech; Model FasNSeal: www.ampcostacks.com.
- B. Metal-Fab, Inc; Model Corr / Guard: www.mtlfab.com.
- C. Selkirk Corporation; Model Saf T Vent: www.selkirkcommercial.com.

2.02 FIELD FABRICATED BREECHINGS

- A. Provide adjustable self-actuating barometric draft dampers, where indicated on drawings, full size of breeching.
- B. Provide cleanout doors of same gage as breeching where indicated on drawings.
- C. Reinforcing: Provide angle frames for rectangular breeching and flanged girth joints or angle frames for round breeching in accordance with SMACNA HVAC Duct Construction Standards, at following intervals:

2.03 MANUFACTURED BREECHINGS

- A. Provide factory-built AL29-4C / stainless steel, double-wall, manufactured breeching and venting system, tested to UL UL-1738 with positive pressure rating. Include locking band and integral gasket for a factory-approved assembled system.
- B. Assembly to be UL listed for use with building equipment in compliance with NFPA 211.
- C. Size in accordance with equipment manufacturer's recommendations and fabricator requirements.
- D. Provide single-wall, manufactured stainless steel breeching for intake vents.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NFPA 54.
- C. Install breechings with minimum of joints. Align accurately at connections, with internal surfaces smooth.
- D. Support breechings from building structure, rigidly with suitable ties, braces, hangers and anchors to hold to shape and prevent buckling. Support vertical breechings, chimneys, and stacks at 12 foot spacing, to adjacent structural surfaces, or at floor penetrations. Refer to SMACNA HVAC Duct Construction Standards for equivalent duct support configuration and size.
- E. Pitch breechings with positive slope up from fuel-fired equipment to chimney or stack.
- F. Insulate breechings in accordance with Section 23 07 16.
- G. Clean breechings, chimneys, and stacks during installation, removing dust and debris.
- H. At appliances, provide slip joints permitting removal of appliances without removal or dismantling of breechings, breeching insulation, chimneys, or stacks.

END OF SECTION