

January 11, 2018

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ADDENDUM NUMBER 2  
TO THE DRAWINGS AND SPECIFICATIONS

PROJECT: Normal Community High School -- Energy Efficiency Project

FOR: McLean Co. Unit District No. 5  
1809 W. Hovey Ave.  
Normal, IL 61761

A/E PROJECT NO: 22242216

ISSUE DATE: December 7, 2017

**BID OPENING: Tuesday, January 16, 2018 – 1:30 p.m. prevailing time. THIS ADDENDUM DOES NOT CHANGE THE BID DATE.**

Upon receipt of this ADDENDUM, insert same into the documents, which were issued to you, dated December 7, 2017. Hereafter, said ADDENDUM shall be as much a part of the said documents as though originally set forth therein. Acknowledge receipt of this addendum in space provided on Bid Form. FAILURE TO DO SO MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

Item 1 is on previously issued Addendum 1.

2. TO THE SPECIFICATIONS – Commissioning of HVAC, Section 0800 Commissioning of HVAC: Add the following clarification:
  - a. Page 23 0800-1, Paragraph 1.2-B.: Delete in its entirety and replace with the following:
    - B. Alpha Controls to commission the entire new control system prior to substantial completion.
3. TO THE SPECIFICATIONS: Add the following Section 23 2123 Hydronic Pumps:
  - a. See the attached Section 23 2123, pages 1 - 4.
4. TO THE SPECIFICATIONS – SECTION 23 4133 – High Efficiency Particulate Filtration: Add the following clarification:
  - a. Page 23 4133-1, Paragraph 1.2-A.1.: Delete in its entirety and replace with the following:
    1. Alpha Controls to check existing filter racks and existing filters at air handling units, unit ventilators and at the terminal units.

5. TO THE SPECIFICATIONS – Section 01 0300 Alternates: Add the following to paragraph 1.2.C.:
  4. See Specification Section 23 8126 – Split System Air Conditioners.
6. TO THE DRAWINGS: Sheet H-1 – First Floor Area 1 Floor Plan: Add the following to keynote #8:
  - a. Electrical Contractor to provide electrical connection to new ceiling mounted cassette.
7. TO THE DRAWINGS: Sheet H-13 – Mechanical Floor Plans:
  - a. Add the following note to OU-1 in Mechanical Room 403 and 404 Floor Plan – Electrical Contractor to provide electrical connection to new mini-split outdoor unit.
  - b. Add the following note to BP-1,2,&3 Boiler Piping Schematic - New Work - Alternate #2 – Electrical Contractor to provide electrical connection to new in-line pumps.

Bids are due at the Maintenance Office, 1999 Eagle Road, Normal, Illinois before 1:30 PM local prevailing time on Tuesday, January 16, 2017. Bids will be publicly opened and read aloud at that time.

This Addendum consists of 2 pages with 1 attachment.

END ADDENDUM NO. 2

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING  
Section 23 2123 – Hydronic Pumps

PART 1 - GENERAL

1.1 WORK INCLUDES

A. Base Bid

1. HVAC Contractor work includes the following:
  - a. Inline centrifugal pumps.

1.2 DEFINITIONS

- A. Buna-N: Nitrile rubber.
- B. EPT: Ethylene propylene terpolymer.

1.3 SUBMITTALS

- A. Product Data: Include certified performance curves and rated capacities, operating characteristics, furnished specialties, final impeller dimensions, and accessories for each type of product indicated. Indicate pump's operating point on curves.
- B. Shop Drawings: Show pump layout and connections. Include setting drawings with templates for installing foundation and anchor bolts and other anchorages.
  1. Wiring Diagrams: Power, signal, and control wiring.
- C. Operation and Maintenance Data: For pumps to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain hydronic pumps through one source from a single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. UL Compliance: Comply with UL 778 for motor-operated water pumps.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Manufacturer's Preparation for Shipping: Clean flanges and exposed machined metal surfaces and treat with anticorrosion compound after assembly and testing. Protect flanges, pipe openings, and nozzles with wooden flange covers or with screwed-in plugs.
- B. Store pumps in dry location.
- C. Retain protective covers for flanges and protective coatings during storage.
- D. Protect bearings and couplings against damage from sand, grit, and other foreign matter.
- E. Comply with pump manufacturer's written rigging instructions.

## 1.6 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

## PART 2 - PRODUCTS

### 2.1 CLOSE-COUPLED, IN-LINE CENTRIFUGAL PUMPS

- A. Manufacturers:
  - 1. Bell & Gossett; Div. of ITT Industries.
  - 2. Grundfos Pumps Corporation.
  - 3. Taco, Inc.
- B. Description: Factory-assembled and -tested, centrifugal, overhung-impeller, close-coupled, in-line pump as defined in HI 1.1-1.2 and HI 1.3; designed for installation with pump and motor shafts mounted horizontally or vertically. Rate pump for 125-psig minimum working pressure and a continuous water temperature of 200 deg F.
- C. Pump Construction:
  - 1. Casing: Radially split, cast iron, with replaceable bronze wear rings, threaded gage tappings at inlet and outlet, and threaded companion-flange connections.
  - 2. Impeller: ASTM B 584, cast bronze; statically and dynamically balanced, keyed to shaft, and secured with a locking cap screw. Trim impeller to match specified performance.
  - 3. Pump Shaft: Steel, with copper-alloy shaft sleeve.
  - 4. Mechanical Seal: Carbon rotating ring against a ceramic seat held by a stainless-steel spring, and Buna-N bellows and gasket. Include water slinger on shaft between motor and seal.
  - 5. Pump Bearings: Permanently lubricated ball bearings.
- D. Motor: Single speed, with permanently lubricated ball bearings, unless otherwise indicated; and rigidly mounted to pump casing. Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."

## 2.2 PUMP SPECIALTY FITTINGS

- A. Suction Diffuser: Angle pattern, 175-psig pressure rating, cast -iron body and end cap, pump-inlet fitting; with bronze startup and bronze or stainless-steel permanent strainers; bronze or stainless-steel straightening vanes; drain plug; and factory-fabricated support.
- B. Triple-Duty Valve: Angle or straight pattern, 175-psig pressure rating, cast-iron body, pump-discharge fitting; with drain plug and bronze-fitted shutoff, balancing, and check valve features. Brass gage ports with integral check valve, and orifice for flow measurement.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine equipment foundations and anchor-bolt locations for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Examine roughing-in for piping systems to verify actual locations of piping connections before pump installation.

### 3.2 PUMP INSTALLATION

- A. Comply with HI 1.4 or HI 2.4 as appropriate.
- B. Install pumps with access for periodic maintenance including removal of motors, impellers, couplings, and accessories.
- C. Independently support pumps and piping so weight of piping is not supported by pumps and weight of pumps is not supported by piping.

### 3.3 CONNECTIONS

- A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to machine to allow service and maintenance.
- C. Connect piping to pumps. Install valves that are same size as piping connected to pumps.
- D. Install suction and discharge pipe sizes equal to or greater than diameter of pump nozzles.
- E. Install triple-duty valve on discharge side of pumps.
- F. Install suction diffuser and shutoff valve on suction side of pumps.

- G. Install pressure gages on pump suction and discharge, at integral pressure-gage tapping, or install single gage with multiple input selector valve.
- H. Install electrical connections for power, controls, and devices.
- I. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."
- J. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

END OF SECTION 23 2123