

**SECTION 00 91 02
ADDENDUM NUMBER 2**

DATE: **JANUARY 20, 2022**

PROJECT: **OEHS/OHS BOILERS AND CHILLERS
1525 HARVEY ROAD, 4250 ROUTE 71
OSWEGO, ILLINOIS 60543**

PROJECT NO: **21-158-1389**

OWNER: **COMMUNITY UNIT SCHOOL DISTRICT 308
71 STONEHILL ROAD
OSWEGO, ILLINOIS 60543**

TO: **PROSPECTIVE BIDDERS / PLAN HOLDERS OF RECORD**

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated January 6, 2022, with amendments and additions noted below. Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Two (2) pages, Specification Sections 00 01 10, 00 43 36 and 23 21 23, and Drawing M310.

CHANGES TO INTRODUCTORY INFORMATION

1.01 DOCUMENT 00 01 10 - TABLE OF CONTENTS

- A. Add "Section 00 91 02 - Addendum Number 2" to the listing.
- B. Add "Section 00 43 36 - Bid Form Supplement - Proposed Subcontractors" to the listing.

CHANGES TO SPECIFICATIONS

2.01 SECTION 23 21 23 - HYDRONIC PUMPS

- A. Under Article 2.02 SENSORLESS VARIABLE SPEED PUMP PACKAGE:
 1. Add new Subparagraph 2.02 A. 4. as follows:
"4. Acceptable under Alternate No. 2 - Grundfos."

CHANGES TO THE DRAWINGS

3.01 DRAWING M310 - OEHS MECHNICAL FOURTH FLOOR PLANS

- A. Replace sheet M310 with the attached.

END OF DOCUMENT

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END OF SECTION

SECTION 00 43 36
PROPOSED SUBCONTRACTORS FORM

Herewith is the list of Subcontractors / Suppliers referenced in the bid submitted by:

(Bidder) _____

Dated _____ and which is an integral part of the Bid Form.

List one name for each line item. Failure to list the requested subcontractor or supplier, or listing multiple names will render the Bid "non-responsive" and the Bid will be subject to disqualification at the Owner's sole discretion. If Bidder will self-perform the work subject item, please enter the Bidder's name or write "self-perform" in the space provided.

Bidder agrees that, if awarded the Contract for this Project, he will contract with the subcontractors and suppliers indicated below, and will not deviate without express written authorization from the Owner.

The following work will be self-performed, or performed by subcontractors, or provided by suppliers, and coordinated by us:

1.01 LIST OF SUBCONTRACTORS AND SUPPLIERS

WORK SUBJECT	SUBCONTRACTOR / SUPPLIER NAME
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A. Chiller Manufacturer	_____
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B. Boiler Manufacturer	_____
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C. Temperature Control Contractor	_____
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END OF DOCUMENT

SECTION 23 21 23 HYDRONIC PUMPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Vertical in-line pumps.

1.02 RELATED REQUIREMENTS

- A. Section 23 07 19 - HVAC Piping Insulation.
- B. Section 23 21 13 - Hydronic Piping.
- C. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

- A. UL 778 - Standard for Motor-Operated Water Pumps Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements.
- C. Operation and Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacture, assembly, and field performance of pumps, with minimum three years of documented experience.

PART 2 PRODUCTS

2.01 HVAC PUMPS - GENERAL

- A. Provide pumps that operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
- B. Products Requiring Electrical Connection: Listed and classified by UL or testing agency acceptable to Authority Having Jurisdiction as suitable for the purpose specified and indicated.

2.02 SENSORLESS VARIABLE SPEED PUMP PACKAGE

- A. Manufacturers
 - 1. Armstrong Pumps Inc.; Model 4300.
 - 2. ITT Bell & Gossett.
 - 3. Taco.
 - 4. **Acceptable under Alternate No. 2 - Grundfos. [Addendum # 2]**
- B. Pump

1. Provide split-coupled type Vertical In-Line HVAC pumping units, with rigid spacer type couplings and supplied with NEMA Premium efficiency motors and NEMA/UL type-12 enclosure integrated controls. NEMA/UL type 1 enclosure is not acceptable for integrated controls. Refer to pump schedule for pump flows and heads and motor speed, enclosure and power requirements and other system conditions.
2. Pump shall be capable of being installed in vertical pipe configuration.
3. The controls shall be integrated with the pumping unit to 75hp/55kW motor size for a self-contained pump, motor and integrated controls combination to ensure optimum component matching and protection from motor overloading at any operating point. The pumping package shall be labeled with ETL listing certification that the product conforms to UL Std 778 and is certified to CSA Std C22.2 No.108. Controls for motors above 75hp will be supplied as separate items
4. Pump Construction: Pump Casing - Cast Iron with ANSI-125 / PN16 flanges for working pressure to 175 psig (12 bar) at 150°F (65°C) or Ductile Iron with ANSI-250 / PN25 flanges for working pressures to 375 psig (25 bar) at 150°F (65°C). Suction and discharge connections shall be equally sized ANSI flanges, and shall be drilled and tapped for seal flush and gauge connections.
5. Impeller - Bronze, fully enclosed type. Dynamically balanced. Two-plane balancing is required where installed impeller diameter is less than 6 times the impeller width.
6. Shaft - Provide Stainless Steel pump shaft.
7. Coupling - Rigid spacer type of high tensile aluminum alloy with a fully enclosed ANSI B15.1 Sect 8 and OSHA 1910.219 compliant guard. Pump design must such that the mechanical seal is replaceable without disturbing the pump or motor.
8. Mechanical Seals - Shall be Stainless Steel multi-spring outside balanced type with Viton® secondary seal, carbon rotating face and silicon carbide stationary seat. Provide a 316 stainless steel gland plate.

C. Integrated Controls

1. Controls shall be of the VVC-PWM type providing near unity displacement power factor at all loads and speeds without the need for external power factor correction capacitors. The controls shall incorporate DC link chokes for the reduction of mains borne harmonic currents to reduce the DC link ripple current thereby increasing the DC link capacitors lifetime. This shall be at least equivalent to a 5% input filter. The controls shall be UL and C-UL Listed & CE Marked showing compliance with both the EMC Directive 89/336/EEC and the Low Voltage Directive 72/23/EEC. RFI filters shall be incorporated within the controls to ensure it meets the emission and immunity requirements of EN61800-3 to the 1st Environment Class C1 (EN55011 unrestricted sales class B) and supports IEEE 519-1992 requirements. The controls and motor protection shall include: motor phase to phase fault, motor phase to ground fault, loss of supply phase, over voltage, under voltage, motor over temperature, inverter overload, over current. Over current is not allowed ensuring units will not overload the motor at any point in the operating range of the unit.
2. The controls shall incorporate an integrated graphical user interface that shall provide running and diagnostic information and identify faults and status in clear English language. Faults shall be logged / recorded for interrogation at a later date. It shall be possible to upload parameters from one control hardware into the non-volatile memory of a computer and download the parameters into other control requiring the same settings. The keypad shall incorporate Hand-Off-Auto pushbuttons to enable switching between BAS/BMS and manual control. The controls shall incorporate a USB port for direct connection to a PC and an RS485 connection with

Modbus RTU protocol. Optional protocols available shall include BACnet MS/TP and LonWorks.

3. Programmable skip frequencies and adjustable switching frequency must be available for noise / vibration control
4. Software shall be available in the unit to provide automatic speed control in variable volume systems for duty or duty / standby pump control without the need for pump mounted (internal/external) or remotely mounted differential pressure feedback sensor. Control mode setting and minimum / maximum head set-points shall be set at the factory and be user adjustable via the inbuilt programming interface.
5. The controls shall have the following additional features:
 - a. Sensorless override by BMS
 - b. Manual pump control
 - c. Closed loop PID control for a remote sensor
 - d. Auto alarm reset
 - e. Motor pre-heat function
 - f. Six programmable digital inputs
 - g. Two analog inputs
 - h. One programmable analog / digital output
 - i. Two volt-free contacts.

PART 3 EXECUTION

3.01 PREPARATION

- A. Verify that electric power is available and of the correct characteristics.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide access space around pumps for service. Provide no less than minimum space recommended by manufacturer.
- C. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump such that no weight is carried on pump casings. For close-coupled or base-mounted pumps, provide supports under elbows on pump suction and discharge line sizes 4 inches and over.
- D. Provide line sized shut-off valve and pump suction fitting on pump suction, and line sized combination pump discharge valve on pump discharge.

END OF SECTION

KEYNOTES

KEYNOTES ARE TYPICALLY NOT DUPLICATED WITHIN A GIVEN DETAIL. AN UN-KEYNOTE ITEM IN A DETAIL IS THE SAME AS A KEYNOTE ITEM HAVING THE SAME APPEARANCE WITHIN THE SAME DETAIL.

2.408 TEMPORARILY REMOVE EXISTING LOUVER AND BLANK-OFF PANELS FROM MASONRY OPENING TO PERMIT MECHANICAL COMPONENTS TO BE MOVED THROUGH IT DURING THE COURSE OF THE WORK OF THE PROJECT; SAVE AND PROTECT LOUVER AND BLANK-OFF PANELS FOR RE-INSTALLATION.

7.921 JOINT SEALANT: PROVIDE CONTINUOUS BEAD OF POLYURETHANE JOINT SEALANT AT PERIMETER OF DOOR FRAME ON BOTH SIDES OF FRAME.

7.922 JOINT SEALANT: PROVIDE CONTINUOUS BEAD OF SILICONE JOINT SEALANT AT PERIMETER OF REINSTALLED LOUVER FRAME ON BOTH INTERIOR AND EXTERIOR SIDE OF FRAME.

8.110 STEEL ASYMMETRIC DOUBLE DOOR FRAME: 3'-0" x 7'-10" RH INACTIVE LEAF; 2" x 5-3/4" FRAME WITH 2" HEAD; PROVIDE EXISTING MASONRY ANCHORS.

8.111 STEEL ASYMMETRIC DOUBLE DOOR FRAME: 3'-0" x 7'-10" RH INACTIVE LEAF; 2" x 5-3/4" FRAME WITH 2" HEAD; PROVIDE EXISTING MASONRY ANCHORS.

8.711 DOOR HARDWARE: BUTT HINGES, PASSAGE LOCKSET ON ACTIVE LEAF, FLUSH BOLTS ON INACTIVE LEAF; COORDINATOR AND CLOSERS WITH CUSHION STOP FUNCTION ON BOTH LEAVES; PERIMETER AND ASTRAGAL GASKETING/WEATHERSTRIPPING; SURFACE-MOUNTED AUTO DROPOUT ON BOTH LEAVES.

8.712 ACCESS DOOR HARDWARE: WEATHER STRIPPING, GASKETS; THOROUGHLY CLEAN EXISTING FRAME AND DOOR. REMOVE DUST, OIL, GREASE, DIRT AND DRIED CONCRETE; COMPLETELY INSTALL NATIONAL GUARD PRODUCTS (NGP) #2625B SELF-ADHESIVE SILICONE BULK SMOKE SEAL ON UNDERSIDE OF DOOR ON THREE SIDES. ON HINGE SIDE INSTALL ON TOP SIDE OF DOOR NGP #114NA OVERLAPPING ASTRAGAL WITH NEOPRENE SEAL. ENSURE SEALS ARE CONTINUOUS AND DO NOT IMPED PROPER CLOSING AND LATCHING OF DOOR.

8.910 REINSTALL EXISTING WALL LOUVER AND BLANK-OFF PANELS WHEN OPENING IS NO LONGER NEEDED FOR MOVEMENT OF MECHANICAL COMPONENTS THROUGH IT.

9.901 PAINT DOOR AND FRAME.

23.100 REMOVE STEAM ABSORPTION CHILLER AND ALL ASSOCIATED STEAM PIPE, CONDENSATE PIPE AND SPECIALTIES.

23.101 REMOVE EXISTING UTILITY BRIDGE MAIN DRAIN CONNECTION AND PROVIDE PERMANENT CAP.

23.102 REMOVE CONDENSATE PIPE BACK TO MAIN DRAIN CONNECTION TO REMAIN AND PROVIDE PERMANENT CAP.

23.103 REMOVE IN-LINE PUMP AND ALL SPECIALTIES.

23.104 REMOVE CONDENSER WATER PIPES BACK TO LOCATION SHOWN AND PROVIDE TEMPORARY CAP FOR NEW CONNECTION.

23.105 REMOVE CHILLED WATER PIPES BACK TO LOCATION SHOWN AND PROVIDE TEMPORARY CAP FOR NEW CONNECTION.

23.107 REMOVE TEMPERATURE CONTROL COMPONENTS AND ALL ASSOCIATED WIRING THAT IS NOT TO BE REUSED.

23.108 REMOVE CHILLED WATER PIPES BACK TO LOCATION SHOWN AND PROVIDE TEMPORARY CAP FOR NEW CONNECTION.

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23.200 REMOVE NEW ELECTRIC CENTRIFUGAL CHILLER, CHILLED WATER AND CONDENSER WATER PIPING, AND ALL ASSOCIATED SPECIALTIES. PIPE ALL RELIEF PIPING TO THE EXTERIOR OF THE BUILDING.

23.201 PROVIDE NEW IN-LINE, SENSORS, SPLIT COUPLED PUMP HAVING MOTOR MOUNTED VFD, BALANCE PUMP VFD SETTING TO MAINTAIN SCHEDULED GPM. DO NOT USE TRIPLE DUTY VALVE FOR BALANCING.

23.202 COORDINATE AND WORK WITH EARTHWISE ENVIRONMENTAL, CHRIS KOEPEL, 630-774-0419 (OWNERS WATER TREATMENT COMPANY) FOR INSTRUCTIONS ON WHICH PIPE TAPS ARE TO BE REMOVED/REMAIN AND WHERE TO LOCATE TAP RELEASER FOR EACH OF THE CHILLED WATER AND CONDENSER WATER SYSTEMS.

23.203 PROVIDE REFRIGERANT DETECTION SYSTEM. SYSTEM SHALL INCLUDE TWO SENSORS.

23.204 PROVIDE NLINE EXHAUST FAN FOR REFRIGERANT EXHAUST SYSTEM.

23.205 PROVIDE EXHAUST DUCTWORK DOWN TO WITHIN 24 INCHES OF FLOOR WITH OPEN BOTTOM, SCREEN OPENING.

23.206 PROVIDE PERMANENT SIGN ATTACHED TO DOOR INDICATING "RESTRICTED TO AUTHORIZED PERSONNEL ONLY" INCLUDE ON SIGN (A) NAME AND ADDRESS OF INSTALLER (B) REFRIGERANT NUMBER AND AMOUNT OF REFRIGERANT. (C) FIELD TEST PRESSURE APPLIED.

23.207 PROVIDE STROBE AND LIGHT OUTSIDE OF DOOR AND INTERFACE TO REFRIGERANT DETECTOR.

23.208 PROVIDE MODIFICATIONS TO EXISTING HONEYWELL WEBSTATIONS-AX SERVER/HONEYWELL TIDUM AX JACES WITH OPEN LICENSE (WEB-600-0) CONTROL SYSTEM. MODIFICATIONS INCLUDE REMOVAL OF POINTS AND GRAPHICS, ADDITION OF POINTS AND GRAPHICS, INTERFACE OF PUMP VFD, INTERFACE OF CHILLER CONTROLLERS, CHANGED TO SEQUENCES OF OPERATION, ETC. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ALL REQUIRED CONTROLLERS, COMPONENTS/SENSORS, AND PROGRAMMING FOR EQUIPMENT TO MEET THE SEQUENCE OF OPERATIONS AS IDENTIFIED ON FLOOR PLANS AND TEMPERATURE CONTROLS AND PIPING SCHEMATIC DRAWING.

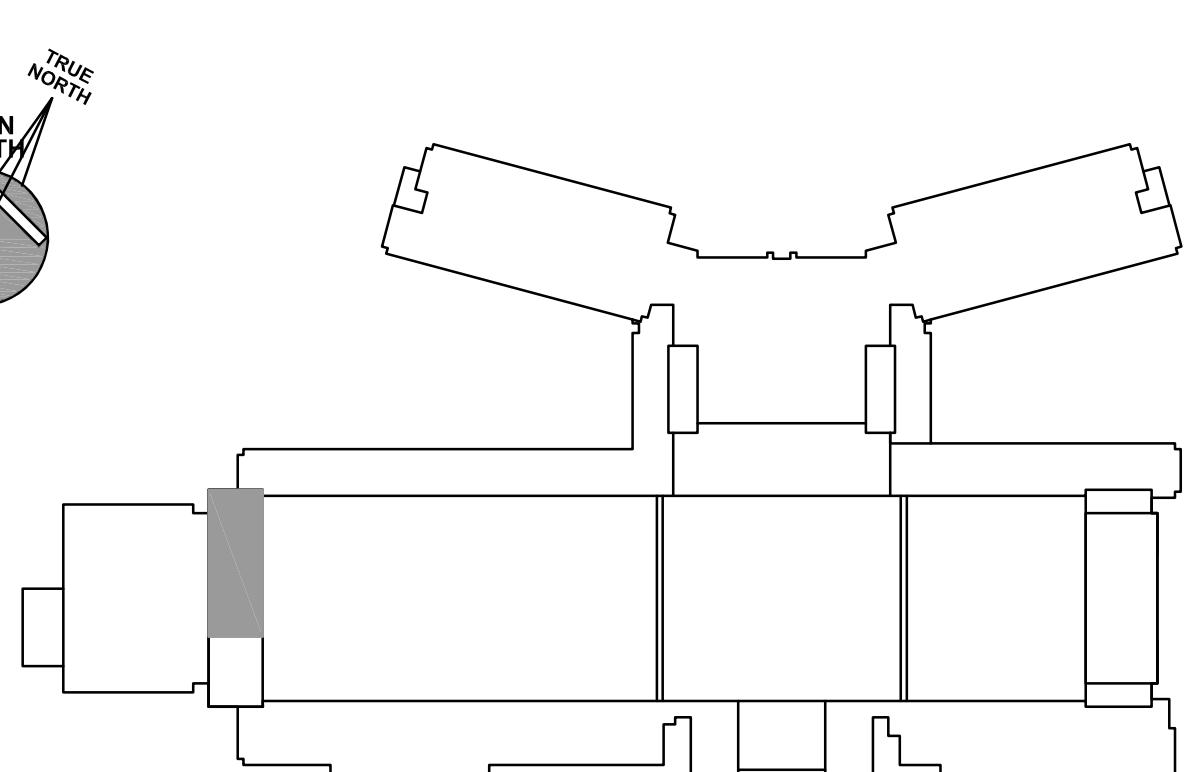
23.209 PROVIDE DAMPER ACTUATOR ON EXISTING DAMPER AND TIE INTO SEQUENCES FOR REFRIGERANT MONITORING SYSTEM. DAMPER ACTUATOR SHALL HAVE MANUAL OVERRIDE AVAILABLE TO OPERATE THE DAMPER.

23.210 PROVIDE 48" x 48" DUCT CONNECTION TO LOUVER FOR EXHAUST FAN DISCHARGE.

GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL REQUIRED FITTINGS, OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM. COORDINATE WITH OTHER TRADES FOR SPACE AVAILABLE AND RELATIVE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK, ETC.
3. EXISTING PIPING AND DUCTWORK INDICATED ON THESE PLANS SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS, QUANTITY AND PIPE SIZES.
4. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
5. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

KEY PLAN



ISSUED	01/06/22	BID DOCUMENT ONE
DRAWN	01/25/22	ADDITIONAL TWO
CHECKED	01/25/22	
APPROVED	01/25/22	DDW
SHEET TITLE	OEHS MECHANICAL FOURTH FLOOR PLANS	
SHEET NUMBER	1	

M310

PARTIAL FOURTH FLOOR MECHANICAL ROOM DEMOLITION (2)

PARTIAL FOURTH FLOOR MECHANICAL ROOM (1)