

## ADDENDUM NO.1

March 8, 2020

PROJECT NAME: Pocatello High School Unit 1 Boiler Replacements

The data included hereinafter is issued by the Engineer (Engineered Systems Associates, Inc. 1355 East Center, Pocatello, ID 83201) as clarification, addition to, and/or deletion from the Drawings, Specifications, and Contract Documents relative to the above-named project.

Except as affected by data included hereinafter, all other parts of the Contract Documents shall remain in full force and effect as issued by the Engineer. It shall be the sole responsibility of the Bidder to appropriately disseminate this data to all concerned prior to the assigned bid time and date. Acknowledge Receipt of this addendum shall be recorded by the Bidder in the appropriate space on the Bid Form included in the Contract Documents. Failure to do so may subject the bidder to disqualification

This addendum consists of 1 page(s) and 11 page(s) attachment for a total of 12 page(s).

### Changes to The Specifications:

1. See new bid form- Attached
2. See New Form of Bond-Attached
3. Replace Section 23 5230- Gas Boilers with New 23 5230- Attached
4. Change Division 01-General Provision 01002 Section a. to read, No new MCC or Concrete cutting or patching is required.

### Changes to Prior Addendums:

1. NA.

### Changes to the Drawings:

- 1- See revised Circulating Pump and Boiler Schedules- Attached

### Prior Approvals:

1. Section 23 5230 Gas Boiler Accessories: Niles Steel Tank and Caleffi.

END OF ADDENDUM

**POCATELLO HIGH SCHOOL BOILER REPLACEMENT**

**BID FORM**

TO:

GENTLEMEN:

The Undersigned hereby submits the following proposals:

**1. BID ITEM:**

Having carefully examined the Specifications and Drawings entitled:

2021 – BOILER REPLACEMENT  
FOR  
POCATELLO HIGH SCHOOL

as well as the premises and conditions affecting the work, the undersigned proposes to furnish all labor and materials and to perform all work as required by and in strict accordance with the above-named documents for the following sum:

BASE BID: (\$\_\_\_\_\_)

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**2. CONTRACT:**

If the undersigned be notified of the acceptance of this proposal,  
\_\_\_\_\_ agrees to execute a  
contract for the above work, for a compensation of the above stated amount.

**3. COMPLETION DATE:**

The Undersigned hereby also agrees to complete the work contemplated on or before August 11, 2021, and agrees to the Liquidated Damages for work not substantially complete by this date.

The Undersigned acknowledges receipt of addenda numbers \_\_\_\_, \_\_\_\_, \_\_\_\_.

**4. ALCOHOL AND DRUG-FREE WORKPLACE:**

Pursuant to Idaho Code, Section 72-1717 I, the undersigned certify that

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(Name of contractor)

is in compliance with the provisions of Idaho Code, Section 72-1717 and will maintain such program throughout the life of this contract and shall subcontract work only to subcontractors meeting the requirements of Idaho Code, Section 72-1717 (1)(a).

Dated at \_\_\_\_\_ this \_\_\_\_\_ day  
of \_\_\_\_\_ 2021.

Very truly yours,

\_\_\_\_\_  
Bidder

\_\_\_\_\_  
Street or Building Address

\_\_\_\_\_  
Authorized Signature, Title

\_\_\_\_\_  
City State Zip

\_\_\_\_\_  
Idaho Public Works License No.

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
\_\_\_\_\_  
WORKERS COMPENSATION AND EMPLOYEE LIABILITY EXPIRATION  
DATE: \_\_\_\_\_

SUB-CONTRACTORS WHO SHALL BE UTILIZED ON THIS CONTRACT:

PLUMBING: (name)

\_\_\_\_\_

(Address):

\_\_\_\_\_

Idaho Public Works Contractors License No.:

\_\_\_\_\_

Idaho Plumbing Contractors License No.:

\_\_\_\_\_

HEATING & AIR CONDITIONING (Name) :

\_\_\_\_\_

(Address):

\_\_\_\_\_

Idaho Public Works Contractors License No.:

\_\_\_\_\_

ELECTRICAL (Name):

\_\_\_\_\_

(Address):

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Idaho Public Works License No.:

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Idaho Electrical Contractor's License No.:

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END OF BID FORM FOR **POCATELLO HIGH SCHOOL BOILER REPLACEMENT**

KNOW ALL MEN: That we \_\_\_\_\_,  
Principal, \_\_\_\_\_,  
Surety, are held firmly bound unto \_\_\_\_\_,  
Owner, in the sum of \_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

for the payment of which we bind ourselves, our legal representatives, successors, and assigns, jointly and severally, firmly by the presents.

WHEREAS, Principal has executed contract with Owner, dated \_\_\_\_\_

for Boiler Replacement for  
Pocatello High School  
Pocatello School District #25

copy of which contract is by reference made a part hereof.

NOW, THEREFORE, if Principal shall faithfully perform such contract and pay all persons who have furnished labor or material for use in or about the improvement and shall indemnify and save harmless the Owner from all cost and indemnify and save harmless the Owner from any defect or defects in any of the workmanship or materials entering into any part of the work which shall develop or be discovered within one year after the final acceptance of such work, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

Provided, that the liability hereunder for defects in materials or workmanship for a period of one year after final acceptance of the work shall not exceed the sum

of: \_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

All persons who have furnished labor or materials for use in or about the improvement shall have a direct right of action under the bond, subject to the Owner's priority.

The Contract, including the completion thereof after default, if any, shall be prosecuted under full supervision of a duly qualified Engineer.

Any payment of payments under the bond shall reduce its penalty to the extent of such payment of payments.

No suit or action may be maintained under the bond unless it shall have been instituted within two years from date on which final payment under the contract falls due.

The Owner and Engineer shall cooperate with and assist Surety in prosecuting its rights and claims, if any, against Principal and others by supplying testimony, books, records, and documentary evidences in their possession.

The Surety hereby waives notice of any alterations, extensions, or forbearance made or extended by the Owner or Principal.

In event Principal is in default under the contract as defined therein, Surety will (a) within fifteen days of determination of such default, take over and assume completion of said contract and become entitled to the payment of the balance of the contract price, or (b) pay the Owner in cash the reasonable cost of completion, less the balance of the contract price including retained percentage. The cost of completion shall be fixed by taking bids from at least three responsible contractors, one chosen by the Owner, one by the Engineer, and one by the Surety. The Surety will make such payment within fifteen days after the cost of completion shall have been so determined.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ 2021.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Principal)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Surety)

## **SECTION 23 5230 – GAS BOILER**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

1. Contractor shall supply and install Qty.: 4 Laars MagnaTherm Model MGH 2000 rated at 1,999,000 BTU/hr input and 1,895,000 BTU/hr output.

### **PART 2 – PRODUCTS**

1. 4.9 Standard for Gas-Fired Low Pressure Steam and Hot Water Boilers. The unit(s) shall be designed and constructed in accordance with the ASME Boiler & Pressure Vessel Code, Section IV requirements for 160 psi (1103 kPa) maximum working pressure, and shall bear the ASME "H" Stamp and be listed by the National Board.
2. The boiler shall be listed with AHRI (Air Conditioning, Heating and Refrigeration Institute). The boiler shall have a minimum thermal efficiency of 95%.
3. The unit(s) shall be constructed to comply with the efficiency requirements of the latest edition of ASHRAE Standard 90.1.
4. The boiler shall be certified for placement indoors and outdoors, where freezing conditions do not exist.
5. The boiler must have knockdown feature that allows the top section of the boiler to be removed, allowing for easy handling and installation.
6. The boiler shall be equipped with an ASME certified pressure relief valve set at 75psi 517 (kPa). Optional pressure relief valves with settings of 30psi (207kPa), 50psi (345 kPa), 60psi (413 kPa), 125psi (861 kPa) or 150psi (1034 kPa) shall be available.
7. The water tube heat exchanger shall be stainless steel, rated for 160 psi (1103 kPa) working pressure. The heat exchanger shall be a low water volume design with micro-fin tubing, welded construction, with no gaskets, o-rings or bolts in the header. Heat exchanger shall be accessible for visual inspection and cleaning of all internal surfaces. The boiler shall be fully condensing design with built-in condensate drain and trap. The heat exchanger shall have a limited ten-year warranty.
8. Each boiler shall be fully test fired, (with water, gas, and venting connected), and all safety components tested, at the factory.
9. The boiler shall be sealed combustion. The boiler jacket shall be a unitized shell finished with acrylic thermo-set paint baked at not less than 325°F (163°C). The frame shall be constructed of galvanized steel for strength and protection. Chamber shall include a sight glass for viewing flame. Boiler sides and back shall be certified for zero no more than 11 inches clearance to combustible surfaces.
10. The boiler shall be equipped with an engineered gas/air chamber that ensures proper mixing for stable combustion at all firing rates
11. Boiler shall operate on 4-13" w.c. gas pressure, and shall need no component changes to operate at high altitude, up to 10,000 feet.
12. The boiler shall use a premix burner with a stainless steel woven metal fiber wrap, and a negative pressure gas valve to burn cleanly, with NOx emissions not exceeding 9ppm. The boiler shall meet the emissions requirements of SCAQMD 2012.
13. The boiler shall be designed for vertical or horizontal Category IV venting, up to 100 equivalent feet, with 6" (1600), 8" (2000 & 2500), 10" (3000 & 3500) or 12" (4000) diameter CPVC, polypropylene or stainless steel vent material.
14. Air may be taken from the room, or ducted directly to the boiler using up to 100 equivalent feet of 6" (1600), 8" (2000 & 2500), 10" (3000 & 3500) or 12" (4000) diameter of ABS, PVC, CPVC or galvanized pipe.
15. The boiler shall be a vertical, micro-finned tube exchanger design, with one control and one burner
16. The boiler control shall be an integrated electronic PID temperature and ignition control with large touchscreen and color display and shall control the boiler operation and firing rate. The boiler display shall be visible without the removal of any jacket panels or control panels.
17. The control shall have the ability to control the boiler pump, system pump and indirect domestic water pump, each with delay and exercise features.
18. The control shall have a variable speed boiler pump control option.
19. The control shall have the ability to integrate indirect domestic water heating with the boiler

- system. The control shall have domestic hot water priority, and shall have the ability to recognize a domestic water sensor or closure from tank stat on the same terminals.
20. The control shall have built-in outdoor reset feature with customizable reset curves, based on the outdoor temperature and desired system water temperature. The boiler shall be shipped with the outdoor reset sensor, as standard equipment.
  21. The control shall easily allow the user to force the boiler into minimum or maximum firing rate, for setup and diagnostic purposes, and shall have a cleaning mode that allows the user to wipe the screen without activating any functions from the touchscreen.
  21. The control shall have dry alarm contacts for ignition failure. The control shall monitor flue gas temperature and shall stop the boiler from firing if temperature is excessive.
  22. Allowable control adjustments shall include: boiler temperature setpoint; domestic water temperature setpoint; automatic high limit; °F or °C display; setpoint for time of day input; DHW setpoint for time of day input; PID gain parameters; DHW PID gain parameters; manual firing rate control; pump delay time; pump exercise interval; outdoor reset selection; low boiler setpoint temperature (for outdoor reset operation); boiler temperature at high outdoor temperature (for outdoor reset operation); boiler setpoint at low outdoor temperature (for outdoor reset operation); warm weather shutdown; automatic remote signal detection; anti-shortcycle feature enable/disable.
  23. The control shall have installer-level password, and verification feature to ensure that safety-related parameters are not altered by mistake.
  24. The control shall be able to cascade and lead-lag with other MagnaTherm controllers, for a total of eight MagnaTherm boilers, without additional system controllers.
  25. The burners shall be controlled to keep each one in the lowest firing rate possible, based on system demand, to maximize efficiency. For example, in multiple boiler systems, the master control shall choose to bring on all boilers at low firing rates, instead of one boiler at a high rate, to meet the system needs.
  26. A control that is chosen as master in a system with multiple controllers shall display an icon of each of the controls that it is controlling. The color of the icon shall indicate if the control is in normal operation, in lockout, in standby mode, in a hold state, or if there is a communication error.
  27. The control shall graphically depict the firing rate of each burner in the boiler, and/or each burner in system, if the controller is the master of other MGH boilers in a multiple boiler system. The control shall also show information about system, such as outdoor temperature and system temperature, where applicable.
  28. The control shall have the ability to accept a 4-20mA or 0-10VDC input connection from an external control or building automation system, to modulate the flame.
  29. The controller shall be able to send information through a Modbus connection, including (but not limited to) inlet and outlet water temperatures, stack temperature, DHW temperature and priority, central heating temperature, frost protection, warm weather shutdown, status of sensors, fan speed, setpoints, remote control input, burner status, lockout codes, alarm reasons, system pump status, boiler pump status and domestic water pump status.
  30. Control diagnostics shall include, at a minimum, the following: ignition failure, grounded flame rod, safety chain interrupt, boiler high limit exceeded, domestic water high limit exceeded, temperature rise limit exceeded, stack limit exceeded, pressure sensor fault, combustion pressure fault, blocked air intake, sensor errors (open or shorted), 24VAC voltage low or high, modulation fault, pump fault, AC input phases reversed, and fan speed proving rate failure.
  31. The control shall have a clock with a battery backup and will allow the user to access the burner run time, and cycle counts for the burner, DHW pump, system pump and boiler pump.
  32. The control shall differentiate between a lockout, a hold, or an alert. If an issue occurs, the system will display a brief description of the issue on the control screen. The user shall be able to tap the display to be presented with a more detailed explanation of the issue.

## 2.7 BOILER

1. The Boiler shall have an independent laboratory rating for Oxides of Nitrogen (NO<sub>x</sub>) of 20 ppm or less corrected to 3% O<sub>2</sub>. The manufacturer shall verify proper operation of the burner, all controls and the heat exchanger by connection to water and venting for a factory fire test prior to shipping.
2. The Boiler shall operate at altitudes up to 4,500 feet above sea level without additional parts or adjustments.



3. The Boiler shall be started up, adjusted and checked out by a manufacturer's authorized service agency. A start-up report shall be submitted to the owner and the contractor for inclusion in the O&M Manuals.

## 2.8 MANUFACTURERS



1. Laars - MagnaTherm

## 2.9 BUFFER TANK



1. Furnish and install in the system where shown a "Buffer Tank" or "Low Loss Header" as required by the boiler system design and recommended by the boiler manufacturer.
2. The Unit shall have flanged connections to match the heating pipe connections and shall include a high capacity air vent at the top and a ball valve drain at the bottom piped to the floor drain.
3. Units shall be rated for 250 gpm primary system flow and 60 gpm Boiler flow.
4. Manufacturers:
  - a. Lochinvar "Buffer Tank"
  - b. Spirovent "Quad"

END OF SECTION 23 5230

## CIRCULATING PUMP SCHEDULE

SYM.	TYPE	G.P.M.	HEAD	H.P.	CHAR	RPM	REMARKS	MANUFACTURER & MODEL NO.
	IN-LINE	128	30'	2	208/60/1	1750	BOILER CIRCULATING	TACO MODEL 1641 WITH VFD.
	IN-LINE	128	30'	2	208/60/1	1750	BOILER CIRCULATING	TACO MODEL 1641 WITH VFD.

## BOILER SCHEDULE

SYM.	TYPE	GROSS BTU INPUT	GROSS BTU OUTPUT	CHAR	MCA	WORKING PRESSURE	FUEL TYPE	FLUE SIZE	GAS SIZE	PIPE SIZE	GPM	REMARKS
	SEALED COMBUSTION	1,999,000	1,895,000	120/60/1	23.3	30 psi	NAT.	(2) 6"Ø	1-1/2"	2"	150	HEAT PUMP SYSTEM BOILERS SIMILAR TO LAARS MODEL MGH-2000 CONDENSING BOILER WITH BUILT-IN CONDENSATE TRAP. SET DISCHARGE TEMPERATURE TO 120°F.
	SEALED COMBUSTION	1,999,000	1,895,000	120/60/1	23.3	30 psi	NAT.	(2) 6"Ø	1-1/2"	2"	150	



CHANGED BOILER SIZES, CHANGED PUMP SIZES, AND CHANGED BREAKER SIZES.



CHANGED  
BREAKER  
SIZES

- 6 FIELD VERIFY EXACT LOCATION OF ALL ELECTRICAL GEAR. MAINTAIN CLEARANCES IN FRONT OF EXISTING PANELS AND GEAR AS REQUIRED BY CODE.
- 7 DISCONNECT (2) EXISTING 20A 2P BREAKERS (SERVING TWO EXISTING BOILER BEING REPLACED) IN PANEL 'R1A' ON INTERMEDIATE LEVEL CUSTODIAL ROOM. REWORK EXISTING WIRING AS REQUIRED IN PANEL AND IN BOILER ROOM TO CONNECT THE (2) NEW BOILER CIRCULATING PUMPS TO THE EXISTING 20A 2P BREAKERS. EXISTING CONDUIT AND WIRING TO REMAIN AND/OR EXTENDED AS REQUIRED FOR NEW BOILER LOCATIONS. RE-INDEX PANEL SHEET TO REFLECT CHANGES.
- 8 DISCONNECT AND REMOVE (1) EXISTING 20A 2P BREAKER IN EXISTING ELECTRICAL PANEL 'R1A' WHICH SERVES (1) EXISTING BOILER BEING REMOVED. REPLACE WITH (2) NEW 40A 1P BREAKERS. REWORK EXISTING WIRING AS REQUIRED IN PANEL AND IN BOILER ROOM TO CONNECT THE (2) NEW BOILER CIRCULATING PUMPS TO THE NEW 40A 1P BREAKERS. EXISTING CONDUIT AND WIRING TO REMAIN AND/OR EXTENDED AS REQUIRED FOR NEW BOILER LOCATIONS. RE-INDEX PANEL SHEET TO REFLECT CHANGES.
- 9 DISCONNECT AND REPLACE EXISTING HOT WATER BOILER, ALL EXISTING BOILER CONTROLS, ALL IMMEDIATE ASSOCIATED HEAT PUMP PIPING BACK TO EXISTING MAIN LINE, AND ALL EXISTING GAS PIPING BACK TO SHUT-OFF VALVE. FIELD VERIFY EXISTING CONDITIONS. CUT EXISTING BOILER AS REQUIRED TO REMOVE FROM BUILDING. EXISTING HEAT PUMP SUPPLY AND RETURN LINES AND EXISTING GAS LINE TO BE EXTEND TO NEW BOILER LOCATIONS AND RECONNECTED. (TYPICAL OF 2.)

Intermediate Custodial Area

1	13	EXISTING CONDENSING BOILER TO BE DISCONNECTED AND REMOVED. REMOVE ALL CONTROLS, GAS PIPING, AND HEAT PUMP PIPING TO EXISTING BOILER.
	14	NEW CONDENSING BOILER AS SPECIFIED. CONNECT TO EXISTING HEAT PUMP AND GAS PIPING AND TO NEW LOW LOSS HEADER AS SHOWN.
	15	BOILER CIRCULATING PUMP. CONNECT NEW 2" LINE TO HEAT PUMP PIPING LOOP AS SHOWN. (114 GPM)
	16	EXISTING PIPING TO REMAIN. PROTECT DURING CONSTRUCTION AND MAINTAIN CONNECT TO EXISTING EQUIPMENT AND VALVES.
	17	PROVIDE AND INSTALL NEW PIPING AS SHOWN. CONTRACTOR TO FIELD VERIFY EXISTING PIPING MATERIALS AND CONNECTIONS. PROVIDE NEW TO MATCH EXISTING.
	18	DISCONNECT AND REMOVE EXISTING BY PASS VALVE AND CIRCUIT SETTER. PROVIDE NEW PIPE LENGTH AS REQUIRED FOR REMOVED FITTINGS AND DEVICES.
	19	DISCONNECT AND REMOVE EXISTING 3" LINE TO EXISTING BOILER. PROVIDE NEW PIPING AS SHOWN TO NEW BOILER OR TO REPLACE FITTINGS.
	20	DISCONNECT AND REMOVE EXISTING 1-1/2" GAS LINE TO EXISTING BOILER. PROVIDE NEW PIPING AS SHOWN TO NEW BOILER OR TO REPLACE FITTINGS.

1 ADDENDUM #1 - CHANGED BOILER SIZES, CHANGED PUMP SIZES, AND CHANGED BREAKER SIZES.