ADDENDUM

ADDENDUM NO: 01

BID PACKAGE NO: N/A

PROJECT: New Palestine High School Boiler Replacement

PROJECT NO: 2025030 DATE: 06/26/2025 BY: Emery H. M. Hunt

This Addendum is issued in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein. This Addendum includes:

ATTACHMENTS

CSO Addendum No.1 Cover Page, pages 1 through

Specifications: 22 34 00 Gas Fired Domestic Water Heaters, 22 34 01 Gas Fired Pool Heaters

Drawings: E-301

Appendix A: Owner Pre Purchased Equipment Information
Pre-Bid Agenda
Pre-Bid Sign in sheet

PART 1 - GENERAL INFORMATION

1.1 Add "Appendix A: Owner Pre Purchased Equipment Information" as a part of the contract documents. This includes information on the Owner pre purchased gas fired domestic water heaters, gas fired pool heaters, and condensing boilers.

1.2 Pre-Bid Agenda, see attached agenda from the pre-bid meeting

1.3 Pre-Bid Sign in sheet, see attached sign in sheet from the pre-bid meeting

PART 2 - BIDDING REQUIREMENTS

2.1 NOT USED

PART 3 - SPECIFICATIONS

3.1 22 34 00 Gas Fired Domestic Water Heaters – This specification section was omitted in the Contract Documents and is being issued as a part of this addendum.

3.2 22 34 01 Gas Fired Pool Heaters – Reissue this specification section in its entirety.

3.3 23 52 16 Condensing Boilers

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A. Add the following to the end of paragraph 1.1, A.

"THIS CONTRACT SHALL TAKE DELIVERY, STORE AND PLACE/INSTALL EQUIPMENT AND ASSUME THE ASSOCIATED WARRANTY."

PART 4 - DRAWINGS

4.1 A201 Enlarged Ground Floor Plan

A. Add plan note #2 as shown on the attached drawings.

4.2 A202 Enlarged Second Floor Plan

A. Add plan note #2 as shown on the attached drawings.

4.3 E-301 Enlarged Plans – Electrical. Reissue this drawing in its entirety.

PART 5 - QUESTIONS AND AWSNERS

5.1 NOT USED

END ADDENDUM

APPENDIX A: OWNER PRE PURCHASED EQUIPMENT INFORMATION

SECTION 22 34 00 – GAS-FIRED DOMESTIC WATER HEATERS (PRE-PURCHASE)

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following fuel-fired water heaters:

1. Commercial, gas water heaters.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUBMITTALS

A. Product Data: For each type and size of water heater indicated. Include rated capacities, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings:

Diagram power, signal, and control wiring.

Design Calculations: Submit detailed drawings certified and approved by manufacturer indicating the required sizing, slope, fittings, dampers, etc. for use with water heater venting configuration.

C. Operation and maintenance data.

D. Warranty.

1.4 QUALITY ASSURANCE

A. 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.

B. ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

C. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9" for all components that will be in contact with potable water.

1.5 DELIVERY, STORAGE AND HANDLING

The boilers shall be shipped from the factory to the project site (New Palestine High School) via FOB Jobsite. All shipping costs and freight insurance shall be covered in this bid by the manufacturer. The boilers will be unloaded, stored, and installed by the installing contractor under separate contract. Coordinate delivery with installing contractor.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of fuel-fired water heaters that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including storage tank and supports.
b. Faulty operation of controls.
c. Deterioration of metals, finishes, and other materials beyond normal use.

2. Warranty Period(s): From date of Substantial Completion:

a. Commercial, Gas Water Heaters: Three (3) year heat exchanger warranty, one (1) year parts warranty.

PART 2 - PRODUCTS

2.1 COMMERCIAL, GAS WATER HEATERS

A. Tank Type Water Heater; WH-A:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Smith, A.O. Water Products Company model number BTH-120A Mxi
b. Lochinvar, State or approved equal.

2. Capacity: 60-gallon storage, 120,000 BTUH http://www.battersbydanielson.com 317-867-3799
3. Storage-Tank Construction: ASME-code steel with 160-psig working-pressure rating.

a. Tappings: Factory fabricated of materials compatible with tank. Attach tappings to tank before testing. Threaded ends shall comply with ASME B1.20.1.
b. Interior Finish: Glass-lined. Comply with NSF 61 barrier materials for potable-water tank linings, including extending finish into and through tank fittings and outlets.
c. Anode Rod: Powered non-sacrificial anode.

4. Burner:

a. Modulating gas burner that automatically adjusts the input based on demand.

b. Submerged combustion chamber with helical heat exchanger coil.
c. Direct spark ignition.
d. 95% thermal efficiency.

5. Controls:

a. Integrated solid-state temperature and ignition control device with integral diagnostics, graphic user interface, fault history display, and digital temperature readout.
b. Water heater shall include iCOMM system for remote monitoring, leak detection, and fault alert.

6. Factory-Installed, Appurtenances:

a. Drain Valve: Corrosion-resistant metal complying with ASSE 1005.
b. Insulation: Comply with ASHRAE/IESNA 90.1. Surround entire storage tank except connections and controls.
c. Jacket: Steel with enameled finish.
d. Safety Controls: Automatic, high-temperature-limit.
e. Combination Temperature and Pressure Relief Valves: ANSI Z21.22/CSA 4.4. Include one or more relief valves with total relieving capacity at least as great as heat input, and include pressure setting less than water heater working-pressure rating. Select one relief valve with sensing element that extends into storage tank.

7. Optional equipment:

a. Condensate neutralization kit.

2.2 WATER HEATER ACCESSORIES

A. Gas Shutoff Valves: ANSI Z21.15/CGA 9.1, manually operated. Furnish for installation in piping.

B. Gas Pressure Regulators: ANSI Z21.18, appliance type. Include pressure rating, capacity, and pressure differential required between gas supply and water heater.

C. Gas Automatic Valves: ANSI Z21.21, appliance, electrically operated, on-off automatic valve.

PART 3 - EXECUTION

3.1 DEMONSTRATION

A. Provide a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial water heaters.

PART 4 - GAS-FIRED DOMESTIC WATER HEATER SCHEDULE

A. MARK NO.: WH-A1, WH-A2, WH-A3

B. PURPOSE: Water Heater

C. EQUIPMENT NAME: High Efficiency Gas-Fired Condensing

D. FUEL: Natural Gas

E. MBH INPUT: 1,200,000

F. WEIGHT, SHIPPING: 460 lbs

G. ELECTRICAL VOLTS: 120

H. ELECTRICAL PHASE: 1

I. ELECTRICAL FLA 5.0

J. REMARKS: 60 gallon storage

END OF SECTION 22 34 00

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SECTION 22 34 01 – GAS-FIRED POOL HEATERS (PRE-PURCHASE)

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following fuel-fired water heaters:

1. Commercial, gas pool water heaters.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 23 51 00 Breechings, Chimneys, and Stacks

1.3 SUBMITTALS

A. Product Data: For each type and size of water heater indicated. Include rated capacities, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings:

Diagram power, signal, and control wiring.

Design Calculations: Submit detailed drawings certified and approved by manufacturer indicating the required sizing, slope, fittings, dampers, etc. for use with water heater venting configuration.

C. Operation and maintenance data.

D. Warranty.

1.4 QUALITY ASSURANCE

A. 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.

B. ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

C. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9" for all components that will be in contact with potable water.

1.5 DELIVERY, STORAGE AND HANDLING

The boilers shall be shipped from the factory to the project site (New Palestine High School) via FOB Jobsite. All shipping costs and freight insurance shall be covered in this bid by the manufacturer. The boilers will be unloaded, stored, and installed by the installing contractor under separate contract. Coordinate delivery with installing contractor.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of fuel-fired water heaters that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including storage tank and supports.
b. Faulty operation of controls.
c. Deterioration of metals, finishes, and other materials beyond normal use.

2. Warranty Period(s): From date of Substantial Completion:

a. Commercial, Gas Pool Water Heaters: 10-year Limited Warranty, Five (5) year heat exchanger warranty, one (1) year parts warranty.

PART 2 - PRODUCTS

2.1 COMMERCIAL, GAS POOL WATER HEATERS

A. Pool Heaters; PH-1, PH-2:

1. The pool heater shall be a LOCHINVAR COPPER-FIN II Model CPN 1262 having an input rating of 1,260,000 Btu/hr, and shall be operated on Natural Gas. (S-15 Inc. 1-317-580-1515)

2. Manufactures: Lochinvar, Hamilton Engineering, or Raypak.
3. The water containing section shall be of a "Fin Tube" design, with straight copper tubes having extruded integral fins spaced seven (7) fins per inch. The tubes shall terminate into a one piece, lined, cast iron header. There shall be no bolts, gaskets or "O" rings in the head configuration. There shall be access to the front header of the heat exchanger for the purposes of inspection, cleaning or repair. The heat exchanger shall be mounted in a stress free jacket assembly in order to provide a "free floating design" able to withstand the effects of thermal shock. The heater shall bear the ASME "H" stamp for 160 psi working pressure and shall be National Board listed. The complete heat exchanger assembly shall carry a five (5) year warranty.
4. The combustion chamber shall be sealed and completely enclosed with Loch-Heat™ ceramic fiberboard insulation. A burner/flame observation port shall be provided on each end of the unit. The burners shall be constructed of a high temperature stainless steel and fire on a horizontal plane. The heater shall have a multi-speed combustion air blower to precisely control the fuel/air mixture for maximum efficiency.

5. The heater shall be constructed with a heavy gauge galvanized steel jacket assembly, primed and pre-painted on both sides with a minimum dry film thickness of 0.70 mils. The jacket design shall allow single unit venting connection without the use of external draft hood devices.
6. The heater shall be certified and listed by CSA International under the latest edition of ANSI Z21.56/CSA4.7 standard. The heater shall comply with the energy efficiency requirements of the latest edition of the ASHRAE 90.1 Standard. The heater shall operate at thermal efficiency 85%.
7. The heater shall be furnished with a factory supplied pumped by-pass assembly to ensure proper operation without condensation. The by-pass assembly shall include a sealed all bronze pump suitable for outdoor installation. The by-pass assembly shall be constructed of schedule 80 CPVC piping with brass inserts and an automatic three-way valve to protect the unit against inlet water temperatures that would cause the heat exchanger to condense. Instructions for proper setup and operation of the by-pass will be supplied with the heater.
8. The heater shall be equipped with an Electronic Integrated Control Module with a microprocessor-based platform incorporating software customized for operation of the Lochinvar Copper-Fin II. All internal safety, operating and ignition controls shall be included in the electronic integrated control module. The electronic integrated control module shall provide on/off control of the gas supply to the burner, operation of the combustion air blower, ignition of the gas-air mixture, flame proving, control of water temperature set points, and monitoring of all safety functions. Modbus protocol (optional).
9. The heater shall feature the “Smart System” control with a 2-line, 16-character LCD display, password security, pump delay with freeze protection, pump exercise and PC port connection. The heater shall allow 0-10 VDC input connection for BMS control and have built-in “Cascade” to sequence and rotate while maintaining stage firing of up to eight heaters without utilization of an external controller. Supply voltage shall be 120 volt / 60 hertz / single phase.
10. Local communication, programming and a display of operating and alarm status conditions shall be accessible through the Smart System control panel. The Smart System control panel shall contain an on/off main power switch, a digital display of a temperature functions, the operational status of the heater, or an active alarm fault. Data points visible in the digital display include inlet water temperature, outlet water temperature, water temperature differential, percent firing rate, setpoint temperatures, setpoint differential, minimum temperature, maximum temperature and maximum reset temperature. Operational status shall be displayed for Off, Standby, Pre-purge, Ignition, Pool and/or Spa Water Heating, and Post-purge.
11. Fault status shall be provided for high limit, gas pressure (optional), low water, blocked drain, louver proving, and air pressure switch status.
12. The standard operating control system shall include redundant proven pilot Hot Surface Ignition with full flame monitoring capability. Multiple main gas valves with redundant valve seats and built in low gas pressure regulators shall be supplied as standard. Gas valves will be referenced to the combustion chamber to ensure proper air/gas mixture for efficient combustion.
13. Additional standard controls shall include a water pressure switch, blocked flue pressure switch, low air pressure switch for each fan, low voltage transformer for the control circuit, 7-amp circuit breaker for 24 VAC control circuit, ASME temperature and pressure relief valve and flow switch. The manufacturer shall verify proper operation of the burners, all controls and the heat exchanger by connection to water and venting for a factory fire test prior to shipping. A quality test report shall be shipped with each unit.
14. A 24 VAC control circuit and components shall be used. All components shall be easily accessed and serviceable. All components shall have multi-pin plug in type connectors to ease service, troubleshooting and lower removal and replacement cost.
15. The heater shall be approved for indoor or outdoor installation. The heater shall be approved for Sidewall, DirectAire® Vertical, DirectAire Vertical with Sidewall Air Inlet,

DirectAire Horizontal, Aire-Lock™ Direct Vent and conventional venting (See mechanical detail). Venting shall be classified as Category I, negative draft, non-condensing, to use type "B" double wall venting materials. Direct Vent installations require the use of AL29-4C vent materials.

16. The heater shall have an independent laboratory rating for Oxides of Nitrogen (NO_x) of less than 20 ppm corrected to 3% O_2.
17. The Firing Control System shall be Two Stage Hot Surface Ignition with Electronic Supervision (Standard). Prefix "M" denotes staged Module Firing.

2.2 POOL HEATER ACCESSORIES

A. Gas Shutoff Valves: ANSI Z21.15/CGA 9.1, manually operated. Furnish for installation in piping.

B. Gas Pressure Regulators: ANSI Z21.18, appliance type. Include pressure rating, capacity, and pressure differential required between gas supply and water heater.

C. Gas Automatic Valves: ANSI Z21.21, appliance, electrically operated, on-off automatic valve.

D. Pool Heater Stands: Pool heater manufacturer's factory-fabricated steel stand for floor mounting and capable of supporting pool heater and water. Provide dimension that will support bottom of pool heater a minimum of 18 inches above the floor.

E. Piping-Type Heat Traps: Field-fabricated piping arrangement according to ASHRAE/IESNA 90.1 or ASHRAE 90.2.

F. Stackable frame

PART 3 - EXECUTION

3.1 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial water heaters. Refer to Division 01 Section "Demonstration and Training."

PART 4 - GAS-FIRED POOL HEATER SCHEDULE

A. MARK NO.: PH-1, PH-2,

B. PURPOSE: Pool Heater

C. EQUIPMENT NAME: High Efficiency Gas-Fired Condensing

D. FUEL: Natural Gas

E. MBH INPUT: 1,260,000

F. WEIGHT, SHIPPING: 954 lbs

G. ELECTRICAL VOLTS: 120

H. ELECTRICAL PHASE: 1

I. REMARKS: Provide stack frame part number 100163351

END OF SECTION 22 34 00

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SECTION 23 52 16 – CONDENSING BOILERS (PRE-PURCHASE)

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes packaged, factory-fabricated and factory-assembled, modulating gas-fired boilers, trim, and accessories for generating hot water.

1.2 SUBMITTALS

A. Product Data: Include performance data, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings: For boilers, boiler trim, and accessories. Include plans, elevations, sections, details, and attachments to other work.

1. Wiring Diagrams: Power, signal, and control wiring. Clearly indicate factory wiring versus wiring to be field installed by the contractor.
2. Complete control package wiring schematic with sequence of operation.

C. Source quality-control test reports.

D. Field quality-control test reports.

E. Operation and maintenance data.

F. Warranty: Manufacturer’s standard warranty.

1.3 QUALITY ASSURANCE

A. 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.

B. ASME Compliance: Fabricate and label boilers to comply with ASME Boiler and Pressure Vessel Code.

C. ASHRAE/IESNA 90.1 Compliance: Boilers shall have minimum efficiency according to "Gas and Oil-Fired Boilers - Minimum Efficiency Requirements."

D. DOE Compliance: Minimum efficiency shall comply with 10 CFR 430, Subpart B, Appendix N, "Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers."

E. UL Compliance: Test boilers for compliance with UL 795, "Commercial-Industrial Gas Heating Equipment." Boilers shall be listed and labeled by a testing agency acceptable to authorities having jurisdiction.

1.4 DELIVERY, STORAGE AND HANDLING

The boilers shall be shipped from the factory to the project site (New Palestine High School) via FOB Jobsite. All shipping costs and freight insurance shall be covered in this bid by the manufacturer. The boilers will be unloaded, stored, and installed by the installing contractor under separate contract. Coordinate delivery with installing contractor.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Lochinvar Crest
2. Fulton Endura+
3. Clever Brooks

2.2 HIGH EFFICIENCY GAS-FIRED CONDENSING BOILERS

A. Provide boilers as shown in PART 5 Schedules.

B. Boilers shall be UL/FM approved and labeled.

C. Boiler Construction

1. Boiler modules shall be of gas-fired, condensing design with a modulating power burner and positive pressure discharge. Each boiler shall be capable of minimum 20:1 turndown of firing rate without loss of combustion efficiency. Heat exchanger/combustion chamber shall incorporate a helical fire tube design that will be self-supporting, baffle free, and warranted to withstand thermal shock. Heat exchanger shall be ASME stamped for a working pressure of not less than minimum 80 psig. Unit shall have an ASME approved relief valve with a setting of 60 psig. Exhaust manifold shall be of corrosion resistant with a flue connection. Exhaust manifold shall have a gravity drain for the elimination of condensation with collecting reservoir. Contractor responsible for piping condensation to floor drain.
2. The flame monitoring system shall incorporate a U/L recognized combustion safeguard system utilizing interrupted spark ignition and a rectification type flame sensor. An electro-hydraulic double seated safety shutoff valve shall be an inherent part of the gas train.
3. Each boiler module shall incorporate electric probe type low water cutoff and dual over temperature protection including a manual reset in accordance with ASME Section IV and CSD-1. Remote fault alarm contacts, sensor failure detection and auxiliary contacts shall be standard equipment. Boilers shall operate on voltage shown on the equipment schedule.

D. Provide a condensate neutralization device for each boiler provided. Neutralization device to be Lime Neutrakon neutralizer or JJM Boiler Works JM Series condensate neutralization tube.

E. Mode of Operation

1. Boiler manufacturer shall supply as part of boiler package a completely integrated manufacturer's Boiler Management System to control all operation and energy input of the multiple boiler system. The system shall be comprised of a microprocessor-based control utilizing pulse width modulation for bumpless transfer of header temperature and sequential firing. The controller shall have the ability to vary each individual module input throughout its full range to maximize the condensing capability of the module and the entire plant without header temperature swings. The controller shall be PID type for accurate temperature control with excellent frequency response. BAS shall provide contact closure for automatic adjustable heat start circuit for plant activation and have contact closure for auxiliary equipment such as pumps.
2. The BAS will operate plant to vary header temperature setpoint linearly as an externally applied 4-20 mA or 0-10 VDC signal is applied. Units shall operate inversely with an Inverse Efficiency Curve, with known Part Load Value Efficiencies. Maximum efficiency shall be achieved at minimum firing input. Main header outlet temperature shall not be more than +/- 2° F from setpoint at any point of operation. The controller shall have LCD display for monitoring of all sensors and interlocks. Non-volatile backup of all control setpoints shall be internally provided as standard. Control will automatically balance operating time on each module by a first on-first off mode and provide for setback and remote alarms contacts. Connection between central BAS system and individual modules shall be twisted pair low voltage wiring to internal terminal strips for easy installation.
3. Provide a controller that allows the boiler control panel and each boiler to fully communicate with and be controlled through the Building Automation System (BAS) via Modbus open protocol. BAS access to the boiler system shall be BACnet over IP.
4. Provide controls and 2-position, 2-way valves to allow staging of boilers at low flow conditions. One valve per boiler to be provided.

F. Warranty

1. The boilers and respective boiler control panel assembly shall have a non-prorated 2-year parts and labor warranty from the date of Phase IB substantial completion (see front end documents for additional information.). A Warranty Certificate shall be issued to the Owner from the manufacturer. A copy of the warranty shall be submitted to the Engineer for approval.
2. Manufacturer's standard 10-year limited warranty on heat exchanger.

G. Field Services

1. Three site visits for factory startup and four (4) hours of Owner training shall be included in the bid.

PART 3 - EXECUTION – NOT APPLICABLE

PART 4 - BID EVALUATION

4.1 SUMMARY

A. Provide submittal data with bid.

B. Boilers will be selected with consideration given to all the following criteria:

1. First Cost
2. Physical Dimensions

C. Provide acknowledgement of startup/commissioning scope with bid.

D. Include with Bid: Statement of earliest date boilers can be delivered on site, based on an anticipated purchase order date of June 25, 2025.

(Continued on next page)

PART 5 - GAS-FIRED CONDENSING HOT WATER BOILER SCHEDULE

A. MARK NO.: B-1, B-2,
B. PURPOSE: Boilers
C. EQUIPMENT NAME: High Efficiency Gas-Fired Condensing Boilers
D. FUEL: Natural Gas
E. MBH INPUT: 2,000
F. MBH OUTPUT: 1,923
G. ENTERING WATER TEMPERATURE: 150° F
H. LEAVING WATER TEMPERATURE: 180° F
I. WATER FLOW: 128 GPM
J. WATER PRESSURE DROP: 10.0 Ft. H20 @ 128 GPM
K. MINIMUM WATER FLOW: 25 GPM
L. WEIGHT, SHIPPING: 2,087 lbs
M. WEIGHT, OPERATING: 2,570 lbs
N. ELECTRICAL VOLTS: 120
O. ELECTRICAL PHASE: 1
P. ELECTRICAL FLA / MCA: 13 / 16
Q. REMARKS:

END OF SECTION 23 52 16

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S15 INCORPORATED

- QUOTATION -

PROJECT: **NEW PALESTINE HIGH SCHOOL BOILERS**
LOCATION: **NEW PALESTINE, IN**
ENGINEER: **R E DIMOND**
BID DATE: **06/13/2025**

We are pleased to offer the following

PH1, PH2 **Lochinvar – CPN1262**
COPPER FIN II NATURAL GAS COMMERCIAL POOL HEATER, 1,260,000 BTU INPUT, SMART SYSTEM CONTROLS, MODBUS / BACNET MSTP BMS INTERFACE, ASME CONSTRUCTION, GASKETLESS COPPER FINNED TUBE HEAT EXCHANGER, FLOW SWITCH, AUTOMATIC LOW-TEMP VALVE, CIRCULATION PUMP, CPVC BYPASS LOOP PIPING AND 150# RATED TEMPERATURE AND PRESSURE RELEIF VALVE.
100147159 – SIDE WALL POWER VENT KIT
100163351 – STACK FRAME

Lochinvar CPN1262 uses CAT I Double wall B-Vent for Vertical & CAT IV AL294C with Powered Side Wall Kit for Horizontal Venting
Vent material and installation by others.

WH-A1, WH-A2, WH-A3
Lochinvar – SWR125N
SHIELD COMMERCIAL CONDENSING HIGH EFFICIENCY NATURAL GAS WATER HEATER, 125,000 BTU INPUT, 65 GALLON GLASS LINED STORAGE TANK 5:1 TURN DOWN RATIO CONTROLS, 316 STAINLESS STEEL WATER TUBE HEAT EXCHANGER, RECOVERY OF 145 GPH @ 100 DEGREE RISE, JACKETED AND INSULATED, CLASS IV VENT MATERIAL UPTO 150 EQUIVALENT FEET, 150# ASME TEMPERATURE AND PRESSURE RELEIF VALVE. (ASME RATED UNIT NOT AVAILABLE)
CS2 - 500,000 BTU CONDENSATE KIT

Lochinvar SWR125N uses CAT IV PVC, CPVC, Polypropylene and AL29-4C Vent
Vent material and installation by others.

15223 Herriman Blvd. Ste. 1 Noblesville, IN 46060
PH (317) 580-1515 / FAX (317) 581-1515 / jbutler@s15inc.com

CFC-E 2000

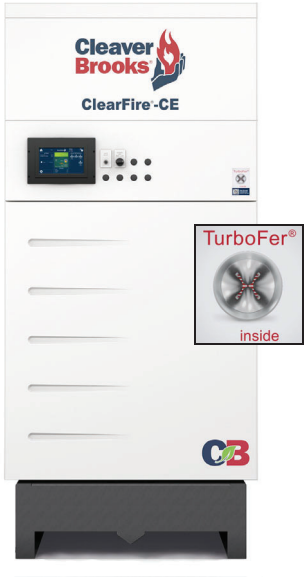
ClearFire®-CE

Condensing Boiler

2000 MBH

Submittal Sheet

JOB NAME: New Palestine High School Boiler Replacement



REVIEWER NOTES:

PROJECT INFORMATION

CB REPRESENTATIVE Hydronic & Steam Equipment
JOB NAME New Palestine High School Boiler Replacement
EQUIPMENT TAGS B-1 & B-2
LOCATION New Palestine, IN
ALTITUDE _____
CONTRACTOR _____
ENGINEER R.E. Diamond & Associates, Inc
MODEL NUMBER CFC-E2-700-2000-125HW QTY 2
FUEL X NATURAL GAS _____ PROPANE
BOILER ROOM GAS SUPPLY PRESSURE _____
VOLTAGE 115
DESIGN SUPPLY AND RETURN WATER TEMPERATURE Supply 180 deg F / Return 150 deg F
FLOW RATE (GPM)_____WATERSIDE PRESSURE DROP (FT HEAD @ FLOW RATE)_____
X WATER _____GLYCOL (if glycol, type and percentage):_____
BOILER OUTPUT W/GLYCOL DERATE (or N/A) N/A

BOILER RATINGS

Description	Units	2000*
Input Max.	Btu/hr	2,000,000
Natural Gas	ft^3/hr	2000
Propane	ft^3/hr	800
Output at 120/80 F [49/27 C] 100% Firing	Btu/hr	1,880,000
Output at 180/140 F [82/60 C] 100% Firing	Btu/hr	1,760,000
MAWP	psi	125
Operating Temp., Max.	°F	210
Dry Weight	pounds	2041
Shipping Weight	pounds	2166
Operating Weight	pounds	2858
Water Volume	gallons	98
Fan Motor Size	Watts	1,700
Operating Voltage, Fan	Volts/ph/Hz	115/1/60
Control Circuit	Volts/ph/Hz	115/1/60
Current Draw, Fan	Amperes	13.5
Current Draw Cont. Cct.	Amperes	2
Full Load Amps	Amperes	16
Max Over Current Protection	Amperes	20
Condensate Quantity Firing Nat. Gas & operating @ 120/80 F.	gal/hr	13.5
Flue Gas Mass Flow @ 100% Firing	lb/hr	2,226
Flue Gas Temp. Oper. 180/140 F	°F	180
Flue Gas Temp. Oper. 120/80 F	°F	130
Effective fireside heating surface	ft^2	488.09

*12% derate with 7ppm NOx option

STANDARD FEATURES

- Duplex Stainless Steel TurboFer® firetube heat exchanger.
  - True counterflow design
  - Thermal shock proof design
  - Superior effective heating surface area for excellent operational efficiency
  - Dual temperature returns provide 6% efficiency gain
  - Single pass design
- High water volume and low waterside pressure drop
  - Ideal for Primary Variable Flow pumping
  - Reduced cycling with no buffer tank required
  - Capable of low flow situations with no need for a flow switch
- Low emission premix burner featuring:
  - Self-regulating linkageless control
  - ECM variable speed combustion air blower modulation
  - Whisper quiet operation (<70dBA at high fire)
  - 10:1 turndown [natural gas]
  - <20 ppm NOx standard [natural gas]
  - <7 ppm NOx optional
  - SCAQMD Rule 1146.2 certified
- UL certified for natural gas or propane
- Combustion air intake via room air or direct vent connection on boiler
- Spark ignition with UV scanner for flame supervision
- ASME CSD-1 compliant
- ENERGY STAR certified
- Factory tested prior to shipment
- Standard short circuit current rating (SCCR): 10kA

STANDARD EQUIPMENT

- Trim and Controls
  -Manual reset high limit temperature cut-off with adjustable set point
  -Low water cutoff, probe type, manual reset with test switch
  -Thermistor sensors for supply and return water temperature readings
  -Combination temperature/pressure gauge
  -ASME Safety relief valve (ship loose)
  -Combustion air proving switch
  -Blocked flue/condensate safety switch
- Gas Train in Accordance with ASME CSD-1 and Includes:
  -Low and high gas pressure switches
  -Single body gas valve, dual solenoid safety shutoff
  -Leak test plugs
  -Manual shutoff valve

INTELLIGENT, INTEGRATED CONTROLS

- Ember integrated boiler safety and system control
- Color touch-screen display/interface
- Multiple loop PID set point control - central heat, domestic hot water and lead/lag demand priority
- Lead Lag control for up to eight boilers
- Boiler pump, DHW pump, system pump, iso valve, damper enable/disable
- Modulating pump speed control tracking firing rate or boiler delta T
- Outdoor temperature reset
- Post shutdown pump or valve delay
- Remote enable and set point capability
- Modbus RTU or BACnet MSTP communications (RS485)
- Multiple protocol gateway solutions available for other BMS integration requirements
- On-screen fault annunciation
- Remote alarm & boiler status contacts standard
- Non-volatile alarm history (last 10 lockouts)
- Cloud enabled for remote monitoring capabilities (with optional CB ProtoAir)

CFC-E Boiler Options Selection Guide

All options ship loose for field installation

Boiler Options
☐ Reusable air filter
☐ Adjustable feet
☐ Condensate neutralization ☐ Combination trap / tank (8000 MBH) ☐ Tank only (8000 MBH)
☐ Auto air vent
☐ Stack Thermometer
☐ Boiler drain valve
☐ Boiler Electrical Disconnect (NEMA 1 - non fused)
☐ Automatic isolation valve (24VAC standard)
☐ Auxiliary low water cut off
☐ Seismic anchor provisions
Gas train options
☐ Gas pressure regulator - stepdown ☐ low pressure: up to 21 in. WC ☐ medium pressure: 22 - 56 in. WC ☐ high pressure: 2 - 15 psig
☐ Gas pressure relief valve - required above 1 psig (UL); 1/2 psig (cUL/CSA)
Control Options
▣ Supply header sensor for Lead Lag operation (NEMA 4X)
☐ Redundant supply header sensor for Redundant Lead (NEMA 4X)
☐ System pump control Module (in NEMA 1 enclosure with fuse and power supply) Includes: ☐ Temperature control (two temperature transmitters) ☐ Pressure control (D/P transmitter)
☐ Alarm lights and horn package
☐ Alarm horn only package
☐ Outdoor temperature sensor (with weather cover)
☐ Stack temperature limit sensor
☐ Flow switch
■ Protocol translator (in NEMA1 Enclosure with fuse and power supply) Modbus RTU / BACnet MSTP communication standard ☐ BACnet IP ☐ Modbus TCP ☐ Metasys N2 ☐ LonWorks
☐ Protocol translator ship loose for mounting in boiler control panel (includes 24VDC power supply) Modbus RTU / BACnet MSTP communication standard ☐ BACnet IP ☐ Modbus TCP ☐ Metasys N2 ☐ LonWorks

OPERATING EFFICIENCIES

Percent Efficiency

% Firing Rate	Return Water Temperature °F (°C)						
	68 (20)	80 (27)	100 (38)	120 (49)	130 (55)	140 (60)	160 (72)
20%	98.0	97.1	94.5	91.4	90.0	88.9	88.0
50%	96.6	95.5	93.0	90.5	89.3	88.5	87.7
75%	95.5	94.1	91.7	89.6	88.8	88.2	87.5
100%	94.3	92.7	90.5	88.8	88.3	87.8	87.2

Conditions: Natural Gas; ΔT = 20°F

AHRI Certified Efficiency

Combustion Efficiency (%)	Thermal Efficiency (%)
94.3	95.5

FLOW RATES

CFC-E Flow Rates*

System Temperature Drop °F					
10	20	30	40	50	60
Flow Rate GPM					
377	188	126	94	75	63

**Recommended flow rates relative to temperature drop so as not to exceed boiler output.*

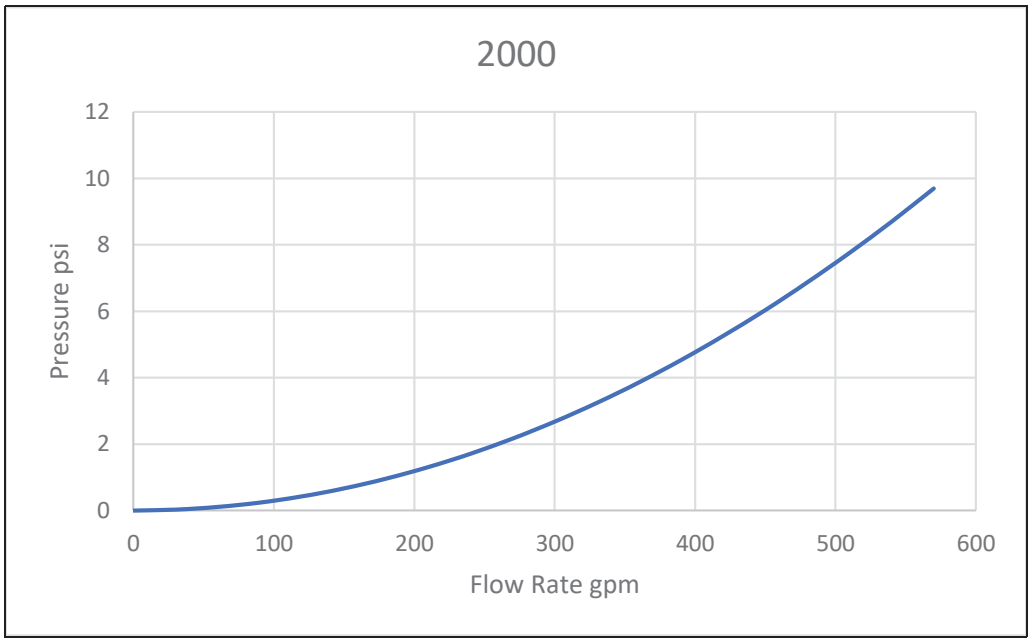
Based on 94% nominal effficiency

NOTE: Flow rates based on 100% water only. Not applicable to glycol solutions. Contact local C-B representative for assistance with glycol systems.

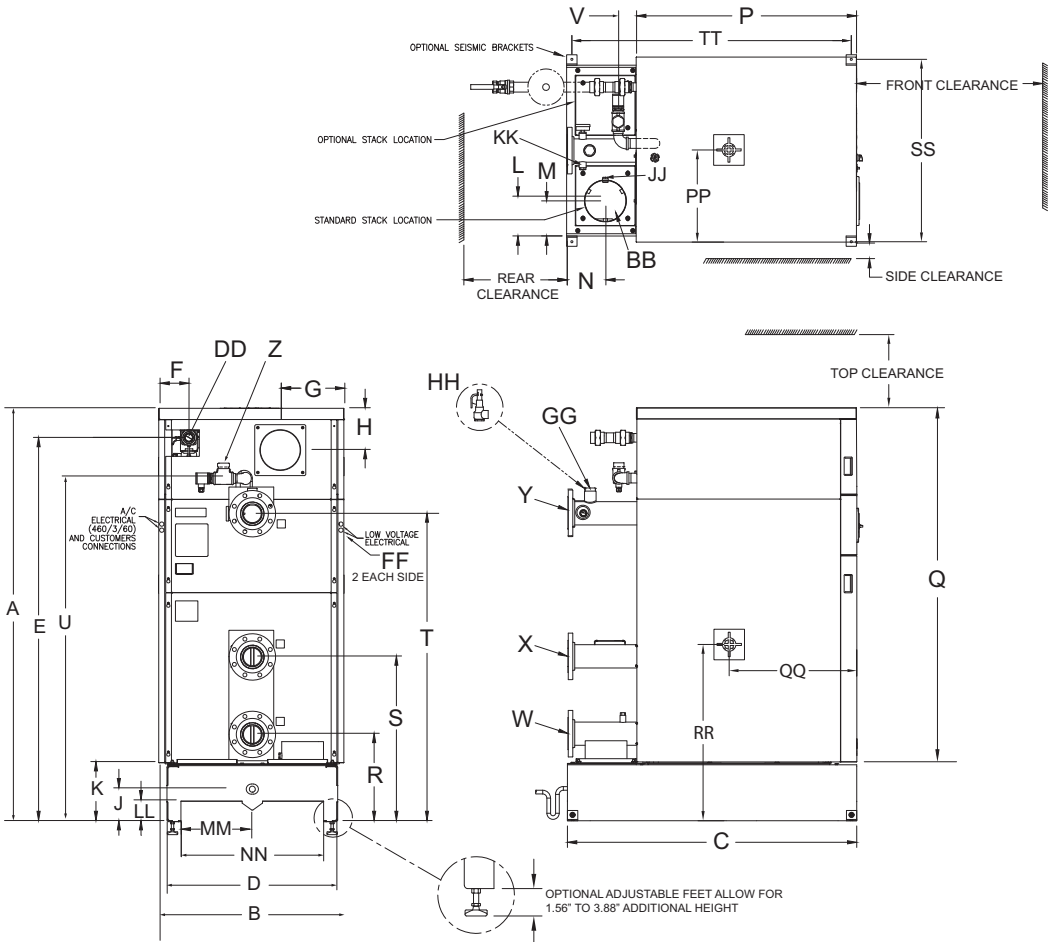
NOTE: The flow rates shown are recommended design flow rates. The CFC-E is capable of handling delta T's up to 120 deg F without damage to the heat exchanger.

PRESSURE DROP

Waterside Pressure Drop CFC-E 2000



DIMENSIONS AND CONNECTION SIZES



DIMENSIONS (inches) CFC-E 2000

A	Overall Height	79.8
B	Overall Width	35.7
C	Overall Depth	56
D	Width Less Casing	33.0
E	Gas Connection to Floor	74.1
F	Side of Casing to Gas Connection	5.6
G	Side of Casing to Air Inlet	12.3
H	Top of Casing to Air Inlet	8.1
J	Floor to Condensate Drain	6.3
K	Floor to Bottom of Casing	11.4
L	Side of Base to Flue Outlet (Centered)	8.5
M	Side of Base to Flue Outlet (Offset)	7.5
N	Rear of Base to Flue Outlet	7.5
P	Casing Depth	42.6
Q	Casing Height	68.4
R	Floor to Lower Return Connection	16.9
S	Floor to Upper Return Connection	31.8
T	Floor to Supply Connection	59.5
U	Floor to Air vent Connection	66.3
V	Air Vent Line Projection From Rear of Casing	3.5
FORK POCKETS		
LL	Pocket Height	3.9
MM	Pocket Width	11.8
NN	Overall Pocket Width	27.6
CENTER OF GRAVITY		
PP	Casing - Side Panel	18.0
QQ	Casing - Front Panel	24.6
RR	Bottom of Base	34.0
SEISMIC BRACES (optional)		
SS	Bracket-to-Bracket Width (hole center)	35.2
TT	Bracket-to-Bracket Length (hole center)	54

CONNECTIONS

W	Water Low Temp. Return, CL150 RF Flange	4"
X	Water High Temp. Return, CL150 RF Flange	4"
Y	Water Supply, CL150 RF Flange	4"
Z	Air Vent, NPT	1-1/2"
AA	Vessel Drain, NPT	1-1/2"
BB	Flue Gas Outlet	
	Standard (Offset)	8"
	Option	10"
CC	Combustion Air	8"
DD	Gas, NPT	1-1/2"
EE	Condensate Drain, NPT	1"
FF	Electrical Conduit, Left or Right	0.87"
GG	Safety Relief Valve Vessel Connection, NPT	1-1/4"
HH	Safety Relief Valve	
	30 psig Inlet x Outlet, NPT	1-1/4" x 1-1/2"
	50 - 60 psig Inlet x Outlet, NPT	1" x 1-1/4"
	75 - 125 psig Inlet x Outlet, NPT	3/4" x 1"
JJ	Flue Coupling, NPT	1/2"
KK	Water Outlet Coupling, NPT	3/4"

CLEARANCES

Top	14"
Side	3"
Rear	20"
Front	36"

Notes:
Boiler rear must be accessible for servicing.
Side clearance to wall or between boilers.
Side clearance typical each side.

RIGGING AND TRANSPORTATION

The boiler should be lifted by the base using a suitable fork lift. **Note:** The boiler should not be moved by pushing, prying, or pulling on any part of the casing. If the floor is not level, piers or a raised pad slightly larger in length and width than the boiler base dimensions will make boiler installation and leveling easier.The boiler must be installed so that all components remain accessible for inspection, cleaning, or maintenance. Field-installed piping and electrical connections must be arranged so as to avoid interfering with removal of the casing panels or with the burner door.

To avoid damage to casing, removal of front and side casing panels is recommended during installation.

Care should be taken to secure load at the top to prevent tipping.

WARNING! Do not install the boiler on carpeting.

NOTE: For crane lifting refer to CFC-E Installation manual 750-487 for instructions.

STACK DESIGN

STACK SIZING USING OUTSIDE AIR FOR COMBUSTION (DIRECT VENT)

Boiler	Combustion Air Duct (Inches Diameter)	Combustion Air SCFM Required	Flue Connection/Duct (Inches Diameter)	Max. Length* (Equivalent Feet)
CFC-E 2000	8	500	8 standard	100
			10 optional	120

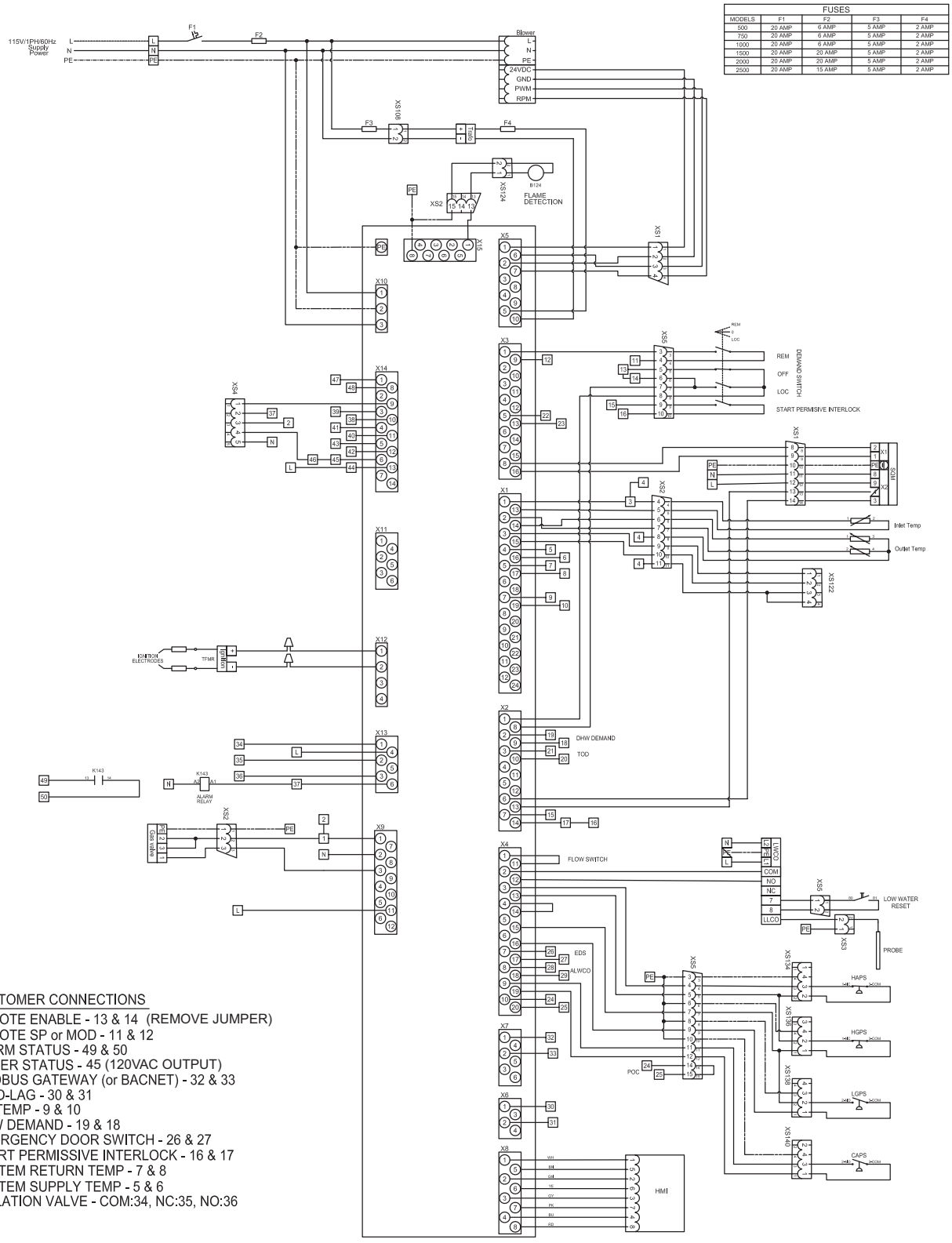
Each additional 90° elbow equals 5 equivalent feet of ductwork. Flue terminations may add 5-10 feet to the equivalent length and should also be included in the equivalent length calculation.

Draft tolerance at boiler flue connection during operation is +/-0.25” W.C.

*Maximum vent length assumes horizontal run and sidewall terminations. Larger diameter venting, vertical flue runs, and vertical flue termination may allow for longer vent lengths than indicated here, provided the engineered draft calculations are within the allowable operational tolerance of +/-0.25” W.C.

WIRING DIAGRAM

WD is typical and may not reflect actual customer boiler. Refer to job specific WD for actual wiring connections.



CUSTOMER CONNECTIONS

REMOTE ENABLE - 13 & 14 (REMOVE JUMPER)
REMOTE SP or MOD - 11 & 12
ALARM STATUS - 49 & 50
BOILER STATUS - 45 (120VAC OUTPUT)
MODBUS GATEWAY (or BACNET) - 32 & 33
LEAD-LAG - 30 & 31
OD TEMP - 9 & 10
DHW DEMAND - 19 & 18
EMERGENCY DOOR SWITCH - 26 & 27
START PERMISSIVE INTERLOCK - 16 & 17
SYSTEM RETURN TEMP - 7 & 8
SYSTEM SUPPLY TEMP - 5 & 6
ISOLATION VALVE - COM:34, NC:35, NO:36

WARRANTY

In addition to our Standard Warranty, Cleaver Brooks offers the following non-prorated Extended Warranty on the ClearFire CFC-E boilers:

1. The pressure vessel is guaranteed against thermal shock for the lifetime of the boiler when utilized in a closed loop hydronic heating system with a temperature differential of 120°F or less. The boiler pressure vessel is guaranteed accordingly without a minimum flow rate or return water temperature requirement. The boiler shall not require the use of flow switches or other devices to ensure minimum flow.
2. The pressure vessel, tubes, and tube sheets (heat exchanger) are guaranteed against flue gas corrosion and materials/workmanship for a period of fifteen (15) years.
3. The condensate collection box shall be guaranteed against corrosion for twenty (20) years.
4. The burner cylinder shall be warranted for a period of five (5) years.

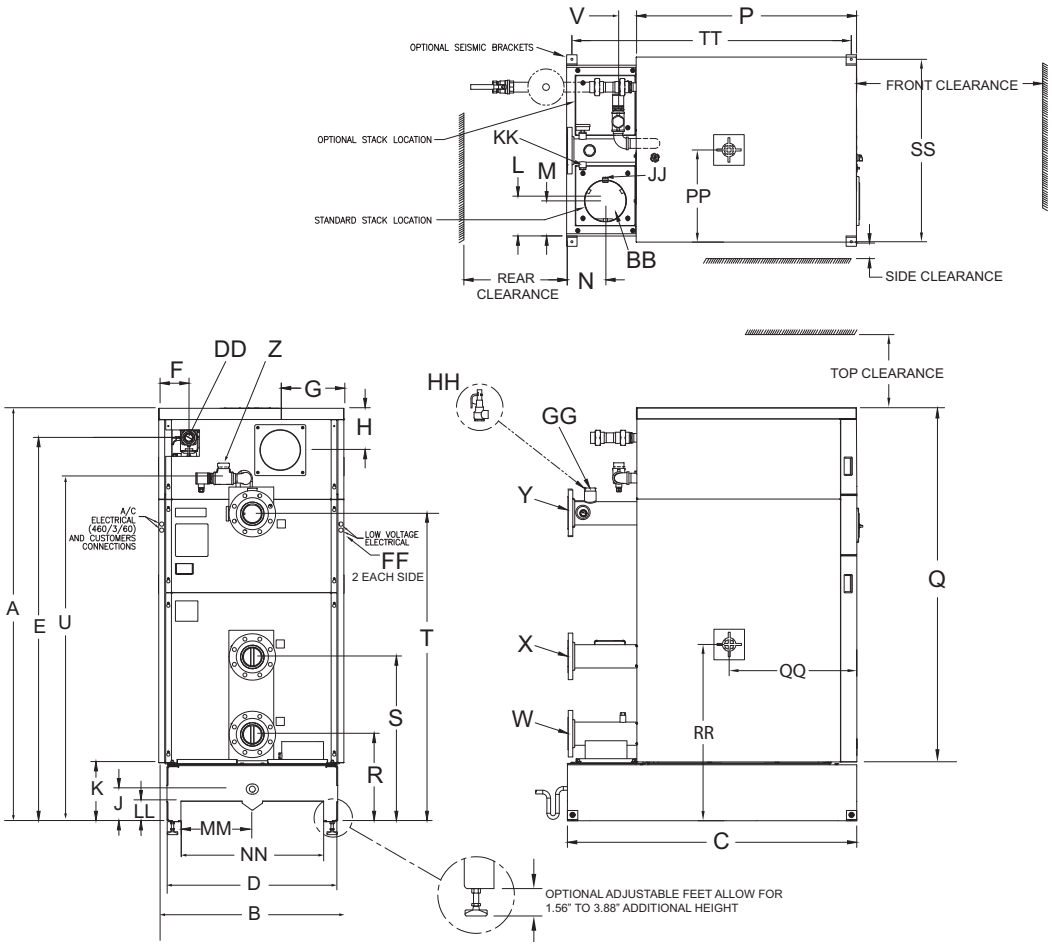
All parts not covered by the above warranties are valid for twenty-four (24) months from the date of initial operation of the Equipment, but in no event shall the Warranty extend more than thirty (30) months from the date of shipment of the Equipment by Cleaver-Brooks. This includes all electrical and burner components.

The pressure vessel thermal shock warranty covers leaks in the pressure vessel including the furnaces, tubes, tube sheets, and shell (not including failed gaskets), which, from our inspection, are attributed to unequal or rapid expansion, typically referred to as “thermal shock,” or stress cracking. This warranty does not cover damage or failures that are attributed, by our inspection, to corrosion, operation at low water level, accumulation of scale, sludge or dirt in the boiler, or other improper service, operation, or neglect.

Cleaver Brooks' liability hereunder is limited to repairing or furnishing a replacement pressure vessel or component parts thereof, as deemed necessary by our inspection. Cleaver Brooks is not responsible for shipping, handling, installation and other costs, including all costs associated with the removal and disposition of the old pressure vessel or component parts. In no event shall Cleaver Brooks be responsible for any incidental, consequential or other damages, including, without limitation, any damages resulting from loss of use of the boiler.

Refer to official warranty documents for specific warranty information.

METRIC DIMENSIONS CFC-E 2000



DIMENSIONS (mm) CFC-E 2000

A	Overall Height	2027
B	Overall Width	907
C	Overall Depth	1422
D	Width Less Casing	838
E	Gas Connection to Floor	1882
F	Side of Casing to Gas Connection	142
G	Side of Casing to Air Inlet	312
H	Top of Casing to Air Inlet	206
J	Floor to Condensate Drain	160
K	Floor to Bottom of Casing	290
L	Side of Base to Flue Outlet (Centered)	216
M	Side of Base to Flue Outlet (Offset)	192
N	Rear of Base to Flue Outlet	190
P	Casing Depth	1082
Q	Casing Height	1737
R	Floor to Lower Return Connection	429
S	Floor to Upper Return Connection	808
T	Floor to Supply Connection	1511
U	Floor to Air vent Connection	1683
V	Air Vent Line Projection From Rear of Casing	89
FORK POCKETS		
LL	Pocket Height	99
MM	Pocket Width	300
NN	Overall Pocket Width	700
CENTER OF GRAVITY		
PP	Casing - Side Panel	457
QQ	Casing - Front Panel	625
RR	Bottom of Base	864
SEISMIC BRACES (optional)		
SS	Bracket-to-Bracket Width (hole center)	894
TT	Bracket-to-Bracket Length (hole center)	1372

CONNECTIONS (inches)

W	Water Low Temp. Return, CL150 RF Flange	4"
X	Water High Temp. Return, CL150 RF Flange	4"
Y	Water Supply, CL150 RF Flange	4"
Z	Air Vent, NPT	1-1/2"
AA	Vessel Drain, NPT	1-1/2"
BB	Flue Gas Outlet	
	Standard (Offset)	8"
	Option	10"
CC	Combustion Air	8"
DD	Gas, NPT	1-1/2"
EE	Condensate Drain, NPT	1"
FF	Electrical Conduit, Left or Right	0.87"
GG	Safety Relief Valve Vessel Connection, NPT	1-1/4"
HH	Safety Relief Valve	
	30 psig Inlet x Outlet, NPT	1-1/4" x 1-1/2"
	50 - 60 psig Inlet x Outlet, NPT	1" x 1-1/4"
	75 - 125 psig Inlet x Outlet, NPT	3/4" x 1"
JJ	Flue Coupling, NPT	1/2"
KK	Water Outlet Coupling, NPT	3/4"

CLEARANCES (mm)

Top	356
Side	76
Rear	508
Front	914

Notes:
Boiler rear must be accessible for servicing.
Side clearance to wall or between boilers.
Side clearance typical each side.

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ARCHITECTURE · INTERIOR DESIGN

RE: Pre-Bid Conference

Meeting Date: June 17, 2025

Project: **New Palestine High School Boiler Replacement**

INTRODUCTIONS

Owner: New Palestine Community Schools – Matthew Lawson

Architect: CSO – Emery Hunt

Engineer: RE Dimond and Associates Inc. – Bill Eisler

BID DATE / LOCATION

Bid Date: **Tuesday, July 1, 2025, at 2:00pm (local time)**
Deliver to: New Palestine Community Schools Administration Building
4711 South 500 West
New Palestine, IN 46163

Bids will be publicly opened at this time and taken under advisement for review and recommendation by the Owner. Bids received after this date and time will be retuned unopened.

BIDDING REQUIREMENTS

1. Bid is a Single Prime Contract.

DESCRIPTION OF PROJECT

Project includes but is not limited to, replacement of boilers and heat ex-changers to decouple the pool heating water from the pool air handler unit, scope also includes demolition of existing boilers, piping, pumps and other associated equipment, and replacement with new Owner purchased water heating and boiler equipment, new concrete curbs, new stacks and vents for new boiler and water heating equipment.

Unless noted otherwise, a complete bid will include all labor, material and equipment to complete the work.

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ALTERNATES:

A. Alternate No. 1: Amount to add to contract sum for HVAC controls provided by Conserv to integrate into the school's existing system, with requirements specified in Section 23 09 00 Instrumentation and Controls for HVAC, and as shown on Plans. Amount represents cost of all materials and labor.

Refer to the Alternate Section 01 23 00 for additional information

Addendum 1 to be released by Thursday, June 19, 2025.

SUBMIT WITH BID (Refer to Instructions to Bidders AIA Document A701 and Supplemental Bid Form)

1. Project Name and Description on the outside of your Bid Envelope
2. Fully completed Form No. 96 (pages 1-8) in Duplicate
3. Financial Statement
4. Non-Collusion Affidavit (part of Form No. 96)
5. Certified Check or Bid Bond (10%) of the Total Price
6. Complete the Alternate portion of the Supplemental Bid Form (as applicable)

PROJECT INFORMATION

1. For consideration, a Bid Form must be submitted in duplicate, sealed in an envelope, and delivered to the location above by the designated time. The clock in the board room will be used as the "official" clock for determining when receipt of bids will be closed.
2. Bids shall be guaranteed for 60 calendar days
3. Review Divisions 00 & 01 in detail
4. Tax Exempt Project
5. Successful Bidder to submit 100% Labor Performance & Material Payment Bonds.
6. Awarded Contractor is also required to conduct and maintain criminal history reports of its works (inclusive all of subcontractors and suppliers of any tier) that are available to the Owner upon their request.
7. If any materials testing is required, will be by Owner.

WORK RESTRICTIONS

1. Refer to Section 01 14 00 Work Restrictions and Hours
    a. Coordinate with Owner
2. Employee Screening
    a. Review Section 00 83 10 – Employee Screening in detail

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ARCHITECTURE · INTERIOR DESIGN

PROJECT SCHEDULE

1. July 1, 2025 – Receipt of Bids
2. July 14, 2025 – School Board Approval
3. September 29, 2025 – Substantial Completion

SPECIAL NOTES

1. Boiler, Pool Heater, and Domestic Water heater are currently being pre-purchased by Owner.
2. Review the Draft A101 and Draft A201 in detail:
    a. There will be a 3% retainage of the dollar value of all Work completed until the Work is Substantially Completed.
    b. There is no stipulation for Liquidated Damages
    c. A101. Article 8.7 – Contractor acknowledges it has reviewed and agrees to comply with all requirements in the public works statues and has applied, been approved, and is pre-qualified with the IN Public Works Certification Board as required under Ind. Code 4-13.6-4-2.5.
    d. Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit, as well as other approvals, permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the Work.
3. All New Palestine Community School facilities and properties are Tobacco, Vaping, Alcohol and Drug Free Sites. The use of any of these products on the school property is strictly prohibited and violators will be removed from the premises.
4. Contractors wishing to make a follow-up site visit to the building must contact Matthew Lawson to set up a time to avoid disruption to school activities. **Do not attempt** to visit the site or building without first notifying the school corporation and Matthew Lawson.

QUESTIONS

SITE VISIT

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ARCHITECTURE · INTERIOR DESIGN

MEETING SIGN-IN SHEET

DATE: 6/17/2025 MEETING LOCATION: New Palestine High School

PROJECT: New Palestine High School Boiler Replacement PROJECT NUMBER: 2025030

Participants Sign-In: (Please Print)

Name: Adam Ashour	Company: Meyer-Najem		
Phone:	Cell: (317)402-9071	Email: AAshour@Meyer-Najem	
Name: Bill Eisle	Company: RE Dimond		
Phone: 317-634-4672	Cell:	Email: bill.eisle@redimond.com	
Name: Matt Doyle	Company: RE Dimond		
Phone: 317-607-1693	Cell:	Email: matt.doyle@redimond.com	
Name: EMERY Hunt	Company: CSO		
Phone: 317 846-7800	Cell:	Email:	
Name:	Company:		
Phone:	Cell:	Email:	
Name:	Company:		
Phone:	Cell:	Email:	
Name:	Company:		
Phone:	Cell:	Email:	
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Name:	Company:		
Phone:	Cell:	Email:	

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SECTION 22 34 00 – GAS-FIRED DOMESTIC WATER HEATERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes installing owner pre-purchased packaged, factory-fabricated and factory-assembled, modulating gas-fired domestic water heaters, trim, and accessories. This contract shall take delivery, store and place/install equipment and assume the associated warranty.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 23 51 00 Breechings, Chimneys, and Stacks.

1.3 SUBMITTALS

A. Reference Appendix for owner pre-purchased specifications and shop drawings.

1.4 QUALITY ASSURANCE

A. 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.

B. ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

C. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9" for all components that will be in contact with potable water.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 WATER HEATER INSTALLATION

A. Install commercial water heaters on concrete bases.

1. Exception: Omit concrete bases for commercial water heaters if installation on stand, bracket, suspended platform, or direct on floor is indicated.

2. Concrete base construction requirements are specified in Division 20 Section "Common Materials and Methods for Fire Suppression, Plumbing, and HVAC."

B. Install water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.

C. Install gas water heaters according to NFPA 54.

1. Install gas shutoff valves on gas supplies to gas water heaters without shutoff valves.
2. Install gas pressure regulators on gas supplies to gas water heaters without gas pressure regulators if gas pressure regulators are required to reduce gas pressure at burner.
3. Install automatic gas valves on gas supplies to gas water heaters, if required for operation of safety control.

D. Install combination temperature and pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend commercial, water-heater, relief-valve outlet, with drain piping same as domestic water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.

E. Install water heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains.

F. Install thermometer on outlet piping of water heaters. Refer to Division 20 Section “Common Materials and Methods for Fire Suppression, Plumbing, and HVAC."

G. Install piping-type heat traps on inlet and outlet piping of water heater storage tanks without integral or fitting-type heat traps.

H. Fill water heaters with water.

3.2 CONNECTIONS

A. Install piping adjacent to water heaters to allow service and maintenance. Arrange piping for easy removal of water heaters.

B. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

C. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

A. Engage a factory-authorized service representative to inspect installation, including connections.

B. Perform the following field tests and inspections:

1. Leak Test: After installation, test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, confirm proper operation.

3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace water heaters that do not pass tests and inspections and retest as specified above.

3.4 DEMONSTRATION **(not required for light commercial heaters)**

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial water heaters. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION

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SECTION 22 34 01 – GAS-FIRED POOL HEATERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes installing owner pre-purchased packaged, factory-fabricated and factory-assembled, modulating gas-fired pool heaters, trim, and accessories. This contract shall take delivery, store and place/install equipment and assume the associated warranty.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 23 51 00 Breechings, Chimneys, and Stacks

1.3 SUBMITTALS

A. Reference Appendix for owner pre-purchased specifications and shop drawings.

1.4 QUALITY ASSURANCE

A. 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.

B. ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

C. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9" for all components that will be in contact with potable water.

PART 2 - PRODUCTS (NOT APPLICABLE)

2.1 WATER HEATER ACCESSORIES

A. Gas Shutoff Valves: ANSI Z21.15/CGA 9.1, manually operated. Furnish for installation in piping.

B. Gas Pressure Regulators: ANSI Z21.18, appliance type. Include pressure rating, capacity, and pressure differential required between gas supply and water heater.

C. Gas Automatic Valves: ANSI Z21.21, appliance, electrically operated, on-off automatic valve.

PART 3 - EXECUTION

3.1 POOL HEATER INSTALLATION

A. Install heaters on concrete bases.

1. Exception: Omit concrete bases for commercial water heaters if installation on stand, bracket, suspended platform, or direct on floor is indicated.
2. Concrete base construction requirements are specified in Division 20 Section "Common Materials and Methods for Fire Suppression, Plumbing, and HVAC."

B. Install water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.

C. Install gas water heaters according to NFPA 54.

1. Install gas shutoff valves on gas supplies to gas water heaters without shutoff valves.
2. Install gas pressure regulators on gas supplies to gas water heaters without gas pressure regulators if gas pressure regulators are required to reduce gas pressure at burner.
3. Install automatic gas valves on gas supplies to gas water heaters, if required for operation of safety control.

D. Install combination temperature and pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend commercial, water-heater, relief-valve outlet, with drain piping same as domestic water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.

E. Install water heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains.

F. Install thermometer on outlet piping of water heaters. Refer to Division 20 Section “Common Materials and Methods for Fire Suppression, Plumbing, and HVAC."

G. Install piping-type heat traps on inlet and outlet piping of water heater storage tanks without integral or fitting-type heat traps.

H. Fill water heaters with water.

I. Reassemble skid mounted packages that have been shipped in multiple sections per mfg. requirements.

3.2 CONNECTIONS

A. Install piping adjacent to water heaters to allow service and maintenance. Arrange piping for easy removal of water heaters.

B. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

C. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

A. Engage a factory-authorized service representative to inspect installation, including connections.

B. Perform the following field tests and inspections:

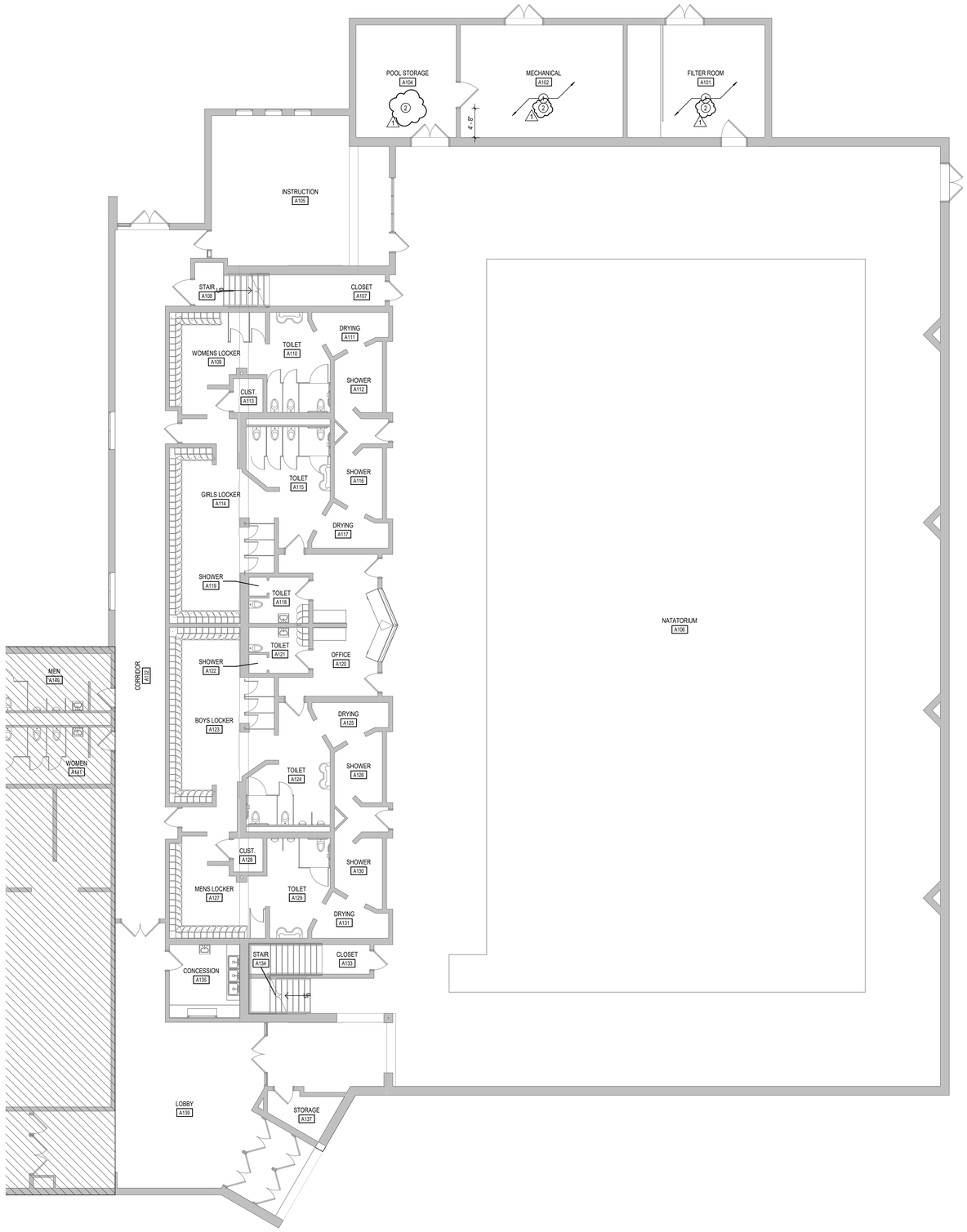
1. Leak Test: After installation, test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, confirm proper operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace water heaters that do not pass tests and inspections and retest as specified above.

3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial water heaters. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION



1 A201 ENLARGED GROUND FLOOR PLAN

SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. COORDINATE THE WORK OF EACH TRADE WITH THE WORK OF OTHER TRADES.
B. ALL WORK IS TO BE COMPLETED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, RULES, REGULATIONS AND STANDARDS INCLUDING, BUT NOT LIMITED TO THOSE LISTED ON THE COVER SHEET. ALL APPLICABLE RULES & REGULATIONS ARE TO BE THE MOST CURRENT ADOPTED EDITIONS.
C. FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE COMMENCEMENT OF WORK. DISCREPANCIES BETWEEN THE DOCUMENTS AND THE ACTUAL CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
D. ALL DIMENSIONS ARE FROM CENTERLINE OF STRUCTURE, FINISH FACE OF WALL, FACE OF MASONRY, OR FACE OF EXISTING.
E. ANY DIMENSIONS NOT SHOWN OR DEEMED QUESTIONABLE ARE TO BE VERIFIED BY ARCHITECT. DO NOT SCALE DRAWINGS.
F. REFER TO WALL TYPE SCHEDULE, SHEET A200, TO DETERMINE WHICH WALLS EXTEND TO DECK. SEE STRUCTURAL FOR TOP SUPPORT DETAIL. WHERE METAL STUDS EXTEND TO DECK, PROVIDE SLIP CONNECTIONS FOR ROOF/ FLOOR DEFLECTION.
G. ALL STEEL STUDS ARE TO BE BRACED ACCORDING TO MANUFACTURER LIMIT HEIGHT (L/240).
H. WHERE INSULATED OR SOUND WALLS EXTEND TO DECK, FILL DECK FLUTES WITH INSULATION/ SOUND ATTENUATION.
I. REFER TO PLUMBING PLANS FOR LOCATION OF FLOOR DRAINS.
J. WHERE ACCESS PANELS ARE SHOWN IN TOILET ROOM CHASES, FINAL LOCATION SHALL BE COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
K. ALL CONCRETE MASONRY UNITS (CMU) SHALL BE LAID RUNNING BOND U.N.O. CMU WALLS THAT DO NOT LAY OUT IN FULL OR HALF LENGTHS SHOULD BE BALANCED SO AS NOT TO HAVE ANY PIECES LESS THAN 4" IN SIZE EXPOSED TO VIEW.
L. ALL INTERIOR MASONRY WALLS THAT RUN TO UNDERSIDE OF DECK ABOVE SHALL HAVE A 2" JOINT (U.N.O.) AT THE DECK TO BE FILLED WITH FIRE STOPPING AT RATED WALLS PER PROJECT MANUAL, AND MINERAL WOOL AT THE NON-RATED WALLS TO ALLOW FOR DEFLECTION.
M. THERE SHALL BE PERIMETER INSULATION CONTINUOUS AROUND THE ENTIRE PERIMETER OF THE BUILDING EXTENDING 2'-0" MINIMUM (R-15 MIN.) HORIZONTAL.
N. PROVIDE MISCELLANEOUS SUPPORT FOR ALL CEILING SUSPENDED ITEMS.
O. DOOR AND FRAME NUMBERS CORRESPOND TO ROOM NUMBERS. WHERE MORE THAN ONE DOOR OCCURS IN A ROOM, A SUFFIX HAS BEEN ADDED (E.G. A100-1). SEE A500 SERIES DRAWINGS FOR DOOR SCHEDULE AND DETAILS.
P. ALL DOOR FRAMES SHALL BE LOCATED 4" OFF FINISH WALLS OR 4" OFF MASONRY WALLS UNLESS NOTED OTHERWISE.
Q. ALL GLASS AT INTERIOR DOOR FRAMES, DOOR LITES AND WINDOW FRAMES IS TO BE 1/4" CLEAR TEMPERED GLASS UNLESS NOTED OTHERWISE.
R. AT BUILDING EXPANSION JOINTS, ALL PARTITIONS, CEILINGS, FLOORS AND ALL WALL, FLOOR OR CEILING MOUNTED ITEMS SHALL BE ANCHORED TO THE BUILDING STRUCTURE ON ONLY ONE SIDE OF THE EXPANSION JOINTS. CONTRACTOR SHALL COORDINATE CONSTRUCTION OR INSTALLATION OF ALL ITEMS NOTED TO ASSURE THAT NO SUCH ITEMS BRIDGE ACCROSS THE EXPANSION JOINT.
S. ALL SLAB-ON-GRADE CONTROL JOINTS TO BE CLEANED AND CAULKED PRIOR TO PLACEMENT OF FLOOR FINISH.
T. SEE REFLECTED CEILING PLANS FOR BULKHEAD LOCATIONS AND DETAILS.
U. REFER TO MECHANICAL DRAWINGS FOR WALL LOUVER LOCATIONS, SIZES AND QUANTITIES.
V. SEE A800 SERIES DRAWINGS FOR FINISH SCHEDULE AND PLANS.
W. SEE A900 SERIES DRAWINGS FOR EQUIPMENT SCHEDULE AND PLANS. PROVIDE BLOCKING IN STUD WALLS AND/OR GROUTED MASONRY CORES AS REQUIRED TO SUPPORT EQUIPMENT.
X. PROVIDE FIRE RESISTANT TREATED WOOD BLOCKING SUPPORTS AS REQUIRED FOR ALL SURFACE MOUNTED ITEMS.
Y. WHERE DISIMILAR FLOOR MATERIALS MEET, THEY SHALL DO SO UNDER THE CENTERLINE OF THE DOOR UNLESS NOTED OTHERWISE.
Z. APPLY SEALANT AT ALL JUNCTURES BETWEEN DIFFERENT MATERIALS (E.G. MASONRY TO GYPSUM WALL BOARD) UTILIZING THE APPROPRIATE TYPE PER SPECIFICATIONS. COLOR TO BE SELECTED BY ARCHITECT.
AA. APPLY SEALANT AT ALL COUNTERTOPS AND BLACKSPLASHES AT JUNCTURE WITH WALL.
BB. ALL DOORS MUST BE INSTALLED WITH AT LEAST THE MINIMUM MANEUVERING CLEARANCE AT THE DOOR APPROACH PER THE MOST CURRENT AMERICANS WITH DISABILITIES ACT.
CC. BASE FLOOR ELEVATION INDICATED FOR THIS PROJECT IS 100'-0". REFER TO SITE PLAN FOR CORRELATION TO USGS DATUM.

PLAN NOTES

1 OWNER TO PAINT ALL MECHANICAL ROOMS WITH THEIR OWN FORCES FOLLOWING COPLETION OF DEMOLITION
2 ALL NEW PENETRATIONS OR OPENINGS, IN FLOORS OR WALLS OF THE ENTIRE ROOM OR AREA, AS PART OF THE WORK SHALL BE FIRE STOPPED / SEALED TO A MIN. OF 2-HOUR RATING.

1

NEW PALESTINE COMMUNITY SCHOOLS

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8831 Keystone Crossing, Indianapolis, IN 46240
317.848.7800 | csoinc.net

PROJECT:
NEW PALESTINE HIGH SCHOOL
BOILER REPLACEMENT
4485 S. VICTORY DR. NEW PALESTINE, IN 46163

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, and the general requirements related to the type of structural, mechanical and electrical systems.
The drawings do not necessarily indicate or describe all work required for the satisfactory performance and completion of the requirements of the Contract.
On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of the work.

REVISIONS:
1 ADDENDUM #1 06/26/25

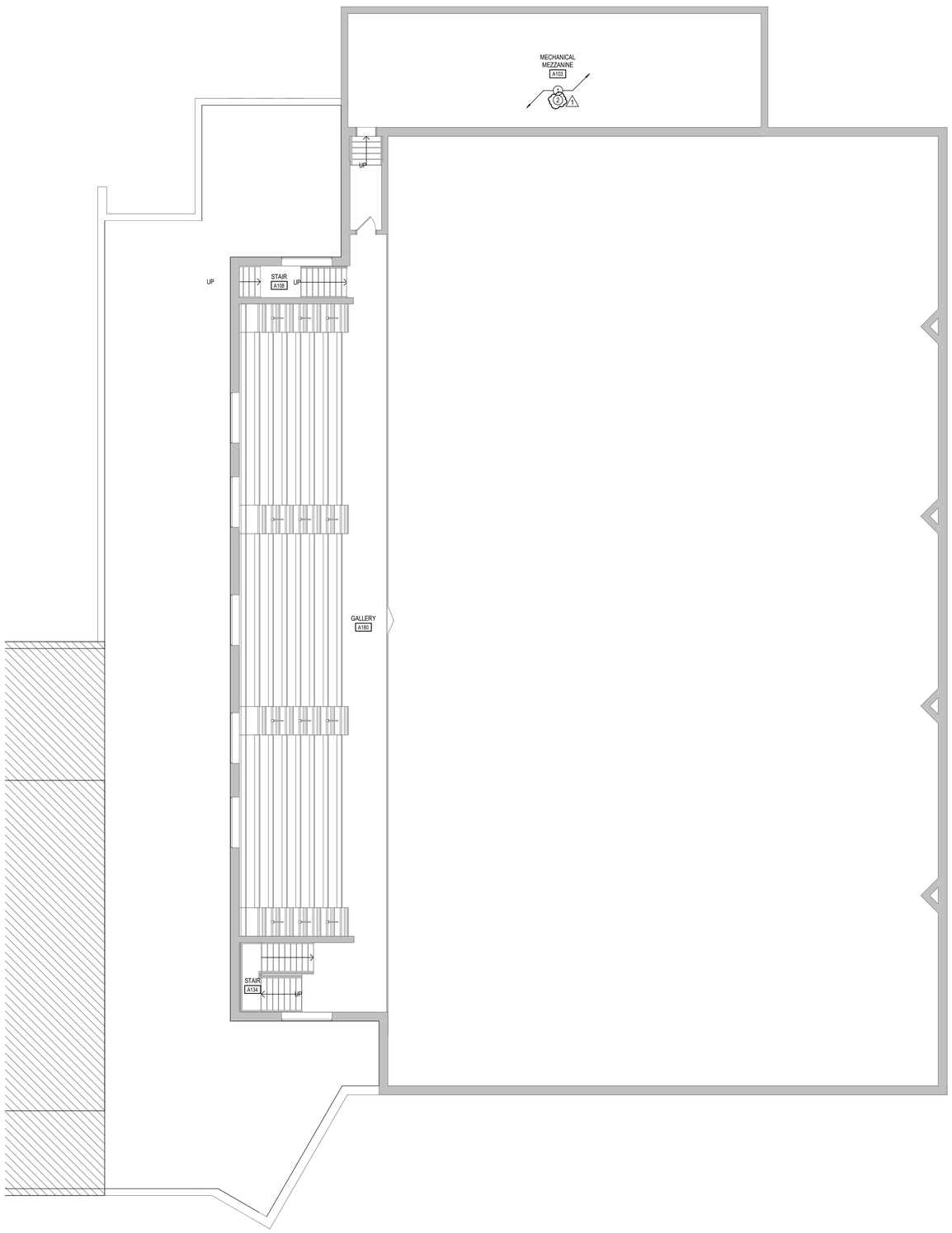
ISSUE DATE	DRAWN BY	CHECKED BY
06/11/25	EHMH	EHMH

DRAWING TITLE:
ENLARGED GROUND FLOOR PLAN

CERTIFIED BY:
JAMES ROBERT FUNK
REGISTERED
No.
AR00900003
STATE OF
INDIANA
ARCHITECT

DRAWING NUMBER
A201

PROJECT NUMBER
2025030



1 A202 ENLARGED SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. COORDINATE THE WORK OF EACH TRADE WITH THE WORK OF OTHER TRADES.
B. ALL WORK IS TO BE COMPLETED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, RULES, REGULATIONS AND STANDARDS INCLUDING, BUT NOT LIMITED TO THOSE LISTED ON THE COVER SHEET. ALL APPLICABLE RULES & REGULATIONS ARE TO BE THE MOST CURRENT ADOPTED EDITIONS.
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G. ALL STEEL STUDS ARE TO BE BRACED ACCORDING TO MANUFACTURER LIMIT HEIGHT (L/240).
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④ PLAN NOTES

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NEW PALESTINE COMMUNITY SCHOOLS

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PROJECT:
NEW PALESTINE HIGH SCHOOL
BOILER REPLACEMENT
4485 S. VICTORY DR. NEW PALESTINE, IN 46163

SCOPE DRAWINGS:
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⚠ REVISIONS:
1 ADDENDUM #1 06/26/25

ISSUE DATE	DRAWN BY	CHECKED BY
06/11/25	EHMH	EHMH

DRAWING TITLE:
ENLARGED SECOND FLOOR PLAN

CERTIFIED BY:
JAMES ROBERT FUNK
REGISTERED
No.
AR00900003
STATE OF
INDIANA
ARCHITECT

DRAWING NUMBER
A202

PROJECT NUMBER
2025030

RENOVATION LEGEND:

WORK TO BE INSTALLED

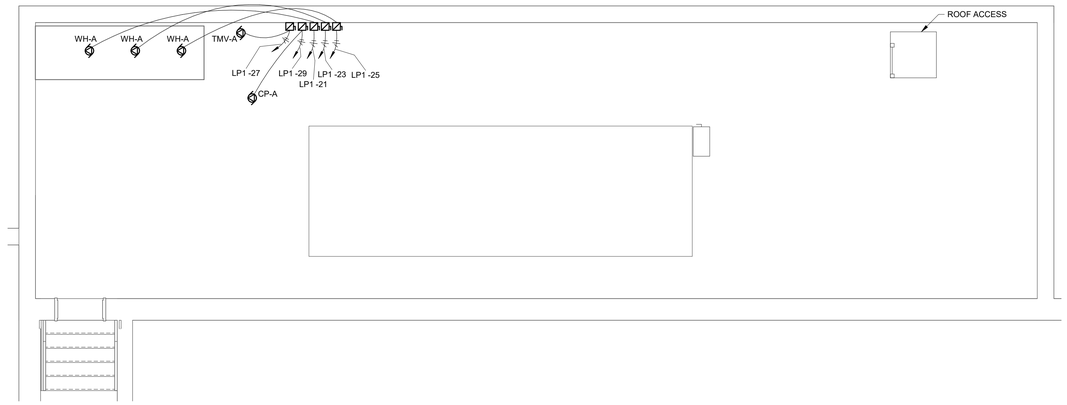
WORK TO REMAIN

GENERAL NOTES:

1. SEE E-001 FOR GENERAL NOTES.

(#) PLAN NOTES:

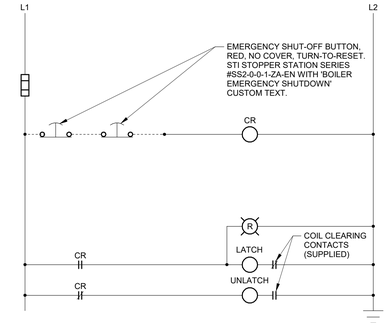
1. BOILER REMOTE SHUTDOWN CONTACTOR SHALL BE SURFACE MOUNTED TO WALL ABOVE PANEL LP (SECTION 1). SEE DETAIL A FOR CONTACTOR DETAIL.
2. BOILER REMOTE SHUTDOWN E-STOP BUTTON.
3. RECONNECT NEW EXHAUST FAN TO EXISTING CIRCUIT.
4. PROVIDE 30A, NEMA 4X FUSED DISCONNECT SWITCH. SIZE AND INSTALL FUSES PER MANUFACTURER'S BOILER RATING PLATE. POWER TO DISCONNECT SHALL BE WIRED THROUGH CONTACTOR FOR EMERGENCY REMOTE SHUTDOWN.
5. CONNECT POWER TO POOL WATER HEATER PER MANUFACTURER'S WRITTEN INSTRUCTION.
6. PROVIDE 20A, NEMA 4X FUSED DISCONNECT SWITCH. SIZE AND INSTALL FUSES PER MANUFACTURER'S WRITTEN INSTRUCTION. POWER TO DISCONNECT SHALL BE WIRED THROUGH CONTACTOR FOR EMERGENCY REMOTE SHUTDOWN.



SECOND FLOOR MECHANICAL ROOM - ELECTRICAL

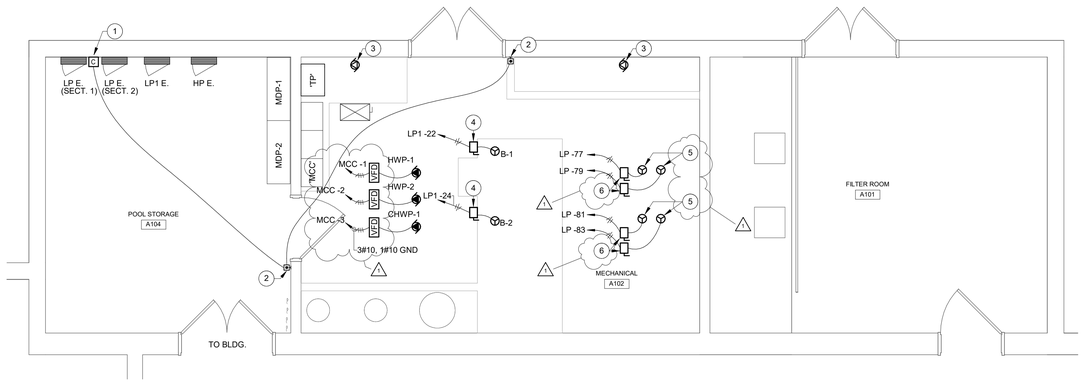
SCALE: 1/4" = 1'-0"

NORTH



A BOILER REMOTE EMERGENCY SHUT DOWN SWITCH SCHEMATIC

SCALE: NONE



GROUND FLOOR MECHANICAL ROOM - ELECTRICAL

SCALE: 1/4" = 1'-0"

NORTH

0 1 2 3 4 8 12 16

1 2 3 4

CSO
8831 Keystone Crossing, Indianapolis, IN 46240
317.848.7800 | csoinc.net

D&A #25048

R.E. Dimond and Associates, Inc.
Consulting Engineers
732 North Capitol Avenue
Indianapolis, IN 46204
Phone: (317) 634-4672
Fax: (317) 638-8725

PROJECT:

NEW PALESTINE HIGH SCHOOL
BOILER REPLACEMENT

4485 S. VICTORY DR. NEW PALESTINE, IN 46163

SCOPE DRAWINGS:

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REVISIONS:

1	Addendum #1	06/26/2025

ISSUE DATE	DRAWN BY	CHECKED BY
06/26/2025	MSD	TEH

DRAWING TITLE:

ENLARGED PLANS - ELECTRICAL

CERTIFIED BY:

TIMOTHY E. HILL
REGISTERED
No. PE19800083
STATE OF INDIANA
PROFESSIONAL ENGINEER

6/10/2025

DRAWING NUMBER

E-301

PROJECT NUMBER

2025030