City of Helena

Public Works Department

Engineering Division

CITY PROJECT #24-20

WASTEWATER TREATMENT PLANT CONDENSING BOILER SYSTEM

Contract Book No.

Prepared By:
City of Helena Engineering Division
316 North Park Avenue
Helena, MT 59623
(406)447-8430

Authorized and Approved by:

Doug Compton
Doug Compton, PE

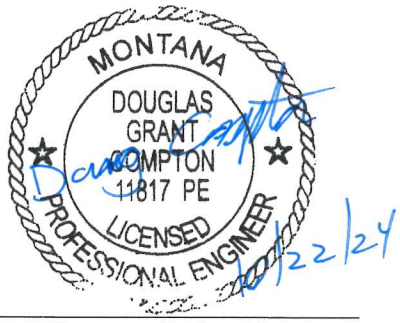
10/22/24
Date

Bid Purchase Manual

For the

#24-20 WASTEWATER TREATMENT PLANT CONDENSING BOILER SYSTEM

October 2024



Doug Compton, Project Manager

City of Helena Engineering Division
316 North Park Avenue
Helena, MT 59623
(406) 447-8430

CITY OF HELENA PROJECT #24-20 WASTEWATER TREATMENT PLANT CONDENSING BOILER SYSTEM

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CITY OF HELENA

********** REQUEST FOR BID **********

(Purchase Agreement)

The City is requesting sealed bids for the **Wastewater Treatment Plant Condensing Boiler System, Project No. 24-20.** To be considered for award, the bid must state the name and number of the project, be addressed to the Clerk of Commission, City of Helena, 316 North Park Avenue, Helena, Montana 59623, and be received by **2:00 P.M.** local time on **November 12th, 2024**, at which time the bids will be publicly opened and read. No bid may be withdrawn after the scheduled time of the public opening of bids. The opening and reading of the bids will occur in Room 326 of the City-County Building, 316 North Park Avenue, Helena, Montana.

THE PROPOSED PROJECT CONSISTS OF:

The procurement, supply and delivery of three (3) condensing boilers, three (3) condensate neutralizers, three (3) circulating pumps, and three (3) natural gas regulators

Anyone wishing to submit a bid will need to obtain detailed plans, specifications, and Instructions to Bidders from the City of Helena City Engineer's Office in Room 417 of the City-County Building, 316 North Park Avenue, Helena, Montana or call (406) 447-8098 to request that the specifications be mailed to you.

Each bidder shall expressly covenant in the bid that if the bidder is awarded the contract, the bidder will, within **60** days after the bid is awarded, enter into a formal contract with the City of Helena. Each bid must be accompanied by bid security payable to the *City of Helena* for ten percent (10%) of the total amount of the bid. Bid security provided in a form specified in §18-1-203, MCA, which includes, but is not limited to, certified check, cashier's check, bank draft, bid bond, guaranty bond, or surety bond, constitutes compliance with this requirement. The bid security protects and indemnifies the City against the failure or refusal of the successful bidder to timely enter into the contract.

The City reserves the right to reject any or all proposals received, waive informalities, postpone the award of the contract for a period not to exceed SIXTY (60) calendar-days, and accept the lowest responsive and responsible bid that is in the best interest of the City. Upon reasonable notice, the City of Helena will provide assistance for those persons with sensory impairments. For further information please contact the City Clerk at (406) 447-8410 or TDD Relay service 1-800-253-4091 or VOICE 1-800-253-4093.

Authorized and approved by:

Doug Compton — 10/22/24

Doug Compton, PE, Water/Wastewater Engineer **DATE**

PLEASE ADVERTISE ON: October 26th and November 2nd, 2024

INSTRUCTIONS TO BIDDERS
(Purchase Agreement)

BIDS: All bids must be made on the forms provided in this bound copy of the Purchase Agreement. All bids must be legibly written in ink with all prices given in figures and total bid amount given in words and figures. No alterations by erasures or interlineations will be permitted in bids or in the printed forms. Each bid shall be enclosed in a sealed envelope addressed to: Clerk of the City Commission, 316 North Park Avenue, Helena, Montana 59623, and endorsed on the outside of the envelope with the words:

WASTEWATER TREATMENT PLANT CONDENSING BOILER SYSTEM
Project No. 24-20

Bids shall be strictly in accordance with the prescribed form. Any modifications thereof or deviations therefrom may be considered as sufficient cause for rejection. Bids carrying riders or qualifications to the bid being submitted may be rejected as irregular.

BID SECURITY: To be considered, the bid must be accompanied by a bid security unconditionally payable to the *City of Helena* for ten percent (10%) of the total amount of the bid. Each Bidder shall expressly covenant in the bid that if the Bidder is awarded the bid, the Bidder will, within Sixty (60) days after the bid is awarded, enter into a formal purchase agreement with the City of Helena. Bid security must be provided in a form specified in §18-1-203, MCA, which includes, but is not limited to, certified check, cashier's check, bank draft, bid bond, guaranty bond, or surety bond. Bid security through a bid, guaranty or surety bond must be issued by a surety company authorized to do business in the State of Montana. The bid security protects and indemnifies the City against the failure or refusal of the successful Bidder to timely enter into the agreement.

SIGNATURE OF BIDDERS: Each bid must be signed in ink by the Bidder with the Bidder's full name and business address or place of residence. If the Bidder is a firm or partnership, the name and residence of each member must be inserted. If the bid is submitted by or in behalf of a corporation, it must be signed in the name of the corporation by a corporate official authorized to bind the corporation and who shall also affix the corporate seal of the corporation to the bid. Any bid by a corporation signed by a person other than a corporate officer must be accompanied by a power of attorney showing that person's authority to sign for the corporation.

ONLY ONE PROPOSAL: No Bidder may submit more than one bid. Two bids under different names will not be received from one firm, partnership, association, or corporation.

RESPONSIBILITY OF AGENT: Any person signing a bid as the agent of another, or of others, may be required to submit satisfactory evidence of authority to so sign.

TITLE: The position title of any person executing the bid or Agreement shall be clearly indicated beneath the signature.

RESPONSIBLE BIDDER: Bidder is not deemed a responsible bidder if Bidder is delinquent in payment of property taxes or special improvement district assessments for at least six (6) months.

Any Bidder required by the Helena City Code to have a general business license in the City of Helena must obtain it before a bid can be awarded to a bidder.

EXAMINATION OF SPECIFICATIONS: Before submitting a bid, each bidder should examine the specifications thoroughly and become familiar with federal, state, and local laws, ordinances, rules, and regulations that may, in any manner, affect the cost or delivery of the goods.

INTERPRETATION OF CONTRACT DOCUMENTS: If any person contemplating submission of a bid for the proposed purchase agreement is in doubt as to the true meaning of any part of the specifications, that person may submit a written request to the City for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed purchase agreement will be made only by an addendum duly issued and a copy of any such addendum will be mailed or delivered to each person receiving the specifications.

TIME OF COMPLETION: The time of delivery of the goods to be purchased is a basic consideration of the contract. It is necessary that each Bidder satisfy the City of the Bidder's ability to deliver the goods being purchased within the stipulated time.

ADDENDA: Any addenda issued during the time of bidding, or forming a part of the specifications provided to Bidder for the preparation of Bidder's proposal, shall be covered in the bid and shall be made a part of the Purchase Agreement. Receipt of each addendum shall be acknowledged in the bid. Any bid in which all issued addenda are not acknowledged will be considered incomplete and will not be read.

WITHDRAWAL OF BID: No Bidder may withdraw any bid for a period as specified in the Request for Bid after the date and hour set for the opening declared herein. Prior to that time, Bidder may withdraw a bid by written request. The request to withdraw a bid must be signed in the same manner and by the same person or persons who signed the bid.

ACCEPTANCE AND REJECTION OF BIDS: The City reserves the right to accept or reject the bids in the best interest of the City. The City reserves the right to waive informalities and irregularities in any bid submitted, to reject non-conforming, non-responsive or conditional bids, to correct arithmetic errors without changing unit price, and postpone awarding of the Purchase Agreement for a period not exceeding sixty (60) days.

AWARD OF BID: If the bid is to be awarded, City will award the bid to the responsible Bidder whose bid is responsive and conforms with all material terms and conditions of the bidding documents and proposed Purchase Agreement, is lowest in price, is in the best interest of the project, and other factors considered. The award will be based on the lowest responsive cumulative base bid plus any added alternate schedules the City determines to include with the project. If the bid is awarded, the award will be made within the period specified in the Request for Bid. The successful Bidder will be notified by letter mailed to the address shown on the bid that the bid has been accepted and that Bidder has been awarded the bid.

CANCELLATION OF AWARD: The City reserves the right to cancel the award of any bid at any time before the complete execution of the Purchase Agreement by all parties without any liability against the City.

EXECUTION AND APPROVAL OF AGREEMENT: The Purchase Agreement shall be signed by the successful Bidder and returned within the time shown on the bid. If the Purchase Agreement is not executed by the City within thirty (30) days following receipt from Bidder of the signed Agreement, Bidder has the right to withdraw the bid without penalty. The Purchase Agreement is not effective until it has been fully executed by all of the parties thereto.

FAILURE TO EXECUTE AGREEMENT: Failure to execute the Purchase Agreement shall be just cause for annulment of the award. In the event of such annulment, the bid guarantee shall be forfeited to the City, not as a penalty, but as liquidation of damages sustained. Award may then be made to the next lowest responsible and qualified Bidder, or the project may be re-advertised as the City may decide.

PAYMENT: Payment for all goods purchased under the Purchase Agreement will be made by the City within the time period specified in and in accordance with the procedures outlined therein.

NON-DISCRIMINATION: In accordance with law, Bidder shall agree not to discriminate against any client, employee, or applicant for employment or for services because of race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, gender identity, sexual orientation, or national origin, with regard to, but not limited to, the following: employment upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, selection for training, or rendition of services.

It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase from the City of Helena unless a satisfactory showing is made that discriminatory practices have ceased, and the recurrence of such acts is unlikely.

BID PURCHASE AGREEMENT

THIS AGREEMENT is made this ____ day of _____, 202__, by and between the **CITY OF HELENA**, a municipal corporation organized and existing under the laws of the State of Montana, 316 North Park Avenue, Helena, Montana 59623, hereinafter referred to as "City," and Insert Seller's business name, Insert Seller's address, hereinafter referred to as "Seller"; and sometimes together with City, the "Parties."

In consideration of the premises and the mutual covenants set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. **Purpose**:
   To supply a complete condensing boiler system for the City Wastewater Treatment Plant, including: three (3) condensing boilers; three (3) condensate neutralizers; three (3) circulating pumps; three (3) natural gas regulators, startup assistance and training for the system.

2. **Effective Date**: This Agreement is for a one-time purchase and is effective upon execution by the Parties.

3. **Property Purchased**: Seller agrees to sell and City agrees to purchase the property requested and described in the City's Bid Specifications, as modified by the parts of Seller's response that City has accepted, all of which is incorporated into this Agreement by this reference. The property being purchased ("Property") consists of three (3) condensing boilers, three (3) condensate neutralizers, three (3) circulating pumps, and three (3) natural gas regulators.

4. **Purchase Price**: City agrees to pay Seller insert dollar amount in words ($insert dollar amount in numbers) for the Property. The purchase price is F.O.B. Destination and Seller may not impose additional delivery or storage charges (see section 7, below).

5. **Delivery and Payment**: Seller shall deliver the Property to the City at 2108 East Custer Ave, Helena, MT 59602. Upon delivery and for a reasonable period thereafter, City has the right to inspect the Property to ensure that it meets the City's Bid Specifications, as modified by the parts of Seller's response that City has accepted. City shall tender payment of the purchase price to Seller within thirty (30) days after delivery of the Property or within thirty (30) days after the City completes its inspection of the Property, whichever date is later.

6. **Warranty:** Seller warrants that the Property conforms to the City's specifications, is fit and sufficient for the purpose manufactured, is of good material and workmanship, and will be free from defect for a period of thirty (30) days from the date of shipment or for the duration of the product warranty, whichever period is longer. Seller further warrants that the Property is new and unused and of the latest model or manufacture, unless specifically agreed to otherwise by the City in the *Property Purchased* section of this Agreement. Seller acknowledges that exceptions will be rejected. City's acceptance of non-conforming

products does not relieve Seller of its obligation under this warranty and does waive any remedy available to the City. In addition to the remedies available to the City under this Agreement, at law or in equity, the City may require prompt replacement, at Seller's expense, of any products failing to meet the warranties contained in this section.

7. **Shipping**: All deliveries of products shall be F.O.B. Destination to the delivery address specified in section 5 of this Agreement. The phrase "F.O.B. Destination," as used within this section, means free of expense to the City and delivered to the location specified. Seller must do all of the following:

   a. Pack and mark the shipment to comply with specifications, or if Agreement specifications do not contain specific packing or marking instructions, pack and mark the shipment in accordance with prevailing commercial practices and in such a manner as to ensure delivery in good condition.

   b. Prepare and distribute commercial bills of landing and Material Safety Data Sheets (MSDS), as appropriate.

   c. Deliver the shipment in good order and condition to the point of delivery as specified in this Agreement. Seller is responsible for any loss of or damage to the products occurring before receipt of the shipment by the City. Lost or damaged products must be replaced by Seller at Seller's expense.

   d. Provide to the City a delivery schedule and designate the mode of delivery.

   Unless stated otherwise in Section 4 of this agreement, Seller is responsible for shipping costs.

8. **Independent Contractor**: The Parties agree that Seller is an independent contractor and shall not be considered a City employee. Seller is not subject to the terms and provisions of the City's personnel policies handbook and may not be considered a City employee for workers compensation or any other purpose. Seller is not authorized to represent the City or otherwise bind the City in any dealings between Seller and third parties.

9. **Hold Harmless and Indemnification**: Seller agrees, to the fullest extent permitted by law, to protect, defend, hold harmless, and save the City, its elected and appointed officials, officers, agents, employees, and volunteers from any and all losses, damages, liabilities, and causes of action of any kind or character, including the cost of defense thereof, occasioned by, growing out of, or in any way arising or resulting from any intentional or negligent act or omission on the part of the Seller or Seller's agents, employees, officers, representatives, assignees, or invitees, in connection with this Agreement. If any such claim, demand, or cause of action arises solely from the City's own negligence, Seller need not so protect or defend.

10. **No Assignment, Transfer, Delegation, or Subcontracting**: Seller may not assign, transfer, delegate, or subcontract this Agreement or any of its rights, duties, or obligations under this Agreement without the City's prior express written consent.

11. **Compliance with Laws**: Seller agrees to comply with all applicable federal, state, and local laws, ordinances, rules, and regulations, including but not limited to the safety rules, codes, and provisions of the Montana Occupational Safety and Health Act as found in Title 50, Chapter 71, Montana Code Annotated.

    Seller agrees to purchase a City business license if Seller is based in or operates in Lewis & Clark County, Montana. If Seller has no base or operations in Lewis & Clark County, Montana, and deals and contacts customers by salesman, telephone, or mail, a City business license is not required.

12. **Nondiscrimination**: Seller agrees it will not discriminate based on any protected class in any of its activities or in the provision of services, regardless of whether the activities or services are provided in connection with this Agreement. Seller further agrees that all hiring of persons in connection with this Agreement will be on the basis of merit and qualification and that Seller will not discriminate on the basis of race, creed, religion, color, national origin, age, physical or mental disability, marital status, sex, pregnancy, childbirth or medical condition related to pregnancy or childbirth, sexual orientation or expression, political beliefs or affiliation, genetic information, veteran status, culture, social origin or condition, or ancestry.

13. **Website Privacy Policy**: Seller agrees to comply with and follow the City's Website Privacy Policy in order to ensure the data security and data quality of personally identifiable information that is collected in connection with this Agreement.

14. **Records Access and Retention**: Seller agrees to create and retain for eight (8) years after this Agreement terminates, all records relating to the Property and this Agreement. Seller agrees to provide the City and the City's authorized agents access to any such records at the City's request. Seller's obligation to maintain such records shall survive termination of this Agreement.

15. **Notice Protocol**: Any notice or demand required or permitted under this Agreement must be in writing. Written notice shall be deemed to have been given when hand-delivered, mailed by first class mail, postage prepaid, to the addresses specified in this section, or by electronic mail with confirmation of delivery.

The City's liaison for purposes of this Agreement is:

Name:	Doug Compton, Water/Wastewater Engineer
Address:	316 North Park Avenue, Helena, MT 59601
Phone:	(406) 447-8073
E-Mail:	dcompton@helenamt.gov

The Seller's liaison for purposes of this Agreement is:

Name:	Insert Name and Title.
Address:	Insert Mailing Address.
Phone:	Insert City Contact Phone Number.
E-Mail:	Insert City Contact email.

If either party changes its address or liaison, it must notify the other party in writing at the address provided in this section.

16. **Default**: If either party to this Agreement defaults in the performance of any term or condition of this Agreement, the other party may give the defaulting party notice of the default. The notice shall specify the action required to correct the default and a period not less than thirty (30) days within which to correct the default. If the default is not corrected within the period specified, the non-defaulting party may terminate this Agreement without further obligation under this Agreement, other than obligations incurred or accrued up to the date of termination. The non-defaulting party may also bring suit for damages, specific performance, and any other remedy available by law.

17. **Termination for City's Convenience:** The City may terminate this Agreement at any time before delivery by giving Seller thirty (30) days' written notice that, in the sole opinion and discretion of the City, this Agreement is no longer in the best interest of the City or funding for this Agreement is no longer available. In the event the City terminates this Agreement pursuant to this section, the City is not liable to Seller for any damages arising from said termination.

18. **Remedies Non-Exclusive**: The remedies available under this Agreement are cumulative and non-exclusive. Use of one remedy does not preclude use of the others.

19. **Failure to Enforce Not a Waiver**: If the City at any time fails to enforce or seek strict compliance with any provision in this Agreement, or if the City does not exercise any right or remedy arising from a breach of this Agreement, the City's failure to act does not constitute a waiver of that provision or remedy or of any other provision or remedy available under this Agreement.

20. **Full Integration**: This Agreement, together with its exhibits, if any, embodies the Parties' entire understanding with respect to the subject matter contained in this Agreement. This

Agreement supersedes any prior statements, understandings, promises, or representations of the Parties or their agents. No agent or representative of either party has authority to make any representations, statements, warranties, or agreements not expressed in this Agreement.

The following exhibits are made part of this Agreement by reference:
"None"

21. **Amendments in Writing**: All amendments to this Agreement must be in writing and executed by the Parties.

22. **Governing Law and Venue**: This Agreement shall be governed and construed in accordance with Montana law. If a dispute arises, the proper venue for hearing the case is Montana's First Judicial District Court in and for the County of Lewis & Clark.

23. **Headings**: The headings in this Agreement are for reference purposes only and do not affect the meaning or interpretation of this Agreement.

24. **Severability**: If any term or provision of this Agreement is held to be illegal, void, or in conflict with Montana law, the validity of the remaining terms and conditions shall not be affected. The rights and obligations of the Parties shall be construed and enforced as if this Agreement did not contain the illegal, void, or conflicting term or provision.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the dates stated below.

FOR THE CITY OF HELENA, MONTANA:

Signed: _____ **Dated:** _____
By: **Tim Burton, City Manager**

FOR THE SELLER:

Signed: _____ **Dated:** _____
By: **Insert Name, Insert Title**

APPROVED AS TO FORM:

Signed: _____ **Dated:** _____
By: **Rebecca Dockter, City Attorney**

BID FORM
(Purchase Agreement)

PROJECT: WASTEWATER TREATMENT PLANT CONDENSING BOILER SYSTEM

City Project No. #24-20

THIS BID SUBMITTED TO:

Honorable Mayor and City Commission

City of Helena

316 North Park Avenue

Helena, Montana 59623

1. **THE UNDERSIGNED BIDDER** proposes and agrees that if this bid is accepted, Bidder will enter into a Purchase Agreement with the City in the form included in the bidding documents and will furnish the goods or product to be purchased by the City within the number of calendar days indicated in the Agreement and in accordance with the other terms and conditions of the bidding documents.

2. Bidder has examined, understands, accepts, and abides by all of the terms and conditions of the Request for Bid and Instructions to Bidders.

3. Bidder expressly covenants that if Bidder is awarded the bid, Bidder will, after the bid is awarded and within the time specified in the Request for Bid, enter into a formal Purchase Agreement with City. The bid must be accompanied by Bid Security payable to the *City of Helena* for ten percent (10%) of the total amount of the bid, including alternates, if any. The Bid Security must be in a form specified in §18-1-203, MCA, which includes, but is not limited to, certified check, cashier's check, bank draft, bid bond, guaranty bond, or surety bond. The Bid Security is attached hereto as **Exhibit 1**.

4. This bid will remain subject to acceptance for sixty (60) days after the bid opening, or for such longer period of time that Bidder may agree to in writing upon request of City.

5. Bidder further represents that this bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other bidder or over City.

6. Bidder certifies that no official of the City, no consulting engineer or architect, or any member of such official's or consulting engineer's or architect's immediate family has any direct or indirect interest in the pecuniary profits or contracts of the Bidder.

7. Bidder will provide the goods, product, or equipment being purchased by the City in accordance with the Purchase Agreement, for the price stated on the Bid Sheet attached hereto as **Exhibit 2**. The Bidder will provide each unit price, which must be expressly stated on the Bid Sheet so it does not have to be calculated by the City.

8. Bidder acknowledges that estimated quantities set forth on the Bid Sheet are not guaranteed and are provided solely for the purpose of comparison of bids. The actual amount of goods, product, or equipment furnished may differ from such estimated quantities and the basis for final payment for all unit price bid items is the actual quantities provided per City's request. The successful bidder may not make a claim for anticipated profits or other damages on account of any difference between the amount of goods, product, or equipment actually provided and the estimated amounts used on the Bid Sheet.

9. Bidder understands that the unit prices shall govern in checking the bid, and should a discrepancy exist in the total estimated price and total amount of unit prices bid as listed on the Bid Sheet after extensions are checked and corrections made, if any, the total amount of unit prices bid as corrected shall be used in awarding the contract.

10. Bidder certifies that Bidder is a responsible bidder and has the required qualifications and experience as submitted by Bidder on the Qualifications attached hereto as **Exhibit 3**.

11. Bidder agrees that the good, product, or equipment to be purchased by City will be delivered and ready for final payment in accordance with the Purchase Agreement.

12. Bidder certifies receipt of City's revisions or additions made subsequent to the advertised proposal, which are specifically acknowledged on Receipt of Addendum, attached hereto as **Exhibit 4**.

13. Bidder represents that the bid is genuine and not collusive, or a sham and that bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding. Bidder further represents that Bidder has not sought by agreement or collusion, directly or indirectly, with any person, to fix the bid price of any other bidder, or to fix any overhead, profit, or cost element of said bid price or that of any other bidder, or to secure any advantage against the City or any person interested in the proposed bid. Bidder affirms that all statements in this bid are true.

SUBMITTED on the _____ day of _____, 20_____.

Bidder's Tax ID # _____

IF BIDDER is:

An Individual: _____
(Name typed or printed)

By: _____ (SEAL)
(Individual's Signature)

Doing business as: _____

Business Address: _____

Telephone # _____ FAX # _____

A Partnership: _____
(Partnership Name)

By: _____(SEAL)
(Signature)

_____
(Name typed or printed)

Business Address: _____

Telephone # _____ FAX # _____

A Corporation: _____(SEAL)
(Corporation Name)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature of Authorized Representative)

Print Name and Title: _____

Attest: _____(Corporate Seal)
(Signature of Secretary)

Business Address: _____

Telephone # _____ FAX # _____

Date of Qualification To Do Business Is: _____

A Joint Venture: Each Joint Venture Must Sign

Joint Venture Name: _____(SEAL)
(Name)

By: _____
(Signature of Joint Venture Partner)

Name: _____
(Name, printed or typed)

Title: _____

Business Address: _____

Telephone # _____ FAX # _____

A Joint Venture: Each Joint Venture Must Sign

Joint Venture Name: _____(SEAL)
(Name)

By: _____
(Signature of Joint Venture Partner)

Name: _____
(Name, printed or typed)

Title: _____

Business Address: _____

Telephone # _____ FAX # _____

Address of Joint Venture for Receipt of Official Communication:

Address: _____

Telephone # _____ FAX # _____

(Each Joint Venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

Exhibit 1

Bid Security

Attached.

Exhibit 2

Bid Sheet

Attached.

City of Helena

EXHIBIT 2

BID SHEET

PROJECT #24-20 - WASTEWATER TREATMENT PLANT CONDENSING BOILER SYSTEM

SHEET 1

ITEM NO.	ESTIMATED QUANTITY	UNIT	DESCRIPTION		UNIT PRICE		TOTAL PRICE
1	1	LS	Three (3) condensing boilers; three (3) condensate neutralizers; three (3) circulating pumps; three (3) natural gas regulators, startup assistance and training, complete and delivered.	$		$	

TOTAL BID PRICE _____ $ _____

(PRICE IN WORDS) **(PRICE)**

Exhibit 3

Vendor Qualifications

Please include documentation of vendor qualifications as outlined in Project Technical Specifications (Sections 1.06 and 2.01).

Exhibit 4

Receipt of Addendum

Bidder acknowledges receipt of the following addendum of revisions or additions:

Addendum Number	Date Issued	Authorized Signature For Each
1		
2		
3		
4		
5		

SUPPLEMENTAL TECHNICAL SPECIFICATIONS
CONDENSING BOILER

PART 1 GENERAL

1.01 SUMMARY

A. This section includes furnishing the following items from a single supplier:
   1. Three (3) condensing boilers;
   2. Three (3) condensate neutralizers;
   3. Three (3) circulating pumps;
   4. Three (3) natural gas regulators; and
   5. One (1) site visit from a factory authorized representative for startup assistance, testing, and troubleshooting.

1.02 REFERENCES

A. The condensing boiler and accessories shall be designed and constructed in accordance with the standards listed below.
   1. 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.
   2. ASME Compliance: Fabricate and label boilers to comply with ASME Boiler and Pressure Vessel Code.
   3. ASHRAE/IESNA 90.1 Compliance: Boilers shall have minimum efficiency according to Gas and Oil Fired Boilers - Minimum Efficiency Requirements.
   4. AHRI Compliance: Boilers shall be AHRI listed and must meet the minimum efficiency specified under AHRI BTS-2000 as defined by Department of Energy in 10 CFR Part 431.
   5. The boiler shall operate at a minimum of 96.2% thermal efficiency at full fire as registered with AHRI. The registered combustion efficiency must be equal to or greater than the registered thermal efficiency. All models shall operate up to 98% thermal efficiency with return water temperatures at 70°F or below at 20°F temperature rise. The boiler shall be certified for indoor installation.
   6. ANSI Compliance: Boilers shall be compliant with ANSI Z21.13 test standards for US and Canada. Boilers shall be tested in an ISO 17025 recognized laboratory. Boilers tested to UL 795 shall not be permitted. ANSI Z21.13 pertains to gas-fired low-pressure steam and hot water boilers. UL 795 pertains to commercial-industrial gas heating equipment.
   7. CSA Compliant: Boilers shall be compliant with CSA certification.

1.03 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Site Conditions:
      a. Elevation — 3,812 feet (above sea level)
      b. Inlet air temperature range — -40°F to 110°F
      c. Relative humidity range — 10 %– 90%
      d. Boiler room temperature range — 40°F - 110°F
   2. Boiler shall be natural gas fired, fully condensing, fire tube.
      a. Quantity of condensing boilers: — 3 each
      b. Water capacity — 94 gallons
      c. Heating surface — 162.3 sq ft

d.	Inlet water connection	4" flange
e.	Outlet water connection	4" flange
f.	Drain	1 ½"
g.	Maximum flow rate	350 gpm
h.	Minimum flow rate	25 gpm
i.	20°F ΔT water flow	144 gpm
j.	Head loss	12.3 ft
k.	40°F ΔT water flow	72 gpm
l.	Head loss	7.3 ft
m.	Maximum working pressure	160 psi
n.	Number of relief valves	1
o.	Relief valve size	1 ¼"
p.	Relief valve rating	1,954 MBH
q.	Relief valve pressure rating	50 psi
r.	Gas Input	1,500,000 BTU/hr
s.	Output (high fire)	1,443,000 BTU/hr
t.	Output (low fire)	57,720 BTU/hr
u.	Input	45 hp
v.	Inlet connection	1 ½"
w.	Maximum inlet pressure, natural gas	14" wc
x.	Minimum inlet pressure, natural gas	4" w.c.
y.	Maximum inlet pressure, LP	14" wc
z.	Minimum inlet pressure, LP	8" w.c.
aa.	Voltage/heater (VAC)	120V/1PH/60Hz
bb.	Voltage/control (VAC)	24
cc.	Total amps (FLA)	10
dd.	Minimum circuit amps (MCA)	13
ee.	Number of electrical connections	1
ff.	Height	78"
gg.	Width	30"
hh.	Depth	68"
ii.	Shipping Weight	1,961 lbs
jj.	Operating weight	2,307 lbs
kk.	Service Clearance – front	30"
ll.	Service Clearance - rear, right, left, and top	24"
mm.	Vent size	8"
nn.	Air inlet size	8"
oo.	Vent category	II or IV
pp.	Vent material	SS, CPVC, PVC, Polypro

3. Condensate neutralizer shall include 4" clear tube, integral o-ring unions, two (2) ¾" male x PVC adaptors, two (2) snap in brackets, and sack containing Neutra-pH media.

a.	Quantity of condensate neutralizers:	3 each
b.	Capacity	2,000,000 BTU/hr
c.	Cartridge size	5" diameter x 26 ¾" length
d.	Neutra-pH media	Calcite and magnesium oxide granules
e.	Installation	Bi-directional, horizontal

4. Circulating pump shall be factory-assembled and tested, wet-rotor pump. Pump and motor shall form an integral unit with bearings lubricated by the pumped liquid.

a.	Quantity of circulating pumps	3 each
b.	Flange size	2½"
c.	Max shutoff head	39 feet

d.	Max flow	227 USGPM
e.	Max operating pressure	175 PSI (12 bar)
f.	Water temperature range	14 to 230ºF (-10 to 110ºC)
g.	Ambient temperature range	32 to 104ºF (0 to 40ºC)
h.	Ambient humidity	Less than 95%
i.	Body	Cast iron
j.	Impeller	Type 304 stainless steel
k.	Pump Shaft	Stainless steel
l.	Bearings	Metal-impregnated carbon
m.	Voltage	200-240
n.	Phase	Single
o.	Hertz	60
p.	Max amps	3.5
q.	Design Flow Rate	144 USGPM
r.	Design head	12.3 feet
s.	Design Hp	0.860
t.	Design RPM	3600
u.	Mode	0-10v

5. Natural gas regulator shall include positive 100% bubble tight lockup, integral vent limiter, external vent limiter, filter, and inlet and outlet test ports with 500 to 1 turndown. The regulator shall be suitable for indoor or outdoor installation and for use with natural gas, LPG, and other non-corrosive, clean gas. The regulator shall be constructed in accordance with ANSI Z21.80A-2012 / CSA 6.22A-2012(R2016) Class I for outlet pressures up to 14” W.C.

a.	Quantity of natural gas regulator:	1 each
b.	Inlet Pressure:	3" W.C. to 2 PSIG CSA approved
c.	Max. Inlet Pressure:	7.25 PSIG for non-CSA applications
d.	Outlet pressure:	2" W.C. to 14" W.C. and up to 4.25 PSIG for non-CSA applications
e.	Temperature range:	-40°F to 150°F
f.	Connection:	1 ½" NPT
g.	Maximum Emergency Inlet Exposure Pressure:	80 PSIG
h.	Vent size:	1/2" NPT

Capacity in cfh for .60 specific gravity gas with filter (capacity without filter in brackets)

Size	Outlet Pressure Set Point	Operating Inlet Pressure		
		14” W.C.	1 PSIG	2 PSIG
1 ½" NPT	8" W.C.	2,567 (3,197)	4,629 (5,766)	6581 (8197)
	11" W.C.	1,829 (2,279)	4,284 (5,336)	6581 (8197)

B. Compatibility: Condensing boilers, condensate neutralizers, circulating pumps, and natural gas regulators shall be compatible with each other with no additional adaptors, fittings, fabrication or converters.

1.04 DEFINITIONS

A. Continuous operation shall be defined as 24 hours per day 7 days per week operation.

1.05 SUBMITTALS

A. Product Data: Include performance data, operating characteristics, furnished specialties, and accessories.
B. Shop Drawings: For boilers, boiler trim, and accessories.
   1. Include plans, elevations, sections, details, and attachments to other work.
   2. Wiring Diagrams: Power, signal, and control wiring
C. Source quality-control test reports: Indicate and interpret test results for compliance with performance requirements before shipping.
D. Field quality-control test reports: Indicate and interpret test results for compliance with performance requirements.
E. Efficiency Data Points: Data shall be submitted per ASHRAE 155 Method of Testing for Rating Commercial Space Heating Boiler Systems. This data shall cover steady state thermal efficiency, part load efficiency, and idling energy input rate. Efficiency data not supported by a third party published test standard shall not be permitted.
F. Operation and Maintenance Manuals: Provide operation and maintenance manuals for condensing boilers, condensate neutralizers, circulatory pumps, and natural gas regulator.

1.06 QUALITY ASSURANCE

A. General
   1. The manufacturer shall have a minimum of 10 years' experience designing and manufacturing fire tube condensing hydronic boilers. The manufacturer must be headquartered in North America and manufacture in an ASME-certified facility wholly owned by the manufacturer.
   2. Provide a list of references (name, location, and contact information) of at least 10 installations currently using similar model condensing boilers as is being proposed.

1.07 DELIVERY

A. Packing and Shipping
   1. Protect equipment during shipment in accordance with manufacturer's recommendations.

1.08 WARRANTY

A. Provide manufacturers' standard warranty. The manufacturer agrees to repair or replace components of boiler that fail in materials or workmanship within specified warranty period.
   1. Heat Exchanger, Pressure Vessel and Condensation Collection Basin shall carry a 10-year limited warranty against defects in materials or workmanship.
   2. Heat exchanger/pressure vessel are warranted against thermal shock for the lifetime of the boiler.
   3. The burner shall carry a five (5) year limited warranty against defective material or workmanship from the date of shipment.
   4. All other components shall carry a one-year limited warranty from the date of boiler start up or 18 months from shipment.

1.09 MAINTENANCE

A. Special Tools
   1. Provide one set of special tools required for complete assembly or disassembly of the condensing boiler system and accessories.
   2. Special tools shall be defined as any tool not typically necessary for general plant maintenance.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. The boiler pre-approved by the Engineer shall be a CREST Condensing Boiler model FBN 1501 manufactured by Lochinvar, or an Engineer approved equivalent meeting this specification. The

manufacturer shall have condensing boilers of comparable capacity in successful operation in the field for a minimum period of 10 years. The manufacturer shall have a minimum of 50 existing completed installations of condensing boilers currently in service (with reference list), with a minimum of 25 located in the Rocky Mountain Region (NM, CO, WY, MT, ID) and a minimum of 5 installed in Montana.

B. The condensate neutralizer pre-approved by the Engineer shall be model CN4B-2000C manufactured by Neutra-Safe, or an Engineer approved equivalent meeting this specification.
C. The circulating pump pre-approved by the Engineer shall be model VR25M-F manufactured by Taco, or an Engineer approved equivalent meeting this specification.
D. The natural gas regulator pre-approved by the Engineer shall be model 31154 manufactured by Pietro Fiorentini, or an Engineer approved equivalent meeting this specification.

2.02 CONSTRUCTION

A. Description: Boiler shall be natural gas fired, fully condensing, and fire tube design. The boiler shall be factory-fabricated, factory-assembled, and factory-tested, fire-tube condensing boiler with heat exchanger sealed pressure tight, built on a steel base; including insulated jacket; flue-gas vent; combustion-air intake connections; water supply, return, and condensate drain connections; and controls.
B. Heat Exchanger: The heater exchanger shall bear the ASME "H" stamp for 160 psi working pressure and shall be National Board listed. The heat exchanger shall be constructed of a fully welded 316L stainless steel interior with a carbon steel shell and of fire tube design. Fire tube shall be of the Wave Fire Tube design and capable of transferring 16,000 to 20,000 Btu's per tube. The Wave Fire Tube shall be manufactured via a liquid impact process. The Wave Fire Tube shall have an OD = 1.654" and a wall thickness = 0.039". The top and bottom tubesheets shall have a minimum thickness = ¼" (0751-2001) or 3/8" (2501,6001). There shall be no overlapping welds with the Wave Fire Tube to tubesheet welds. The heat exchanger shall be designed for a single-pass water flow to limit the water side pressure drop. There shall be no banding material, bolts, gaskets or "O" rings in the heat exchanger design. Cast iron, aluminum, or copper tube or water tube boilers will not be accepted.
C. Condensate Collection Basin: Fully welded 316L stainless steel.
D. Intake Filter and Dirty Filter Switch: Boiler shall include an intake air filter with a factory installed air pressure switch. The pressure switch will alert the end user on the screen of the boiler that the intake filter is dirty and needs to be changed.
E. Pressure Vessel: The pressure vessel shall be in accordance with ASME Section IV pressure vessel code. The pressure vessel shall be designed for a single-pass water flow to limit the water side pressure drop. Pressure drop shall be no greater than 6.5 psi at 180 gpm. The pressure vessel shall contain a volume of water no less than:

Input MBH	Water Content
1,500	94 gallons

F. Burner: Natural gas, forced draft single burner premix design. Operation of the burner shall not exceed that of 5.7% oxygen level or 40% excess air. The burner shall be high temperature stainless steel with a woven Fecralloy outer covering to provide modulating firing rates. The burner shall be capable of the stated gas train turndown without loss of combustion efficiency. The burner shall be removable from the boiler without removing the gas/air manifold. The burner shall have an independent laboratory rating for Oxides of Nitrogen (NOx) to meet requirements of South Coast Air Quality Management District (SCAQMD) as compliant with Rule 1146.2 (FB 0751 – FB 2001), Bay Area Quality Management District as compliant with Regulation 9 Rule 7 (FB 2501 – FB 6001) and Texas Commission on Environmental Quality (FB 0751 – FB 2001) as being compliant with Section 117.465.

G. Blower: Boiler shall be equipped with a pulse width modulating blower system to precisely control the fuel/air mixture to provide modulating boiler firing rates for maximum efficiency. The burner firing sequence of operation shall include pre-purge, firing, modulation, and post-purge operation.
   1. Motors: Comply with requirements specified in Division 23 Section, Common Motor Requirements for HVAC Equipment.

H. Gas Train: The boiler shall be supplied with two gas valves designed with negative pressure regulation and shall be capable of the following minimum turndowns:

Input MBH	Turndown	Minimum Input	Maximum Input
1,500	25:1	60,000	1,500,000

I. Ignition: Spark ignition with 100 percent main-valve shutoff with electronic flame supervision. Boilers using a pilot for ignition and/or UV scanners for flame supervision shall be deemed unacceptable.

J. High Altitude: Boiler shall operate at altitudes up to 4,500 feet above sea level without additional parts or adjustments. High altitude operation shall be certified at a minimum of 4,500 feet above sea level by a third party organization. High altitude boilers shall be certified to 3,000 to 12,000 feet above sea level. The boilers shall carry a CSA certification for high altitude operation up to 12,000 feet. High altitude operation shall be 3rd party certified and be conducted in an ISO 17025 recognized laboratory; boilers without this high-altitude certification shall be deemed unacceptable.

K. Casing:
   1. Jacket: Heavy gauge primed and painted steel jacket with snap-in closures. Jacket panels shall be fully removal; the front door and side panels shall not require tools for removal. The jacket shall be mounted on a steel base with a minimum thickness = ¼".
   2. Control Compartment Enclosures: NEMA 250, Type 1A.
   3. Insulation: Minimum ½ inch thick, mineral fiber insulation surrounding the heat exchanger.
   4. Combustion-Air Connections: Inlet and vent duct collars.
   5. Clearances: Boilers shall feature zero (0) clearance to combustibles. Boilers shall have the ability to be placed side by side in multiples with no clearance in between if necessary. Local codes should be considered.

L. Rigging and Placement: Boiler shall include lifting lugs and fork truck accessibility for rigging.

M. Characteristics and Capacities:
   1. Heating Medium: Hot water.
   2. Design Water Pressure Rating: 160 psi working pressure.
   3. Safety Relief Valve Setting: 50 psig
   4. Minimum Water Flow Rate:

Input MBH	Minimum Flow
1,500	25 gpm

N. Oxygen Sensor
   1. An O_2 sensor shall be offered as an optional package with this boiler. The O_2 sensor shall be made by a top automotive supplier. The O_2 sensor shall be located in the combustion chamber. Boilers with O_2 sensors placed elsewhere on the unit shall not be permitted.

2.03 TRIM

A. Safety Relief Valve:
   1. Size and Capacity: 50 lb. System pressures should be confirmed. Custom relief valve sizes can

be ordered.
2. Description: Fully enclosed steel spring with adjustable pressure range and positive shutoff; factory set and sealed.

B. Pressure Gage: Minimum 3-1/2 inch diameter. Gage shall have normal operating pressure about 50 percent of full range.
C. Drain Valves: Minimum NPS 3/4 or nozzle size with hose-end connection.
D. Condensate Trap: Factory supplied condensate trap with condensate trip sensor.

2.04 CONTROLS

A. Refer to Division 23 Section Instrumentation and Control for HVAC.
B. Boiler controls shall feature the following standard features:
1. 8" LCD screen display displaying status, modulation percentage, setpoints, and sensor data at a minimum on the home screen. Additional information such as history and parameters can be accessed via the touchscreen display without the need for navigation buttons. A screen saver mode shall be available with the display.
2. Variable Speed Boiler Pump Control: Boiler may be programmed to send a 0-10V DC output signal to an ECM or VFD boiler pump to maintain a designed temperature rise across the heat exchanger. The boiler shall be able to operate in this mode with a minimum temperature rise of 20 degrees F and a maximum temperature rise of 60 degrees F.
3. Password Security: Boiler shall have a different password security code for the User and the Installer to access adjustable parameters.
4. Outdoor air reset: Boiler shall calculate the set point using a field installed, factory supplied outdoor sensor and an adjustable reset curve.
5. Pump exercise: Boiler shall energize any pump it controls for an adjustable time if the associated pump has been off for a time period of 24 hours.
6. Ramp delay: Boiler may be programmed to limit the firing rate based on six limits steps and six time intervals.
7. Boost function: Boiler may be programmed to automatically increase the set point a fixed number of degrees (adjustable by installer) if the setpoint has been continuously active for a set period of time (time adjustable by installer). This process will continue until the space heating demand ends.
8. Domestic hot water priority: Boiler shall make the domestic hot water call for heat a priority over any space heating call and adjust the boiler setpoint to the domestic hot water boiler setpoint.
9. Domestic hot water modulation limiting: Boiler may be programmed to limit the maximum domestic hot water firing rate to match the input rating of the indirect tank coil.
10. Domestic hot water night setback: Boiler may be programmed to reduce the domestic hot water tank set point during a certain time of the day.
11. PC port connection: Boiler shall have a PC port allowing the connection of PC boiler software.
12. Time clock: Boiler shall have an internal time clock with the ability to time and date stamp lock-out codes and maintain records of runtime.
13. Service reminder: Boiler shall have the ability to display a yellow colored service notification screen based upon months of installation, hours of operation, and number of boiler cycles. All notifications are adjustable by the installer.
14. Three pump control: Boiler shall have the ability to control the boiler pump, system pump and the domestic hot water pump.
15. Anti-cycling control: Boiler shall have the ability to set a time delay after a heating demand is satisfied allowing the boiler to block a new call for heat. The boiler will display an anti-cycling blocking on the screen until the time has elapsed or the water temperature drops below the anti-cycling differential parameter. The anti-cycling control parameter is adjustable by the installer.
16. Night setback: Boiler may be programmed to reduce the space heating temperature set point

during a certain time of the day.

17. Freeze protection: Boiler shall turn on the boiler and system pumps when the boiler water temperature falls below 45 degrees. When the boiler water temperature falls below 37 degrees the boiler will automatically turn on. Boiler and pumps will turn off when the boiler water temperature rises above 43 degrees.
18. Isolation valve control: Boiler shall have the ability to control a 2-way motorized control valve. Boiler shall also be able to force a fixed number of valves to always be energized regardless of the number of boilers that are firing.
19. BMS integration with 0-10V DC input: The Control shall allow an option to Enable and control set point temperature or control firing rate by sending the boiler a 0-10V input signal.
20. Data logging: Boiler shall have non-volatile data logging memory including last 10 lockouts, hours running and ignition attempts and should be able to view on boiler screen.

C. The boiler shall have a built in Cascade controller to sequence and rotate lead boiler to ensure equal runtime while maintaining modulation of up to 8 boilers of different btu inputs without utilization of an external controller. The factory installed, internal cascade controller shall include:
   1. Lead lag: The Control module shall minimize the number of boilers firing to achieve the heating load.
   2. Efficiency optimization: The Control module shall allow multiple boilers to fire at minimum firing rate in lieu of Lead/Lag.
   3. Front end loading: The Control modulate shall have the ability to communicate with other boilers featuring the SmartTouch and Smart System control platforms (or Engineer approved equivalent). This allows for a combination of units that feature condensing and non-condensing operation if so desired.
   4. Rotation of lead boiler: The Control module shall change the lead boiler every hour for the first 24 hours after initializing the Cascade. Following that, the leader will be changed once every 24 hours.
   5. Redundancy: The Control module shall have a built in feature to continue operating with follow boilers if the Lead boiler is not operational.

D. Boiler operating controls shall include the following devices and features:
   1. Set-Point Adjust: Set points shall be adjustable.
   2. Operating Pressure Control: Factory wired and mounted to cycle burner.
   3. Sequence of Operation: Factory installed controller to modulate burner firing rate to maintain system water temperature in response to call for heat.
   4. Sequence of Operation: Electric, factory-fabricated and factory-installed panel to control burner firing rate to reset supply-water temperature inversely with outside-air temperature. At 10 deg F outside-air temperature, set supply-water temperature at 180 deg F; at 60 deg F outside-air temperature, set supply-water temperature at 140 deg F.

E. Burner Operating Controls: To maintain safe operating conditions, burner safety controls limit burner operation.
   1. High Temperature Limit: Automatic and manual reset stops burner if operating conditions rise above maximum boiler design temperature. Limit switch to be manually reset on the control interface.
   2. Low-Water Cutoff Switch: Electronic probe shall prevent burner operation on low water. Cutoff switch shall be manually reset on the control interface.
   3. Blocked Inlet Safety Switch: Manual-reset pressure switch field mounted on boiler combustion-air inlet.
   4. High and Low Gas Pressure Switches: Pressure switches shall prevent burner operation on low or high gas pressure. Pressure switches to be manually reset on the control interface.
   5. Blocked Drain Switch: Blocked drain switch shall prevent burner operation when tripped. Switch to be manually reset on the control interface.
   6. Low air pressure switch: Pressure switches shall prevent burner operation on low air pressure.

Switch to be manually reset on the control interface.
7. Audible Alarm: Factory mounted on control panel with silence switch; shall sound alarm for any lockout conditions.

F. Building Automation System Interface: Factory installed Modbus and BACnet MSTP gateway interface to enable building automation system to monitor, control, and display boiler status and alarms.
1. BACnet IP gateway to be included with building Automation System Interface.

G. Software Update: The control shall have the ability to receive updates in the field without hardware component replacement. This update can be performed via USB flash drive, internet connection, or via wireless connection. This service shall be provided at no additional and/or annual cost to the owner.

H. Remote Connect: Integral remote connectivity technology that allows a mobile device to monitor and control boiler functionality. Internet connection is available on the boiler via Wi-Fi or hardwired Ethernet connection. This service shall be provided at no additional and/or annual cost to the owner.

I. RealTime O2 Feedback: Boiler, if equipped with the optional RealTime O2 Feedback package (or Engineer approved equivalent), shall provide real time sensing of O2. Free air calibration of the sensor shall occur after every combustion cycle. The O2 value shall also auto correct for conditions such as altitude. O2 information shall be displayed in real time via a gauge on both the boiler touchscreen as well as remote connect screen.

2.05 ELECTRICAL POWER

A. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in Division 26 Sections.

B. Single-Point Field Power Connection: Factory-installed and factory-wired switches, motor controllers, transformers, and other electrical devices necessary shall provide a single-point field power connection to boiler.

C. Electrical Characteristics:
1. Voltage: 120V/1PH
2. Frequency: 60 Hz

2.06 VENTING

A. Exhaust flue for the FB 1501 must be Category IV approved PVC, CPVC, PP or stainless steel sealed vent material from one of the approved manufacturers listed in the Installation and Operation manual. Boilers exhaust vent length must be able to extend to 100 equivalent feet.

B. Intake piping must be of approved material as listed in the Installation and Operations manual. Boilers intake pipe length must be able to extend to 100 equivalent feet.

C. Boiler venting and intake piping configuration shall be installed per one of the approved venting methods shown in the Installation and Operation manual.

D. Boiler shall come standard with a flue sensor to monitor and display flue gas temperature on factory provided LCD display.

E. Boilers using common venting must contact the factory for sizing.

F. Refer to manufacturer's Installation and Operations manual for detailed venting instructions and approved manufacturers.

2.07 SOURCE QUALITY CONTROL

A. Burner and Hydrostatic Test: Factory adjust burner to eliminate excess oxygen, carbon dioxide, oxides of nitrogen emissions, and carbon monoxide in flue gas and to achieve combustion efficiency; perform hydrostatic test.

B. Test and inspect factory-assembled boilers, before shipping, according to ASME Boiler and Pressure Vessel Code.

PART 3 EXECUTION

3.01 ON SITE/STARTUP SERVICES

A. A factory authorized representative shall inspect the condensing boiler system and verify the system has been installed correctly and is ready for start-up. The factory representative shall provide startup assistance and ensure proper operation of the boiler system. The factory authorized representative shall also provide training for the owner's personnel in the operation and maintenance of the boiler system.