NOTICE TO BIDDERS

Sealed and/or electronic bids must be received by the Executive Port Director or his designee of the Caddo-Bossier Parishes Port Commission, 6000 Doug Attaway Blvd., Shreveport, Louisiana 71115 no later than 10:00 a.m. on June 9, 2026, for the following:

2,000,000BTU/H ULTRA-HIGH EFFICIENCY CONDENSING BOILER, FULTON ENDURE XE 2000 OR EQUIVALENT

Specifications and bid documents may be obtained from the office of the Caddo-Bossier Parishes Port Commission, or you may download them from the website at www.portcb.com or electronic website (Bid Express) at www.bidexpress.com. Questions regarding the bid items are to be emailed to Richard Nance, Director of Engineering, RickN@portcb.com, no later than FIVE (5) working days prior to bid opening.

INSTRUCTIONS TO BIDDERS

Bidders electing to submit a physical bid (paper), must use the LOUISIANA BID FORM AND SUPPORTING DOCUMENTS included in the bid package as outlined in these instructions. Each blank space should be filled in, showing either the bid amount or no bid. Bids SHALL be LUMP SUM. Bidders are required to state the bid amount in words and figures. In the case of a conflict between the written and numerical bid amounts, the bid amount written in words shall govern.

Bidders may elect to submit bids electronically via the internet. Electronic bids for the Caddo-Bossier Parishes Port Commission are available for submission at www.bidexpress.com.

Bidders that wish to submit electronic bids online may be charged a fee by Bid Express. In addition, bidders shall be required to obtain a digital signature certificate prior to submitting bids online.

Bidders electing to submit bids electronically shall follow the procedures established by Bid Express.

The proper and timely submission of an electronic bid is the responsibility of the bidder. Bidders are encouraged to complete the electronic bid documents well in advance of the bid closing.

Late bids due to the malfunction of the internet infrastructure, certificate service providers, electronic bid bond providers, or other interruptions will not be accepted.

Bidders submitting bids electronically need not submit paper forms.

It is the responsibility of the bidder to ensure receipt and acknowledgement of all addenda prior to the bid submission.

Paper bids must be submitted and signed in ink by the authorized member of the bidding entity. Bid envelopes shall be plainly marked in accordance with the Bid Invitation. Paper bids must be either mailed or delivered to the Executive Port Director, Caddo-Bossier Parishes Port Commission within the time limit set forth in the Bid Invitation. Bids received after this time will be returned to the bidder unopened.

Bids may be rejected if they stipulate additions, conditional or alternative bids, incomplete bids or other matters in conflict with the bid specifications. The Caddo-Bossier Parishes Port Commission reserves the right to reject any and all bids in accordance with Louisiana law.

The individual unit prices for the material and equipment shall include the amount of all applicable taxes and indemnify and save the Caddo-Bossier Parishes Port Commission, its employees and representatives harmless against any and all claims of liability resulting from the failure of any bidder to include applicable taxes in the submitted bid. The Caddo-Bossier Parishes Port Commission is exempt from all local and state taxes in the state of Louisiana. Bid amounts must include all shipping and handling charges.

The bid will be awarded to the lowest responsive and responsible bidder in accordance with the terms and conditions of the Louisiana Public Bid Law.

CADDO-BOSSIER PARISHES PORT COMMISSION
REQUEST FOR BIDS (RFB)

1) PURPOSE

a) The Caddo-Bossier Parishes Port Commission (the "Port") is seeking equipment supliers interested in providing the materials and labor associated with the replacement and installation of a Ultra-High Efficiency Condensing Boiler (the "project"), more particularly described in Section 2 of this Request for Bids ("RFB").

b) It is the Port's intent to select a qualified contractor to install the project defined in Section 2.

2) PROJECT NAME AND SCOPE OF WORK

Caddo Bossier Parishes Port Commission Project ENG.26.012- Replacement of an Existing 2,000 MBTU/Hr Aerco Gas-fired Condensing Boiler with a new unit of equal capacity

Instructions to Bidders:

a) OBLIGATION OF BIDDERS: The submittal of a Bid will be understood to indicate the Bidder has inspected the work site and has become thoroughly familiar with the plans, general provisions, and technical specifications. The failure or omission of any Bidder to examine any of the above shall in no way relieve the Bidder from any obligations set forth in the Bid.

b) BID AMOUNT: The compensation to perform the work delineated in the BID shall be stated as a LUMP SUM, based on the Engineer's estimated quantities.

c) BID FORMAT: The Bidder shall use THE LOUISIANA UNIFORM PUBLIC WORK BID FORM format which conforms to the requirements of this RFB.

d) Forms to be completed and submitted with the BID are as follows:
   i) Bid Bond;
   ii) Power of Attorney (for Bid Bond); and
   iii) Corporate Resolution Authorizing Execution of the Bid.

e) The following Forms shall be completed simultaneously with the execution of the contract:
   iv) Performance and Payment Bond;
   v) Power of Attorney (for Performance and Payment Bond);
   vi) Conditional Waiver – Contractor; and
   vii) Conditional Waiver – Subcontractor(s).

Scope of Work

The scope of work for this project in accordance with the attached Plans and Technical Specifications, identified as **Exhibit A**, **Exhibit B, Exhibit C**,and **Exhibit D** respectively is described as follows:

i) Dis-assemble and remove existing 2,000 MBTU/hr nominal input capacity gas-fired condensing boiler Aerco Boiler and salvage;
ii) Provide and install a new 2,000 MBTU/hr nominal input capacity gas-fired condensing boiler based on the Fulton Endure Model EXE-2000 (Performance -97.5% thermal efficiency (AHRI),16 GPM minimum flow rate, 15 to 1 turndown ratio, 10-year heat exchanger warranty, lifetime thermal shock warranty, twenty-four months parts warranty (from shipment date), five-year burner warranty, T439 stainless steelheat exchanger material, 120V,1 Phase;
iii) Test and certify.

The Bidder shall submit one (1) clearly identified original Bid in response to this RFB to the Executive Port Director, Eric England, no later than **June 9, 2026 at 10:00 a.m.**

3) INSURANCE REQUIREMENTS

The Bidder shall, at its own expense, provide a copy of the insurance certificate which meets the requirement in **Exhibit E.**

4) PRE-BID MEETING

A Pre-Bid meeting will be held on June 2, 2026 at 9:00 a.m. to clarify any information necessary to submit an acceptable Bid.

5) BID MUST BE DELIVERED TO:

Caddo-Bossier Parishes Port Commission
ATTN: Executive Port Director
6000 Doug Attaway Blvd
Shreveport, LA 71115

6) DOCUMENTATION OF RESPONSES

a) Responses to this RFB will be recorded in the presence of one or more witnesses.

b) Responses to this RFB must be submitted by using a sealed envelope.

c) The Bidder's name and address, license number, the RFB due date and time, and the RFB title shall be shown on the outside of the envelope.

d) The Port assumes no responsibility for unmarked envelopes being excluded from consideration for an award.

e) Bids received after the time specified will be recorded and then returned unopened.

f) Questions seeking clarification of any aspect of this RFB may be submitted to:
Rick Nance at rickn@portcb.com, phone: (318) 426-0877; or
Tyler Comeaux at tylerc@portcb.com, phone: (318) 524-2276.

7) PROCESS OF AWARD

a) The Bids will be evaluated by representative(s) of the Port prior to the issuance of a letter of award.

b) The award process could take up to 10 days following receipt of the Bids.

BID BOND

FOR

2,000 MBTU/hr Gas-fired Condensing Boiler Equipment Replacement

CBPPC Project No. ENG.26.012

Caddo & Bossier Parish

Date: _____

KNOW ALL MEN BY THESE PRESENTS:

That_____of_____, as Principal, and_____, as Surety, are held and firmly bound unto the _____ (Obligee), in the full and just sum of five (5%) percent of the total amount of this bid, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater that the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

_____	_____
PRINCIPAL (BIDDER)	SURETY
BY: _____	BY:_____
AUTHORIZED OFFICER-OWNER-PARTNER	AGENT OR ATTORNEY-IN-FACT(SEAL)

PERFORMANCE BOND

_____

_____

as Principal, and _____,
a surety company or companies authorized to do business in Louisiana, as Surety, are bound, in solido, unto

_____

in the sum of

_____DOLLARS ($_____),
payable in lawful money of the United States, in order to secure the full and faithful performance and timely completion of the project described below according to its plans and specifications, including, but not limited to the payment of stipulated damages as specified in the contract, and to this bond do obligate their heirs, successors and assigns. In the case of cosureties, the cosureties assume an obligation in the sum of

_____DOLLARS ($_____),

for_____ and

_____DOLLARS ($_____),

for_____

The consideration of this bond is such, that if the Principal shall perform this contract, made and entered into on the

_____ day of _____, 20_____,

For installation of CBPPC Project No.: **ENG.26.012** entitled **2,000 MBTU/hr Gas-fired Condensing Boiler Equipment REPLACEMENT** located in Parish CADDO, consisting of **removal of existing BOILER components and replacement with new Boiler for the RCC , at 6000 Doug Attaway, Shreveport, LA 71115**

according to the stipulations in said contract attached hereto and made a part hereof, at the time and in the manner and form specified; perform all labor and work; and shall furnish all materials as specified in said contract, and the plans a specifications thereto attached and made a part thereof; this obligation shall be void; otherwise to remain in effect.
It is agreed by the parties that this bond is given in accordance with Louisiana Revised Statutes of 1950, Title 38, Chapter 10.

In faith whereof, we have subscribed this obligation at _____, Louisiana

Witness our hands and seals, this _____ day of _____, 20_____,

Witness

_____
Principal

_____ By _____(Seal)

_____ _____
Type or Printed Name

_____
First Surety

_____ By _____(Seal)
Attorney-in-Fact

_____ _____
Type or Printed Name

_____
Second Surety

_____ By _____(Seal)
Attorney-in-Fact

_____ _____
Type or Printed Name

PAYMENT BOND

_____

_____

as Principal, and _____,

a surety company or companies authorized to do business in Louisiana, as Surety, are bound, in solido, unto

_____

and unto all subcontractors, workmen and furnishers of materials and equipment, jointly in the sum of

_____DOLLARS ($_____),
payable in lawful money of the United States, and to this bond do obligate their heirs, successors and assigns. In the case of cosureties, the cosureties assume an obligation in the sum of

_____DOLLARS ($_____),

for_____ and

_____DOLLARS ($_____),

for_____

The consideration of this bond is such, that if the Principal shall perform this contract, made and entered into on the

_____ day of _____, 20_____,

For installation of CBPPC Project No.: **ENG.26.012** entitled **2,000 MBTU/hr Gas-fired Condensing Boiler Equipment REPLACEMENT** located in Parish CADDO, consisting of **removal of existing BOILER components and replacement with new Boiler for the RCC , at 6000 Doug Attaway, Shreveport, LA 71115**

according to the stipulations in said contract attached hereto and made a part hereof, pay all sums due on materials and supplies used and for wages earned by workmen employed on the work; this obligation shall be void; otherwise to remain in effect. It is agreed by the parties that this bond is given in accordance with Louisiana Revised Statutes of 1950, Title 38, Chapter 10.

In faith whereof, we have subscribed this obligation at _____, Louisiana

Witness our hands and seals, this _____ day of _____, 20_____,

Witness

_____

Principal

_____ By_____(Seal)

_____

Type or Printed Name

_____

First Surety

_____ By_____(Seal)

Attorney-in-Fact

_____

Type or Printed Name

_____

Second Surety

_____ By_____(Seal)

Attorney-in-Fact

_____

Type or Printed Name

CADDO BOSSIER
PORT COMMISSION

6000 Doug Attaway Blvd. | Shreveport, LA 71115 | P (318)524-2272 | F (318)524-2273 | port@portsb.com | www.portsb.com

CONDITIONAL WAIVER AND RELEASE
UPON PROGRESS PAYMENT TO CONTRACTOR

Upon receipt of a check from the Caddo-Bossier Parishes Port Commission:

In the sum of: _____

Payable to: _____

(Name of Contractor)

and, upon the proper endorsement of the check and payment by the bank upon which it is drawn, this document shall become effective to release any claims defined under the provisions of La. R.S. 38:2242, et seq., liens, work stoppages, or bond rights the undersigned has on the **Caddo-Bossier Parishes Port Commission, Project No. ENG.25.042 entitled Ron Bean Digital Sign Display Equipment Replacement** of the Caddo-Bossier Parishes Port Commission.

This release covers a progress payment for any claims defined under the provisions of La. R.S. 38:2242, et seq. including, but not limited to, liens, labor, services, equipment or materials furnished by:

_____ through _____

(Name of Contractor) (Pay Period Date)

only and does not cover any retentions retained before or after the release date and work or materials furnished before the release date for which payment has not been received. Rights based upon work performed or items furnished under a written change order which have been fully executed by the parties prior to the release date are covered by this release.

Upon the execution of this conditional waiver and release, the Contractor hereby certifies and confirms it has submitted progress payments to its subcontractors and/or suppliers for work performed and equipment or materials furnished for the pay period set forth hereinabove.

SIGNATURES CONTINUED ON NEXT PAGE

NOTICE: THIS DOCUMENT CONDITIONALLY WAIVES RIGHTS AND STIPULATES YOU

HAVE BEEN PAID FOR WORK PERFORMED OR SUPPLIES FURNISHED. THIS DOCUMENT, IF EXECUTED, IS ENFORCEABLE. PRIOR TO THE EXECUTION OF THIS DOCUMENTS, PLEASE VERIFY EVIDENCE OF PAYMENT.

_____
Date

_____
Printed Name of Contractor

_____
Signature of Authorized Representative

_____
Date

Caddo-Bossier Parishes Port Commission

_____
By: Eric England, Executive Port Director

CADDO BOSSIER
PORT COMMISSION

6000 Doug Attaway Blvd. | Shreveport, LA 71115 | P (318)524-2272 | F (318)524-2273 | port@portsb.com | www.portsb.com

CONDITIONAL WAIVER AND RELEASE
UPON PROGRESS PAYMENT TO SUBCONTRACTOR AND/OR SUPPLIER

Upon receipt of a check from the undersigned:

_____
(Name of Contractor)

In the sum of:

_____

Payable to:

_____
(Name of Subcontractor and/or Supplier)

and, upon the proper endorsement of the check and payment by the bank upon which it is drawn, this document shall become effective to release any claims defined under the provisions of La. R.S. 38:2242, et seq., liens, work stoppages, or bond rights the undersigned has on **the Caddo-Bossier Parishes Port Commission, Project No. ENG.25.042 entitled Ron Bean Digital Sign Display Equipment Replacement** of the Caddo-Bossier Parishes Port Commission.

This release covers a progress payment for any claims defined under the provisions of La. R.S. 38:2242, et seq. including, but not limited to, liens, labor, services, equipment or materials furnished by:

_____ through _____
(Name of Subcontractor and/or Supplier) (Pay Period Date)

only and does not cover any retentions retained before or after the release date and work or materials furnished before the release date for which payment has not been received. Rights based upon work performed or items furnished under a written change order which have been fully executed by the parties prior to the release date are covered by this release.

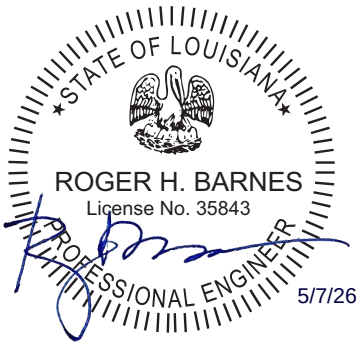
NOTICE: THIS DOCUMENT CONDITIONALLY WAIVES RIGHTS AND STIPULATES YOU HAVE BEEN PAID FOR WORK PERFORMED OR SUPPLIES FURNISHED. THIS DOCUMENT, IF EXECUTED, IS ENFORCEABLE. PRIOR TO THE EXECUTION OF THIS DOCUMENTS, PLEASE VERIFY EVIDENCE OF PAYMENT.

SIGNATURES CONTINUED ON NEXT PAGE

_____	_____
Date	Printed Name of Contractor
	_____
	Signature of Authorized Representative
_____	_____
Date	Printed Name of Subcontractor/Supplier
	_____
	Signature of Authorized Representative

EXHIBIT A

Boiler Replacement for
The Port of Caddo-Bossier
AFJMc 26-083
May 7, 2026



General Project Scope: The existing Aerco, gas-fired condensing boiler located within the fourth-floor mechanical room, with a nominal input capacity of 2,000 MBH, shall be removed and replaced with a new unit of equal capacity.

Existing Conditions: The existing boiler has been in place and in use since the original building's construction. It is nearing the end of its anticipated service life. Recently this unit has become increasingly unreliable and is an escalating service issue to the facility. Related associated items in conjunction with the boiler such as the structural bases and supports, electrical conduit and conductors, and hydronic, gas, and condensate branch piping appear sufficient and are anticipated for reuse under the boiler replacement to the greatest extent practical with only slight required modifications in relation to the new unit replacement.

Equipment: As previously stated, the existing gas-fired condensing boiler has a nominal input capacity tonnage of 2,000 MBH. For the basis of design, an equivalent boiler would be equal to Fulton Endure Model EXE-2000 (Performance – 97.5% thermal efficiency (AHRI), 16 GPM minimum water flow rate, 15 to 1 turndown ratio, 10-year heat exchanger warranty, lifetime thermal shock warranty, twenty-four month parts warranty (from shipment date), five-year burner warranty, T439 stainless steel heat exchanger material, 120V, 1 phase). Provide with single point power connection that feeds this boiler. Alternate acceptable boiler manufacturers shall be as follows: Aerco, or a prior-approved equal. Alternate boiler substitutions shall be evaluated based upon comparison to the above stated performances, features and options, and the project specifications.

Anticipated Work: Contractor shall fully disconnect the existing boiler with regards to the existing building automation and power conduit and conductors, and flue, hydronic, gas and condensate branch piping connections. These components shall remain for reuse, modification and reconnection to the new replacement boiler. Protect as required during demolition and replacement phase. Thoroughly purge and drain the existing boiler in place prior to removal.

Legally remove and discard the existing boiler from the mechanical room to the building exterior and from site. The existing boiler base structure shall remain. Provide new boiler shall be set atop this existing base. Provide, extend and connect new branch piping to the new boiler as necessary. Contractor shall configure and connect to the exact flue, hydronic, gas and condensate piping and power and control conduit and conductor connection points with the exact boiler manufacturer provided prior to order, rough-in and installation. All extension materials shall match existing components as close as practical and shall be equal. If an alternate manufacturer is used, contractor shall fully coordinate and provide all associated electrical changes (MCA, MOCP, etc.) and adjust accordingly by coordinating with all applicable trades. Existing gas and hydronic piping shut-off valves shall be reused. For the return pipe branch prior to boiler inlet connection, provide an inline strainer with mesh in compliance with warranty requirements of the boiler manufacturer. In each hydronic supply and return pipe main, near high points adjacent to boiler, provide new automatic air vents to replace existing automatic air vents. After leak testing is completed, fully insulate new branch piping (matching the existing) in strict accordance with ASHRAE 90.1. Provide, extend and connect electric power and building automation control conduit and conductors to appropriate connection points. Control work shall be limited to bringing this boiler online, including the onboard boiler controls interface, and properly configuring this new boiler with existing building automation control systems. No other controls related work shall be anticipated under this project scope. Maintain the integrity and operation of any existing electrical on hydronic piping systems as applicable. Fully refill and purge existing hydronic piping system, complete boiler manufacturer's recommended start-up procedure (including a signed and dated checklist by the contractor to the owner) and configure with existing building HVAC systems as necessary to make completely operational. At project completion, contractor shall provide owner's selected representative (coordinate with Mr. Richard Nance with The Port of Caddo-Bossier) with one hour training of boiler operation/troubleshooting and two copies of boiler operation and maintenance manuals.

Special Conditions: Schedule all work phasing and implementation in advance with and as approved by owner to minimize the disruption to normal business operations. Take all necessary precautions to not damage any interior building finishes, including, but not limited to, flooring, walls, etc., in conjunction with boiler removal and new unit installation. If any associated damage occurs, patch to match existing to the satisfaction of the owner.

EXHIBIT B

SECTION 230000 - GENERAL PROVISIONS

PART 1 - GENERAL

1.1 SCOPE

A. The mechanical portion of this project includes all labor, materials, equipment, etc., required to provide the complete mechanical work to fulfill the intent of the Contract Documents.

1.2 RELATED DOCUMENTS

A. All applicable provisions of Division 0 and 1 govern work under this division. Refer to these articles in the specifications for additional information.

B. All work shall be in compliance with the currently enforced edition of the applicable state, national, and local ordinance and building codes. No additional compensation shall be granted for work which must be changed as a result of the work not originally complying with the codes and standards, etc.

C. Refer to each section for additional applicable codes and reference standards.

1.3 FEES AND TAXES

A. This Contractor is responsible for all inspection fees required by local authorities having jurisdiction. Local building permits shall not be required for this project. The Contractor is also responsible for all taxes levied for labor and materials associated with the mechanical portion of the work. After completion of the work, a certificate of final inspection shall be provided showing approval from the local Inspector.

1.4 SUBMITTALS

A. Submittals shall be provided for all equipment, fixtures and other items indicated. Product data shall be from published manufacturer's data. Data shall include enough information so that the Engineer can verify compliance with codes, standards, and the contract documents. Submittal shall not contain data that is not relevant to the equipment being submitted. The data shall be highlighted by arrows, underlining, etc. Broad, general data, is not acceptable. Data shall be presented at one time, in a neatly bound and organized manner.

B. Submit a single electronic copy or a minimum of 5 copies of each required submittal. Electronic submittals shall be divided by individual specification division and only combined where total document size is less than 100 pages. The Engineer will return the copies marked with action taken and corrections or modifications required. Unless resubmittal is requested, the submittal may serve as the final submittal.

C. The contractor shall provide and maintain at the site a set of prints which accurately represent the actual installation of all work under this Division. Any changes in sizes, locations, dimensions, etc. shall be shown.

D. At the completion of the Project, a set of marked-up drawings, including DIMENSIONED, location of all underground piping shall be provided to the owner.

1.5 OPERATING AND MAINTENANCE MANUALS AND INSTRUCTIONS

A. Operating and Maintenance Data includes printed information, such as manufacturer's installation instructions, manufacturer’s service manuals, manufacturer’s lubrication charts, standard wiring diagrams, and a parts list including the price of each item.

B. Mark each copy to show applicable choices and options. Where printed Operating and Maintenance Data includes information on several products that are not required, mark copies to indicate the applicable information.

C. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Operation Data:
    1. Emergency instructions and procedures.
    2. System, subsystem, and equipment descriptions, including operating standards.
    3. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
    4. Description of controls and sequence of operations.
    5. Piping and wiring diagrams.

2. Maintenance Data:
    1. Manufacturer's information, including list of spare parts.
    2. Name, address, and telephone number of Installer or supplier.
    3. Maintenance procedures.
    4. Maintenance and service schedules for preventive and routine maintenance.
    5. Maintenance record forms.
    6. Sources of spare parts and maintenance materials.
    7. Copies of maintenance service agreements.
    8. Copies of warranties and bonds.

D. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

E. Do not submit Operating and Maintenance Data until compliance with requirements of the Contract Documents has been confirmed.

1.6 PRIOR APPROVAL

A. The drawings and specifications are intended to indicate a standard of quality for items by identifying manufacturer’s names and model numbers. It is the responsibility of the contractor to prove equality for any substitutions.

The contractor shall submit a list of proposed substitutions to the Engineer. All proposed substitutions shall be in writing to the Engineer, at least, ten (10) calendar days prior to bid opening. The submittal will list the proposed substitutions from published manufacturer’s data, which cover the applicable features of the submitted equipment. Any approvals shall be issued in writing.

1.7 GUARANTEE

A. The contractor shall fully guarantee the installation against defects in materials and workmanship which may occur under normal usage for a period of one year after owner's acceptance. Defects shall be promptly remedied at no cost to the owner. This guarantee is in addition to, and not a limit to, any other guarantees or warranties.

1.8 DEFINITIONS. The following words and phases are defined:

A. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference. Location is not limited.

B. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect/Engineer, requested by the Architect/Engineer, and similar phrases.

C. "Approved": The term "approved," when used in conjunction with the Architect's/Engineer's action on the Contractor's submittals, applications, and requests, is limited to the Architect's/Engineer's duties and responsibilities as stated in the Conditions of the Contract.

D. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

E. "Furnish": The term "furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

F. "Install": The term "install" describes operations at the Project site including the actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

G. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

H. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform

I. "Project site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

J. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.9 INSPECTION OF THE SITE

A. The drawings are prepared from the most accurate information available. However, in order to insure responsible bidding by the contractor, he shall, prior to placing any bids, visit the site to verify existing conditions, the locations, sizes, depths, pressures, etc., of all existing utilities and become familiar with working conditions, hazards, existing grades, obstructions, local requirements involved, etc.

B. All proposals shall take these existing conditions and any speculated revisions needed into account. The contractor shall be fully responsible for his bid regardless of any additional site information which may be uncovered after a contract is signed.

1.10 CONSTRUCTION SAFETY

A. The plans and specifications do not include items necessary for the contractor to insure the safety of his personnel on the project construction site. Construction site safety for the project is the responsibility of the contractor. Reference other sections of these specifications for any additional information.

1.11 DAMAGE

A. The contractor shall be held accountable to repair, at no cost to the owner, any damage to existing wiring, piping, or other materials and equipment intended to remain.

B. The contractor shall be held accountable to repair, at no cost to the owner, any damage to project due to failure to recognize associated hazards such as leaks, scheduling of work, poor workmanship, excessive cutting, etc.

1.12 DRAWINGS AND SPECIFICATIONS

A. Should be considered as complimentary to each other. What is required by one shall be binding as if required by both. If conflicts between plans and specifications are found, the Engineer shall be contacted to secure clarification, prior to bidding. The contractor shall verify all dimensions and existing conditions.

PART 2 - EXECUTION

2.1 WORKMANSHIP

A. All work shall be done in a professional and complete manner by experienced craftsmen. Unsatisfactory workmanship shall be duly noted and corrected at the contractor’s expense.

B. Only new materials shall be used, unless otherwise indicated on plan or prior approved.

2.2 MANUFACTURER’S INSTALLATION INSTRUCTIONS

A. All equipment shall be installed in accordance with manufacturer’s installation instructions.

2.3 PROTECTION OF EQUIPMENT

A. The contractor shall provide protection of stored material and installed equipment against dirt, rust, moisture, and abuse from other trades. Where tarps or other cover is used, provide air circulation to prevent condensate build up. No materials or equipment shall be stored directly on the ground. Ductwork, piping and equipment are prohibited from use as scaffolding or personnel supports.

B. Upon completion of work, all equipment, fixtures, piping, etc., shall be cleaned to the satisfaction of the Architect. All repairs due to damage shall be at the Contractor's expense.

2.4 CONFLICTS, INTERFERENCES AND COORDINATION BETWEEN TRADES

A. Coordinate work so as to conform with the progress of the work of others. The drawings are only intended to indicate the extent, general location and arrangement, of piping systems, ductwork and equipment. The drawings are not to be construed as shop drawings. Any questions regarding the information given on the plans shall be directed to the Engineer for clarification. The contractor shall refer to other sections of the specifications and other drawings such as structural, electrical, etc., in order to eliminate conflicts when laying out his work. The contractor shall be responsible for the proper coordination of the mechanical work with the installations under other Divisions for clearances, etc. Any changes required to avoid interferences shall be submitted to the Architect for approval and shall be made, as approved, without additional cost to the Owner.

B. Code requirements shall have precedence over plans or specifications in the event of a conflict. If a discrepancy or conflict exists between specifications and drawings, drawings shall take precedence over specifications except as pertaining to quality. Manufacturer's installation instructions shall govern the installation of all equipment.

C. The contractor shall coordinate with equipment suppliers for any requirements specific to the equipment provided which may not be shown on the plans or given in the specifications. The contractor shall include the provision and installation of such requirements in his bid. The contractor shall coordinate with equipment suppliers, prior to bid, to determine what ancillary equipment is or is not provided with the equipment, such as bolts, gaskets, oils, drive belts, etc. Coordinate with Owner for owner supplied equipment.

D. Equipment requiring set grades or elevations and piping has precedence over ductwork, conduit, boxes, etc. as to location.

E. The contractor shall coordinate with other equipment providers to insure correct operation of the equipment, such as, phase rotation, interlocking, accessibility, etc.

F. The contractor shall examine the plans for the location of suitable openings and aisles for the passage of equipment to be installed under this Division. The contractor shall be responsible for having suitable openings and aisles left open until his equipment has been properly installed.

G. Except as otherwise noted, it shall be understood that the indication and/or description of any item, in the drawings or specifications, or both, carries with it the instruction to furnish and install the item, regardless of whether or not this instruction is explicitly stated as part of the indication or description.

H. The right is reserved to make reasonable changes in locations of equipment indicated in Drawings prior to installation without an increase in the contract cost.

I. The drawings and specifications do not undertake to indicate every item required to produce a complete and properly operational installation. Material, equipment or labor not indicated, but which can be reasonably inferred to be necessary for a complete installation shall be provided.

2.5 CUTTING AND PATCHING

A. Every effort shall be made to build-in the work as the job progresses. As required, cutting and patching for the installation of sleeves, piping, equipment, etc., shall be coordinated with the General Contractor. Do not cut any structural element without written permission from the Structural Engineer.

2.6 EQUIPMENT CONNECTIONS

A. The contractor shall make final connection of all required services to all equipment items furnished, including that provided by others or by the owner. Equipment shall be left in a ready to operate state.

2.7 FLASHING AND WATERPROOFING

A. All building penetrations to outside shall be flashed, as required, to prevent leaks.

END OF SECTION 230000

ENG.26.012
2,000 MBTU/hr Gas-fired Condensing Boiler Equipment Replacement

SPECIAL PROVISIONS

SALES/USE TAX EXEMPTION: Contractor is not required to pay any state or local sales or state or local use taxes on materials and equipment which are affixed and made a part of the real estate of the project or work which is permanently incorporated into the project or work (hereinafter referred to as "applicable materials and/or equipment"). All purchases of applicable materials or equipment shall be made by the Contractor on behalf of and as the agent of the Caddo-Bossier Port Commission (OWNER), a political subdivision of the State of Louisiana. No state and local sales and use taxes are owed on applicable materials and equipment under the provisions of ACT 1029 of the 1991 Regular Session – Louisiana Revised Statute 47:301 (8) (C). OWNER will furnish Contractor a certificate on a form supplied by the Louisiana Department of Revenue and Taxation and/or local taxing authorities which certifies the OWNER is not required to pay such state or local sales and use taxes. Refer to "Certificate of Sale/Use Tax Exemption" of this Project Manual. Contractor shall furnish a copy of such certificate to all vendors or suppliers of the applicable materials and equipment. The OWNER agrees to indemnify Contractor against the payment of any state or local taxes which Contractor may be forced to pay on the purchase of applicable materials and equipment. The Contractor shall pay all other taxes which are required to be paid regarding the work or the project or materials or equipment supplied or purchased by the Contractor for the work under this contract.

Any provisions of this contract which are or may appear to be contrary to the provisions hereof are to be interpreted within the context of this section.

Payment Requests for Tax Exempt Items: Payment requests for applicable materials and equipment which are tax exempt in accordance with paragraph above entitled "Sales/Use Tax Exemption" shall be submitted separately (but at the same time) from progress payment requests. The "tax exempt" payment requests shall include a description of each item purchased, name of the supplier, invoice number and date, and the cost of each item excluding taxes. The "tax exempt" payment requests shall not include any amount for Contractor's or subcontractor's labor. Copies of invoices shall be attached to the request.

Contractor shall not include sales tax on any material at time of bid. If sales tax is included, it will not be reimbursed as a payment request during construction or at any other time.

INVOICE NO._____ VENDOR'S ADDRESS:_____			
SOLD TO: Caddo-Bossier Port Commission Prime Contractor, Agent		SHIP TO: (Contractor/Subcontractor)	
SALESPERSON	DATE	ORDERED BY: DATE ORDERED: ORDER NO:	SHIP VIA
F.O.B.	TERMS		REFERENCE
QUALITY	DESCRIPTION	UNIT PRICE	AMOUNT

Subtotal	
Tax Rate	
Sales Tax	
Shipping & Handling	
Total Due	

EXHIBIT C

SECTION 235216 - STAINLESS STEEL FIRETUBE CONDENSING BOILERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes packaged, factory-fabricated and -assembled, gas-fired, firetube ferritic stainless steel ultra-high efficiency condensing boilers, trim and accessories for generating hot water.

1.2 REFERENCES

A. ASME Section IV

B. CAN-1.3.1-77, Industrial and Commercial Gas Fired Packaged Boilers

C. CSD-1, Controls and Safety Devices

D. AXA XL

E. NFPA 70 National Electric Code (NEC)

F. CSA 4.9, ANSI Z21.13

G. AHRI-1500

H. ASHRAE 90.1

1.3 SUBMITTALS

A. Product Data: Include performance data, operating characteristics, technical product data, rated capacities of selected model, weights (shipping, installed and operating), installation and start-up instructions, and furnished accessory information.

B. Shop Drawings: For boiler, standard boiler trim and accessories.

1. Product Data Submittal (“PDS”) End Assembly Drawing: Detail overall dimensions, connection sizes, connection locations, and clearance requirements.

2. Wiring Diagrams: Detail electrical requirements for the boiler including wiring diagrams for power, interlock and control wiring. Clearly differentiate between portions of wiring that are factory installed and portions to be field installed.

C. Certificate of Product Rating: Submit AHRI Certificate indicating Thermal Efficiency, Combustion Efficiency, Materials of Construction, Input, and Gross Output conform to the design basis.

D. Thermal efficiency curves: Submit thermal efficiency curves between and including minimum and maximum rated capacities, for return water temperatures ranging from 80°F to 160°F.

E. Water side pressure drop curve.

F. Flue gas temperature curves: Submit flue gas temperature curves for minimum and maximum boiler capacity, for return water temperatures ranging from 80°F to 160°F.

1. If submitted flue gas temperatures or excess O2% levels, minimum or maximum inputs are different from that of the basis of design manufacturer and model, the manufacturer shall be responsible for draft calculations and potential costs associated with reselection of the flue gas exhaust vent system.

G. Source quality-control test reports.

H. Field quality-control test reports: Start-up by a factory authorized service organization.

I. Operation and Maintenance Data: To be included in the boiler Installation, Operation and Maintenance Manual.

J. Warranty: Standard warranty specified in this Section.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firms regularly engaged in the manufacture of condensing hydronic boilers with welded steel pressure vessels, whose products have been in satisfactory use in service for not less than twenty-five (25) years. The manufacturer must be headquartered in North America and manufacture pressure vessels in an ASME-certified facility wholly owned by the manufacturer. The specifying engineer, contractor and end customer must have the option to visit the factory to witness test fire and other relevant procedures.

B. Electrical Components, Devices and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. ASME Compliance: Fabricate and label boilers to comply with ASME Boiler and Pressure Vessel Code, Section IV “Heating Boilers”, for a maximum allowable working pressure of 160 PSIG.

D. CSD-1 Compliance: The boiler shall comply with ASME Controls and Safety Devices for Automatically Fired Boilers (CSD-1).

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

F. UL/CSA/ANSI Compliance: Boilers must be tested for compliance with either ANSI Z21.13/CSA 4.9, “Gas-fired low pressure steam and hot water boilers” or UL 795, “Standard for Commercial-Industrial Gas Heating Equipment.” Boilers shall be listed and labeled by ETL, and bear the ETL mark as a complete, factory-packaged boiler.

G. AHRI Compliance: Boilers shall be witness tested and rated in accordance with the AHRI-1500 test standard and verified by AHRI.

H. The equipment shall be of the type, design, and size that the manufacturer currently offers for sale and appears in the manufacturer’s current catalog.

I. The equipment shall fit within the allocated space, leaving ample allowance for maintenance and inspection.

J. The equipment shall be new and fabricated from new materials. The equipment shall be free from defects in materials and workmanship.

K. In order to provide unit responsibility for the specified capacities, efficiencies, and performance, the boiler manufacturer shall certify in writing that the equipment being submitted shall perform as specified.

1.5 COORDINATION

A. Mechanical contractor shall coordinate the size and location of concrete bases. Drill/set anchor-bolt into existing concrete base.

1.6 WARRANTY

A. Standard Warranty: Manufacturer’s standard form in which manufacturer agrees to repair or replace components of boilers that fail in materials or workmanship within specified warranty period provided the boiler is installed, controlled, operated and maintained in accordance with the Installation, Operation and Maintenance Manual.

1. Warranty Period for the Pressure Vessel and Heat Exchanger: The boiler manufacturer shall warranty against failure due to:
    a. Flue gas condensate corrosion, and/or defective material or workmanship for a period of ten (10) years, non-prorated, from the date of shipment from the factory.
    b. Thermal shock for the lifetime of the boiler.
2. Warranty Period for the Burner: The boiler manufacturer shall warranty the burner head against defective material or workmanship for a period of five (5) years, non-prorated, from the date of shipment from the factory.
3. Warranty Period for all other components: The boiler manufacturer will repair or replace any part of the boiler that is found to be defective in workmanship or material for a period of two (2) years, non-prorated, from the date of shipment from the factory.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. This specification is based on the Endura XE series boilers as manufactured by Fulton. Equivalent units and manufacturers must meet all performance criteria, and will be considered upon prior approval. Alternate acceptable manufacturers shall include, but not be limited to, Aerco (Watts) or a prior-approved equal.

B. Basis-of-Design Product: Subject to compliance with requirements, provide:
    1. Fulton Endura XE model EXE-2000 stainless steel firetube condensing boiler.
        a. Alternate boilers must equal or exceed all aspects of this specification in its entirety throughout. Boilers seeking an approval shall provide documentation that supports this requirement.

C. The boiler manufacturer shall have the capability to construct an engineered hydronic system, skid mounted, for the above referenced boilers incorporating single point electrical, supply water, return water, fresh water make up, fuel, and drain. The boiler manufacturer shall have the engineering capabilities for all aspects of the mechanical, electrical and control design of the skidded system.

2.2 CONSTRUCTION

A. Description: Factory-fabricated, -assembled, and -pressure tested, ferritic stainless steel firetube condensing boiler with heat exchanger sealed pressure tight, built on a steel base; including flue gas vent and combustion air intake connections, water supply, water return, condensate drain, and controls. The boiler, burner and controls shall be completely factory assembled as a self-contained unit. Each boiler shall be neatly finished, thoroughly tested, and properly packaged for shipping. For closed-loop water heating service only.

B. Pressure Vessel: Design and construction shall be in accordance with Section IV of the ASME Code for heating boilers.
    1. The pressure vessel shall be a counter-flow design with internal water-baffling.
    2. The boiler return and supply water connections shall be NPT or ANSI Flanged. The water connections shall not be designed to support an external structural load from the piping system.
    3. To ensure heat exchanger longevity, the pressure vessel shall be a high volume design with a water volume to heat capacity ratio of not less than 16.0 Gallons per MMBTU/hr.

4. The maximum water pressure drop across the boiler inlet and outlet connections at a high-fire 20°F delta-T condition shall not exceed 6 psi.

C. Heat Exchanger: The heat exchanger is defined as the surfaces of the pressure vessel where the heat of combustion gases is transferred to the hydronic heating liquid.

1. The boiler shall be a single-pass firetube design, such that all combustion chamber components are within water-backed areas. Watertube boilers will not be accepted.

2. Furnace to tube connections shall be constructed with low weld heat intensity, a tube to tube minimum spacing of 2 tube diameters center to center, minimum 1 tube diameter tube to tube ligament, and shall not contain any overlapping welds.

3. Heat transfer capability shall be maximized via the use of corrugated firetubes. The corrugation process shall not remove any material from the tubes. Finned, twisted tape, or coil type tube inserts negatively impact ease of maintenance and will not be accepted.

4. To ensure long heat exchanger life, the design shall be such that tubesheet to tube weld stresses while the boiler is in operation shall never exceed 3.5 ksi. Alternate boilers to the basis of design model and manufacturer shall provide a factory Finite Element Analysis (FEA) report detailing compliance, no exceptions will be granted.

5. Material: The heat exchanger furnace and tubesheets shall be constructed of Duplex stainless steel, firetubes shall be constructed of Ferritic stainless steel. Austenitic stainless steels such as 316Ti, 316L and 304 provide insufficient yield strength and are subject to catastrophic Chloride Stress Corrosion Cracking failure, and thus are not accepted.

a. For long term durability, heat exchanger material of construction must have a minimum Ultimate Tensile Strength of 66 ksi, and a minimum 0.2% Yield Strength of 41 ksi. Weaker materials of construction with reduced strength are not accepted. Boilers seeking an approval must provide documentation that supports this requirement or will be rejected.

b. The nickel content in weight percent shall not exceed 6.5%. A nickel content between 7 to 20% is highly susceptible to Stress Corrosion Cracking (SCC), a mode of cracking failure instigated without warning which can be catastrophic in pressurized equipment. Austenitic stainless steels including 316(L) and 304(L) are most prone to this mode of failure and are not accepted.

c. Heat exchangers constructed of cast aluminum, mild steel, cast iron or copper finned tube materials are not accepted.

D. Exhaust Manifold: Shall collect flue gases and flue gas condensate for safe disposal and shall be of stainless steel construction.

E. Burner: Standard natural gas, forced draft.

1. Air and gas pre-mix on the suction side of the fan with ratio controlled electronically by a Flame-by-Wire™ combustion control system.

2. Turndown: Burner modulation ratio shall be no less than 15:1 (minimum).

3. NOx Emissions: When operating on natural gas, the burner shall maintain a level of <20 ppm over the complete combustion range at a 3% O_2 correction.

4. Ignition: Automatic direct spark ignition electrode or pilot ignition system.

5. Alternative Renewable Fuels: The burner shall be hydrogen-ready for blends of up to 20% hydrogen and 80% natural gas, including fossil-free renewable natural gas (RNG). To ensure future-proof service, those seeking approval shall provide documentation proving successful laboratory tests on Hydrogen blends.

F. Blower: Variable speed centrifugal fan to operate during each burner firing sequence and to pre-purge and post-purge the combustion chamber.

1. Motor: Closed-loop brushless DC variable speed motor with hall effect sensor feedback; internal electronic commutation controller with built in speed control and protection features; long life, sealed, ball bearing with high temperature grease.

2. Motor Alternate: Totally enclosed fan-cooled premium efficiency AC motor, Class H insulation, variable speed capable with sealed bearings. Variable speed drive with IP20 housing, 0-400Hz frequency output capability, overload capacity of 150% for 60 seconds and 200% for 3 seconds, shall fully modulate blower speed according to burner modulation.

G. Main Fuel Train:

1. A factory mounted fuel train shall be supplied. The fuel train shall be fully assembled, leak tested, and enclosed within the boiler cabinet. Burners with inputs exceeding 400,000 BTU/hr the gas train shall be complete with factory mounted and wired high and low gas pressure switches in compliance with CSD-1.

H. Boiler Enclosure:

1. Cabinet: Jacketed steel enclosure with full height front access door, fully removable access panels, mounted on a steel skid with steel plate decking.

2. Control Enclosure: Equivalent to NEMA 250, Type 1.

3. Finish: Cabinet shall be powder coated.

4. Combustion Air: Connection collar located on the boiler cabinet.

I. Rigging and Placement: The boiler shall include provisions for pallet jack and forklift handling.

J. Characteristics and Capacities:

1. Standard capacities shall be based on 100% water

2. Minimum Design Water Pressure Rating: 160 psig

3. Minimum Return Water Temperature: None

4. Maximum Allowable Water Temperature (ASME): 210°F

5. Minimum Water Flow Rate: EXE-2000: 16 GPM

6. Maximum Water Delta-T: 50°F default; configurable to 100°F where conditions allow

7. Jacket Losses: External convection and radiation heat losses to the boiler room from the boiler shall comply with IAW ASHRAE 103-2007, and shall not exceed 0.2% of the rated boiler input at maximum capacity.

K. Flow switches, dedicated circulator pumps, or primary-secondary arrangements shall not be required to protect the boiler from thermal shock. Boilers requiring the use of flow switches or primary-secondary piping arrangements will not be accepted.

L. The boiler shall fit through a standard 36-inch door without requiring disassembly.

M. The equipment shall be in strict compliance with the requirements of this specification and shall be the manufacturer's standard commercial product unless specified otherwise. Additional equipment features, details, accessories, etc. which are not specifically identified but which are a part of the manufacturer's standard commercial product, shall be included in the equipment being furnished.

2.3 TRIM

A. Safety Relief Valve: ASME rated 160 psig.

B. Pressure and Temperature Gauge: Minimum 3-1/2" diameter, combination pressure and temperature gauge.

C. Flue Gas Condensate Drain Trap: A flue gas condensate drain trap shall be provided to prevent positive pressure exhaust gases from entering the boiler room.

D. Flue Gas Condensate Neutralization: pH neutralization shall be provided.

2.4 CONTROLS

A. Integrated Control Panel: Shall include the following factory mounted and wired devices:

1. User Interface: 5-inch color touchscreen control display on the front exterior panel. The user interface shall allow access for configurating parameters, boiler control and monitoring; and shall feature a screen saver, boiler status, configuration, history and diagnostics.
2. Flame Safeguard.
3. Field Connections Terminals.
4. Controls Transformers and Power Supplies: 24VAC, 24VDC, 5VDC

B. Burner Operating Controls: To maintain safe operating conditions, factory mounted and wired burner safety controls limit burner operation:

1. High Limit: A manual reset electronic high temperature device shall stop the burner if operating conditions rise above maximum boiler design temperature.
2. Low-Water Cut Off: Electronic probe type mounted in the pressure vessel shall prevent burner operation on low water alarm.
3. Air Safety Switch: Prevent operation unless sufficient blower pressure is proven.

C. Fuel/Air Ratio Controls: Maintain the ratio of fuel to air throughout the burner modulation range.

1. A Flame-by-Wire™ or equivalent electronic combustion control system shall be provided to empower technicians to accurately dial-in positions electronically. The system shall feature O_2 Compensation™ or equivalent to continuously tune the burner air-fuel ratio in real-time, automatically adjusting for changes in seasonality to maximize combustion efficiency and condensate production for greater energy savings and reduced emissions. Pneumatic (“negative regulation”, “zero governor”) type systems offer far less precision and are not capable of independent air and gas control and are not accepted.
2. The air and gas motor position tolerances shall be no greater than +/- 0.1° to allow for much more precise control of air-fuel ratio compared to linkages that may slip, or pneumatic gas valves which drift over time and have difficulty handling environmental and installation fluctuations.
3. Combustion air flow shall be controlled by variable fan speed and a closed-loop motor actuated butterfly valve with position feedback.
4. Gaseous fuel flow shall be controlled by a separate closed-loop motor actuated butterfly valve with position feedback.
5. The air/fuel ratio shall be optimized across the entire modulation range through the use of a non-linear combustion curve. Ignition, low fire to high fire shall be comprised of ten (10) total points where each point includes discrete electronic parameters for fan speed, air position, and gas position. Two (2) point controls only allow for low fire and high fire settings, are incapable of generating a non-linear combustion curve, and thus will not be accepted.
6. O_2 Compensation™: 100% duty cycle system to maximize efficiency throughout seasonality:
    a. The system shall autonomously adjust the fuel-air ratio during operation thereby reducing emissions and optimizing heating reliability, combustion efficiency, and the dewpoint temperature for formation of flue gas condensate.

b. O_2 feedback or monitoring-only type systems that cannot automatically adjust combustion for seasonal variability shall not be accepted. Systems that trim at less than a 100% duty cycle are unable to account for rapid changes in operating conditions and shall not be accepted.

D. Temperature Operating Controls and Instrumentation:

1. Outlet (supply) operating water temperature sensor: Sensor shall be dual-element type.
2. Inlet (return) water temperature sensor.
3. Combustion air temperature sensor.
4. Flue gas exhaust temperature sensor: Probe shall be stainless steel.
5. Proportional Integral Derivative (PID) temperature load control capability for hydronic and domestic hot water in standalone or lead-lag operation.
6. Time of day display.
7. Customizable boiler name display.
8. Alarm history for a minimum 100 most recent alarms including status at time of lockout.
9. Administrative password protection options.
10. Outdoor air temperature (OAT) reset controls with warm weather shutdown:
    a. OAT reset shall automatically adjust the setpoint according to changes in the outdoor air temperature, and disable the boilers above a configurable outdoor air temperature.
    b. The boiler manufacturer shall provide an OAT sensor.
    c. The temperature sensor shall be field installed in an outdoor area not exposed to direct sunlight or the exhaust of other mechanical equipment, and wired the boiler controller.
    d. The control shall be field programmed with the outdoor reset schedule.

E. Pump and Motorized Valve Controls:

1. Motorized isolation valve control:
    a. Upon heat demand for the boiler, the control shall provide an enable/open signal.
    b. After the burner is disabled and upon the heat exchanger delta-T dropping to a user programmable delta-T, the signal will be disabled. Boilers which utilize only a time delay close as the only means of valve actuation are unable to optimize for residual heat, and will not be accepted.
    c. In variable primary arrangements utilizing integrated lead-lag, the control shall hold the lead boiler isolation valve open at all times.
2. Dedicated boiler (primary) pump control:
    a. A dry contact start/stop signal shall be provided. The contact shall be configurable to close upon local burner demand and shall open after a time delay when burner demand ends.
    b. Variable speed signal shall be provided to modulate dedicated boiler (primary) pump speed with a 4-20mA output signal.
3. System (secondary) pump control:
    a. A dry contact start/stop signal shall be provided. The contact shall be configurable to close when the plant exits warm weather shutdown mode, and open when the plant enters warm weather shutdown mode.
4. Domestic hot water (DHW) pump control:

a. A dry contact shall be provided for a start/stop signal. The contact shall be configurable to close when a DHW heating demand exists and shall open when the DHW heating demand ends.

F. Lead-Lag Control of Modular (Multiple) Boiler Plants: Lead-lag capabilities shall be integral to the boiler controller for up to 10 boilers installed in the same hydronic loop and shall not require an external panel.

1. The boiler manufacturer shall provide a supply water header temperature sensor to be field installed in the common supply water piping.

2. Lead-lag operation shall not require a master boiler or external control panel. Field wired sensors or communication may be connected to any boiler in the lead-lag sequence.

3. The boilers shall communicate with each other via a private Ethernet/IP addressed network.

a. Field wiring between boilers shall be Cat5e or Cat6 Ethernet cable.

b. In the event a communication cable becomes damaged or interrupted, communication shall be lost with only one boiler and not the entire lead-lag operation. Daisy chain style wiring lacks this redundancy and shall not be accepted.

4. Sequence of Operation:

a. Upon loop temperature dropping below start point, the lead boiler shall be enabled at low fire and shall modulate according to the heating demand.

b. As lag boiler stages are enabled according to heating demand, burners shall return to low fire. Boilers shall modulate in parallel as a cohesive unit according to heating demand.

c. When all boilers are active they shall modulate in parallel up to full fire according to the heating demand.

d. As heating demand decreases, the sequence shall operate in reverse.

e. Rotation of the lead and subsequent lag boilers shall be automatic.

G. Building Automation System Interface: Hardware and software to enable building automation system (BAS) to monitor, control, and display boiler status and alarms.

1. Hardwired Contacts:

a. Monitoring: General Alarm.

b. Control with Factory Installed Jumper: Interlock for External Device, Remote Enable (“BMS Start/Stop”), Emergency Stop (“E-Stop”).

c. Remote Temperature Setpoint Signal: 4-20 mA

2. Communication Protocol: A Modbus communication interface with BAS shall enable BAS operator to remotely enable and monitor the boiler plant from an operator workstation.

2.5 ELECTRICAL POWER

A. Single-Point Field Power Connection: Factory-installed and factory-wired switches, transformers, control and safety devices and other devices shall provide a single-point field power connection to the boiler.

B. Electrical Characteristics:

1. Voltage: EXE-2000: 120 V

2. Phase: EXE-2000: One

3. Frequency: 60 Hz.

2.6 VENTING

A. The boiler shall be capable of operating with a stack effect up to -0.10” W.C. and a combined air intake and exhaust venting pressure drop up to 1.0” W.C.

B. Combustion Air Intake: It shall be acceptable to either direct vent the boiler using sealed combustion by drawing combustion air in from the outdoors or by drawing air from the mechanical space itself.

1. Sealed Combustion: Schedule 40 PVC pipe or smooth-walled galvanized steel, vent termination with 1/2” x 1/2” mesh bird screen.

2. Mechanical Space: Adequate combustion air and ventilation shall be supplied to the boiler room in accordance with boiler manufacturer requirements and local codes.

C. Flue Gas Exhaust: The flue gas exhaust stack shall be AL 29-4C, 444 or 316L stainless steel, listed and labeled to UL-1738 / C-UL S636 for use with Category II/IV appliances, guaranteed appropriate for the application by the manufacturer and supplier of the venting.

D. Common Exhaust Vents: The draft system shall be designed to prevent the backflow of exhaust gases through idle boilers. The common boiler vent shall not be combined with any other appliance.

E. Condensate Drain: Piping shall be galvanized, stainless steel, or Schedule 40 PVC/CPVC. Copper or carbon steel piping is not accepted.

2.7 SOURCE QUALITY CONTROL

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

B. Each boiler shall be installed and operated in a functioning hydronic system, inclusive of venting, as part of the manufacturing process. A factory test fire report corresponding to the boiler configuration shall be included with each boiler.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Before boiler installation, examine roughing-in for concrete equipment bases, anchor-bolt sizes and locations, and piping and electrical connections to verify actual locations, sizes, and other conditions affecting boiler performance, maintenance, and operations.

1. Final boiler locations indicated on Drawings are approximate. Determine exact locations before roughing-in for piping and electrical connections.

B. Examine mechanical spaces for suitable conditions where boilers will be installed.

C. Proceed with installation only after satisfactory conditions have been verified.

3.2 BOILER INSTALLATION

A. Install boilers level on concrete base, minimum 4 inches high.

B. Install gas-fired boilers according to NFPA 54. Equipment and materials shall be installed in an approved manner and in accordance with the boiler manufacturer’s installation requirements.

C. Assemble and install boiler trim.

D. Install electrical devices furnished with the boiler but not specified to be factory mounted.

E. Install control wiring to field-mounted electrical devices.

3.3 CONNECTIONS

A. Install piping from equipment drain connection to nearest floor drain. Piping shall be at least full size of connection. Provide an isolation valve if required.

B. Connect gas piping to boiler gas train inlet with isolation valve and union. Piping shall be at least full size of gas train connection. Provide a reducer if required.

C. Connect hot water supply and return water connections with shutoff valve and union or flange at each connection.

D. Install piping from safety relief valves to the nearest floor drain or local equivalent approved by local code.

E. Install piping from flue gas condensate drain connection to the condensate drain trap and to the nearest floor drain.

F. Boiler Venting:

1. Install flue venting and combustion air-intake.

2. Connect to boiler connections, flue size and type as recommended by the manufacturer.

G. Ground equipment.

H. Connect wiring.

3.4 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

1. After boiler installation is completed, the manufacturer shall provide the services of a field representative to inspect components, assemblies, and equipment installations, including connections and provide startup of the boiler and training to the operator.

2. Arrange with National Board of Boiler and Pressure Vessel Inspectors for inspection of boilers and piping. Obtain certification for completed boiler units, deliver to Owner, and obtain receipt.

B. Tests and inspections:

1. Perform installation and startup checks according to manufacturer’s written instructions.

2. Leak Test: Hydrostatic test. Repair leaks and retest until no leaks exist.

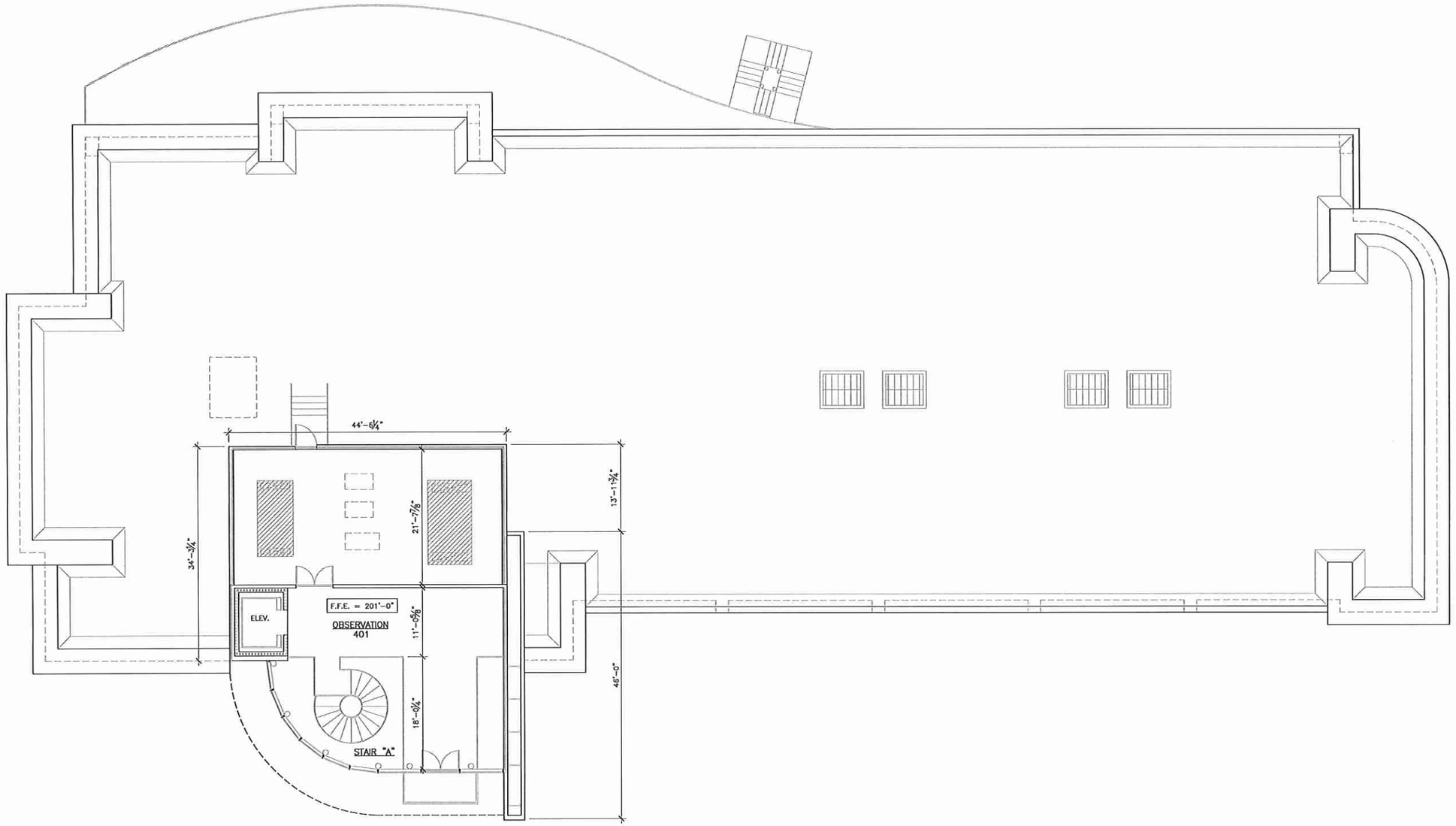
3. Operational Test: Start units to confirm proper motor rotation and unit operation. Adjust air-fuel ratio and combustion.

a. Check and adjust initial operating set points and high- and low-limit safety set points of fuel supply, water level and water temperature.

C. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 235216

EXHIBIT D



FOURTH FLOOR DIMENSION PLAN

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

IF SHEET IS LESS THAN 24" x 36", IT IS A REDUCED PRINT AND IS NOT TO SCALE SHOWN.

KEVIN BRYAN ARCHITECTS

KEVIN BRYAN ARCHITECTS L.L.C.
9045 ELLERBE ROAD, SUITE 107
SHREVEPORT, LOUISIANA 71106
WORK 318-865-0959
FAX 318-865-0343
KBARCHITECTS@BELLSOUTH.NET

REVISIONS

ARCHITECT

W. KEVIN BRYAN 5671 STATE OF LOUISIANA REGISTERED ARCHITECT

ENGINEER

PROJECT

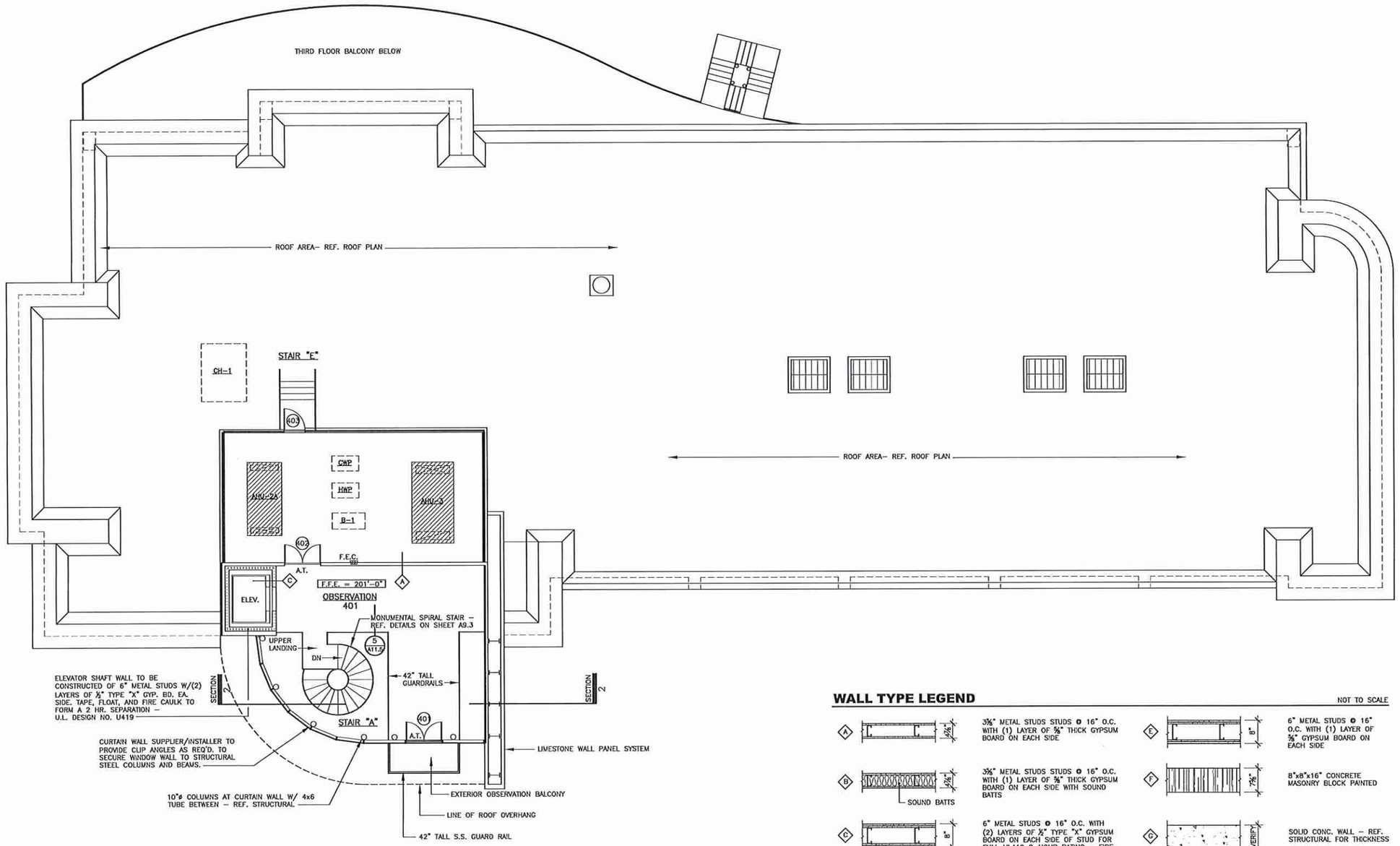
REGIONAL COMMERCE CENTER
PORT OF SHREVEPORT BOSSIER
10397 LA HIGHWAY ONE, SHREVEPORT, LA 71115

PROJECT INFO

Date	APRIL 2009
Scale	AS SHOWN
Drawn	
Job	

SHEET

A3.8 OF 46A



WALL TYPE LEGEND

NOT TO SCALE

A	3⅝" METAL STUDS STUDS @ 16" O.C. WITH (1) LAYER OF ⅝" THICK GYPSUM BOARD ON EACH SIDE	E	6" METAL STUDS @ 16" O.C. WITH (1) LAYER OF ⅝" GYPSUM BOARD ON EACH SIDE
B	3⅝" METAL STUDS STUDS @ 16" O.C. WITH (1) LAYER OF ⅝" THICK GYPSUM BOARD ON EACH SIDE WITH SOUND BATTS	F	8"x8"x16" CONCRETE MASONRY BLOCK PAINTED
C	6" METAL STUDS @ 16" O.C. WITH (2) LAYERS OF ½" TYPE "X" GYPSUM BOARD ON EACH SIDE OF STUD FOR FULL UL419 2–HOUR RATING – FIRE CAULK AS REQ'D.	G	SOLID CONC. WALL – REF. STRUCTURAL FOR THICKNESS
D	3⅝" METAL STUDS STUDS @ 16" O.C. WITH (1) LAYER OF ⅝" THICK TYPE "X" GYPSUM BOARD ON EACH SIDE TO FORM A FULL UL419 1–HOUR RATING		

FOURTH FLOOR PLAN

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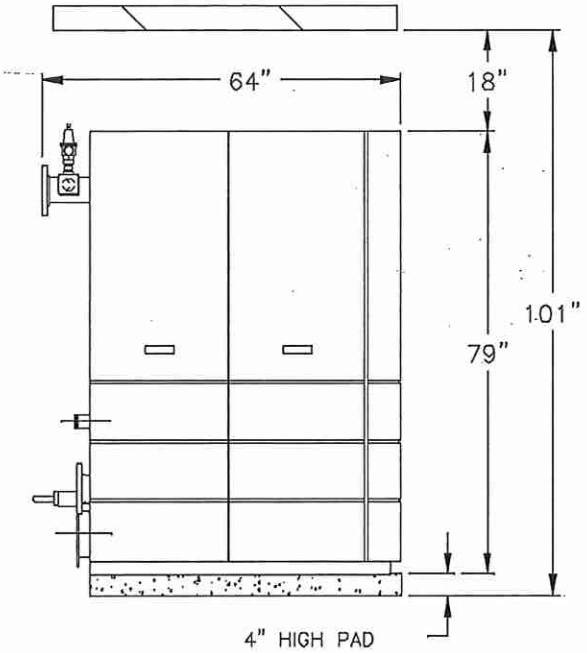
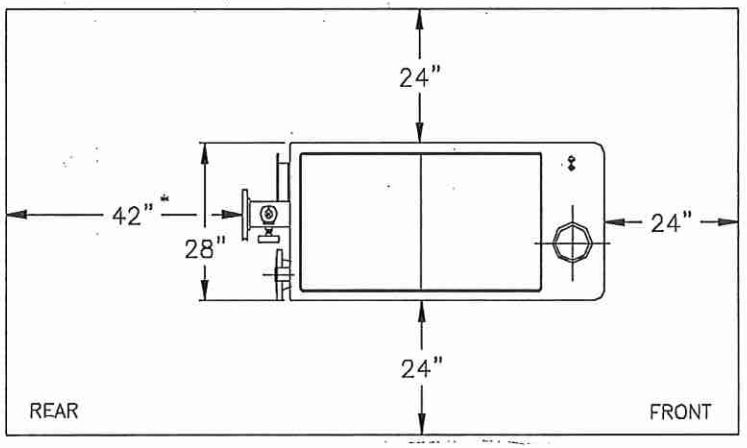
SHEET

A3.4 OF **46A**

SIDE VIEW



TOP VIEW



INSTALLATION CLEARANCES

1) THIS APPLIANCE MAY BE INSTALLED ON COMBUSTIBLE FLOORING
2) MINIMUM CLEARANCES TO ADJACENT CONSTRUCTION ARE AS FOLLOWS:

LEFT AND RIGHT SIDES: 24"
FRONT: 24"
REAR: 42" *
CEILING HEIGHT: 101"

NOTES:
1) REAR CLEARANCE MAY BE REDUCED TO 30" DEPENDENT UPON PIPING AND VENTING COMPONENT SELECTION, ARRANGEMENT, AND LOCAL CODE REQUIREMENTS.

AERCO INTERNATIONAL, INC. NORTHVALE, NJ 07647		
BENCHMARK 2 MIL. BTU GAS FIRED BOILER INSTALLATION CLEARANCES		
DWN.BY SCD DATE 052698 SCALE NTS APPD. MPC DATE 052898	SD-A-549	REV. D

EXHIBIT E

CADDO-BOSSIER PARISHES PORT COMMISSION

MINIMUM INSURANCE REQUIREMENTS

	COVERAGE	LIMITS
I.	**COMMERCIAL GENERAL LIABILITY** Coverage to include: Broad Form Contractual Liability Independent Contractors 3rd Party Limited Pollution buyback Federal Employees Liability Act (rail ops) as necessary Marine Liabilities as necessary: Wharfingers, Stevedores, Terminal Operations, Protection & Indemnity	$ 2,000,000 General Aggregate $ 2,000,000 Products/Ops Aggregate $ 1,000,000 Personal & Advertising $ 1,000,000 Each Occurrence $ 100,000 Rented Premises $ 5,000 Medical Expenses
II.	**BUSINESS AUTOMOBILE LIABILITY** Provides coverage for all owned, non-owned, hired commercial autos & trailers, as required.	$ 1,000,000 Any One Accident $ 5,000 Auto Med Pay (Additional limits may be required to satisfy the Motor Carrier Act of 1980 for transportation of hazardous materials.)
III.	**WORKERS COMPENSATION** Employers Liability USL & HW coverage, Maritime Employers Liability, In Rem, OCSLA	Statutory $ 500,000 each accident $ 500,000 policy limit / disease $ 500,000 each employee / disease If required
IV.	**POLLUTION AND ENVIRONMENTAL DAMAGE INSURANCE** As required. Example: Tenants engaged in handling or storage of petroleum products, chemical and other hazardous materials.	$ 3,000,000 occurrence / aggregate
V.	**EXCESS OR UMBRELLA LIABILITY** Excess of minimum underlying liability coverages set forth above.	$ 5,000,000 occurrence / aggregate
VI.	**PHYSICAL DAMAGE TO PROPERTY** Special Causes of Loss, including Flood (if required) All buildings and property including mobile equipment to be Insured	Replacement Cost

VII. All liability insurance and workers comp policies to include Waiver of Subrogation in favor of Port and underwriters' agreement to provide thirty (30) days' notice of cancellation or non-renewal.

VIII. All liability insurance policies (except Workers Comp) to name Port as additional insured, including primary and non-contributory clauses.

IX. All policies should be issued by companies with an A. M. Best rating of A- or better.

X. The Port reserves the right to grant exceptions to its insurance requirements for contracts not exceeding $150,000.00, provided, however, the contractor must meet the minimum requirements of $1,000,000 Broad Form Liability for Commercial General Liability (CGL) with a $2,000,000 aggregate, and workers' compensation insurance coverage, as required by Louisiana law.

Adopted: May 10, 1985
Revised: January 20, 1994
Revised: November 4, 2011
Revised: November 19, 2015
Revised: October 10, 2022