



City of Auburn, Maine

Financial Services

www.auburnmaine.gov | 60 Court Street
Auburn, Maine 04210
207.333.6601

September 20, 2019

Dear Bidder:

The City of Auburn is accepting written proposals for the Central Fire Station for a **Boiler Replacement Project**, located at 550 Minot Avenue, Auburn, ME. The City reserves the right to accept or reject any or all proposals in whole or in part and to waive any informality the City may determine necessary. The City also reserves to itself the exclusive right to accept any proposals when it is deemed by the City to be in its best interest. The City of Auburn is governed by Title 1 M.R.S.A. § 401-410, otherwise known as the Freedom of Information Act, which considers bid specifications as public documents. In awarding any proposal, the City may consider, but not be limited to, any of the following factors: Bidder qualifications, price, experience, financial standing with the City, warranties, references, bonding, delivery date, and service of Bidder. Vendors/Contractors shall be current on all amounts due to the City of Auburn prior to the City entering into any contract agreement. All proposals must include FOB to Auburn, Maine unless otherwise specified.

A **mandatory pre-bid meeting** to review the work site is scheduled for Tuesday, October 1, 2019 at 9:00 a.m. at the Central Fire Station, 550 Minot Avenue, Auburn, ME. Please contact Derek Boulanger at dboulanger@auburnmaine.gov to confirm participation.

Proposals will not receive consideration unless submitted in accordance with the following instructions to bidders. Please mark sealed envelopes plainly:

"Central Fire Station Boiler Replacement Project – Bid #2020-002."

Questions regarding this Request for Proposals should be directed to Derek Boulanger, Facilities Manager/Purchasing Agent, at (207) 333-6601, ext. 1135.

Please submit your proposal to the City of Auburn by **2:00 p.m. Thursday, October 10, 2019**. Proposals will be opened at 2:00 p.m. Proposals must be delivered to **Derek Boulanger, Facilities Manager/Purchasing Agent, 60 Court Street, Auburn, ME 04210** on or before the date and time appointed. No proposals will be accepted after the time and date listed above.

Sincerely,

Derek Boulanger
Facilities Manager/Purchasing Agent

Table of Contents

CONDITIONS AND INSTRUCTIONS TO BIDDERS 3
GENERAL CONDITIONS 4
1. Equal Employment Opportunity 4
2. Save Harmless 4
3. Subcontracting 4
4. Warranty 4
5. Retainage and Payments 4
6. Changes in the Work 4
7. Liens 5
BID PROPOSAL FORM 6
SCHEDULE OF VALUES 7
SAMPLE CONTRACT AGREEMENT 8-14
BID SPECIFICATIONS..... APPENDIX A

CONDITIONS AND INSTRUCTIONS TO BIDDERS

1. Bidders shall use the enclosed bid form and schedule of values forms for quotations. Whenever, in bid forms, an article is defined by using a trade name or catalog number, the term "or approved equal", if not inserted, shall be implied.
2. Submit a separate unit price for each item unless otherwise specified in the bid request. Award will be made on a basis of each item, or as a group, whichever is in the best interest of the City. Prices stated are to be "delivered to destination".
3. Bid proposals must be completed in full, in ink, and must be signed by firm official. Bid proposal **must be notarized** prior to bid being sealed and will be disqualified if not notarized. Bids may be withdrawn prior to the time set for the official opening.
4. Bids will be opened publicly. Bidders or representatives may be present at bid opening.
5. Awards will be made to the lowest responsible bidder, considering the quality of the materials, date of delivery, cost which meets specification and is in the best interest to the City of Auburn.
6. All transportation charges, including expense for freight, transfer express, mail, etc. shall be prepaid and be at the expense of the vendor unless otherwise specified in the bid.
7. The terms and cash discounts shall be specified. Time, in connection with discount offered, will be computed from date of delivery at destination after final inspection and acceptance or from date of correct invoice, whichever is later.
8. The City is exempt from payment of Federal Excise Taxes on the articles not for resale, Federal Transportation Tax on all shipments and Maine Sales Tax and Use Taxes. Please quote less these taxes. Upon application, exemption certificate will be furnished with the Purchase Order when required.
9. Time of delivery shall be stated. If time is of the essence, the earliest date may be a factor in the bid award.
10. No contract may be assigned without the written consent of the Finance Director or her designate. The contract shall not be considered valid until a purchase order has been issued to the successful bidder.
11. Please state **"Central Fire Station Boiler Replacement Project – Bid #2020-002."** on submitted sealed envelope.
12. The City of Auburn reserves the right to waive any formality and technicality in bids whichever is deemed best for the interest of the City of Auburn.
13. The bid question deadline is prior to 2:00 p.m. on October 8, 2019. Questions received after the deadline will not be answered.
13. The scope of work shall be substantially completed by December 20, 2019. Final completion shall be on or before January 20, 2020.

GENERAL CONDITIONS

1. Equal Employment Opportunity

The City of Auburn is an Equal Opportunity Employer and shall not discriminate against an applicant for employment, and employee or a citizen because of race, color, sex, marital status, physical and/or mental handicap, religion, age, ancestry or natural origin, unless based upon a bona-fide occupation qualification. Vendors and contractor or their agents doing business with the City shall not violate the above clause or the Civil Rights Acts of 1964. Violations by vendors shall be reviewed on a case-by-case basis and may mean an automatic breach of contract or service to the City of Auburn.

2. Save Harmless

The Bidder agrees to protect and save harmless the owner from all costs, expenses or damages that may arise out of alleged infringement of patents of materials used.

3. Subcontracting

The Bidder shall not subcontract any part of the work or materials or assign any monies due it without first obtaining the written consent of the municipality. Neither party shall assign or transfer its interest in the contract without the written consent of the other party.

4. Warranty

The Bidder warrants that all work will be of good quality and free from faults and defects, and in conformance with the specifications. All work not so conforming to these standards may be considered defective. The Bidder agrees to be responsible for the acts and omissions of all of its employees and all subcontractors, their agents and employees, and all other persons performing any of the work under a contract with the Bidder.

5. Retainage and Payments

5.1 Retainage in the amount of 10% will be held from each progress payment and shall be released at the discretion of the Project Engineer. Payments shall be made by the City to the Contractor 30 days after receipt of the request for payment.

6. Changes in the Work

6.1 The Contractor shall not proceed with extra work without an approved Change Order or Construction Change Directive. A Change Order which has been properly signed by all parties shall become a part of the contract.

6.2 A Change Order is the usual document for directing changes in the Work. In certain circumstances, however, the Owner may utilize a Construction Change Directive to direct the Contractor to perform changes in the Work that are generally consistent with the scope of the project. The Owner shall use a Construction Change Directive only when the normal process for approving changes to the Work has failed to the detriment of the Project, or when agreement on the terms of a Change Order cannot be met, or when an urgent situation requires, in the Owner's judgment, prompt action by the Contractor.

- 6.3 The Architect shall prepare the Construction Change Directive representing a complete scope of work, with proposed Contract Price and Contract Time revisions, if any, clearly stated.
- 6.4 The Contractor shall promptly carry out a Construction Change Directive which has been signed by the Owner and the Architect. Work thus completed by the Contractor constitutes the basis for a Change Order. Changes in the Contract Price and Contract Time shall be as defined in the Construction Change Directive unless subsequently negotiated with some other terms.
- 6.5 The method of determining the dollar value of extra work shall be by:
- a) an estimate of the Contractor accepted by Owner as a lump sum, or
 - b) unit prices named in the contract or subsequently agreed upon, or
 - c) cost plus a designated percentage, or
 - d) cost plus a fixed fee.
- 6.6 The Contractor shall determine the dollar value of the extra work for both the lump sum and cost plus designated percentage methods using the following rates. The rates include all overhead and profit expenses.
- a) Contractor - for any work performed by the Contractor's own forces, 10% of the cost;
 - b) Subcontractor - for work performed by Subcontractor's own forces, 10% of the cost;
 - c) Contractor - for work performed by Contractor's Subcontractor, 10% of the amount due the Subcontractor.
- 6.7 The Contractor shall keep and provide records as needed or directed for the cost plus designated percentage method. The Architect shall review and certify the appropriate amount which includes the Contractor's overhead and profit. The Owner shall make payments based on the Architect's certificate.

7. Liens

- 7.1 The Contractor shall deliver to the Owner a complete release of all liens arising out of this contract before the final payment or any part of the retainage payment is released. The Contractor shall provide with the release of liens an affidavit asserting each release includes all labor and materials for which a lien could be filed. Alternately, the Contractor, in the event any Subcontractor or supplier refuses to furnish a release of lien in full, may furnish a bond satisfactory to the Owner, to indemnify the Owner against any lien.
- 7.2 In the event any lien remains unsatisfied after all payments to the Contractor are made by the Owner, the Contractor shall refund to the Owner all money that the latter may be compelled to pay in discharging such lien, including all cost and reasonable attorney's fees.

BID PROPOSAL FORM
Central Fire Station Boiler Replacement Project - Bid #2020-002
Due: Thursday, October 10, 2019 at 2:00 PM

To: City of Auburn
Derek Boulanger,
Facilities Manager/Purchasing Agent
60 Court Street
Auburn, ME 04210

The undersigned individual/firm/business guarantees this price for Thirty days (30) from the bid due date. The undersigned submits this proposal without collusion with any other person, individual, firm, or agency. The undersigned ensures the authority to act on behalf of the corporation, partnership, or individual they represent; and has read and agreed to all of the terms, requests, or conditions written herein by the City of Auburn. By signing this bid form, the firm listed below hereby affirms that its bid meets the minimum specifications and standards as listed above and as amended in

Addendums # _____ Dated _____

Signature _____ Name (print) _____

Title _____ Company _____

Address _____

Telephone No. _____ Fax No. _____

Email Address: _____

STATE OF MAINE

_____, SS.

Date: _____

Personally appeared _____ and acknowledged the foregoing instrument to be his/her free act and deed in his/her capacity and the free act and deed of said company.

Notary Public

Print Name

Commission Expires _____

Bid Proposal Form must be accompanied with the Schedule of Values Forms.

BID BREAKDOWN SCHEDULE OF VALUES

Central Fire Station Boiler Replacement Project - Bid #2020-002

<u>Item</u>	<u>Description</u>	<u>Value</u>
1.	General Conditions	\$ _____ . ____
2.	Bonds & Insurance	\$ _____ . ____
3.	Demolition & Disposal	\$ _____ . ____
4.	Boiler & Accessories	\$ _____ . ____
5.	HVAC Insulation	\$ _____ . ____
6.	Piping	\$ _____ . ____
7.	Electrical	\$ _____ . ____
8.	Balancing	\$ _____ . ____
9.	Commissioning	\$ _____ . ____
10.	Training	\$ _____ . ____
11.	Other (specify) _____	\$ _____ . ____
12.	Other (specify) _____	\$ _____ . ____
13.	TOTAL BASE BID (Sum of Items 1 through 12)	\$ _____ . ____

TOTAL OF ALL LINE ITEMS IN SCHEDULE OF VALUES MUST EQUAL FINAL BASE BID. THERE MUST BE AMOUNTS IN EACH OF THE SPECIFIED ITEMS ABOVE. ENTER A ZERO IF NOT APPLICABLE.

ALTERNATE BID ITEMS (ABI)

ABI#1	Add additional shunt pump and associated piping to existing boiler that is not being replaced.	\$ _____ . ____
ABI#2	Add AutoFlame Modulating Boiler Control System to new boiler/burner.	\$ _____ . ____

FAILURE TO PROPERLY COMPLETE THIS BID ATTACHMENT MAY BE CONSIDERED A NON-RESPONSIVE PROPOSAL AND MAY BE REJECTED AT THE OWNERS DISCRETION.

SAMPLE CONTRACT AGREEMENT

THIS AGREEMENT is made this **###** day of **Month Year**, by and between the CITY OF AUBURN, a municipal corporation existing under the laws of the State of Maine and located in the County of Androscoggin, State of Maine (hereinafter "CITY"), **Company Name, Address, EIN**, (hereinafter "CONTRACTOR"),

WITNESSETH:

In consideration of the mutual covenants and conditions contained herein, the CITY and the CONTRACTOR agree as follows:

SPECIFICATIONS:

1. The CONTRACTOR shall furnish all of the material and perform all of the work shown on the drawings and described in the specifications entitled: **Bid # XXXXX Bid Title** which are attached hereto and made a part hereof, and the CONTRACTOR covenants that it shall do everything required by this Agreement, the Special Provisions of the Agreement, the Invitation to Bid and the Specifications in return for payment as provided herein.

COMPLETION DATE:

2. The work to be performed under this Agreement shall be commenced by **Month Day, Year** and fully completed on or before **Month Day, Year**.

CONTRACT PRICE:

3. The CITY shall pay the CONTRACTOR for the performance of the Agreement the sum of **\$XXX**

PERFORMANCE BOND:

4. If required by the City, the CONTRACTOR shall furnish to the CITY at the time of the execution of this Agreement a performance bond and a labor and material payment bond each in the amount of **\$XXX** (whichever applies) executed by a surety company satisfactory to the CITY, guaranteeing the performance and payment by the CONTRACTOR. Yes, Required (Initials: ___) No, Waived (Initials ___)

GUARANTEE:

5. The CONTRACTOR shall guarantee his work against any defects in workmanship and materials for a period of one year from the date of the CITY's written acceptance of the project.

PERMITS AND LICENSES:

6. Permits and licenses necessary for the prosecution of the work shall be secured and paid by the CONTRACTOR.

CITY'S RIGHT TO TERMINATE CONTRACT:

7. If the CONTRACTOR should be adjudged a bankrupt, or if it should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of its insolvency, or if it should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if it should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, and ordinances, or otherwise be guilty of a substantial violation of any provision of the Agreement, then the CITY when sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the CONTRACTOR, and his surety, seven (7) days written notice, terminate the employment of the CONTRACTOR and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method it may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Agreement price shall exceed the expense of the finishing the work, including compensation for additional architectural, managerial and administrative services, such excess shall be paid to the CONTRACTOR. If such expense shall exceed such unpaid balance, the CONTRACTOR shall pay the difference to the CITY.

CONTRACTOR'S LIABILITY INSURANCE:

8. The CONTRACTOR shall not commence work under this Agreement until he has obtained all insurance required under this paragraph and such insurance has been approved by the CITY, nor shall the CONTRACTOR allow any subcontractor to commence work on his subcontract until all similar insurance required of subcontractor has been so obtained and approved. **It is a requirement that the CITY be named as an Additional Insured on the General Liability and Automobile Liability policies.**

(a) **Commercial General Liability** to include products and completed operations, and blanket contractual. The limits of liability shall be as follows:

Bodily Injury and Property Damage	\$1,000,000
Personal Injury and Advertising Injury	\$1,000,000
Per Project Aggregate	\$1,000,000
General Aggregate	\$2,000,000
Products and Completed Operations Aggregate	\$2,000,000
Medical Payments	\$10,000

(b) **Business Automobile Liability**

The CONTRACTOR shall maintain and cause all sub-contractors and lower tier contractors to maintain business automobile liability insurance covering all owned, non-owned, leased, rented or hired automobiles (symbol 1). The limits of liability shall be as follows:

Bodily Injury and Property Damage	\$1,000,000
-----------------------------------	-------------

Automobile physical damage coverage shall be at the option of the CONTRACTOR, all sub-contractors and lower tier contractors. The CITY shall not be liable for physical loss or damage to any owned, non-owned, leased, rented or hired automobile.

(c) **Workers' Compensation Insurance**

The CONTRACTOR shall maintain and cause all sub-contractors and lower tier contractor's to maintain Workers' Compensation and Employers Liability in accordance with the laws and regulations of the State of Maine. The limits of liability provided shall be as follows:

Coverage A:	Statutory
Coverage B:	\$100,000/\$500,000/\$100,000

(d) **Professional Liability**

If the CONTRACTOR is an Architect, Engineer or Surveyor, they shall maintain a policy of insurance to pay on their behalf whatever amounts that may become legally required to pay on account of an error, omission or negligent act.

Limits of Liability shall be as follows:

\$1,000,000 per occurrence and in the aggregate site specific.

It is a requirement that this policy be maintained for a period of three (3) years following completion of the project.

(e) **Certificates of Insurance** of the types and in the amounts required shall be delivered to the CITY prior to the commencement of any work by the CONTRACTOR, subcontractor or lower tier contractor or any person or entity working at the direction or under control of the CONTRACTOR. The CONTRACTOR shall assume the obligation and responsibility to confirm insurance coverage for all sub-contractors or lower tier contractors who will participate in the project.

(f) The Certificate of Insurance and the policies of insurance shall include a sixty (60) day notice to the CITY of cancellation, non-renewal or material change in coverage or form.

(g) The CONTRACTOR and his surety shall indemnify and save harmless the CITY, his officers and employees from all suits, actions or claims of any character brought because of any injuries or damage received or sustained by any person, persons or property on account of the operations of the said CONTRACTOR; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in construction of the work; or because of any act or omission, neglect, or misconduct of said CONTRACTOR; or because of any claims or amounts recovered from any infringements or patent trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act" or of any other law, ordinance, order or decree; and so much of the money due to the said CONTRACTOR under and by virtue of his/her contract as shall be considered necessary by the CITY for such purpose, may be retained; or in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims, for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the CITY.

(h) **Waiver of Subrogation**

Payment of any claim or suit including any expenses incurred in connection therewith by the CITY, or any insurance company on behalf of the CITY shall not constitute a waiver of subrogation against the CONTRACTOR, sub-contractors or any lower tier contractor in the event that such claim or suit was caused by or contributed to as a result of the negligent acts of the CONTRACTOR, any sub-contractors or lower tier contractors.

(i) Construction Agreement

The CONTRACTOR shall and does hereby agree to indemnify, save harmless and defend the CITY from the payment of any sum or sums of money to any person whomsoever on account of claims or suits growing out of injuries to persons, including death, or damages to property, caused by the CONTRACTOR, his employees, agents or sub-contractors or in any way attributable to the performance and execution of the work herein contracted for, including (but without limiting the generality of the foregoing), all claims for service, labor performed, materials furnished, provisions and suppliers, injuries to persons or damage to property, liens, garnishments, attachments, claims, suits, costs, attorney's fees, costs of investigation and defense. It is the intention of this paragraph to hold the CONTRACTOR responsible for the payment of any and all claims, suits, or liens, of any nature character in any way attributable to or asserted against the CITY, or the CITY and the CONTRACTOR, which the City may be required to pay. In the event the liability of the CONTRACTOR shall arise by reason of the sole negligence of the CITY and/or the sole negligence of the CITY's agents, servants or employees, then and only then, the CONTRACTOR shall not be liable under the provisions of this paragraph.

DAMAGES:

9. The CONTRACTOR shall defend, indemnify and save harmless the CITY and all persons acting for or in behalf of it against all claims for injuries (including death), loss or damage, arising out of the performance out this contract.

LIENS:

10. Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR, if required, shall deliver to the CITY a complete release of all liens arising out of the Agreement, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as it has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the CONTRACTOR may, if any SUB-CONTRACTOR refuses to furnish a release or receipt in full, furnish a bond satisfactory to the CITY to indemnify it against any lien. If any lien remains unsatisfied after all payments are made, the CONTRACTOR shall refund to the CITY all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

ASSIGNMENT:

11. Neither party to the Agreement shall assign the Agreement or sublet it as a whole without the written consent of the other, nor shall the CONTRACTOR assign any moneys due or to become due to it hereunder, without the previous written consent of the CITY.

SUBCONTRACTS:

12. The CONTRACTOR shall not sublet any part of this Agreement without the written permission of the CITY. The CONTRACTOR agrees that it is as fully responsible to the CITY for the acts and omissions of its SUB-CONTRACTORS and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

USE OF PREMISES:

13. The CONTRACTOR shall confine its apparatus, the storage of materials and operations of its workers to limits indicated by law, ordinance and permits and shall not otherwise unreasonably encumber the premises with its materials. If any part of the project is completed and ready for use, the CITY may, by written and mutual consent, without prejudice to any of its rights or the rights of the CONTRACTOR, enter in and make use of such completed parts of the project. Such use or occupancy shall in no case be construed as an acceptance of any work or materials.

CLEANING UP:

14. The CONTRACTOR shall at all times keep the premises free from accumulation of waste materials or rubbish caused by its employees or work, and at the completion of the work it shall remove all its rubbish from and about the project, and all its tools, scaffolding and surplus materials and shall leave its work "broom-clean" or its equivalent, unless more exactly specified. In case of dispute, the CITY may remove the rubbish and charge the cost to the CONTRACTOR.

PAYMENTS:

15. Unless otherwise agreed to, the CITY shall make payments on account of the Agreement less retainage as follows:

Within 30 days, as invoices are submitted for work completed to the satisfaction of the CITY.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

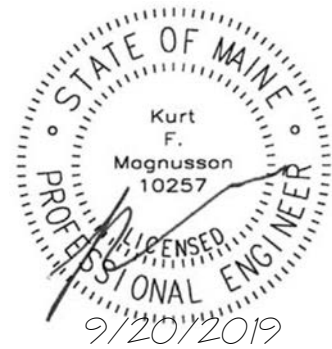
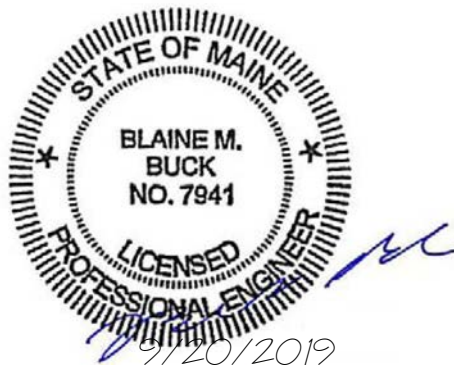
BY: _____ BY: _____
Witness Finance Director

BY: _____ BY: _____
Witness Contractor

CITY OF AUBURN, MAINE
CENTRAL FIRE STATION
BOILER REPLACEMENT PROJECT

550 Minot Avenue, Auburn, Maine

Bid No. 2020-002



APPENDIX A

Project Specifications

September 20, 2019

SECTION 00 01 10

TABLE OF CONTENTS

DIVISION 01 – GENERAL REQUIREMENTS

01 00 00	ADMINISTRATIVE PROVISIONS
01 35 43	ENVIRONMENTAL PROTECTION
01 73 29	CUTTING AND PATCHING

DIVISION 23 – MECHANICAL

23 05 00	PERFORMANCE SPECIFICATION FOR A BOILER REPLACEMENT
----------	--

END OF TABLE OF CONTENTS

SECTION 01 00 00
ADMINISTRATIVE PROVISIONS

PART 1 GENERAL

1.01 CONTRACT REQUIREMENTS

A. Scope of Work

1. The Work of the Contract includes disconnection of the existing electrical power wiring, gas piping and removal of the existing Webster burner to be reused. Isolate and drain the existing H.B. Smith 7-Section boiler, disassemble, remove and dispose of the existing boiler. Provide and assemble a new HB Smith, 28 series High Efficiency boiler, connect to the existing supply and return piping system and breeching, mount the existing Webster burner in place, connect to the existing gas piping and electrical power wiring. After the installation is complete, perform a start-up and operational check of the new boiler. There are two (2) alternate bid items to install a new shunt pump and associated piping on the existing boiler to remain and to retrofit the existing Webster JB Series gas only burner with an Autoflame Modulating Boiler Control System on the new boiler/burner. The selected Contractor will be responsible to obtain any and all Efficiency Maine incentives for the Owner. Work under this contract will be in accordance with the specifications created by Cordjia Capital Projects Group, LLC dated September 20, 2019 and as amended.

B. Contract Method

1. Basis of award of this Contract will be in accordance with the Conditions and Instructions to Bidders section within the RFP.
2. Contract type: City of Auburn, Maine, Standard Form of Agreement. A Sample Agreement is located within the RFP.
3. The project will be constructed under a single lump sum contract.

C. Work Sequence

1. Work of the Contract and related provisions are as described in the Contract Documents.

D. Contractor Use of Premises

1. Work of this Contract includes coordinating the work with the daily operations of the Owner.
2. Limit use of premises for Work and construction operations only, allow for Owner occupancy, work by other Contractors, and public access.
4. Limit access to Owner's site, hours of operations are 7:00 A.M. - 6:00 P.M. If Contractor would like to work on weekends or federal and state holiday's he/she must request permission from Owner three working days in advance. The Owner reserves the right to accept or reject the Contractor's request.
6. Coordinate use of premises under direction of Owner.

7. The Contractor shall be responsible for his/her security in Construction Area until substantial completion. The contractor shall coordinate security of Building with Owner.

E. Owner Occupancy

1. Owner will occupy the facility during entire period of construction, to conduct Owner's normal operations. The Contractor shall cooperate with Owner to minimize conflict to the Owner's operations.

F. Owner-furnished Products: Not Used

G. Schedule of Allowances: Not Used

H. Alternates Bid Items (ABI):

1. ABI #1 – Additive amount to provide the labor and all materials necessary to remove the existing shunt pump and associated piping on the existing boiler to remain and to install a new properly sized shunt pump and associated piping.
2. ABI #2 – Additive amount to provide the labor and all materials necessary to retrofit the existing Webster JB Series gas only burner with an Autoflame Mini Mk 8 Modulating Boiler Control System; including start-up, commissioning, and onsite end user training by a factory licensed and authorized technician.

I. Unit Prices (UPR): Not Used

J. Applications for Payment:

1. Submit Two (2) copies of each application using a form that is acceptable to the Owner and the Architect/Engineer, hereafter referred to solely as Owner.

K. Coordination:

1. Work of this Contract includes coordination of the entire Work of the Project.
2. The Contractor shall obtain and pay for all necessary construction/building permits. The Contractor shall send two (2) copies of all permits to the Owner.
3. Coordinate work with all utilities. Interruption of services shall be coordinated with an appropriate official at the facility to minimize the disruption of operations within the facility.
4. Notify an appropriate official at the facility at least three days in advance of the need to move furnishings, equipment, materials, etc. from areas to be affected by the construction.
5. Control on-site activities to minimize the disruption of the occupants.
6. Coordinate the work of equipment and material suppliers and subcontractors.
7. Make arrangements for the timely delivery of materials and supplies to the job site and for their temporary storage on site.
8. Maintain the project site in a neat condition.

9. Assist the Owner during periodic site visits and in the review of construction.
10. Maintain up to date progress records and as-built drawings.

L. Efficiency Maine:

1. This project intends to pursue Efficiency Maine (EM) prescriptive and/or custom incentives where applicable. The contractor shall coordinate the activities associated with Efficiency Maine incentive approval process including but not limited to; preparation and submission of all applicable incentive applications, receiving pre-approval when applicable, the tracking and submission of measure specific invoices to Efficiency Maine within the allotted timeframe and follow-up as necessary until the Owner receives the incentives.
2. The contractor shall also:
 - a. Become familiar with the Efficiency Maine Business Program including available incentives and the application and review process.
 - b. Review the specifications and field conditions for compliance with Efficiency Maine standards for applicable systems and technologies.
 - c. Review the specifications for any and all incentive opportunities, prescriptive and custom.
3. The project schedule shall reflect and accommodate the time required to achieve application preapproval from EM if required. No equipment shall be purchased until preapproval is received from EM if required.
4. All invoices shall be forwarded to EM and the Owner within the allotted timeframe. This deliverable shall be shown on the project schedule as a milestone date and coordinated with all contractors to assure compliance with this requirement.
5. Efficiency Maine is available to assist in the application process and can be reached at 866-376-2463. Contractor must contact EM prior to submittals to review the project equipment and scope.

M. Supervision of the Work

1. During all stages of the Work the Contractor shall have a competent superintendent, with any necessary assistant superintendents, overseeing the project. The superintendent shall not be reassigned without the consent of the Owner unless a superintendent ceases to be employed by the Contractor due to unsatisfactory performance.
2. The superintendent represents the Contractor on the jobsite. Directives given by the Architect or Owner to the superintendent shall be as binding as if given directly to the Contractor's main office. All important directives shall be confirmed in writing to the Contractor. The Architect and Owner are not responsible for the acts or omissions of the superintendent or assistant superintendents.
3. The Contractor shall provide supervision of the Work equal to the industry's highest standard of care. The superintendent shall carefully study and compare all Contract Documents and promptly report any error, inconsistency or omission discovered to the Architect. The Contractor may not necessarily be held liable for damages resulting directly from any error,

inconsistency or omission in the Contract Documents or other instructions by the Architect that was not revealed by the superintendent in a timely way.

N. Conflicts

1. Contractor shall notify Owner in writing of any real or apparent conflicts in the Contract Documents and, except in cases of emergency, await Owner's determination before proceeding.
2. The Owner's Project Manager shall resolve conflicts that arise during construction.
3. If two or more solutions are indicated in the Contract Documents, the Contractor shall assume the cost of the more expensive solution unless otherwise directed by the Owner.

O. Field Engineering

1. The Contractor shall be responsible for all field engineering as required.
2. The Contractor shall be responsible for obtaining any permits necessary.

P. Reference Standards

1. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
2. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is given.
3. Obtain copies of standards when required by Contract Documents. Maintain copy at job site during progress of the specific work.

1.02 SCHEDULING AND PHASING OF WORK

- A. Work of the Contract may commence once the contract requirements have been met and the Contractor and Owner agree to commence construction activities.
- B. The Contractor is expected to diligently proceed with submittals, scheduling, equipment ordering and all removals and preparatory work that is possible while maintaining the primary heating system in operation if required.
- C. Work of the Contract must be Substantially Completed by no later than **December 20, 2019** so that the Owner has full use of the primary heating system.
- D. Final completion of all Work of this Contract shall be achieved on or before **January 20, 2020**.
- E. Except as otherwise specified, Substantial Completion is hereby defined to mean a stage of completion sufficient for the Owner to have full beneficial use and occupancy of the structure involved, less only minor corrections and repairs that can be performed without undue annoyance to building occupants which shall be documented on the "punch list" as specified hereinafter. Beneficial use and occupancy means removal of all debris, interior and exterior scaffolding, surplus equipment and material and cleaning as required under the Contract completed.

- F. Normal building operations will continue throughout the length of the Project. The successful Contractor shall develop a schedule of work that is respectful of the Owner's needs but with a mutual understanding that temporary relocation of personnel within the facility may be required.
- G. Within ten (10) working days following receipt of the fully executed formal Contract Agreement by the Contractor, the Contractor shall prepare a proposed Phasing and Progress Schedule. The final Schedule shall be as mutually agreed to by the Owner and Contractor, and within the following guidelines:
 - 1. The Owner's business operations must continue throughout the entire construction period.
 - 2. Work within the building interior must comply with the Owner's requirements for continued use and occupancy.
 - 3. Applicable egress codes must be complied with during the construction period. In particular, building entrances and exit ways must be kept open at all times.

1.03 REGULATORY REQUIREMENTS

- A. Conform to Local, State and Federal codes.

1.04 PROJECT MEETINGS

- A. Requirements:

- 1. Contractor shall, upon acceptance of a Contract and before commencing Work, contact the Owner and request a pre-construction conference.

- B. Pre-construction Conference

- 1. The Owner will administer a pre-construction conference for execution of Owner-Contractor Agreement and exchange of information and preliminary submittals.

- C. Construction Progress Meetings

- 1. The Contractor shall schedule and administer Project meetings throughout progress of the Work, called meetings, and pre-installation conferences.
 - 2. The Contractor shall make physical arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within two days to Owner, participants, and those affected by decisions made at meetings.
 - 3. Attendance: Job superintendent, major Subcontractors and suppliers, Owner and those appropriate to agenda topics for each meeting.
 - 4. Suggested Agenda: Review of Work progress, status of progress schedule and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, and other items affecting progress of Work.

1.05 SUBMITTALS

A. Procedures

1. In all submittals always refer to the project name and bid number.
2. Submit the number of copies which Contractor requires, plus two copies, which will be retained by Owner.
3. Submittals can be delivered electronically to both the Architect/Engineer and Owner. If submitting by e-mail, submit to the Architect/Engineer for approval, and the Owner for review, at the e-mail address below:

Architect/Engineer: mdaigle@cordjiacpg.com

Owner: dboulanger@auburnmaine.gov

4. Submittals can be delivered in paper form. Deliver copies of submittals to Architect/Engineer for approval at the address below:

Mitch Daigle
16 Tannery Lane, Suite 23
PO Box 1367
Camden, ME 04843
And one (1) copy to the Owner for review:

Derek Boulanger
Facilities Manager / Purchasing Agent
City of Auburn
60 Court St.
Auburn, Me 04210

5. Submittal Sheets:
 - a. Transmit each item, as specified, using a form that is acceptable to the Owner;
 - b. Identify Project, Bid No., Contractor, Subcontractor, major supplier;
 - c. Identify drawing sheet and detail number, and Specification Section number, as appropriate;
 - d. Identify deviations from Contract Documents.
6. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
7. Architect/Engineer shall have 14 calendar days for review of submittals.
8. After the Architect/Engineer's review of submittal, revise and resubmit as required identifying changes made since previous submittal.
9. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Workmanship

1. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
2. Perform work by persons qualified to produce workmanship of specified quality.
3. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking and as otherwise indicated by the manufacturer.

C. Manufacturers' Instructions

1. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Owner before proceeding.

D. Manufacturers' Certificates

1. When required by individual Specifications Section, submit manufacturer's certificate, in duplicate, those products that meet or exceed specified requirements.

1.07 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

A. Electricity

1. The Contractor shall be allowed to hook to existing electrical panel in building, for temporary power. The Contractor will not disrupt power at building. The Owner will only pay for cost of electricity and reserves the right to deny should the use become excessive.
2. The Contractor shall provide all temporary electrical panels.
3. The Contractor shall be responsible to fix any damages, caused by modifications for temporary services.

B. Lighting

1. The Contractor shall provide source of lighting as specifically required by the Contractor.

C. Heat, Ventilation

1. The Contractor shall provide source of heating and ventilation as required by the Contractor. The Contractor shall not use electrical heating units, if the Owner is supplying electrical power to the Contractor.

D. Water

1. The Contractor shall be allowed to hook to existing water in building, for temporary water supply.

E. Sanitary Facilities

1. The Contractor shall be permitted to use on-site Sanitary Facilities. The Owner reserves the right to revoke such use should problems occur, which is at the sole discretion of the Owner.

F. Barriers

1. Provide as required to prevent public entry to construction areas, to provide for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations.

G. The Contractor will provide as they deem necessary:

1. Office Trailer: Weather tight, with lighting, electrical receptacles, heating, cooling and drawing display table. The office trailer will have separate office space for the project manager to conduct his/her daily business.
2. Storage Sheds for Tools, Materials, and Equipment: Weather tight, with adequate space for organized storage and access, and lighting for inspection of stored materials.
3. His/her own on-site telephone, if so required for the conduct of his/her business.
4. Protected storage, if necessary.
5. Temporary barricades to separate the Contract Site areas from the Owner's area or public area.

H. Protection and Restoration

1. The Contractor shall be responsible for all damages to furnishings, equipment, supplies, existing construction, including finished surfaces, caused by Work of Contract.
2. The Contractor shall be fully responsible for maintaining weather-tight integrity of the roofing system and wall systems, including permanent and temporary flashings, during the entire construction period.
3. The Contractor's responsibilities shall include the cost to repair damage to the existing building's structure, finishes and contents associated with the Contractor's failure to maintain the watertight integrity of the roofing system and wall system, whether permanent or temporary, at no additional cost to the Owner.
4. The Contractor shall protect paved areas and lawns around the Building from damage associated with the construction. Costs to repair damage to paved areas and lawns will be deducted from Contractor's final payment to cover Owner's expenses to repair damage should the Contractor fail to repair the damages to the Owners satisfaction. The Owner will determine if damages are minor or major.

I. Security

1. Provide security program and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program.

J. Water Control

Not Used

K. Cleaning during Construction

1. Throughout the construction period the Contractor shall be responsible for maintaining building and site areas affected by the Work in a standard of cleanliness.
 - a. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing protection of materials.
 - b. Completely remove all scrap, debris, waste material and other items not required for construction from the site at least once a week.
 - c. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
2. Conduct daily inspection, more often if necessary, to verify that requirements for cleanliness are being satisfied.
3. Provide required personnel, equipment and materials needed to maintain the specified standard of cleanliness.
4. Use only those cleaning materials and equipment that are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

L. Removal

1. Unless otherwise specified, materials to be removed, including all components and accessories, become property of the Contractor and shall be promptly removed from the Contract Site and legally disposed of at Contractor's expense.
2. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
3. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to specified, or to original, condition.
4. The Contractor shall be responsible for removing and disposing of solid wastes (including construction/demolition debris) per Section 01 35 43.

1.08 MATERIAL AND EQUIPMENT

A. Products

1. Products include material, equipment, and systems.
2. Comply with Specifications and referenced standards as minimum requirements.
3. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.

4. Do not use materials and equipment removed from existing structure, except as specifically required, or allowed, by the Contract Documents.
5. ACBM (ASBESTOS CONTAINING BUILDING MATERIALS) ARE NOT ALLOWED, materials containing asbestos in any manner or quantity are not allowed on this Project. If such materials are installed they shall be removed and replaced at no additional cost to the Owner.

B. Transportation and Handling

1. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
2. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
3. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

C. Storage and Protection

1. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
2. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.
3. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.
4. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not specifically named.

D. Products List

1. Submit with the bid a list of major products proposed for use, with name of manufacturer, trade name, model number of each product on a manufacturer's product data sheet.

E. Substitutions

1. Alternate Manufacturers shall be submitted to Architect/Engineer a minimum of 2 days prior to bid date for review. Any substitutions not submitted 2 days prior to bid date shall not be reviewed or considered.
2. Do not assume that "or Equal" or terms of similar meaning indicate automatic approval of substitute products.
3. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
4. Request constitutes a representation that the Contractor:
 - a. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.

- b. Will provide the same warranty for substitution as for specified product.
 - c. Waives claims for additional costs, which may subsequently become apparent.
5. The Owner will determine acceptability of proposed substitution, and will notify the Contractor of acceptance or rejection in writing within a reasonable time.

1.09 CONTRACT CLOSEOUT

A. Closeout Procedures

1. Submit Closeout Documentation to the Architect/Engineer 10 days prior to the Substantial Completion Date. The Architect/Engineer shall confirm that the Contractor has fulfilled the Contract Closeout Documentation Requirements 10 days prior to the Substantial Completion Date. The Contractor shall not submit for Final Application for Payment until the Architect/Engineer has notified the Owner that Contractor has fulfilled the Contract Closeout Documentation Requirements.
2. When the Owner considers the Work of this contract has reached Substantial Completion, the Contractor and Owner shall sign a Certificate of Substantial Completion. Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. This Certificate of Substantial Completion will be prepared by the Architect/Engineer. When the Certificate of Substantial Completion has been signed by the Owner and the Contractor, the completed Certificate of Substantial Completion shall set the date for Substantial Completion of the work or a designated portion of the work.
3. When the Contractor considers the Work of this contract has reached final completion, the Contractor shall submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for OWNER's inspection. This written notification shall be submitted to the Owner 7 calendar days prior to the proposed inspection date. The Contractor shall not call for final inspection of any portion of the Work that is not complete and permanently installed. The Contractor will be found liable for the re-inspection expenses of individuals called to final inspection meetings prematurely.
4. In addition to submittals required by the conditions of the Contract, provide release of all liens, claims and submit final requisition.
5. The Contractor's failures to comply with Closeout Procedures, if the Closeout Documentation Requirements are not completed by the Substantial Completion Date. The Owner reserves the right to recover the costs to complete the Closeout Documentation Requirements from the Retainage. The Owner reserves the right to hire an Architect/Engineer to complete the required Contract Closeout Documentation.

B. Final Cleaning

1. Execute prior to final inspection.
2. Clean site; sweep hard surfaced areas, rake clean other surfaces.

3. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site. Owner will be responsible for cleaning after acceptance.

C. Project Record Documents

1. Store documents separate from those used for construction.
2. Keep documents current; do not permanently conceal any work until Owner has inspected and required information has been recorded.
3. At Contract Closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 FINAL CLEANING

- A. Execute final cleaning before final project assessment.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
- D. Replace filters of operating equipment.
- E. Clean work site; sweep clean all hard surfaces.
- F. Remove waste and surplus materials, rubbish, and construction facilities from site.

3.02 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect/Engineer seven days before start-up of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturers' instructions.

- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation before start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report stating the equipment or system has been properly installed and is functioning correctly.

3.03 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks before date of Substantial Completion.
- B. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at equipment location.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- E. Required instruction time for each item of equipment and system is specified in individual sections.

3.04 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

3.05 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.

4. Change Orders and other modifications to the Contract.
 5. Reviewed Shop Drawings, Product Data, and Samples.
 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
 - C. Store record documents separate from documents used for construction.
 - D. Record information concurrent with construction progress, not less than weekly.
 - E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates used.
 3. Changes made by Addenda and modifications.
 - F. Submit Closeout Documentation to the Architect/Engineer 10 days prior to the Substantial Completion Date. The Architect/Engineer shall confirm that the Contractor has fulfilled the Contract Closeout Documentation Requirements 10 days prior to the Substantial Completion Date.

3.06 OPERATION AND MAINTENANCE DATA

- A. Submittal Requirements:
 1. Submit three (3) copies of data on 8-1/2 x 11-inch text pages, bound in three (3) separate D side ring binders with durable plastic covers. **Contractor shall also provide O&M Manual in electronic form on CD/DVD.**
 2. Prepare binder cover with printed title "OPERATION AND MAINTENANCE", title of project, location, bid number, and subject matter of binder when multiple binders are required. A spine label with same information should also be provided.
 3. Subdivide each binder's contents with permanent page dividers, logically organized, with tab titles clearly printed. Tabs should be organized and titled based on the Table of Contents.
- B. Manual Submission
 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.
 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

3. Submit one copy of completed volumes 15 days before final inspection. Draft copy will be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content of document sets as required before final submission.
4. Submit two sets of revised final volumes in final form within 10 days after Receipt from Owner.

C. Contents

1. Project Summary: The first page in binder should include a paragraph describing the Project followed by a Contact List. The Contact List is to include Owner name along with company name, contact name, address, and telephone number for the Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
2. Table of Contents: Provide a Table of Contents (TOC) for the binder and place behind the reduced plans. If multiple binders are necessary, include a TOC for the entire submission, then a TOC for the individual binder. TOC should be a listing of all products or systems and the required components below each.
3. Product/System Components: Provide the following information for each product and/or system. Provide additional requirements as specified in individual product specification sections.
 - a. **OVERVIEW and INFORMATION:**
 - i. Equipment Register: equipment description, model number(s), date of installation, installer w/contact info, supplier w/contact info, manufacturer w/contact info, warranty date, warranty details, estimated life / useful life.
 - ii. Description of Complete Installation: A general description of the installation to provide a general understanding of the equipment and its operation.
 - iii. Specific System Description: A technical description of each system of the installation, written to ensure it can be clearly understood by persons not familiar with the installation.
 - iv. Performance Data: Technically description of the mode of operation of each system provided. This section provides functionality details.
 - v. When applicable, include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - b. **OPERATIONS:**
 - i. Manufacturers' technical literature as appropriate. For other than common accessories, where no manufacturer literature is available, provide a precise and concise description of the operation procedure in plain English.
 - ii. Safe start-up, break-in, routine operation, shut-down, and emergency operations for the equipment installed including a logical step-by-step sequence of instructions for each procedure. Include summer, winter and special operating instructions.
 - iii. List of all limiting conditions for equipment.
 - iv. Control Sequence and flow diagrams for the system installed.
 - v. A legend for color-coded services. A legend of the symbols used on the drawings, unless included on the drawings.
 - vi. Schedules of the parameter settings of each protective device, including fixed and adjustable circuit breakers, protective relays, adjustable photoelectric switches, pressure switches, and any other control and monitoring device, as established during commissioning and maintenance.

- c. MAINTENANCE
 - i. Emergency procedures, including telephone numbers for emergency services, and procedures for fault-finding.
 - ii. Manufacturers' technical literature, as appropriate. Include original manufacturers' parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - iii. Detailed recommendations for the frequency of performance of routine maintenance tasks
 - iv. List of procedures and tasks associated with preventative (routine) maintenance.
 - v. Procedures for safe trouble shooting, disassembly, repair and reassembly, cleaning, alignment, inspection and adjustment, including a logical step-by-step sequence of instructions for each procedure.
 - vi. Include summer, winter and special maintenance instructions.
 - vii. Maintenance Schedule: schedule of the frequency of the required or recommended maintenance, testing and inspection for each type of equipment. The schedule is to include weekly and monthly attendance times.
 - viii. Installation and dismantling instructions: Instructions for the proper installation and dismantling of the equipment.
 - ix. Spares and Consumables:
 - 1. Schedule of spares (including bearings) with an expected operating life less than 40,000 hours. Include expected replacement frequency, item label manufacturer name, address, and telephone number, catalogue number name and address of local distributor.
 - 2. Schedule of Consumable Items (oil, grease, belts, bearings) to be used during servicing.
 - 3. Furnish spare parts, consumable items, and extra products in quantities specified in individual specification sections and/or as recommended by manufacturer or requested by Owner. Deliver to project site and place in location as directed by Owner; obtain receipt before final payment.
- d. TECHNICAL DATA
 - i. Manufacturers' technical literature assembled specifically for the project and **excluding irrelevant matter.**
 - ii. Each product data sheet marked to clearly identify the specific products and components used in the installation and the data applicable. Additional instructions and illustrations, as required, to identify and changes to the manufacturers' data or to illustrate the function of each component in the installation.
 - iii. Provide performance curves and engineering data
 - iv. Include control diagrams by controls manufacturer as installed.
 - v. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
 - vi. Shop drawings.
- e. WARRANTIES
 - i. Provide originals of Manufacturers' warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
 - ii. All Guarantees
 - iii. Certificates of compliance for all electrical and plumbing works, where applicable.
 - iv. If installation is not by the manufacturer, and product warranty is conditional on the manufacturer's approval of the installer, submit the manufacturer's approval of the installing firm.

3.07 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- B. Verify documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Submit before final Application for Payment.
- E. Time of Submittals:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
 - 2. Make other submittals within ten days after Date of Substantial Completion, before final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

END OF SECTION 01 00 00

SECTION 01 35 43
ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 DEFINITIONS OF CONTAMINANTS:

- A. Sediment: Soil and other debris that has been eroded and transported by runoff water.
- B. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations, and from community activities.
- C. Rubbish: A variety of combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans and bones.
- D. Debris: Includes combustible and noncombustible wastes such as ashes, waste materials that result from construction or maintenance and repair work, leaves, and tree trimmings.
- E. Chemical Wastes: Includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.
- F. Sanitary Wastes: See Section 01 00 00, para. 1.07. E.1.
- G. Sewage: Wastes characterized as domestic sanitary sewage.
- H. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.
- I. Oily Waste: Includes petroleum products and bituminous materials.

1.02 ENVIRONMENTAL PROTECTION REQUIREMENTS:

- A. General:
 - 1. Provide and maintain during the life of the contract, environmental protection as defined herein. Provide environmental protective measures as required to control pollution that develops during normal construction practice. Provide also environmental protection measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with all federal, state, and local regulations pertaining to water, air, and noise pollution.

PART 2 - PRODUCTS: NOT USED

PART 3 - EXECUTION

3.01 PROTECTION OF NATURAL RESOURCES:

- A. General:
 - 1. The natural resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their existing condition or restored to an

equivalent or improved condition upon completion of the work. Confine construction activities to areas defined by the work schedule, drawings, and specifications.

B. Land Resources:

1. Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without special approval of the Owner. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage.

C. Protection:

1. Protect existing trees which are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operators. Remove displaced rocks from uncleared areas. Protect monuments, markers and works of art.

D. Repair and Restoration:

1. Repair or restore to their original condition all trees or other landscape features scarred or damaged by the equipment operations. Obtain approval of the repair or restoration from the Owner prior to its initiation.

E. Temporary Construction:

1. Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, and all other vestiges of construction. Temporary roads, parking areas, and similar temporary use areas shall be graded in conformance with surrounding areas, tilled, and seeded. Include topsoil or nutriment during the seeding operation as necessary to establish a suitable stand of grass.

F. Water Resources:

1. Perform all work in such a manner that any adverse environmental impact on water resources is reduced to a level acceptable to the Owner.

G. Oil Substances:

1. Take special measures to prevent oily or hazardous substances from entering the ground, drainage areas or local bodies of water. Surround all temporary fuel oil, petroleum, or liquid chemical storage tanks with a temporary berm of sufficient size and strength to contain the contents of the tanks in the event of content leakage or spillage.

H. Fish and Wildlife Resources:

1. During the performance of the work take such steps as required to prevent interference or disturbance to fish and wildlife. Do not alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to fish and wildlife except as may be indicated or specified.

I. Historical and Archaeological Resources:

1. Carefully preserve and report immediately to the Owner all items having any apparent historical or archaeological interest which are discovered in the course of any construction activities.

3.02 EROSION AND SEDIMENT CONTROL MEASURES:

A. Burn-off:

1. Burn-off of ground cover is not permitted.

B. Protection of Erodible Soils:

1. All earthwork brought to final grade shall be immediately finished as indicated or specified. Protect immediately side slopes and backslopes upon completion of rough grading. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure of unprotected soils.

C. Temporary Protection to Erodible Soils:

1. Utilize the following methods to prevent erosion and control sedimentation.

D. Mechanical Retardation and Control of Runoff:

1. Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, and berms, to retard and divert runoff to protected drainage courses.

E. Vegetation and Mulch:

1. Provide temporary protection on all side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion. Such protection shall be by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such contamination of these and other methods necessary for effective erosion control.

3.03 CONTROL AND DISPOSAL OF SOLID, CHEMICAL AND SANITARY WASTES:

A. General:

1. Handle and dispose of wastes in accordance with this specification section. If directions conflict with another included specification, the other specification shall take precedence.
2. Track the disposal of all solid, hazardous and chemical wastes and provide Waste Disposal Tracking as required by Local, State and Federal regulations.
3. The preparation, cooking, and disposing of food is strictly prohibited on the project site.
4. Conduct handling and disposal of wastes to prevent contamination of the site and other areas. On completion, leave areas clean and natural looking. Obliterate signs of temporary construction and activities incidental to construction of permanent work in place.

B. Solid Wastes:

1. Pick up solid wastes and place in containers which are emptied on a regular schedule at the Contractor's expense.
2. Solid wastes shall be recycled whenever practicable.
3. The Contractor shall be responsible for contacting disposal facilities to determine what types of solid waste they will accept. The Contractor shall dispose of solid wastes only at facilities allowed to accept such material per Federal, State, and Local regulations.

C. Sewage, Odor, and Pest Control:

1. Dispose of sewage through connection to an authorized sanitary sewage system. Where such a system is not available, use chemical toilets or comparable effective units and periodically empty wastes. Include provisions for pest control and elimination of odors.

D. Chemical Wastes:

1. Store chemical waste in corrosion resistant containers labeled to identify type of waste and date filled. Remove containers from the project site, and dispose of chemical waste in accordance with Federal, State, and Local regulations. For oil and hazardous material spills which may be large enough to violate Federal, State, or Local regulations, notify the Owner and appropriate regulating Agency immediately.

E. Petroleum Products:

1. Conduct fueling and lubricating of equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded and excess oil in accordance with approved procedures meeting Federal, State and Local regulations.

3.04 DUST CONTROL:

A. General:

1. Keep dust down at all times, including nonworking hours, weekends, and holidays. Sprinkle or treat with dust suppressors, the soil at the site, haul roads, and other areas disturbed by operations. Petroleum products will not be used as suppressors. No dry power brooming is permitted. Instead use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing is permitted only for cleaning of non-particulate debris, such as steel reinforcing bars. No unnecessary shaking of bags is permitted where bagged cement, concrete mortar and plaster is used.

3.05 NOISE:

A. General:

1. When available, make the maximum use of "low-noise-emission products" as certified by EPA. No blasting or use of explosives is permitted without written permission of the Owner and then only during designated times.

END OF SECTION 01 35 43

SECTION 01 73 29
CUTTING AND PATCHING

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes procedural requirements for cutting and patching.

1.02 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.03 RELATED REQUIREMENTS

- A. Section 01 00 00 – ADMINISTRATIVE PROVISIONS
- B. Section 01 35 43 – ENVIRONMENTAL PROTECTION
- C. Section 23 05 00 – PERFORMANCE SPECIFICATION FOR A BOILER REPLACEMENT

1.04 QUALITY ASSURANCE

- A. General: Contractor shall take reasonable care prior to all cutting and drilling in order to minimize unintended damage to concealed conduits, cables, pipes, reinforcing steel, etc. In circumstances where the absence of such concealed elements is not established conclusively, utilize detection and mapping technology, e.g., X-ray or Sub-surface Interface Radar (SIR), to locate any such elements that may be present before proceeding with the cutting or drilling work.
- B. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- C. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational Elements include but are not limited to the following:
 - 1. Air or smoke barriers.
 - 2. Fire-protection systems.
 - 3. Control systems.
 - 4. Communication systems.
 - 5. Conveying systems.
 - 6. Electrical wiring systems.
 - 7. Operating systems of special construction.
- D. Miscellaneous Elements: Do not cut and patch elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in an increased maintenance or decreased operational life or safety. Miscellaneous Elements include but are not limited to the following:
 - 1. Water, moisture, or vapor barriers.
 - 2. Membranes and flashings [that are scheduled to remain].
 - 3. Exterior curtain-wall construction.
 - 4. Equipment supports.
 - 5. Piping, ductwork, vessels, and equipment.

6. Noise- and vibration-control elements and systems.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.05 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing and In-Place Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, shall match the visual and functional performance of existing materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to prevent interruption of services to occupied areas.
 1. If existing services to occupied areas must be interrupted, coordinate and receive approval of the interruption of services prior to starting work.

3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that shall eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
- D. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
1. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
- E. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- F. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

SECTION 23 05 00

PERFORMANCE SPECIFICATION FOR A BOILER REPLACEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. General Requirements of the Contract.

1.2 ALTERNATES

- A. There are alternates that apply to this project – See PART 4 ALTERNATES of this section.

1.3 SITE INSPECTION AND TEMPORARY HEAT

- A. The Mechanical Contractor is required to make a pre-bid site visit in order to submit a bid on this project.
- B. This project is to replace one (1) of the two (2) Existing H.B. Smith boilers, The Mechanical Contractor is responsible to keep the existing boiler that is not being replaced in operation until the new boiler is tested and in-service.

1.4 SUMMARY

- A. This is a design-build mechanical project. The information provided in this specification is intended to communicate the preferences of the Owner. It is the Mechanical Contractor's responsibility to properly design, install, start/test, and warranty their work.
- B. It has been determined that the existing Shunt Pump and associated piping are not correctly sized to meet the minimum requirement of most boiler manufacturers and has probably contributed to the failures of the cast iron sections.

The existing Shunt Pump is located above the boiler and has a pipe from the supply side of the boiler to the return side of the boiler. The connection points are correct, and the flow direction is correct (supply to return) but the piping and pump are not adequate and will need replacement as specified below.

- C. The information provided in this section is intended to provide the minimum size, quantities and quality of material – it is the Mechanical Contractor's responsibility to provide and install what the Mechanical Contractor believes to be the correct sizes and quantities.
- D. It is the Mechanical Contractor's responsibility to design and install the systems per the following Codes and Standards:
 - 1. NFPA (National Fire Protection Association) Standards.

2. NEC 2017 (National Electrical Code) Standards.
 3. IECC 2009 (International Energy Conservation Code).
 4. American Gas Association (AGA).
 5. Applicable Town of Auburn, Maine Codes and Ordinances.
 6. Requirements of the State of Maine Gas Board Rules.
- E. The Mechanical contractor is responsible for all permit and application fees.
- F. The Mechanical Contractor is responsible to design and install a complete and operating heating system including, but not limited to:
1. Removal and proper disposal of the existing boiler that is being replaced.
 2. Removal and proper disposal of the Shunt Pump for the boiler that is being replaced.
 3. Removal and proper disposal of any materials that are not being reused.
 4. Installation of the new Boiler.
 5. Installation of a new Shunt Pump and Associated Piping.
 6. Reconnection of the boiler breeching.
 7. Reconnection of Supply and Return Water Connections.
 8. Reconnection of make-up water connection.
 9. Re-installation of existing Webster Gas-Fired Burner.
 10. Reinstallation of Natural Gas piping.
 11. Replacement or repair of piping insulation within 10' of the new boiler.
 12. All required electrical and power wiring to pumps and burners.
 13. All required controls and control wiring to pumps, power venter, spill switches and burners.
- G. Submit with your bid, a summary of your design including equipment manufacturers and existing equipment and material that you intend to reuse.

NOTE – OWNER HAS THE OPTION TO KEEP ANY OF THE REMOVED MATERIAL AND EQUIPMENT – INCLUDING ANY OR ALL OF THE EXISTING BOILER SECTIONS.

1.5 SUBMITTALS (if awarded contract)

- A. Submit shop drawings, manufacturers' data and certificates for equipment, materials and finish, and pertinent details for each system where specified.
- B. Review will be for type and quality. Quantities and the ability to perform the function intended shall be the responsibility of the Contractor.

PART 2 - PRODUCTS AND SYSTEMS

2.1 REMOVAL OF EXISTING SYSTEMS.

- A. Remove from job-site and properly dispose of all material in the mechanical room that is not being reused.

- B. The Following is a list of the expected material that will be removed.
 - 1. One Existing Boiler
 - 2. One Existing Shunt Pump.
 - 3. Existing Shunt Pump Piping
 - 4. Damaged Pipe Insulation

2.2 CAST IRON BOILER

- A. Replace the existing HB Smith 28A-7 Sectional Boiler with a new Boiler of equal heating capacity.
- B. Replacement Boiler shall be a HB Smith G28HE-S-7 High Efficiency Pressurized Wet Base Boiler.
- C. Alternate Manufacturers will be considered with Pre-Bid Approval as an alternate add/deduct to the HB Smith Boiler. If an alternate manufacturer is requested the contractor should be aware that the existing Webster JB1 Burner may need to be adapted and the adaptations approved by the alternate manufacturer.
 - a. 82.5% Thermal Efficiency - 1722 MBH Gross Output.
 - b. Cast iron wet base sections tested for 80 psi working pressure.
 - c. Heat Transfer Rods.
 - d. Insulated Metal Jacket – R11.7.
 - e. Burner mounting plate with insulation block.
 - f. Front and Rear observation ports.
 - g. Steel angle floor rails.
 - h. Ceramic fiber rope seal between sections.
 - i. Graphite port connectors.
 - j. Manual reset high limit.
 - k. Operating Control.

2.3 GAS-FIRED BURNER

- A. Remove and reinstall existing Webster JB1 Burner.
- B. Provide factory authorized start-up & testing of reinstalled burner.

2.4 SHUNT PUMP

- A. Replace existing In-Line Pump with a Grundfos UPS 32-80 F Circulator Pump or equal by Wilo or Taco.
- B. 40 gpm at 12' head on medium speed (Pump to be set on medium speed).
- C. 115v, 2.66A.
- D. Cast iron body, stainless steel impeller.

2.5 SHUNT PUMP PIPING

- A. Replace existing piping with 2" Schedule 40 Black Iron.
- B. Connections at supply and return to be increased to 2".
- C. Install full port ball valves on both sides of pump.

2.6 BREECHINGS

- A. Reconnect existing breeching and provide and install new reconnection material if needed.
- B. Reseal breeching per manufacturer's recommendations.

2.7 GAS PIPING

- A. The existing gas meter is a 2 PSIG natural gas.
- B. Reconnect Schedule 40 black iron gas piping & regulator.
- C. If any new piping is installed paint all new gas piping Yellow. – Clean, prime and final coat of Rustoleum Yellow.
- D. Installation to meet NFPA 54 Gas Piping Standards.

2.8 PIPE INSULATION

- A. Provide and install new pipe insulation on the shunt pump piping and any replaced piping.
- B. Repair or replace any insulation that is damaged or missing on the supply and return piping within 10 piping feet of the new boiler.
- C. All new insulation to be 1 ½" fiberglass with ASJ. Fittings to be Zeston PVC or equal.

2.9 POWER ELECTRICAL WIRING

- A. It is the Mechanical Contractors responsibility to provide all power wiring to the replacement Shunt Pump and Burner.
- B. Reconnect and test existing Low Water Cutoff.
- C. Installation to meet NFPA 70 National Electrical Code Standards.

2.10 CONTROL AND CONTROL WIRING

- A. Provide control for the boilers and pumps.
- B. All exposed control wiring in the boiler room to be run in EMT Conduit.
- C. Use the Existing Tekmar 264 Boiler Control to control the two HB Smith Boilers and Pumps
 - 1. Test and confirm the following:
 - a. When Main Circulating Pumps are on the associated Shunt Pumps and Zone Pump are also energized.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Perform work by qualified journeymen of their respective trades who are employed by a firm that can demonstrate successful experience with work similar in type, quality and extent to the work required by this project.
- B. Install mechanical equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
- C. Cutting and Patching: Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
- D. Operation and Maintenance Data: Provide manufacturer's printed operating procedures to include start-up, break-in, routine and normal operation instruction; regulation control, stopping, shut-down, and emergency instructions; and summer and winter operation instructions. Provide copies of warranties.
- E. Provide owner with one-year warranty on all parts and labor. Provide the owner with the standard warranties from the boiler manufacturer.

PART 4 - ALTERNATES

- 4.1 **Alternate #1** – Additional Shunt Pump and Associated Piping.
- A. Replace the Shunt Pump on the existing boiler that is not being replaced.
 - B. Specifications for Pump, Piping, Insulation and Power Wiring as detailed above.
 - C. This change cannot be made until after the new boiler is operating and heating the building.
- 4.2 **Alternate #2** – Add AutoFlame Modulating Boiler Control System to new boiler/burner.
- A. In order to bid on this Alternate the installing contractor **must** be an authorized AutoFlame installer and **must** be an Efficiency Maine Qualified Partner.
 - B. Components shall include:
 - a. AutoFlame Mini Mk 8 full color touchscreen controller.
 - b. AutoFlame Gas Control Valve.
 - c. AutoFlame UV scanner.
 - d. AutoFlame hot water load detector.
 - e. AutoFlame Servomotor for gas control.
 - f. AutoFlame Servomotor for combustion air control.
 - g. Factory authorized Start, Test and commissioning.

END OF SECTION 23 05 00