

ALASKA COURT SYSTEM (ACS)
Palmer Courthouse Original Building Boiler Replacement
Project #PAL-C-21-0010

Issue ITB Date: December 13, 2021

Project Address: Palmer Courthouse
435 South Denali Street
Palmer, Alaska 99645

Submittal Address: Alaska Court System
Attn: Facilities Dept. – Dean Maschner, Assistant Facilities Manager
820 West 4th Avenue
Anchorage, AK 99501
Fax: 907-264-8296
Email: dmaschner@akcourts.gov

Response Due Date: January 3, 2022 @ 10:00 a.m.

**Pre-Bid Meeting and
Site Inspection Date:**

The pre-bid meeting and site inspection for this project will be held December 23, 2021 at 10:00 AM. It is recommended but not mandatory. Meet in the public lobby of the Palmer Courthouse, 435 South Denali St., Palmer, AK. All questions, concerns, or clarifications regarding the project must be emailed to Dean Maschner at dmaschner@akcourts.gov. Please keep in mind that an oral response to a question at the site inspection is not binding on the ACS. After the site inspection the ACS will distribute to all prospective bidders an addendum listing the questions asked and the court system's official responses. The cut-off date for contractor questions is 4 calendar days before the bid Date.

Questions: Dean Maschner, Assistant Facilities Manager
Office: 264-0427 Cell: 404-5021 Email: dmaschner@akcourts.gov

Please submit on the form below a total cost quote for the Work as specified. Receipt of your Bid must be no later than the "Response Due Date" noted above.

To be considered, the submitted Bid must include the following information, properly completed and executed. Bid documents must be submitted to the location listed above, either mailed, hand delivered, scanned and e-mailed, or faxed to the number/address provided. Specify project name and response due date and time on quote. Bids not including all of the items noted below may be rejected:

- A. The Bid Schedule and acknowledgment of any addenda that may be issued. (Bids may be submitted on photocopied forms.) Bid Schedule must be fully completed, including bid amounts for Basic Bid, any Alternate Bids listed, and other required information. **Bid Form sheets include Pages 8, 9, and 10 of this ITB only**
- B. Valid Alaska Business License Number or photocopy of application for same under AS.08.18.
- C. Bidder's Contractor Registration Number under AS.08.18.
- D. Bid Security. See Section 00100, Paragraph 10, and Section 00410 for form of bid bond. Bid security must accompany a bid if the total bid, including base bid and alternates, exceeds \$100,000.

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Index of Attachments to this ITB:

Specifications:

- Section 00100 – Instruction to Bidders
- Section 00300 – Bid Schedule
- Section 00410 - Bid Bond
- Section 00510 – Agreement Between Owner and Contractor
- Section 00700 – General Conditions
- Section 01010 – Summary of Work
- Section 01740.1 - Certificate of Substantial Completion form
- Section 01740.2 - Affidavit of Payment of Debts and Claims and Release of Liens Section
- Section 01740.3 - Warranty of Work form
- Certificate of Compliance
- Background Check Form
- Technical Specifications

Drawings/Sketches/PDF's:

MECHANICAL:

- M001 Legend, Abbreviations, and Schedules
- M002 Mechanical Specifications
- M003 Mechanical Specifications
- M101 Boiler Room Demotion Plans
- M102 Boiler Room Ventilation Demolition Plan
- M103 Boiler room Demolition Schematic
- M201 Boiler room Remodel Plans
- M201 Boiler room Ventilation Remodel Plans
- M203 Boiler room Remodel schematic

(Alternate #1 Bid separately)

- M204 Boiler room Remodel schematic – Alternate #1
- M104 Boiler room Demolition Schematic – Alternate #1

ELECTRICAL:

- E001 Legend, and Panel Schedules
- E101 Electrical Demotion - Boiler Room
- E201 Electrical Remodel - Boiler Room
- E301 Panel Schedules
- E401 Electrical Specifications

(Alternate #1 Bid separately)

- E102 Electrical Demotion - Boiler Room– Alternate #1
- E202 Electrical Remodel - Boiler Room –Alternate #1

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SECTION 00100 – INSTRUCTIONS TO BIDDERS

1. **DEFINITIONS:** Wherever in the Contract Documents the following terms, or pronouns in place of them, are used, the intent and meaning, unless a different intent or meaning is clearly indicated, shall be interpreted as set forth below. The titles and headings of the Sections, Subsections and Articles herein are intended for convenience of reference and shall not be considered as having bearing on their interpretation.

Bid is the response submitted by a Bidder.

Bidder is defined as the respondent to the ITB.

Contract Documents - The Contract form, Addenda, the bidding requirements and Contractor's Bid the bonds, the Conditions of the Contract and all other Contract requirements, the Specifications, and the Drawings Furnished by the Owner to the Contractor, together with all Change Orders and documents approved by the Contracting Officer for inclusion, modifications and supplements issued on or after the Effective Date of the Contract.

Day is a calendar day. Unless noted otherwise.

Owner is the Alaska Court System, sometimes referred to as the "court system" or "ACS".

Work - Work is the act of, and the result of, performing services, furnishing labor, furnishing and incorporating materials and equipment into the Project and performing other duties and obligations, all as required by the Contract Documents. Such Work, however incremental, will culminate in the entire completed Project, or the various separately identifiable parts thereof.

2. **PROCUREMENT GUIDELINES:** This procurement is issued under the ACS Procurement Guidelines, adopted by the administrative director of the ACS effective September 25, 2013. Copies of the Procurement Guidelines are available without charge from the Anchorage Court System, Procurement Office, 820 4th Ave, Anchorage, Alaska 99501, telephone 264-8226. In case of conflict between this document and the ACS Procurement Guidelines, the ACS Procurement Guidelines shall prevail.
3. **AVAILABILITY OF CONTRACT DOCUMENTS:** Contract Documents are available in electronic format from
Dean Maschner, Assistant Facilities Manager at dmaschner@akcourts.gov or at 907-264-0427.
4. **Withdraw AMENDMENT, EXTENSION, OR CANCELLATION:** The ACS may amend, extend, or cancel this ITB as provided in the Procurement Guidelines.
5. **COMPLETENESS OF CONTRACT DOCUMENTS:** The submission of a bid is a representation that the Bidder has examined the Contract Documents to make certain that all sheets and pages were provided, that the Bidder has examined the Property/Facility where the work will be performed, that the Bidder is knowledgeable as to the conditions to be encountered in performing the Work, and that the Bidder understands the work to be performed.
6. **TIMELINESS OF BID:** The cut-off date for contractor questions is 4 calendar days before the bid Date. It is the responsibility of the Bidder to ensure that the Bid and any Bid modifications are received by the Contracting Officer before the scheduled bid opening time. Late bids, including bids mis-delivered to other ACS divisions, shall not be accepted.

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7. **RESPONSIVENESS OF BIDS:** Bids with minor informalities shall be considered responsive and accepted if the Contracting Officer determines that acceptance is in the best interest of the ACS. Minor informalities are matters of form rather than substance, or insignificant mistakes that can be waived or corrected without prejudice to other bidders; that is, the effect on price, quantity, quality, delivery, or contractual conditions is negligible. Unbalanced bids (bids that do not reasonably allocate prices among the various bid items) will be rejected as nonresponsive if the unbalance is detrimental to the ACS.
8. **REJECTION OF BIDS:** The ACS may reject any and all bids. A bid shall be rejected if it does not conform in all material respects to the requirements of the ITB or is otherwise determined to be non-responsive.
9. **DOCUMENTS REQUIRED FOR BID:** Bidders must submit the items described on the first page of this solicitation properly completed and executed no later than the Bid Response Due Date and Time. Bids not including all of the items listed on the first page of this solicitation may be rejected.

Bid Security. ACS requires a bid guaranty in the amount of 5% of the bid amount (including base bid and all alternate bids) if the bid amount exceeds \$100,000.

- A. Bids amounts that exceed \$100,000 shall be accompanied by bid security in the form of an acceptable bond issued by a surety company, certified check, cashier's check or money order made payable to the Alaska Court System (State of Alaska). The penal sum of the bond may be expressed as a dollar amount equal to 5% of the bid amount, or as "5% of the attached bid." The surety of a bid bond may be any corporation or partnership authorized to do business in Alaska as an insurer under AS 21.09. This bid security shall be held until a firm contract is executed. If the successful bidder fails to enter into a contract, this bid security shall be forfeited to the Alaska Court System. Award may be made to the next lowest responsive and responsible bidder. After final award of bid, all bid security shall be returned to the unsuccessful bidders. By submission of bid security and signature on the bid schedule, the successful bidder acknowledges and agrees to the conditions of this Invitation to Bid. See Section 00410 for form of bid bond.
10. **RESPONSIBILITY REQUIREMENT:** A bid shall be awarded only to a responsible Bidder, who has the capability in all respects to perform fully the contract requirements and has the integrity and reliability which shall assure good faith performance. A Bidder shall be declared non-responsible and the bid shall be rejected when:
 - A. The Bidder is in arrears on taxes due the State;
 - B. The Bidder has failed to perform satisfactorily on a previous contract with ACS, other state agency or an entity providing similar services to a court building or is not in a position to perform this contract.

See ACS Procurement Guidelines Section 2-212 for responsibility criteria. A determination by the Contracting Officer that a Bidder is not responsible may be protested.

11. **BID OFFERS:**
 - A. Bids made in response to this ITB shall be good and firm for a period of 60 days from the date of bid opening.
 - B. All offers and acceptance resulting from this ITB are limited to the terms and conditions contained in this document and its attachments.

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12. **BID CONSIDERATION BY ACS:** As soon as practicable after the Response Due Date and time specified above, the Alaska Court System will review all bids and evaluate them for award.
13. **BID AWARD:** The bid award shall be made to the lowest responsible and responsive Bidder whose Bid conforms in all material respects to the requirements and criteria set out in this Invitation to Bid. The sum of the Total Basic Bid plus any Alternates Awarded governs for purpose of determining low Bidder. Award will be made subject to availability of funds. The Alaska Court System reserves the right to award some, none, or all of Base Bids and/or Alternates in any order in the best interest of the Alaska Court System. Bid amounts for alternates not awarded with this contract shall be held for 60 days from date of contract and may be awarded within that time as a fixed price change order.
- A. Notice of Award will be issued to the lowest responsible and responsive Bidder generally within 2 working days after Bid Opening, and shall be transmitted to all bidders. Notice of Award shall also be made subject to availability of funds and its issuance may be delayed or canceled as determined by the Contracting Officer in accordance with ACS Procurement Guidelines.
- B. Within 3 working days of Notice of Award the Contractor shall provide proof of insurance per General Conditions Section 00700.5.A of this ITB, and a list of subcontractors the Bidder proposes to use in the performance of the contract in compliance with this Section.
14. **BID PROTESTS:** Prior to the bid opening - Bidders are requested to carefully review this entire invitation as soon as it is received for defects and questionable or objectionable content. Questions, objections or comments should be made in writing and received by the Assistant Facilities Manager no later than 3 days (Monday through Friday, excluding legal Holidays) before the Response Due Date and time, so that any necessary amendments may be published and distributed to bidders. Bidders' protests based upon any omissions, errors, or the content of the Invitation to Bid will be disallowed if not made in writing and received by the Assistant Facilities Manager at least two business days (Monday through Friday, excluding legal Holidays) prior to the Response Due Date and time.
- A person desiring to protest the provisions of this ITB or the award must comply with the applicable provisions of ACS Procurement Guideline 4-401.
- If a protest is sustained in whole or in part, the protestor's sole remedy is the successful protestor's documented reasonable bid or proposal preparation costs.
15. **EEO AND FEDERAL CIVIL RIGHTS COMPLIANCE:** By signature on the Bid Schedule the Bidder certifies compliance with the applicable portions of the Federal Civil Rights Act of 1964 and the Equal Employment Opportunity Act and the regulations issued thereunder by the State and Federal Governments. If any Bidder fails to comply with the Act or Regulations issued thereunder, the ACS reserves the right to terminate the contract.
16. **TAXES:** All bids shall exclude federal, state and local sales taxes. However, if the Bidder believes that certain taxes are properly payable by the ACS; such taxes may be listed separately, directly below the Bid price for the affected item. The ACS is exempt from federal excise tax under Registration No. 92-6001185.
17. **SUBCONTRACTORS:** Within 3 working days after the issuance of the Notice of Award, the apparent low Bidder shall submit a list of subcontractors the Bidder proposes to use in the performance of the contract. The list must include the name, phone number, and location of the place of business for each subcontractor and evidence of the subcontractor's valid Alaska business license. Replacement of a subcontractor may not be made, except with prior approval of the

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Contracting Officer, for reasons specified in the ACS Procurement Guidelines.

18. **ACCEPTANCE OF CONTRACT, PERFORMANCE BOND, PAYMENT BOND, and PROOF OF INSURANCE:** If the ACS delivers or mails written Notice of Award to the Bidder within sixty (60) days after the date set for the opening of this bid, or at any other time thereafter before it is withdrawn, the Bidder will accept, execute and deliver **Section 00510 Agreement Between Owner and Contractor** to the ACS in accordance with the bid, and will also furnish and deliver proof of insurance coverage in compliance with **Section 00700 General Conditions, paragraph 5**, all within 3 working days after personal delivery or after deposit in the mails of the notification of acceptance of this bid. If the amount of the contract to be awarded exceeds \$100,000 the Contractor will also furnish and deliver within five days of Notice of Award a Performance Bond and a Payment Bond, and, before Final Payment, submit a completed and authorized Consent of Surety Company to Final Payment form, a Contractors affidavit of Payments of Debts and Claims and release Liens and Claims against Payment Bond form. The aforementioned Bonds and forms must be substantially in forms provided by ACS.
19. **ALASKA LITTLE DAVIS BACON ACT:** Prospective Bidders are advised that construction or remodeling in connection with the contract is subject to AS 36.05.010. The Contractor must comply with the requirements noted within the most recent Department of Labor pamphlet entitled, "Laborer's and Mechanic's Minimum Rates of Pay," found at: <http://www.labor.state.ak.us/lss/pamp600.htm> The rate of wages shall be adjusted to the wage rate under AS 36.05.010.
20. **DESCRIPTION OF PREFERENCES**
- A. **ALASKA PREFERENCE:** A bid shall be awarded to an Alaska Bidder whose bid is not more than five percent (5%) higher than the lowest non-resident's bid in accordance with Alaska Statute 36.30.170(b)(1) – (5). An Alaska Bidder is defined as one who:
- 1). Holds a current Alaska business license (business license number must be shown in space provided on the Bid Schedule);
 - 2). Submits a bid for goods or services under the name appearing on the current Alaska business license;
 - 3). Has maintained a place of business in the State staffed by the Bidder or an employee of the Bidder for a period of six months immediately preceding the date of the bid;
 - 4). Is incorporated or qualified to do business under the laws of the State, is a sole proprietorship and the proprietor is a resident of the State, or is a partnership and all partners are residents of the State; and
 - 5). If a joint venture is comprised entirely of ventures that qualify under (1-4 of this subsection).
- NOTE:** A Bidder may seek a preference under either B, below, or C, below, but not both. In addition, a Bidder may seek a preference under D and E, below. A Bidder seeking the Alaskans with Disabilities Preference under B, below, must be an individual or business must be listed with the Division of Vocational Rehabilitation as qualified under Alaska Statute 36.30.170 at the time the bid is opened and provide ACS with a copy their Certification Letter. A Bidder seeking a preference under B, C, or D, below must add value by actually performing, controlling, managing, and supervising the services provided, or for supplies, a Bidder must have sold supplies of the general nature solicited to other state agencies, governments, or the general public.
- B. **ALASKANS WITH DISABILITIES PREFERENCE:** A bid shall be awarded to an Alaska Bidder whose bid is not more than ten percent (10%) higher than the lowest bid, if the Bidder is a qualifying entity under AS 36.30.321(d)-(e).
- C. **EMPLOYMENT PROGRAM PREFERENCE:** A bid shall be awarded to an Alaska Bidder

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whose bid is not more than fifteen (15%) higher than the lowest bid, if the Bidder is offering services through an employment program in accordance with Alaska Statute 36.30.321(b).

- D. EMPLOYERS OF PEOPLE WITH DISABILITIES PREFERENCE:** A bid shall be awarded to an Alaska Bidder whose bid is not more than ten percent (10%) higher than the lowest bid, if the Bidder meets the requirements of AS 36.30.170(f).
- E. ALASKA PRODUCTS PREFERENCE:** The bid will be decreased by the percentage of the value of the designated Alaska products under AS 36.30.332 – AS 36.30.338. The Bidder must execute the Alaska Products Preference Worksheet and submit the worksheet with the Bid in order to receive this preference. A list of qualified Alaskan products is available on line at <http://www.dced.state.ak.us.econdev/prodpref>. An Alaska Products Preference Worksheet can be obtained from the Facilities Office by calling 264-8238.
- F. ALASKA VETERAN'S PREFERENCE:** An Alaska Veteran Preference of five percent, not to exceed \$5,000, will be applied to the price in the proposal. The preference will be given to an offeror who qualifies under AS 36.30.990(2) as an Alaska bidder and is a:
- 1) sole proprietorship owned by an Alaska veteran;
 - 2) partnership under AS 32.06 or AS 32.11 if a majority of the partners are Alaska veterans;
 - 3) limited liability company organized under AS 10.50 if a majority of the members are Alaska veterans; or
 - 4) corporation that is wholly owned by individuals, and a majority of the individuals are Alaska veterans

A preference under this section is in addition to any other preference for which the bidder qualifies.

To qualify for this preference, the bidder must add value by the bidder itself actually performing, controlling, managing and supervising a significant part of the services provided or the bidder must have sold supplies of the general nature solicited to other state agencies, governments, or the general public.

An Alaska veteran is a resident of Alaska who:

- 1) Served in the Armed forces of the United States, including a reserve unit of the United States armed forces; or the Alaska Territorial Guard, the Alaska Army National Guard, the Alaska Air National Guard, or the Alaska Navel Militia; and
- 2) Was separated from service under a condition that was not dishonorable.

NOTE: **Alaska Veteran Preference Affidavit Required.** See attached form 25D-17.

- G. RECYCLED PRODUCTS PREFERENCE:** Not Applicable.
- H.** Contractor must provide documents for proof or calculation of Preferences listed above.

END OF SECTION

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SECTION 00300 – BID SCHEDULE

1.1 BASE BID – Palmer Courthouse Boiler Room Upgrades & Boiler Replacement

Demo existing three cast iron boiler & replace with new cast iron boilers, Boiler Circulation Pumps, associated piping and related accessories. Furnish all labor, materials, equipment, etc., necessary to complete all work shown; specified; and reasonably inferred:

Total Base Bid \$ _____
(figures)

Dollars

1.2 ADD ALT #1 – Palmer Courthouse Boiler Room Upgrades & Boiler Replacement

Bid same base scope pulse the replacement of the Heating System Pumps, Associated piping and related accessories, using Alternates Schematics M104, M204, E201, E202

Total Base Bid \$ _____
(figures)

Dollars

(words)

PREFERENCES: Indicate whether you are eligible for any of the following Preferences. Requirements that must be complied with to qualify for bid preferences are described in paragraph 1.5 below:

- _____ Alaska Bidder Preference (5%), ACS Procurement Guidelines 2-202-12-9.
- _____ Alaska Employment Program (15%), ACS Procurement Guidelines 2-202-12-9.
- _____ Alaska Disabled Bidder (10%), ACS Procurement Guidelines 2-202-12-9.
- _____ Alaska Product Preference, ACS Procurement Guidelines 2-202-12-9.
- _____ Alaska Veteran's Preference, ACS Procurement Guidelines 2-202-12-9.

1.3 BIDDER ACKNOWLEDGEMENTS AND REPRESENTATIONS:

- A. In compliance with the attached bid documents, the above Bidder proposes to enter into an agreement with ALASKA COURT SYSTEM for the Work.
- B. The above Bidder, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents for this project hereby proposes and agrees to perform the Work within the time stated and in strict accordance with the proposed Contract Documents, including furnishing all labor and materials to do all the work required.

The submission of a Bid is considered a representation that the Bidder has examined the Contract Documents to make certain that all sheets and pages were provided, and that the Bidder has examined the Project site, and that the Bidder is satisfied as to the conditions to be

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encountered in performing the Work. The Alaska Court System expressly denies any responsibility or liability for a bid submitted on the basis of an incomplete set of Contract Documents.

- C. The above Bidder acknowledges receipt of the following addenda to the DRAWINGS and/or SPECIFICATIONS (give number and date of each) and that associated costs are included in this Bid.

Addenda #, Date Issued	Addenda #, Date Issued	Addenda#, Date Issued
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No other alterations, substitutions, changes or qualifications to the terms or conditions of the invitation are allowed on this Bid Schedule.

- D. Offers made in response to this Invitation to Bid shall be good and firm for a period of 60 days from the date of bid opening. If written notice of the acceptance of this Bid is mailed or delivered to the Bidder within sixty (60) days from the date of bid opening, or at any other time thereafter before it is withdrawn, the Bidder will accept the Contract in accordance with this Bid. All offers and acceptance resulting from this Invitation to Bid shall be expressly limited to the terms and conditions contained in this document and its attachments.
- E. By signature on this document the above Bidder certifies compliance with the applicable portions of the Federal Civil Rights Act of 1964 and the Equal Employment Opportunity Act and the regulations issued thereunder by the State and Federal Government. If any Bidder fails to comply with the Act or Regulations issued thereunder, the OWNER reserves the right to terminate the contract.
- F. Bidder acknowledges that this Bid is being submitted with Bidder's facsimile signature. Bidder agrees that the Alaska Court System is relying upon this facsimile signature as if it were an original signature, and by submitting this Bid, Bidder waives any right to disclaim this Bid based upon the fact that the signature is not original.
- G. By completing, signing and submitting this form I certify that I have reviewed the bid documents, with addenda, and understand the scope of services and conditions required for this Property/Facility. Furthermore, I agree to furnish for the above amounts – which was arrived at independently and without collusion – all necessary labor, materials, and equipment. Work shall be accomplished in a workmanlike manner, observing all applicable civil rights and equal employment opportunity acts, and to the satisfaction of the Contracting Officer
- H. HUMAN TRAFFICKING: By signature on this bid, the bidder certifies that the bidder is not established and headquartered or incorporated and headquartered in a country recognized as Tier 3 in the most recent United States Department of State's Trafficking in Persons Report. The most recent United States Department of State's Trafficking in Persons Report can be found at the following website: <http://www.state.gov/g/tip/>. Failure to comply with this requirement will cause the state to reject the bid as non-responsive, or cancel the contract.

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1.4 SIGNATURE

Signature of Bidder

Date

Printed or Typed Name of Signer & Title

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer and officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business Name: _____

Business Address: _____

Telephone Number: _____

Fax Number: _____

E-mail Address: _____

(Seal, if by Corporation)

Business License Number

Expires: _____

Contractor's Certification Number

Expires: _____

Federal Identification Number

If the Bidder seeks application of the Alaska veteran's preference, the Bidder must supply a written certification for each individual who is an Alaska veteran, in the following form:

[Name] certifies that he (or she) is a resident of Alaska who:

1). Served in the Armed forces of the United States, including a reserve unit of the United States armed forces; or the Alaska Territorial Guard, the Alaska Army National Guard, the Alaska Air National Guard, or the Alaska Navel Militia; and

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2). Was separated from service under a condition that was not dishonorable.

Authorized Signature

Printed Name

Date

END OF SECTION

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SECTION 00510 - AGREEMENT BETWEEN OWNER AND CONTRACTOR

Date of Contract: **DATE:**

THIS AGREEMENT made by and between: **ALASKA COURT SYSTEM**, (hereinafter called "Owner") and **CONTRACTOR** (hereinafter called "Contractor").

The Owner and the Contractor agree as set forth below:

Article 1. Work

The Contractor shall perform all the Work required by the Contract Documents for the following project:

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It is agreed that for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Owner or its assignee, the Contractor hereby agrees with the Owner to commence and complete the construction described as follows:

Supply and installation of the entire Work as contained in the ITB issued **December 13, 2021** (hereinafter called the "Work"), at a cost not to exceed the proposed price and to furnish all the materials, supplies, machinery, equipment, superintendents, labor, insurance and other accessories and services necessary to complete said Work in accordance with the conditions stated in the Contract Documents.

Article 2. Time of Commencement and Completion

Contractor hereby agrees to commence Work under this Agreement on a date to be specified in a written "Notice of Proceed" from the Owner and to complete the Work within the time stated in the Supplemental Conditions.

Article 3. Architect/Engineer

The Architect/Engineer for this project is: Alaska Court System – Assistant Facilities Manager

1.

Article 4. Contract Sum

The Owner shall pay the Contractor under provisions of the Contract Documents for the performance of the Work, subject to additions and deductions by change order as provided in the Contract Conditions, the Contract Sum of **AMOUNT** dollars and no cents (**\$NUMBER.00**), for the Base Bid total Lump Sum Amount. The attached bid sheets form an integral part of this Agreement.

Article 5. Contract Documents

- 5.1 The Contract Documents consist of this Agreement and documents listed hereinafter, (hereinafter called "Contract Documents"), and all are incorporated herein by reference and as fully a part of the Contract as if attached to this Agreement or repeated herein:
- Invitation to Bid and all attachments listed in the Index of Attachments
 - Laborers' and Mechanics' Minimum Rates of Pay
 - Technical Specifications
 - Technical Drawings
 - Contents of Addenda
 - Contractor's completed Bid Schedule
 - Notice of Award
 - Notice to Proceed

This Agreement and all covenants hereof shall insure to the benefit of and be binding upon the Owner and the

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Contractor, respectively, and their partners, successors, assigns and legal representatives.

Article 6. Progress and Final Payments

- 6.1 Payment shall be made to the Contractor by the Owner, or his assigns, based upon amount of the approved Contractor's estimate of Work completed and value of materials suitably stored on site up to date of application for payment less any retainage required by the Owner in accordance with General Conditions Paragraph 5.
- 6.2 Final payment, constituting the final unpaid balance of the contract sum including retainage, shall be paid by the Owner or his assigns to the Contractor. Final payment shall be due to the Contractor in accordance with General Conditions Paragraph 5.

Article 7. Miscellaneous

- 7.1 Any notice of communication which either party desires to give the other party which affects the contract sum of this Agreement shall be given in writing and either shall be personally delivered to the other party's representative or deposited in the United States mail as registered mail with all postage prepared and if given by the Contractor to the Owner, then addressed as follows:

Name:	Dean Maschner		
Agency:	Alaska Court System		
Address:	820 West 4 th Avenue		
City, State, Zip:	Anchorage, AK 99501	Email:	dmaschner@akcourts.gov
Phone:	907-264-0427		

If given by the Owner to the Contractor, then addressed as follows (including telephone number on the last line):

Name:	CONTRACTOR		
Business:	.		
Address:			
City, State, Zip:		Email Address:	
Phone:		Fax:	

- 7.2 The Owner shall furnish to the Contractor an electronic set of drawings and specifications, at no cost, for use in the Construction of the Work. The Contractor may obtain additional sets of printed drawings or specifications by paying the Owner for the costs of reproduction, handling and mailing.
- 7.3 The Contractor shall perform at least ten percent of the total Work with forces that are in the direct employment of the Contractor's organization.

In WITNESS WHEREOF, the parties have made and executed this Agreement to be effective the day and year first above written.

ALASKA COURT SYSTEM, Owner

Contractor

By: Anna Harrison

By:

Contracting Officer

Title: _____ Date

Title: _____ Date

END OF SECTION

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SECTION 00700 – GENERAL CONDITIONS

1. CONTRACTOR'S GENERAL DUTIES:

- a) The Contractor shall diligently, and in skillful, workmanlike manner, provide all labor, materials, equipment, and facilities necessary to perform the Work in accordance with the Contract Documents and in a manner to complete the Work within the specified contract time. The Contractor shall not perform any portion of the Work for which the Contract Documents require submittal and review of shop drawings, product data, samples or similar documents until the applicable submittal has been approved by the architect.
- b) The Contractor shall provide on the site at all times during the prosecution of the Work an Owner approved, competent resident Supervisor. The CONTRACTOR is to submit to the Owner for consideration, the proposed Supervisors qualifications and relevant work history, and, three (3) project references, no older than 5 years old, with scope, date, and contact information including phone number, of the referenced projects Project Manager. The Owner shall also be advised in writing of the supervisor's name, email address, local address, mailing address, and telephone number. This written advice is to be kept current until Final Completion by the OWNER. The supervisor will be the CONTRACTOR's representative at the site and shall have full authority to act and sign documents on behalf of the CONTRACTOR. The Supervisor may not be changed or replaced without prior approval of the Owner. All communications given to the Supervisor shall be as binding as if given to the CONTRACTOR.
- c) The Contractor shall cooperate with the Contracting Officer in every way possible.
- d) Contractor must prepare contemporaneous daily reports showing the progress of the work. The Contractor must transmit a copy of the daily reports to the Owner no less than daily. Transmittal of daily reports does not constitute notice to the Owner of any matter for which notice is specifically required under the Contract Documents. The daily reports must include, at the minimum, information regarding the project schedule, safety issues, subcontractors on site, work performed, meetings held, and communications with the Owner.
- e) Contractor shall provide a minimum of 72 hours' notice for all required or requested inspections, approvals, tests or differing condition verifications that require site visits. Site visits by Owner are limited to weekdays, unless agreed to in advance by both parties.

2. AUTHORITIES AND LIMITATIONS:

- a) The Contracting Officer (or authorized representative) has the authority to make findings, clarifications or interpretations and decisions with respect to the contract; to approve materials, work and payment therefore; and, to modify or terminate the contract on behalf of the Owner.
- b) The Contractor shall have sole responsibility for the means, methods, sequences, or procedures of construction and safety precautions related thereto. The Contractor shall conduct all works in such a manner as to protect state resources.
- c) Dispute Resolution: Any dispute arising out of this contract, and which cannot be satisfactorily remedied by the Parties to the Contract, shall be resolved pursuant to Alaska Rules of Court, Rule 47.

3. LAWS AND REGULATIONS: The Contractor shall comply with all applicable laws, regulations, codes, ordinances and written directives issued by the Contracting Officer.

- a) The Contractor shall obtain applicable licenses and permits; provide supervision, labor, tools and new materials (except as may otherwise be provided by the Contracting Agency); and utilize Alaska Products and Wood Products when applicable (see AS 36.05.010 & AS 36.30.322).

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- b) The Department of Labor, Labor Standards and Safety Division shall be notified in accordance with AS 36.05.010 and AS 36.05.030. The Contractor must then comply with the requirements noted within the most recent Department of Labor pamphlet entitled, "Laborer's and Mechanic's Minimum Rates of Pay," found at: <http://www.labor.state.ak.us/lss/pamp600.htm>
- c) The Contractor shall submit one copy of the certified payrolls to the Owner weekly. Statue 36.05.0005 applies only to a public construction contract that exceeds \$25,000.
- d) Compliance of Specifications and Drawings: If the Contractor observes that the Specifications and Drawings supplied by the OWNER are at variance with any Regulatory Requirements, Contractor shall give the Contracting Officer prompt written notice thereof, and any necessary changes will be authorized.
- e) Preferential Employment:
 - a. The Contractor shall comply with all applicable and valid laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect during the term of this Contract.
 - b. Employment Preference in Zones of Underemployment. The Alaska Department of Labor and Workforce Development has determined that certain areas of Alaska are Zones of Underemployment. If the Work is to be performed wholly or partly within a Zone of Underemployment, the Contractor must give employment preference to Alaska residents as determined by the Alaska Department of Labor and Workforce Development. Failure to comply with this requirement can result in substantial civil and criminal penalties under AS 36.10.100. Within 20 days after award of a contract under this procurement, the Alaska Court System will report the Contract to the Alaska Department of Labor and Workforce Development, which will be responsible for administration and enforcement of employment preference requirements. Contractor can obtain the Alaska Department of Labor and Workforce Development Employment Preference Determination at the following internet address: <http://labor.alaska.gov/lss/forms/res-hire-notice-2013.pdf>. For further information, contact the Alaska Department of Labor and Workforce Development, Division of Wage and Hour Administration, at 907-269-4900.
 - c. In order to ensure that the Contractor Subcontractors will comply with all applicable laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect, the Contractor shall include in its Contracts with subcontractors under this Contract language that is substantially the same as the paragraph above.
- f) Alaska Little Davis-Bacon Act requirements. The following Labor provisions shall also apply to this Contract:
 - a. Contractor and Subcontractors of Contractor shall pay all employees unconditionally and not less than once a week;
 - b. Wages may not be less than those stated in the advertised Specifications, regardless of the contractual relationship between the Contractor or Subcontractors and laborers, mechanics, or field surveyors;
 - c. The scale of wages to be paid shall be posted by the Contractor in a prominent and easily accessible place at the site of the Work;
 - d. The Owner shall withhold so much of the accrued payments as is necessary to pay to laborers, mechanics, or field surveyors employed by the Contractor or Subcontractors the difference between
 - 1. The rates of wages required by the Contract to be paid laborers, mechanics, or field surveyors on the Work, and
 - 2. The rates of wages in fact received by laborers, mechanics, or field surveyors.

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4. **CHANGES:** The Facilities Manager reserves the right to make written changes to the Contract Documents for modifications within the general scope of the Work. The value of any Work covered by a Change Order for an increase or decrease in the Contract Price shall be determined in one of the following ways:
- a) Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.
 - b) Request for Proposal – upon receipt by the Contractor, he shall within seven days, submit to the Owner a written proposal for adjustment. Proposals for increases or decreases to the Contract amount shall include both a detailed cost estimate showing direct labor, material, equipment, small tools, and consumable costs, and subcontractor cost estimates as appropriate.
 - c) Time and Materials (T&M) Work – When authorized by Owner, the cost of the change shall be based on actual cost for time and materials spent on work performed. The Contractor shall provide backup documentation including, but not limited to, daily time sheets, material invoices, and equipment rental receipts.
 - d) Allowances for overhead and profit shall not exceed 15% for the party performing the work. This allowance is to compensate the Contractor for all labor, supervision, and equipment not directly necessary to perform or supervise the work. This allowance includes temporary construction facilities, field engineering, schedule updating, as-built drawings, home office costs, project management, office engineering, estimates, home office overhead because of extended time, and any other indirect costs incidental to the performance of the change in work. The Contractor shall be allowed a 5% markup on the first lower tier subcontractor only. No other markup is allowed.
 - e) Any act or occurrence be it a result of an emergency, differing site condition or change order which may form the basis of a claim for a price to time adjustment shall be reported immediately to the Contracting Officer. Extra work performed without a signed agreement or change order shall be treated as unauthorized work, and the Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Time for that work.
5. **INSURANCE AND INDEMNIFICATION:**
- 1. The Contractor shall, within 3 working days of the Award of the contract, provide proof of the following insurances: Worker's Compensation (per statutory requirements) and adequate coverages and limits:
 - (i) Comprehensive or Commercial General Liability: Not less than \$1,000,000 aggregate, and not less than \$500,000 each occurrence;
 - (ii) Automobile Insurance: Not less than \$1,000,000 each occurrence (Combined Single Limit for bodily injury and property damage)These coverages shall remain in force for the duration of the contract.
 - 2. The Contractor shall indemnify, save harmless, and defend the OWNER, its agents and its employees from any and all claims, actions, or liabilities for injuries or damage sustained by any person or property arising directly or indirectly from the construction or the Contractor's performance of this contract; however, this provision has no effect if, but only if, the sole proximate cause of the injury or damage is the Owner's negligence.
6. **APPLICATION FOR PROGRESS PAYMENT:** The Contractor shall submit to the Contracting Officer for review a Request for Payment filled out and signed by the Contractor covering the Work completed as of the date of the Request for Payment and accompanied by such supporting documentation as is required by the Contract Documents. Contracting Officer will either indicate in writing a recommendation of payment or return the Request for Payment to the Contractor indicating in writing the Contracting Officer's reasons for refusing to recommend payment. In the latter case, the Contractor may make the necessary

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corrections and resubmit the Request for Payment. Progress payments will be made as the Work progresses on a monthly basis.

- a) Stored Materials and Equipment: Coordinate with court system project manager.
- b) The Contractor shall make prompt payment to all employees, subcontractors and suppliers utilized on the Project.
- c) The Owner shall make final payment to the Contractor following approval for completion of all Work and the Contractor's submittal of all releases, warranties, record documents, permits and invoices. Liens or other claims relating to the Project may be withheld from final payment, if written notice is first given to the Contractor. Acceptance of final payment will constitute Contractor's waiver to future claims.
- d) No claim by the Contractor for a change in the Contract Price shall be allowed unless claimed before Final Acceptance of this Contract.

- 7. **MATERIALS AND EQUIPMENT:** All materials and equipment shall be of specified quality and new, except as otherwise provided in the Contract Documents. The Contractor shall provide all facilities and labor required to protect materials and other components of the Work from damage or deterioration due to environmental exposure, handling, or other factors.
- 8. **USE OF PREMISES:** The Contractor is responsible for the Site, the Work, and persons and materials thereon. The Contractor shall confine construction equipment, the storage of material and equipment and the operations of workers to the Project limits and approved storage sites.
- 9. **WARRANTY:** The Contractor warrants that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to the Owner. All Defective Work, whether or not in place, may be rejected, corrected, or accepted as provided for in this Article. The Contractor shall remedy all defects in materials or workmanship which develops within a period of one year from the date of final payment unless directed otherwise within the Contract Documents/specifications.
- 10. **SAFETY:** The Contractor is responsible for maintaining a safe and clean work area, and for blocking off work areas to public access during the course of work. The Contractor shall also comply with standards prescribed by the State of Alaska, Department of Labor, Division of Labor Standards and Safety. The CONTRACTOR alone shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons and organizations who may be affected thereby; and to all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, The CONTRACTOR shall comply with all applicable Regulatory Requirements of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- 11. **BUILDING SECURITY:** The Contractor will lock exterior building doors except while work in the immediate area is in progress. The Contractor shall keep all exterior doors locked except while access to the building is required for Work. If an exterior door is left unlocked the Contractor will not leave the door unattended. If exterior doors are removed or rendered insecure as a result of the Work, the Contractor will secure the opening using other means as necessary while maintaining egress compliance. When Contract personnel leave the building after hours, they will lock all doors, inspect the area for fire hazards and take appropriate corrective action.

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12. CONTRACT CLOSE-OUT:

- a) Substantial Completion: Substantial Completion Inspection will be scheduled after the Contractor provides written notice to the Owner that Work is Substantially Complete. Should Owner determine that Work is not substantially complete the Contractor will be notified in writing, giving reasons therefore.
- b) Final Completion: Upon completion of the Work, and prior to final payment, the Contractor shall submit to the Owner the following items duly signed and executed: Warranty of Work; Contractor's Affidavit of Payment of Debt and Claims; Contractor's Affidavit of Release of Liens; Consent of Surety to Final Payment; Final Wage Certification and Department of Labor Notice of Completion; Complete and legally effective releases or waivers signed by each of Contractor's direct subcontractors and direct material suppliers, and all persons who have notified Contractor or Owner of a right to make a claim under AS 36.35.020

- 13. LIQUIDATED DAMAGES:** Liquidated damages will be in the amount of \$200 per day beginning on the date(s) provided in Section 01010.1.5.D for Substantial Completion and ending on the date that Substantial Completion is achieved. These liquidated damages are intended to compensate the Owner for contract administration costs due to delay, and are in addition to any actual damages that Owner may claim as a result of loss of use or other harm resulting from delay of Final Completion.

END OF SECTION

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SECTION 01010 - SUMMARY OF WORK

PART 1 GENERAL

1.1 DEFINITIONS

- A. Alaska Court System (ACS) Normal Work Hours: 7:30 am until 5:00 pm Monday through Thursday, Friday 7:30 am until 12:00 pm not including State holidays.
- B. Provide: To furnish and install.

1.2 OWNER'S OCCUPANCY

- A. The Owner will continue to occupy and operate the building. The Contractor shall coordinate with the Owner to allow normal business operations to continue and shall cooperate with the Owner in construction operations to minimize conflict and to facilitate Owner usage. Contractor shall at all times conduct their operation to insure the least inconvenience to staff, visitors, and the general public.
 - 1. Contractor must maintain the existing fire exiting and public and private circulation pathways.
- B. Contractor shall schedule **after** ACS Normal Work Hours any work which could interfere with the Owner's operation. Specific schedules and Work activities which will be required to be performed after Normal Work Hours are:
 - 1. All demolition work.
 - 2. All rooftop hoisting.
 - 3. Any concrete drilling or saw cutting.
 - 4. Any water, HVAC or power shut offs.
 - 5. All work with loud power tools.
 - 6. All fire alarm and security system disruption or testing.
 - 7. All Work in common circulation areas, including office space, hallways, courtrooms, public lobbies, public toilets, and stairwells.
- C. Disruption of Operations: Any work deemed by the Owner to be disruptive to operations or to the record of the court due to excessive noise, vibration or other reasons will be required to be performed after normal working hours. The Contractor must schedule and coordinate such work with the Owner prior to proceeding with work. Contractor shall coordinate with the Owner periods of time when construction work is producing strong odors for the shut off of air intake fans.
 - 1. Upon notice by court staff that the contractors work is disrupting operations the contractor must immediately cease work.
- D. Include in contract sum sufficient funds as may be required for any "after hours" work caused by these requirements. No additional payment to Contractor will be authorized because of Contractor's failure to anticipate required "after hours work".
- E. Construction areas must be segregated by closed doors or temporary barriers from the occupied areas of the courthouse.

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- F. After Substantial Completion in a given area, schedule work to maintain Owner's operation.

1.3 WORK COVERED BY THE CONTRACT DOCUMENTS

- A. Project Location: Palmer Courthouse, 435 South Denali St., Palmer, Alaska
- B. Owner: Alaska Court System (ACS), Facilities Dept. 820 West 4th Avenue, Anchorage, Alaska 99501.
1. Owner's Contract Representative: Dean Maschner, Assistant Facilities Manager.
 2. Owner's on-site Representative for Palmer court system issues: Babz Cloud, Clerk of Court.
- C. Provide all equipment, materials, labor, and workmanship, necessary to complete the Work as described and reasonably inferred to in the Contract Documents.

1.4 CONTRACT TYPE

- A. Competitively bid Lump Sum Single Prime Contract.

1.5 PERFORMANCE PERIOD AND NOTICE TO PROCEED

- A. A limited Notice to Proceed may be issued as determined appropriate by the Project Manager. Such Notices to Proceed may be limited to procurement and fabrication of long lead materials, submittals and other off-site work prior to issuance of a full Notice to Proceed with Work On-Site.
- B. A Notice to Proceed with Work On-site will be given after Contractor has all materials on-hand; has complied with contract requirements; and has submitted and received approval of a Work Schedule.
- C. Submit Preliminary Work Schedule to include but not be limited to: the submittal process; materials selection and procurement; timelines for Work; and Substantial Completion date within 14 days after Notice of Award for review, comment, and revision process. Upon receipt of Owner comments, submit a revised schedule within 5 days. Continue Work Schedule submittal/revision process until a Final Work schedule is agreed upon. Submit Final Work schedule 4 weeks prior to the beginning of Work On-Site. Submit Work schedule with Pay Request.
- D. Substantial Completion required, by May 20, 2022.
- E. Note Liquidated Damages provision in General Conditions paragraph 13.
- F. Final Completion, including Final Pay Request, required by June 20, 2022.

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1.6 SECURITY AND CLEARANCES

- A. Contractors, agents, principals, officers or employees who supply goods or services to the ACS must have completed background checks. The interior premises of ACS facilities may contain confidential information relating to the business of the ACS. Any person with the following conditions is restricted from working within the interior premises or entering the interior premises, other than as a member of the general public:
- B. Been convicted of a violent crime or crime of theft within last 5 years;
- C. Been convicted of more than 2 misdemeanors in last 5 years;
- D. Been convicted of more than one felony in previous 10 years;
- E. Has an on on-going case in the court where work is being performed with ACS until case is resolved. The ACS may make an exception to this restriction where services are provided under conditions in which the movements and activities of the person providing services within the premises are constantly monitored, and under circumstances in which the movements and activities of the person providing services are limited to areas in which confidential information relating to the business of the ACS is not present.;
- F. The ACS may limit or reject certain individuals if their presence is determined by the Contracting Officer to be detrimental to the normal conduct of the ACS business.
- G. Prior to commencement of any work on court premises, the ACS requires each contractor, agent, principal, officer or employee who will work on court premises to provide a State of Alaska Criminal History Report, obtained from the Troopers. Allow 4 days for clearance approval after Criminal History Report is submitted.
- H. Much of the business of the ACS is necessarily confidential and not subject to public disclosure. The confidentiality of draft opinions, internal memoranda, conversations regarding pending issues and other court business are essential to the court's function. Additionally, records related to personnel issues, procurement proceedings, internal policy discussions, and other administrative issues are also confidential. Prior to commencing any work under this contract, the contractors, agents, principals, officers or employees who supply goods or services to the premises shall inform all contractors, agents, principals, officers, and employees working on the premises that the disclosure of any confidential court business observed or overheard may result in permanent removal from the premises and may be grounds for termination of contract and even criminal prosecution.
- I. Access to the Palmer Courthouse will be permitted with a limited issuance of hard keys and electronic card keys which will be signed for by the Contractor. The Contractor is responsible for tracking and safeguarding the keys and must return them to the issuing entity as a condition of final payment. No duplications are to be made by the Contractor. The Contractor may also be given security codes to allow entry into secure areas of the courthouse. The Contractor and the Contractors Supervisor are the only individuals to be made aware of these codes. Should loss of keys or unauthorized code distribution occur, the Contractor shall advise the Owner immediately, and will be responsible for replacement keys; re-keying; and recoding costs.

- 1.7 WARRANTY:** All work and materials shall be warranted for a period of one year after acceptance by the Owner, unless otherwise stated in these specifications. At no additional cost to Owner, correct defects in materials and workmanship which appear during warranty period by repairing, or when directed, by replacing.

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1.8 MEETINGS: A Preconstruction meeting will be held. Attendance by the Contractor, the Contractors Supervisor, and the first-tier subs is required. One Progress Meetings will be held per week. Attendance by the Contractor and Supervisor is required. Attendance by first tier subs is required if requested by Owner.

1.9 INSPECTIONS: Contractor shall provide a minimum of 72 hour's notice for all required or requested inspections, approvals, tests or differing condition verifications that require site visits. Site visits by Owner are limited to weekdays, between 8am and 4pm, unless agreed to in advance by both parties.

1.10 SUBMITTALS:

- A. Deliver all required submittals to Owner within 14 days of Notice of Award. Provide a minimum of 2 copies of the submittals. Owner will review submittals and resubmittals and provide comments within **seven (5) days** after receipt and will retain the submittals for their files.
- B. Contractor to provide resubmittals within 5 days after receipt of Owner comments.
- C. Identify Project, Contractor, subcontractor or supplier; pertinent contract drawings sheet and detail numbers and specification section number and location in Work. Submittals for each section shall be submitted individually. Submit by specification section complete and all at one time; partial submittals will not be considered.
- D. Apply Contractor's stamp, signed, certifying that review, verification of products required, field dimensions, adjacent construction Work and coordination of information is in accordance with the requirements of the Work and the Contract Documents.
- E. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed Work.
- F. Reference Division 08 Openings for specific technical submittal requirements.
- G. The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, product data, Samples, Qualifications, or similar submittals until the respective submittal has been approved by the Owner.
- H. Contractor shall submit all required submittals in a timely fashion in order to allow review, comment, and resubmittal process and not delay the Work.
- I. Submittal copy size for most submittals shall be 8-½" by 11", 8-½" by 14", or 11" by 17" as appropriate. Copy size for fire alarm or other system shop and design drawings may be up to 24"x36".
- J. Mark each copy to identify applicable products, details, models, options and other project specific data.
- K. Supplement manufacturer's standard data to provide information unique to this project. Show reference standards, performance characteristics and capacities, electrical characteristics, wiring and piping diagrams and controls, component parts finishes, dimensions, details and required clearances.
- L. Submit 2 full sets of samples. One to the Owner and one to the Owners On-site representative to review, select, and retain. Provide additional sets of samples as needed for return to Contractor.

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Contractor shall keep one set of samples at the project site for on-site reference. Include identification on each sample with full project information.

- M. Submit samples to illustrate functional and aesthetic characteristics of the product with integral parts and attachment devices. Coordinate samples submittals for interfacing work.

1.11 SUBSTITUTIONS

- A. No items will be considered for, or for equal approval prior to Bid Opening. No request will be considered from sub-bidders or suppliers directly. To be considered, requests for substitution should conform to this Section.
- B. In connection with the use of any substitute item approved by the Architect or Owner, it shall be in the Contractor's responsibility to see that such items meet all space requirements, and that any alterations to connecting items necessitated by use of the alternate items are properly made, at no increase in cost to the Owner.
- C. Specific reference in the specifications to any article, device, product, materials, form or type of construction, etc., by name, make or catalog number, shall be interpreted as establishing a standard of quality and/or color and shall not be construed as limiting competition.
- D. In making a request for substitution, Contractor represents:
1. He has personally investigated proposed product or method, and determined that: It is equal or superior in all aspects to that specified; and that any significant variation between the product specified and the proposed product that would affect the use of product, operation of building systems, or exposed appearance of product has been identified to the Owner.
 2. He will provide the same guarantee for substitution as for product or method specified and that he waives all claims for additional costs related to substitution which consequently becomes apparent.
 3. He will coordinate installation of accepted substitution as for product or method specified.
 4. Owner will be sole judge of acceptability of any proposed substitution and only approved substitutions may be used on Contract Work.
 5. Each request for substitution approval shall include:
 - a. The identity of product for which substitution is requested, identity of substitution and quality comparison of proposed substitution with specified product.
 - b. Changes required in other work because of substitution and effect on construction progress schedule.
 - c. Availability of local (Anchorage, Alaska) maintenance service and source of replacement materials.

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1.12 CERTIFIED PAYROLL

- A. The Contractor shall provide one copy of all certified payrolls which are submitted to the State Department of Labor to the Owner for review.
 - 1. Certified payrolls shall be submitted bi-weekly while work is proceeding for all Contractor and subcontractor personnel on site.
 - 2. At completion of each subcontractor's on-site work, a final certified payroll shall be submitted with the wording "FINAL" denoted on it.

1.13 WORK UNDER OTHER CONTRACTS

- A. Contractor shall coordinate with Owner to allow Work by other Contractors.

PART 2 – PRODUCTS

- A. Protection - Use all materials and means necessary to maintain temporary traffic controls, barriers for material storage areas, and protection of Owner's facilities, walkways, and stairways, throughout progress of the work.
- B. Replacements - In the event of loss or damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

PART 3 – EXECUTION

3.1 SITE ACCESS:

- A. Vehicle Parking: Contractor will be allowed to park in the courthouse parking areas only after Normal Work Hours unless pre-approved otherwise by Owner.
- B. Off-loading of materials and equipment: Off-loading of materials and equipment permitted only after Normal Business Hours unless pre-approved otherwise by Owner.
- C. Contractor is responsible for protection of the Site including concrete and asphalt paving, curbs, landscaping, fencing, and striping.
- D. Contractor is responsible for obtaining all permits/approval required to perform Work. Including but not limited to ACS, Local, State, Muni, sidewalk closing, parking meter/space hooding /closing, crane/forklift hoisting.
- E. After court system Normal Working Hours all building entrances must be secured, and remain secured (locked) throughout the Work session. If an exterior door is left unlocked the Contractor shall not leave the door unattended. If exterior doors are removed or rendered insecure as a result of the Work, the Contractor will secure the opening using other means as necessary while maintaining egress compliance.
- F. Sanitary Facilities: Contractor will be limited to two restrooms within the facility. The specific restrooms will be determined by the Owner prior to commencement of the Work. Janitorial personnel provide cleaning services after Normal Working Hours, and will clean each toilet room once a day. At the end of each work activity, Contractor shall leave all toilets used by their personnel in clean and sanitary condition. If additional cleaning by janitorial personnel is required due to Contractor's use of after hours, the Contractor will be charged.

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3.2 SITE STAGING, STORAGE AND WASTE DISPOSAL: The Contractor shall be responsible for protection of materials during delivery, off-loading and transportation to on-site storage areas.

- A. Available Storage Areas:** Contractor shall store all Contractor provided materials off-site at their bonded and insured warehouse until Work on-site commences. After that time, the Contractor may store limited tools, materials, and equipment in an on-site store room. Stored items to be kept in a neat and orderly fashion.
- B. Protection:** Use all materials and means necessary to protect and maintain facility property, including plantings, fencing, pavements, roadways, structures, lighting, existing utilities and vehicles, from the activity of remodel demolition and material removal operations.
- C. Site Waste Disposal:** The Contractor shall remove waste resulting from the Work on a daily basis. Transport and legally dispose of materials off site as work progresses. **The Owners waste receptacles shall not be used.**

3.3 QUALITY ASSURANCE: All work shall be performed by workmen skilled and experienced in their craft, and under proper supervision.

3.4 CLEANING:

- A. General:** Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this Work or caused as a result of the Work. Provide adequate storage for all items, awaiting removal from the job site, observing all requirements for fire prevention and protection of the ecology.
 - 1. Retain all stored items in an orderly arrangement allowing maximum access. Do not impede drainage or traffic and provide required protection of materials.
 - 2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site; restack, tidy or otherwise service.
 - 3. Maintain the interior and exterior areas of Work in a neat and orderly condition at all times to the satisfaction of the Owner.
 - 4. Construction activities shall be monitored on a daily basis to determine if tracking of dirt and debris from construction areas onto the adjacent areas, floors, desks, office furniture or equipment has occurred. Any cleanup necessary, including sweeping, vacuuming, dusting, or stain removal, shall be accomplished on a daily basis by the Contractor. Washing dirt and debris into the storm drains is not permitted.
 - 5. If additional cleaning by janitorial personnel is required due to contractor related construction activities the contractor will be charged.
- B. Dust Control:**
 - 1. Maintain continuous cleaning and wetting procedures to control dust pollution at the project site and haul routes as required by governing authorities and Contract Documents. Use power sweepers for street cleaning. Schedule cleaning so that resultant dust and contaminants will not fall on newly coated surfaces.
 - 2. Prevent dust and particle infiltration into diffusers, vents and ductwork to remain, and to above ceiling plenum areas. Contain all dust and debris within project areas, removed from occupied spaces. Provide cleaning as needed to control and contain dust.

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3. Any additional cleaning deemed necessary by the Owner shall be provided by the Contractor as soon as requested.
- C. Close Out Cleaning.
 1. Execute prior to Substantial Completion.
 2. Employ skilled workmen for final cleaning.
 3. Fully clean all project work areas, project storage, staging and transport area
 4. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, temporary labels, protection films, and other foreign matter from sight exposed interior and exterior surfaces.
 5. Clean all interior and exterior surfaces exposed to view. Polish wood, clean transparent and glossy surfaces, vacuum carpeted and soft surfaces, clean hard flooring surfaces as per manufacturer recommendations.
 6. Clean equipment and fixtures to a sanitary condition.
 7. Hose clean exterior paved surfaces at material and equipment storage locations.

END OF SECTION

SECTION 00410
BID BOND

KNOW ALL MEN BY THESE PRESENTS:

Date Bond Executed: _____

That _____ of _____ as principal,
and _____ of _____ as surety,
in the penal sum of _____ Dollars (\$_____).

Date of bid: _____

We, the PRINCIPAL and SURETY above named, are held and firmly bound to the State of Alaska Court System (State of Alaska), in the penal sum of the amount stated above, for the payment of which sum will and truly be made, we bind ourselves and our legal representatives and successors, jointly and severally, firmly by this instrument.

THE CONDITION OF THE FOREGOING OBLIGATION is that the principal has submitted the accompanying bid or proposal in writing, date as shown above, on **Palmer Courthouse Clerk's Counter Security Upgrades, Project #PAL-C-21-0003**.

In accordance with plans and specifications filed in the Alaska Court System Project Office and under the Invitation for Bids therefore, and is required to furnish a bond in the amount stated above.

If Principal's bid is accepted and he is offered the proposed contract for award, and if Principal fails to enter into the contract, then the obligation to the Alaska Court System created by this bond shall be in full force and effect.

In presence of:

WITNESS

INDIVIDUAL PRINCIPAL

1. _____ as to _____ (SEAL)
2. _____ as to _____ (SEAL)
3. _____ as to _____ (SEAL)
4. _____ as to _____ (SEAL)

CORPORATE PRINCIPAL: _____

Attest:

BUSINESS ADDRESS: _____

BY: _____ Affix
Corporate
Seal

NAME & TITLE: _____

CORPORATE SURETY: _____

Attest:

BUSINESS ADDRESS: _____

BY: _____ Affix
Corporate
Seal

NAME & TITLE: _____

State of Alaska Court System

END OF SECTION

SECTION 01740.1

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project: Palmer Courthouse Boiler Room Upgrades & Replacement

Project #PAL-C-21-0010

TO OWNER:
Alaska Court System
820 W. 4th Avenue
Anchorage, AK 99501

ARCHITECT:
RSA Engineers

CONTRACTOR:

WORK ON THE ABOVE PROJECT GENERALLY INCLUDES:

Boiler Room Upgrades & Boiler Replacement

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION: The date of substantial completion of the Work is the date determined by the Owner when the Work is substantially complete in accordance with, and as defined in, the Contract Documents.

CERTIFICATION BY CONTRACTOR OF SUBSTANTIAL COMPLETION:

I certify that the Work is substantially complete, in accordance with, and as defined in, the contract documents. A list of items to be completed or corrected will be prepared by the Owner and the Architect, and appended hereto. The failure to include any items on such list does not alter the responsibility of the undersigned to complete the Work in accordance with the contract documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing.

CONTRACTOR: _____
(Signature)

For _____
(Company)

(Name Printed)

Date _____

CERTIFICATION BY ARCHITECT OF SUBSTANTIAL COMPLETION:

I certify that I have inspected the Work and certify that the Work is substantially complete, in accordance with, and as defined in, the contract documents.

ARCHITECT: _____
(Signature)

For _____
(Company)

(Name Printed)

Date _____

CERTIFICATION BY PROJECT MANAGER OF SUBSTANTIAL COMPLETION:

I certify that I have inspected the Work and certify that the Work is substantially complete, in accordance with, and as defined in, the contract documents.

PROJECT MANAGER: _____
(Signature)

For ALASKA COURT SYSTEM
(Company)

(Name Printed)

Date _____

DATE OF SUBSTANTIAL COMPLETION:

In reliance upon the certification of the Contractor, the Architect, and the Project Manager, the Owner hereby accepts the Work as substantially complete. The date of substantial completion is hereby established as _____
for all areas and components except for _____

The Contractor shall maintain all insurance, including property insurance, until final acceptance of the Work.

OWNER: ALASKA COURT SYSTEM

Date _____

The responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows: _____

End of Section

SECTION 01740.3
WARRANTY OF WORK AFTER FINAL PAYMENT
Palmer Courthouse Boiler Room Upgrades & Replacement
Project #PAL-C-21-0010

Prior to final payment, the Contractor shall furnish to the Owner a Warranty of Work After Final Payment in the following form:

The CONTRACTOR does hereby warrant all work and materials to be in full and complete accordance with the Contract Documents and Agreement between Owner and Contractor and requirements appertaining thereto; that all work and materials are free from any defects and imperfections and fully suitable for the use and purposes for which each and every part is intended. The contractor also agrees that, should any defect develop or appear which the Project Manager or Architect finds was not caused by improper use, the Contractor shall promptly, upon demand, fully correct, substitute and make good any such defective material, without any cost to the Owner, and will save the Owner harmless against any claim, demand, loss, or damage by reasons of any breach of this warranty.

This period of this warranty shall commence on the date of Final Acceptance of the Owner.

The warranty shall continue to be in full force and effect for the period of one year, except for those items for which a longer period of warranty is specifically stated in the Warranties for work in Technical Sections of the Specifications. Warranties for work stated in Technical Sections shall continue in full force and effect for the respective periods expressly stated.

In WITNESS WHEREOF, the undersigned has signed and sealed this instrument this _____ day of _____, year _____.

(Firm Name): _____

(Signature): _____

(Title): _____

(Attest): _____

(SEAL IF BIDDER IS A CORPORATION)

CERTIFICATE OF COMPLIANCE
Palmer Courthouse Boiler Room Upgrades & Replacement
Project #C-21-0010

No final payment shall be made until the CONTRACTOR shall file with the OWNER, prior to acceptance of the Work, a notarized Certificate of Compliance on the following form:

- A. The CONTRACTOR does hereby certify that all work has been performed and materials supplied in accordance with the DRAWINGS, SPECIFICATIONS, and Contract Documents for the above work, and that;
1. No less than the prevailing rates of wages as ascertained by the governing body of the Contracting Agency has been paid to laborers, workmen and mechanics employed on this Work;
 2. There have been no unauthorized substitutions of subcontractors; nor have any subcontracts been entered into without the names of the subcontractors having been submitted to the OWNER prior to the start of such subcontracted Work;
 3. No subcontract was assigned or transferred or performed by any subcontractor other than the original subcontractor, without prior notice having been submitted to the OWNER together with the names of all subcontractors;
 4. All claims for material and labor and other service performed in the connection with these specifications have been paid.

In WITNESS WHEREOF, the undersigned has signed and sealed this instrument this _____ day of _____, year _____.

(Firm Name): _____

(Signature): _____

(Title): _____

(Attest): _____

(SEAL IF BIDDER IS A CORPORATION)

As determined necessary, evidence of compliance may be required to be submitted with and made a part of this Certificate of Compliance.

STATE OF ALASKA
DEPARTMENT OF PUBLIC SAFETY
REQUEST FOR CRIMINAL JUSTICE INFORMATION
From the Alaska Criminal History Record Repository

Original forms must be submitted to:

Criminal Records and Identification Bureau

5700 E. Tudor Road, Anchorage, AK 99507

Telephone: (907) 269-5767 Fax: (907) 269-5091 (RSAs only)

Include fee: \$20 single copy, \$5 each additional copy

Check or money order must be made payable to 'State of Alaska'

Type of information being requested (**from other than the record subject**): (Choose ONE)

☐ 1. Criminal Justice Information available to **ANY PERSON for ANY PURPOSE**

▪ This report includes current/open criminal charges and charges that resulted in conviction, excluding sealed records.

☐ 2. Criminal Justice Information available to an **INTERESTED PERSON**

▪ This report includes all criminal charges and dispositions, excluding sealed records

2.A. If you checked item 2, the requester must provide the following information:

I request this report for the purpose of determining whether to grant the record subject supervisory or disciplinary power over (check all that apply):

☐ Minor(s)

☐ Dependent adult(s)

Title or brief description of the position under consideration: _____

☐ 3. Criminal Justice Information needed for another purpose authorized by federal or state law.

Client Number: _____

If you check this box, you **must** provide the client number assigned by the DPS Records and Identification Bureau.

To obtain a client number, you must provide the applicable state or federal statute to this office for review and approval prior to submitting this request.

*A check or money order payable to the State of Alaska in the amount of \$20 **must** accompany this request. Additional copies, if requested at the time of this request, may be obtained for an additional \$5 per copy. State agencies with a Reimbursable Services Agreement (RSA) in place may fax the appropriate forms. All other requests must be submitted via U.S. Postal Service or in person.*

Subject Name: _____

Maiden/Alias name(s): _____

Mailing Address: _____

City/State/Zip: _____

Alaska Drivers License #: _____

Date of Birth: _____

Sex: ☐ -Male ☐ Female Soc Sec No. _____

Telephone: _____ Msg: _____

To be completed by the record subject: *"I authorize the release of my criminal justice information record, (described above) to the named requester."*

Signature of subject: _____

Date Signed: _____

Requester Name: _____

Title: _____

Business/Agency: _____

Mailing Address: _____

City/State/Zip: _____

Date of Birth: _____ Telephone: _____

Sex: ☐ -Male ☐ - Female Soc Sec No. _____

The requested record will be mailed to the above named individual at the listed address. If you would like the record faxed, check the box below:

☐ Fax Number: _____

Signature of requester: _____

Date Signed: _____

Unsworn Falsification Statement (Your request will not be processed if you do not sign this statement.)

I certify under penalty of unsworn falsification (AS 11.56.210) that the information I am supplying on and with this form is true and correct.

Record Subject's Signature

Date

Criminal Records and Identification Bureau Use Only

☐ Fee Payment Type _____
☐ Fee Waiver/Authorization _____
☐ OCA Number _____

☐ Report Sent to Subject _____
☐ Report Sent to Requester _____
☐ R&I Staff initials _____

Authority:

AS 11.56.210 - Unsworn Falsification

AS 12.62.160 – Release and Use of Criminal Justice Information; fees

AS 12.62.900 – Definitions

13 AAC 68 Article 4 – Dissemination of Criminal Justice Information

13 AAC 68.905 – Definitions

DPS Form 11/15/03

Revised 2/09/04

Revised 3/01/04

Revised 4/20/04

Revised 11/15/04

Revised 1/13/05

Revised 7/27/06



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

ALASKA VETERAN'S PREFERENCE AFFIDAVIT

In response to the Invitation to Bid for:

Project Name and Number _____,

I certify under penalty of perjury that _____
(Name) qualifies for the Alaska Veteran's Preference under the following conditions:

(a) If a bidder qualifies under AS 36.30.170(b) as an Alaska bidder and is a qualifying entity, a five percent bid preference shall be applied to the bid price (preference may not exceed \$5,000). In this subsection, "qualifying entity" means a:

- (1) Sole proprietorship owned by an Alaska Veteran;
- (2) Partnership under AS 32.06 or AS 32.11 if a majority of the members are Alaska Veterans;
- (3) Limited liability company organized under AS 10.50 if a majority of the individuals are Alaska Veterans.

(b) To qualify for a preference under this section, a bidder must add value by the bidder itself actually performing, controlling, managing and supervising a significant part of the services provided, or the bidder must have sold supplies of the general nature solicited to other state agencies, governments, or the general public.

(c) In this section, "Alaska Veteran" means an individual who is a:

- (1) Resident of this state; and
- (2) Veteran; means an individual who:

(A) Served in the:

- (i) Armed Forces of the United States, including a reserve unit of the United States armed forces; or
- (ii) Alaska Territorial Guard, the Alaska Army National Guard, the Alaska Air National Guard, or the Alaska Naval Militia; and

(B) Was separated from the service under a condition that was not dishonorable.

Authorized Signature

Printed Name

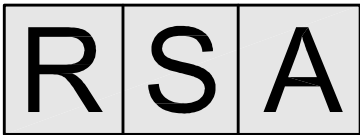
Date

ACS PALMER COURTHOUSE

BOILER REPLACEMENT

Palmer, Alaska

MECHANICAL & ELECTRICAL
ENGINEERING

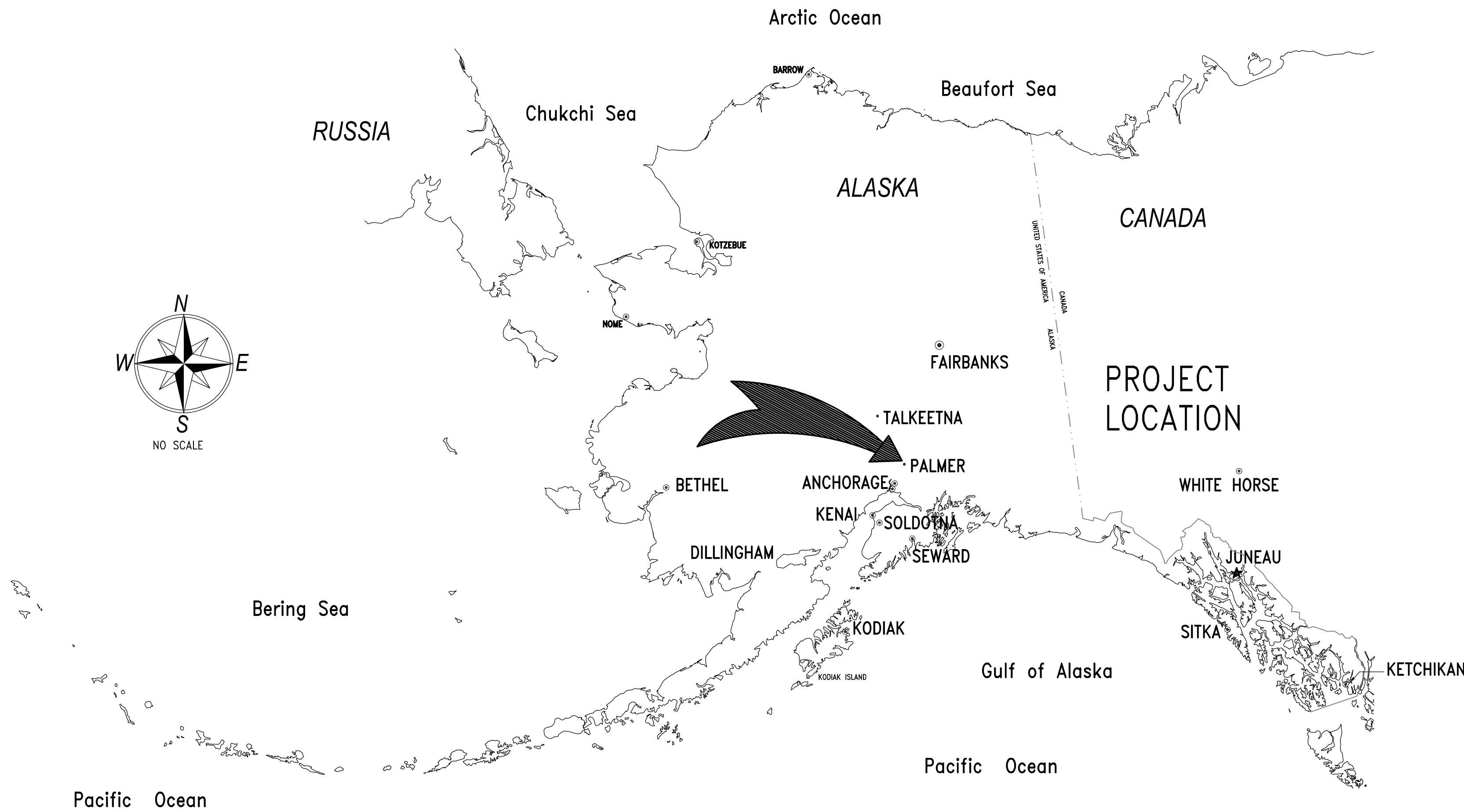


Mechanical and
Electrical Consulting
Engineers

670 West Fireweed Lane, Suite 200
Anchorage, AK 99503
(907) 276-0521
Corporate number: AECC542

SCOPE OF WORK-BASE BID
THE SCOPE OF WORK INCLUDES REPLACEMENT OF THREE CAST IRON BOILERS WITH TWO CAST IRON BOILERS, BOILER CIRCULATION PUMPS, ASSOCIATED PIPING, AND RELATED ACCESSORIES.

SCOPE OF WORK-ALTERNATE
THE SCOPE OF WORK INCLUDES THE BASE SCOPE WORK PLUS THE REPLACEMENT OF THE HEATING SYSTEM PUMPS, ASSOCIATED PIPING, AND RELATED ACCESSORIES.



DRAWING INDEX

MECHANICAL:

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M201	BOILER ROOM REMODEL PLANS
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ELECTRICAL:

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E301	PANEL SCHEDULES
E401	ELECTRICAL SPECIFICATIONS

0"
1"
2"
3"

PIPING LEGEND

	DENOTES DEMOLITION
	SEE ABBREVIATIONS FOR MEDIA
	PIPE UP
	PIPE DOWN
	TEE UP
	TEE DOWN
	CAP
	UNION
	DIRECTION OF FLOW
	BALL VALVE
	CHECK VALVE
	BALANCE VALVE
	2-WAY CONTROL VALVE
	PRESSURE/TEMPERATURE RELIEF VALVE

	PUMP
	THERMOMETER
	PRESSURE GAUGE W/ ISOLATION COCK
	STRAINER W/ BLOWDOWN

LOGIC

	POINT OF CONNECTION TO EXISTING
	DETAIL NUMBER
	SHEET LOCATED ON
	SHEET NOTES

DUCTWORK LEGEND

	THERMOSTAT
	SUPPLY AIR UP & DOWN
	DUCT SIZE (FIRST FIGURE – SIDE SHOWN) (SECOND FIGURE – SIDE NOT SHOWN)

ABBREVIATIONS

ABV	ABOVE	HWG	HOT WATER GENERATOR	PH	PHASE
AFF	ABOVE FINISHED FLOOR	HWR	HEATING WATER RETURN	PSI	POUND PER SQUARE INCH
AHAP	AS HIGH AS POSSIBLE	HWS	HEATING WATER SUPPLY	PG	PROPYLENE GLYCOL
AS-X	AIR SEPARATOR DESIGNATOR	HOA	HAND-OFF-AUTO	R/A	RETURN AIR
B-X	BOILER DESIGNATOR	HP	HORSEPOWER	RPM	REVOLUTIONS PER MINUTE
BTU	BRITISH THERMAL UNIT	IBC	INTERNATIONAL BUILDING CODE	S/A	SUPPLY AIR
CD	CONDENSATE DRAIN	IN	INCHES	SP	STATIC PRESSURE
CFM	CUBIC FEET PER MINUTE	L	LIQUID	SQ	SQUARE
CP-X	CIRCULATION PUMP DESIGNATOR	LAT	LEAVING AIR TEMPERATURE	TEMP	TEMPERATURE
EAT	ENTERING AIR TEMPERATURE	LF	LINEAL FEET	TOD	TOP OF DUCT
ESP	EXTERNAL STATIC PRESSURE	LWT	LEAVING WATER TEMPERATURE	TSP	TOTAL STATIC PRESSURE
ET-X	EXPANSION TANK DESIGNATOR	MAX	MAXIMUM	T'STAT	THERMOSTAT
FCO	FLOOR CLEAN OUT	MBH	THOUSAND BTUH	TMV	TEMPERING VALVE
FD	FIRE DAMPER	MCA	MINIMUM CIRCUIT AMPACITY	TTL	TOTAL
FD-X	FLOOR DRAIN DESIGNATOR	MFG	MANUFACTURER	TYP	TYPICAL
FF	FINISHED FLOOR	MPG	MEDIUM PRESSURE GAS	UPC	UNIFORM PLUMBING CODE
FIN	FINISHED	M/A	MAKEUP AIR	VAC	VOLT-AC
FLR	FLOOR	MIN	MINIMUM	VDC	VOLT-DC
FPM	FEET PER MINUTE	NC	NOISE CRITERIA	VEL	VELOCITY
FT	FEET	N.C.	NORMALLY CLOSED	W/	WITH
G	GAS	NG	NATURAL GAS	W/O	WITHOUT
GA	GAUGE	NO.	NUMBER	WC	WATER COLUMN
GALV	GALVANIZED	N.O.	NORMALLY OPEN	WPD	WATER PRESSURE DROP
GPM	GALLONS PER MINUTE	NTS	NOT TO SCALE		
GTD	GLYCOL TEMPERATURE DROP	O/A	OUTSIDE AIR		
HD	HEAD	D	PRESSURE DROP		

BOILER SCHEDULE

			HEATED		GROSS INPUT	GROSS OUTPUT	ELECTRICAL			
SYMBOL	MANUFACTURER	MODEL	MEDIUM	FUEL	MBH	MBH	HP	VOLTS/PH	LABEL	REMARKS
B-1,2	DE-DIETRICH	GT-339A	WATER	NATURAL GAS	1442	1229	1/2	120/1	ASME H	PROVIDE WITH RIELLO BURNER MODEL NO. RS38, LOW-HIGH OPERATION. PROVIDE WITH 50 PSI ASME RELIEF VALVE.

PUMP SCHEDULE

				PUMPED		HEAD	ELECTRICAL		
SYMBOL	MANUFACTURER	MODEL	FUNCTION	MEDIUM	GPM	FEET	HP	VOLTS/PH	REMARKS
PMP-1A,1B	TACO	KV 3009D	BUILDING CIRCULATION	GLYCOL	180	70	7.5	208/3	SUPPORT STAND, VFD RATED MOTOR, VFD PROVIDED BY CONTROLS CONTRACTOR.
BP-1,2	TACO	1935	BOILER CIRCULATION	GLYCOL	94	15	0.75	208/3	CONSTANT VOLUME.

AIR SEPARATOR SCHEDULE

SYMBOL	MANUFACTURER	MODEL	SIZE	CONNECTION	MATERIAL	FLUID	REMARKS
AS-1	SPIROTHERM	VDN	400	FLANGED	STEEL	WATER	COMBINATION AIR AND DIRT SEPARATOR, 0.6 FT PRESSURE DROP, 180 GPM.

TANK SCHEDULE

SYMBOL	MANUFACTURER	MODEL	FUNCTION	MEDIUM	MATERIAL	TANK VOLUME (GAL)	ACCEPTANCE (GAL)	DIMENSIONS	REMARKS
ET-1 (E)	AMTROL	600L	HEATING	50% PG	STEEL/BUTYL	158	158	30" DIA X 64" HIGH	EXISTING TANK CHARGE TO 20 PSI PRIOR TO REUSE.

SHEET NOTES:

PMP-1A AND PMP-1B ARE ALTERNATE.

CONTRACTOR TO PROVIDE STRUCTURAL AND SEISMIC CALCULATIONS PLUS FASTENING DETAILS FOR B-1, B-2, PMP-1A AND PMP-1B TO INCLUDE ENGINEER'S STAMP AND SIGNATURE, FOR REVIEW ON A DEFFERED SUBMITTAL BASIS



RSA
Engineering, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
670 West Freewood Lane, Suite 200
Anchorage, AK 99503
Phone (907) 276-0521
Corporate No.: AECC542

ACS PALMER COURTHOUSE BOILER
REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

DRAWN BY: SR
CHECKED BY: AJS
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
LEGEND, ABBREVIATION
AND SCHEDULES

SHEET:
M001

0"
1"
2"
3"

SECTION 22 05 00: 23 05 00 – COMMON WORK RESULTS FOR MECHANICAL

PLANS – THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM. THE DRAWINGS ARE PARTLY DIAGMMATIC, NOT NECESSARILY SHOWING ALL OFFSETS OR EXACT LOCATIONS OF PIPING AND DUCTS UNLESS SPECIFICALLY DIMENSIONED. CONTRACTOR IS TO COORDINATE PIPING, DUCTWORK, SPRINKLER HEADS, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL PLANS TO AVOID CONFLICTS. CODES, ORDINANCES, REGULATIONS, STANDARDS, OR MANUFACTURER'S INSTRUCTIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS. MAINTAIN CODE MINIMUM MECHANICAL SERVICE TO ALL AREAS IMPACTED BY WORK WHERE STILL OCCUPIED BY THE OWNER.

STANDARDS, CODES, AND REGULATIONS – ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL FIRE CODE (IFC), UNIFORM PLUMBING CODE (UPC), INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND NATIONAL ELECTRIC CODE (NEC) AS AMENDED BY THE STATE OF ALASKA. SHEET METAL WORK SHALL BE DONE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS.

ELECTRICAL WORK – ALL ELECTRICAL WORK IS TO BE PERFORMED BY A LICENSED ELECTRICIAN AND IN ACCORDANCE WITH NEC STANDARDS.

PERMITS – THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS AND FEES.

SUBMITTALS – SUBMITTALS SHALL BE IN ELECTRONIC FORM. THE DATA SHALL BE ARRANGED AND BOOKMARKED BY SPECIFICATION SECTION. SUBMIT ON ALL SCHEDULED EQUIPMENT AND ALL MATERIALS AND EQUIPMENT AS NOTED IN THE SPECIFICATIONS.

EQUIPMENT SUBSTITUTIONS – ALL EQUIPMENT LISTED AND SCHEDULED ARE REPRESENTATIVE OF THE STANDARD OF QUALITY AND PERFORMANCE REQUIRED. "OR EQUAL" SUBSTITUTIONS WILL BE CONSIDERED IF SUBSTITUTE DATA SHEETS ARE SUBMITTED AND ARE SHOWN TO BE OF EQUAL OR BETTER QUALITY, INCLUDING EFFICIENCY OF PERFORMANCE, AND SIZE AND WEIGHT. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL SUBSTITUTIONS.

WARRANTY – ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM PROJECT COMPLETION AND OWNER ACCEPTANCE. ANY FAULTY MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER DURING THE WARRANTY PERIOD.

OPERATION AND MAINTENANCE MANUAL – PROVIDE THE OWNER WITH AN OPERATING AND MAINTENANCE MANUAL TO INCLUDE DATA CUTSHEETS MARKED WITH THE SPECIFIC ITEM USED, MANUFACTURER'S SPECIFICATIONS, OPERATING AND MAINTENANCE INSTRUCTIONS, WARRANTY INFORMATION ON EACH PIECE OF EQUIPMENT, RECORD DRAWINGS WITH INSTALLED LOCATIONS NOTED, SOURCE OF SUPPLY FOR SPARE PARTS AND SERVICE. OPERATION AND MAINTENANCE MANUAL SHALL BE IN ELECTRONIC FORM AND SHALL BE SUBMITTED FOR REVIEW. THE DATA SHALL BE ARRANGED AND BOOKMARKED BY SPECIFICATION SECTION.

SEISMIC RESTRAINT – ALL PIPING, AND EQUIPMENT INSTALLED UNDER THIS PROJECT SHALL BE SEISMICALLY RATED AND RESTRAINED FOR A SEISMIC EVENT IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE IBC AND ASCE 7 AS AMENDED BY THE STATE OF ALASKA. THE CONTRACTOR SHALL PROVIDE A DEFERRED SUBMITTAL FOR REVIEW TO THE PROJECT MANAGER FOR SEISMIC RESTRAINT DESIGN WITH CALCULATIONS AND SHOP DRAWINGS. SEISMIC RESTRAINT CALCULATIONS AND SHOP DRAWINGS SHALL INCLUDE A STRUCTURAL ENGINEERS STAMP AND SIGNATURE PRIOR TO INSTALLATION. SEISMIC CATEGORY D, COMPONENT IMPORTANCE FACTOR IP–1.0

MATERIALS – ALL MATERIALS OTHER THAN OWNER SUPPLIED MATERIALS SHALL BE NEW AND UNUSED, INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND IN THE BEST PRACTICE OF THE CRAFT. OBTAIN PROJECT MANAGER'S AND ENGINEER'S APPROVAL OF ALL PRODUCTS PRIOR TO ORDERING OR INSTALLING ANY PART OF ANY SYSTEM.

ACCESS – PROVIDE WORKABLE ACCESS TO ALL SERVICEABLE AND/OR OPERABLE EQUIPMENT. PROVIDE ACCESS PANELS OR ACCESS DOORS FOR ALL EQUIPMENT INSTALLED IN CONCEALED LOCATIONS.

EQUIPMENT INSTALLATION – INSTALL ALL EQUIPMENT WHERE NOTED ON THE DRAWINGS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROVIDE MISCELLANEOUS APPURTENANCES, ACCESSORIES, SUPPORTS, AND CONTROL CONNECTIONS REQUIRED FOR COMPLETE AND OPERATING SYSTEMS.

DEMOLITION DRAWINGS ARE BASED ON AS–BUILT DRAWINGS AND A NON–DESTRUCTIVE WALK–THROUGH OF THE FACILITY. REPORT DISCREPANCIES TO OWNER BEFORE DISTURBING THE EXISTING INSTALLATION. DISABLE SYSTEMS ONLY TO MAKE SWITCH OVERS AND CONNECTIONS. COORDINATE WITH PHASING PLAN TO PERFORM WORK IN SEQUENCE WITH OTHER TRADES AND MAINTAIN CODE MINIMUM MECHANICAL SERVICE CLEARANCES TO ALL AREAS IMPACTED BY WORK AND STILL OCCUPIED. OBTAIN PERMISSION FROM OWNER AT LEAST 72 HOURS PRIOR TO PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION AND MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREAS. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS. REMOVE, RELOCATE, AND/OR EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTIONS. REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY. REMOVE EXPOSED ABANDONED PIPING, DUCTWORK, INSULATION, HANGERS AND SUPPORTS, CONTROLS AND CONTROL WIRING, AND ANY OTHER ABANDONED MECHANICAL EQUIPMENT. THIS INCLUDES ABANDONED EQUIPMENT ABOVE ACCESSIBLE CEILING FINISHES. WHERE ABANDONED PIPE ENTERS EXISTING SURFACES TO REMAIN, CUT PIPE FLUSH WITH WALLS, AND FLOORS, CAP/PLUG PIPE AND PATCH SURFACES. DEMOLISH ALL DOMESTIC WATER PIPING BACK TO MAINS AND CAP, LEAVE NO DEAD LEGS. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND REMODEL WORK. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS WHICH REMAIN ACTIVE.

SECTION 22 05 53: 23 05 53 – IDENTIFICATION FOR PIPING AND EQUIPMENT

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
 - 1. COLORING SCHEME IN ACCORDANCE WITH ANSI A13.1, SETON OPTI–CODE OR EQUAL.
- C. INSTALLATION:
 - 1. LABEL ALL EQUIPMENT WITH HEAT RESISTANT LAMINATED PLASTIC LABELS HAVING ENGRAVED LETTERING 1/2" HIGH.
 - 2. IDENTIFY PIPING TO INDICATE CONTENTS AND FLOW DIRECTION USING PIPE MARKERS OR BY A LABELED SLEEVES IN LETTERS READABLE FROM FLOOR AT LEAST ONCE IN EACH ROOM AND AT INTERVALS OF NOT MORE THAT 20' APART AND ON EACH SIDE OF PARTITION PENETRATIONS.

SECTION 22 05 29: 23 05 29 – HANGERS & SUPPORTS FOR PIPING & EQUIPMENT

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
 - 1. PIPE HANGERS AND SUPPORTS
 - 1.1. HANGERS FOR PIPES 1/2" TO 1–1/2" – MALLEABLE IRON OR CARBON STEEL, ADJUSTABLE SWIVEL, SPLIT RING FOR STEEL PIPE, COPPER SWIVEL FOR COPPER PIPE.
 - 1.2. HANGERS FOR PIPES 2" TO 4" – CARBON STEEL, ADJUSTABLE CLEVIS.
 - 1.3. MULTIPLE OR TRAPEZE HANGERS – STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS.
 - 1.4. WALL SUPPORTS FOR PIPES 1/2" TO 3" – CAST IRON HOOK.
 - 1.5. WALL SUPPORTS FOR PIPES 4" AND LARGER – WELDED STEEL BRACKET, WROUGHT STEEL CLAMP W/ ADJUSTABLE STEEL YOKE AND CAST IRON ROLL.
- C. INSTALLATION
 - 1. DESIGNED AND INSTALLED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE (UPC) FOR DOMESTIC WASTE, VENT, AND WATER PIPING .
 - 2. INSTALL HVAC PIPE HANGERS IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE (IMC) AND ANSI/MSS–SP–69 AND 89.
 - 3. INSTALLED AS PER THE MANUFACTURERS INSTRUCTIONS. PROVIDE SEISMIC SUPPORT FOR ALL PIPING AND EQUIPMENT IN ACCORDANCE WITH IBC.
 - 4. FABRICATE EQUIPMENT CURBS OF CONCRETE UNLESS SPECIFICALLY CALLED OUT OTHERWISE.

SECTION 23 05 93 – TESTING, ADJUSTING, AND BALANCING FOR HVAC

- A. SUBMITTALS: SUBMIT QUALIFICATIONS, NEBB CERTIFICATIONS OR 5 YEARS DOCUMENTED PROJECT EXPERIENCE OF SIMILAR OR GREATER MAGNITUDE, EQUIPMENT CALIBRATIONS, PRELIMINARY AND FINAL BALANCING REPORTS.
- B. MATERIALS:
 - 1. BALANCING INSTRUMENTS AS NECESSARY TO COMPLETE WORK TO MEASURE AT LEAST THE FOLLOWING: PRESSURE, TEMPERATURE, AND FLOW.
- C. EXECUTION:
 - 1. THE CONTRACTOR SHALL BALANCE HYDRONIC SYSTEMS ACCORDING TO NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) RECOMMENDED PROCEDURES AND CONTRACT DOCUMENTS, AND TO THE SATISFACTION OF THE OWNER.
 - 2. PRIOR TO THE START OF DEMOLITION TAKE PUMP PRESSURE READINGS ON THE DISCHARGE AND SUCTION OF EACH PUMP. PRESSURE READINGS SHOULD BE TAKEN WITH ALL THE TERMINAL HEATING EQUIPMENT CALLING FOR HEAT. REPLACE/INSTALL PUMP PRESSURE GAUGES AS NEEDED TO OBTAIN ACCURATE READINGS. SUBMIT PRESSURE READINGS TO OWNER.
 - 3. AFTER CONSTRUCTION IS COMPLETE SET HEATING LOOP BALANCING VALVES TO GPMS AS INSTRUCTED BY OWNER. THE OWNER WILL PROVIDE GPMS FOR EACH OF THE LOOPS TO BE BALANCED.

SECTION 22 07 00: 23 07 00 – INSULATION

- A. SUBMITALLS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS
 - 1. PIPING INSULATION – GLASS FIBER, RIGID, MOLDED, NON–COMBUSTIBLE INSULATION; ANSI/ASTM C547; 'K' VALUE OF 0.24 AT 75 DEG F, RATED TO 850 DEG F, VAPOR RETARDER JACKET OF KRAFT PAPER BONDED TO ALUMINUM FOIL; JOHNS MANVILLE "MICRO–LOK" OR EQUAL. COMPLETE WITH VAPOR BARRIER JACKET AND PLASTIC COVERS FOR FITTINGS.
- C. INSTALLATION
 - 1. PIPING
 - 1.1. INSULATE ALL HEATING AND DOMESTIC WATER PIPING WITH PRE–FORMED FIBERGLASS INSULATION, COMPLETE WITH FACTORY VAPOR BARRIER AND PVC JACKETING FOR FITTINGS. PVC JACKETING TO BE PROVIDED FOR ALL PIPING BELOW 10' AFF IN MECHANICAL ROOMS.
 - 1.2. PROVIDE INSULATED PIPING SUPPORTS INSERT FABRICATED OF JOHNS MANVILLE THERMO–12 GOLD OR OTHER HEAVY DENSITY INSULATING MATERIAL SUITABLE FOR TEMPERATURE BETWEEN SUPPORT SHIELD AND PIPING ON PIPING 1–1/2" DIAMETER OR LARGER. INSULATION INSERTS SHALL NOT BE LESS THAN THE FOLLOWING LENGTHS: 1–1/2" TO 2–1/2" PIPE SIZE == 10" LONG.3" TO 6" PIPE SIZE = 12 INCH LONG.
 - 1.2.1. INSULATE ALL HYDRONIC HEATING PIPING SIZE 1–1/4" AND SMALLER WITH 1" INSULATION, SIZE 1–1/2" AND LARGER WITH 1–1/2" INSULATION.
 - 2. INSTALL ALL INSULATION MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND ALL APPLICABLE BUILDING CODES AND INDUSTRY STANDARDS.

SECTION 23 09 00 – INSTRUMENTATION AND CONTROL FOR HVAC

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
 - 1. THERMOMETERS:
 - 1.1. STEM TYPE – 9 INCH SCALE, UNIVERSAL ADJUSTABLE ANGLE, RED APPEARING MERCURY, LENS FRONT TUBE, CAST ALUMINUM CASE WITH METALLIC FINISH AND CLEAR LEXAN WINDOW, EXTENDED BRASS STEM, CAST ALUMINUM ADJUSTABLE JOINT WITH POSITIVE LOCKING DEVICE, 2 PERCENT OF SCALE ACCURACY TO ASTM E77, SCALE CALIBRATED IN BOTH DEGREES F AND DEGREES C. TRERICE "BX9" OR APPROVED EQUAL.
 - 2. PRESSURE GAUGES – 4–1/2" DIAMETER CAST ALUMINUM CASE, PHOSPHOR BRONZE BOURBON TUBE, ROTARY BRONZE MOVEMENT, BRASS SOCKET, SILICONE FLUID DAMPENING BLACK FIGURES ON WHITE BACKGROUND, 1% MID–SCALE ACCURACY, CALIBRATED IN PSI. TRERICE "600CB" OR APPROVED EQUAL.
- C. INSTALLATION:
 - 1. ALL DEVICES SHALL BE INSTALLED IN ACCORDANCE W/ MANUFACTURERS INSTRUCTIONS.
 - 2. ALL WIRING SHALL BE PER THE NEC. PROVIDE PROPER GROUNDING OF ALL CONTROL WIRING.
 - 3. PROVIDE TWO PRESSURE GAUGES PER PUMP, INSTALLING TAPS BEFORE STRAINERS AND ON SUCTION AND DISCHARGE OF PIPE. PIPE TO GAUGE WITH ISOLATION VALVE TO EACH TAPPING.

- 4. INSTALL THERMOMETERS IN PIPING SYSTEMS IN SOCKETS WITH SHORT COUPLING. SELECT BULB LENGTH TO REACH CENTERLINE OF PIPE.
- 5. ALL INSTRUMENTS SHALL BE PROVIDED WITH SCALE RANGES ACCORDING TO LARGEST PRESSURE IN SYSTEM SERVED.
- 6. INSTALL ALL GAUGES AND THERMOMETERS IN LOCATIONS WHERE THEY ARE EASILY READ.
- 7. ALL CONTROLLERS, TRANSMITTERS, SWITCHES, THERMOSTATS, GAUGES AND DEVICES WITH ADJUSTABLE SETPOINTS SHALL BE PERMANENTLY TAGGED WITH IDENTIFICATION COORDINATED WITH THE CONTROL DRAWINGS.

SECTION 23 21 16 – HYDRONIC SPECIALTIES

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
 - 1. AIR VENTS:
 - 1.1. MANUAL TYPE – DISK TYPE VENT WITH BUILT–IN CHECK VALVE FOR MANUAL OR AUTOMATIC OPERATION, DISCS REPLACEABLE WITHOUT DRAINING SYSTEM, 1/8 INCH SHANK, RATED AT 50 PSI; HOFFMAN "MODEL 508" OR APPROVED EQUAL.
 - 1.2. FLOAT TYPE: MAINTENANCE FREE SOLID BRASS CONSTRUCTION, CONTINUOUS AIR VENTING, 150 PSIG STANDARD WORKING PRESSURE, 240° F MAXIMUM TEMPERATURE, 1/2 INCH MALE THREAD AT VENT POINT FOR PRESSURE TESTING OR REMOTE VENTING, 1/2 OR 3/4 INCH FEMALE THREADED CONNECTIONS. PROVIDE WITH MINI BALL VALVE FOR ISOLATION. TACO "409 VENT", SPIROTHERM "SPIROTOP VTP" OR APPROVED EQUAL.
 - 2. STRAINERS:
 - 2.1. SIZE 2" AND SMALLER – SCREWED BRASS OR IRON BODY FOR 175 PSIG WORKING PRESSURE, Y PATTERN WITH 1/32 INCH STAINLESS STEEL PERFORATED SCREEN.
 - 2.2. SIZES 2–1/2" TO 4" – FLANGED IRON BODY FOR 175 PSIG WORKING PRESSURE, Y–PATTERN WITH 3/64 INCH STAINLESS STEEL PERFORATED SCREEN.
 - 3. BALANCE VALVES – ANGLE OR STRAIGHT PATTERN, INSIDE SCREW GLOBE VALVE FOR 125 PSIG WORKING PRESSURE, WITH BRONZE BODY AND INTEGRAL UNION FOR SCREWED CONNECTIONS, RENEWABLE COMPOSITION DISC, PLASTIC WHEEL HANDLE FOR SHUT–OFF SERVICE, AND LOCKSHIELD KEY CAP FOR BALANCING SERVICE. BELL & GOSSETT "CIRCUIT SETTER PLUS" OR APPROVED EQUAL.
 - 6. FLOW METER – INLINE ELECTROMAGNETIC FLOW METER, ANSI CLASS 150 FLANGES, EPOXY PAINTED CARBON STEEL OUTER BODY, 304 STAINLESS STEEL FLOW TUBE, INTEGRAL LINER TO BE SELECTED BASED ON OPERATING TEMPERATURE AND FLUID. MAX 580 PSIG MAXIMUM PRESSURE, 266°F MAXIMUM TEMPERATURE. ELETROMAGNETIC SENSING ELEMENT WITH MINIMUM TWO 316L STAINLESS STEEL ELECTRODES MEASURING AVERAGE FLUID VELOCITY. INDIVIDUAL CALIBRATION TAG SHALL BE ATTACHED INDICATING CALIBRATION AND PROGRAMMING INFORMATION. ACCURACY SHALL BE +/- 0.2% FROM 1.6 TO 33.0 FT/S FLUID VELOCITY. ONICON "FT–3200" OR APPROVED EQUAL.
- C. INSTALLATION:
 - 1. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
 - 2. INSTALL AIR VENTS AT HIGH POINTS, AND RETURN PIPE DOWN TURNED ELBOWS, AND IN ACCESSIBLE LOCATIONS.

SECTION 23 11 23 – FACILITY NATURAL GAS PIPING

- A. SUBMITTALS: SUBMIT ON PRODUCT DATA FOR APPROVAL, PIPING SYSTEM PRESSURE TEST RESULTS.
- B. MATERIALS
 - 1. ABOVE GRADE PIPING – STEEL PIPE, ASTM A53, SCHEDULE 40 BLACK. FITTINGS: ANSI/ASME B16.3, MALLEABLE IRON, OR ASTM A234, STEEL WELDING TYPE. JOINTS: VEIGA MEGAPRESS–G OR SCREWED FOR PIPE 2" AND SMALLER AND IF LOW PRESSURE. IF MEDIUM PRESSURE, OUTSIDE BUILDING, OR 2–1/2" ANSI/AWS D1.1, WELDED.
 - 2. GAS COCKS:
 - 2.1. SIZES 2" AND SMALLER – BRONZE BODY, BRONZE TAPERED PLUG, NON–LUBRICATED, TEFLON PACKING, THREADED OR PRESS–FIT ENDS..
 - 2.2. SIZES 2–1/2" – IRON BODY AND PLUG, NON–LUBRICATED, TEFLON PACKING, FLANGED OR PRESS–FIT ENDS.
 - 3. BALL VALVES:
 - 3.1. SIZES 2" AND SMALLER – BRONZE, TWO–PIECE BODY, FULL PORT, FORGED BRASS CHROME PLATED BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLED, SOLDER, THREADED, OR PRESS FIT ENDS.
 - 3.2. SIZE 2–1/2" – CAST STEEL, TWO–PIECE BODY, FULL PORT CHROME PLATED STEEL BALL, TEFLON SEAT AND STUFFING BOX SEALS, LEVER HANDLE, FLANGED, THREADED, OR PRESS–FIT ENDS.
- C. INSTALLATION
 - 1. INSTALL ALL PIPING IN CRAFTSMANSHIP LIKE MANNER, PLUMB AND PARALLEL TO BUILDING LINES. GROUP PIPING AT COMMON ELEVATIONS WHERE PRACTICAL.
 - 2. PROVIDE CLEARANCE FOR ACCESS TO VALVES AND FITTINGS.
 - 3. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
 - 4. INSTALL BALL VALVES FOR SHUT–OFF TO ISOLATE EQUIPMENT.
 - 5. INSTALL HANGERS AND SUPPORTS IN ACCORDANCE WITH MSS–SP–69 AND 89.

TEST ALL PIPING IN ACCORDANCE WITH IFGC AND UPC REQUIREMENTS.



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REVISIONS:

DRAWN BY: SR
CHECKED BY: AJS
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
MECHANICAL SPECIFICATIONS

SHEET:
M002

0"
1"
2"
3"

SECTION 23 21 13 – HYDRONIC PIPING

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL, PIPING SYSTEM PRESSURE TEST RESULTS.
- B. MATERIALS:
- COPPER TUBING – ASTM B88, TYPE L, HARD DRAWN. FITTINGS: ANSI/ASME B16.18 CAST BRONZE OF ASME B16.22 WROUGHT COPPER. JOINTS: ASTM B32, SOLDER, GRADE 95TA OR ANSI/AWS A5.8, BCUF SILVER BRAZE; FLUX: ASTM B813 OR VIEGA PRO PRESS SYSTEM.
 - POLYPROPYLENE PIPING – SDR 11, IN ACCORDANCE WITH ASTM F2389. NSF 14 & 61 LISTED. PIPE AND FITTINGS SHALL BE MANUFACTURED FROM A BETA CRYSTALLINE PP-RCT RESIN MEETING THE SHORT-TERM PROPERTIES AND LONG-TERM STRENGTH REQUIREMENTS OF ASTM F 2389 AND CSA B137.11. PIPING SHALL BE EXTRUDED WITH A MIDDLE LAYER THAT HAS GLASS FIBER CONTENT TO RESTRICT THERMAL EXPANSION. ELECTRO-FUSION FITTINGS. AQUATHERM "BLUE PIPE", NUPI NIRON "CLIMA PIPE", OR APPROVED EQUAL.
 - BALL VALVES:
 - SIZES 2" AND SMALLER – BRONZE TWO-PIECE BODY, FULL PORT, FORGED BRASS, CHROME PLATED BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE. SOLDER, THREADED, OR PRESS-FIT ENDS.
 - SIZES 2-1/2" AND LARGER – CAST STEEL TWO-PIECE BODY, FULL PORT CHROME PLATED STEEL BALL, TEFLON SEAT AND STUFFING BOX SEALS, LEVER HANDLE. FLANGED, SOLDER, THREADED, OR PRESS-FIT ENDS.
 - BUTTERFLY VALVES – ONLY OVER 2", ONE PIECE WAFER, LUG OR DOUBLE FLANGED DESIGN WITH EXTENDED NECK TO ALLOW FOR 2" OF PIPING INSULATION. ASME 150 FLANGE. PROVIDED WITH TOP AND BOTTOM STEM BEARINGS CONSISTING OF A 316 STAINLESS STEEL SHELL WITH A TFE/GLASS FABRIC LINER BEARING SURFACE. EQUIPPED WITH AN EXTERNALLY ADJUSTABLE STEM PACKING SYSTEM THAT ALLOWS PACKING ADJUSTMENT WITHOUT REMOVING THE ACTUATOR. INTERNAL OVER-TRAVEL STOP SHALL BE PROVIDED TO PREVENT OVER-TRAVEL OF THE DISC AND MINIMIZE POSSIBLE SEAT DAMAGE. DISC: DISC SHALL BE HARD POLISHED FOR MINIMUM TORQUE AND MAXIMUM SEALING CAPABILITY. STEM: ONE PIECE DESIGN PROVIDED WITH BLOW OUT PROOF STEM RETENTION SYSTEM TO ASSURE FULL RETENTION OF THE STEM IN THE UNLIKELY EVENT OF AN INTERNAL STEM FAILURE. SEAT: DESIGN SHALL CONSIST OF A RESILIENT ENERGIZER TOTALLY ENCAPSULATED BY THE SEAT. SEAT RETAINER SHALL BE FULLY FACED AND FIRMLY ATTACHED BY BOLTS LOCATED OUTSIDE THE SEALING AREA TO PROTECT THEM FROM CORROSION. THE SEAT ASSEMBLY SHALL BE LOCKED IN THE BODY RECESS BY THE FULL FACED RETAINER. THE SEAT SHALL BE SELF ADJUSTING FOR WEAR AND TEMPERATURE CHANGES. THE SEAT SHALL BE EASILY FIELD REPLACEABLE. VALVE SHALL BE TESTED FOR TIGHT SHUTOFF PER API 598 REQUIREMENTS. PROVIDE WITH MULTI POSITION VALVE OPERATOR/LEVER HANDLE. BRAY/MCCANNALOK HIGH PERFORMANCE BUTTERFLY VALVE OR APPROVED EQUAL.
 - SWING CHECK VALVES:
 - SIZES 2" AND SMALLER – BRONZE SWING DISC. SOLDER, SCREWED, OR PRESS FIT ENDS.
 - SIZES 2-1/2" AND LARGER – IRON BODY, SWING DISC, RENEWABLE DISC AND SEAT, FLANGED ENDS.
 - SPRING LOADED CHECK VALVES – IRON BODY, BRONZE TRIM, STAINLESS STEEL SPRING, RENEWABLE COMPOSITION DISC. SCREWED, WAFER, OR FLANGED ENDS.
 - FLANGES, UNIONS, AND COUPLINGS – BRONZE UNIONS FOR COPPER PIPE, SOLDERED JOINTS.
 - RELIEF VALVES – BRONZE BODY, TEFLON SEAT, STAINLESS STEEL STEM AND SPRINGS, AUTOMATIC, DIRECT PRESSURE ACTUATED, CAPACITIES ASME CERTIFIED AND LABELED.
- C. INSTALLATION:
- INSTALL ALL PIPING IN CRAFTSMANSHIP LIKE MANNER, PLUMB AND PARALLEL TO BUILDING LINES. GROUP PIPING AT COMMON ELEVATIONS WHERE PRACTICAL.
 - PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
 - INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
 - INSTALL BALL VALVES FOR SHUT-OFF TO ISOLATE EQUIPMENT.
 - PROVIDE 3/4" DRAIN VALVES AT EQUIPMENT AND PIPING LOW POINTS FOR DRAINING OF SYSTEM.
 - NO POLYPROPYLENE PIPING SHALL BE INSTALLED OR ROUTED THROUGH PLENUMS.
 - PRIOR TO FLUSHING SYSTEM, VERIFY SYSTEM IS COMPLETE. THOROUGHLY FLUSH AND CLEAN THE SYSTEM. DRAIN ALL LOW POINTS AND REMOVE AND CLEAN ANY STRAINER BASKETS. UPON COMPLETION OF FLUSHING, FEED HEATING MEDIUM INTO SYSTEM THROUGH MAKE-UP LINE WITH PRESSURE REGULATOR WHILE VENTING HIGH POINTS. SET INITIAL FILL PRESSURE TO 5 PSIG. ADJUST PRESSURE AS NECESSARY TO ACHIEVE 20 PSIG DURING SYSTEM OPERATION.

SECTION 23 51 00 – BREECHINGS, CHIMNEYS, & STACKS

- A. SUBMITTALS: SUBMIT PRODUCT DATA, SHOP DRAWINGS, AND STACK SIZING CALCULATIONS FOR APPROVAL.
- B. MATERIALS:
- TYPE A, DOUBLE WALL STACK FOR GAS FIRED EQUIPMENT – UL 103HT LISTED, NFPA 211 COMPLIANT. TYPE 430 STAINLESS STEEL INNER JACKET, 28 GAUGE. TYPE 430 STAINLESS STEEL OUTER JACKET, 28 GAUGE. MINIMUM 1" AIR SPACE BETWEEN INNER AND OUTER SHELLS. SELKIRK OR EQUAL.
- C. INSTALLATION:
- INSTALL IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS.
 - MAINTAIN UL LISTED MINIMUM CLEARANCE FROM COMBUSTIBLES. NO SINGLE WALL VENTS ARE PERMITTED.

SECTION 23 52 23 – CAST IRON BOILERS

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. CAST IRON BOILERS:
- CAST IRON 3-PASS, HIGH EFFICIENCY, LARGE NET OUTPUT, LOW OPERATING TEMPERATURE, DESIGNED BOILER.
 - EQUIPPED WITH A SIMPLIFIED CONTROL PANEL WITH BUILT-IN ON/OFF LIMIT, HIGH LIMIT, MANUAL RESET LIMIT AND TEMPERATURE GAUGE.
 - THREE PASS DESIGN WITH LARGE COMBUSTION CHAMBER AND HORIZONTAL FLUE PASSES WITH FINS.
 - LOW WATER OUTLET TEMPERATURE DOWN TO 85°F.
 - HINGED DOOR FOR BURNER AND FLUE ACCESS. DOORS CAN BE HINGED RIGHT OR LEFT BASED.
 - FOUR INCH INSULATION FEATURING REINFORCED FIBERGLASS WOOL.

- CONTROL PANEL. THE STANDARD CONTROL PANEL SUPPLIED IS DESIGNED FOR HEATING ONLY. THE PANEL IS EQUIPPED WITH A BOILER THERMOMETER, ON/OFF LIMIT, HIGH LIMIT AND MANUAL RESET LIMIT. CAN BE INTEGRATED EASILY WITH THIRD PARTY ENERGY MANAGEMENT SYSTEMS.
- C. BURNER:
- GAS BURNER: FORCED DRAFT TYPE FOR NATURAL GAS ADJUSTABLE COMBUSTION AIR SUPPLY, PRESSURE REGULATOR, GAS VALVES, MANUAL SHUT-OFF, INTERMITTENT SPARK OR GLOW COIL IGNITION, FLAME SENSING DEVICE, AND AUTOMATIC 100 PERCENT SHUT-OFF.
 - GAS BURNER SAFETY CONTROLS: ENERGIZE IGNITION, LIMIT TIME FOR ESTABLISHMENT OF FLAME, PREVENT OPENING OF GAS VALVE UNTIL PILOT FLAME IS PROVEN, STOP GAS FLOW ON IGNITION FAILURE, ENERGIZE BLOWER MOTOR, AND AFTER AIR FLOW PROVEN AND SLIGHT DELAY, ALLOW GAS VALVE TO OPEN.
 - CONTROLS: PRE-WIRED, FACTORY ASSEMBLED ELECTRONIC CONTROLS IN CONTROL CABINET WITH FLAME SCANNER OR DETECTOR, PROGRAMMING CONTROL, RELAYS, AND SWITCHES. PROVIDE PRE-PURGE AND POST-PURGE IGNITION AND SHUT-DOWN OF BURNER IN EVENT OF IGNITION PILOT AND MAIN FLAME FAILURE WITH MANUAL RESET.
- D. INSTALLATION:
- INSTALL PER MANUFACTURER’S DIRECTIONS.
 - SUBMIT RESULTS OF COMBUSTION TEST PRIOR TO FINAL ACCEPTANCE, INCLUDING: OVERFIRE AND FLUE COLLAR DRAFT, CO₂ (CO FOR GAS), NET STACK TEMPERATURE, SMOKE NUMBER, AND PERCENT EFFICIENCY. TESTS ARE TO BE RUN BY APPROVED TECHNICIAN SPECIALIZING IN BOILER MAINTENANCE.

SECTION 23 09 23 – DIRECT DIGITAL CONTROL SYSTEM FOR HVAC

- A. SUBMITTALS: SUBMIT ON PRODUCT DATA AND CONTROLS SHOP DRAWINGS FOR APPROVAL.
- B. DDC GENERAL REQUIREMENTS:
- THE CONTROL SYSTEM SHALL BE DESIGNED, FURNISHED, INSTALLED, TESTED, AND PLACED INTO SERVICE BY SIEMENS INDUSTRY, INC. LOCATED IN ANCHORAGE, AK. NO SUBSTITUTIONS ALLOWED.
 - PROVIDE A COMPLETE DIRECT DIGITAL CONTROL SYSTEM TO ACCOMPLISH THE SEQUENCE OF OPERATIONS. PROVIDE ALL CONTROLLERS, TEMPERATURE SENSORS, THERMOSTATS, TRANSFORMERS, WIRING AND ALL OTHER ASSOCIATED COMPONENTS. THE CONTRACTOR SHALL MAINTAIN THE EXISTING BAS SYSTEM AS OPERATIONAL DURING THE RENOVATION WORK. THE RENOVATED AREAS WILL BE BROUGHT ONLINE AND CONNECTED TO THE EXISTING BAS SERVER TO ALLOW MONITORING AND CONTROL OF THE SYSTEM AT THE HEAD END SERVER. THE DDC SYSTEM SHALL BE COMPLETE WITH GRAPHICS DISPLAYING EQUIPMENT, INDICATIONS, AND ALARMS AS NOTED IN THE SEQUENCE OF OPERATIONS.
- C. MATERIALS:
- EMERGENCY BOILER SHUTDOWN – CONTACT PUSHBUTTON WITH 60 MILLIMETER DIAMETER RED MUSHROOM HEAD, MOUNTED ON STAINLESS STEEL 1-GANG PLATE IN RECESSED BOX. MOUNT RED ENGRAVED NAMEPLATE WITH WHITE LETTERS THAT READS "BOILER EMERGENCY STOP" ON FACEPLATE OR WALL ABOVE BUTTON. PROVIDE NO OR NC CONTACT BLOCKS AS REQUIRED TO PERFORM THE SPECIFIED SEQUENCE OF OPERATION. KELE "ST120" OR APPROVED EQUAL.
 - VARIABLE FREQUENCY DRIVES – PROVIDE A COMPLETE VARIABLE FREQUENCY DRIVE (VFD) CONSISTING OF A PULSE WIDTH MODULATED (PWM) INVERTER DESIGNED FOR USE WITH BOTH ASYNCHRONOUS AND PERMANENT MAGNET MOTORS. THE DRIVE MANUFACTURER SHALL SUPPLY THE DRIVE AND ALL NECESSARY OPTIONS AS NOTED IN THE SCHEDULES AND SPECIFICATIONS.
 - DRIVES SHALL BE UL LISTED AS A COMPLETE ASSEMBLY; THE BASE VFD SHALL BE UL LISTED.
 - DROVES SHALL BE ENCLOSED IN A UL TYPE ENCLOSURE.
 - THE DRIVE SHALL PROVIDE FULL RATED OUTPUT FROM A LINE OF +10% TO -15% OF NOMINAL VOLTAGE ACROSS AN AMBIENT TEMPERATURE RANGE OF 5°F TO 104°F.
 - IF MORE THAN ONE DRIVE IS PROVIDED, ALL SHALL UTILIZE THE SAME USER INTERFACE. USER INTERFACE SHALL BE AN EASILY REMOVABLE AND REMOTE MOUNTED ADVANCED CONTROL PANEL WITH DISPLAY AND KEYPAD FOR I/O PROGRAMMING COMPLETE WITH BLUETOOTH COMMUNICATION.
 - ON-BOARD HARDWARE SHALL INCLUDE 2 ANALOG OUTPUTS, 2 ANALOG INPUTS, 6 PROGRAMMABLE DIGITAL INPUTS, 3 PROGRAMMABLE FORM-C RELAY OUTPUTS, ISOLATED USB PORT FOR INTERFACE WITH PORTABLE EQUIPMENT, 24VDC AUXILIARY POWER SUPPLY, INTERNAL IMPEDANCE TO REDUCE POWER LINE HARMONICS, AND VARIABLE SPEED COOLING FANS.
 - THE DRIVE SHALL BE RATED FOR USE IN REMOTE LOCATED SETUPS.
 - THE DRIVE SHALL HAVE AN EIA-485 PORT WITH REMOVABLE TERMINAL BLOCKS. ONBOARD COMMUNICATIONS PROTOCOLS SHALL INCLUDE AT A MINIMUM BACNET MS/TP AND SHALL BE CAPABLE OF COMMUNICATING AT LEAST TWO PROTOCOLS SIMULTANEOUSLY.
 - DRIVE SHALL BE PROVIDED WITH A DOOR/COVER INTERLOCKED DISCONNECT SWITCH.
 - THE DRIVE SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO INSTALL AND PROVIDE THE ELECTRICAL CONNECTIONS NECESSARY AS REQUIRED BY THE MANUFACTURERS INSTALLATION INSTRUCTIONS.

- D. INSTALLATION:
- CONTROL CONTRACTOR SHALL PROVIDE (11X17) SCHEMATIC CONTROL DIAGRAMS IN AUTOCAD FORMAT. CLEARLY INDICATE WIRE AND TERMINAL LABELS, SET POINTS, RESET SCHEDULES, SWITCH OVER POINTS, SIGNAL RANGES, AND OTHER POINTS REQUIRED TO COMPLETELY DESCRIBE THE SYSTEM. DEPICT CIRCUITRY ON SCHEMATIC CONTROL DIAGRAMS TO ALLOW CIRCUITS TO BE TRACED FROM CONNECTION TO CONNECTION. INSTALL ALL WIRING IN ACCORDANCE WITH THE NEC.
 - TEST ALL SYSTEMS; VERIFY ALL SYSTEMS OPERATE AS SPECIFIED IN THE SEQUENCE OF OPERATIONS AND RECORD INITIAL SETTINGS AND OPERATING POINTS IN O&M MANUALS. PROVIDE OPERATOR INTERFACE TO ALLOW FOR LOCAL SCHEDULE ADJUSTMENT, SETPOINT ADJUSTMENT, AND SYSTEM MONITORING.
 - INSTALL THERMOMETERS AND PRESSURE GAUGES WHERE INDICATED ON SCHEMATICS AND PLANS. INSTALL IN LOCATIONS WHERE THEY CAN BE EASILY READ BY MAINTENANCE PERSONNEL.
 - ALL CONTROLLERS, SWITCHES, RELAYS, THERMOSTATS, SENSORS, AND ACTUATORS SHALL BE PERMANENTLY TAGGED FOR IDENTIFICATION TO MATCH THE EXISTING FACILITY IDENTIFICATION SCHEME. THE TAGGING SCHEME SHALL BE REFLECTED ON THE CONTROL DRAWINGS.
 - THE CONTRACTOR WILL COMPLETELY CHECK-OUT, CALIBRATE, AND TEST ALL CONNECTED HARDWARE AND SOFTWARE TO ENSURE THAT THE SYSTEM PERFORMS IN ACCORDANCE WITH THE APPROVED SPECIFICATIONS AND SEQUENCE OF OPERATIONS.
 - TRAINING – INSTRUCT OWNERS REPRESENTATIVE(S) IN THE OPERATION, CARE, AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT PROVIDED. PROVIDE CONTROL SYSTEMS DEMONSTRATIONS AND MINIMUM 4 HOURS OF HANDS ON TRAINING TO OWNERS REPRESENTATIVE(S) PRIOR TO SUBSTANTIAL COMPLETION.

SEQUENCE OF OPERATIONS

HEATING SYSTEM – B-1,2 BP-1,2 PMP-1A,1B:

- A. ALARMS:
- LOW SUPPLY HEATING GLYCOL TEMPERATURE
 - LOW SYSTEM PRESSURE
 - BOILER FAILURE
 - BOILER CIRC PUMP FAILURE
 - BUILDING CIRCULATION PUMP FAILURE
 - BOILER EMERGENCY SHUTDOWN
- B. THE DDC SHALL MONITOR THE FOLLOWING POINTS:
- OUTSIDE AIR TEMPERATURE
 - SUPPLY HEATING GLYCOL TEMPERATURE
 - RETURN HEATING GLYCOL TEMPERATURE
 - BOILER SUPPLY SETPOINT
 - BOILER STATUS
 - BOILER CIRCULATION PUMP STATUS
 - BP-1,2 START/STOP
 - BP-1,2 STATUS
 - PMP-1A,B START/STOP
 - PMP-1A,B STATUS
- C. AUTOMATED CONTROL:
- | | OUTSIDE TEMPERATURE | LOOP HGS TEMPERATURE |
|--|---------------------|----------------------|
| | 0 DEG F | 180 DEG F |
| | 65 DEG F | 150 DEG F |
- DDC SHALL OPERATE BOILER PUMPS, BP-1/2, WHENEVER ASSOCIATED BOILER IS FIRING. BOILER PUMP SHALL START BEFORE BOILER FIRES AND CONTINUE TO RUN FOR 3 MINUTES AFTER THE BURNER SHUTS OFF.
 - DDC SYSTEM SHALL OPERATE ~~PMP-1A,1B~~ IN LEAD-LAG FASHION. ROTATE LEAD PUMP EVERY WEEK OF OPERATION. PUMP SHALL OPERATE VIA VFD TO MAINTAIN DIFFERENTIAL PRESSURE IN EACH OF THE THREE MAIN LOOPS. LOCATE DIFFERENTIAL PRESSURE SENSORS NEAR THE END OF EACH LOOP.
 - PROVIDE RED MUSHROOM PUSH BUTTON SWITCH FOR EMERGENCY SHUT-DOWN OF BOILERS. INTERLOCK SWITCH TO SHUT DOWN BOTH BOILERS. LABEL SWITCH "EMERGENCY BOILER SHUTDOWN".



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ACS PALMER COURTHOUSE BOILER
REPLACEMENT

435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

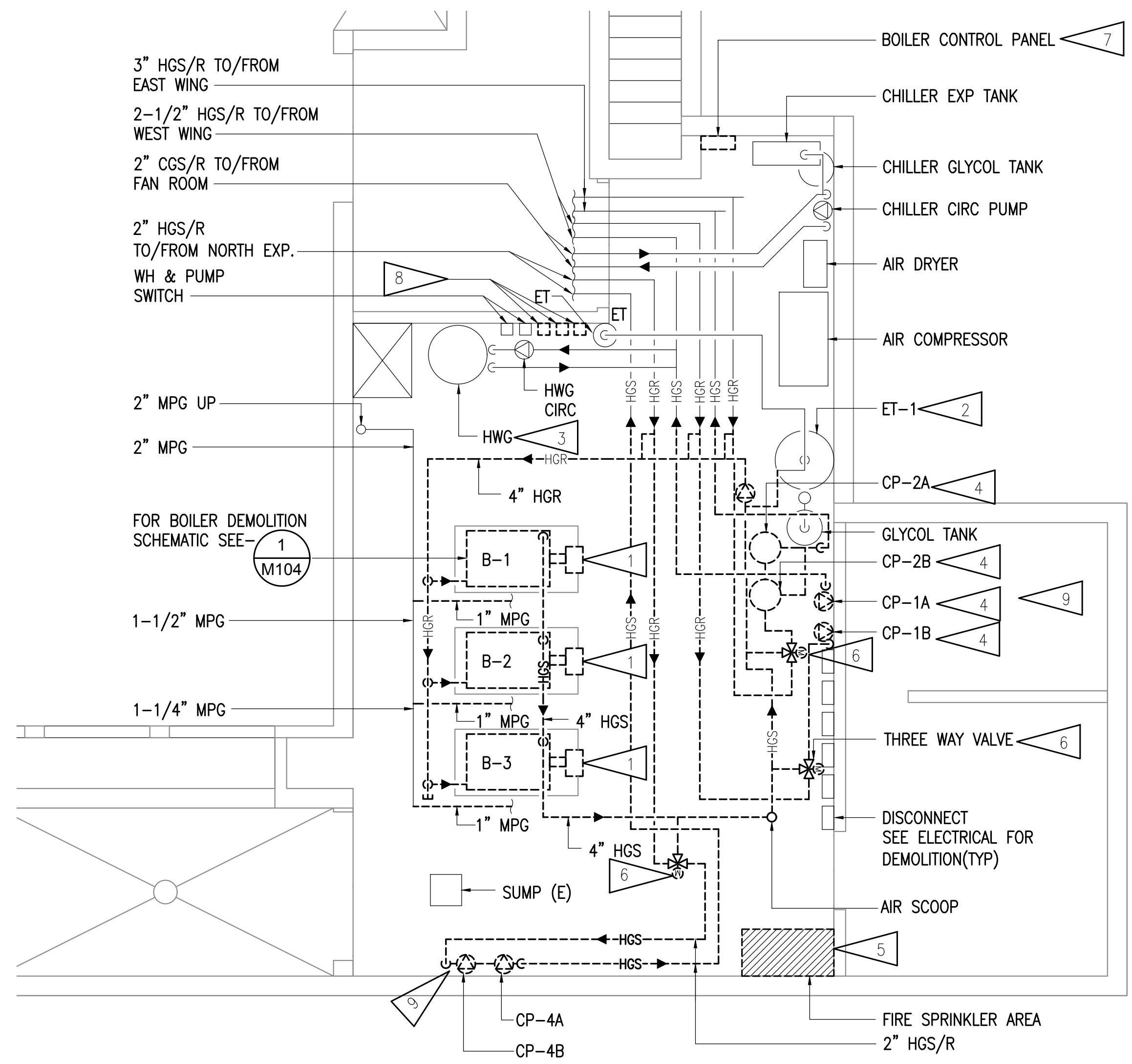
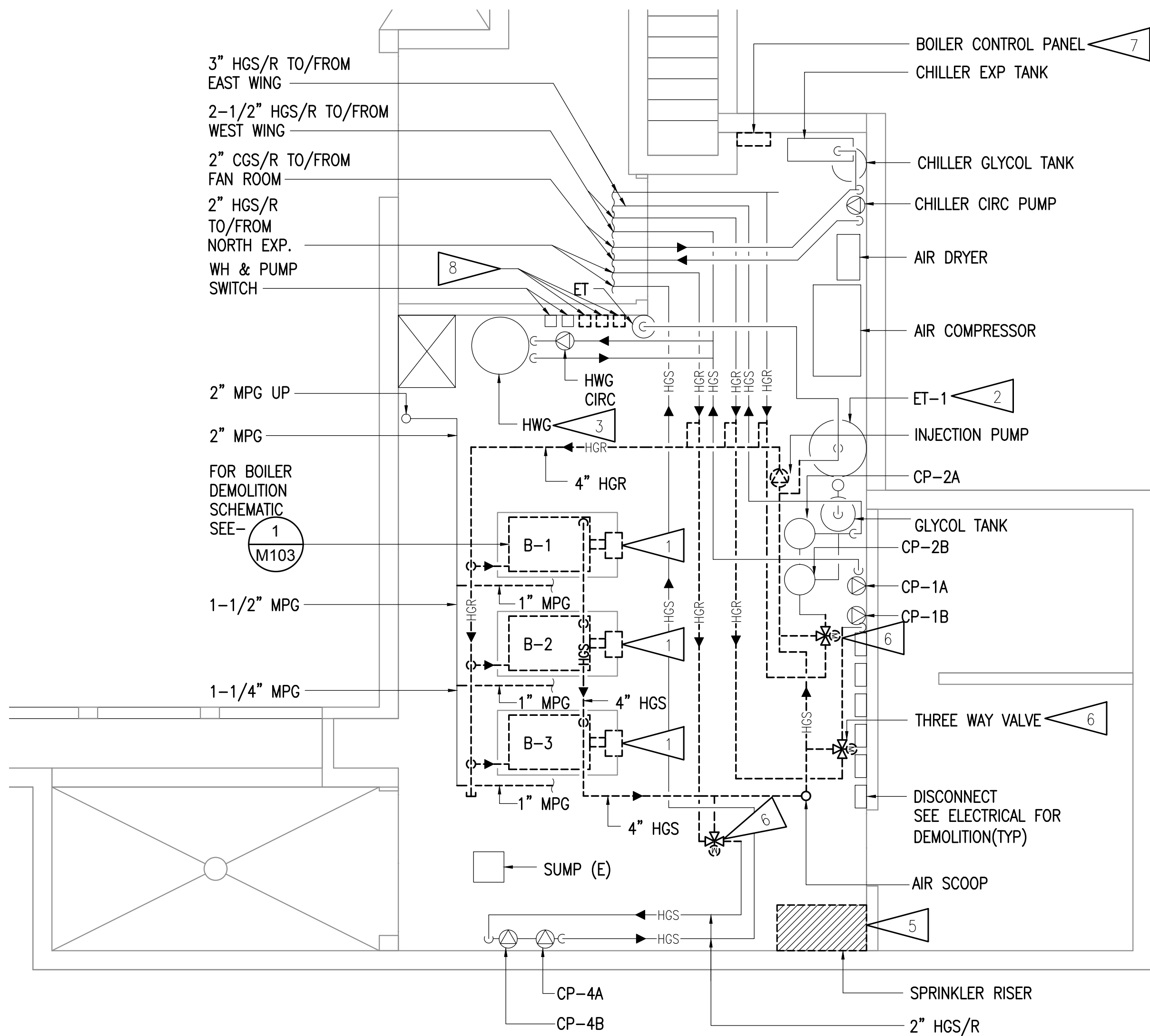
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CHECKED BY: AJS
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
MECHANICAL
SPECIFICATIONS

SHEET:

M003

0"
1"
2"
3"



1 BOILER ROOM HEATING DEMOLITION PLAN
1/4" = 1'-0"

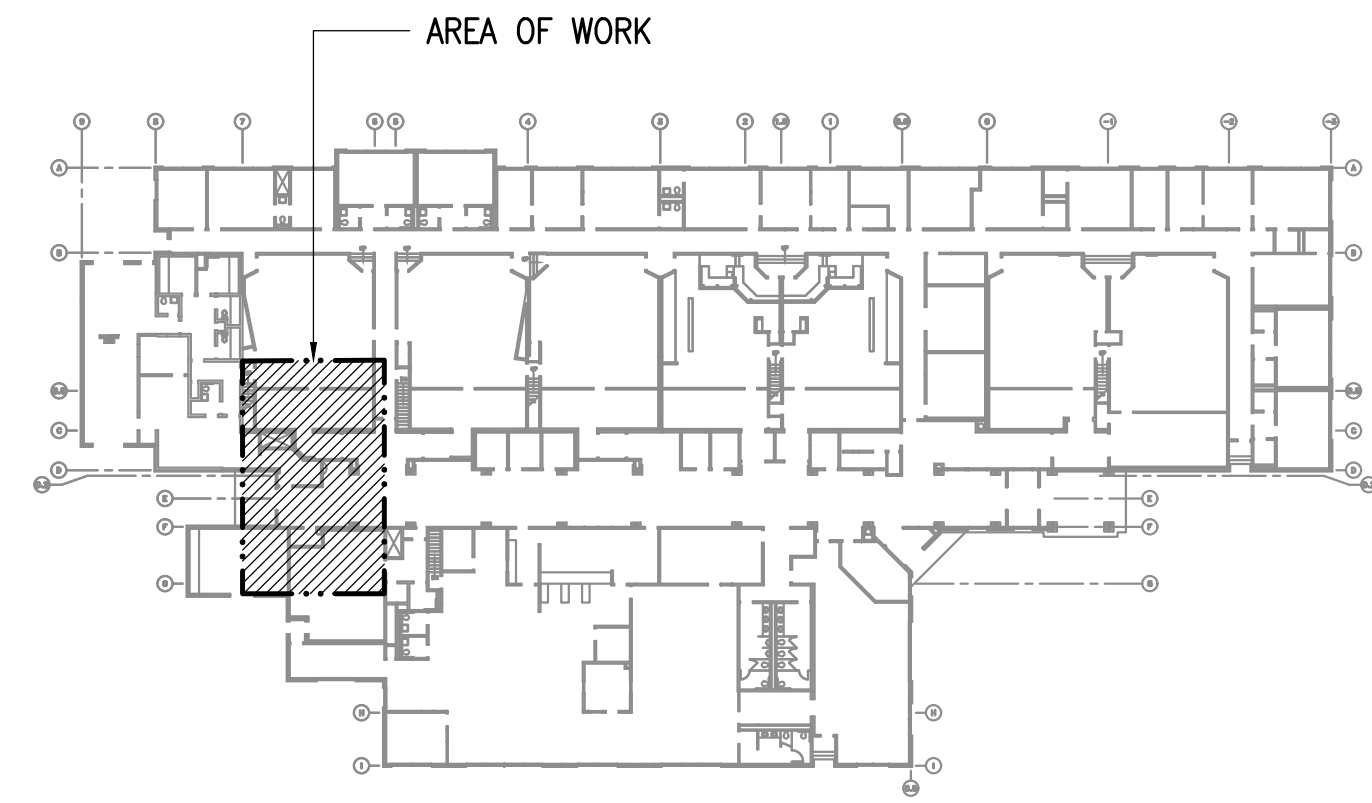
2 BOILER ROOM HEATING DEMOLITION PLAN - ALTERNATE
1/4" = 1'-0"

SHEET NOTES:

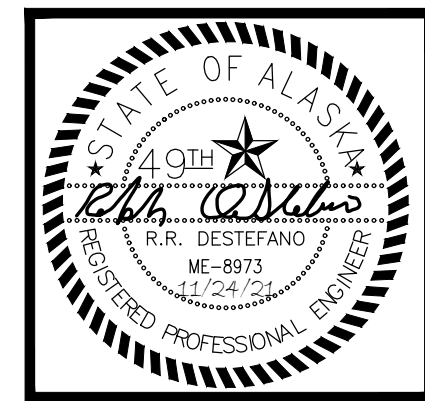
- 1 DEMOLISH BOILER, BURNER, PIPING AND ALL ASSOCIATED APPURTENANCES.
- 2 EXPANSION TANK (ET-1) TO REMAIN FOR REUSE.
- 3 HOT WATER GENERATOR, TEMPERING VALVE, HOT WATER RECIRCULATION PUMP, HOT WATER EXPANSION TANK TO REMAIN.
- 4 DEMOLISH HEATING CIRCULATION PUMPS AND ALL ASSOCIATED APPURTENANCES.
- 5 WATER SERVICE ENTRANCE, ASSOCIATED PIPING, AND APPURTENANCES TO REMAIN.
- 6 DEMOLISH 3 WAY VALVE AND ASSOCIATED APPURTENANCES.
- 7 DEMOLISH BOILER CONTROL PANEL AND ALL ASSOCIATED WIRING.
- 8 DEMOLISH BOILER-1,2,3 SHUTDOWN SWITCHES, SEE ELECTRICAL.
- 9 DETERMINE MAXIMUM PUMP FLOW PRIOR TO DEMOLISHING PUMPS. REFER TO SPECIFICATIONS ON M002.

GENERAL NOTES:

- A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS BUILT DRAWINGS AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
- B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A LOCATION AS DIRECTED BY THE OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- C. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.



KEY PLAN
NO SCALE



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ACS PALMER COURTHOUSE BOILER REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

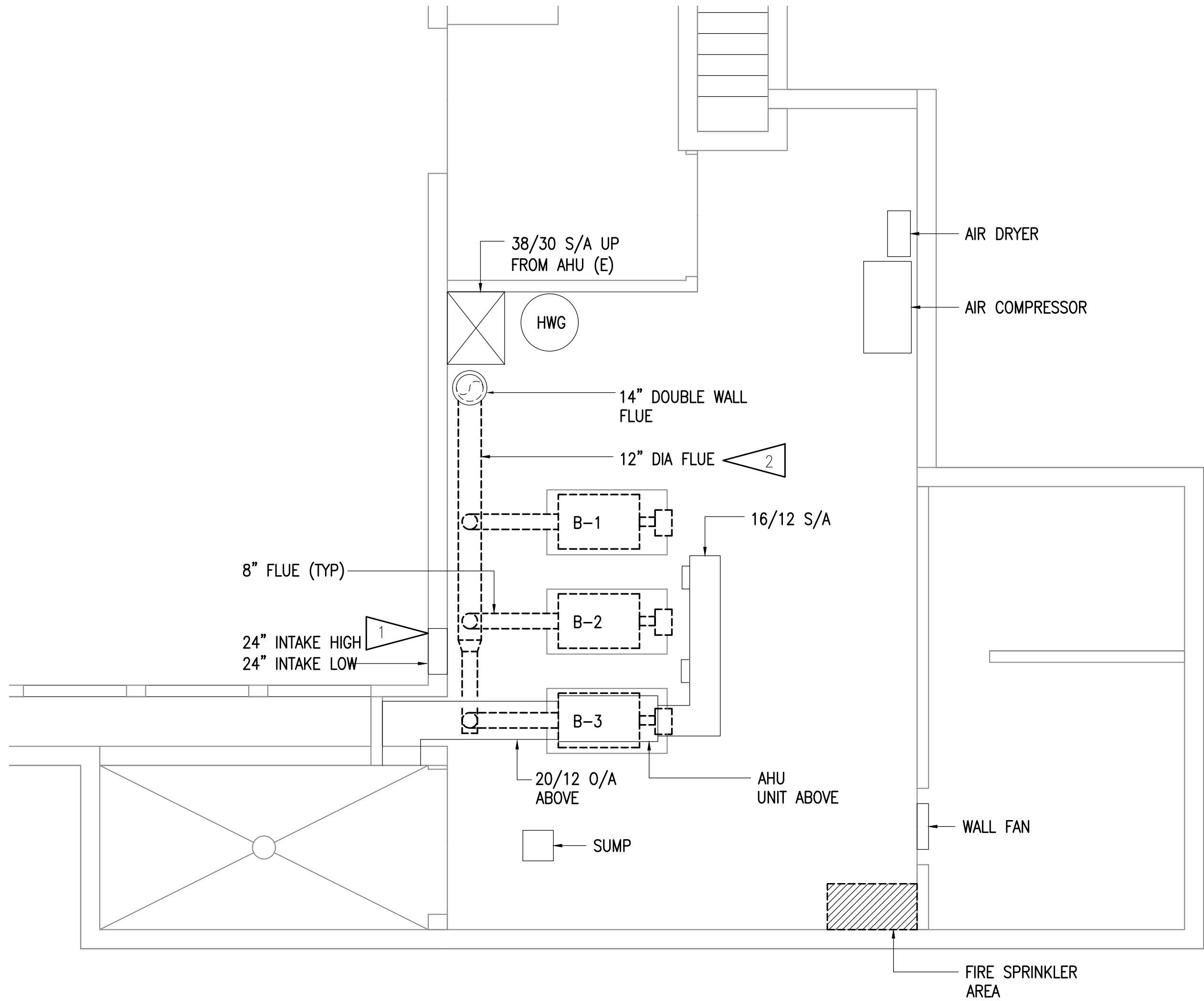
REVISIONS:

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DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
BOILER ROOM DEMOLITION PLANS

SHEET:
M101

0"
1"
2"
3"



1 BOILER ROOM VENTILATION AND GAS DEMOLITION PLAN

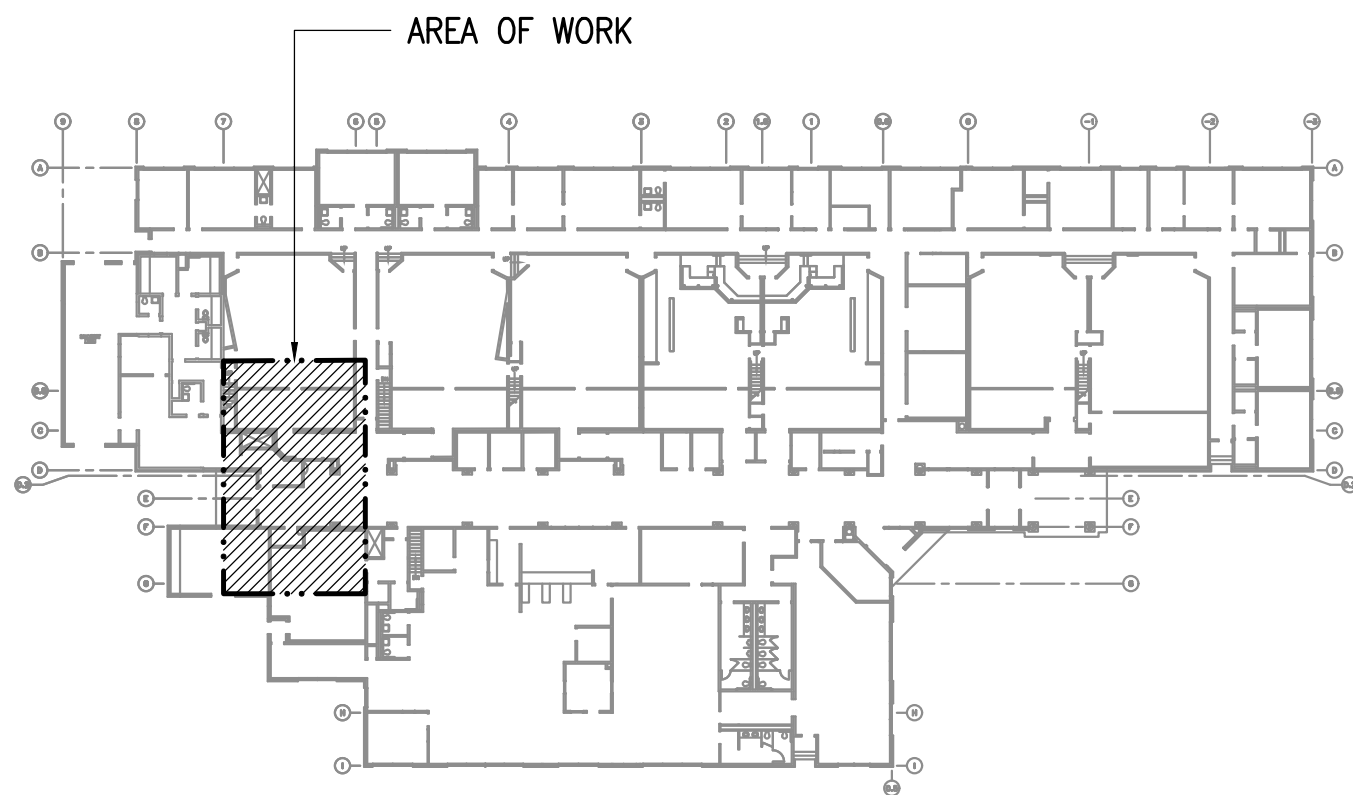
1/4" = 1'-0"

SHEET NOTES:

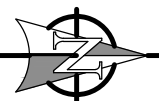
- 1 COMBUSTION AIR INTAKES DUCTWORK TO REMAIN.
- 2 DEMOLISH BOILER FLUE AND ALL ASSOCIATED APPURTENANCES UP TO CHIMNEY.

GENERAL NOTES:

- A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS BUILT DRAWINGS AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
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KEY PLAN
NO SCALE



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ACS PALMER COURTHOUSE BOILER REPLACEMENT
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REVISIONS:

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DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
BOILER ROOM VENTILATION DEMOLITION PLAN

SHEET:
M102



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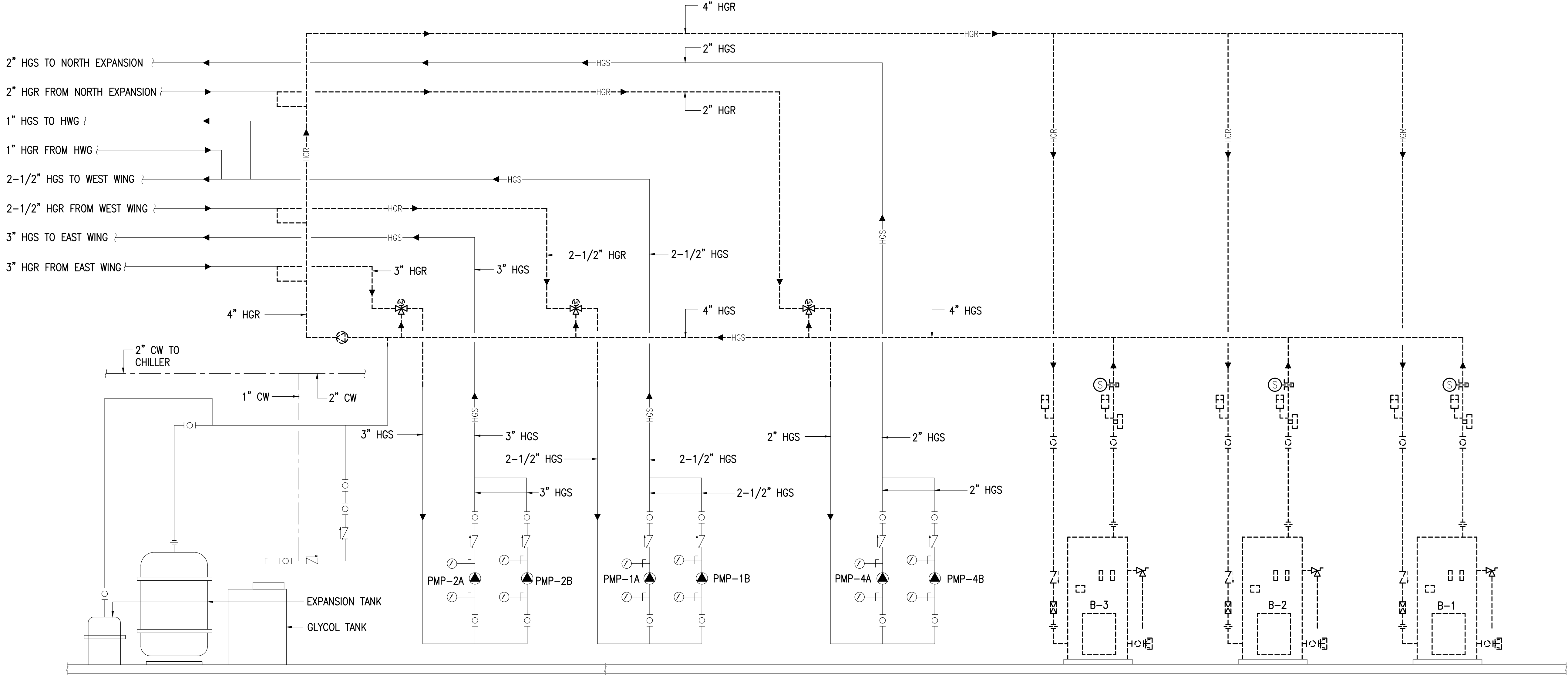
**ACS PALMER COURTHOUSE BOILER
REPLACEMENT**
435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

DRAWN BY: SR
CHECKED BY: AJS
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
BOILER ROOM
DEMOLITION
SCHEMATIC

SHEET:
M103

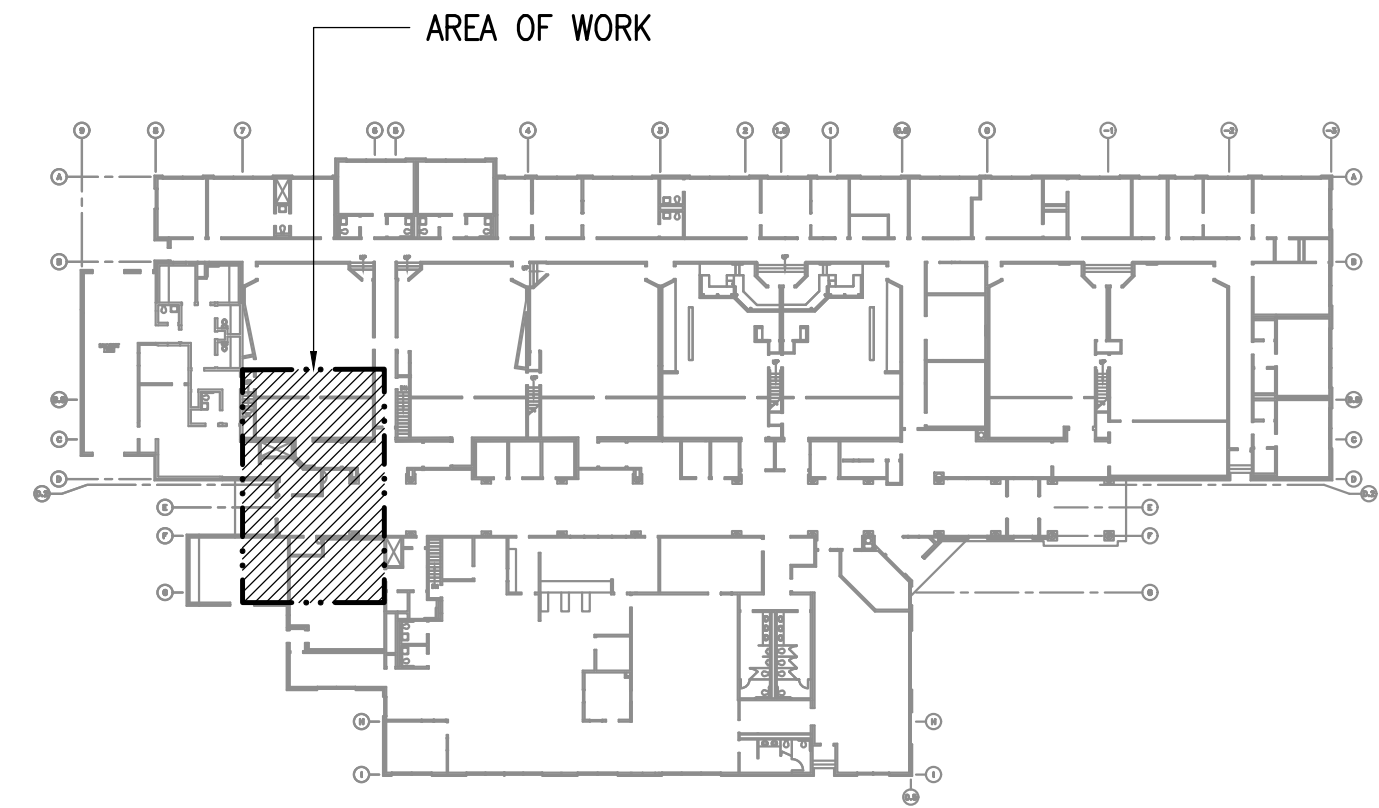


1 BOILER PIPING DEMOLITION SCHEMATIC

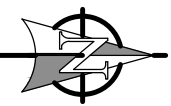
NO SCALE

GENERAL NOTES:

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- DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.



KEY PLAN
NO SCALE





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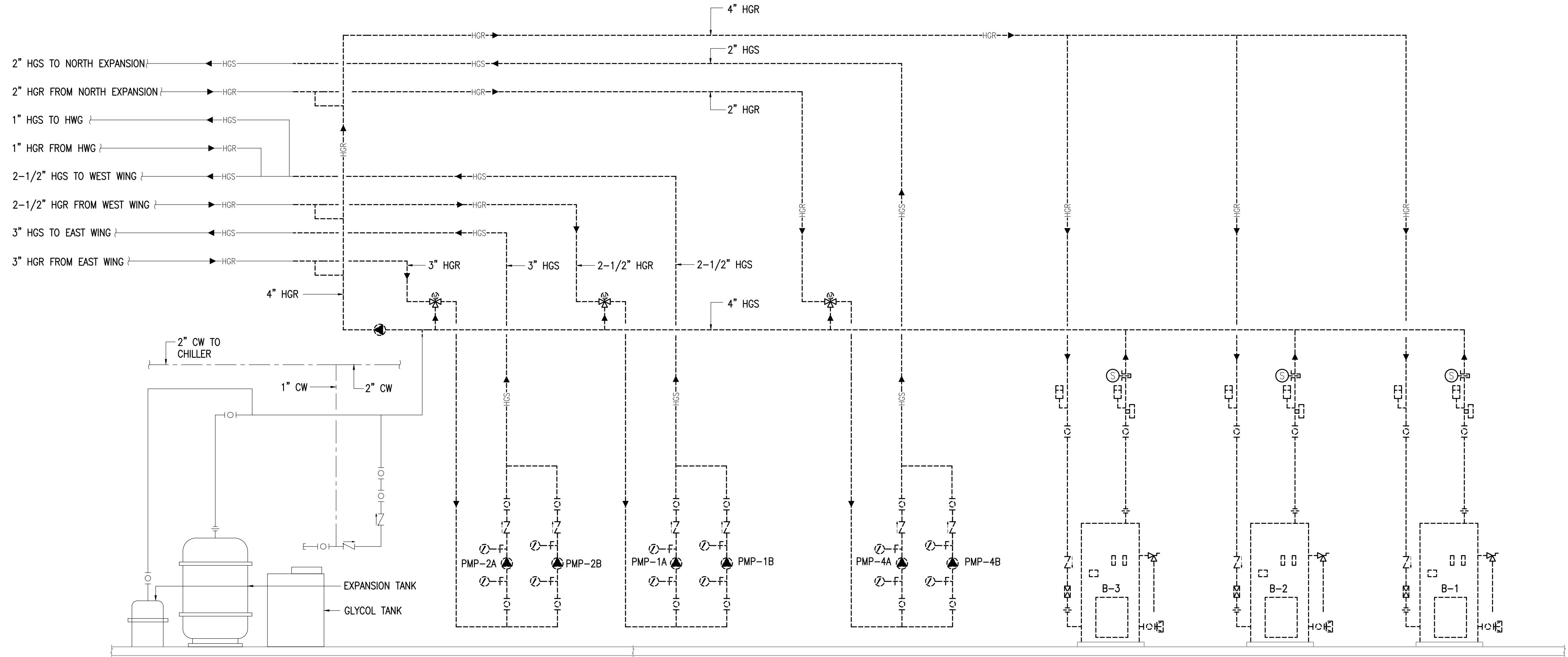
ACS PALMER COURTHOUSE BOILER REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

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DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
BOILER ROOM
DEMOLITION
SCHEMATIC -
ALTERNATE

SHEET:
M104

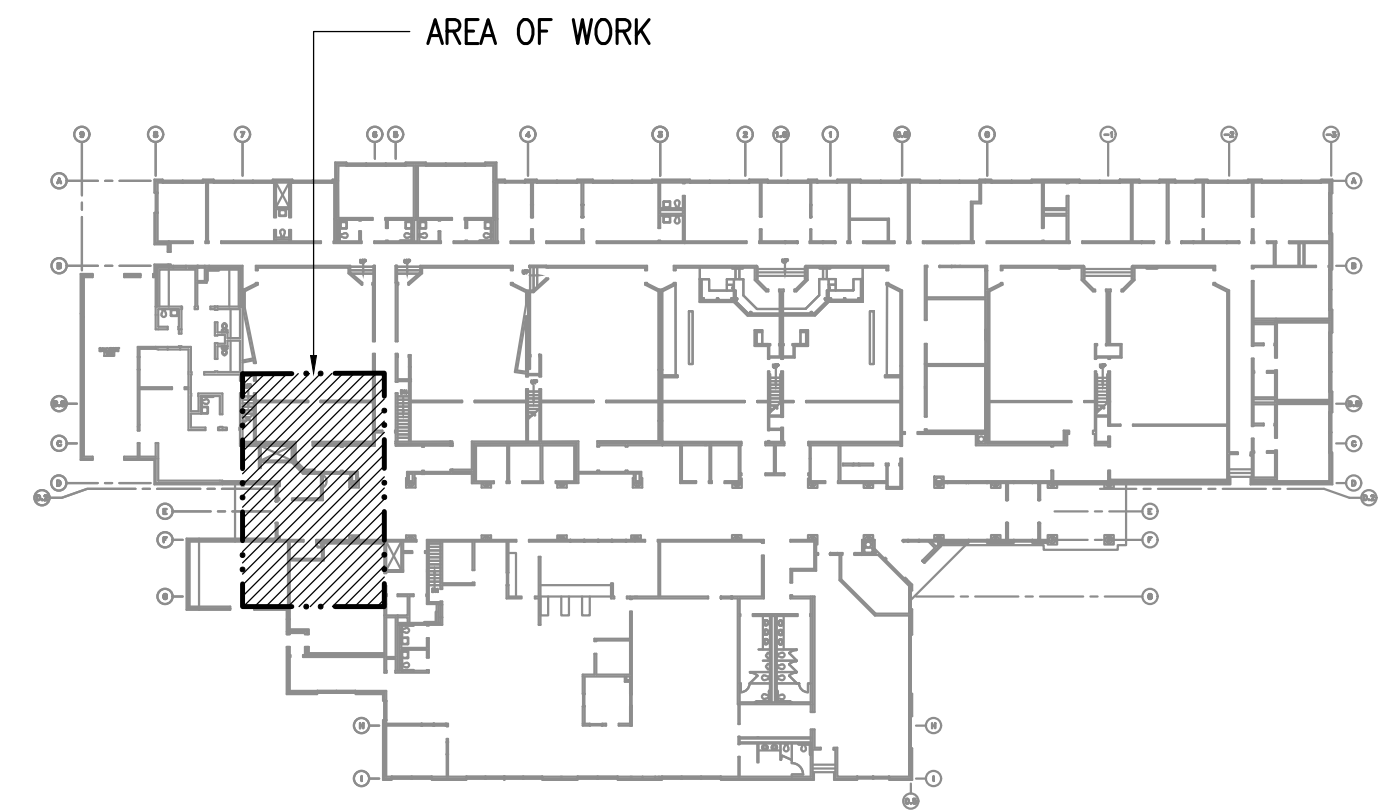


1 BOILER PIPING DEMOLITION SCHEMATIC - ALTERNATE

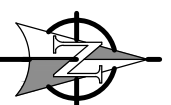
NO SCALE

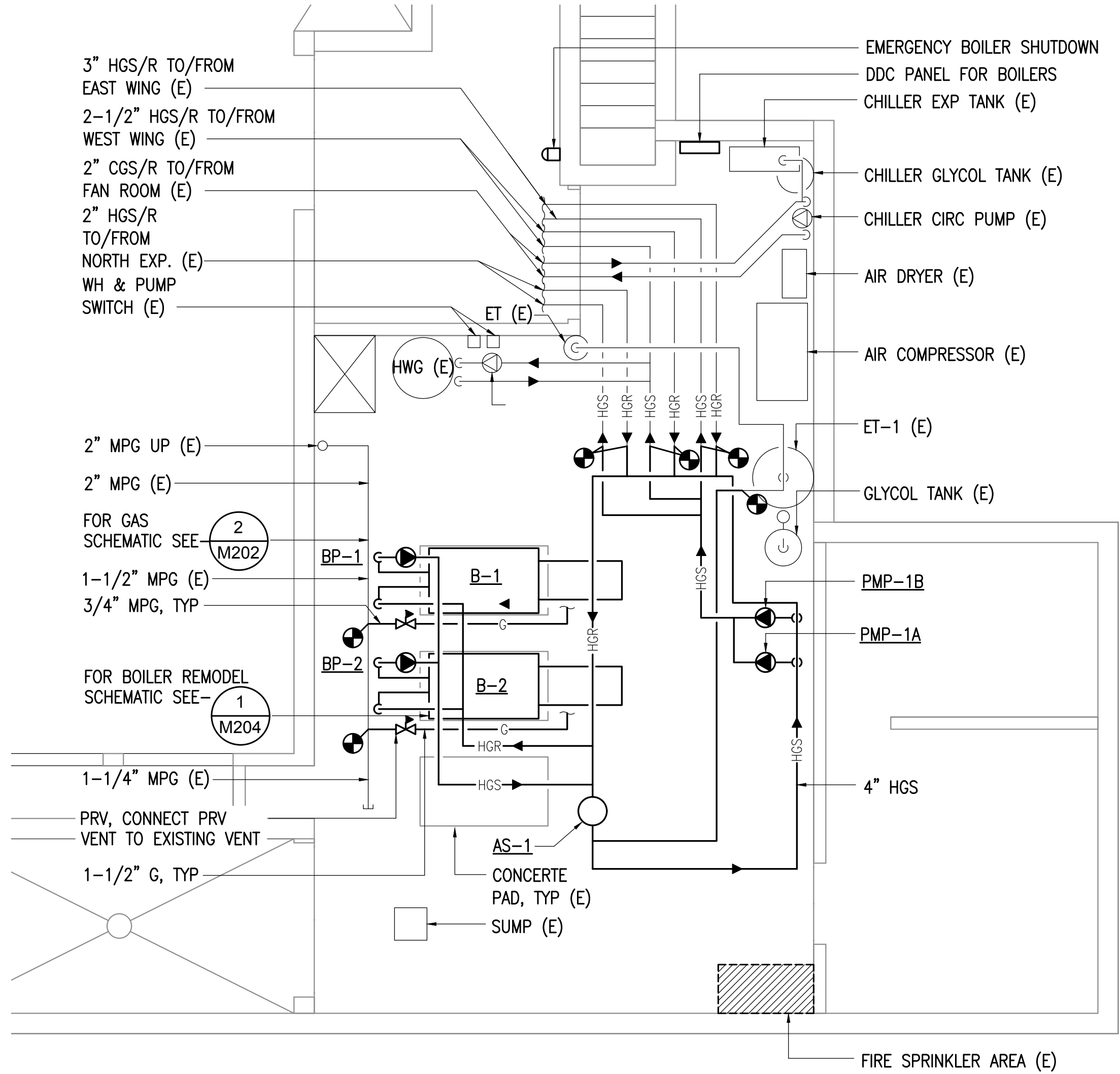
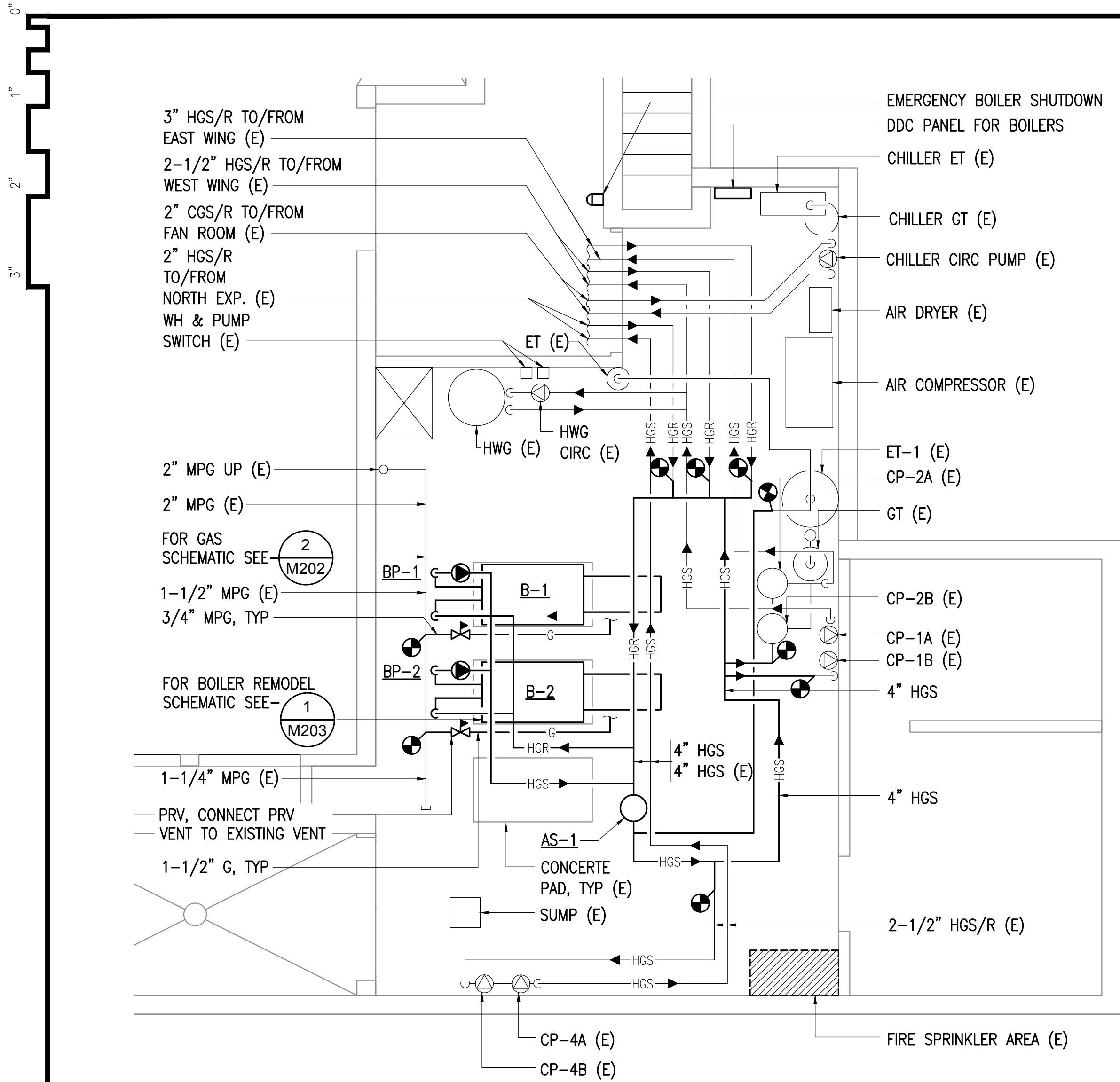
GENERAL NOTES:

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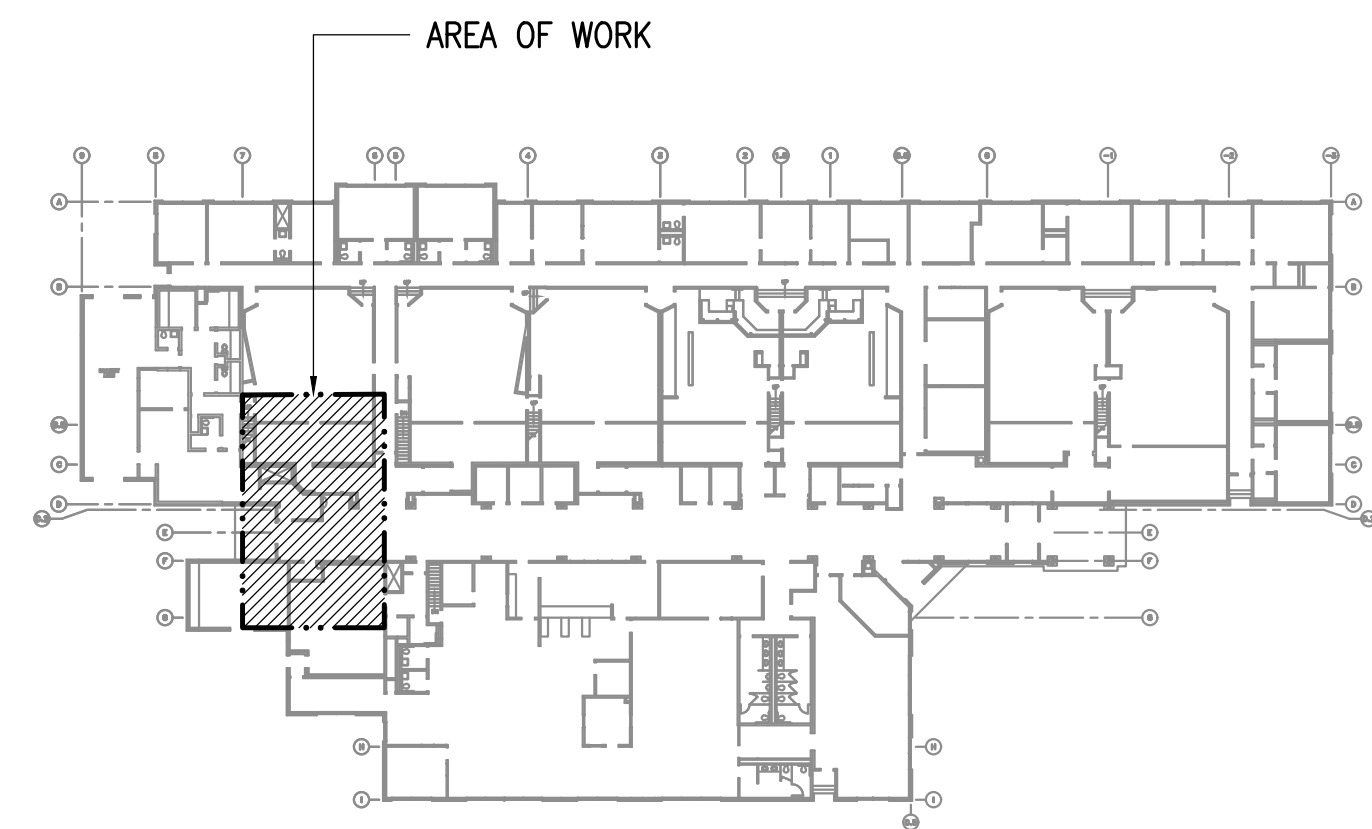
KEY PLAN
NO SCALE



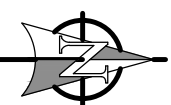


1 BOILER ROOM HEATING REMODEL PLAN
1/4" = 1'-0"

2 BOILER ROOM HEATING REMODEL PLAN - ALTERNATE
1/4" = 1'-0"



KEY PLAN
NO SCALE



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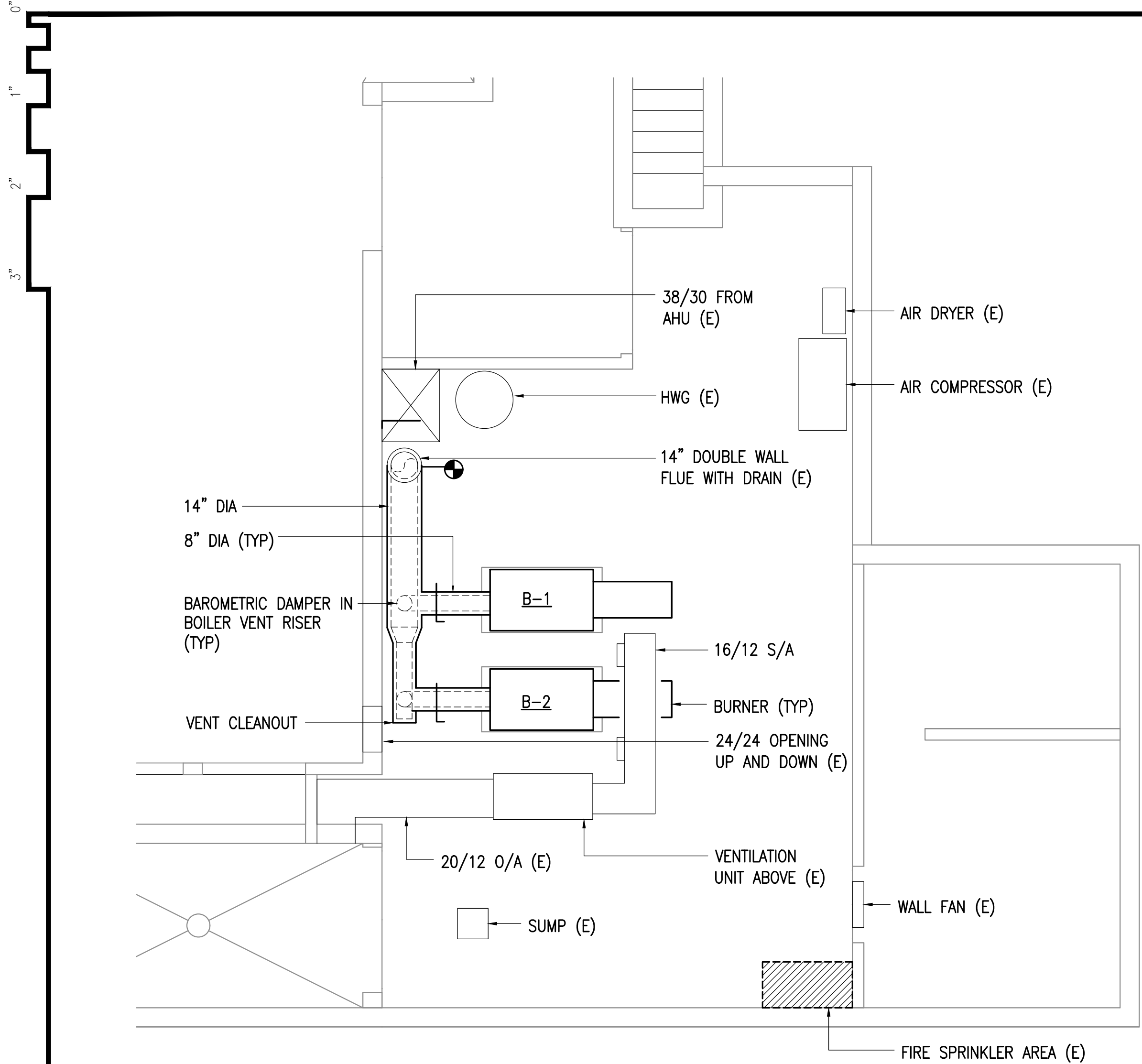
ACS PALMER COURTHOUSE BOILER REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

DRAWN BY: SR
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DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

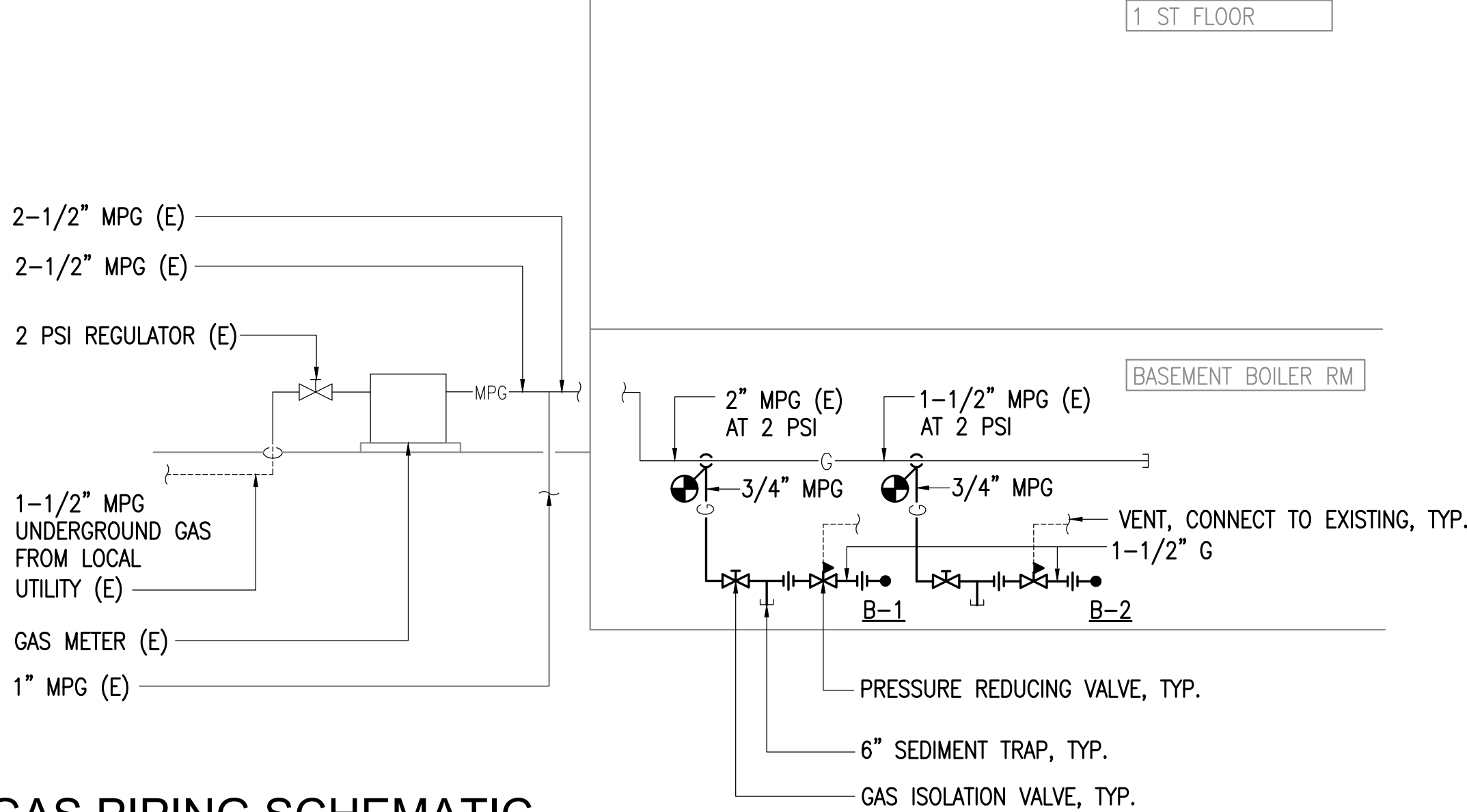
DRAWING TITLE:
BOILER ROOM REMODEL PLANS

SHEET:
M201

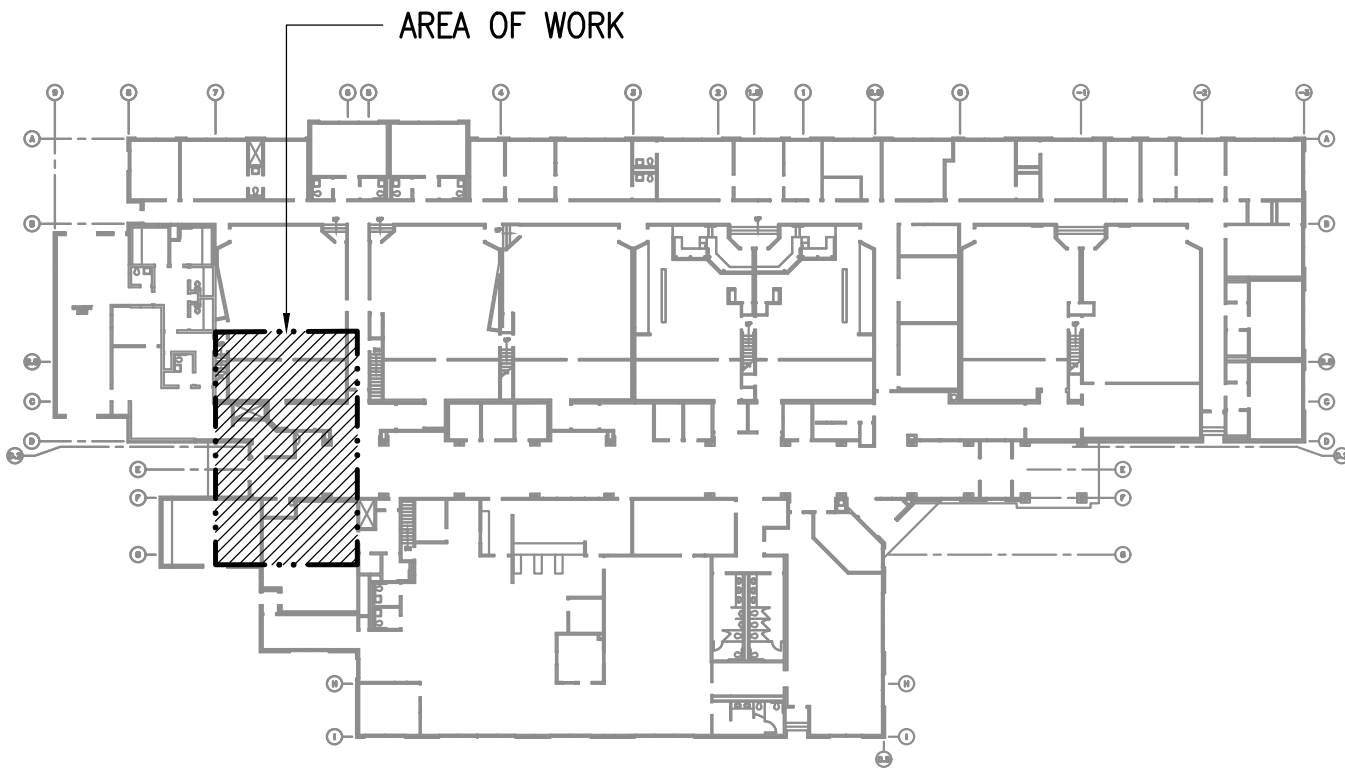


1 BOILER ROOM VENTILATION REMODEL PLAN
1/4" = 1'-0"

REMOVED LOAD	
BOILER, B-1,2	: 794 CFH
BOILER, B-3	: 783 CFH
TOTAL REMOVED LOAD	: 2371 CFH
GAS PIPING SIZED IN ACCORDANCE WITH 2018 UPC TABLE 1215.2(4) AND 1215.2(1)	
NEW BOILER B-1	: 1442 CFH
NEW BOILER B-2	: 1442 CFH
TOTAL ADDED LOAD	: 2884 CFH
TOTAL DEVELOPED LENGTH:	: 40 FT



2 GAS PIPING SCHEMATIC
NO SCALE



KEY PLAN
NO SCALE



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Corporate No.: AECC542

ACS PALMER COURTHOUSE BOILER REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

DRAWN BY: SR
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DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
BOILER ROOM VENTILATION REMODEL PLAN

SHEET:
M202



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Corporate No.: AECC542

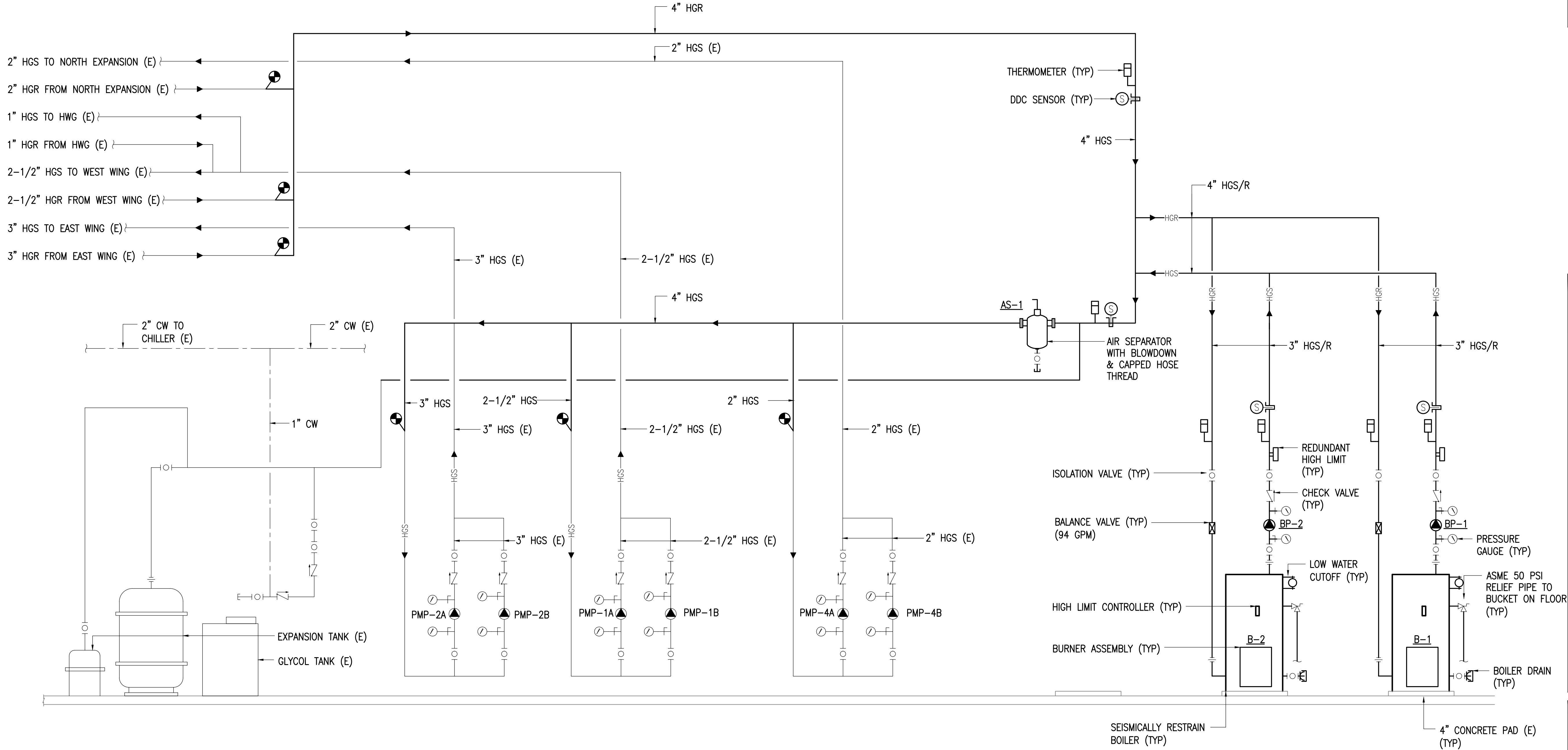
ACS PALMER COURTHOUSE BOILER REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

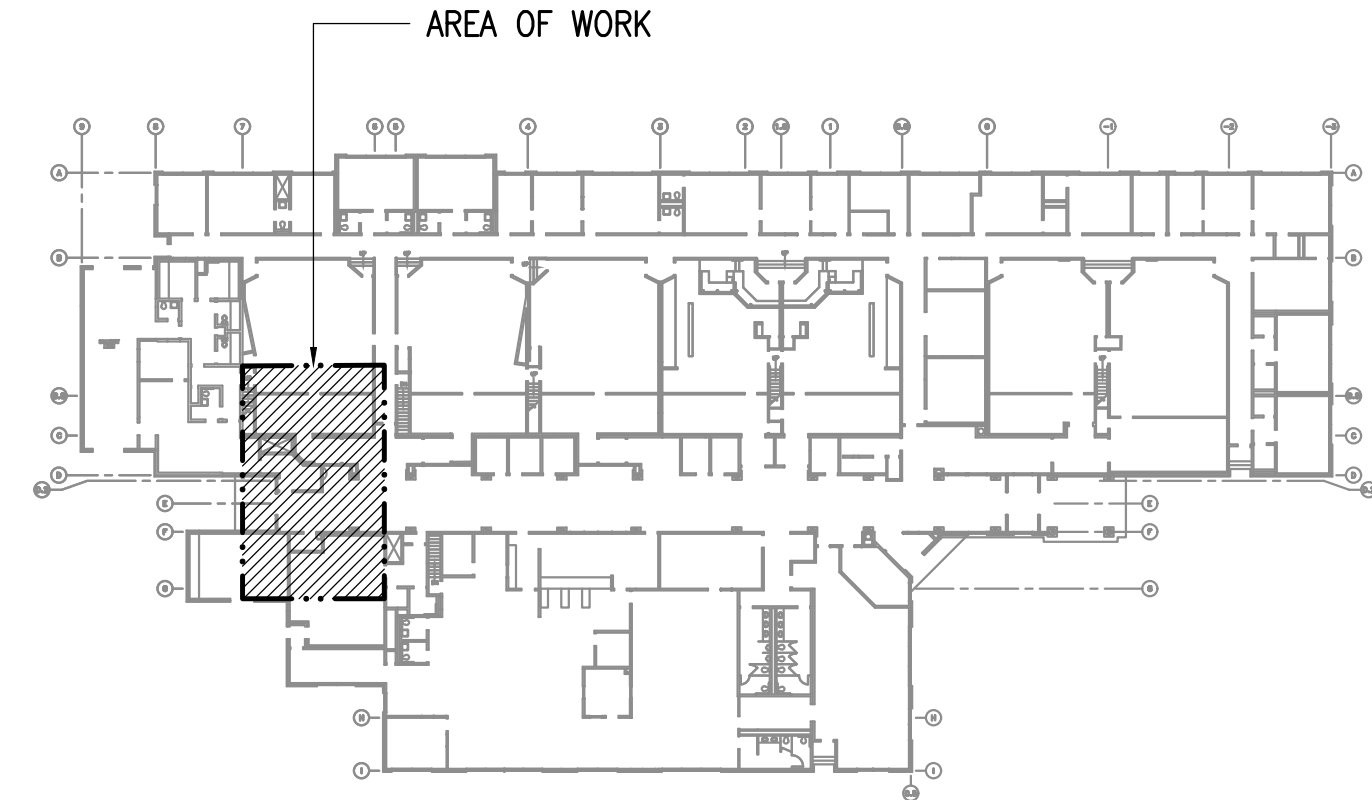
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CHECKED BY: AJS
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: MSERIES

DRAWING TITLE:
BOILER ROOM
REMODEL
SCHEMATIC

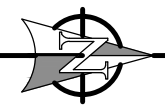
SHEET:
M203



1 BOILER PIPING REMODEL SCHEMATIC
NO SCALE



KEY PLAN
NO SCALE





RSA Engineering, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
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Phone (907) 276-0521
Corporate No.: AECC542

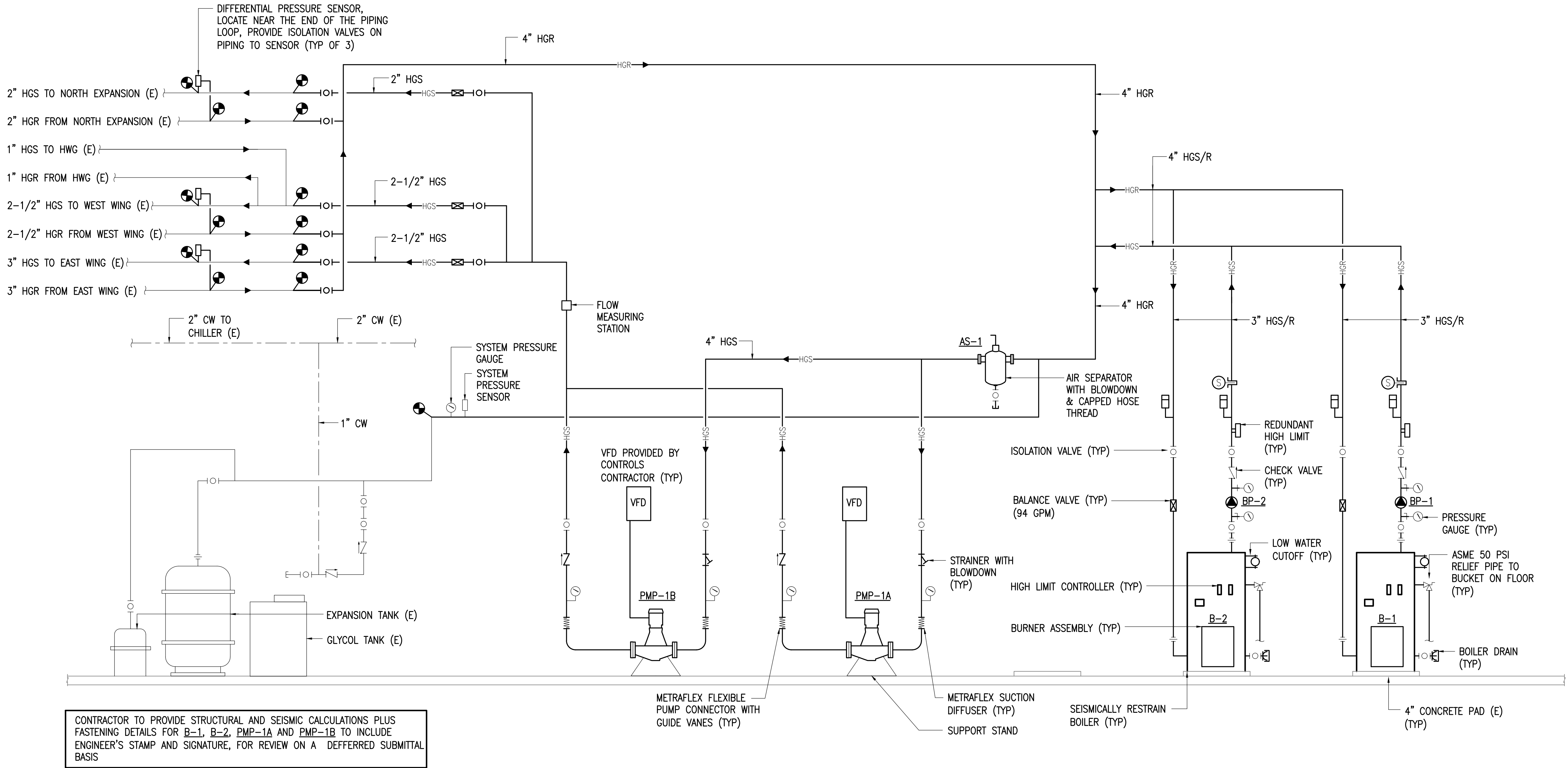
ACS PALMER COURTHOUSE BOILER REPLACEMENT
435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

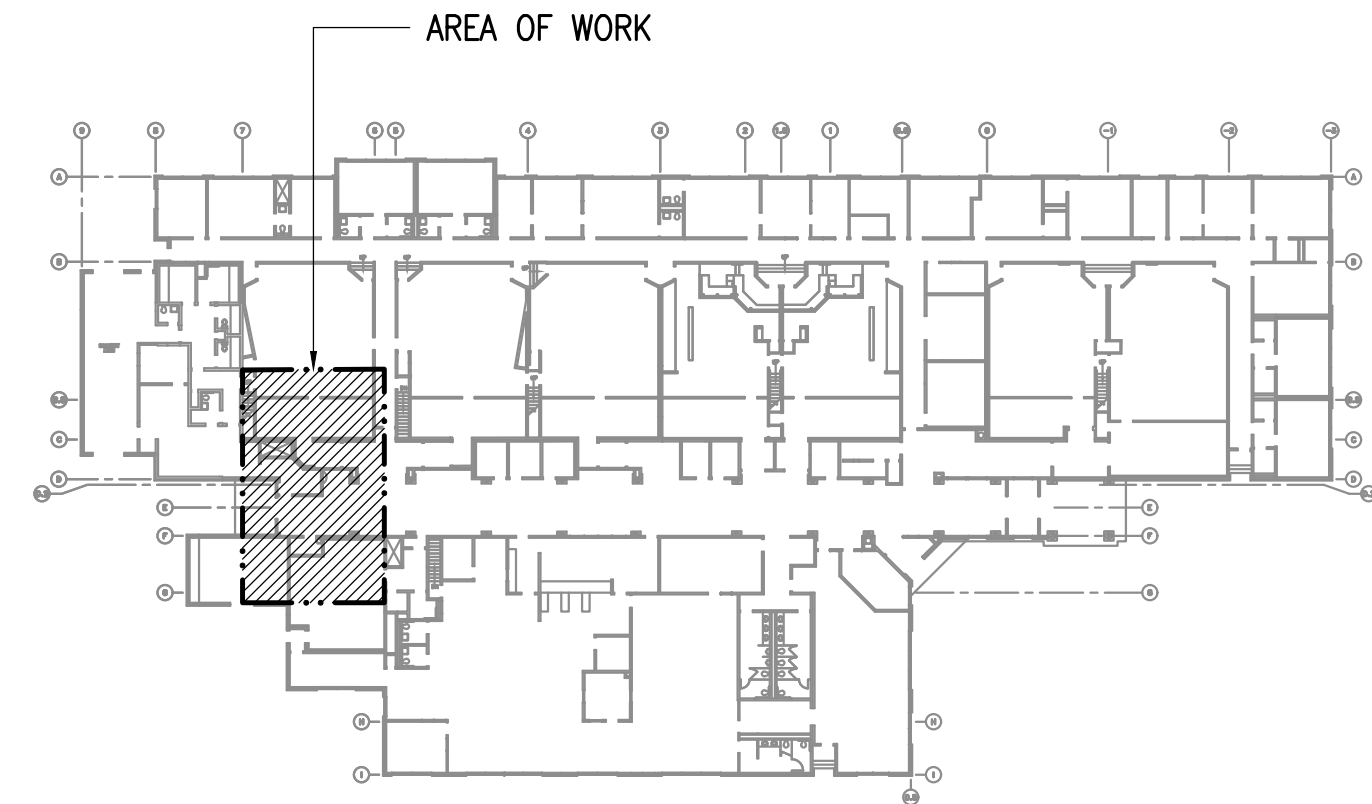
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CHECKED BY: AJS
DATE: 11/24/2021
JOB NUMBER: M1195.00
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DRAWING TITLE:
BOILER ROOM
REMODEL
SCHEMATIC -
ALTERNATE

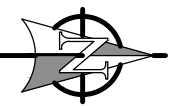
SHEET:
M204



1 BOILER PIPING REMODEL SCHEMATIC - ALTERNATE
NO SCALE



KEY PLAN
NO SCALE



0"
1"
2"
3"

LEGEND			
\$	SINGLE POLE SWITCH		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT
	CONDUIT, SURFACE MOUNTED		DUPLEX RECEPTACLE TO BE REMOVED (DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED TYPICAL)
 #10	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)		NOTE TAG (No. INDICATES NOTE)
A-2 	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)	AFF	ABOVE FINISHED FLOOR
	EXISTING PANEL	C	CONDUIT
	DUPLEX RECEPTACLE	E	DENOTES EXISTING ITEM
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	JUNCTION BOX	GRSC	GALVANIZED RIGID STEEL CONDUIT
	EMERGENCY PUSHBUTTON SWITCH	NEC	NATIONAL ELECTRICAL CODE
	MOTOR (SIZED AS NOTED)	NTS	NOT TO SCALE
	FRACTIONAL HORSEPOWER MOTOR STARTER	R	DENOTES EXISTING ITEM THAT HAS BEEN RELOCATED
	DISCONNECT SWITCH	TYP	TYPICAL
	DISCONNECT SWITCH (FUSED)	UON	UNLESS OTHERWISE NOTED
	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER		



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ACS PALMER COURTHOUSE BOILER REPLACEMENT

435 S DENALI STREET
PALMER, ALASKA 99645

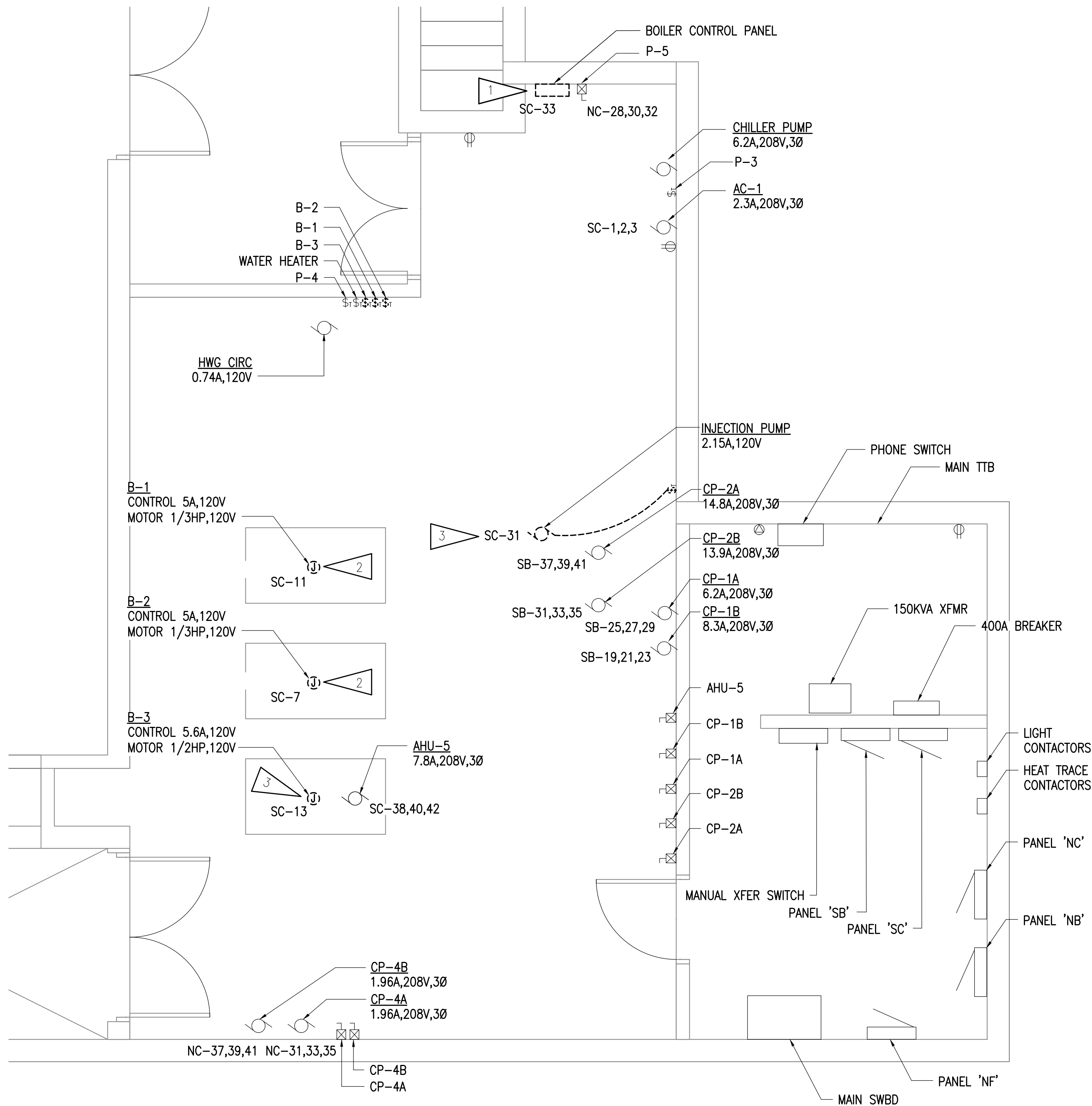
REVISIONS:

DRAWN BY: CSZ
CHECKED BY: DAO, CPL
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: ESERIES

DRAWING TITLE:
ELECTRICAL LEGEND

SHEET:
E001

0"
1"
2"
3"



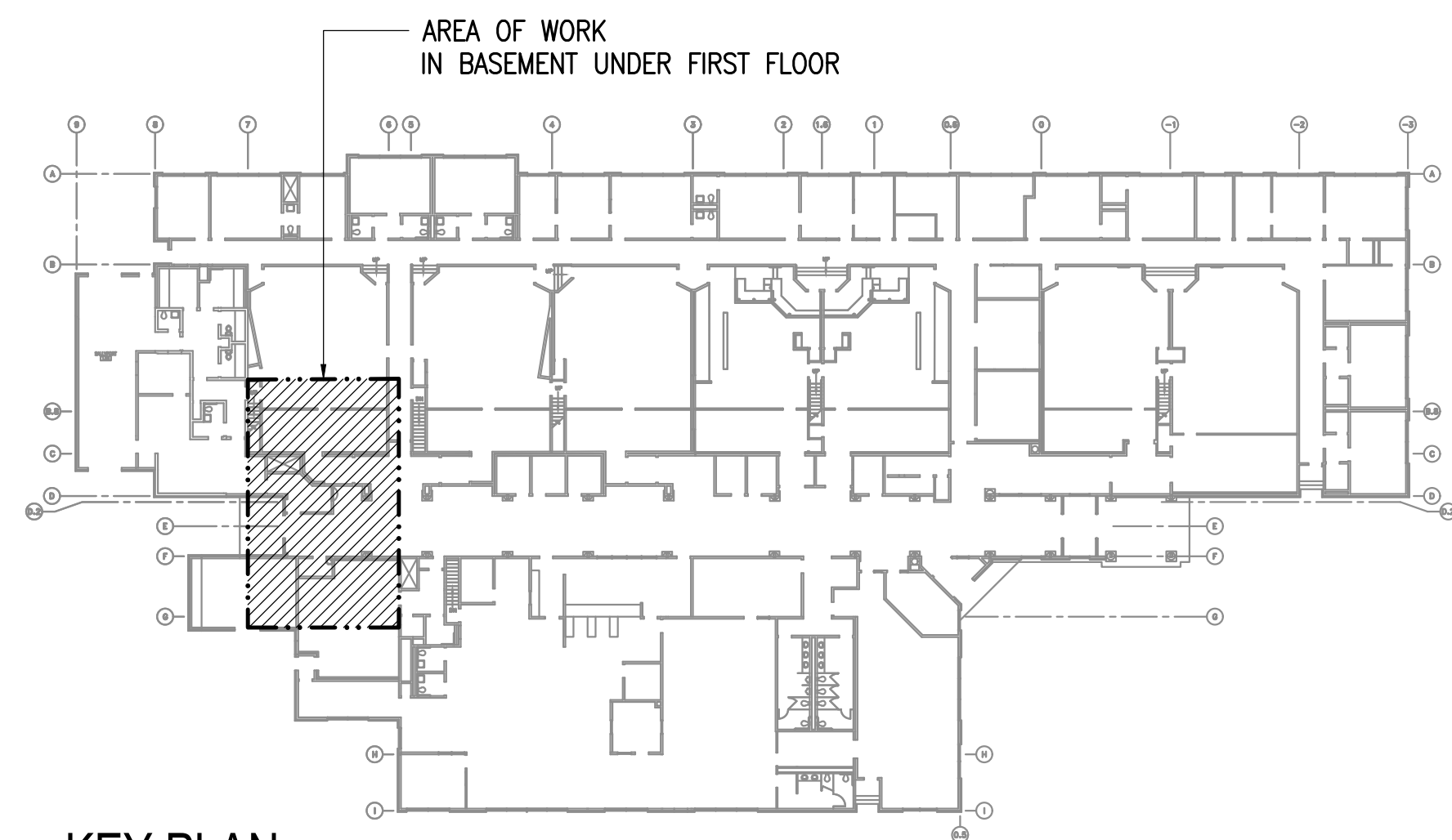
1 BOILER ROOM DEMOLITION PLAN BASE BID - BASEMENT
3/8" = 1'-0"

GENERAL NOTES:

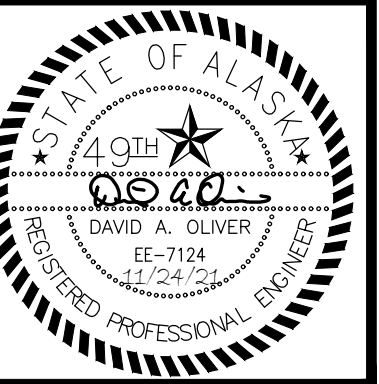
1. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS-BUILT DRAWINGS AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
2. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.
3. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.

SHEET NOTES

1. SALVAGE CIRCUIT FOR EXTENSION TO REPLACEMENT CONTROL PANEL. FIELD COORDINATE WITH MECHANICAL FOR NEW PANEL LOCATION.
2. SALVAGE CIRCUIT FOR EXTENSION AND CONNECTION TO NEW BOILER. SEE E201.
3. DEMOLISH CIRCUIT BACK TO SOURCE. LABEL BREAKER AS SPARE.



KEY PLAN
NO SCALE



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ACS PALMER COURTHOUSE BOILER REPLACEMENT

435 S DENALI STREET
PALMER, ALASKA 99645

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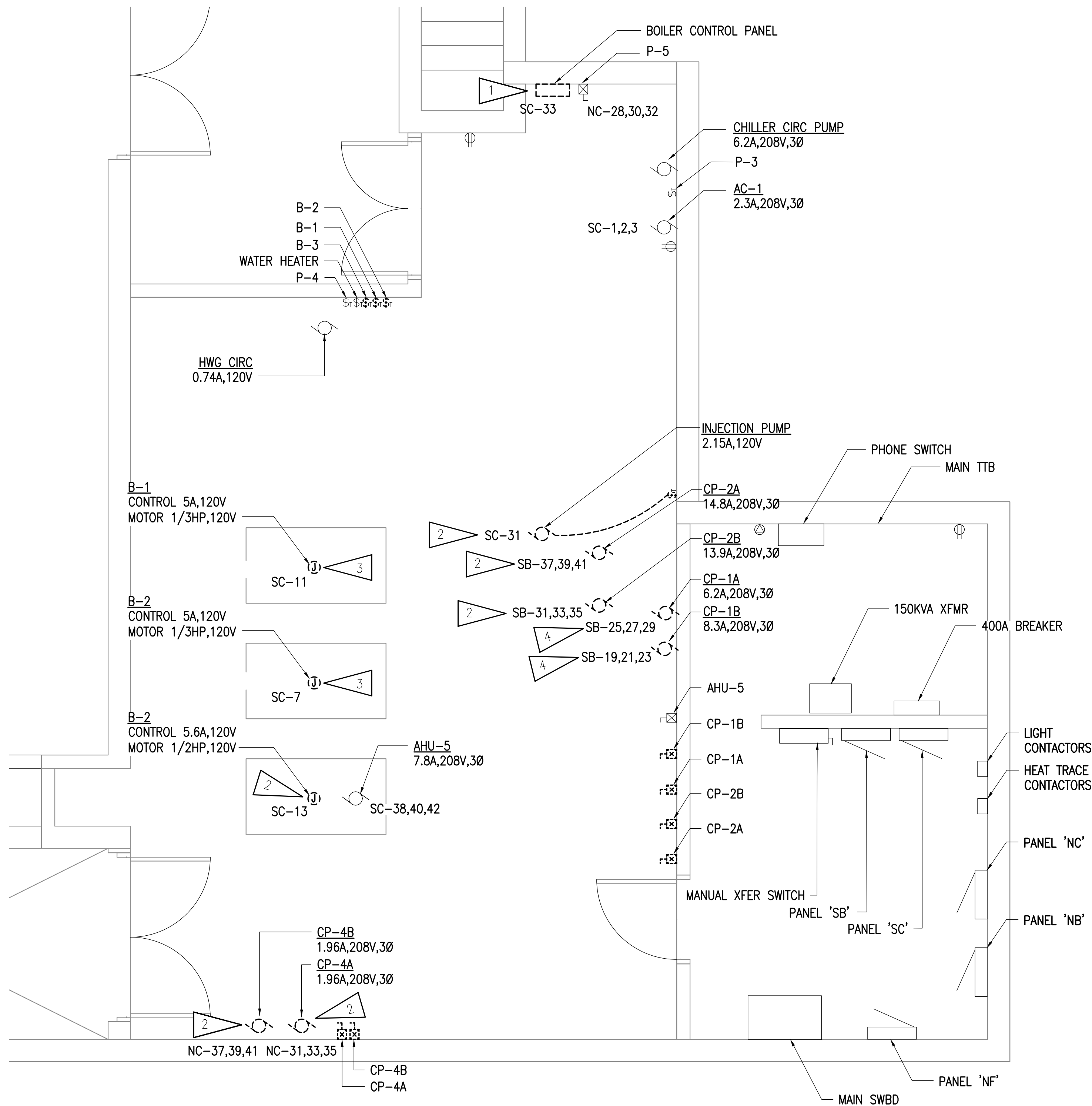
DRAWN BY: CSZ
CHECKED BY: DAO, CPL
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: ESERIES

DRAWING TITLE:
BOILER ROOM
DEMOLITION PLAN
BASE BID - BASEMENT

SHEET:

E101

0"
1"
2"
3"



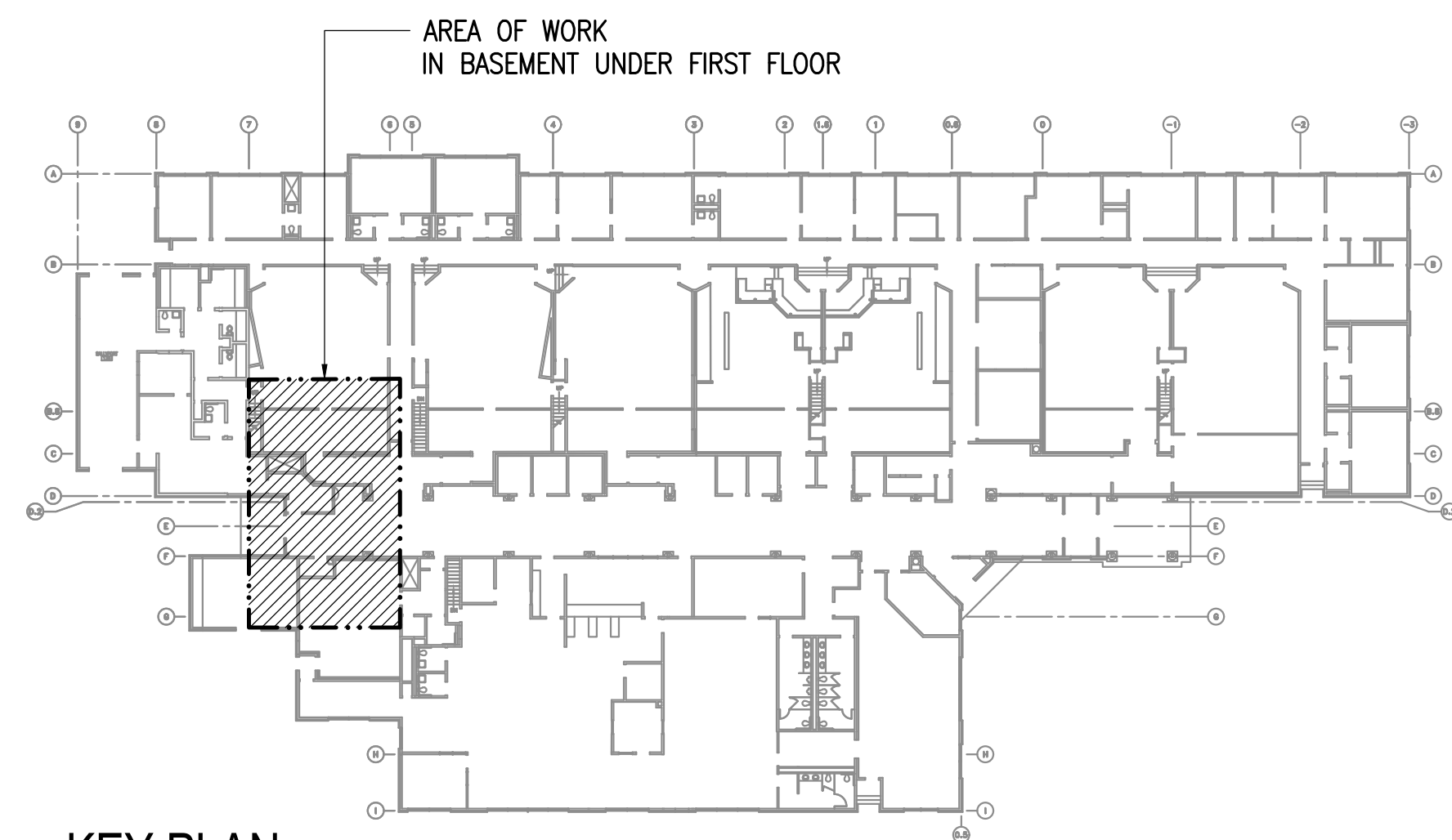
1 BOILER ROOM DEMOLITION PLAN ALTERNATE - BASEMENT
3/8" = 1'-0"

GENERAL NOTES:

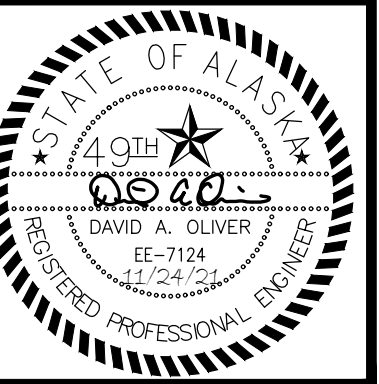
1. SEE E101 FOR GENERAL NOTES.

SHEET NOTES

1. SALVAGE CIRCUIT FOR EXTENSION TO REPLACEMENT CONTROL PANEL. FIELD COORDINATE WITH MECHANICAL FOR NEW PANEL LOCATION.
2. DEMOLISH CIRCUIT BACK TO SOURCE. LABEL BREAKER AS SPARE.
3. SALVAGE CIRCUIT FOR EXTENSION AND CONNECTION TO NEW BOILER. SEE E202.
4. UPGRADE EXISTING CONDUCTORS AND CIRCUIT BREAKER FOR USE WITH NEW PUMPS. SEE E202 AND E301.



KEY PLAN
NO SCALE



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ACS PALMER COURTHOUSE BOILER REPLACEMENT

435 S DENALI STREET
PALMER, ALASKA 99645

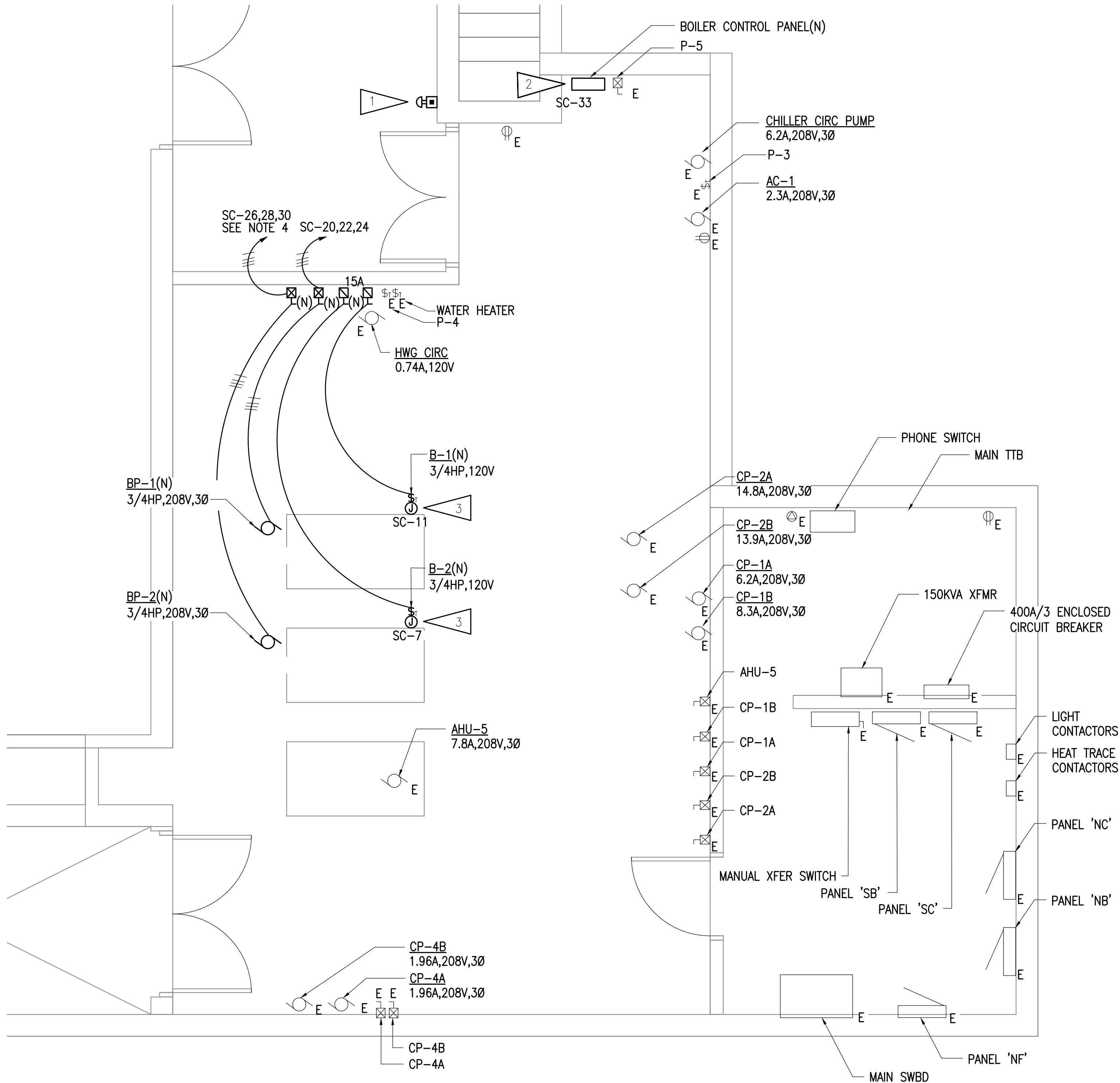
REVISIONS:

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CHECKED BY: DAO, CPL
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: ESERIES

DRAWING TITLE:
BOILER ROOM
DEMOLITION PLAN
ALTERNATE - BASEMENT

SHEET:

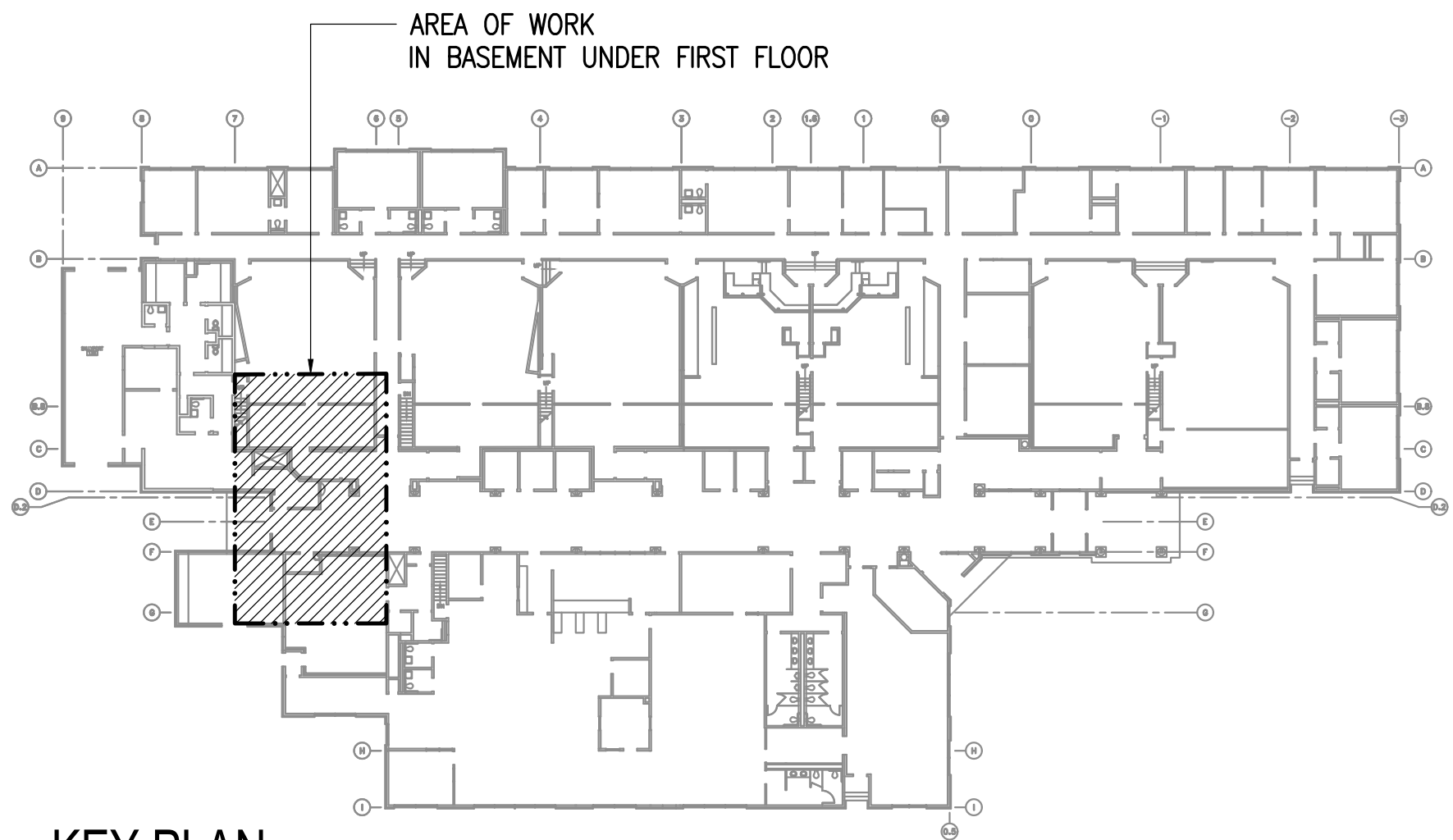
E102



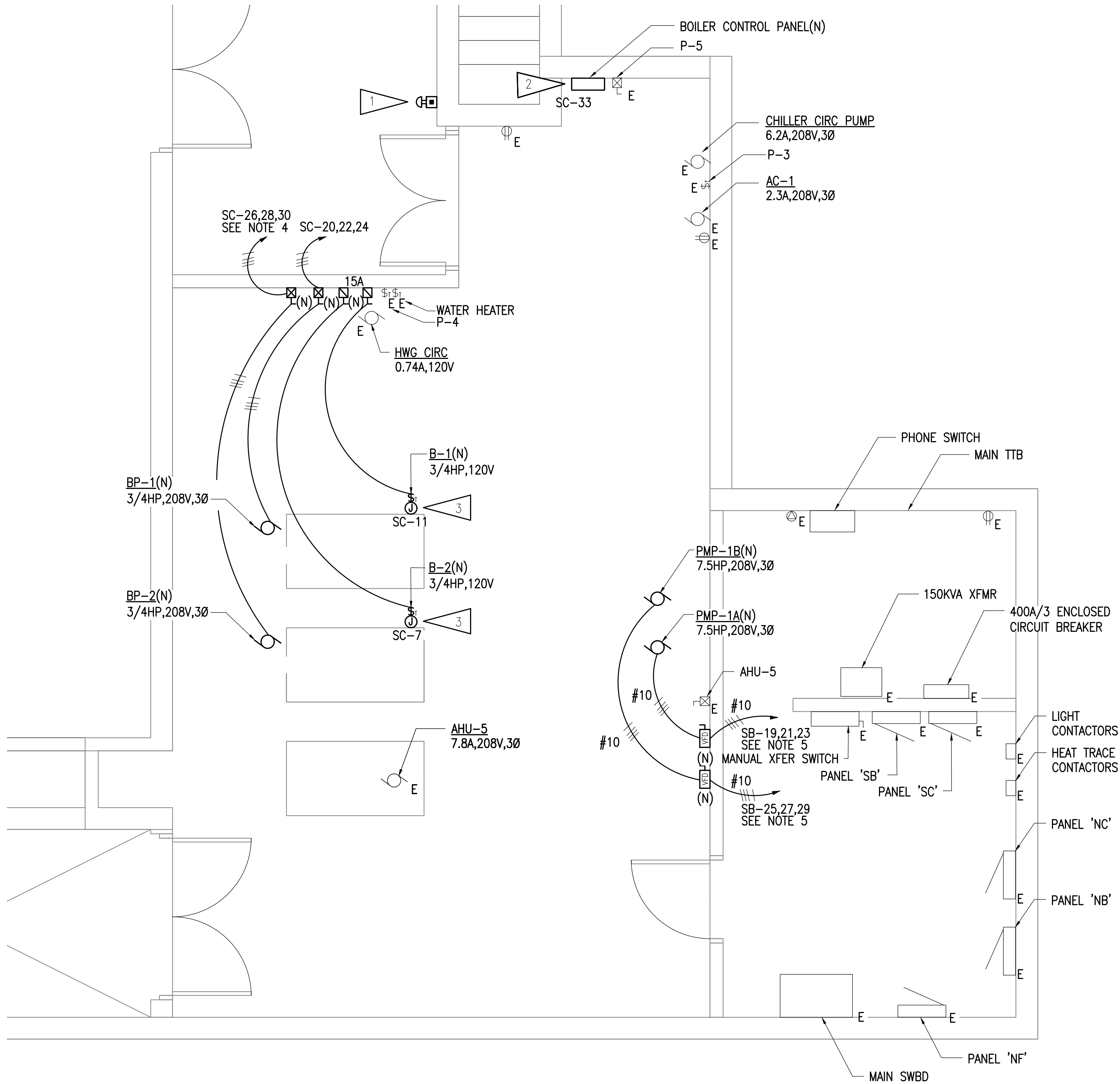
1 BOILER ROOM REMODEL PLAN BASE BID - BASEMENT
3/8" = 1'-0"

SHEET NOTES

1. CONNECT EMERGENCY SHUT-OFF PUSHBUTTON TO NEW SAFETY SHUT-OFF CIRCUIT ON NEW BOILERS. CONNECT PER BOILER MANUFACTURER'S INSTRUCTIONS.
2. NEW BOILER CONTROL PANEL. EXTEND EXISTING CIRCUIT AS REQUIRED AND CONNECT NEW CONTROL PANEL. FIELD COORDINATE WITH MECHANICAL FOR EXACT LOCATION AND POWER REQUIREMENTS.
3. EXTEND EXISTING CIRCUIT AS REQUIRED AND CONNECT TO NEW BOILER. FIELD COORDINATE WITH BOILER INSTALLER FOR EXACT LOCATION OF NEW CONNECTION.
4. CONNECT BP-2 TO EXISTING SPARE 15A, 3P BREAKER IN PANEL 'SC'.

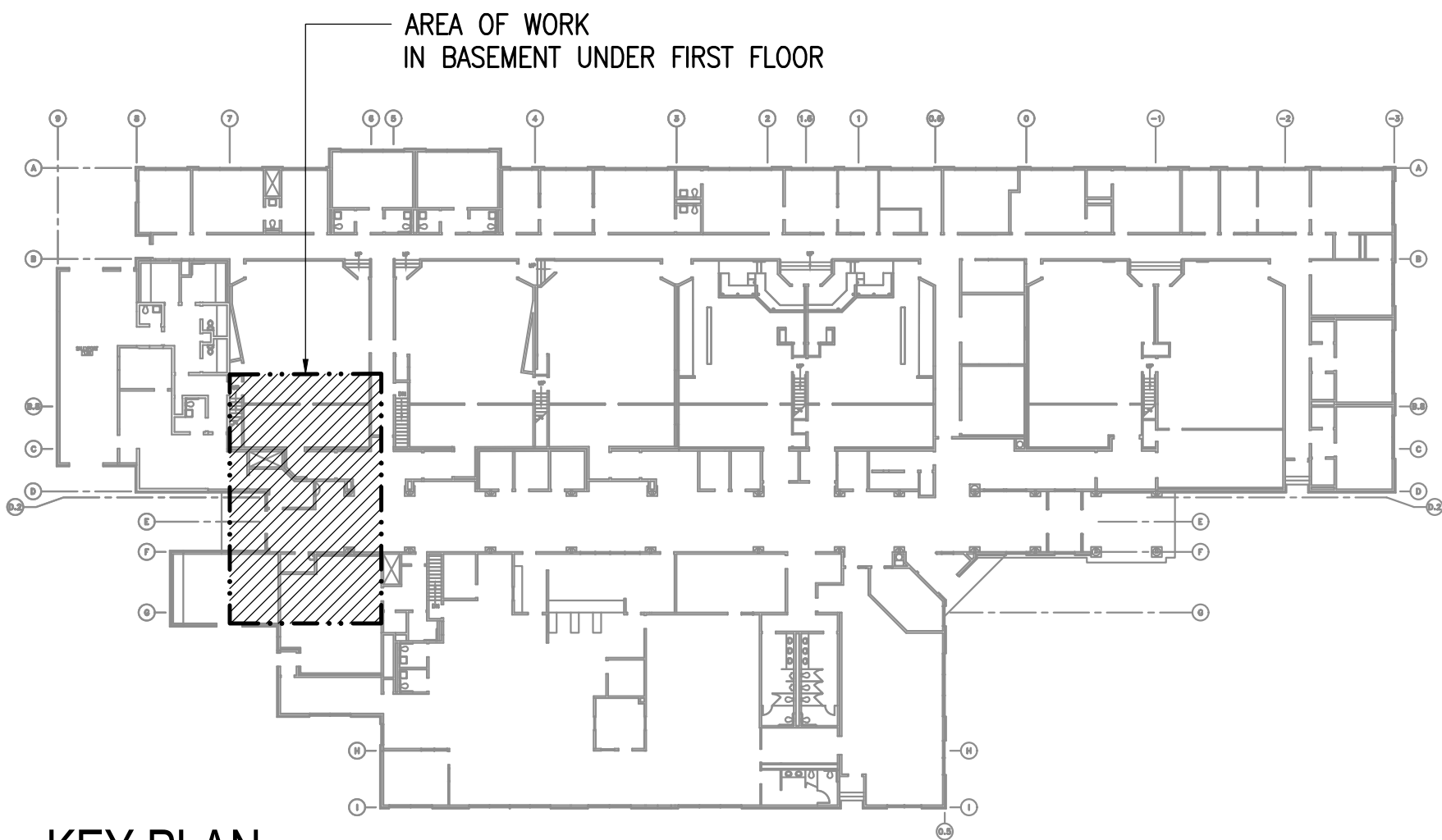


KEY PLAN
NO SCALE



SHEET NOTES

1. CONNECT EMERGENCY SHUT-OFF PUSHBUTTON TO NEW SAFETY SHUT-OFF CIRCUIT ON NEW BOILERS. CONNECT PER BOILER MANUFACTURER'S INSTRUCTIONS.
2. NEW BOILER CONTROL PANEL. EXTEND EXISTING CIRCUIT AS REQUIRED AND CONNECT NEW CONTROL PANEL. FIELD COORDINATE WITH MECHANICAL FOR EXACT LOCATION AND POWER REQUIREMENTS.
3. EXTEND EXISTING CIRCUIT AS REQUIRED AND CONNECT TO NEW BOILER. FIELD COORDINATE WITH BOILER INSTALLER FOR EXACT LOCATION OF NEW CONNECTION.
4. CONNECT BP-2 TO EXISTING SPARE 15A, 3P BREAKER IN PANEL 'SC'.
5. UPGRADE EXISTING CONDUCTORS AND CIRCUIT BREAKER FOR USE WITH NEW PUMPS. SEE E102 AND E301.



KEY PLAN
NO SCALE

1 BOILER ROOM REMODEL PLAN ALTERNATE - BASEMENT
3/8" = 1'-0"

0"
1"
2"
3"

(E) PANEL 'SC'																		
MFR/MODEL: SIEMENS I-T-E TYPE CDP-7						VOLTS: 120/208V,3PH,4W			ENCLOSURE: NEMA 1				400 A					
						VOLT-AMPS			MTG: SURFACE									
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A		B		C		TYPE	SERVICE		AMPS	POLE	CIRC	NOTE
a	1	3	15	AIR COMPRESSOR - 3HP									DRY SPRINKLER, AIR COMPRESSOR		15	1	2	a
a	3	3	15	AAA									SUMO SYSTEM		15	1	4	a
a	5	3	15	AAA									RECP - TTB		20	1	6	a
b	7	1	25	BOILER 2	HEAT	1656							RECP - BOILER, EF-7		20	1	8	a
a	9	1	20	EXISTING LOAD									RECP - BOILER, FAN RM		20	1	10	a
b	11	1	25	BOILER 1	HEAT					1656			EXISTING LOAD		20	1	12	a
	13	1	20	SPARE									EXISTING LOAD		20	1	14	a
a	15	1	20	EXISTING LOAD									EXISTING LOAD		20	1	16	a
a	17	1	30	UPS PHONE RM									TEL UNIT		20	1	18	a
a	19	3	60	AHU-3			444					MOTR	BP-1		15	1	20	b
a	21	3	60	AAA					444			MOTR	AAA		15	1	22	b
a	23	3	60	AAA							444	MOTR	AAA		15	1	24	b
a	25	3	100	PANEL 'SD'			444					MOTR	BP-2		15	3	26	c
a	27	3	100	AAA					444			MOTR	AAA		15	3	28	c
a	29	3	100	AAA							444	MOTR	AAA		15	3	30	c
a	31	1	20	SPARE									SPARE		20	3	32	
	33	1	15	BOILER CONTROL PANEL	MISC			250					AAA		20	3	34	
a	35	1	15	EXISTING LOAD									AAA		20	3	36	
PANEL NOTES: a EXISTING LOAD b INSTALL NEW CIRCUIT BREAKER IN SPACE AVAILABLE IN THE PANEL. THE NEW CIRCUIT BREAKER SHALL BE COMPATIBLE WITH AND LISTED FOR USE IN THE PANEL AND SHALL HAVE A MINIMUM SHORT CIRCUIT AIC RATING TO MATCH THE LOWEST RATED EXISTING DEVICE IN THE PANEL. c NEW LOAD CONNECTED TO EXISTING BREAKER.												PANEL OPTIONS: MAIN LUGS ONLY PANEL INCLUDES 200/3 SUB FEED BREAKER						

1

BASE BID PANEL SCHEDULE

NO SCALE

(E) PANEL 'SB'																	
MFR/MODEL: SIEMENS I-T-E TYPE CDP-7						VOLTS: 120/208V,3PH,4W				ENCLOSURE: NEMA 1				400 A			
						VOLT-AMPS				MTG: SURFACE							
NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	A		B		C		TYPE	SERVICE	AMPS	POLE	CIRC	NOTE
a	1	1	20	LTG FAN RM, BSMT, CORR									POWER CONDITIONER	50	1	2	a
a	3	1	20	LTG - BOILER, ELECT, TEL RM									AAA	50	1	4	a
a	5	1	20	LTG RM 66,67									AAA	50	1	6	a
a	7	1	20	LTG RM 66,									FACP AND SPRINKLER BELL	20	1	8	a
a	9	1	20	LTG RM 66									FC-2, FC-3	15	1	10	a
a	11	1	20	LTG RM 65,66									SPARE	20	1	12	
a	13	1	20	LTG RM 66									AHU-1 (3HP)	35	3	14	a
a	15	1	20	LTG RM 66									AAA	35	3	16	a
a	17	1	20	LTG RM 66									AAA	35	3	18	a
b	19	3	50	PMP-1B	MOTR	3036							AHU-2 (3HP)	20	3	20	a
b	21	3	50	AAA	MOTR		3036						AAA	20	3	22	a
b	23	3	50	AAA	MOTR				3036				AAA	20	3	24	a
b	25	3	50	PMP-1A	MOTR	3036							EXISTING LOAD	40	3	26	a
b	27	3	50	AAA	MOTR		3036						AAA	40	3	28	a
b	29	3	50	AAA	MOTR				3036				AAA	40	3	30	a
	31	3	35	SPARE									AHU-4	40	3	32	a
	33	3	35	AAA									AAA	40	3	34	a
	35	3	35	AAA									AAA	40	3	36	a
	37	3	35	SPARE									AHU-5	15	3	38	a
	39	3	35	AAA									AAA	15	3	40	a
	41	3	35	AAA									AAA	15	3	42	a
PANEL NOTES: a EXISTING LOAD b REPLACE EXISTING 15A, 3P BREAKER WITH NEW 50A, 3P BREAKER TO FEED NEW PUMPS. THE NEW CIRCUIT BREAKER SHALL BE COMPATIBLE WITH AND LISTED FOR USE IN THE PANEL AND SHALL HAVE A MINIMUM SHORT CIRCUIT AIC RATING TO MATCH THE LOWEST RATED EXISTING DEVICE IN THE PANEL.												PANEL OPTIONS: MAIN LUGS ONLY					

2

ADDITIVE ALTERNATE PANEL SCHEDULE

NO SCALE

ELECTRICAL LOAD CALCULATION	
EXISTING PANEL SB - BASE BID:	400 A, 208 V, 3 PH
EXISTING CONNECTED LOAD (PER PANEL SCHEDULE)	101 KVA
EXISTING LOADS REMOVED (IN KVA):	
BOILER B1	1.46 KVA
BOILER B2	1.46 KVA
BOILER B3	1.85 KVA
INJECTION PUMP CP-3	0.26 KVA
SUBTOTAL:	5.03 KVA
TOTAL LOADS REMOVED:	-5.03 KVA
TOTAL LOADS REMOVED (IN AMPS):	-14 A
NEW LOADS ADDED (IN KVA)	
BOILER B1	1.66 KVA
BOILER B2	1.66 KVA
PUMP BP-1	1.33 KVA
PUMP BP-2	1.33 KVA
SUBTOTAL:	5.98 KVA
TOTAL LOADS ADDED:	5.98 KVA
TOTAL LOADS ADDED (IN AMPS):	17 A
NET LOAD CHANGE:	0.94 KVA
NET LOAD CHANGE (IN AMPS):	3 A
NEW TOTAL NEC DEMAND LOAD:	127.3 KVA
NEW TOTAL NEC DEMAND LOAD:	353 A
SPARE CAPACITY:	47 A
RESULT: THE EXISTING FEEDER TO PANEL 'SB' HAS ADEQUATE CAPACITY FOR THE ADDITIONAL BASE BID LOADS ADDED.	
EXISTING PANEL 'SB' - ALTERNATE	400 A, 208 V, 3 PH
EXISTING CONNECTED LOAD (PER PANEL SCHEDULE)	101 KVA
EXISTING LOADS REMOVED (IN KVA)	
BASE BID LOAD	5.03 KVA
PUMP CP-1A	2.23 KVA
PUMP CP-1B	2.99 KVA
PUMP CP-2A	5.33 KVA
PUMP CP-2B	5.01 KVA
SUBTOTAL:	20.60 KVA
TOTAL LOADS REMOVED:	#### KVA
TOTAL LOADS REMOVED (IN AMPS):	-57 A
NEW LOADS ADDED (IN KVA)	
BASE BID LOAD	5.98 KVA
PUMP PMP-1A	9.11 KVA
PUMP PMP-1B	9.11 KVA
SUBTOTAL:	24.21 KVA
TOTAL LOADS ADDED:	24.21 KVA
TOTAL LOADS ADDED (IN AMPS):	67 A
NET LOAD CHANGE:	3.61 KVA
NET LOAD CHANGE (IN AMPS):	10 A
NEW TOTAL NEC DEMAND LOAD:	130.0 KVA
NEW TOTAL NEC DEMAND LOAD (IN AMPS):	361 A
SPARE CAPACITY:	39 A
RESULT: THE EXISTING FEEDER TO PANEL 'SB' HAS ADEQUATE CAPACITY FOR THE ADDITIONAL ALTERNATE LOADS ADDED.	

3

BASE BID AND ADDITIVE ALTERNATE LOAD CALC

NO SCALE



RSA

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ACS PALMER COURTHOUSE BOILER REPLACEMENT

435 S DENALI STREET
PALMER, ALASKA 99645

REVISIONS:

DRAWN BY: CSZ
CHECKED BY: DAO, CPL
DATE: 11/24/2021
JOB NUMBER: M1195.00
DWG FILE: ESERIES

DRAWING TITLE:
PANEL SCHEDULES

SHEET:
E301

0"
1"
2"
3"

ELECTRICAL SPECIFICATIONS

26 05 00 – COMMON WORK RESULTS FOR ELECTRICAL

- A. SCOPE OF WORK: FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT TO MODIFY THE EXISTING ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.
- B. STANDARDS, CODES AND REGULATIONS: COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, INTERNATIONAL BUILDING CODE, AND INTERNATIONAL FIRE INCLUDING ALL STATE AND LOCAL AMENDMENTS TO THESE CODES. COMPLY WITH THE LATEST PUBLISHED VERSION OF THE NECA STANDARD OF INSTALLATION.
- C. DRAWINGS: THE DRAWINGS ARE DIAGRAMMATIC, NOT NECESSARILY SHOWING ALL OFFSETS OR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. UNLESS SPECIFICALLY DIMENSIONED. REVIEW THE DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT FURNISHED BY OTHER CRAFTS BUT INSTALLED IN ACCORDANCE WITH THIS SECTION. BRING QUESTIONABLE OR OBSCURE ITEMS, APPARENT CONFLICTS BETWEEN PLANS AND SPECIFICATIONS, GOVERNING CODES OR UTILITIES REGULATIONS TO THE ATTENTION OF THE OWNER. CODES, ORDINANCES, REGULATIONS, MANUFACTURER'S INSTRUCTIONS OR STANDARDS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS.
- D. RECORD DRAWINGS: MARK UP A CLEAN SET OF DRAWINGS AS THE WORK PROGRESSES TO SHOW THE DIMENSIONED LOCATION AND ROUTING OF ALL ELECTRICAL WORK WHICH WILL BECOME PERMANENTLY CONCEALED. SHOW ROUTING OF WORK IN PERMANENTLY CONCEALED BLIND SPACES WITHIN THE BUILDING. SHOW COMPLETE ROUTING AND SIZING OF ANY SIGNIFICANT REVISIONS TO THE SYSTEMS SHOWN.
- E. WORKMANSHIP: INSTALLATION OF ALL WORK SHALL BE MADE SO THAT ITS SEVERAL COMPONENT PARTS SHALL FUNCTION AS A WORKABLE SYSTEM COMPLETE WITH ALL ACCESSORIES NECESSARY FOR ITS OPERATION. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND/OR INSTALLATION DRAWINGS AND IN ACCORDANCE WITH NECA STANDARDS. MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM WITH APPLICABLE INDUSTRY STANDARDS, NEMA STANDARDS AND UNDERWRITERS LABORATORIES STANDARDS WHERE APPLICABLE.
- F. SUBMITTALS: PROVIDE MATERIAL AND EQUIPMENT SUBMITTALS CONTAINING A COMPLETE LISTING OF MATERIAL AND EQUIPMENT SHOWN ON THE DRAWINGS. INCLUDE CATALOG NUMBERS, WIRING DIAGRAMS, ROUGH-IN DIMENSIONS AND PERFORMANCE DATA FOR ALL MATERIAL AND EQUIPMENT. SUBMITTALS SHALL BE IN ELECTRONIC .PDF FORMAT, SEPARATE FROM WORK FURNISHED UNDER OTHER DIVISIONS. INDEX AND CLEARLY IDENTIFY ALL MATERIAL AND EQUIPMENT BY ITEM, NAME OR DESIGNATION USED ON THE DRAWINGS. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND ARRANGEMENT ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE SUBMITTALS ARE NOT CHECKED FOR QUANTITY, DIMENSION, OR FOR PROPER OPERATION. WHERE DEVIATIONS OF A SUBSTITUTE PRODUCT OR SYSTEM PERFORMANCE HAVE NOT BEEN SPECIFICALLY NOTED IN THE SUBMITTAL BY THE CONTRACTOR, PROVISIONS OF A COMPLETE AND SATISFACTORY WORKING INSTALLATION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- G. WARRANTY: THE CONTRACTOR SHALL GUARANTEE ALL WORK EXECUTED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM BENEFICIAL OCCUPANCY. ANY FAULTY MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER DURING THE GUARANTEE PERIOD.
- H. PERMITS: SECURE AND PAY FOR ALL FEES, PERMITS, ETC. REQUIRED BY LOCAL AND STATE AGENCIES.
- I. REFERENCE SYMBOLS: THE ELECTRICAL "LEGEND" ON THE DRAWINGS IS A STANDARDIZED VERSION, AND ALL SYMBOLS SHOWN MAY NOT BE USED. USE THE "LEGEND" AS A REFERENCE FOR THE SYMBOLS USED ON THE DRAWINGS.
- J. PENETRATION OF FIRE BARRIERS: ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED BARRIERS SHALL BE SEALED IN ACCORDANCE WITH NEC ARTICLE 300.21 AND THE FOLLOWING:
1. ALL HOLES OR VOIDS CREATED TO EXTEND ELECTRICAL SYSTEMS THROUGH FIRE RATED FLOORS, WALLS OR CEILING SHALL BE SEALED WITH AN ASBESTOS-FREE INTUMESCENT FIRE STOPPING MATERIAL CAPABLE OF EXPANDING 8 TO 10 TIMES WHEN EXPOSED TO TEMPERATURES 250 DEGREES F OR HIGHER.
 2. MATERIALS SHALL BE SUITABLE FOR THE FIRE STOPPING OF PENETRATIONS MADE BY STEEL, GLASS, PLASTIC AND SHALL BE CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH THE REQUIREMENTS OF ASTM E814, UL 1479 AND THE UL FIRE RESISTANCE DIRECTORY REQUIREMENTS FOR THROUGH-PENETRATION FIRESTOP DEVICES (XHCR).
 3. THE RATING OF THE FIRE STOPS SHALL BE THE SAME AS THE TIME-RATED FLOOR, WALL OR CEILING ASSEMBLY.
 4. INSTALL FIRE STOPPING MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

26 05 05 – SELECTIVE DEMOLITION FOR ELECTRICAL

- A. DEMOLITION DRAWINGS ARE BASED ON A NON-DESTRUCTIVE FIELD OBSERVATION AND EXISTING RECORD DRAWING. REPORT DISCREPANCIES TO OWNER BEFORE DISTURBING THE EXISTING INSTALLATION. DISCONNECT ELECTRICAL SYSTEMS FOR EQUIPMENT SCHEDULED FOR REMOVAL. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN ALL EXISTING ELECTRICAL SYSTEMS IN SERVICE DURING CONSTRUCTION. DISABLE SYSTEMS ONLY TO MAKE SWITCHOVERS AND CONNECTIONS.
- B. OBTAIN PERMISSION FROM OWNER AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION AND MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
- C. REMOVE, RELOCATE AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION. REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY. REMOVE EXPOSED ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. WHERE ABANDONED CONDUIT ENTERS EXISTING SURFACES TO REMAIN, CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES. DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT SERVICING THEM IS ABANDONED AND REMOVED. PROVIDE BLANK COVER FOR ABANDONED OUTLETS WHICH ARE NOT REMOVED.

- D. DISCONNECT AND REMOVE ELECTRICAL DEVICES AND EQUIPMENT SERVING UTILIZATION EQUIPMENT THAT HAS BEEN REMOVED. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE.

26 05 19 – WIRE AND CABLE

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIALS:
1. ALL CONDUCTORS SHALL BE COPPER WITH TYPE XHHW, THWN, THW OR THHN INSULATION. MINIMUM BRANCH CIRCUIT CONDUCTOR SIZE SHALL BE #12 AWG. MINIMUM CONTROL CIRCUIT CONDUCTOR SIZE SHALL BE #18 AWG.
 2. CONTROL CIRCUITS SHALL BE COPPER, STRANDED CONDUCTOR, 600V INSULATION, THHN/THWN, MINIMUM SIZE #18 AWG.
- C. INSTALLATION:
1. COLOR CODE WIRES BY LINE OR PHASE. COLOR CODE THE 120/208V CONDUCTORS BLACK, RED, BLUE, AND WHITE.
 2. DO NOT SHARE NEUTRAL CONDUCTORS. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT THAT REQUIRES A NEUTRAL.
 3. USE PROPERLY SIZED INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS FOR ALL CONDUCTORS #8 AWG AND SMALLER. TERMINATE #6 AWG AND LARGER CONDUCTORS WITH CRIMP OR COMPRESSION TYPE CONNECTORS INSTALLED WITH TOOL RECOMMENDED BY CONNECTION MANUFACTURER AND INSULATE WITH PROPERLY SIZED 600 VOLT RATED HEAT SHRINK TUBING.
 4. INSTALLATION SCHEDULE: BUILDING WIRE IN RACEWAYS AT ALL LOCATIONS UNLESS OTHERWISE NOTED. PROVIDE XHHW-2 IN EXTERIOR LOCATIONS.

26 05 26 – GROUNDING AND BONDING

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR GROUND RODS.
- B. INSTALLATION:
1. PROVIDE A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ALL NEW BRANCH CIRCUITS AND FEEDERS. TERMINATE EACH END ON A GROUNDING LUG, BUS, OR BUSHING.
 2. MECHANICAL CONNECTORS: NON-REVERSIBLE CRIMP TYPE LUGS ONLY. USE FACTORY MADE COMPRESSION LUG FOR ALL TERMINATIONS.

26 05 29 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIAL: SUPPORT CHANNEL SHALL BE GALVANIZED OR PAINTED STEEL. HARDWARE SHALL BE CORROSION RESISTANT.
- C. INSTALLATION: EQUIPMENT WEIGHING MORE THAN 50 POUNDS SHALL BE ADEQUATELY ANCHORED TO THE BUILDING STRUCTURE TO RESIST LATERAL EARTHQUAKE FORCES.

26 05 33 – RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIALS:
1. RIGID STEEL CONDUIT: ANSI C80.1. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; THREADED TYPE WITH INSULATED THROAT BUSHINGS, MATERIAL TO MATCH CONDUIT.
 2. INTERMEDIATE METAL CONDUIT (IMC): GALVANIZED STEEL. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; USE FITTINGS AND CONDUIT BODIES SPECIFIED ABOVE FOR RIGID STEEL CONDUIT.
 3. ELECTRICAL METALLIC TUBING CONDUIT (EMT): ANSI C80.3. GALVANIZED TUBING. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; STEEL OR MALLEABLE IRON, COMPRESSION TYPE OR SET SCREW FITTINGS WITH INSULATED THROAT BUSHINGS. DIE-CAST FITTINGS ARE NOT ACCEPTABLE. MAXIMUM SIZE SHALL BE 2". PROVIDE FACTORY ELBOWS ON SIZES 1-1/2" AND LARGER.
 4. FLEXIBLE METAL CONDUIT: FS WW-C-566; STEEL, FULL WALL OR REDUCED WALL THICKNESS. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; STEEL OR MALLEABLE IRON WITH INSULATED THROAT BUSHINGS. DIE CAST FITTINGS ARE NOT ACCEPTABLE.
 5. LIQUIDTIGHT FLEXIBLE CONDUIT: FLEXIBLE METAL CONDUIT WITH PVC JACKET. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1; STEEL OR MALLEABLE IRON WITH INSULATED THROAT BUSHINGS. DIE CAST FITTINGS ARE NOT ACCEPTABLE.
 6. PROVIDE GALVANIZED OR CADMIUM PLATED, ONE PIECE PRESSED STEEL OUTLET BOXES 4 INCH SQUARE OR OCTAGONAL, 1-1/2 INCHES DEEP MINIMUM SIZE FOR USE IN INTERIOR AREAS.
 7. PROVIDE CAST ALUMINUM OR FERALLOY TYPE BOXES WITH GASKETED COVER, THREADED HUBS AND NEMA 3R RATING FOR USE IN EXTERIOR OR WET LOCATIONS.
- C. INSTALLATION:
1. INSTALL CONDUIT FOR ALL SYSTEMS UNLESS OTHERWISE NOTED, 1/2 INCH MINIMUM SIZE, EXCEPT CONDUIT FOR SPECIAL SYSTEMS SHALL BE 3/4" MINIMUM. ALL LOCATIONS SHALL BE RIGID STEEL CONDUIT OR INTERMEDIATE METAL CONDUIT.
 2. MOTOR AND EQUIPMENT CONNECTIONS SHALL BE SHORT EXTENSIONS OF LIQUIDTIGHT FLEXIBLE METAL CONDUIT TO ALLOW FOR VIBRATION.
 3. PROVIDE OUTLET BOXES AS SHOWN ON THE DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, DEVICE INSTALLATION AND CODE COMPLIANCE.
 4. INSTALL FITTINGS AND FLEXIBLE METAL CONDUIT TO ACCOMMODATE 3-AXIS MOVEMENTS WHERE RACEWAY CROSSES SEISMIC JOINTS. INSTALL FITTINGS DESIGNED AND LISTED TO ACCOMMODATE EXPANSION AND CONTRACTION WHERE RACEWAY CROSSES CONTROL AND EXPANSION JOINTS.
 5. USE MULTIPLE-GANG BOXES WHERE MORE THAN ONE DEVICE ARE MOUNTED TOGETHER; DO NOT USE SECTIONAL BOXES.
 6. SUPPORT BOXES INDEPENDENTLY OF CONDUIT.

26 05 53 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIALS:
1. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON A BLACK BACKGROUND. NAMEPLATES SHALL BE PROVIDED TO IDENTIFY ALL NEW ELECTRICAL EQUIPMENT AND LOADS SERVED.
 2. TAPE LABELS: ADHESIVE TAPE LABELS, WITH 3/16 INCH BOLD BLACK LETTERS ON CLEAR BACKGROUND MADE USING DYMO RHINO SERIES OR EQUAL LABEL PRINTER.
 3. WIRE AND CABLE MARKERS: CLOTH MARKERS, SPLIT SLEEVE OR TUBING TYPE.

C. INSTALLATION:

1. GEAR: PROVIDE ENGRAVED THREE-LAYER LAMINATED PLASTIC NAMEPLATES WITH WHITE LETTERS ON A BLACK BACKGROUND TO IDENTIFY ALL MOTOR STARTERS, DISCONNECT SWITCHES AND CONTROL EQUIPMENT.
2. CONDUITS: MARK ALL CONDUITS ENTERING OR LEAVING PANELBOARDS WITH INDELIBLE BLACK MAGIC MARKER WITH THE CIRCUIT NUMBERS OF THE CIRCUITS CONTAINED INSIDE.
3. JUNCTION BOXES: MARK ALL CIRCUIT NUMBERS OF WIRING ON ALL JUNCTION BOXES WITH SHEET STEEL COVERS. MARK WITH INDELIBLE BLACK MARKER. ON EXPOSED JUNCTION BOXES IN PUBLIC AREAS, MARK ON INSIDE OF COVER.
4. WIRE IDENTIFICATION: PROVIDE WIRE MARKERS ON EACH CONDUCTOR IN PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND AT LOAD CONNECTION. MARKERS SHALL BE LOCATED WITHIN ONE INCH OF EACH CABLE END, EXCEPT AT PANELBOARDS, WHERE MARKERS FOR BRANCH CIRCUIT CONDUCTORS SHALL BE VISIBLE WITHOUT REMOVING PANEL DEADFRONT.

26 05 83 – WIRING CONNECTIONS

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIALS: NOT USED.
- C. INSTALLATION:
1. OBTAIN AND REVIEW SHOP DRAWINGS, PRODUCT DATA, MANUFACTURER'S WIRING DIAGRAMS, AND MANUFACTURER'S INSTRUCTIONS FOR EQUIPMENT FURNISHED UNDER OTHER SECTIONS. DETERMINE CONNECTION LOCATIONS AND REQUIREMENTS. SEQUENCE ROUGH-IN OF ELECTRICAL CONNECTIONS TO COORDINATE WITH INSTALLATION OF EQUIPMENT. SEQUENCE ELECTRICAL CONNECTIONS TO COORDINATE WITH START-UP OF EQUIPMENT
 2. USE WIRE AND CABLE WITH INSULATION SUITABLE FOR TEMPERATURES ENCOUNTERED IN HEAT-PRODUCING EQUIPMENT.
 3. MAKE CONDUIT CONNECTIONS TO EQUIPMENT THAT IS SUBJECT TO VIBRATION OR MOVEMENT USING FLEXIBLE CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT IN DAMP OR WET LOCATIONS.
 4. MAKE WIRING CONNECTIONS IN CONTROL PANEL OR IN WIRING COMPARTMENT OF PRE-WIRED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PROVIDE INTERCONNECTING WIRING WHERE REQUIRED.
 5. INSTALL DISCONNECT SWITCHES, CONTROLLERS, CONTROL STATIONS, AND CONTROL DEVICES AND CONNECT WITH CONDUIT AND WIRING AS INDICATED IN THE EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 6. WHERE RECONNECTING EXISTING EQUIPMENT, EXTEND CONNECTIONS USING MATERIALS AND METHODS COMPATIBLE WITH EXISTING ELECTRICAL INSTALLATIONS, OR AS SPECIFIED

26 24 16 – PANELBOARDS

- A. SUBMITTALS: NONE REQUIRED FOR THIS SECTION.
- B. MATERIAL:
1. MANUFACTURERS: SQUARE D, GE, EATON, OR EQUAL.
 2. NEW BREAKERS IN EXISTING PANELS: NEMA AB 1; UL LISTED FOR USE IN THE PANEL, AMPERE RATING AND NUMBER OF POLES AS INDICATED ON PLANS. AIC RATING SHALL MATCH THE LOWEST RATED DEVICE IN THE PANEL.
- C. INSTALLATION:
1. PROVIDE UPDATED, TYPED CIRCUIT DIRECTORIES FOR EACH PANELBOARD IN WHICH CHANGES HAVE BEEN MADE.
 2. INSTALL NEW BREAKER(S) IN EXISTING PANEL(S) AND TEST FOR PROPER OPERATION.

26 28 19 – ENCLOSED SWITCHES

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
1. MANUFACTURERS: SQUARE D, GE, EATON, OR EQUAL
 2. FUSIBLE SWITCH ASSEMBLIES: NEMA KS 1; TYPE HD; QUICK-MAKE, QUICK-BREAK, HEAVY-DUTY LOAD INTERRUPTER ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION. ENCLOSURE SHALL BE NEMA KS 1; TYPE 1, 3R OR 4 AS INDICATED ON DRAWINGS. FUSES SHALL BE CLASS RK1; RK5; DUAL ELEMENT, CURRENT LIMITING, TIME DELAY, ONE-TIME FUSES, 600V, WITH AN INTERRUPTING RATING OF 200,000 RMS AMPERES.
 3. NONFUSIBLE SWITCH ASSEMBLIES: SAME CRITERIA AS ABOVE WITHOUT THE FUSES.
- C. INSTALLATION:
1. INSTALL DISCONNECT SWITCHES IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FIELD LOCATE FINAL LOCATION OF DISCONNECTS TO ALLOW READY ACCESS AND NEC 110.26 WORKING CLEARANCES WHERE APPLICABLE.
 2. ALL FUSED DISCONNECTS SHALL HAVE SIGNAGE FOR ARC HAZARD INSTALLED. THE MARKING SHALL BE LOCATED TO BE CLEARLY VISIBLE TO QUALIFIED PERSONNEL BEFORE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE OF THE EQUIPMENT. AT A MINIMUM THE 3-LINE SIGNAGE SHALL STATE THE FOLLOWING: WARNING – ARC FLASH AND SHOCK HAZARD – APPROPRIATE PPE REQUIRED

26 29 13 – ENCLOSED CONTROLLERS

- A. SUBMITTALS: SUBMIT PRODUCT DATA FOR APPROVAL.
- B. MATERIALS:
1. MANUFACTURERS: SQUARE D, GE, EATON, OR EQUAL
 2. MANUAL AND FRACTIONAL MOTOR STARTERS: NEMA ICS 2, AC GENERAL PURPOSE CLASS A, MANUALLY OPERATED UNIT WITH NUMBER OF POLES AS REQUIRED BY THE LOAD SERVED, FULL-VOLTAGE CONTROLLER FOR FRACTIONAL HORSEPOWER INDUCTION MOTORS, WITH THERMAL OVERLOAD UNIT, RED PILOT LIGHT, AND TOGGLE OPERATOR.
 3. MAGNETIC MOTOR STARTERS: NEMA ICS 2; AC GENERAL-PURPOSE CLASS A, FULL VOLTAGE STARTING, NON-REVERSING TYPE MAGNETIC CONTROLLER FOR INDUCTION MOTORS RATED IN HORSEPOWER. PROVIDE BI-METAL THERMAL OVERLOAD RELAY. COMBINE MOTOR STARTERS IN COMMON ENCLOSURE WITH MOTOR CIRCUIT PROTECTOR THAT HAS INTEGRAL INSTANTANEOUS MAGNETIC TRIP IN EACH POLE. INCLUDE TWO FIELD CONVERTIBLE CONTACTS IN ADDITION TO SEAL-IN CONTACT, RED LED LIGHT, AND HAND/OFF/AUTO SELECTOR SWITCH IN FRONT COVER. INCLUDE A THREE PHASE POWER MONITOR IN EACH THREE PHASE MAGNETIC STARTER CONNECTED TO SHUT DOWN THE MOTOR ON LOSS OF ANY PHASE, PHASE REVERSAL, OR LOW VOLTAGE ON ANY PHASE. POWER MONITOR SHALL AUTOMATICALLY RESET AND RESTART MOTOR WHEN PHASE AND VOLTAGE CONDITIONS RETURN TO NORMAL. PROVIDE OVERSIZE STARTER ENCLOSURES AS REQUIRED TO INSTALL POWER MONITOR.

C. INSTALLATION

1. SELECT AND INSTALL HEATER ELEMENTS IN MOTOR STARTERS TO MATCH INSTALLED MOTOR CHARACTERISTICS.
2. FIELD ADJUST THE TRIP SETTINGS OF ALL MOTOR STARTER MAGNETIC TRIP ONLY CIRCUIT BREAKERS TO APPROXIMATELY 11 TIMES MOTOR FULL LOAD CURRENT. DETERMINE FULL LOAD CURRENT FROM MOTOR NAMEPLATE FOLLOWING INSTALLATION.
3. AFTER FINAL CONNECTIONS ARE MADE, CHECK AND CORRECT THE ROTATION OF ALL MOTORS.
4. MOTOR STARTING EQUIPMENT SHALL BE LISTED FOR USE AND PROPERLY SIZED FOR OPERATION WITH THE MOTORS SPECIFIED BY MECHANICAL.



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