Request for Proposals



The City of Kenai Public Works Department

Professional Architectural, Mechanical and Electrical Engineering Services for the Kenai Recreational Center Improvements Project

Release: November 18, 2021

Pre-proposal Conference: November 29, 2021 at 10:00am Zoom Meeting Details to Follow

Proposal Due Date: December 10, 2021, no later than 4:00pm

Kenai City Hall 210 Fidalgo Avenue Kenai, AK 99611 ATTN: Director of Public Works Blank Page

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Facility Plans & Specifications

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ADVERTISEMENT

REQUEST FOR PROPOSALS (RFP)

Project Name: Professional Architectural, Mechanical and Electrical Engineering Services for the Kenai Recreation Center Improvements Project

Proposal Documents Available: November 18, 2021 Pre-Proposal Meeting: November 29, 2021 @ 10:00am Via Zoom Last Day for Questions: December 3, 2021 @ 5:00 PM Proposal Due Date: December 10, 2021 no later than 4:00 PM at City Hall

The City of Kenai seeks professional A/E services to provide bid ready construction documents for complete roof replacement and HVAC system improvements at the Kenai Recreation Center located at 227 Caviar St.

Proposers should contact the Public Works Department at (907) 283-8236 to be placed on the plan holder's list to receive addenda. Attendance at the Pre-Proposal meeting is not mandatory but is recommended.

RFP documents can be obtained at no cost on the City of Kenai website at <u>www.kenai.city</u> or at City Hall for a non-refundable fee of \$25.00 for hard copies.

Publish: <u>Anchorage Daily News</u>- November 18, 2021 <u>Peninsula Clarion</u> – November 18, 2021 or 1st available Blank Page



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REQUEST FOR PROPOSALS (RFP) INSTRUCTIONS

1.0 GENERAL INFORMATION

1.1 Purpose

The City of Kenai is seeking to enter into agreement with a qualified firm to provide professional architectural, mechanical and electrical engineering services to develop bid ready construction documents for the complete roof replacement and various HVAC improvements to the Kenai Recreation Center.

The facility is located at 227 Caviar St, Kenai, AK 99611 and is approximately forty years old. The Scope of Work shall include an initial code analysis of the existing facility. Architectural plans and specifications for replacement of the existing built up asphalt roof with new membrane roof system and associated details. ADA accessibility at front entry shall be reviewed and addressed.

The mechanical systems were previously reviewed under an earlier agreement that was not sufficiently funded to allow the replacements to proceed. These documents, included within this RFP, shall be reviewed and updated as needed based on current conditions and recommendations. This will include replacement of roof top units, boilers, water heaters, and associated controls.

1.2 Background

The City of Kenai is located at the confluence of the Kenai River and Cook Inlet on the Kenai Peninsula. Current population is just under 8000 citizens, however in the summer months this fluctuates between 20,000-30,000, as tourists flock to the area as well as a large number of dip net personal use fisherman accessing the sockeye fishery. Population as a whole is seeing relatively slow growth 7100 in 2010 to approximately 7841 in 2018 seeing an estimated growth rate of 10.44% in that period with-in its 29.1 Sq. Miles.

The goal of this RFP is to obtain appropriate Professional Services to assist the City with renovations to an aging city asset. The Recreation Center is a well and widely used facility for the community, offering basketball and racquetball courts, weight and cardio room, as well as a teen center. The facility was previously managed with assistance from the Boys and Girls Club, and is today managed directly by the City's Parks and Recreation Department.

Ongoing roof leaks have been a challenge for the facility, as well as the lack of consistent control over the existing mechanical systems. Numerous components are now beyond their intended useful life expectancy. This project shall safeguard the building with the installation of a new roof, and provide for phased replacements of mechanical systems in order of recommended priority.

1.3 Questions

Any questions regarding this proposal are to be submitted <u>in writing</u> to the Public Works Department by no later than the time and date specified in the ad or addendum. Questions shall be emailed to PublicWorks@kenai.city. The subject line of the fax or email should read: "Questions: RFP AE Services for Recreation Center Improvements

Verbal requests for information or clarification will not be accepted. All questions will be answered and distributed to all prospective proposers via addendum. To receive project addenda, you must

be on the plan holders list. To be placed on the plan holders list, please contact <u>Lisa List</u> either by phone at 283-8236 or email PublicWorks@kenai.city. Downloading projects from the City web site does not automatically put you on the plan holders list.

1.4 Preparation Costs

The City shall not be responsible for proposal preparation cost, nor for any cost including attorney fees associated with any (administrative, judicial or otherwise) challenge to the determination of the highest ranked proposer and/or award of contract and/or rejection of proposal. By submitting a proposal, each proposer agrees to be bound in this respect and waives all claims to such costs and fees.

1.5 Additional Services

Additional Services shall consist of providing any other services not included in the Consultant's basic services and will be authorized by a contract amendment signed by both parties and compensated at the rate listed in the Consultant's Fee Schedule for Additional Services. The fee schedule should be included with the cost proposal portion of the submitted proposal.

1.6 Timeline

Release	November 18, 2021
Preproposal Meeting	
Proposals Due	by 5:00pm December 10, 2021
Intent to Award	December 17, 2021
Notice of Award	January 6, 2022
Notice to Proceed	January 13, 2022

These dates are approximate and subject to change.

2.0 RULES GOVERNING COMPETITION

2.1 Examination of Proposals

Proposers should carefully examine the entire Request for Proposal (RFP) and any addenda thereto, and all related materials and data referenced in the RFP. Proposers should become fully aware of the nature of the work and the conditions likely to be encountered in performing the work.

2.2 Proposal Acceptance Period

Proposals must be irrevocable for sixty (60) days following the submission date.

2.3 Confidentiality

The content of all proposals will be kept confidential until the selection of the Consultant is announced. At that time, the selected proposal is open for review by the competing proposers, excluding any tabulations and evaluations thereof. After the award of the Contract, all proposals, tabulations and evaluations will then become public information.

2.4 Proposal Format

Proposals are to be prepared in such a way as to provide a straight forward, concise delineation of the proposer's capabilities to satisfy the requirements of this RFP. Emphasis should be concentrated on:

- (1) Conformance to the RFP instructions;
- (2) Responsiveness to the RFP requirements;
- (3) Completeness and clarity of content.

2.5 Signature Requirements

<u>All proposal transmittal letters and cost proposal forms must be signed</u>. A proposal may be signed by: an officer or other agent of a corporate vendor, if authorized to sign contracts on its behalf; a member of a partnership; an owner of a privately-owned vendor; or other agent if properly authorized by a power of attorney or equivalent document. The name and title of the individual(s) signing the proposal must be clearly shown immediately below the signature.

2.6 Proposal Submission

Five (5) copies of the technical proposal are to be submitted to the City of Kenai Public Works Department at 210 Fidalgo Avenue, Kenai, AK 99611, along with one (1) copy of the Firm's Fee schedule for each discipline in a <u>separate sealed</u> envelope. These six (6) documents shall be submitted in a sealed envelope clearly marked with the proposer's and RFP name.

2.7 Tax Compliance

Kenai City Code requires that businesses or individuals contracting to do business with the City be in compliance with the Kenai Peninsula Borough tax provisions. No contract will be awarded to any individual or business found to be in violation.

2.8 Licenses and Certifications

Proposers shall include with their proposals copies of all licenses, certificates, registrations and other credentials required for performance under the contract. Documentation must be current and must have been issued by or under authority of the State of Alaska or, if documentation is from an outside jurisdiction, such documentation must be accepted as valid by the State of Alaska for performance in Alaska. Such documentation shall include, but is not limited to, Alaska business license and applicable professional licenses, registrations and certificates.

2.9 News Releases

News releases pertaining to the award resulting from the RFP shall not be made without prior written approval of the City of Kenai's City Manager.

2.10 Disposition of Proposals

All materials submitted in response to this RFP will become the property of the City of Kenai. One copy shall be retained for the official files of the Public Works Department and will become public record after award of the Contract.

2.11 Oral Change/Interpretation

No oral change, or interpretation, of any provision contained in this RFP is valid whether issued at a pre-proposal conference or otherwise. Written addenda will be issued when changes, clarifications, or amendments to proposal documents are deemed necessary by the City.

Proposer shall acknowledge receipt of addenda in the space provided on the Proposal Form. Only a proposal acknowledging receipt of all addenda may be considered responsive, unless the addendum, in the opinion of the City Manager, would have no material effect on the terms of the proposal. The City Manager may elect to allow a proposer to acknowledge receipt of addenda after opening proposals.

2.12 Replacement of Submitted Proposals

Replacements will be accepted by the City, and binding upon the responding firm, only if it is received by the City at the place designated for submission prior to the scheduled deadline and meets all other RFP conditions.

2.13 Late Submissions

Proposals not received prior to the date and time specified in this RFP will not be considered.

2.14 Withdrawal of Proposals

At any time prior to the scheduled closing time for receipt of RFP submittals, any responding firm may withdraw their submittal, either personally or by written request. However, a proposal may not be withdrawn after opening without the written consent of the City.

2.15 Acceptance – Rejection of Proposals

The City may reject any or all proposals if the City Manager determines that it is in the best interest of the City and may waive irregularities, other than the requirements for timeliness and manual signature, if the irregularities do not affect the competitive advantage of any proposer.

2.16 Choice of Law and Jurisdiction

The laws of the State of Alaska shall govern this RFP, and any legal action brought thereon shall be filed in the Third Judicial District at Kenai, Alaska.

2.17 Conflicts of Interests

No member of the governing body of the City of Kenai or other officer, employee or agent of the City who exercises any functions or responsibilities in connection with the carrying out of the project shall have any personal interests, direct or indirect, in any ensuing contract as a result of this Request for Proposal, without first disclosing his/her potential conflict, by submitting a letter to the Clerk's Office establishing their "intent to do business with the City." The contractor for itself and its principal employees, officers, agents, directors or shareholders covenants that neither the contractor nor any of the listed classes of individuals has nor shall acquire any interest, direct or indirect, in the project, direct or indirect, to which the contract pertains which would conflict in any

manner or degree with the performance of its work hereunder. The selected proposer further covenants that in its performance of the contract no person having such interest shall be employed, without first disclosing his/her potential conflict.

2.18 Grant Funding

While the start of this agreement is not associated with an existing Grant, it shall be understand by all parties that the City shall continue to seek and apply for Grant opportunities as they arise. The successful proposer and their sub-consultants understand that any conditions set forth as grant requirements shall be met by Owner and Proposer.

These may include things like insurance and purchasing requirements. It is possible that with a new grant opportunity, a separate Request for Proposals may be required. All grants shall be made available to the successful proposer to ensure both Owner and Proposer remain in full compliance of requirements at all times.

3.0 SCOPE OF WORK

3.1 Project Description

The Public Works Department anticipates this project focusing on three primary items: Facility Code Analysis, Roof Replacement, HVAC system improvements.

3.2 Facility Code Analysis

3.2.1 Architectural Services shall provide a facility wide code analysis of the existing spaces. Goal of this effort is to identify potential life safety issues, accessibility concerns, and efficient use of space. It shall be understood that this current project may not be able to fund all issues identified from this task. Architect shall coordinate with Owner to determine which items, if any are discerned, will be addressed with this set of bid documents and which items may be identified as future.

3.3 Roof Replacement

3.3.1 Architectural Services shall provide for complete replacement of the existing built up asphalt roof with a new membrane roof system. All associated flashings, scuppers, mechanical curbs, etc. shall be included. One ongoing issue is the location to which all of the existing roof drains, from the larger roof sections down to the smaller roof and eventually to a storm drain in the parking area. A portion of the existing roof may need to change the existing drainage slope toward an alternative location, i.e drainage gallery on the western side of the facility.

3.4 HVAC Improvements

3.4.1 The facilities HVAC systems are nearing the end of their useful lives. An earlier project was started in 2017 that partially evaluated these systems. Those documents are attached to this RFP. This project will involve the review of those documents and updating of existing condition assessments. Any new equipment installed with this project shall include BAS system monitoring and control by either a Siemens or Trane Connect service. Currently the facility does not have a BAS system at all.

Below is a list of the current Roof top units installed at the facility.

The Kenai Rec Center has 6 RTUs. 5 units are operational with 1 unit is non-operational.

- 1. Non-operational RTU. Serves Cardio/Racquetball #3 location. Lennox 3 ton, 1200 cfm. Year installed: approx. 2002
- Operational RTU H/V & Cooling Serves Racquetball Courts 1 & 2 locations. Trane 4 ton, 1600cfm. Serial # YSCO48A3RHA00KQ Year installed: approx. 2007 (average condition)
- 3. Operational RTU (original) Serves 2nd floor teen recreation. Hastings; H&V 3500 cfm, Serial# 55213-2 Year installed: approx. 1981 (past expected useful life expectancy)
- Operational RTU (original) Serves 1[^] floor lobby, weight room, and entry locker rooms. Hastings; H&V 3500 cfm. Serial # 53213-1 Year installed 1981 (past expected useful life expectancy)
- Operational RTU (original) Serves 2""^ floor game room and gym locker rooms. Hastings: H&V 2610 cfm Serial #55773 Year installed: 1983 * gym expansion project, (past expected useful life expectancy)
- 6. Operational RTU (original) Serves gym court. Hastings: H&V 7950 cfm Serial# 55772 Year installed: 1983 * gym expansion project (past expected useful life expectancy)

Additional photos attached to this RFP for reference.

3.5 Program and budget

Based on a mutually agreed upon program and budget, the Consultant's basic services shall consist of the normal duties associated with a phased design system. These include: Schematic Design, Design Development and Construction Document, Bidding and Construction Phase Services as described in the Request for Proposals and the General Conditions of the Contract.

Code Analysis shall be completed first after in person walk through of the facility by the design team. A written report shall be provided to Owner. Owner will review report and provide direction on identified items. Consultants shall expect project documents to include additive alternates when bidding to allow the Owner flexibility in the project arriving within budgeted amounts.

3.5.1 Schematic Phase Services

Electronic Plans will be submitted to the City for review at 35% completion. No formal review period will be necessary at this time and schematic design shall continue.

3.5.2 Design Development

Consultant will be expected to deliver 65% Design Documents including a preliminary engineer's cost estimate within 45 days from Notice to Proceed. All primary components shall be identified, draft specifications shall be included for all required disciplines.

3.5.3 Final Construction Documents

Consultant will be expected to deliver 95% Final Construction Documents to Owner within 75 calendar days from Notice to Proceed. Owner will complete review in 3 business days, consultant will be required to make any requested revisions within 5 business days. Owner will handle all front end documents, Consultant's plans and specifications will be added as an attachment when bid is released. Consultant shall coordinate Owner's Bid schedule for additive alternates, as may be required, within construction documents.

Electronic copies of stamped plans and specifications in pdf format, along with CAD files will complete this deliverable.

3.5.4 Bid Phase Services

The City will compile the bid documents including all front end documents. Consultant will not be responsible for any publishing except as outlined otherwise in this RFP. The Consultant shall attend and participate in a pre-bid conference and assist the City in preparing addenda.

The City will conduct the bid opening.

3.5.5 Construction Phase Services

These services will begin at the Construction Contractor's start date and shall include the following:

- Review and approve submittals
- Respond to Requests For Information (RFI's)
- Substantial and Final inspections
- As-built drawings
- Other tasks as identified in the general conditions

3.5.6 Project Closeout

Consultants shall perform final inspections to verify all items included in the project have been completed and delivered to Owner. Mechanical systems shall be witnessed to be complete and operational through the BAS system. Roof manufacturer's warranties shall be executed and delivered to Owner. Final As-built drawings shall be provided in pdf, CAD, and hard copy formats to Owner.

4.0 PROPOSAL AND SUBMISSION REQUIREMENTS

To achieve a uniform review process and obtain the maximum degree of comparability, it is required that the proposals be organized in the manner specified below.

4.1 Letter of Transmittal

Briefly state your firm's understanding of the services to be performed and make a positive commitment to provide the services as specified.

List name(s) of the person(s) who are authorized to make representations for your firm, their titles, address, and telephone numbers.

The letter must be signed by a corporate officer or other individual who has the authority to bind the firm.

4.2 Firm Experience/Qualifications

Detail the firm's experience specifically within the services being requested. List relevant comparable projects within Alaska. Provide Owner reference information for completed projects.

4.3 Project Manager, Key Project Staff and Sub-consultants

Identify the project manager, key project staff and sub-consultants expected to provide services on behalf of the firm. Resumes should be included for each of the individuals and sub-consultants referenced. Be specific on the proposed staff regarding experience and qualifications on projects of similar size and scope.

4.4 Methodology and Approach

Provide detailed information on the firm's methodology in assisting clients with similar needs to the City of Kenai. The firm's approach for assisting a client that may not have 100% of funding available to complete all facets of a project. This project will likely involve decisions being made on which spaces require bringing other yet to be identified items up to current code which inherently adds costs. Consultant shall describe approach to guide Owner through the successful completion of priority items first and inclusion of remaining items within the City's Capital Improvement Plan.

Provide a detailed work plan and anticipated time line for completion of all work. Consultants able to complete services in shorter time frames will be scored higher over those with longer deliverable time lines.

4.5 Fee Schedule

Under a separate sealed envelope submit one copy of a fee schedule for all services which may be required in performance of this work and mark on the outside of the envelope "FEE SCHEDULE". The fee schedule is to be a presentation of hourly costs per positions working on the projects. The fee schedule shall be all inclusive of overhead, general, and administrative expenses, fringe benefits, profit, insurance, etc. The fee schedule shall not be used in evaluations. Consultants will be selected on the basis of the criteria requested above.

5.0 EVALUATION PROCESS AND CRITERIA

5.1 Evaluation Process

A committee of individuals representing the City of Kenai will perform evaluation of the proposal. The committee will rank the proposal as submitted. The City of Kenai reserves the right to award a contract solely on the written proposal.

The City also reserves the right to request oral interviews with the highest ranked firms (short list). The purpose of the interviews with the highest ranked firms is to allow expansion upon, and possible refinement of the written responses. If interviews are conducted, a maximum of three (3)

firms will be short-listed. A second score sheet will be used to score those firms interviewed. The final recommendation for selection will be based on the total of all evaluators scores achieved on the second rating. The same categories and point ranges will be used during the second evaluation as for the first.

The firm, whose proposal is ranked highest by the evaluation committee, may be invited to enter into final negotiations with the City for the purposes of contract award.

5.2 Criteria

The criteria considered during evaluations are as follows:

15%
15%
25%
20%
25%

6.0 SELECTION PROCESS

The Proposer with the highest total evaluation points may be invited to enter into contract negotiations with the City of Kenai. If an agreement cannot be reached with the highest ranked Proposer, the City shall notify the proposer and terminate the negotiations. If proposals are submitted by one or more other proponents determined to be qualified, negotiations may then be conducted with such other proposers in the order of their respective rankings. This process may continue until successful negotiations are achieved. The City of Kenai reserves the right to reject any and all proposals submitted.

7.0 APPEAL PROCEDURE

Any party submitting a proposal for this procurement and who believes that they are adversely affected by the City's procurement process, or by any acts of the City in connection with the award of a City contract, may file a protest appeal with the City's Public Works Director. All protest appeals must be filed with the City within 10 days of the issuance of the City's notice of its intent to award the contract. The City Manager will decide the appeal. The protest appeal must be in writing and shall include the following information:

- A. the name, address, e-mail, and telephone and facsimile numbers of the protester;
- B. the signature of the protester or the protester's representative;
- C. identification of the solicitation or contract at issue;

D. a detailed statement of the legal and factual grounds of the protest, including copies of relevant documents; and,

E. the form of relief requested.

The protest appeal may be hand-delivered, faxed, or sent by U.S. mail with postage prepaid to the attention of the Public Works Director, 210 Fidalgo Avenue, Kenai, AK 99611. Regardless of the method of delivery chosen by the protester, all protest appeals must be actually received by the City within 10 calendar days of the issuance of the City's notice of intent to award. If the tenth day is a City-recognized holiday or a weekend, the deadline for appeal shall be the next work day. It is up to the protester to choose a method of delivery to assure timely receipt by the City.

The City Manager shall decide the protest appeal and issue a written decision under the following general procedures:

A. If the City Manager sustains a protest in whole or in part, the City Manager shall implement an appropriate remedy.

B. In determining an appropriate remedy, the City Manager shall consider the circumstances surrounding the solicitation or procurement including the seriousness of the procurement deficiencies, the degree of prejudice to other interested parties or to the integrity of the procurement system, the good faith of the parties, the extent the procurement has been accomplished, costs to the agency and other impacts on the agency of a proposed remedy, and the urgency of the procurement to the welfare of the City.

C. Notwithstanding subsections A and B immediately above, if the City Manager sustains a protest appeal in whole or part, the protester's damages shall not exceed the reasonable proposal preparation costs.

The City Manager shall deliver his or her determination of the protest appeal in writing to the protester by hand-delivery at the protester's place of business or other address or via U.S. Mail or facsimile, and shall be effective immediately upon receipt if hand-delivered, upon receipt of delivery confirmation if sent by facsimile or, if mailed, three days after placement in the U.S. Mail.

A party filing a protest appeal may appeal the City Manager's decision to the Kenai Superior Court.

8.0 SAMPLE CONTRACT OR MINIMUM MANDATORY CONTRACT PROVISIONS

In addition to carefully reading all of the information in the RFP, all Proposers must carefully read and review the attached sample contract. The successful Proposer shall be required to enter into a Contract with the City of Kenai, which will be substantially similar to the sample.

If no changes are made, the proposer shall be deemed to have accepted the sample contract. If the respondent makes changes, such changes will be considered in any negotiations with the City. Changes made to the sample contract shall not be considered during the evaluation process.

CITY OF KENAI

AGREEMENT BETWEEN OWNER AND CONSULTANT FOR PROFESSIONAL DESIGN SERVICES

MADE AS OF THE _____ DAY OF _____ 202___.

BETWEEN the OWNER:

CITY OF KENAI 210 Fidalgo Avenue Kenai, Alaska 99611

AND the CONSULTANT:

FOR the PROJECT: Professional Architectural, Mechanical and Electrical Engineering Services for the Kenai Recreation Center Improvements

The Owner and Consultant agree as set forth below.

ARTICLE 1

THE WORK

The Consultant shall perform all the work described in the Request for Proposals as Attachment "A" hereto, and in the Consultant's Proposal, as Attachment "B" hereto, consisting of:

- 1. Basic Services, as described in the General Conditions, including Schematic Phase Services, Design Development and Construction Document Phase Services, Bidding Phase Services, and Construction Phase Services.
- 2. Additional Services, if authorized, as described in ARTICLE 2 of the General Conditions.

ARTICLE 2

TIME OF COMMENCEMENT AND COMPLETION

The Consultant's performance of services required by this Agreement shall commence with a Notice to Proceed and shall be completed in accordance with the following schedule:

1.	Schematic & Design Development Phase Services	Within45 days of Notice to Proceed
2.	Final Design Development and Construction Document Phase Services	Within83 days of Notice to Proceed
3.	Construction Phase Services	WithinTBD days of Notice to Proceed

ARTICLE 3

COMPENSATION

The Owner shall compensate the Consultant in accordance with the General Conditions of this Agreement as follows:

- 1. FOR THE CONSULTANT'S BASIC SERVICES, as described in ARTICLE 1 of the General Conditions, Compensation will be paid periodically on a time and expense basis in accordance with the Consultant's Cost Proposal and Fee Schedule as Attachment "B" hereto, in a total amount not to exceed the sum of \$_____.
- 2. FOR THE CONSULTANT'S ADDITIONAL SERVICES, as described in ARTICLE 2 of the General Conditions, Compensation will be paid for Principal's, employees', and sub-consultant's time at the fixed gross hourly billing rates set forth in the Fee Schedule as Attachment "B" hereto, and as per ARTICLE 6 of the General Conditions. Payment of additional services is not included in the "shall not exceed" provisions contained in the contract documents.
- 3. FOR THE CONSULTANT'S REIMBURSABLE EXPENSES, as described in Article 7 of the General Conditions, Compensation will be paid in accordance with the Consultant's Cost Proposal and Fee Schedule as Attachment "B" hereto, in a total Amount not to exceed \$_____.
- 4. THE CONSULTANT'S EXTENDED BASIC SERVICES BEYOND THE CONSTRUCTION PHASE, if authorized, shall commence with a written Notice to Proceed with the performance of those services. These services will be paid as additional services. This payment is not included in the "shall not exceed" provisions contained in the contract documents.
- 5. The total payment under these contract documents, including payment for basic services and reimbursable expenses shall not exceed \$ ______. Any payment beyond this amount including payment for additional services, extended basic services and related expenses may be made only pursuant to a fully executed change order or contract modification specifically stating the amount of payment agreed upon. In the event this paragraph conflicts with or is inconsistent with any other provision in the contract documents, this provision shall control.

Based upon applications for payment submitted by Consultant, Owner shall provide for Progress Payments to Consultant on a monthly schedule. Upon proper application submitted no later than ten (10) days prior to the next scheduled payday, Consultant shall be paid for the value of the work performed during the period preceding application. Each application for payment shall be on an approved Application for Payment form. All sums properly due shall be paid within thirty (30) days of receipt of application. Prior to final payment, the Consultant shall submit as-built drawings or other documents as required by the contract documents.

ARTICLE 4

ENUMERATION OF CONTRACT DOCUMENTS

The documents which are specifically incorporated into this agreement by reference and form the contract documents are:

- A. Any and all later modifications, Change Orders, and written interpretations of the Contract Documents issued by the Owner
- B. This Agreement
- C. Addenda No(s)___
- D. The Contractor's Proposal, including Cost Proposal and Fee Schedule
- E. Supplemental General Conditions (if any)
- F. The General Conditions of the Contract
- G. The Request for Proposals

Any other attachments to this agreement do not form a part of the agreement but are for reference or proof of compliance with the requirements of the agreement, except where the provisions of this agreement provide such attachments will be or are a part of the agreement.

These form the contract and what is required by any of the documents shall be as binding as if required by all. The intention of the contract documents is to require the furnishing of all labor, material, equipment, and other items necessary for the proper execution and completion of the work and to prescribe the terms and conditions of the contract and payment, so as to include work and materials which may be necessary to produce the intended results.

ARTICLE 5

All legal notices relating to this contract, including change of address, shall be mailed to the Owner and the Consultant at the following addresses:

OWNER

CONSULTANT

City of Kenai Scott Curtin, Director of Public Works 210 Fidalgo Avenue Kenai, Alaska 99611

ARTICLE 6

EXTENT OF AGREEMENT

This Agreement represents the entire and integrated agreement between the Owner and the Consultant, and supersedes all prior, inconsistent negotiations, representations, or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Consultant.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed in their respective names by their duly authorized representatives as of the date and year above written.

ARTICLE 7

ATTACHMENTS

In the event there is any difference between an attachment to the original of this agreement on file with the City of Kenai and any attachment to a duplicate original of the agreement, the attachments to the original filed with the City shall control.

ARTICLE 8

NO THIRD-PARTY BENEFICIARY

This agreement is intended solely for the benefit of each party hereto. Nothing contained herein shall be construed or deemed to confer any benefit or right upon any third party.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed in their respective names by their duly authorized representatives as of the date and year first above written.

ARTICLE 9 JURISDICTION: CHOICE OF LAW

This contract shall be governed by the laws of the State of Alaska, and any lawsuit brought thereon shall be filed in the Third Judicial District at Kenai, Alaska.

OWNER and CONSULTANT each binds themselves, their partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed in their respective names or by their duly authorized representatives as of the date and year above written.

A.

OWNER: CITY OF KENAI	CONSULTANT:
Ву:	Ву:
Name:	Name:
Title:	Title:
STATE OF ALASKA)	STATE OF ALASKA)
)ss. THIRD JUDICIAL DISTRICT))ss. THIRD JUDICIAL DISTRICT)
THIS IS TO CERTIFY that on	THIS IS TO CERTIFY that on
this day of, 202_	this day of, 202_
Paul Ostrander, City Manager,	,
City of Kenai, Alaska, being personally known to me or having produced satisfactory evidence of identification, appeared before me and acknowledged the voluntary and authorized execution of the foregoing instrument on behalf of said City.	(title) being personally known to me or having produced satisfactory evidence of identification, appeared before me and acknowledged the voluntary and authorized execution of the foregoing instrument on behalf of said corporation.
NOTARY PUBLIC FOR ALASKA My Commission Expires:	
Approved by Legal:	NOTARY PUBLIC FOR ALASKA My Commission Expires:
Approved by Finance:	-

GENERAL CONDITIONS OF THE CONTRACT BETWEEN OWNER AND CONSULTANT FOR PROFESSIONAL DESIGN SERVICES

THIS DOCUMENT MAY BE ALTERED OR AMENDED ONLY BY ADDENDUM, CHANGE ORDER OR OTHER DOCUMENT EXECUTED BY ALL PARTIES

ARTICLE I CONSULTANT'S BASIC SERVICES

1.1 Basic Services

Without limiting any obligations arising under law, Consultant's Basic Services are enumerated for each of the phases described below and include normal Engineering and Architectural services.

1.2 Schematic Phase

- 1.2.1 Consultant shall review the program furnished by Owner to ascertain the requirements of the Project and shall review Consultant's understanding of such requirements with Owner.
- 1.2.2 Consultant shall provide a preliminary evaluation of the program and the Project budget requirements, each in terms of the other, subject to the requirements and limitations set forth in ARTICLE 4.
- 1.2.3 Consultant shall review with Owner alternative approaches to design and construction of the Project.
- 1.2.4 Based on the mutually agreed-upon program and Project budget requirements, Consultant shall prepare, for approval by Owner, Schematic Design Documents consisting of drawings and other documents illustrating the scale and interrelationship of Project components.
- 1.2.5 Consultant shall submit to Owner a Statement of Probable Construction Cost based on area, volume, or other unit costs, in conformity with all elements of the Schematic Design Documents.
- 1.2.6 Upon completion of schematic design, the Owner shall be furnished with drawings and specifications in PDF file formats. In addition, one 11" x 17" and one 22" x 34" set of hard copy drawings shall be provided by the consultant.

1.3 Design Development Phase

- 1.3.1 Based on the approved Schematic Design Documents and any other adjustments authorized by Owner in the program or Project budget, Consultant shall prepare, for approval by Owner, Design Development Documents consisting of drawings and other documents to fix and describe the size and character of the entire Project as to architectural, structural, civil, mechanical, and electrical systems, materials, and such other elements as may be appropriate.
- 1.3.2 Consultant shall submit to Owner a further Statement of Probable Construction Cost, in conformity with all elements of the Design Development Documents.

1.4 Construction Documents Phase

- 1.4.1 Based on the approved Design Development Documents and any further adjustments authorized by Owner in the scope or quality of the Project or in the Project budget, Consultant shall prepare, for approval by Owner, Construction Documents consisting of Drawings, Specifications, and other items as may be required to detail the requirements for the construction of the entire project in accordance with good design practice and all requirements of agencies having jurisdiction over the work.
- 1.4.2 Consultant shall provide all documents for this Project in a format and on media approved by Owner or as defined in the Request For Proposals.

- 1.4.3 Consultant shall provide in the Construction Documents all of the necessary bidding information, including site plans, floor plans, elevations, sections and details sufficient to show all the requirements of the work. If required by Owner, Consultant shall prepare the Construction Documents for additive alternate bids, unit prices, and phasing of the work.
- 1.4.4 The substantial aspects of the design as indicated by the Working Drawings and Specifications shall comply with the requirements and regulations adopted pursuant to the Occupational Safety and Health Act (OSHA), the Americans with Disabilities Act (ADA), and all requirements of local and state building, fire, mechanical, electrical and other codes in effect at the time of completion of the Construction Documents Phase of work.
- 1.4.5 Consultant shall prepare and submit the required documents for the approval of federal, state and local governmental authorities having jurisdiction over the Project and shall be responsible for obtaining all necessary approvals.
- 1.4.6 Consultant shall provide such additional information as may be required by regulatory agencies in order for such agencies to certify the relevant applications as complete.
- 1.4.7 Consultant shall submit to Owner a final detailed Statement of Probable Construction cost of the project.
- 1.4.8 Upon completion of final design, Owner shall be furnished with 2 DVD's or flash drives of drawings in both DWG and PDF file formats and specifications in both DOCX and PDF file formats. In addition, one 11" x 17" and one 22" x 34" set of hard copy drawings shall be provided by the consultant.

1.5 Bidding Phase

- 1.5.1 Consultant, following Owner's approval of the Construction Documents and the final Statement of Probable Construction Cost, shall assist Owner in conducting a pre-bid conference, in preparing addenda, in reviewing bids, and in evaluating bidder's qualifications. Based on the results, Consultant shall submit a recommendation for award of contract.
- 1.5.2 Consultant shall conduct any mandatory pre-bid conference and shall issue any addenda required to correct errors or omissions in the bid documents, or to clarify items in the bid documents.

1.6 Construction Phase

- 1.6.1 The Construction Phase will commence with the award of the Construction Contract and will terminate when the final Certificate for Payment is approved by Owner.
- 1.6.2 Consultant shall administer the Construction Contract as set forth herein, and the extent of Consultant's duties and responsibilities and the limitations of Consultant's authority as assigned hereunder shall not be modified without the written consent of both parties.
- 1.6.3 Consultant, as the representative of Owner during the Construction Phase, shall advise and consult continually with Owner. Both Consultant and Owner shall at all times have access to the Work wherever it is in preparation or progress. Instructions to the contractor shall be issued through Consultant. Consultant shall have authority to act on behalf of Owner to the extent provided herein unless otherwise modified in writing. Consultant shall provide Owner with copies of all correspondence relating to the Project and shall promptly inform Owner of any circumstances affecting the quality, cost or completion of the work. Consultant shall organize a system of filing and transmitting all documents and correspondence relating to the project.
- 1.6.4 Owner shall have the right to make all final determinations whether an item or material, proposed by the contractor as a substitute for a specified item or material, equals or exceeds the quality of that specified in the Construction Documents. Owner shall make a final determination within seven (7) days after receipt of written request by Consultant .
- 1.6.5 For the Contract fee, Consultant, appropriate staff personnel, and Consultant's consultants, shall make periodic visits to the site, as approved by Owner in advance, for familiarization generally with the progress

and quality of the work, conformance with the design intent and as required for completion of record drawings. A Schedule of Visits will be incorporated by reference if included as an attachment hereto.

- 1.6.6 Consultant shall provide additional inspection services beyond those described herein upon request of Owner in accordance with ARTICLE 2.
- 1.6.7 Based upon the observations of the Project Observer at the site and upon the contractor's Application for Payment, Consultant shall determine the amount then due to the contractor and shall approve Certificates for Payment within 5 days after receipt thereof. Consultant's approval shall constitute a representation by Consultant to Owner, that the work has progressed to the point indicated; that to the best of Consultant's knowledge, information, and belief, the quality of the work is in accordance with the contract documents; and that the contractor is due payment in the amount certified. By issuing a Certificate for Payment as defined in the contract documents, Consultant shall not be deemed to represent that Consultant has made any examination to ascertain how, and for what purpose, the contractor has used the monies paid on account of the contract sum.
- 1.6.8 Consultant shall demand proof of payment to subcontractors or materialmen, or releases from subcontractors or materialmen, before the issuance of a final Certificate for Payment.
- 1.6.9 Consultant shall, in the first instance, interpret and explain the requirements of the contract documents, and be judge of the performance thereunder by the contractor. Consultant shall make the initial decision on all claims and questions of the contractor relating to the execution and progress of the Work, and on all other matters or questions related thereto.
- 1.6.10 Consultant shall have authority to reject Work, which does not conform to the contract documents. Whenever, in Consultant's reasonable opinion, Consultant considers it necessary or advisable to ensure the proper implementation of the intent of the contract documents, Consultant will have authority to require special inspection or testing of any Work in accordance with the provisions of the contract documents, whether or not such work be fabricated, installed, or completed.
- 1.6.11 Consultant shall review and accept (as complying with design concept and the requirements of the contract documents) or take other appropriate action upon the contractor's submittals such as shop drawings, product data, and samples. Such action shall be performed within 5 working days after receipt of the contractor's submittals. Consultant's acceptance of a specific item shall not indicate approval of assembly of which the item is a component.
- 1.6.12 Consultant shall prepare Change Orders for Owner's approval and execution in accordance with the contract documents. Consultant shall have authority to order minor changes in the work not involving an adjustment in Contract Sum or an extension of Contract Time, and not inconsistent with the intent of the contract documents. Consultant shall notify Owner in writing, on a form approved by Owner, of all changes including authorized extras at no additional cost.
- 1.6.13 Consultant shall conduct inspections to determine the dates of Substantial Completion and Final Completion as defined in the contract documents. Consultant shall determine the date of Substantial Completion and issue a Certificate of Substantial Completion allowing for beneficial occupancy by Owner. The Certificate of Substantial Completion shall set a reasonable time for the contractor to complete the work and to correct any deficiencies noted by Consultant. Consultant shall make recommendations (based on then current market values and labor costs) of the amounts of payment to be withheld by Owner until the deficiencies are corrected and the Work completed. Consultant shall receive, review, and transmit to Owner written guarantees, warranties, and related documents assembled by the contractor. Consultant shall issue a final Certificate for Payment upon final completion of the work.
- 1.6.14 Consultant shall not be responsible for (1) construction means, methods, techniques, sequences or procedures; or (2) the safety precautions or programs of the contractor; or (3) any acts or omissions of the contractor, any subcontractor, or any of the contractor's or subcontractors' agents or employees, or of any other person performing any of the work.
- 1.6.15 Consultant shall furnish Owner, within 60 days after final completion of the work, 2 DVD's or flash drives of as-built drawings in both DWG and PDF file formats and specifications in both DOCX and PDF file

formats. In addition, one 11" x 17" paper and one 22" x 34" MYLAR set of as-built drawings shall be provided. As-built documents are subject to review by owner and subsequent revision by Consultant.

ARTICLE 2 CONSULTANT'S ADDITIONAL SERVICES

- 2.1 If any of the following additional services are authorized by Owner in writing, Owner agrees to pay Consultant in accordance with Consultant's Fee Schedule (as attached hereto). Prior to authorization Owner must be expressly informed that the services requested require additional Consultant fees and an estimate of the amount of additional fees must be provided by Consultant. Payment will be made in accordance with Article 6.
- 2.2 Consultant's additional services may include the following:
- 2.2.1 Provide planning surveys, site evaluations, environmental studies, or comparative studies of prospective sites. Prepare special surveys, studies, and submissions required for approvals of governmental authorities or others having jurisdiction over the project.
- 2.2.2 Provide design services relating to future facilities, systems, and equipment which are not intended to be constructed as part of the Project.
- 2.2.3 Provide services to facilitate detailed appraisals and evaluations of existing conditions or facilities and make measured drawings thereof. Services may include surveys or inventories required in connection with construction performed by Owner.
- 2.2.4 Prepare drawings and specifications for Change Orders requested by Owner, where the changed work was not envisioned by the approved construction documents and therefore results in a construction cost which exceeds the Consultant's Statement of Probable Construction Cost.
- 2.2.5 Make major revisions in Drawings, Specifications, or other documents when such revisions are inconsistent with written approvals or instructions previously given and are due to causes beyond the control of Consultant.
- 2.2.6 Provide consultation concerning replacement of any Work damaged by fire or other causes during construction, and furnish service as may be required in connection with the replacement of such Work.
- 2.2.7 Provide services necessitated by default of the contractor or by major defects or deficiencies in the Work of the contractor or by failure of performance of either Owner or the contractor under the contract for construction, unless such default or failure was caused by deficiencies in the Work of Consultant.
- 2.2.8 Provide extensive assistance in the utilization of any equipment or system, including supervision of initial start up; testing, adjusting and balancing of equipment; preparation of operation and maintenance manuals; training personnel for operation and maintenance; and consultation during normal operation of the Project.
- 2.2.9 Provide contract administration and observation of construction after the Construction Contract Time has been exceeded or extended by more than 30 days through no fault of Consultant and after 20 days' written notice thereof has been given to Owner by Consultant. In that event, compensation shall revert to the hourly rates delineated in the Fee Schedule attached hereto. Owner may, however, elect to administer the contract after receipt of such notice, and no payment will be made to Consultant for extended administration and observation performed prior to issuance by Owner to Consultant of a written order to continue providing contract administration.
- 2.2.10 Provide services required after the approval of the contractor's final Certificate for Payment, but excluding completion of Record Drawings and necessary follow-up actions.
- 2.2.11 Prepare and serve as an expert witness in connection with any public hearing, arbitration proceeding, or legal proceeding in connection with the Project where Consultant is not at fault, and is not a party thereto, providing such activities occur within the one year warranty period as defined in the contract documents.

For such activities occurring after the warranty period, the Fee Schedule for Additional Services shall be revised as mutually agreed to by the parties to the contract.

2.2.12 Provide any other services not otherwise included in this contract and not customarily furnished as basic services in accordance with generally accepted Consultant practice.

ARTICLE 3 OWNER'S RESPONSIBILITIES

- 3.1 Owner shall provide full information regarding Owner's requirements for the Project.
- 3.2 The City Manager is hereby designated as the representative authorized to act in Owner's behalf with respect to the Project, and the City Manager is hereby authorized to appoint, and to rescind the appointment of, a designee to exercise such authority in the City Manager's place. Owner's representative, or Owner's designee, shall examine documents submitted by Consultant and shall render decisions pertaining thereto promptly, to avoid unreasonable delay in the progress of Consultant's work.
- 3.3 Owner shall furnish structural, mechanical, chemical, and other laboratory tests, inspection, and reports as required by law or the contract documents.
- 3.4 If Owner observes or otherwise becomes aware of any fault or defect in the Project or non-conformance with the contract documents, Owner shall give prompt written notice thereof to Consultant.
- 3.5 Owner shall furnish to Consultant all information which Owner is required to provide as expeditiously as necessary for the orderly progress of the Work upon request of Consultant.

ARTICLE 4 BUDGETS AND COST ESTIMATES

- 4.1 The Construction Budget does not include the compensation of Consultant and sub-consultants, the cost of the land, rights-of-way, or other costs that are the responsibility of Owner as provided in ARTICLE 3.
- 4.2 Statements of Probable Construction Cost and Total Budget Estimates prepared by Consultant represent Consultant's best judgment as a design professional familiar with the construction industry. It is recognized, however, that neither Consultant nor Owner has any control over the cost of labor, materials, or equipment, over the contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, Consultant cannot and does not guarantee that bids will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by Consultant.
- 4.3 If a final Statement of Probable Construction Cost, including contingency and any anticipated cost escalations through the proposed bid date, exceeds the Construction Budget of the Project, Owner shall either: (1) give written approval of an increase in such fixed limit; (2) cooperate with Consultant in revising the Project scope and quality as required to reduce the Probable Construction Cost; or (3) cancel the project.
- 4.4 If the lowest bona fide bid or negotiated proposal exceeds the amount budgeted as the construction cost for this project, Owner may elect to: (1) give written approval of an increase in such fixed limit; (2) cooperate in revising the Project scope and quality as required to reduce the Construction Cost; (3) authorize rebidding the Project within a reasonable time; or (4) cancel the project.
- 4.5 If Owner elects to reduce the scope or quality of the Project because the construction budget may be exceeded, either before or after the opening of bids, then Consultant, without additional charge shall modify the Drawings and Specifications as necessary to bring the statement, estimate, or bid within the fixed limit. Providing such services shall be the limit of Consultant's responsibility in this regard, and having done so, Consultant shall be entitled to the regular compensation established by the contract.

4.6 Definitions

4.6.1 Probable Cost Estimate: An estimate of the costs to construct the facility including all of the structure. Not included in this estimate are administration costs, utility costs, and Consultant fees. This estimate is to be prepared by Consultant.

- 4.6.2 Construction Cost Budget: The budget that is established to construct the project. Not included in this budget are administration costs, utility costs, and Consultant fees.
- 4.6.3 Total Budget: The total budget includes all budget items, Construction Cost Budget, administration costs, utility costs, Consultant fees, movable equipment and contingencies.
- 4.6.4 Contract Sum: The cost submitted by the contractor as the bid to complete all work for the construction of the Project. Not included in this cost are administration costs, utility costs, and Consultant fees.

ARTICLE 5 PAYMENTS TO CONSULTANT

- 5.1 Payments for Consultant's Basic Services shall be made after approval by Owner of Consultant's submissions in accordance with the contract. Owner shall review each submission and invoice, and Owner shall pay the invoice amount to Consultant within 30 days after approval of Consultant's submission and invoice by Owner. If a submission is not approved by Owner, it shall be returned to Consultant for rework, and no payment to Consultant shall be made. Consultant shall rework the submission and transmit the reworked submission with a new invoice to Owner in a timely manner for review and approval by Owner in accordance with the contract.
- 5.2 Payments for Consultant's Additional Services as defined in ARTICLE 2 and for Reimbursable Expenses as defined in ARTICLE 7 shall be made upon presentation of Consultant's statement of services rendered in accordance with the contract.
- 5.3 If Consultant's Additional Services are terminated or suspended in whole or in part through no fault of Consultant, then Consultant shall be paid compensation for services performed prior to receipt of written notice from Owner of suspension or termination, subject to the provisions of ARTICLE 6 and ARTICLE 10. If the Additional Service is resumed after being suspended for more than 90 days, Consultant's compensation for the Additional Services shall be subject to renegotiation.
- 5.4 Consultant shall render a final billing to Owner for all retained compensation prior to final payment to Consultant. The final billing shall be rendered within 60 days after the Project has been closed out. Owner shall not be required to pay any amounts billed after this time.
- 5.5 In the event the entire project is suspended for a period in excess of 90 days, or Consultant is not ordered to proceed to the next phase within 90 days after completion of a previous phase, then Consultant's compensation for basic services and additional services shall be subject to renegotiation if the project is resumed. If the renegotiated fee has not been mutually agreed upon within 14 days after issuance of Notice to Proceed to the next phase, Owner shall be free to terminate the contract and to negotiate freely with other Consultants for completion of the Project utilizing all drawings, specifications, files, notes and other work previously completed under this contract. Consultant will receive 7 days written notice of termination for failure of renegotiation efforts. In the event of such termination, Consultant shall be paid only for services already performed and shall have no further recourse.

ARTICLE 6 PAYMENT FOR ADDITIONAL SERVICES

- 6.1 For the purpose of determining compensation for additional services of employees or Principals engaged on the Project by Consultant, gross hourly billing rates shall be used. The term employees shall include Consultants, Technicians, Draftsmen, and Secretaries who are engaged in consultation, research, and design, in producing Drawings, Specifications, and other documents pertaining to the Project, and in rendering additional services during construction at the site. Services of Sub-consultants or other Professional Services contracted upon prior approval of Owner shall be billed at 1.1 times the basic fee cost without markup.
- 6.2 Gross hourly billing rates for additional services are noted on Consultant's Fee Schedule as an attachment hereto. Such hourly rates include all wages and salaries paid to Consultant's employees engaged on the Project, payroll taxes, other taxes required by state or federal law, benefits such as vacation, sick leave, retirement plans, pension funds, profit sharing, and any other benefits contracted for or agreed to by said employees and Consultant. Such hourly rates include compensation for any overtime worked by

Consultant's employees and sub-consultants, and also include Consultant's overhead and profit for additional services described herein. The aforementioned hourly rates are not subject to escalation, except as noted in ARTICLE 5.3 and 5.5.

ARTICLE 7 REIMBURSABLE EXPENSES

- 7.1 Reimbursable Expenses are in addition to the Compensation for Basic and Additional Services and include actual out-of-pocket expenditures made by Consultant, Consultant's employees, or Consultant's professional sub-consultants in the interest of the Project. Reimbursable expenses do not include ordinary overhead expenses and are limited to the expenses listed in ARTICLE 7. Expenses the Consultant consider reimbursable shall be approved by Owner prior to incurring the expense.
- 7.2 Reimbursable Expenses include the following:
 - a. Transportation, meals and actual lodging expenses when traveling with the prior approval of Owner in connection with the project, including Owner requested meetings with various committees, boards; long distance calls and telegrams; and fees paid for securing approval of authorities having jurisdiction over the project.
 - b. Except as required in these general conditions or other contract documents including the instructions to proposers, expense of reproduction, postage, and handling of drawings and specifications.
 - c. Surveying and Mapping, or other uses services requiring specialized training, programs, or systems when used in connection with Additional Services.
- 7.3 Consultant shall not be reimbursed for those expenses for which Owner has not been billed within 90 days after the expenses have been incurred, except that the final billing shall be rendered within 60 days after Project closeout.

ARTICLE 8 INSURANCE

- 8.1 The services to be rendered under this contract are those of an independent Contractor.
- 8.2 Contractor and all subcontractors, if any, shall be responsible for the purchase and maintenance of all insurance required by law and at a minimum purchase the insurance coverage as specified in ARTICLE 8. Such insurance shall be by a company/corporation currently rated "A-"or better by A.M. Best.
- 8.3 This insurance coverage required by ARTICLE 8 shall be in acceptable form, and for the amounts specified by the City of Kenai, or as required by law, whichever is greater.
- 8.4 The insurance policies shall remain in force for the life of the contract and shall be a part of the contract price.
- 8.5 Commercial general liability with minimum coverage of \$1,000,000, automobile liability insurance with minimum coverage of \$1,000,000 combined single limit bodily injury and property damage per occurrence, and insurance covering work on this project that provides a minimum coverage of \$1,000,000 against any claim arising out of professional liability/errors or omissions of Consultant and/or Consultant's subcontractors. This insurance shall be primary and exclusive of any other insurance carried by the City of Kenai. The commercial general liability insurance shall be without limitation on the time within which the resulting loss, damage, or injury is actually sustained.
- 8.6 Per Alaska State Statutes, Worker's Compensation and Employers Liability Insurance shall be provided for all employees who are performing work under this contract.
- 8.7 Certificate(s) of Insurance shall be provided by Contractor and all subcontractors, or their Insurance Companies and/or their Agents, naming the City of Kenai as an additional insured for the work specified in this contract with a waiver of subrogation for commercial general liability insurance and automobile liability insurance. The certificates of insurance must reference the specific contract by name. Workers

compensation insurance must be endorsed for waiver of subrogation against the City. Certificates of Insurance, acceptable in form and content, will be delivered to Owner at the address designated for legal service in the agreement, at or prior to presentation of the contract for execution by owner.

- 8.8 There shall be no cancellation or material change of the insurance coverage, or intent not to renew the insurance coverages as specified in this contract, without thirty (30) days prior written notice to the City of Kenai. Notice of cancellation, material change in coverage, or intent not to renew will be delivered to the address designated for legal notice in the agreement.
- 8.9 Upon renewal or change in policies during the contract, Certificates of Insurance shall be delivered to the address designated for legal notice in the agreement.
- 8.10 Owner shall have the option to purchase and maintain such insurance as will protect Owner against property losses or liability claims, which may arise from operations under the contract. Insurance providing coverage against fire and extended coverage perils, may, at Owner option, provide coverage to the full insurable value of the project and insure the interests of Contractor and all subcontractors as their interests may appear. Any recovery for loss insured pursuant to this General Condition is to be adjusted to Owner and made payable to Owner as trustee for the insured, as their interests may appear. This section does not modify the contractor or subcontractors' responsibility to provide insurance as required in ARTICLE 8.

ARTICLE 9 CONSULTANT'S ACCOUNT RECORDS

9.1 Records of reimbursable expenses and expenses pertaining to additional services and services performed on the basis of gross hourly billing rates shall be in a form acceptable to Owner and shall be available to Owner or Owner's authorized representative for audit at mutually convenient times for a period of up to three years after completion of services and final payment. Allowable Consultant's compensation may be modified to conform to the results of any audit, and any excess compensation or expenses shall be refunded to Owner.

ARTICLE 10 PROJECT CLOSE-OUT AND TERMINATION OF AGREEMENT

- 10.1 Contract between Owner and Consultant will be closed out when the Project has been satisfactorily completed and Consultant has performed all of Consultant's obligations under the contract. Project shall not be closed out until Final Completion has been certified and all record drawings and other documentation have been provided to Owner. Project shall be formally closed out by a written memorandum signed by both Consultant and Owner specifying any adjustments to the contract, together with any sums of money remaining due. The memorandum closing out the Project shall constitute a resolution of all payments for contractual services and reimbursable expenses except those specifically noted in the memorandum. Within 30 days after Owner and Consultant have executed the memorandum closing out the Project, Owner shall pay to Consultant all sums of money remaining due to Consultant including all remaining retained money.
- 10.2 This contract may be terminated by either party upon 30 days written notice, should the other party fail substantially to perform in accordance with the Terms and Conditions hereof.
- 10.3 This contract may be suspended or terminated by Owner for Owner's convenience, for any reason deemed by Owner to be in the best interest of Owner.
- 10.4 In the event of termination not due to fault of Consultant, Consultant shall be paid compensation for services actually performed and for reimbursable expenses actually incurred in accordance with the contract and ARTICLE 5, if services are performed and expenses incurred prior to the dates specified in the termination notice.
- 10.5 Should this agreement be terminated because Consultant has failed substantially to perform Consultant's duties in a satisfactory or in a timely manner, then Consultant shall be paid only for the actual value of Consultant's services to date, less any damages or additional costs incurred by Owner as a result of Consultant's failure to perform Consultant's duties. In the event that additional costs to Owner exceed

the amount of money then otherwise due and owing to Consultant, then Owner shall retain those monies and may immediately proceed against Consultant for excess damages.

ARTICLE 11 OWNERSHIP OF DOCUMENTS/DESIGNS

11.1 All Drawings, Specifications, and Designs are considered instruments of service. Owner shall retain an ownership interest in all instruments of service and any similar work including all intellectual property rights associated with them, whether or not completed, which are produced or provided by Consultant in performance of this contract, whether the project for which they are made is constructed or not. Owner and Consultant each reserve unlimited rights of use, without any further compensation, for this project and any subsequent project in which owner or consultant participate. Owner specifically relieves Consultant of any responsibility or liability pertaining to any subsequent use of the document by owner. Any Drawing, Specification, Design, or similar work produced or provided by Consultant in performance of this contract that contains a copyright in the name of the Consultant or any other entity other than Owner will not be accepted, and Owner will consider such submittal to be a breach of the contract.

ARTICLE 12 SUCCESSORS AND ASSIGNS

12.1 Owner and Consultant each binds themselves, their partners, successors, assigns, and legal representatives to the other party to this contract and to the partners, successors, assigns, and legal representatives of such other party with respect to all terms of this contract. Neither Owner nor Consultant shall assign, sublet, or transfer any interest in this contract without the written consent of the other.

ARTICLE 13 INDEMNIFICATION

13.1 The consultant shall indemnify, defend, and hold harmless the contracting agency from and against any claim of, or liability for, negligent acts, errors, and omissions of the Consultant under this agreement. The consultant is not required to indemnify, defend, or hold harmless the contracting agency for a claim of, or liability for, the independent negligent acts, errors, and omissions of the consultant and the contracting agency. If there is a claim of, or liability for, a joint negligent act, error, or omission of the consultant and the contracting agency, the indemnification, defense, and hold harmless obligation of this provision shall be apportioned on a comparative fault basis. In this provision, "consultant" and "contracting agency" include the employees, agents, and contractors who are directly responsible, respectively, to each. In this provision, "independent negligent acts, errors, and omissions" means negligence other than in the contracting agency's selection, administration, monitoring, or controlling of the consultant, or in approving or accepting the consultant's work.

Following are definitions for terms in the above clause:

- "construction" means the process of building, altering, repairing, maintaining, improving, demolishing, planning, and designing a public highway, a structure, a building, a utility, infrastructure, or another public improvement to real property, but does not mean the routine operation of a public improvement;
- (2) "consultant" means a person who contracts with a public agency to provide professional services;
- (3) "professional services" means professional, technical, or consultant's services that are predominantly intellectual in character, result in the production of a report or the completion of a task, and include analysis, evaluation, prediction, planning, or recommendation;;
- (4) "public agency" means a department, institution, board, commission, division, authority, public corporation, committee, school district, political subdivision, or other administrative unit of a municipality, of a political subdivision, or of the executive or legislative branch of state government, including the University of Alaska, the Alaska Aerospace Development Corporation, the Alaska Housing Finance Corporation, the Alaska Industrial Development and Export Authority, the Alaska Energy Authority, the Alaska Railroad Corporation, and a regional educational attendance area.

ARTICLE 14 GOVERNING LAW

14.1 This contract shall be governed by the Laws of the State of Alaska, and any lawsuit brought thereon shall be filed in the Third Judicial District Court at Kenai, Alaska.

ARTICLE 15 SEVERABILITY

15.1 Should a provision of this Agreement be found to be unenforceable or void for any reason, it shall be considered as severed from this Agreement, and the remaining portions of this Agreement shall stand as if that provision had never been included in the contract. Should the unenforceable or void provision be legally essential to the continuing existence of the contract, the parties shall attempt to substitute a reasonable replacement provision.

ARTICLE 16 NONDISCRIMINATION

- 16.1 Contractor must comply with all federal and state laws, rules, regulations and orders, and all local ordinances, regulations and rules concerning wages, taxes, social security, workers' compensation, nondiscrimination, licenses, registration requirements, and similar provisions governing employment of individuals.
- 16.2 Contractor will not discriminate against any employee or applicant for employment or refuse employment to a person, or bar a person from employment, or discriminate against a person in compensation or in a term, condition, or privilege of employment because of the person's race, religion, color, or national origin, or because of the person's age, physical or mental disability, sex, marital status, changes in marital status, pregnancy, or parenthood when the reasonable demands of the position do not require distinction on the basis of age, physical or mental disability, sex, marital status, changes in marital status, pregnancy, or political affiliation. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. Contractor further agrees to insert this provision in all subcontracts hereunder and to require the subcontractors to insert this provision in their subcontracts.

Notwithstanding the prohibition against employment discrimination on the basis of marital status or parenthood stated above, an employer may, without violating this provision, provide greater health and retirement benefits to employees who have a spouse or dependent children than are provided to other employees.

END GENERAL CONDITIONS

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FI 144 N. Binkley Street Soldotna, Alaska 99669-7. www.kpb.us	nance Departr 599	Phor	ne: (907) 714- or: (907) 714- ax: (907) 714-	2175	
1.) Fill in all information requeste	d. 2.) Sign and date. 3.	.) Submit wit	h solicitation, or	other.	For Official Use Only
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best of my knowledge, the abo	ve information is correc		Date)	Signature of	Applicant (Required)

IF ANY BUSINESS IS CONDUCTED OR IS AWARDED A BID WITHIN THE KENAI PENINSULA BOROUGH YOU MUST BE REGISTERED TO COLLECT SALES TAX. THE SALES TAX DEPARTMENT CAN BE REACHED AT (907) 714-2175.

SAMPLE Alaska Department of Commerce, Community, and Economic Development P.O. Box 110806, Juneau, Alaska 99811-0806 ALASKA BUSINESS LICENSE The licensee named below holds Alaska Business License Number ____ Covering the period of: ______ through _ Line of Business: _____ COMPANY NAME ADDRESS Owner: NAME OF OWNER This license shall not be taken as permission to do business in the state without having complied with The other requirements of the laws of the State of Alaska or of the United States. Alaska Department of Commerce, Community, and Economic Development Commissioner: This license must be posted in a conspicuous place at the business location. It is not transferable or assignable. SAMPLE **STATE OF ALASKA** No. Effective: _____ **DEPARTMENT OF COMMERCE, COMMUNITY & ECONOMIC** Expires: ___

PARTMENT OF COMMERCE, COMMUNITY & ECONOM DEVELOPMENT Division of Occupational Licensing

Division of Occupational Licensing

Certifies that

COMPANY NAME

Is a Registered

Specialty

Commissioner: _____

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City of Kenai		Public Works						AUTHOR	ZED REPRESE	TATIVE			
respect to work done by or on behair or the named insured for the project referenced. The Certificate Holder is granted Waiver of Subrogation on the General Liability, Automobile and Workers' Compensation policies as respects the referenced project CERTIFICATE HOLDER CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFOR THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE		210 Fidalgo	Ave							ana ang ang ang ang ang ang ang ang ang			
respect to work done by or on behalt of the named insured for the project referenced. The Certificate Holder is granted Waiver of Subrogation on the General Liability, Automobile and Workers' Compensation policies as respecte the referenced project CERTIFICATE HOLDER CANCELLATION City of Kenai Public Works 210 Fidalgo Ave		Mana - Ave A	0611										
respect to work done by or on behair or the named insured for the project referenced. The Certificate Holder is granted Waiver of Subrogation on the General Liability, Automobile and Workers' Compensation policies as respects the referenced project CERTIFICATE HOLDER CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFOR THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED ACCORDANCE WITH THE POLICY PROVISIONS.		Kenai, AK 9	9611										
City of Kenai Public Works 210 Fidalgo Ave		Kenai, AK 9	9611										
City of Kenai Public Works 210 Fidalgo Ave	00	Kenai, AK 9	9611						@ 400	18-2010 000		A11 =1	abte reconv

Kenai Recreation Center



Kenai Recreation Center





Kenai Recreation Center











MECHANICAL SHEET INDEX

M1.0 M1.1	LEGEND & SCHEDULES SPECIFICATIONS
BASE BID 1 M2.1 M2 2	PLUMBING & PIPING DEMOLITION PLUMBING & PIPING NEW WORK
M2.3	PLUMBING DETAILS & SCHEMATICS
BASE BID 2	
M3.1	ROOFTOP HVAC - DEMOLITION
M3.2	ROOFTOP HVAC - NEW WORK
M3.3	HVAC CONTROLS - DEMOLITION
M3.4	HVAC CONTROLS - NEW WORK
M3.5	ROOFTOP HVAC DETAILS
BASE BID 3	
M4.1	1ST FLOOR DUCT SYSTEMS - DEMOLITION
M4.2	2ND FLOOR DUCT SYSTEMS - DEMOLITION
M4.3	1ST FLOOR DUCT SYSTEMS - NEW WORK
M4.4	2ND FLOOR DUCT SYSTEMS - NEW WORK

ELECTRICAL SHEET INDEX

PHASING TO CORRESPOND WITH MECHANICAL

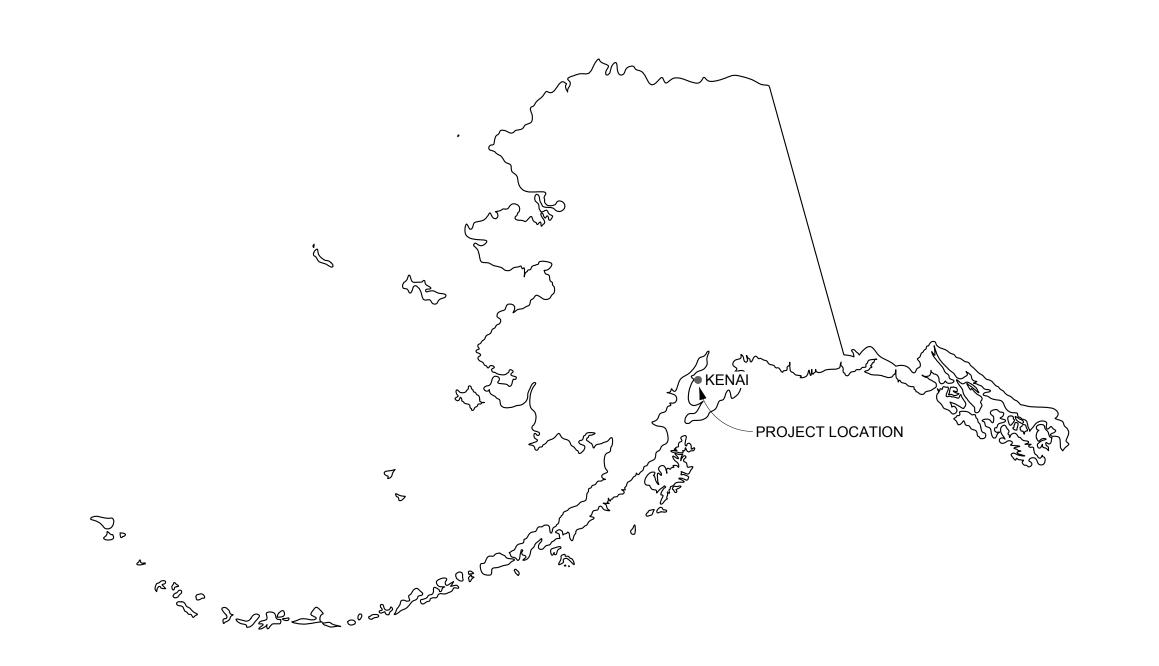
1.0	POWER
2.0	ROOF DEMOLITION
3.0	ROOF POWER
4.0	ONELINE AND SCHEDULES
5.0	LEGEND AND SCHEDULES

CITY OF KENAI **KENAI RECREATION CENTER** MECHANICAL IMPROVEMENTS

225 S. WILLOW STREET KENAI, ALASKA 99611

MECHANICAL ENGINEERS:

JERNSTROM ENGINEERING, LLC 6927 OLD SEWARD HIGHWAY, SUITE 202 ANCHORAGE, AK 99518 (907) 522-1042





ELECTRICAL ENGINEERS:

NORTHERN ELECTRICAL ENGINEERING CONSULTING, LLC 8410 FOXLAIR CIRCLE ANCHORAGE, AK 99507 (907) 562-1552

KENAI RECREATION CENTER

CONSTRUCTION DOCUMENT

OFFICE 601 W. 5 TH AVENUE, AND CHORAGE AK 99501	PHONE 907.522.1042 AECL AECL AECL AITINE WWW.JERNSTROMENGINEERING.COM 1146
KENAI RECREATION CENTER MECHANICAL IMPROVEMENTS 255 S. WILLOW ST. KENAI, ALASKA 99611	COVER SHEET
THIS SHEET IS FULL S 34"x22" 1/8" 1/2" 1/4" 1" # DESCRIPTION	DATE
DATE DRAWN CHECK PROJECT	11/10/17 AB GJ 2017-49
SHEET NO.)

MEC	HANICAL LEGEND AND A	BBRE	VIATI	ONS
GENERAL	ABBREVIATIONS	PIPING S	YSTEM RE	EFERENCES
APPROX ARCH BB BHP BAS BTU BTUH CFM CA CO CO2 CONN dB DB DDC DEG DMPR DN DPS DWV	AMERICANS W/ DISABILITIES ACT APPROXIMATE ARCHITECT, ARCHITECTURAL BASEBOARD BRAKE HORSEPOWER BUILDING AUTOMATION SYSTEM BRITISH THERMAL UNIT BTU PER HOUR CUBIC FEET PER MINUTE COMPRESSED AIR CARBON MONOXIDE CARBON DIOXIDE CARBON DIOXIDE CONNECTION DECIBEL DRY BULB (AIR) DIRECT DIGITAL CONTROL DEGREE DAMPER DOWN DIFFERENTIAL PRESSURE SENSOR DRAIN WASTE AND VENT EACH	CW NPW HW PS PW RL V W <u>FUEL GAS</u> G FOR FOR FOS <u>FIRE PRC</u> SP F F FDC	NON-POTA DOMESTIC DOMESTIC PRESSUR PUMPED V RAIN LEAE SANITARY	COLD WATER ABLE COLD WATER CHOT WATER CIRCULATION E SEWER VASTE DER VENT WASTE GAS RETURN SUPPLY SYSTEMS TECTION SPRINKLER PIPING ARTMENT CONNECTION
EAT EGT ELEC ESP EWT (E) FDC FPM GAL GALV GC GPH GPM	ENTERING AIR TEMPERATURE ENTERING GLYCOL TEMPERATURE ELECTRICAL EXTERNAL STATIC PRESSURE ENTERING WATER (GLYCOL) TEMPERATURE EXISTING FIRE DEPARTMENT CONNECTION FEET PER MINUTE GALLON GALVANIZED GENERAL CONTRACTOR GALLON PER HOUR GALLON PER MINUTE	CWR CWS HWR HWS GR GS	CHILLED V CHILLED V HEATING V HEATING V GLYCOL R GLYCOL S GAS SYSTI OXYGEN NITROUS O DENTAL A VACUUM	VATER RETURN VATER SUPPLY WATER RETURN WATER SUPPLY ETURN UPPLY E <u>MS</u> OXIDE
HP HZ	HORSEPOWER (ELEC.) HERTZ (ELEC.)	PIPING C	OMPONE	NTS AND ASSEMBLIES
IN.W.C. KW KWH LAT LGT LWT MAT MAX MBH MECH MIN MISC NC NIC NO NIC NO NTS OAT OFCI OFOI PD PG PH PSI RPBFP RPM SL SS TEMP TP TYP V VEL VFD VTR WB ADDITION SYSTEM S	INCH, WATER COLUMN KILOWATT KILOWATT KILOWATT HOUR LEAVING AIR TEMPERATURE LEAVING GLYCOL TEMPERATURE LEAVING WATER TEMPERATURE MIXED AIR TEMPERATURE MAXIMUM 1,000 BTU PER HOUR MECHANICAL MINIMUM MISCELLANEOUS NORMALLY CLOSED NOT IN CONTRACT NORMALLY OPEN NOT TO SCALE OUTSIDE AIR TEMPERATURE OWNER FURNISHED CONTRACTOR INSTALLED OWNER FURNISHED CONTRACTOR INSTALLED OWNER FURNISHED OWNER INSTALLED PRESSURE DROP PROPYLENE GLYCOL PHASE (ELEC) POUND PER SQUARE INCH REDUCED PRESSURE BACKFLOW PREVENTER REVOLUTION PER MINUTE ACOUSTIC OR SOUND LINED STAINLESS STEEL TEMPERATURE TRAP PRIMER TYPICAL VOLT (ELEC.) VELOCITY VARIABLE FREQUENCY DRIVE VENT THRU ROOF WET BULB MALABBREVIATIONS NOTED BY EQUIPMENT TAGS, SYMBOLS, AND ACRONYMS GENERALLY	$\begin{array}{c c} SYMBOL \\ \uparrow \\ \uparrow \\ \uparrow \\ \uparrow \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline$	ABBREV. FD RD ORD CO WCO FCO YCO WHA AAV MAV TP ST BLV FCV MOV 3MV 3DV RV	DESCRIPTION PIPE UP PIPE TEE UP PIPE TEE DOWN FLOOR DRAIN ROOF DRAIN OVERFLOW ROOF DRAIN CLEANOUT, PIPE END PLUG CLEANOUT, PIPE END PLUG CLEANOUT, VALL, CONCEALED CLEANOUT, YARD W/CONCRETE COLLAR WATER HAMMER ARRESTOR (# DENOTES FIXTURE UNIT LOAD) AUTOMATIC AIR VENT W/SHUT-OFF VALVE(NOT SHOWN) MANUAL AIR VENT W/SHUT-OFF VALVE(NOT SHOWN) TRAP PRIMER, AUTOMATIC BALL/GATE/SHUTOFF VALVE GLOBE VALVE CHECK VALVE NON-SLAM CHECK VALVE STRAINER, IN-LINE W/HOSE-END DRAIN DRAIN VALVE W/HOSE END BALANCING VALVE FLOW CONTROL VALVE CONTROL VALVE, 3-WAY MIXING RELIEF VALVE
ACCEPTE	D BY THE INDUSTRY SHALL BE APPLICABLE.		Ĩ	PRESSURE GAGE W/ ISOLATION VALVE
AFF AFG BOD BOP CL ELEV. FFL INV. TOD	REFERENCESABOVE FINISHED FLOORABOVE FINISHED GRADEBOTTOM OF DUCTBOTTOM OF PIPECENTER LINEELEVATIONFINISHED FLOOR LEVELINVERTTOP OF DUCTTOP OF PIPEON CENTER		POC	PRESSURE REDUCING VALVE PIPE REDUCER UNION CONNECTION FLANGE CONNECTION FLEXIBLE JOINT PIPE ANCHOR PIPE ALIGNMENT GUIDE PIPING SEISMIC FLEXIBLE JOINT PIPE EXPANSION COMPENSATOR POINT OF CONNECTION
DUCTWO	RK AND ACCESSORIES	DUCTWO	RK COMP	ONENTS AND ASSEMBLIES
C/A E/A O/A R/A S/A T/A FD FSD BD BDD SM	COMBUSTION AIR EXHAUST AIR OUTSIDE AIR RETURN AIR SUPPLY AIR TRANSFER AIR FIRE DAMPER FIRE-SMOKE DAMPER BALANCING DAMPER BACK DRAFT DAMPER SHEET METAL	SYMBOL SYMBO	ABBREV. VD, BD FD, FSD HC	DESCRIPTION ACOUSTICALLY LINED DUCT THERMALLY INSULATED DUCT FLEX DUCT FLEX CONNECTION TURNING VANES VOLUME DAMPER, BALANCING DAMPER FIRE DAMPER, FIRE SMOKE DAMPER HEATING COIL
	BASEBOARD CALLOUT BB-1 10' 1.0 FINNED ELEMENT LENGTH		T'STAT S/A, O/A R/A, T/A E/A	THERMOSTAT (W/ INSULATED BASE) SUPPLY AIR, OUTSIDE AIR (UP & DOWN) RETURN AIR, TRANSFER AIR (UP & DOWN) EXHAUST AIR (UP & DOWN)

FILENAN DRAWN DATE: 1

BASE BID 1 - DOMESTIC WATER HEATER SCHEDULE - GAS FIRED	AFE OF ALAS S. 49 TH
1. SET OUTLET TEMPERATURE TO 120°F. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.	GREGORY JERNSTROM
Image: Figure	11/10/17 ME 12971 PROFESSIONAL HIS
BASE BID 1 - EXPANSION TANK SCHEDULE	
ACCEPTANCE (GAL)BASIS OF DESIGN (DLUME (GAL)BASIS OF DESIGN MFR.NOTESET-16.43.2AMTROLST-12-CASME STEEL TANK, HEAVY DUTY BUTYL RUBBER BLADDER	
BASE BID 1 - PUMP SCHEDULE	
A Rest of	S501 AECL 1146
BASE BID 2 - EXISTING ROOFTOP AIR HANDLING UNIT SCHEDULE - REFERENCE ONLY	
NOMINAL COLING CAPACITYNOMINAL COLING CAPACITYNOMINAL COLING CAPACITYNONN <t< td=""><td>STE NECHANICAL E 200, ANCHORAG</td></t<>	STE NECHANICAL E 200, ANCHORAG
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING & COOLING NOTES:	NUE, SUITE 2
 PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND CO2 SENSOR FOR O/A MODULATION. PROVIDE WITH DOWNTURN SUPPLY AND RETURN PLENUM AND LOW AMBIENT CONTROLS. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 	ERNSTR
NOMINAL COOLING NOMINAL ELECTRICAL DX COOLING COIL GAS HEATING BASIS OF DESIGN	601 W. WWW.J
AREA SERVEDCAPACITY (TONS)SUPPLY CFMO/A CFMESP (IN W.C.)INTEGRAL DISCONNECT	Defice PHONE ONLINE
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING ONLY NOTES: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, CO2 SENSOR FOR O/A MODULATION, ELECTRONIC MODULATING GAS CONTROL WITH DUCT SENSOR AND ROOM THERMOSTAT OVERRIDE, AND 409 STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 3. PROVIDE VITH SMOKE DETECTOR FOR UNIT SHUTDOWN. 4. PROVIDE WITH FRONT SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH DOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS.	MENTS
Image: constraint of the constraint	PROVEN ES
BASE BID 2 - FAN SCHEDULE	REAT L IM ST. 99611 HEDUL
NOTES: 1. FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. 2. PROVIDE WITH BACKDRAFT DAMPER. 3. VFD TO MODULATE FAN SPEED BASED ON BUILDING STATIC PRESSURE SENSOR.	RECR NICA ASKA SCH
Image: Here in the image: He	KENAI MECHA 255 S. WI KENAI, AI LEGEND
BASE BID 3- AIR OUTLET SCHEDULE	THIS SHEET IS FULL SIZE AT 34"x22" 1/8" 1/2"2"
NOTES: 1. DIFFUSER BACK PAN AND NECK SIZE AS SHOWN ON DRAWINGS. 2. DIFFUSER BLOW PATTERN AS SHOWN ON DRAWINGS. 3. PROVIDE SOUND-LINED ACOUSTICAL ELBOW AS SHOWN ON DRAWINGS. 4. PROVIDE WITH OPTIONAL OPPOSED BLADE DAMPER FOR BALANCING. LOCATE DAMPER QUADRANTS IN AN ACCESSIBLE LOCATION FOR BALANCING.	# DESCRIPTION DATE
AREA FINISH USE REMARKS TAG SERVED FINISH USE REMARKS A AS NOTED OFF WHITE S/A SURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RS B AS NOTED OFF WHITE S/A SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FS C AS NOTED OFF WHITE D/A SUBFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300FS	DATE 11/10/17 DRAWN AB CHECK GJ PROJECT 2017-49
CAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RLDAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL	SHEET NO.
CONSTRUCTION DOCUMENTS	M1.0

BASE BID 1 - DOMESTIC WATER HEATER SCHEDULE - GAS FIRED	STATE OF ALAST			
1. SET OUTLET TEMPERATURE TO 120°F. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.	GREGORY JERNSTROM			
EQ. IDRECOVERT MADENPUT (MBH)STORAGE (MBH)ELECTRICALBASIS OF DESIGNEQ. IDDESCRIPTIONGPH ΔT (MBH)(MBH)VOLTAGEPHASEMFR.MODELNOTESWH-196% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251, 2WH-296% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251, 2	ME 12971 PED PROFESSIONAL			
BASE BID 1 - EXPANSION TANK SCHEDULE				
TANK VOLUME (GAL)ACCEPTANCE BASIS OF DESIGNEQ. ID (GAL)(GAL)MFR.MODELNOTESET-16.43.2AMTROLST-12-CASME STEEL TANK, HEAVY DUTY BUTYL RUBBER BLADDER				
BASE BID 1 - PUMP SCHEDULE				
Image: Region of the serviceImage: Region of the service <td>AECL 1146</td>	AECL 1146			
BASE BID 2 - EXISTING ROOFTOP AIR HANDLING UNIT SCHEDULE - REFERENCE ONLY				
NOMINAL COOLING CAPACITY (TONS) NOMINAL COULING CFM No No No NO D D D COULING COL SUPPLY GASIS OF DESIGN BASIS OF DESIGN EQ. ID AREA SERVED AREA SERVED O/A SUPPLY (TONS) O/A ESP (IN W.C.) MOR MCA MOP VOLTAGE PHASE VFD INTEGRAL DISCONNECT MBH MBH AMB. MBH MBH MBH FILTERS MFR. MODEL NOTES RTU-1 RAQUETBALL 4 1600 320 0.50 4.11 KW 23.9 A 35 A 208 3 No Yes 44 42 75 °F 51 °F 85 °F 120 98 57 °F 2" MERV 8 TRANE YSC048 MODEL MODEL MODEL MEN 42 75 °F 51 °F 85 °F 120 98 57 °F 2" MERV 8 TRANE YSC048 MODEL MODEL MODEL MODEL MEN MEN 120 98 57 °F 2" MERV 8 TRANE YSC048 MODEL MEN MEN MEN 120 98	STEE NEEER 200, ANCHORAGI			
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING & COOLING NOTES:	Nenginee			
 PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND CO2 SENSOR FOR O/A MODULATION. PROVIDE WITH DOWNTURN SUPPLY AND RETURN PLENUM AND LOW AMBIENT CONTROLS. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 	E Cons Cons Cons 22.1042			
NOMINAL COOLING CAPACITY EQ. ID NOMINAL COOLING CAPACITY (TONS) NOME NOME NOME ELECTRICAL	FFICE 601 W NULINE WWW			
RTU-2 CARDIO 3 1200 240 0.50 2.93 KW 19.9 A 30 A 208 3 Yes 33 32 75 °F 51 °F 85 °F 120 98 76 °F 2" MERV 8 TRANE YSC036 1, 2, 3	OFFICI OFFICI			
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING ONLY NOTES: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, CO2 SENSOR FOR 0/A MODULATION, ELECTRONIC MODULATING GAS CONTROL WITH DUCT SENSOR AND ROOM THERMOSTAT OVERRIDE, AND 409 STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE FIELD POWERD 120V OFCI OTLET FOR EQUIPMENT MAINTENANCE. 3. PROVIDE WITH FONT SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH FOUNT SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH FOOT COMMONS UNDER VITAN RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH FOOT COMMONS 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2' MERV 8 TRANE GRAA20GDJF0 1.2.3,4 RTU-4 1ST FLOOR LOBBY, WEIGHT ROOM 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2' MERV 8 TRANE GRAA20GDJF0 1.2.3,4 RTU-4 1ST FLOOR LOBBY, WEIGHT ROOM 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2' MERV 8 TRANE GRAA20GDJF0 1.2.3,4 RTU-4 0YM LOCKER ROOMS, 2016 0.400 811 1 HP 5.3 8 208 3 Yes No 200 160 42.1 °F 2' MERV 8 TRANE GRAA20GDJF0 1.2.3,5	TON CENTER PROVEMENTS ES			
BASE BID 2 - FAN SCHEDULE	REAT NL IM ST. 99611 HEDUL			
NOTES: 1. FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. 2. PROVIDE WITH BACKDRAFT DAMPER. 3. VFD TO MODULATE FAN SPEED BASED ON BUILDING STATIC PRESSURE SENSOR.	RECR NICAI ASKA 9 & SCH			
Image: height of the constraint of the cons	KENAL MECHA 255 S. WI Z55 S. WI Z55 S. WI LEGEND			
BASE BID 3- AIR OUTLET SCHEDULE	1/8" 1/2" 2"			
NOTES: 1. DIFFUSER BACK PAN AND NECK SIZE AS SHOWN ON DRAWINGS. 2. DIFFUSER BLOW PATTERN AS SHOWN ON DRAWINGS. 3. PROVIDE SOUND-LINED ACOUSTICAL ELBOW AS SHOWN ON DRAWINGS. 4. PROVIDE WITH OPTIONAL OPPOSED BLADE DAMPER FOR BALANCING. LOCATE DAMPER QUADRANTS IN AN ACCESSIBLE LOCATION FOR BALANCING.				
AREA TAGAREA SERVEDINISHUSEREMARKSA AS NOTEDOFF WHITES/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RSCHECKB AS NOTEDOFF WHITES/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FSPROJECT2				
CAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RLDAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL	SHEET NO.			
CONSTRUCTION DOCUMENTS	M1.0			

BASE BID 1 - DOMESTIC WATER HEATER SCHEDULE - GAS FIRED	SP.F. OF. ALAST			
1. SET OUTLET TEMPERATURE TO 120°F. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.	GREGORY JERNSTROM			
2. PROVIDE CONDENSATE NEUTRALIZER KIT. 2. PROVIDE CONDENSATE NEUTRALIZER KIT. March 1 PROVIDE CONDENSATE NEUTRAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED 465 100 °F 399 120 1 LOCHINVAR SNA401-125 1, 2 WH-2 96% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED 465 100 °F 399 120 1 LOCHINVAR SNA401-125 1, 2				
BASE BID 1 - EXPANSION TANK SCHEDULE				
TANK VOLUME (GAL)ACCEPTANCE VOLUME (GAL)BASIS OF DESIGN MFR.EQ. ID(GAL)MFR.MODELNOTESET-16.43.2AMTROLST-12-CASME STEEL TANK, HEAVY DUTY BUTYL RUBBER BLADDER				
BASE BID 1 - PUMP SCHEDULE				
Image: height of the serviceImage: height of the service <td>AECL AECL 1146</td>	AECL AECL 1146			
BASE BID 2 - EXISTING ROOFTOP AIR HANDLING UNIT SCHEDULE - REFERENCE ONLY	AK 995			
Image: Nominal Cooling Coling Cooling C	NEER MECHANICAL 200, ANCHORAGE			
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING & COOLING NOTES: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND CO2 SENSOR FOR 0/A MODULATION.	N G I N G I N S ULTING ENUE, SUITE 2			
 PROVIDE PREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND COZ SENSOR FOR O/A MODULATION. PROVIDE WITH DOWNTURN SUPPLY AND RETURN PLENUM AND LOW AMBIENT CONTROLS. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 				
NOMINAL COOLING NOMINAL COOLING ELECTRICAL DX COOLING COIL GAS HEATING BASIS OF DESIGN	601 W.W.W.			
AREA SERVED CAPACITY (TONS) SUPPLY CFM O/A CFM ESP (IN W.C.) O/A ESP MCA MO MO MO MAREA SERVED MAREA SERVED MBH MBH <t< td=""><td>DEFICE PHONE DNLINE</td></t<>	DEFICE PHONE DNLINE			
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING ONLY NOTES: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, CO2 SENSOR FOR O/A MODULATION, ELECTRONIC MODULATING GAS CONTROL WITH DUCT SENSOR AND ROOM THERMOSTAT OVERRIDE, AND 409 STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE FIELD POWERD1 200 VGCI OUTLET FOR EQUIPMENT MAINTENANCE. 3. PROVIDE WITH SMOKE DETECTOR FOR UNIT SHUTDOWN. 4. PROVIDE WITH SMOKE DETECTOR FOR UNIT SHUTDOW AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH DOWNTURN SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH DOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS. Image: State of the state	TON CENTER PROVEMENTS ES			
BASE BID 2 - FAN SCHEDULE	REAT NL IM ST. 99611 HEDUL			
NOTES: 1. FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. 2. PROVIDE WITH BACKDRAFT DAMPER. 3. VFD TO MODULATE FAN SPEED BASED ON BUILDING STATIC PRESSURE SENSOR.	RECRI ANICAL ALLOW S ALASKA 9 ALASKA 9 8 SCHE			
EQ. IDLOCATIONESP (IN WC)TYPERPMPOWERFLAVOLTAGEPHASECFMINTEGRAL DISCONNECTMODELNOTESEF-1ROOF15100.75DOWNBLAST15721/2 HP4.22081YesNoNoGREENHECKG-123-VG1, 2EF-2ROOF7200.55DIRECT9831/4 HP2.32081YesNoNoGREENHECKSWD-13-VG1, 2EF-3ROOF62800.50DIRECT15713 HP-2303NoYesNoGREENHECKCSW-20-AF1, 2, 3	KENAI MECH 255 S. W KENAI, <i>A</i> LEGENI			
BASE BID 3- AIR OUTLET SCHEDULE	THIS SHEET IS FULL SIZE AT 34"x22" 1/8"2"			
NOTES: 1. DIFFUSER BACK PAN AND NECK SIZE AS SHOWN ON DRAWINGS. 2. DIFFUSER BLOW PATTERN AS SHOWN ON DRAWINGS. 3. PROVIDE SOUND-LINED ACOUSTICAL ELBOW AS SHOWN ON DRAWINGS. 4. PROVIDE WITH OPTIONAL OPPOSED BLADE DAMPER FOR BALANCING. LOCATE DAMPER QUADRANTS IN AN ACCESSIBLE LOCATION FOR BALANCING.	# DESCRIPTION DATE			
AREA TAGAREA SERVEDINISHUSEREMARKSAAS NOTEDOFF WHITES/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RSBAS NOTEDOFF WHITES/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FSCAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RL	TAGSERVEDFINISHUSEREMARKSABAAS NOTEDOFF WHITES/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RSGJBAS NOTEDOFF WHITES/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FSPROJECT2017-49			
D AS NOTED OFF WHITE R/A, E/A SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL	SHEET NO.			
CONSTRUCTION DOCUMENTS	M1.0			

BASE BID 1 - DOMESTIC WATER HEATER SCHEDULE - GAS FIRED	STR. OF. ALAS
NOTES: 1. SET OUTLET TEMPERATURE TO 120°F. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.	G. Senstrom
RECOVERY RATEINPUTSTORAGEELECTRICALBASIS OF DESIGNEQ. IDDESCRIPTIONGPH ΔT (MBH)(GAL)VOLTAGEPHASEMFR.MODELNOTESWH-196% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251, 2WH-296% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251, 2	11/10/17 ME 12971 PROFESSIONAL PROFESSIONAL
BASE BID 1 - EXPANSION TANK SCHEDULE	
TANK VOLUME (GAL)ACCEPTANCE BASIS OF DESIGNBASIS OF DESIGNEQ. ID (GAL)MFR.MODELNOTESET-16.43.2AMTROLST-12-CASME STEEL TANK, HEAVY DUTY BUTYL RUBBER BLADDER	
BASE BID 1 - PUMP SCHEDULE ELECTRICAL BASIS OF DESIGN	
FLUIDFLOWHEAD (GPM)FLOWHEAD (FT)POWERAMPSVOLTAGEPHASEECMVFDINTEGRAL DISCONNECTMODELNOTESPMP-1HW RECIRCWATER11187 W0.751201NoNoGRUNDFOSUPS 15-55 SFCSTAINLESS STEEL CONSTRUCTION	AECL 1146
BASE BID 2 - EXISTING ROOFTOP AIR HANDLING UNIT SCHEDULE - REFERENCE ONLY	
Image: height index being in the served of the served o	NEEI NEEI 00, anchorag
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING & COOLING	N C C C C C C C C C C C C C C C C C C C
 PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND CO2 SENSOR FOR O/A MODULATION. PROVIDE WITH DOWNTURN SUPPLY AND RETURN PLENUM AND LOW AMBIENT CONTROLS. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 	E L CONS 5 TH AVEN 2.1042
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EQ. IDAREA SERVED(TONS)CFMCFM(IN W.C.)POWERMCAMOPVOLTAGEPHASEVFDDISCONNECTMBHTMBHSEATLATTEMPINOUTRISEFILTERSMFR.MODELNOTESRTU-2CARDIO312002400.502.93 KW19.9 A30 A2083YesYes333275 °F51 °F85 °F1209876 °F2" MERV 8TRANEYSC0361, 2, 3	OFFICE ONLINE
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING ONLY Notes: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, CO2 SENSOR FOR 0/A MODULATION, ELECTRONIC MODULATING GAS CONTROL WITH DUCT SENSOR AND ROOM THERMOSTAT OVERRIDE, AND 409 STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 3. PROVIDE WITH SMOKE DETECTOR FOR UNIT SHUTDOWN. 4. PROVIDE WITH FRONT SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH HOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH HOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH HOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH HOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS. INTEGRAL NATURAL GAS HEATING BASIS OF DESIGN INTEGRAL INTEGRAL INTEGRAL INTEGRAL INTEGRAL INTEGRAL INTEGRAL INTEGRAL INTEGRAL INTEGRAL <td< td=""><td>CENTER</td></td<>	CENTER
RTU-4 1ST FLOOR LOBBY, WEIGHT ROOM 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2" MERV 8 TRANE GRAA20GDJF0 1, 2, 3, 4 RTU-5 GYM LOCKER ROOMS, 2ND FLOOR LOUNGE 2,610 0.40 811 1 HP 5.3 8 208 3 Yes No 300 240 84.8 °F 2" MERV 8 TRANE GRAA20GDJF0 1, 2, 3, 4 RTU-6 GYM LOCKER ROOMS, 2ND FLOOR LOUNGE 7,950 0.50 890 5 HP 20.9 33 208 3 Yes No 300 240 84.8 °F 2" MERV 8 TRANE GRAA30GDJF0 1, 2, 3, 5 RTU-6 GYM 7,950 0.50 890 5 HP 20.9 33 208 3 Yes No 800 640 74.2 °F 2" MERV 8 TRANE GRAA80PDJF0 1, 2, 3, 5 RTU-6 GYM MA MA Yes No 800 640 74.2 °F 2" MERV 8 TRANE GRAA80PDJF0 1, 2, 3, 5 <td>ATION 11 ULES</td>	ATION 11 ULES
BASE BID 2 - FAN SCHEDULE	AL IN ST. JEDU HEDU
 FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. PROVIDE WITH BACKDRAFT DAMPER. VFD TO MODULATE FAN SPEED BASED ON BUILDING STATIC PRESSURE SENSOR. 	RECI ANIC/ ILLOW ILLOW
Image: Her bar bar bar bar bar bar bar bar bar ba	KENAL KENAL, A KENAL, A KENAL, A KERAL, A KA KA KA KA KA KA KA KA KA KA KA KA KA
BASE BID 3- AIR OUTLET SCHEDULE	34"x22" 1/8" 1/2"2"
NOTES: 1. DIFFUSER BACK PAN AND NECK SIZE AS SHOWN ON DRAWINGS. 2. DIFFUSER BLOW PATTERN AS SHOWN ON DRAWINGS. 3. PROVIDE SOUND-LINED ACOUSTICAL ELBOW AS SHOWN ON DRAWINGS. 4. PROVIDE WITH OPTIONAL OPPOSED BLADE DAMPER FOR BALANCING. LOCATE DAMPER QUADRANTS IN AN ACCESSIBLE LOCATION FOR BALANCING.	# DESCRIPTION DATE # DESCRIPTION DATE
AREA SERVEDAREA SERVEDFINISHUSEREMARKSAAS NOTEDOFF WHITES/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RSBAS NOTEDOFF WHITES/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FSCAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RLDAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350RL	DATE 11/10/17 DRAWN AB CHECK GJ PROJECT 2017-49
D AS NOTED OFF WHITE R/A, E/A SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL	SHEET NO.

BASE BID 1 - DOMESTIC WATER HEATER SCHEDULE - GAS FIRED	STR. OF. ALAS
NOTES: 1. SET OUTLET TEMPERATURE TO 120°F. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.	GREGORY JERNSTROM
Image: Normal systemRECOVE: TextImputStorageELECT: CALBASIS OF DESIGNImputEQ. IDDESCRIPTIONGPH ΔT (MBH)(GAL)VOLTAGEPHASEMFR.MODELNOTESWH-196% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251, 2WH-296% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251, 2	11/10/17 ME 12971 PROFESSIONA
BASE BID 1 - EXPANSION TANK SCHEDULE	
TANK VOLUME (GAL)ACCEPTANCE BASIS OF DESIGNEQ. ID (GAL)(GAL)MFR.MODELNOTESET-16.43.2AMTROLST-12-CASME STEEL TANK, HEAVY DUTY BUTYL RUBBER BLADDER	
BASE BID 1 - PUMP SCHEDULE ELECTRICAL BASIS OF DESIGN	
EQ. IDFLUID (TYPE)FLOW (GPM)HEAD (FT)POWERAMPSVOLTAGEPHASEECMVFDINTEGRAL 	AECL 1146
BASE BID 2 - EXISTING ROOFTOP AIR HANDLING UNIT SCHEDULE - REFERENCE ONLY	
Image: Nominal Cooling Coling Coling Cooling Co	STR NEE MECHANICA E 200, ANCHORAG
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING & COOLING NOTES:	NUL SUITE 2
 PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND CO2 SENSOR FOR O/A MODULATION. PROVIDE WITH DOWNTURN SUPPLY AND RETURN PLENUM AND LOW AMBIENT CONTROLS. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 	2.1042
NOMINAL COOLING CAPACITY NOMINAL COOLING CAPACITY NOMINAL COOLING CAPACITY NO. NO. Respective ELECTRICAL DX COOLING COIL SUPPLY Supply BASIS OF DESIGN BASIS OF DESIGN EQ. ID AREA SERVED (TONS) 0/A ESP (IN W.C.) NCA MOP VOLTAGE PHASE VFD INTEGRAL DISCONNECT MBHT MBH MBH MBH MBH NOT RISE FILTERS MFR. MODEL NOTES RTU-2 CARDIO 3 1200 240 0.50 2.93 KW 19.9 A 30 A 208 3 Yes Yes 33 32 75 °F 51 °F 85 °F 120 98 76 °F 2" MERV 8 TRANE YSC036 1, 2, 3	DFFICE 601 W. DNLINE WWW.
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING ONLY	
NOTES: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, CO2 SENSOR FOR O/A MODULATION, ELECTRONIC MODULATING GAS CONTROL WITH DUCT SENSOR AND ROOM THERMOSTAT OVERRIDE, AND 409 STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 3. PROVIDE WITH SMOKE DETECTOR FOR UNIT SHUTDOWN. 4. PROVIDE WITH FRONT SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH DOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS.	NTS
AIRFLOW ESP	
EQ. IDAREA SERVED(CFM)(IN W.C.)RPMPOWERMCAMOPVOLTAGEPHASEVFDDISCONNECTMBH INMBH OUTTEMP RISEFILTERSMFR.MODELNOTESRTU-32ND FLOOR COMMONS3,5000.7010212 HP9.1152083YesNo20016042.1 °F2" MERV 8TRANEGRAA20GDJF01,2,3,4RTU-41ST FLOOR LOBBY, WEIGHT ROOM3,5000.7010212 HP9.1152083YesNo20016042.1 °F2" MERV 8TRANEGRAA20GDJF01,2,3,4	
RTU-5 GYM LOCKER ROOMS, 2ND FLOOR LOUNGE 2,610 0.40 811 1 HP 5.3 8 208 3 Yes No 300 240 84.8 °F 2" MERV 8 TRANE GRCA30GDJF0 1,2,3,5 RTU-6 GYM GYM 7,950 0.50 890 5 HP 20.9 33 208 3 Yes No 800 640 74.2 °F 2" MERV 8 TRANE GRAA80PDJF0 1,2,3,5 RTU-6 GYM GYM 0.50 890 5 HP 20.9 33 208 3 Yes No 800 640 74.2 °F 2" MERV 8 TRANE GRAA80PDJF0 1,2,3,5	
BASE BID 2 - FAN SCHEDULE	REA AL IN 9961
 FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. PROVIDE WITH BACKDRAFT DAMPER. VFD TO MODULATE FAN SPEED BASED ON BUILDING STATIC PRESSURE SENSOR. 	RECI ANIC/ ILLOW ALASKA
Image: Heal of the second se	KENAL MECH, EGEN
EF-2 ROOF 720 0.55 DIRECT 983 1/4 HP 2.3 208 1 Yes No GREENHECK SWD-13-VG 1, 2 EF-3 ROOF 6280 0.50 DIRECT 1571 3 HP - 230 3 No Yes No GREENHECK SWD-13-VG 1, 2 EF-3 ROOF 6280 0.50 DIRECT 1571 3 HP - 230 3 No Yes No GREENHECK CSW-20-AF 1, 2, 3	THIS SHEET IS FULL SIZE AT
BASE BID 3- AIR OUTLET SCHEDULE	34"x22" 1/8" 1/2"2" 1/4" 1"
 DIFFUSER BACK PAN AND NECK SIZE AS SHOWN ON DRAWINGS. DIFFUSER BLOW PATTERN AS SHOWN ON DRAWINGS. PROVIDE SOUND-LINED ACOUSTICAL ELBOW AS SHOWN ON DRAWINGS. PROVIDE WITH OPTIONAL OPPOSED BLADE DAMPER FOR BALANCING. LOCATE DAMPER QUADRANTS IN AN ACCESSIBLE LOCATION FOR BALANCING. 	# DESCRIPTION DATE
AREA AREA FINISH USE REMARKS TAG SERVED FINISH USE REMARKS A AS NOTED OFF WHITE S/A SURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RS B AS NOTED OFF WHITE S/A SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FS C AS NOTED OFF WHITE D/A SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FS	DATE 11/10/17 DRAWN AB CHECK GJ PROJECT 2017-49
CAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RLDAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL	SHEET NO.
CONSTRUCTION DOCUMENTS	M1.0

BASE BID 1 - DOMESTIC WATER HEATER SCHEDULE - GAS FIRED	STR. OF. ALAST
1. SET OUTLET TEMPERATURE TO 120°F. 2. PROVIDE CONDENSATE NEUTRALIZER KIT.	GREGORY JERNSTROM
Image: Recovery rateRecovery rateImputStorageELECTRICALBASIS OF DESIGNEQ. IDDESCRIPTIONGPH ΔT (MBH)(GAL)VOLTAGEPHASEMFR.MODELWH-196% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251,2WH-296% THERMAL EFFICIENCY, 5:1 TURNDOWN, ASME RATED465100 °F3991201201LOCHINVARSNA401-1251,2	ME 12971
BASE BID 1 - EXPANSION TANK SCHEDULE	
Image: March and Mar	
BASE BID 1 - PUMP SCHEDULE	
Image: Leg in the service Image: Service FLUID FLOW HEAD Image: Service Image: Service Image: Service FLUID FLOW HEAD Image: Service	AECL AECL
BASE BID 2 - EXISTING ROOFTOP AIR HANDLING UNIT SCHEDULE - REFERENCE ONLY	ENGINE AK 9950
Image: Nominal Cooling Coling Capacity (TONS) NOM Respensible Capacity (IN W.C.) Not Respensible Capacity (IN	STR NEER E R MECHANICAL 200, ANCHORAGE
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING & COOLING	N G I N SULTING M SULTING M SOMENGINEEF
 PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, AND CO2 SENSOR FOR O/A MODULATION. PROVIDE WITH DOWNTURN SUPPLY AND RETURN PLENUM AND LOW AMBIENT CONTROLS. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 	V. 5 TH AVE 22.1042
NOMINAL COOLING CAPACITY (TONS) NOMINAL COURD CFM NOMINAL COOLING CFM NOM NOM ELECTRICAL DECOMPTON DECOMPTON BASIS OF DESIGN BASIS OF DESIGN EQ. ID AREA SERVED O/A CFM O/A ESP (IN W.C.) NCA MOP VOLTAGE PHASE VFD INTEGRAL DISCONNECT MBHT MBHS EAT LAT AMB. TEMP MBH M	Defice 601 w PHONE 907.5
BASE BID 2 - ROOFTOP AIR HANDLING UNIT SCHEDULE - HEATING ONLY	
NOTES: 1. PROVIDE FREEZESTAT, VARIABLE AIR VOLUME, ECONOMIZER, BAROMETRIC RELIEF, CO2 SENSOR FOR O/A MODULATION, ELECTRONIC MODULATING GAS CONTROL WITH DUCT SENSOR AND ROOM THERMOSTAT OVERRIDE, AND 409 STAINLESS STEEL HEAT EXCHANGER. 2. PROVIDE FIELD POWERED 120V GFCI OUTLET FOR EQUIPMENT MAINTENANCE. 3. PROVIDE WITH SMOKE DETECTOR FOR UNIT SHUTDOWN. 4. PROVIDE WITH SMOKE DETECTOR FOR UNIT SHUTDOWN. 5. PROVIDE WITH DOWNTURN SUPPLY AND BACK RETURN PLENUM AND LOW AMBIENT CONTROLS. 5. PROVIDE WITH DOWNTURN SUPPLY AND DOWNTURN RETURN PLENUM AND LOW AMBIENT CONTROLS.	ER INTS
EQ. ID AREA SERVED AIRFLOW (CFM) RPM POWER MCA MOP VOLTAGE PHASE VFD MBH IN MBH OUT TEMP RISE FILTERS MFR. MODEL NOTES	
RTU-3 2ND FLOOR COMMONS 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2" MERV 8 TRANE GRAA20GDJF0 1, 2, 3, 4 RTU-4 1ST FLOOR LOBBY, WEIGHT ROOM 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2" MERV 8 TRANE GRAA20GDJF0 1, 2, 3, 4 RTU-4 1ST FLOOR LOBBY, WEIGHT ROOM 3,500 0.70 1021 2 HP 9.1 15 208 3 Yes No 200 160 42.1 °F 2" MERV 8 TRANE GRAA20GDJF0 1, 2, 3, 4 RTU-5 GYM LOCKER ROOMS, 2ND FLOOR LOUNGE 2,610 0.40 811 1 HP 5.3 8 208 3 Yes No 300 240 84.8 °F 2" MERV 8 TRANE GRCA30GDJF0 1, 2, 3, 5	ON C ROV
RTU-6 GYM 7,950 0.50 890 5 HP 20.9 33 208 3 Yes No 800 640 74.2 °F 2" MERV 8 TRANE GRAA80PDJF0 1, 2, 3, 5	ATIC 611 DULE
BASE BID 2 - FAN SCHEDULE NOTES:	CRE A 99 CHEI
 FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. PROVIDE WITH BACKDRAFT DAMPER. VFD TO MODULATE FAN SPEED BASED ON BUILDING STATIC PRESSURE SENSOR. 	REC ANIC ALASK
EQ. IDLOCATIONESP (IN WC)TYPERPMPOWERFLAVOLTAGEPHASEECM MOTORVFDINTEGRAL DISCONNECTMODELNOTESEF-1ROOF15100.75DOWNBLAST15721/2 HP4.22081YesNoGREENHECKG-123-VG1, 2EF-2ROOF7200.55DIRECT9831/4 HP2.32081YesNoOFSWD-13-VG1, 2EF-2ROOF62300.50DIRECT45712.4 IP2.302002NoNoGREENHECKSWD-13-VG1, 2EF-2ROOF62300.50DIRECT45712.4 IP2.302002NoNoGREENHECKSWD-13-VG1, 2	KENAI MECH 255 S. W KENAI, <i>J</i> LEGENI
EF-3 ROOF 6280 0.50 DIRECT 1571 3 HP - 230 3 No Yes No GREENHECK CSW-20-AF 1, 2, 3	THIS SHEET IS FULL SIZE AT 34"x22" 1/8" 1/2" 2"
NOTES: 1. DIFFUSER BACK PAN AND NECK SIZE AS SHOWN ON DRAWINGS.	# DESCRIPTION DATE
 DIFFUSER BLOW PATTERN AS SHOWN ON DRAWINGS. PROVIDE SOUND-LINED ACOUSTICAL ELBOW AS SHOWN ON DRAWINGS. PROVIDE WITH OPTIONAL OPPOSED BLADE DAMPER FOR BALANCING. LOCATE DAMPER QUADRANTS IN AN ACCESSIBLE LOCATION FOR BALANCING. 	
AREA TAGFINISHUSEREMARKSAAS NOTEDOFF WHITES/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RSBAS NOTEDOFF WHITES/ASURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FSCAS NOTEDOFF WHITER/A, E/ASURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RL	DATE11/10/17DRAWNABCHECKGJPROJECT2017-49
C AS NOTED OFF WHITE INA, E/A SORFACE MOUNTED, DOUBLE DEFLECTION, THOS SSORE D AS NOTED OFF WHITE R/A, E/A SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL	SHEET NO.
CONSTRUCTION DOCUMENTS	M1.0

		AREA			
	TAG	SERVED	FINISH	USE	REMARKS
	А	AS NOTED	OFF WHITE	S/A	SURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 300RS
	В	AS NOTED	OFF WHITE	S/A	SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 300FS
	С	AS NOTED	OFF WHITE	R/A, E/A	SURFACE MOUNTED, DOUBLE DEFLECTION, TITUS 350RL
	D	AS NOTED	OFF WHITE	R/A, E/A	SURFACE MOUNTED, ALUMINUM, DOUBLE DEFLECTION, TITUS 350FL
_					

MECHANICAL SPECIFICATIONS

GENERAL PROVISIONS

SCOPE OF WORK

THIS PROJECT IS GENERALLY DESCRIBED AS COMPRISING OF ADDING HEATING, VENTILATION, PIPING, PLUMBING, AND CONTROL SYSTEMS TO THE KENAI RECREATION CENTER LOCATED AT 224 S. WILLOW STREET IN KENAI, ALASKA. IT INCLUDES THE ADDITION OF EQUIPMENT AND SYSTEMS TO SERVE THE HEATING, VENTILATION, PIPING, PLUMBING, AND CONTROL FUNCTIONS IN THE FACILITY.

INTENT OF DRAWINGS AND SPECIFICATIONS

THE INTENT OF THE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR TO INCLUDE ALL WORK NECESSARY FOR COMPLETE MECHANICAL SYSTEMS, TESTED AND READY FOR OPERATION. BY SUBMITTING A PROPOSAL. THE CONTRACTOR REPRESENTS THEY HAVE MADE A THOROUGH EXAMINATION OF THE SITE. OF THE WORK AND ALL EXISTING CONDITIONS AND LIMITATIONS. AND THEY HAVE DETERMINED THE DOCUMENTS ARE ADEQUATE AND SATISFACTORY FOR THE COMPLETION OF THE WORK.

MECHANICAL DRAWINGS DO NO ATTEMPT TO SHOW ALL ASPECTS OF BUILDING CONSTRUCTION, WHICH WILL AFFECT THE INSTALLATION OF MECHANICAL SYSTEMS. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW ALL OFFSETS AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE INSTALLATION.

CODES AND STANDARDS

PROVIDE ALL WORK IN COMPLIANCE WITH APPLICABLE LOCAL CODES AND STANDARDS. APPLICABLE CODES AND STANDARDS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- 2009 UNIFORM PLUMBING CODE
- 2009 INTERNATIONAL MECHANICAL CODE
- 2009 INTERNATIONAL FUEL GAS CODE 2009 INTERNATIONAL FIRE CODE
- 2009 INTERNATIONAL BUILDING CODE
- 2014 NATIONAL ELECTRICAL CODE
- REQUIREMENTS OF OSHA AND EPA.
- NATIONAL FIRE PROTECTION ASSOCIATION CODES, LATEST EDITIONS ASME CODES FOR BOILER AND PRESSURE VESSELS, LATEST EDITIONS
- 10. SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITIONS
- 11. ALL LOCAL AND STATE AMENDMENTS
- 12. REQUIREMENTS OF ALL AGENCIES HAVING JURISDICTIONAL AUTHORITY OVER INSTALLATION

COORDINATION AND SCHEDULING

PROVIDE ALL ADMINISTRATIVE AND SUPERVISORY REQUIREMENTS FOR THE COORDINATION AND SCHEDULING OF THE WORK. THE MECHANICAL CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK OF OTHER CONTRACTORS, SUBCONTRACTORS, SUPPLIERS AND THE OWNER.

REVIEW ALL PROJECT DRAWINGS INCLUDING, BUT NOT LIMITED TO, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.

PLAN AND EXECUTE WORK IN COOPERATION WITH ALL OTHER TRADES. EVERY REASONABLE EFFORT SHALL BE MADE TO PROVIDE ALL CONCERNED WITH TIMELY NOTICE OF WORK AFFECTING OTHER TRADES TO PREVENT CONFLICTS OR INTERFERENCE AS TO SPACE REQUIREMENTS. DIMENSIONS, OPENINGS, BLOCK-OUTS, SLEEVING OR OTHER MATTERS WHICH WILL CAUSE DELAYS OR NECESSITATE WORK-AROUND METHODS.

CONTRACTOR RESPONSIBILITY

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN COMPLETE CONTROL OF THE CONSTRUCTED PROJECT, SUCH THAT THE COMPLETE PROJECT SHALL BE FREE OF DEFECTS AND IN CONFORMANCE WITH THE PROJECT DOCUMENTS.

THE CONTRACTOR SHALL UTILIZE PROCEDURES THAT ASSURE QUALITY CONSTRUCTION THROUGHOUT, WITH USE OF THE BEST INDUSTRY STANDARDS FOR THE SPECIFIC PROCESS USED. REMOVE AND REPLACE ANY WORK FOUND DEFECTIVE OR NOT COMPLYING WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.

WORKMANSHIP

ALL WORK TO BE DONE BY WORKMEN SKILLED IN AND REGULARLY EMPLOYED AT THAT TRADE.

PROVIDE ALL MATERIALS. PRODUCTS AND EQUIPMENT IN STRICT ACCORDANCE WITH ALL GOVERNING CODES AND ORDINANCES. THEY MUST BE OF FIRST QUALITY AND IN LINE WITH THE BEST CURRENT PRACTICES.

CUTTING AND PATCHING SHALL BE KEPT TO A MINIMUM. ALL PATCHING TO MATCH EXISTING FINISH WORK. DO NOT CUT STRUCTURAL MEMBERS.

CONTRACTOR SHALL FIELD VERIFY PRIOR TO BIDDING. VERIFY SPACE AVAILABILITY PRIOR TO FABRICATION AND INSTALLATION OF ANY WORK. VERIFY EXACT DISTANCES BETWEEN POINTS SHOWN ON DRAWINGS BY ACTUAL MEASUREMENT AT SITE.

REMOVE ALL WASTE MATERIALS AND RUBBISH FROM THE SITE, THOROUGHLY CLEAN ALL SURFACES OF WORK, AND LEAVE READY FOR OCCUPANCY BY THE OWNER. THE OWNER WILL VERIFY THE COMPLETION AND/OR CORRECTION OF THE ITEMS ABOVE.

SUBMITTALS

SUBMIT TECHNICAL DATA AND REQUIRED INFORMATION ON EQUIPMENT AND MATERIALS AS FOLLOWS:

- PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA FOR THE ITEMS LISTED IN THE INDIVIDUAL SPECIFICATION SECTIONS. PRODUCT DATA SHALL DEMONSTRATE COMPLIANCE WITH ALL SPECIFIED FEATURES AND REQUIREMENTS. 2.
- SHOP DRAWINGS: SUBMIT CONTRACTOR PREPARED DRAWINGS OF CONTRACTOR FABRICATED MECHANICAL SYSTEMS. DRAWINGS SHALL BE PREPARED AT 1/4" SCALE USING COMPUTER AIDED SOFTWARE UNLESS INDICATED OTHERWISE. DRAWINGS SHALL SHOW EXACT LOCATION OF EQUIPMENT, PIPING AND DUCTWORK, EACH SECTION OF SHOP FABRICATED DUCT OR PIPE AND LOCATION OF FIELD JOINTS, SUPPORTS AND BUILDING ATTACHMENTS.
- REPORTS AND CERTIFICATES: INDICATE AND INTERPRET TEST RESULTS FOR COMPLIANCE WITH PERFORMANCE REQUIREMENTS. PROVIDE PERFORMANCE CERTIFICATES.
- EQUIPMENT SEISMIC RESTRAINT: CONTRACTOR TO PROVIDE STRUCTURAL AND SEISMIC CALCULATIONS PLUS FASTENING DETAILS FOR ALL APPLICABLE EQUIPMENT TO INCLUDE ENGINEER'S STAMP AND SIGNATURE, FOR STRUCTURAL REVIEW ON A DEFERRED SUBMITTAL BASIS.

PERMITS, INSPECTIONS AND FEES

CONTRACTOR SHALL ARRANGE FOR ALL PERMITS AND INSPECTIONS REQUIRED IN CONNECTION WITH THIS INSTALLATION. THE CONTRACTOR SHALL PRESENT THE OWNER WITH PROPERLY SIGNED CERTIFICATES OF FINAL INSPECTION BEFORE THE WORK WILL BE ACCEPTED.

CONTRACTOR SHALL CALL FOR ALL INSPECTIONS BY LOCAL BUILDING OFFICIALS WHEN THEY BECOME DUE, AND SHALL NOT COVER ANY WORK UNTIL APPROVED BY THESE GOVERNING AUTHORITIES.

CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR WATER, STEAM, GAS AND DRAINAGE SERVICES, ETC., ASSOCIATED WITH THE WORK AND INCLUDE REQUIRED PAYMENTS FOR METERS, PIPING, SERVICES, CONNECTION CHARGES AND MATERIALS FURNISHED AND INSTALLED BY UTILITY COMPANIES. WORK AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH RULES OF RESPECTIVE AUTHORITIES.

FINAL CHECKOUT AND PROJECT CLOSEOUT

THE OWNER HAS FULL AUTHORITY TO SEE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE OWNER WILL REQUIRE A COMPLETE FINAL INSPECTION OF ALL PARTS OF THE WORK. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: PLUMBING, PIPING, EQUIPMENT, DUCTWORK, WIRING, AND FINISH WORK.

THE OWNER WILL REQUIRE A WRITTEN GUARANTY THAT ALL MATERIALS AND WORKMANSHIP THAT PROVE DEFECTIVE WITHIN ONE YEAR AFTER DATE OF ACCEPTANCE WILL BE REPLACED.

OPERATION AND MAINTENANCE MANUAL

PROVIDE TWO HARD COPIES AND ONE ELECTRONIC COPY (PDF FORMAT) OF THE OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT. INCLUDE WARRANTY CERTIFICATES FOR ALL EQUIPMENT WHERE EXTENDED WARRANTIES ARE EITHER OFFERED OR REQUIRED; PROVIDE SUPPLIER CONTACT INFORMATION.

MECHANICAL SPECIFICATIONS CONT'D

BASIC MATERIALS & METHODS

- **BASIC MATERIALS** DOMESTIC WATER PIPE: TYPE L HARD DRAWN COPPER TUBING, WROUGHT SOLDER TYPE FITTINGS, LEAD FREE SILVER SOLDER OR CROSS-LINKED POLYETHYLENE (PEX A) PIPE, FITTINGS, AND MANIFOLD SYSTEMS SUITABLE FOR DOMESTIC WATER SYSTEMS. CONDENSATE NON-POTABLE WATER PIPE: TYPE HDPE PIPE AND FITTINGS. PLASTIC VALVES ARE NOT ACCEPTABLE. 3. NATURAL GAS PIPE: BLACK STEEL, ASTM A120 OR A53 GRADE A OR B, STANDARD WEIGHT. FLEXIBLE CONNECTORS AT ALL OUTSIDE GRADE PENETRATIONS, ANSI Z21.24 COPPER ALLOY. STEEL FITTINGS: A. LOW PRESSURE (7" WC), NPS 3/4 TO 2 INCH – STEEL PIPE WITH THREADED JOINTS AND MALLEABLE-IRON THREADED FITTINGS. 4. VALVES: SELECT VALVES OF THE BEST TYPE AND QUALITY SUITED FOR THE SPECIFIC SERVICE AND PIPING SYSTEM USED. MINIMUM WORKING PRESSURE 150 PSIG W.O.G. BALANCING VALVES: CIRCUIT SETTER TYPE, DUCTILE IRON BODY WITH BRONZE DISC, SUITABLE FOR FLOW MEASUREMENT, FLOW BALANCING, AND TIGHT SHUTOFF. DIELECTRIC UNIONS: PROVIDE AT EACH JOINT BETWEEN DISSIMILAR-METALS. ESCUTCHEON PLATES: SPRING CLIP TYPE AT WALLS AND CEILINGS. PIPE INSULATION: FIBERGLASS PIPE INSULATION WITH FACTORY APPLIED ALL-SERVICE JACKET; FACTORY PRE-MOLDED PVC FITTING AND VALVE COVERS. THERMAL CONDUCTIVITY K=0.24 AT 100°F MEAN TEMPERATURE. THICKNESS: 1.0-INCH FOR DOMESTIC COLD, HOT AND HOT WATER CIRCULATION WATER SYSTEMS. PROVIDE A 20 GAUGE SHEET METAL SLEEVE WITH MINERAL WOOL PACKING, FULL DEPTH, AT ALL WALL PENETRATIONS. PIPE SUPPORTS: SUPPORT SINGLE PIPES WITH INDIVIDUAL HANGERS OR PROVIDE MULTIPLE PIPE TRAPEZE HANGERS. INSTALL COLD WATER PIPE HANGERS ON THE OUTSIDE OF THE INSULATION. SUPPORT FROM BEAMS USING APPROPRIATE BEAM CLAMPS AND HANGER RODS. SUPPORT HORIZONTAL PIPING RUNS AT FIVE FEET ON CENTERS AND AT CHANGES OF DIRECTION. CONFORM TO IMC AND UPC REQUIREMENTS. 10. DUCTWORK: ALL DUCTWORK SHALL BE GALVANIZED STEEL, FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, 2" W.G. PRESSURE CLASS FOR LOW PRESSURE SYSTEMS AND 4" W.G. FOR MEDIUM PRESSURE SYSTEMS. DUCT SEALER SHALL BE UL LABELED DUST SEALER AS MANUFACTURED BY 3M COMPANY OR EQUAL. EXPOSED DUCT FITTINGS SHALL BE SEALED WITH HARDCAST DUCT SEALANT TAPE APPLIED IN A NEAT AND UNIFORM STYLE. HARDCAST TAPE SHALL BE SUITABLE FOR PAINTING (PAINTING BY OTHERS). DUCT FITTINGS SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA STANDARDS. DUCT RUNS SHALL COORDINATE WITH WALLS, SUSPENDED CEILINGS, LIGHT FIXTURES, ROOF TRUSSES AND SIMILAR FINISHED WORK. DUCT OPENING SHALL BE COVERED DURING CONSTRUCTION TO PREVENT ENTRANCE OF DUST AND DEBRIS. 11. DUCT INSULATION: ALL SUPPLY AIR DUCTWORK, OUTSIDE AIR INTAKE DUCTWORK, RELIEF DUCTWORK, COMBUSTION AIR DUCTWORK, AND EXHAUST DUCTWORK BACK 10 FT. FROM THE EXTERIOR DISCHARGE, SHALL BE INSULATED WITH A COMMERCIAL GRADE, GLASS FIBER, REINFORCED FOIL FACED DUCT WRAP INSULATION SIMILAR TO OWENS-CORNING TYPE 150, 2" NOMINAL THICKNESS, 1.5# DENSITY, OR APPROVED EQUAL. INSULATION SHALL BE APPLIED TO COVER ALL EXTERIOR SURFACES OF DUCTWORK AND SEALED TIGHTLY TO PREVENT LEAKAGE. 12. OUTDOOR DUCTS AND JACKETING: RECTANGULAR DUCTS WITH MINERAL-FIBER BOARD INSULATION, THICKNESS 2 INCHES, WITH A MINIMUM INSTALLED INSULATION R-VALUE OF 7. FIELD-APPLIED ALUMINUM JACKET: SHEETS MANUFACTURED FROM ALUMINUM ALLOY COMPLYING WITH ASTM B 209, AND HAVING AN INTEGRALLY BONDED MOISTURE BARRIER OVER ENTIRE SURFACE IN CONTACT WITH INSULATION, JACKET TO HAVE EMBOSSED FINISH AND 0.04-INCH THICKNESS. 13. WATER HEATER STACK: PVC OR CPVC PIPE AND FITTINGS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. 14. VALVE TAGS: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR, MINIMUM 1-1/2 INCHES DIA. METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE, MINIMUM 1-1/2 INCHES DIAMETER WITH SMOOTH EDGES. TAG CHART: TYPEWRITTEN LETTER SIZE LIST OF APPLIED TAGS AND LOCATION IN ANODIZED ALUMINUM FRAME. ADDITIONAL METHODS COORDINATE ALL NEW WORK WITH THE CONDUITS, LIGHTS, HANGERS, STRUCTURAL MEMBERS AND OTHER TRADES SUBMIT PROJECT DATA, WARRANTIES, AND O&M DATA FOR REVIEW SEE SCHEDULES FOR EQUIPMENT REQUIREMENTS AND SPECIFICATIONS. INSTALL ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. INSTALL ONLY PRODUCTS SPECIFICALLY DESIGNED AND APPROVED FOR THE TYPE OF **OPERATION OR SERVICE. TESTING & CLEANING** TEST THE HEATING AND DOMESTIC WATER SYSTEMS AT 100 PSI WITH NO PRESSURE DROP OVER A FOUR HOUR PERIOD, WITH SYSTEM STABILIZED AT DESIGN TEMPERATURE. OBSERVE SYSTEM FOR LEAKS, FAULTY CIRCULATION, EXPANSION AND CONTRACTION, AND REPAIR ANY DEFICIENCIES. FLUSH AND STERILIZE THE DOMESTIC WATER SYSTEMS AS FOLLOWS: PRESSURE FLUSH THE DOMESTIC WATER PIPING SYSTEMS TO REMOVE PARTICULATE FROM THE SYSTEM. STERILIZE WITH CHLORINE TO OBTAIN 50 PPM FOR 24 HOURS; FLUSH WITH CLEAN WATER UNTIL RESIDUAL CHLORINE CONTENT IS LESS THAN 1.0 PPM. EXERCISE PROPER CARE DURING CLEANING AND FLUSHING OF SYSTEM TO ENSURE NO DAMAGE IS DONE TO ANY EQUIPMENT, VALVES, OR FITTINGS. **BALANCING & STARTUP** THE CONTRACTOR SHALL HIRE AN INDEPENDENT AIR BALANCING COMPANY TO PERFORM THE AIR BALANCING OF THE COMPLETE HEATING AND HVAC SYSTEMS PER THE SMACNA BALANCING AND ADJUSTMENT MANUAL. ADJUST AIR QUANTITIES TO WITHIN 5% OF THE DESIGN VALUES. COMPLETE AND SUBMIT THE FINAL TESTING AND BALANCING REPORT BEFORE THE PROJECT IS COMPLETE. SEQUENCE OF OPERATION AIR SYSTEMS 1. ROOFTOP AIR CONDITIONING UNIT - HEATING AND COOLING (RTU-2): THE UNIT SUPPLIED CONTROL SYSTEM CONTROLS THE OPERATION OF THE COMPRESSOR, EVAPORATOR, FAN, CONDENSING UNIT, AND GAS HEATER. A WALL-MOUNTED 7-DAY TIME CLOCK AND THERMOSTAT (SUPPLIED WITH THE UNIT) CYCLES THE UNIT COMPONENTS TO MAINTAIN THE SELECTED SPACE TEMPERATURE. A SMOKE DETECTOR IN THE FAN RETURN AIR DUCT IS WIRED TO SHUTDOWN FAN ON DETECTOR ACTIVATION, PROVIDE ALARM AT THE FIRE ALARM PANEL. 2. ROOFTOP AIR CONDITIONING UNIT - HEATING ONLY (RTU-3 THROUGH RTU-6): THE UNIT SUPPLIED CONTROL SYSTEM CONTROLS THE OPERATION OF THE FAN AND GAS HEATER. A WALL-MOUNTED 7-DAY TIME CLOCK AND THERMOSTAT (SUPPLIED WITH THE UNIT) CYCLES THE UNIT COMPONENTS TO MAINTAIN THE SELECTED SPACE TEMPERATURE. A SMOKE DETECTOR IN THE FAN RETURN AIR DUCT IS WIRED TO SHUTDOWN FAN ON DETECTOR ACTIVATION: PROVIDE ALARM AT THE FIRE ALARM PANEL. 3. EXHAUST FANS: SEE FAN SCHEDULE FOR ADDITIONAL CONTROL INFORMATION, PROVIDE ALARM AT THE FIRE ALARM AND CENTRAL PANELS. A. EF-1: FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. FAN SHALL RUN CONTINUOUSLY AT THE DESIGN CFM WHILE THE BUILDING IS NORMALLY OCCUPIED. EF-2: FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. FAN SHALL RUN CONTINUOUSLY AT THE DESIGN CFM WHILE THE BUILDING IS NORMALLY OCCUPIED. EF-3: FAN SPEED TO MODULATE UP TO THE MAXIMUM DESIGN SPEED OF 6,280 CFM THROUGH THE VARIABLE FREQUENCY DRIVE MAINTAINING THE BUILDING STATIC PRESSURE. MOTOR OPERATED DAMPER TO BE INTERLOCKED WITH FAN STATUS TO OPEN WHEN FAN IS ACTIVATED AND CLOSE WHEN FAN IS DEACTIVATED. COORDINATE WITH THE ENGINEER ON THE LOCATION OF THE ROOM STATIC PRESSURE SENSORS. INITIAL SETPOINT OF THE BUILDING PRESSURE IS +0.05" W.C. (ADJUSTABLE). 4. GYMNASIUM PRESSURE CONTROL: GYMNASIUM STATIC PRESSURE IS MAINTAINED BY MODULATING THE MOTOR OPERATED DAMPER MAINTAINING THE GYMNASIUM STATIC PRESSURE SETPOINT. PROVIDE A ROOF MOUNTED REFERENCE PRESSURE SENSOR AND TWO (2) ROOM MOUNTED STATIC PRESSURE SENSORS AND DIFFERENTIAL PRESSURE TRANSMITTER. COORDINATE WITH THE ENGINEER ON THE LOCATION OF THE ROOM STATIC PRESSURE SENSORS. INITIAL SETPOINT OF THE GYMNASIUM PRESSURE IS +0.05" W.C. (ADJUSTABLE). PLUMBING CONTROLS
 - 1. WATER HEATER (WH-1, WH-2): THE WATER HEATER PACKAGE INCLUDES INTEGRAL FACTORY WIRED OPERATING CONTROLS THAT WILL CONTROL THE OPERATION OF THE SYSTEM. INITIAL SETPOINT OF THE DOMESTIC HOT WATER IS 120°F BEFORE THE MIXING VALVE. 2. HOT WATER CIRCULATING PUMP (PMP-1) WILL RUN CONTINUOUSLY.

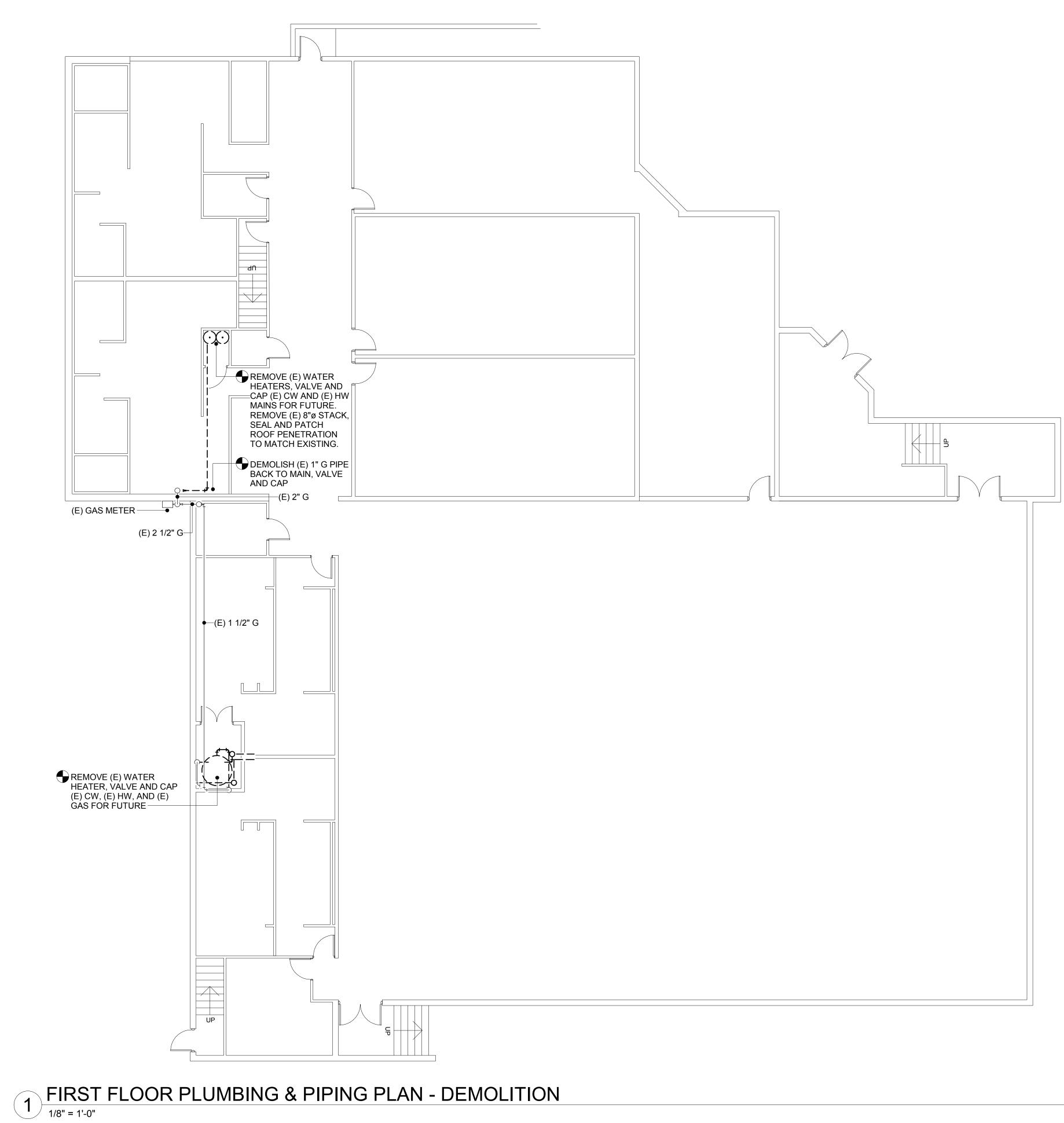
OFFICE 601 W. S TH AVENUE, SUITE 200, ANCHORAGE AK 99501	PHONE 907.522.1042 AECL AECL AILINE WWW.JERNSTROMENGING.COM 1146
KENAI RECREATION CENTER MECHANICAL IMPROVEMENTS 255 S. WILLOW ST. KENAI, ALASKA 99611	SPECIFICATIONS
THIS SHEET IS FULL 34"x22" 1/8" 1/2" 1/4" 1"	2"
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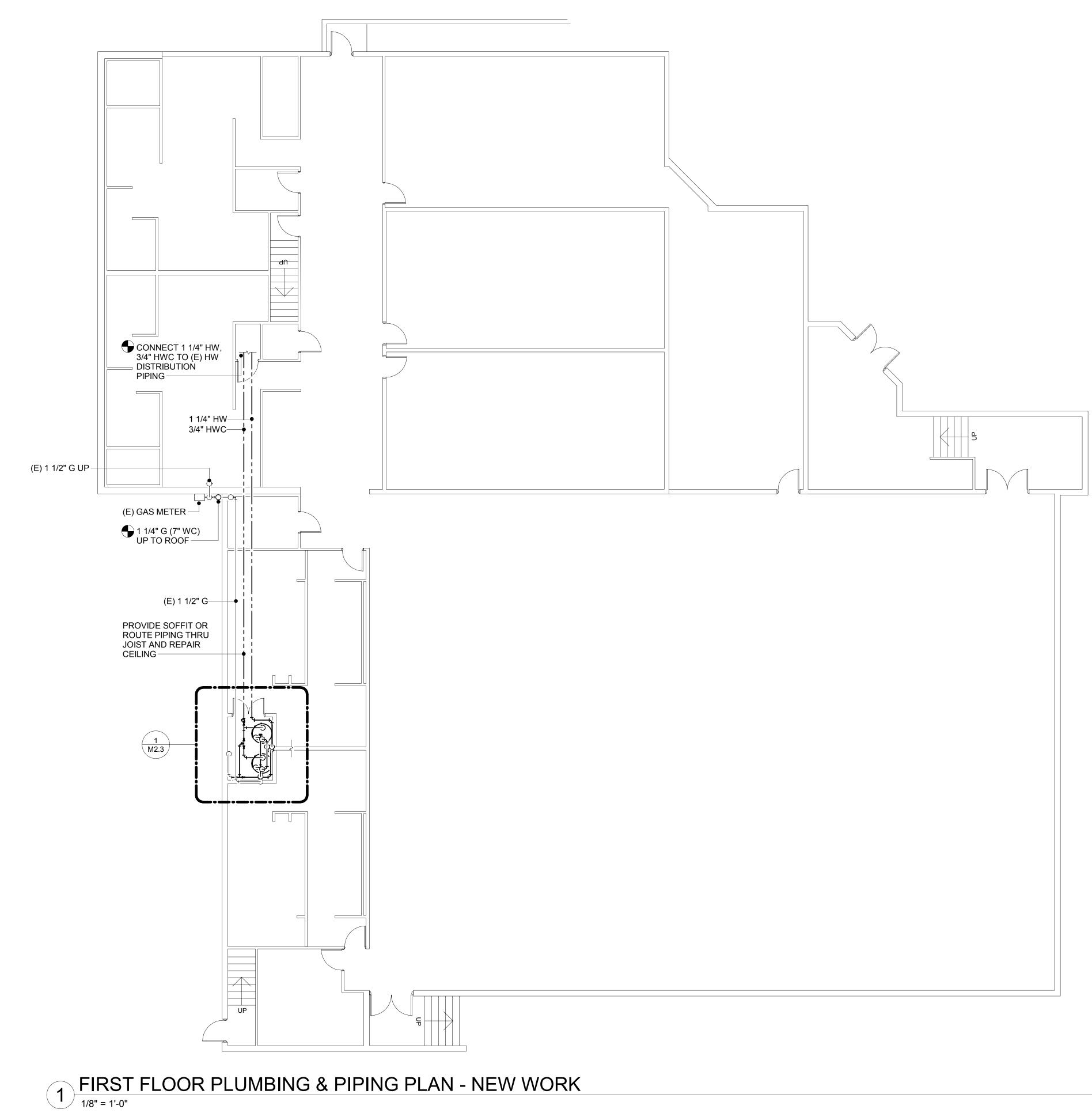
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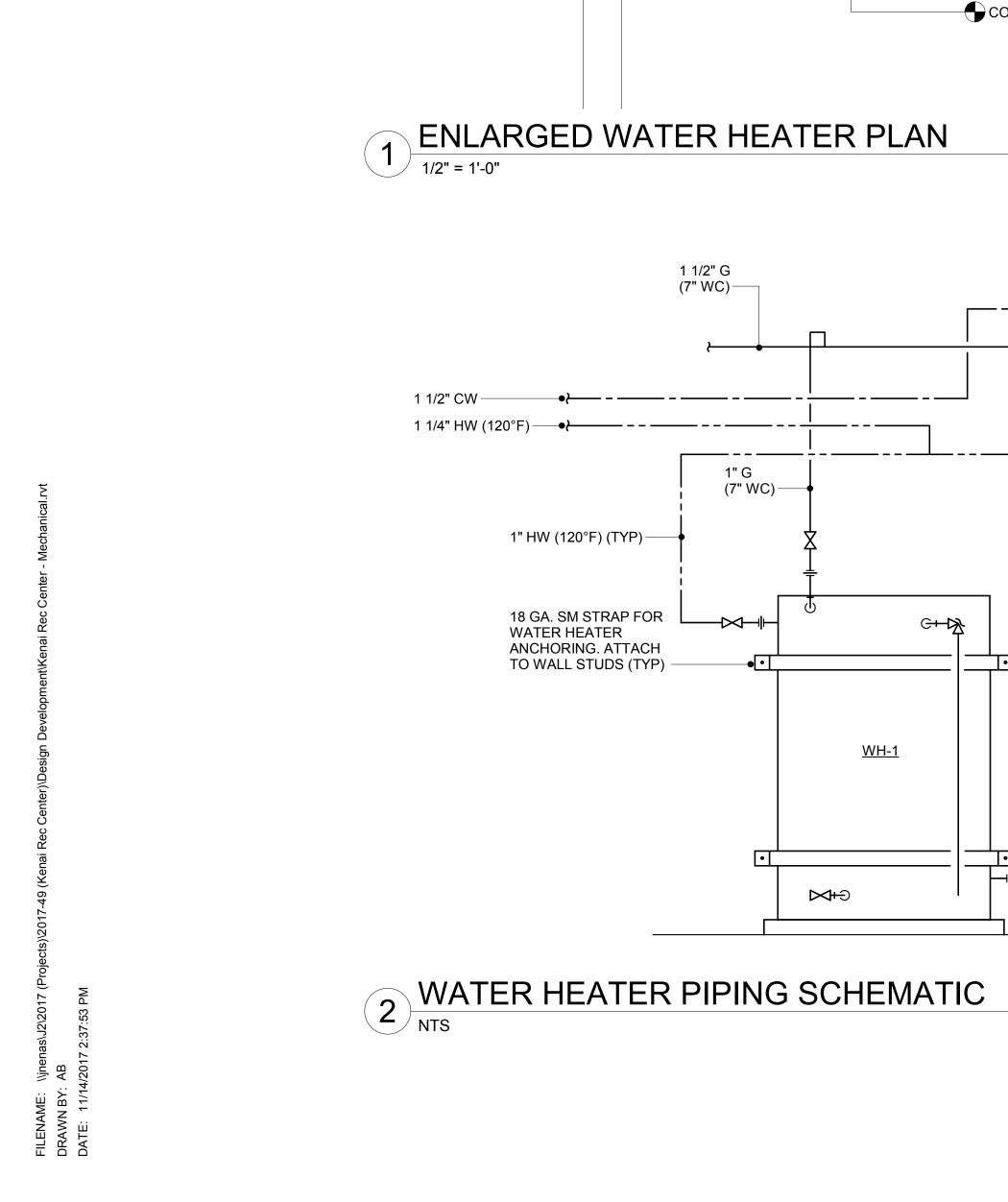
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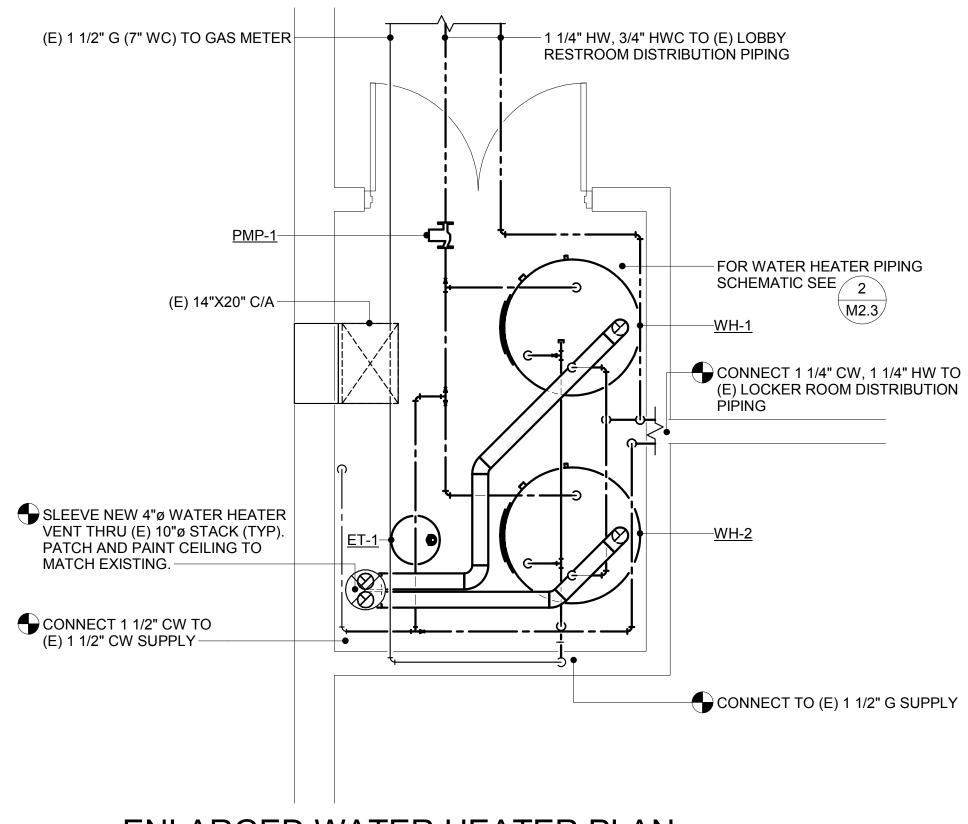
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THIS SHEET IS FULL S 34"x22" 1/8" 1/2" 1/4" 1" # DESCRIPTION	DATE
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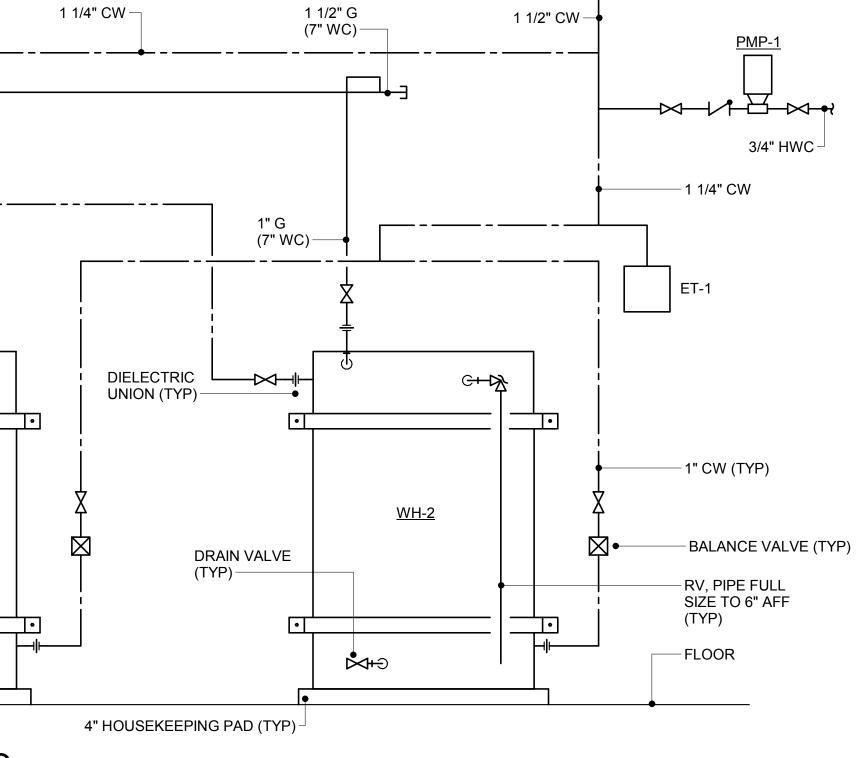
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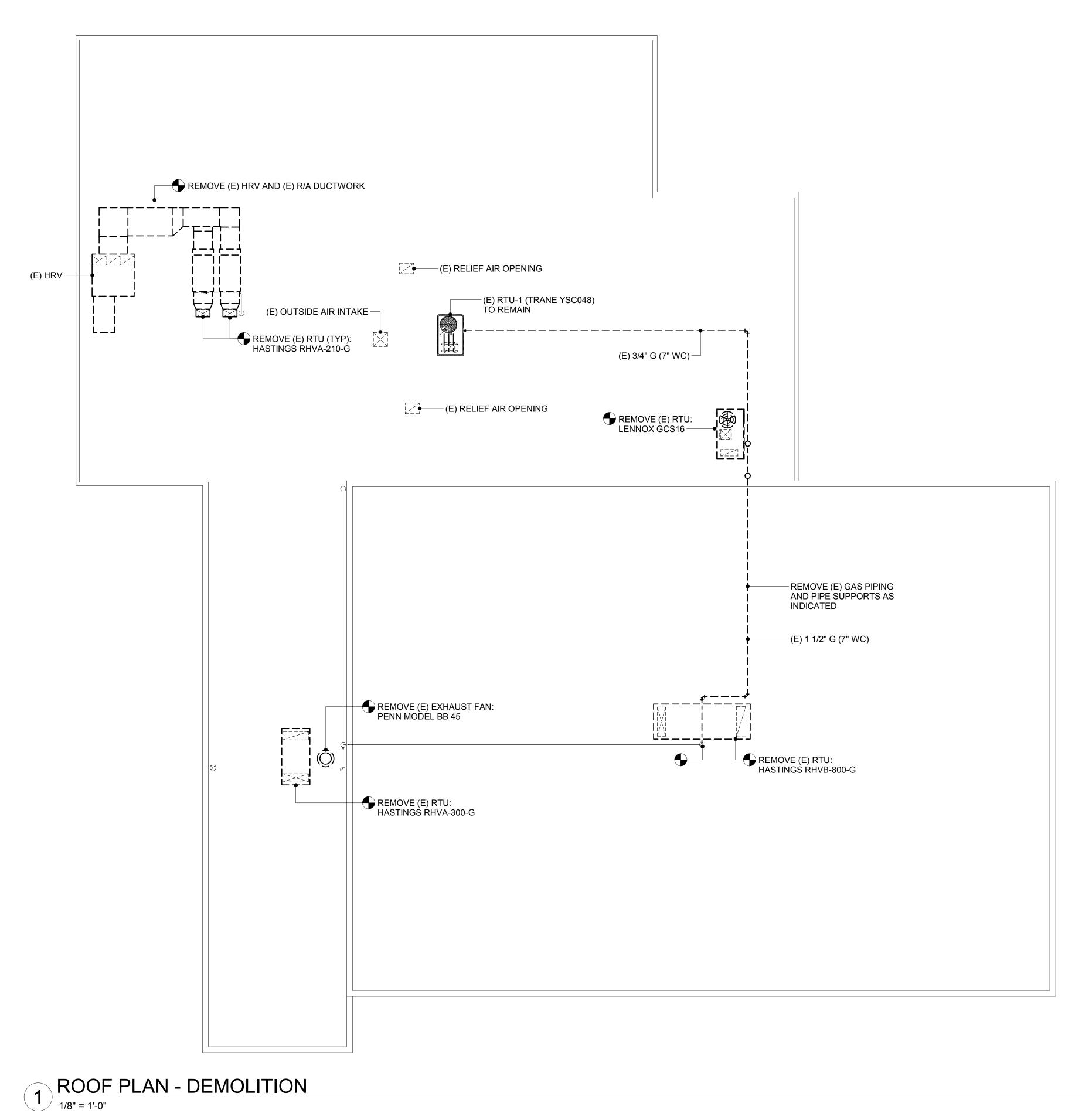
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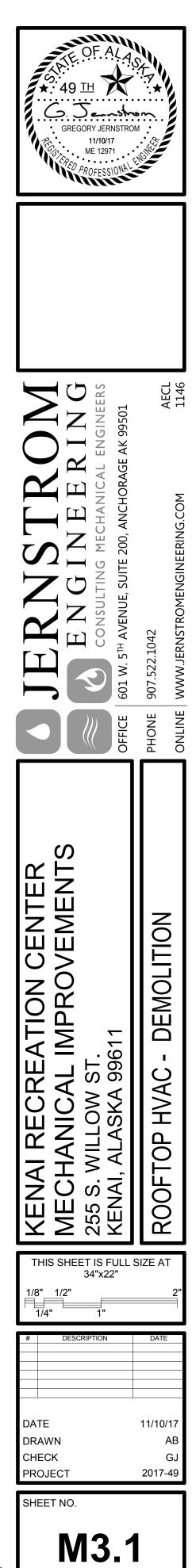
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KENAI RECREATION CENTER MECHANICAL IMPROVEMENTS 255 S. WILLOW ST. KENAI, ALASKA 99611	PLUMBING DETAILS & SCHEMATICS
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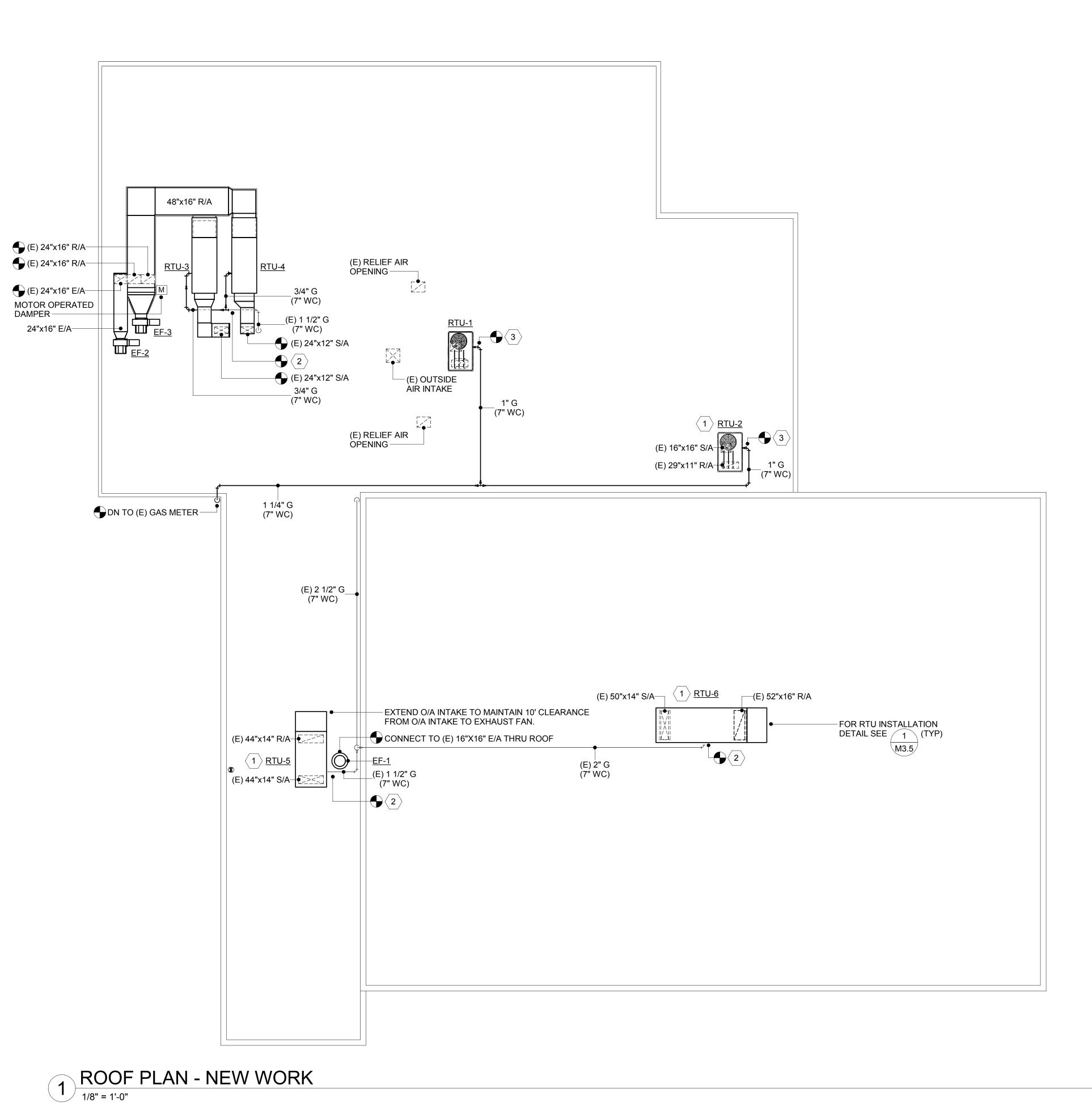


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GENERAL SHEET NOTES

1. ROOF CURBS MAY BE REUSED AS POSSIBLE.



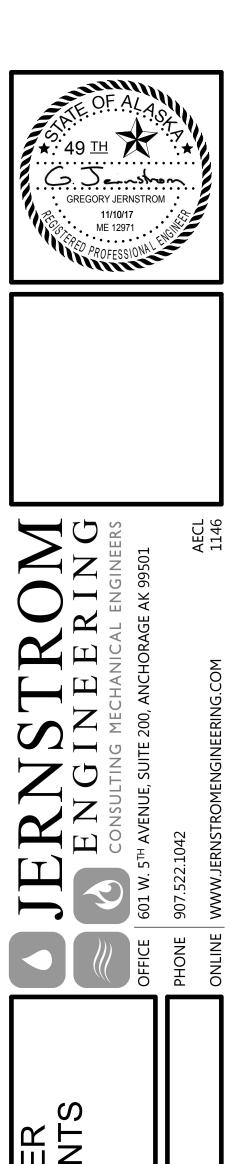


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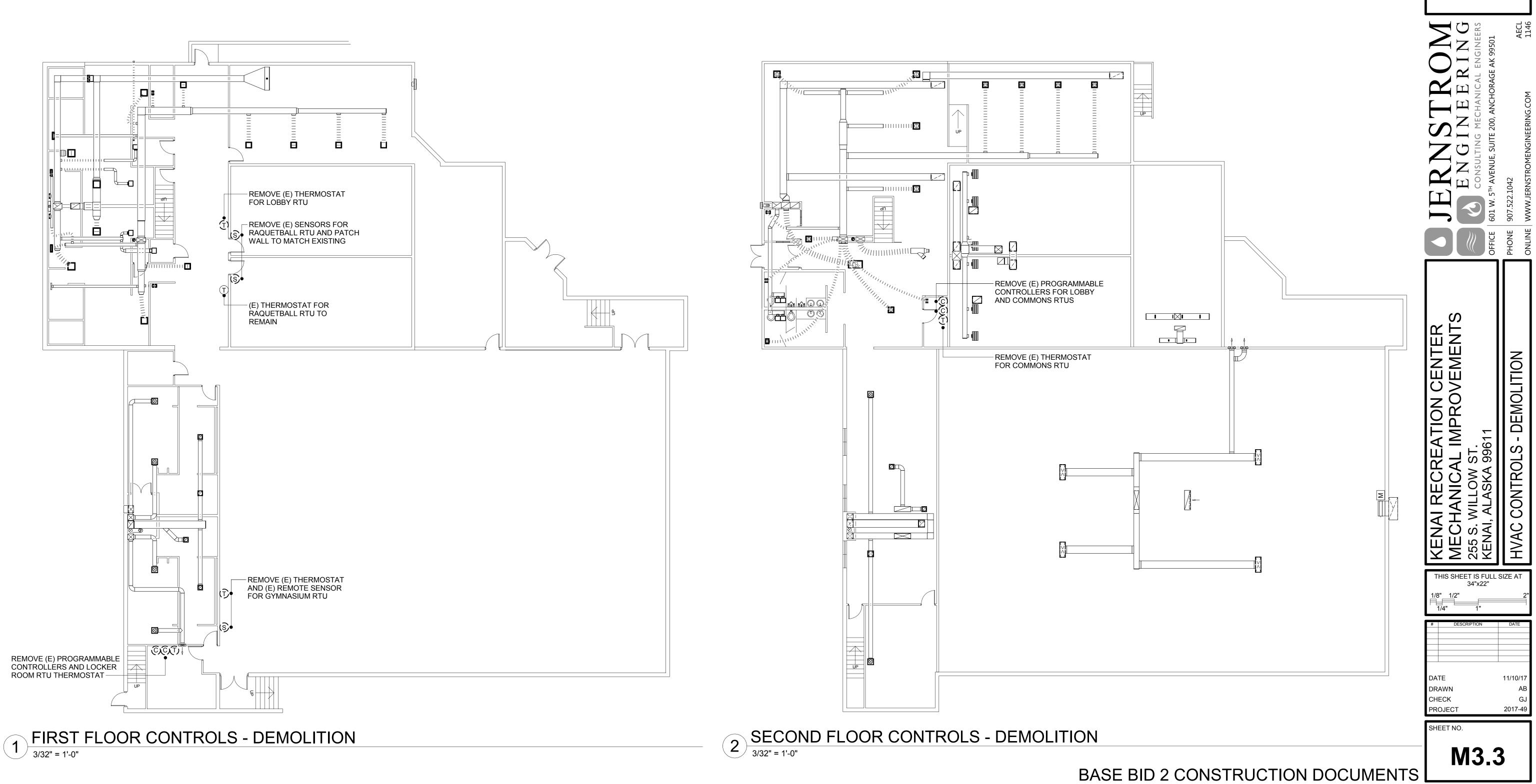


$\langle \# \rangle$ referenced sheet notes

- 1 PROVIDE CUSTOM CURB ADAPTER. FIELD VERIFY DUCT DROP SIZES AND LOCATION.
- 2 CONNECT NEW RTU TO EXISTING GAS SERVICE.
- 3 CONNECT NEW RTU TO NEW GAS SERVICE.



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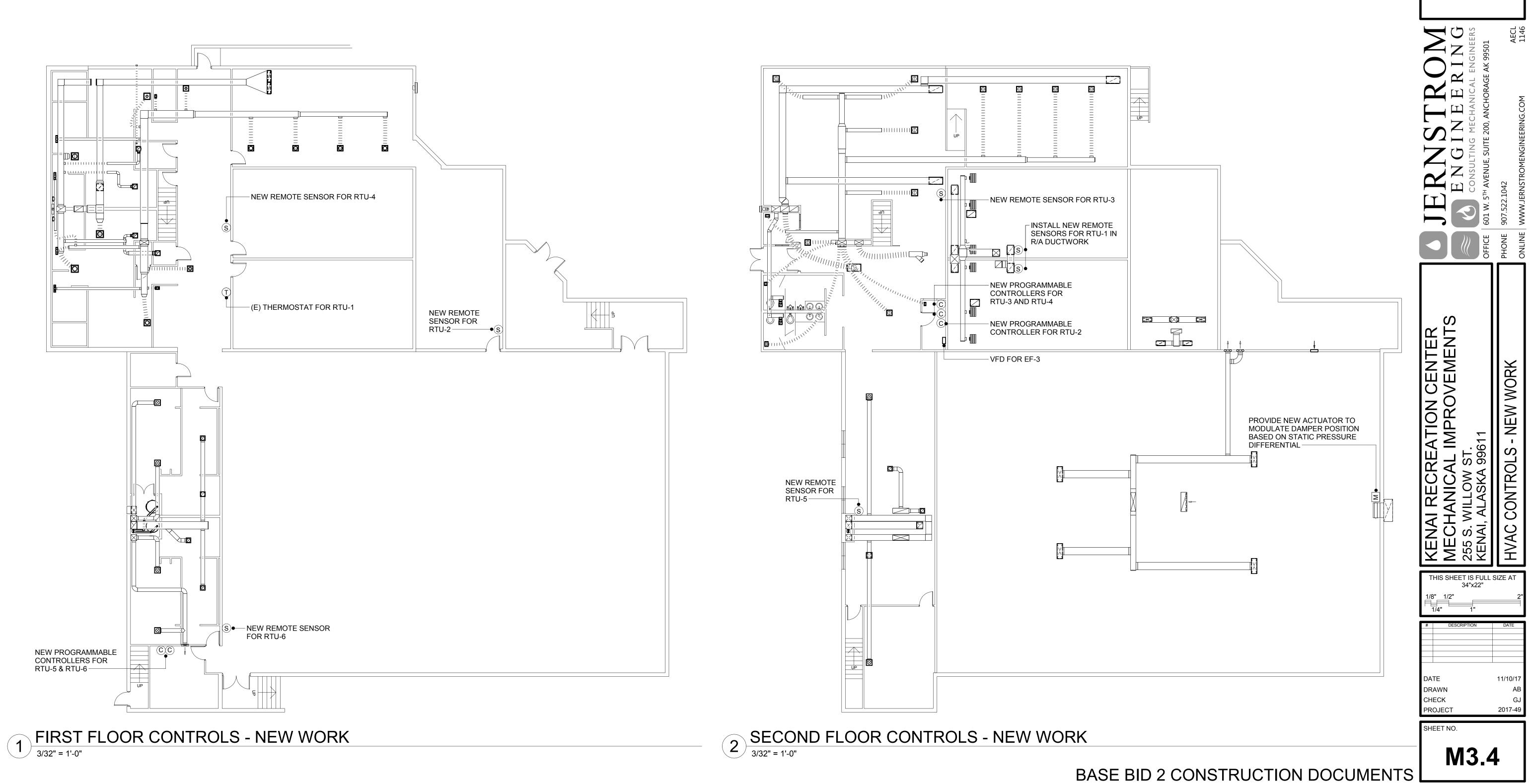
GENERAL SHEET NOTES

1. PROVIDE LABELING FOR ALL CONTROLLERS AND SENSORS (TYP).

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GENERAL SHEET NOTES

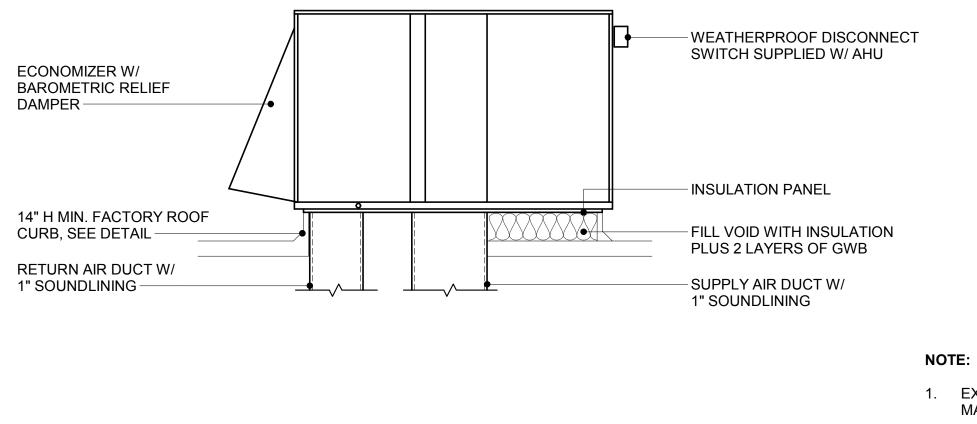
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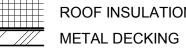
MECHANICAL SUBCONTRACTOR SHALL PROVIDE ITEMS NOTED BELOW

ROOFTOP UNIT: FASTEN TO CURB WITH STRAP		
GASKET AND SILICONE SEALING		
PRESSURE-TREATED WOODER NAILER STRIP		
FACTORY CURB: NRCA APPROVED 18 GAUGE, SQUARE WITHIN 1/8" ON DIAGONAL MEASUREMENT, WITH A MINIMUM OF 8" ABOVE TOP OF ROOF	CURB HEIGHT = 14"	
CURB SET DIRECTLY ON STEEL	•	
		•

1. EXISTING ROOFTOP UNIT CURBS MAY BE REUSED AS POSSIBLE.

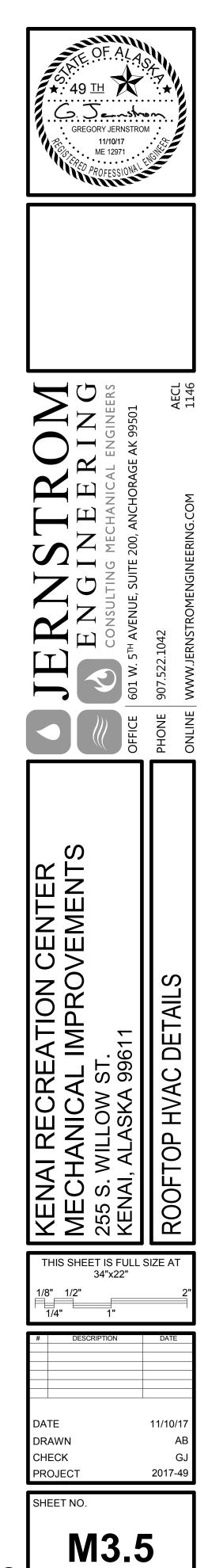


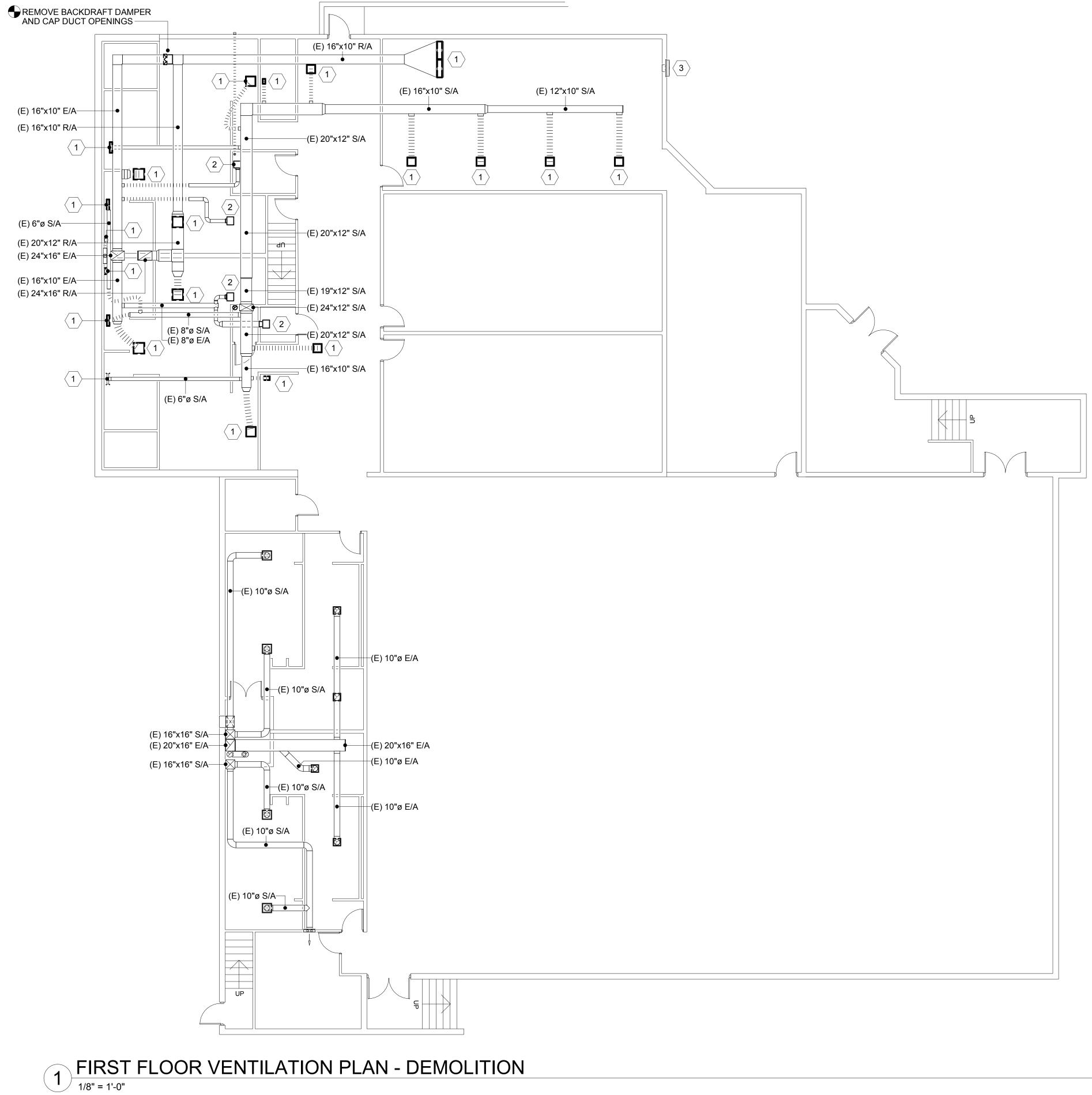
GENERAL CONTRACTOR SHALL PRIVIDE ITESM NOTED BELOW



ROOF INSULATION

SEE STRUCTURAL SUPPORT FRAME FOR UNIT & DECKING AT FULL PERIMETER OF FACTORY CURB





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$\langle \# \rangle$ referenced sheet notes

- 1 REMOVE EXISTING S/A OR R/A GRILLE. GRILLE BOOT MAY BE REPLACED OR REUSED. FIELD VERIFY CONDITIONS AND SIZES.
- 2 REMOVE EXISTING EXHAUST FAN. 3 EXISTING EXHAUST FAN TO REMAIN.

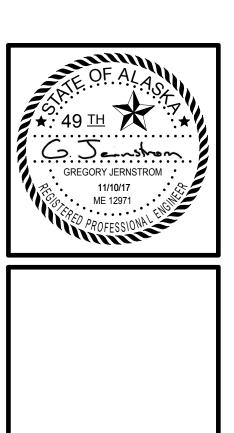
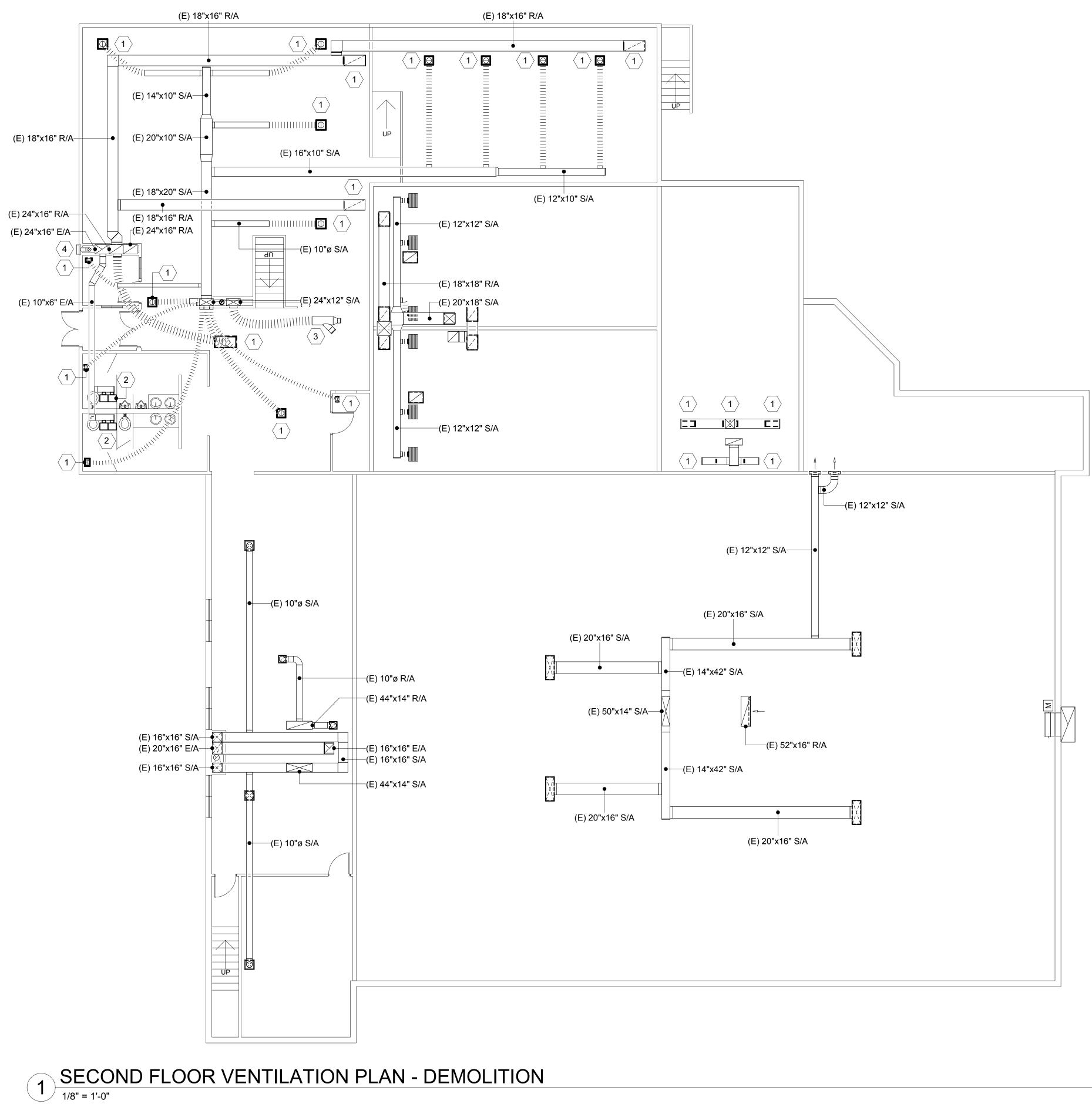


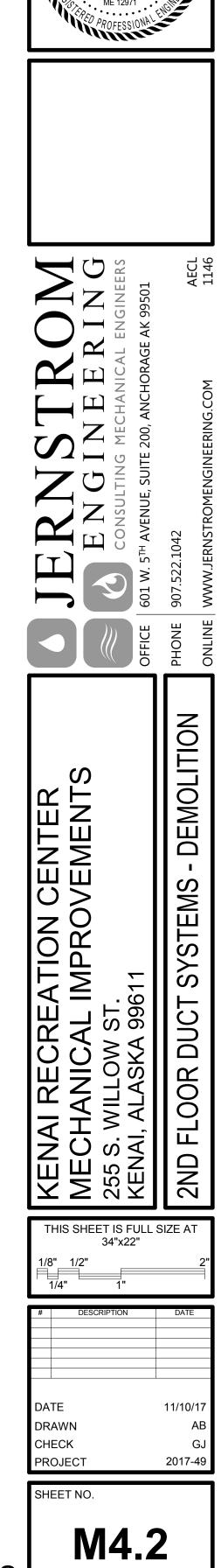
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- 2 REMOVE EXISTING EXHAUST FAN.
- 3 S/A MAIN FOR PREVIOUS RAQUETBALL VENTILATION SYSTEM, ABANDONED.
- 4 EXISTING EXHAUST FAN TO REMAIN.

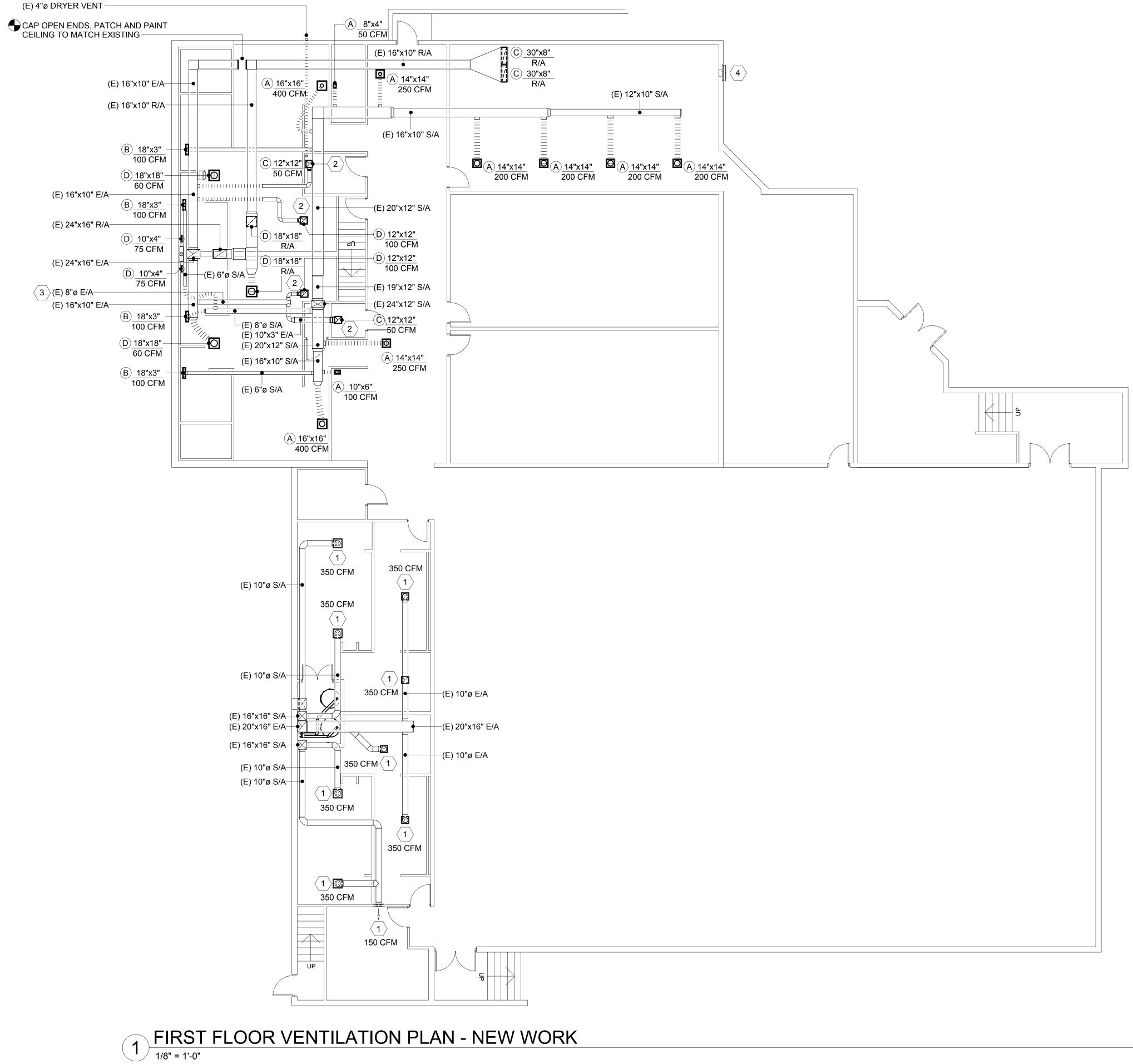


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GENERAL SHEET NOTES

1. ALL DUCTWORK TO BE CLEANED. DUCT CLEANING TO INCLUDE MECHANICAL AGITATION AND HIGH POWER VACUUM METHODOLOGY TO REMOVE ACCUMULATED DIRT AND DUST (TYP).

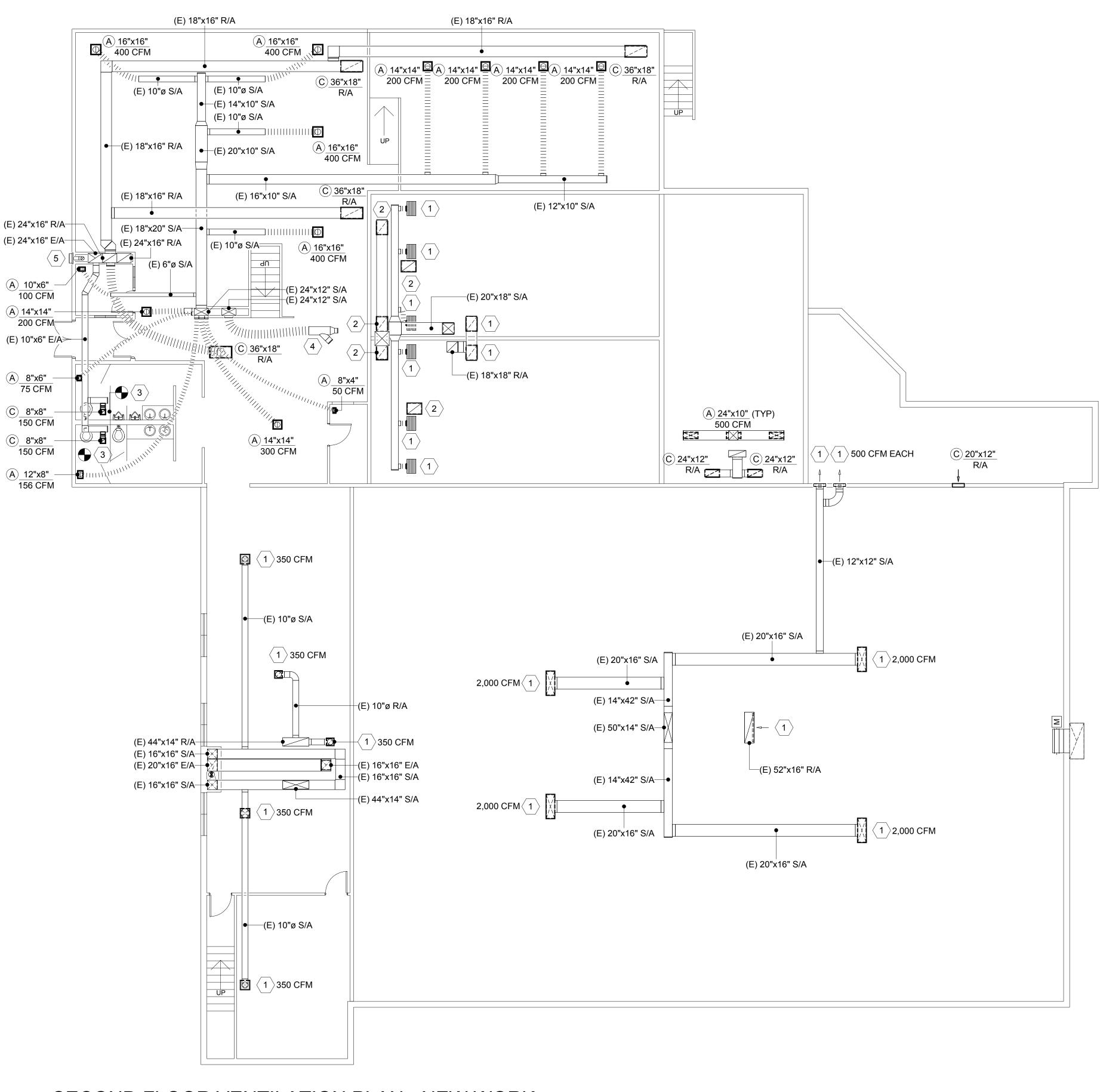


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- 1 EXISTING S/A OR R/A GRILLE TO BE REMOVED FOR
- CLEANING, REINSTALLED, AND REBALANCED (TYP). 2 INSTALL NEW E/A GRILLE TO REPLACE EXHAUST FAN. PATCH AND PAINT CEILING TO MATCH EXISTING (TYP).
- 3 CONFIRM CONNECTIONS TO EXHAUST DUCTWORK, ORIGINAL PLANS SHOWED CONNECTION TO RETURN AIR SYSTEM.
- 4 EXISTING EXHAUST FAN TO REMAIN.



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KENAI RECREATION CENTER MECHANICAL IMPROVEMENTS 255 S. WILLOW ST. KENAI, ALASKA 99611	1ST FLOOR DUCT SYSTEMS - NEW WORK
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1/8" = 1'-0"

GENERAL SHEET NOTES

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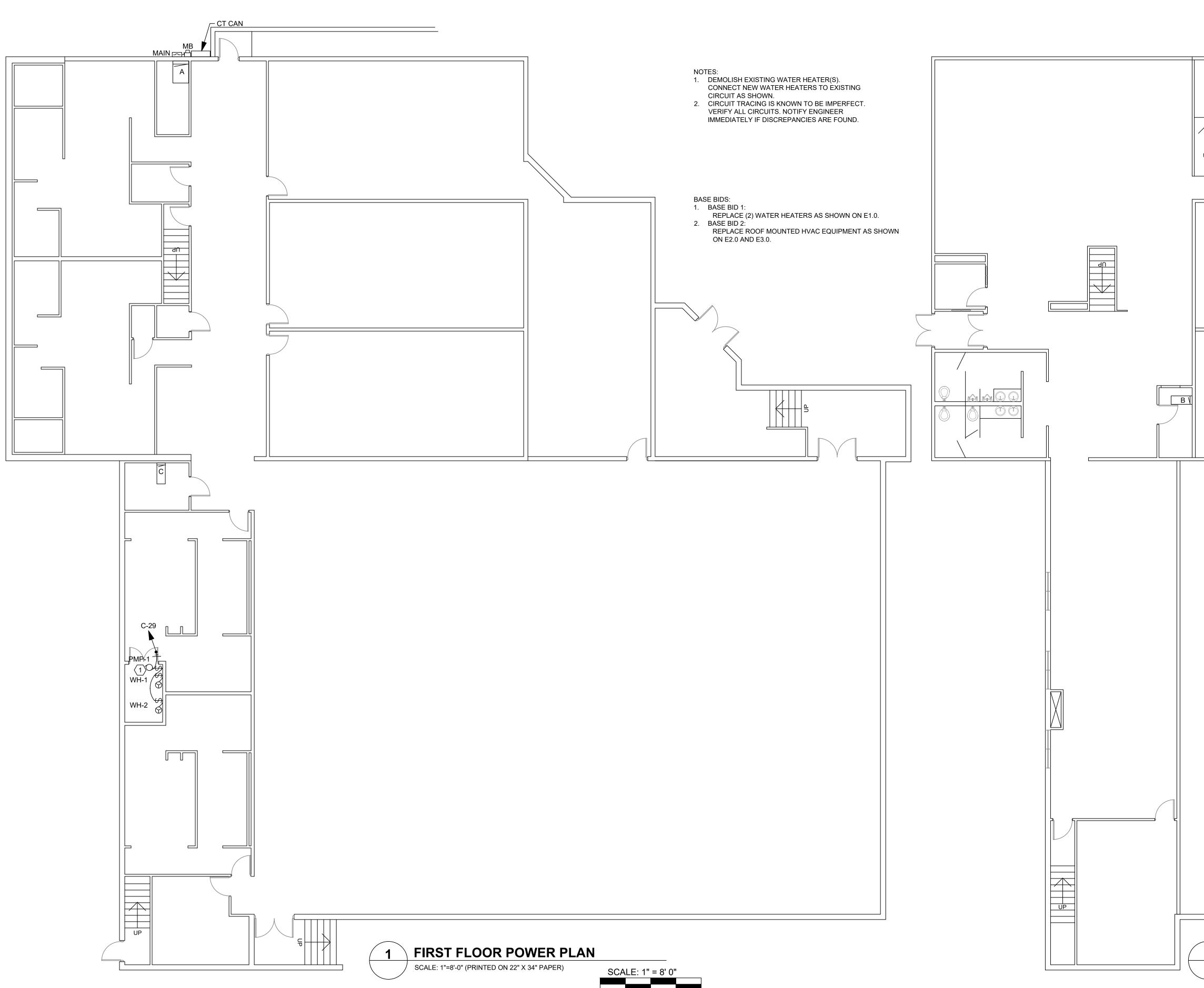


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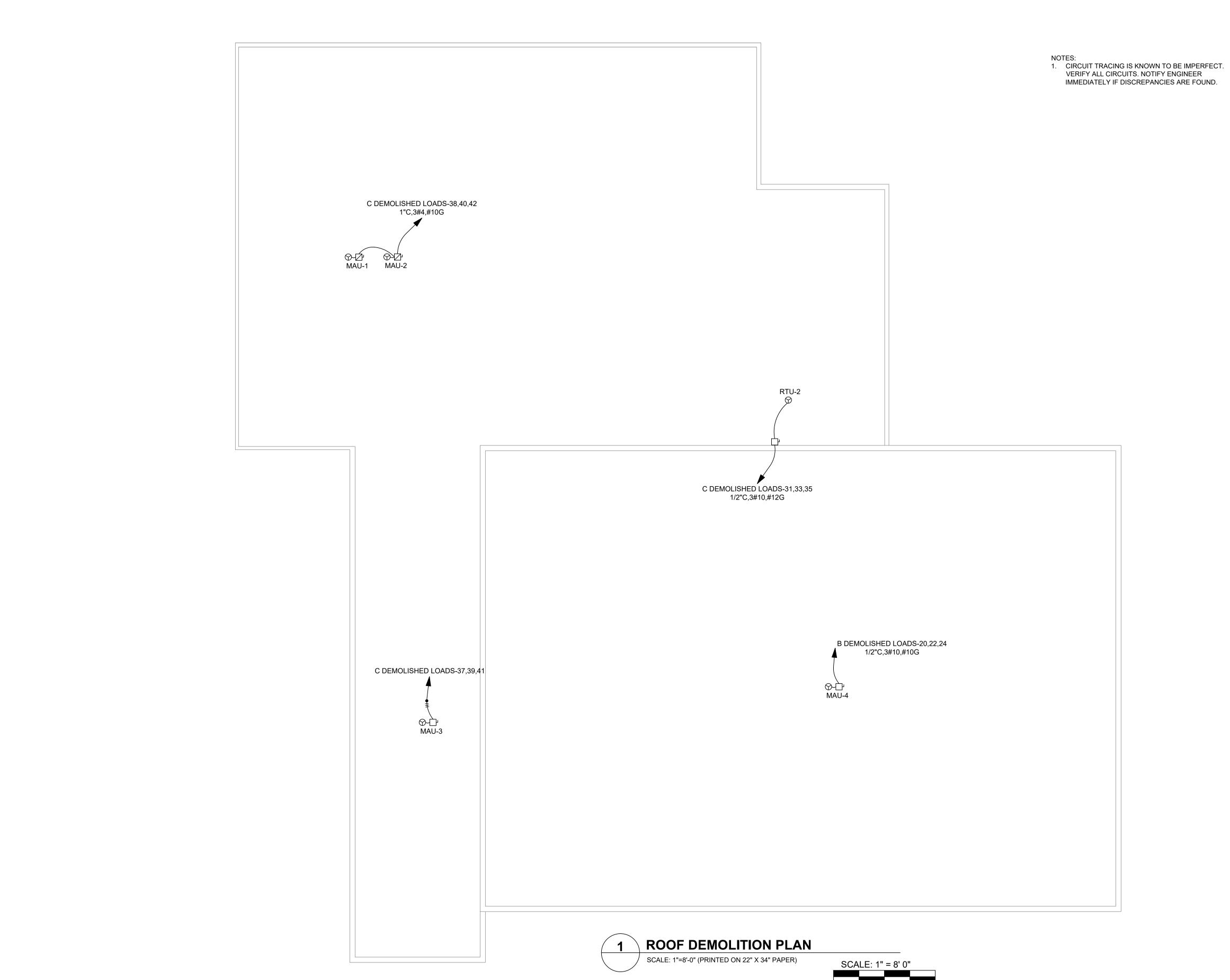
- 1 EXISTING S/A OR R/A GRILLE TO BE REMOVED FOR
- CLEANING, REINSTALLED, AND REBALANCED (TYP). 2 EXISTING RELIEF AIR INTAKE, REMOVE FOR CLEANING AND REINSTALL.
- 3 INSTALL NEW E/A GRILLE TO REPLACE EXHAUST FAN. PATCH AND PAINT CEILING TO MATCH EXISTING (TYP).
- 4 S/A MAIN FOR PREVIOUS RAQUETBALL VENTILATION SYSTEM, ABANDONED.
- 5 EXISTING EXHAUST FAN TO REMAIN.



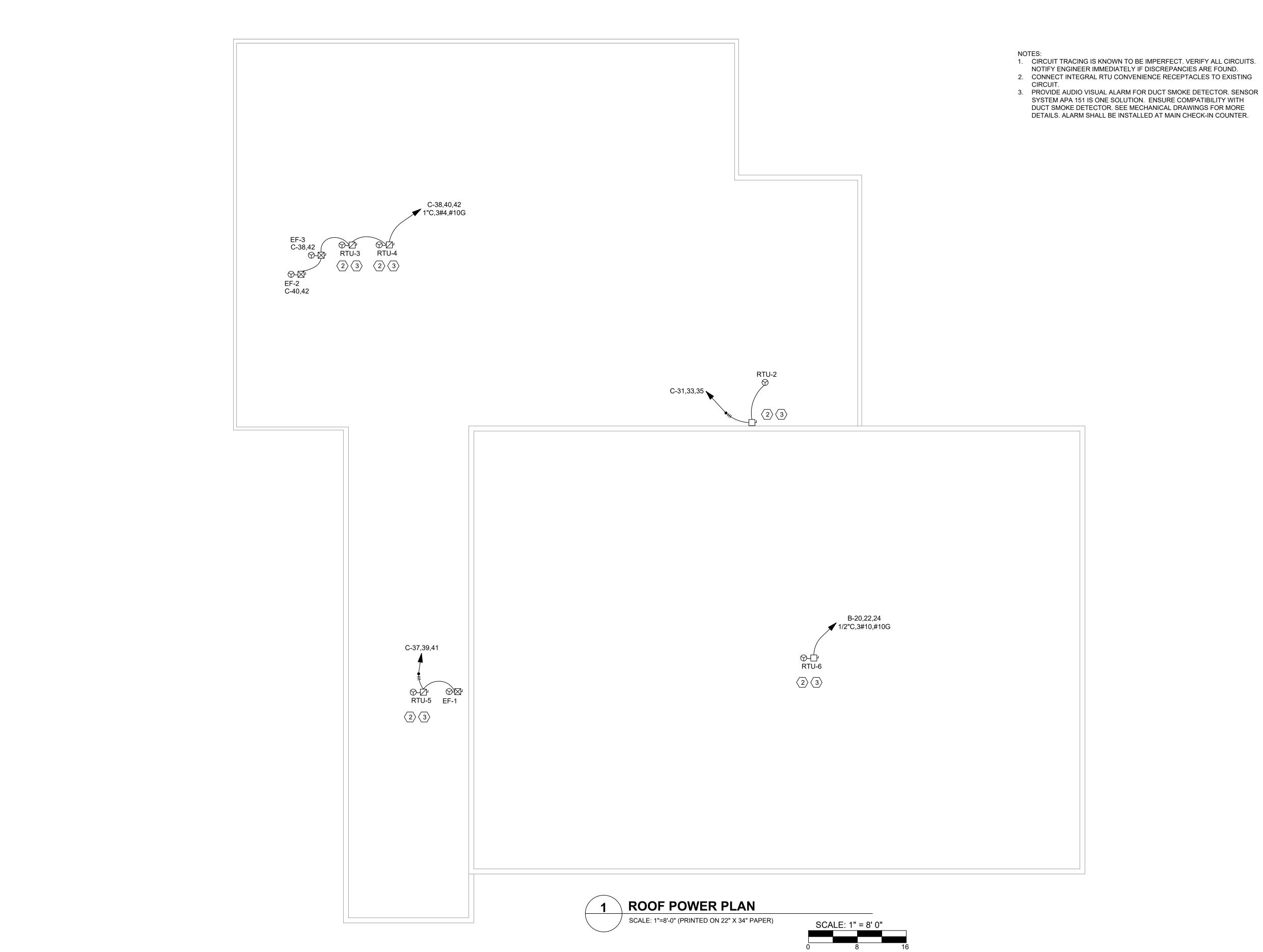
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2 SECOND FLOOR POWER PLAN SCALE: 1"=8'-0" (PRINTED ON 22" X 34" PAPER)		DATE 11/10/2017 DRAWN JSG CHECK JSG PROJECT 2017-49 SHEET NO.
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KENAI RECREATIONAL CENTER MECHANICAL IMPROVEMENTS 255 S. WILLOW ST. KENAI, AK 99611	ROOF DEMOLITION
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DATE 11 DRAWN CHECK PROJECT	/10/2017 JSG JSG 2017-49
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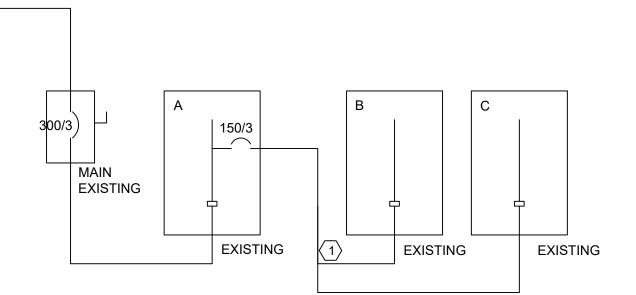
CT CAN 208Y/120V 3P 4W EXISTING	
MB EXISTING	

NOTES: 1. PANEL 'C' IS ASSUMED TO BE CONNECT TO PANEL 'B'S FEEDER. THE J-BOX WHERE THIS WOULD OCCUR WAS NOT FOUND.

NOTES:

- OPERABLE SYSTEM.
- 3. 4. 5
- WARRANTY PERIOD.
- BEST PRACTICE OF THE CRAFT.
- AREAS, XHHW FOR NONHEATED AREAS.
- DEGREES F.
- RECEPTACLES: DUPLEX CONVENIENCE RECEPTACLE WITH INTEGRAL CLASS A GROUND FAULT CURRENT INTERRUPTER U.L. NO. 493 LISTED. 12. DECORATIVE COVER PLATE: IVORY SMOOTH PLASTIC.
- OUTLETS AT THE FOLLOWING HEIGHTS FROM FINISHED FLOOR TO CENTER LINE OF OUTLET: WALL SWITCHES CONVENIENCE OUTL WEATHERPROOF CO TELEPHONE OUTLETS
- PUBLIC TELEPHONE OUTLET SPECIAL EQUIPMENT: AS NOTED ON DRAWINGS.

- SECTIONAL BOXES.



LOAD CALCULATIONS: EXISTING LOAD: 43.7 KVA (39.32 KW AT .9 PF) FROM UTILITY RECORDS NEW LOAD ADDED: 29 KVA DEMOLISHED LOAD: 23.7 KVA TOTAL LOAD: 43.7 X 1.25 + 29 - 23.7 = 59.9 KVA (166 AMPS)



1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR A COMPLETE AND

2. THE DRAWINGS ARE PARTLY DIAGRAMMATIC, NOT NECESSARILY SHOWING EXACT LOCATIONS UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH OTHER TRADES TO AVOID CONFLICTS IN CONGESTED AREAS.

CONFORM TO ALL APPLICABLE CODES, INCLUDING NFPA 70, 2014 EDITION AND LOCAL AMENDMENTS. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS. ALL WORK PERFORMED UNDER THIS CONTRACT IS TO BE FREE FROM DEFECTS IN MATERIALS AND

WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM ACCEPTANCE. ANY FAULTY MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER DURING THE

6. ALL EQUIPMENT INSTALLED UNDER THIS PROJECT SHALL BE BRACED FOR A SEISMIC EVENT IN ACCORDANCE WITH THE 2009 INTERNATIONAL BUILDING CODE SECTION 1613. 7. ALL MATERIALS SHALL BE NEW AND UNUSED, INSTALLED PER MANUFACTURER'S DIRECTIONS AND IN THE

8. USE RIGID STEEL CONDUIT WHERE UNDERGROUND OR SUBJECT TO DAMAGE. USE ELECTRICAL METALLIC TUBING OR AC/MC IN INTERIOR LOCATIONS.

9. FEEDERS AND BRANCH CIRCUITS: COPPER CONDUCTOR, 600 VOLT INSULATION, THHN/THWN FOR HEATED 10. DO NOT INSTALL THERMOPLASTIC CONDUCTORS WHEN TEMPERATURE IN WORK AREA IS BELOW 20

11. CONVENIENCE RECEPTACLE CONFIGURATION: NEMA WD 1; TYPE 5 20 R, IVORY PLASTIC FACE. GFCI

13. ELECTRICAL BOX LOCATIONS SHOWN ON CONTRACT DRAWINGS ARE APPROXIMATE UNLESS DIMENSIONED. VERIFY LOCATION OF SWITCHES AND OUTLETS PRIOR TO ROUGH IN. UNLESS OTHERWISE NOTED, MOUNT

		3'8"
LETS	NON ADA:	1'2" ADA: 1'6"
ONVENIENCE OUTLE	TS	2'6"
TS	NON ADA:	1'2" ADA: 1'6"
OUTLET		3'8"

14. ELECTRICAL PANEL LOCATIONS SHOWN ON CONTRACT DRAWINGS ARE APPROXIMATE UNLESS DIMENSIONED. UNLESS OTHERWISE NOTED, MOUNT PANEL SO THE CENTER OF THE HANDLE OF THE TOP BREAKER IS LESS THAN THE FOLLOWING HEIGHT FROM FINISHED FLOOR:

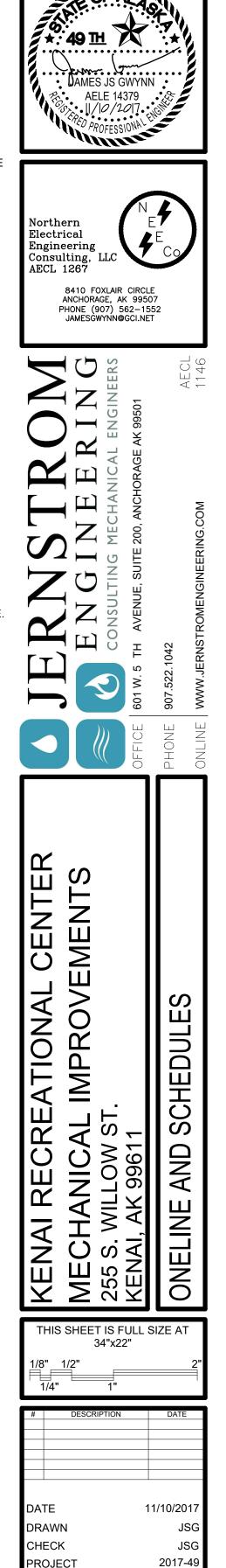
NON ADA: 6'6" ADA: 4'0" 15. PROVIDE ELECTRICAL BOXES AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, AND CODE COMPLIANCE.

16. USE MULTIPLE GANG BOXES WHERE MORE THAN ONE DEVICE ARE MOUNTED TOGETHER; DO NOT USE 17. BRANCH CIRCUIT PANELBOARDS: NEMA PB1;MATCH EXISTING CIRCUIT BREAKER TYPE.

18. LABELING: PROVIDE A TYPED CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT PANELBOARD AND SWITCHBOARD. USE A PENCIL TO LABEL SPARE CIRCUIT BREAKERS. FOR PANELBOARDS, NUMBER CIRCUITS WITH ODD NUMBERS ON THE LEFT, EVEN NUMBERS ON THE RIGHT, ONE NUMBER FOR EVERY POLE. EVERY CIRCUIT SHALL HAVE A UNIQUE DESCRIPTION THAT CLEARLY IDENTIFIES THE LOAD SERVED. PROVIDE A NAME PLATE IDENTIFYING THE PANEL NAME. EVERY SWITCHBOARD AND PANEL SHALL HAVE A NAMEPLATE IDENTIFYING THE SOURCE OF POWER THAT SUPPLIES IT. 19. FUSIBLE SWITCH ASSEMBLIES AND NONFUSIBLE SWITCH ASSEMBLIES: NEMA KS 1; TYPE HD. HANDLE

LOCKABLE IN OFF POSITION WITH INTERLOCK TO PREVENT OPENING IN ON POSITION. 20. MANUAL MOTOR STARTER: NEMA ICS 2; WITH OVERLOAD RELAY, AND TOGGLE OPERATOR. 21. COMBINATION MOTOR STARTERS: COMBINE MOTOR STARTERS WITH MOLDED CASE CIRCUIT BREAKER

DISCONNECT IN COMMON ENCLOSURE. SELECTOR SWITCHES: NEMA ICS 2; HAND/OFF/AUTO.



SHEET NO.

E4.0

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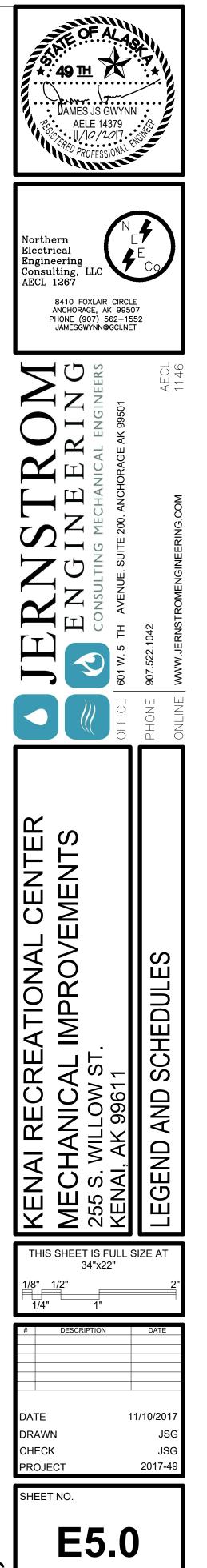
LEGENI	ר	
	NOT ALL SYMBOLS MAY BE USED	
(E), (D)	(E) EXISTING TO REMAIN, (D) DEMOLISH	
W.P.	AS SUBSCRIPT DENOTES "WEATHERPROOF"	
E.	EMERGENCY LIGHT, CIRCUIT, PANEL	
N.L.	NIGHT LIGHT CIRCUIT, FIXTURE	╞
P.C. A	PHOTOCELL LIGHTING FIXTURE KEY-SEE SCHEDULE	
100	ROOM NUMBER	
	REFER TO NOTE INDICATED	
	ELECTRICAL EQUIPMENT SCHEDULE	
	REVISION SYMBOL SURFACE MTD. FIXTURE:CEILING, WALL	
	WALL MTD. FLUORESCENT FIXTURE	
0	SURFACE/PENDANT MTD. FLUORESCENT FIXTURE	
	RECESSED FLUORESCENT FIXTURE	,
	EMERGENCY LIGHT FIXTURE BATTERY POWERED EMERGENCY LIGHTING UNIT, WALL AND CEILING	-
× H	ARROWS INDICATE AIMING	
⊗⊗	EXIT SIGN, W/ARROWS AS NOTED AREA LIGHT	
) (J)	JUNCTION BOX	
⊖ ⊕ ₁₃	DUPLEX OUTLET(W/CKT #, IF SHOWN. GFCI=GROUND FAULT CIRCUIT INTERUPT)	╞
\$	DOUBLE DUPLEX OUTLET	┝
	DUPLEX CONVENIENCE OUTLET, ONE SIDE SWITCHED SPECIAL PURPOSE OUTLET-NEMA CONFIGURATION NOTED	╞
Ø	EQUIPMENT CONNECTION	
	240 OR 208V OUTLET	
Þ	FLOOR OUTLET-POWER	
$\mathbf{\nabla}$	COMBO TELEPHONE/DATA OUTLET-WALL COMBO TELEPHONE/DATA OUTLET-FLOOR	
∇	EXISTING TELEPHONE OUTLET	
\square	EXISTING TELEPHONE OUTLET - FLOOR	
S	SINGLE POLE SWITCH DOUBLE POLE SWITCH	_
S ₂ S ₃	THREE-WAY SWITCH	
s ₄	FOUR-WAY SWITCH	L
s _D	DIMMER CONTROL	
s _K	KEY OPERATED SWITCH SWITCH W/PILOT LIGHT	
S _P S _T	THERMAL OVERLOAD SWITCH, MANUAL STARTER	
s _a o _a	SWITCH SUBSCRIPT INDICATES SWITCHING	
	BRANCH CIRCUIT PANEL "P"	╞
≤ ⊺	TERMINAL CABINET-SUBSCRIPT "T"=TELEPHONE, "S"=SIGNAL SYSTEM	
T	TRANSFORMER MOTOR CONNECTION W/H.P. INDICATED	
(1/4)		
T) (T) + (T)	THERMOSTAT ELECTRIC CLOCK	
© ©	CLOCK OUTLET	
\neg	CIRCUIT BREAKER DISCONNECT	
	DISCONNECT SWITCH-UNFUSED DISCONNECT SWITCH -FUSED	
-122	COMBINATION MOTOR STARTER-DISCONNECT	
(\mathbb{V})	TELEVISION ANTENNA OUTLET	
	PUSH BUTTON BELL	
	BRANCH CIRCUIT-IN WALL OR CEILING	
	BRANCH CIRCUIT-IN FLOOR OR UNDERGROUND	
	BRANCH CIRCUIT-EXPOSED	
	LOW VOLTAGE CONDUCTOR	[
—— T ——	- TELEPHONE / FLEXIBLE CONDUIT	Γ
	HOME RUN TO PANEL OR CABINET	
	CONDUIT-UP	
	ONDUIT-DOWN	
	· SURFACE METAL RACEWAY VIRES IF OTHER THAN TWO	
,	3 HOT WIRES, 1 NEUTRAL WIRE, 1 GROUND WIRE	
·	WIRE SIZE IF OTHER THAN #10 OR #12	
		L

	B	DE	MOLISHED) A D	S								С	DE		ISHED		AD	S							
		TING FL ROM de	USH emolished	BUS A	208Y/ AMPS 20 RAL 1009	0	4W		AIC 10,000 MAIN BKR LUGS STAI	MLO					NTING F FROM c	LUSH Jemolished		VOLTS BUS AM NEUTRA	IPS 200)	4W		AIC 10,000 MAIN BKR M LUGS STAND				
		CKT BKR	CIRCUIT DESCRIPTION	A	LOAD K	VA C	CKT #	CKT BKR	CIRCUIT DESCRIPTI	ON	L A	OAD KV B	'A C	СКТ #	CKT BKR	CIRCUIT DES	SCRIPTION	A	_OAD KV	′A C	СКТ #	CKT BKR	CIRCUIT DESCRIPTION		A	OAD KVA	A C
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PT)								ТС	TAL CONNECTED KV	A BY PHASE	2.11	2.11	3.31									TO	AL CONNECTED KVA	BY PHASE	4.44	4.44	5.64
								ТОТ	AL CONNECTED AMP	S BY PHASE	17.5	17.5	27.5									TOTA	L CONNECTED AMPS	BY PHASE	37	37	47
		LAR OTH REC	CONN KVA CA ITING 0 0 GEST MOTOR 6.32 7. ER MOTORS 0 0 EPTACLES 0 0 CHEN EQUIP 0 0		_ (125%) (125%) (100%) (50%>1 (N/A)			HE/ COO NOI DIV ME ⁻ TO ⁻	CONI NTINUOUS 0 ATING 1.2 DLING 0 NCONTINUOUS 0 ERSE 0 TERED DEMAND 0 TAL KVA 7.52 LANCED 3-PHASE AN			(125%) (100%) (N/A) (100%) (N/A) (125%)			LAF OTH REC	HTING RGEST MOTOR HER MOTORS CEPTACLES CHEN EQUIP	6.59	CALC KVA 0 8.24 6.73 0 0	(125%) (125%) (100%) (50%>10 (N/A)))		HEA COO NON DIVE METI TOTA	TINUOUS 0 TING 1.2 LING 0 CONTINUOUS 0	KVA CALO 0 1.2 0 0 0 0 0 16.2 S 44.9		(125%) (100%) (N/A) (100%) (N/A) (125%)	

	ITING FL FROM A	USH		E	BUS AM	208Y/12 IPS 200 L 100%	OV 3P	4W		MAIN	10,000 BKR MLO STANDARD)									
ЖΤ	СКТ											_OAD_KVA		СКТ	CKT					OAD KV	
#	BKR	CIRCUIT DES	CRIPTION		<u>A</u>	В	С	#	BKR	CIRCUIT DESC	CRIPTION		A	В	С						
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9							0	40	-/1 -/1	SPACE				0	0						
· I							0	42						·	ii						
									ТО	TAL CONNECTE	ED KVA BY	PHASE	2.11	2.11	2.11						
									тоти	AL CONNECTED	AMPS BY	PHASE	17.5	17.5	17.5						
			CONN KVA	CALC	KVA						CONN KVA	CALC	XVA								
	LIGH	ITING	0	0		(125%)			CON	ITINUOUS	0	0		(125%)							
	LAR	GEST MOTOR	6.32	7.9		(125%)			HEA	TING	0	0		(N/A)							
	OTH	ER MOTORS	0	0		(100%)			COC	LING	0	0		(N/A)							
	REC	EPTACLES	0	0		(50%>10)			NON	ICONTINUOUS	0	0		(100%)							
	KITC	CHEN EQUIP	0	0		(N/A)			DIVE	ERSE	0	0		(N/A)							
									MET	ERED DEMAND	0	0		(125%)							
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	С													
		NTING FL FROM A		[BUS AM	208Y/12 PS 200 L 100%		4W		AIC 10,000 MAIN BKR MLO LUGS STANDARD				
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0	39 41					0.887	0.887	40 42		EF-2 EF-3			2.23	4.27
2.11									TO	TAL CONNECTED KVA BY PH	HASE 7	.2	5.51	8.05
17.5									ΤΟΤΑ	AL CONNECTED AMPS BY PH	HASE 60	.8	45.9	67.5
		LAR OTH REC	TING 0 GEST MOTOR 7.17 ER MOTORS 13.2 EPTACLES 0 CHEN EQUIP 0	CALC 0 8.96 13.2 0 0		(125%) (125%) (100%) (50%>10 (N/A))		HEA COO NON DIVE MET	CONN KVA TINUOUS 0.4 TING 0 DLING 0 ICONTINUOUS 0 ERSE 0 ERED DEMAND 0 AL KVA 20.8 ANCED 3-PHASE AMPS	CALC KV 0.5 0 0 0 0 0 22.7 62.9	(1 (N (N (1 (N	25%) N/A) N/A) 00%) N/A) 25%)	

NOTES: 1. REPLACE 40 AMP 3 POLE BREAKER WITH 30 AMP 3 POLE BREAKER. REUSE WIRE AS POSSIBLE.



CITY OF KENAI KENAI RECREATION CENTER MECHANICAL IMPROVEMENTS

MECHANICAL SPECIFICATIONS

GENERAL PROVISIONS

SCOPE OF WORK

THIS PROJECT IS GENERALLY DESCRIBED AS COMPRISING OF ADDING HEATING, VENTILATION, PIPING, PLUMBING, AND CONTROL SYSTEMS TO THE KENAI RECREATION CENTER LOCATED AT 224 S. WILLOW STREET IN KENAI, ALASKA. IT INCLUDES THE ADDITION OF EQUIPMENT AND SYSTEMS TO SERVE THE HEATING, VENTILATION, PIPING, PLUMBING, AND CONTROL FUNCTIONS IN THE FACILITY.

INTENT OF DRAWINGS AND SPECIFICATIONS

THE INTENT OF THE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR TO INCLUDE ALL WORK NECESSARY FOR COMPLETE MECHANICAL SYSTEMS, TESTED AND READY FOR OPERATION. BY SUBMITTING A PROPOSAL, THE CONTRACTOR REPRESENTS THEY HAVE MADE A THOROUGH EXAMINATION OF THE SITE, OF THE WORK AND ALL EXISTING CONDITIONS AND LIMITATIONS, AND THEY HAVE DETERMINED THE DOCUMENTS ARE ADEQUATE AND SATISFACTORY FOR THE COMPLETION OF THE WORK.

MECHANICAL DRAWINGS DO NO ATTEMPT TO SHOW ALL ASPECTS OF BUILDING CONSTRUCTION, WHICH WILL AFFECT THE INSTALLATION OF MECHANICAL SYSTEMS. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW ALL OFFSETS AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE INSTALLATION.

CODES AND STANDARDS

PROVIDE ALL WORK IN COMPLIANCE WITH APPLICABLE LOCAL CODES AND STANDARDS. APPLICABLE CODES AND STANDARDS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- 1. 2009 UNIFORM PLUMBING CODE
- 2. 2009 INTERNATIONAL MECHANICAL CODE
- 3. 2009 INTERNATIONAL FUEL GAS CODE
- 4. 2009 INTERNATIONAL FIRE CODE
- 5. 2009 INTERNATIONAL BUILDING CODE
- 6. 2014 NATIONAL ELECTRICAL CODE
- 7. REQUIREMENTS OF OSHA AND EPA.
- 8. NATIONAL FIRE PROTECTION ASSOCIATION CODES, LATEST EDITIONS
- 9. ASME CODES FOR BOILER AND PRESSURE VESSELS, LATEST EDITIONS
- 10. SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITIONS
- 11. ALL LOCAL AND STATE AMENDMENTS

12. REQUIREMENTS OF ALL AGENCIES HAVING JURISDICTIONAL AUTHORITY OVER INSTALLATION

COORDINATION AND SCHEDULING

PROVIDE ALL ADMINISTRATIVE AND SUPERVISORY REQUIREMENTS FOR THE COORDINATION AND SCHEDULING OF THE WORK. THE MECHANICAL CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK OF OTHER CONTRACTORS, SUBCONTRACTORS, SUPPLIERS AND THE OWNER.

REVIEW ALL PROJECT DRAWINGS INCLUDING, BUT NOT LIMITED TO, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.

PLAN AND EXECUTE WORK IN COOPERATION WITH ALL OTHER TRADES. EVERY REASONABLE EFFORT SHALL BE MADE TO PROVIDE ALL CONCERNED WITH TIMELY NOTICE OF WORK AFFECTING OTHER TRADES TO PREVENT CONFLICTS OR INTERFERENCE AS TO SPACE REQUIREMENTS, DIMENSIONS, OPENINGS, BLOCK-OUTS, SLEEVING OR OTHER MATTERS WHICH WILL CAUSE DELAYS OR NECESSITATE WORK-AROUND METHODS.

CONTRACTOR RESPONSIBILITY

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN COMPLETE CONTROL OF THE CONSTRUCTED PROJECT, SUCH THAT THE COMPLETE PROJECT SHALL BE FREE OF DEFECTS AND IN CONFORMANCE WITH THE PROJECT DOCUMENTS.

THE CONTRACTOR SHALL UTILIZE PROCEDURES THAT ASSURE QUALITY CONSTRUCTION THROUGHOUT, WITH USE OF THE BEST INDUSTRY STANDARDS FOR THE SPECIFIC PROCESS USED. REMOVE AND REPLACE ANY WORK FOUND DEFECTIVE OR NOT COMPLYING WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.

WORKMANSHIP

ALL WORK TO BE DONE BY WORKMEN SKILLED IN AND REGULARLY EMPLOYED AT THAT TRADE.

PROVIDE ALL MATERIALS, PRODUCTS AND EQUIPMENT IN STRICT ACCORDANCE WITH ALL GOVERNING CODES AND ORDINANCES. THEY MUST BE OF FIRST QUALITY AND IN LINE WITH THE BEST CURRENT PRACTICES.

CUTTING AND PATCHING SHALL BE KEPT TO A MINIMUM. ALL PATCHING TO MATCH EXISTING FINISH WORK. DO NOT CUT STRUCTURAL MEMBERS.

CONTRACTOR SHALL FIELD VERIFY PRIOR TO BIDDING. VERIFY SPACE AVAILABILITY PRIOR TO FABRICATION AND INSTALLATION OF ANY WORK. VERIFY EXACT DISTANCES BETWEEN POINTS SHOWN ON DRAWINGS BY ACTUAL MEASUREMENT AT SITE.

REMOVE ALL WASTE MATERIALS AND RUBBISH FROM THE SITE, THOROUGHLY CLEAN ALL SURFACES OF WORK, AND LEAVE READY FOR OCCUPANCY BY THE

OWNER. THE OWNER WILL VERIFY THE COMPLETION AND/OR CORRECTION OF THE ITEMS ABOVE.

SUBMITTALS

SUBMIT TECHNICAL DATA AND REQUIRED INFORMATION ON EQUIPMENT AND MATERIALS AS FOLLOWS:

- 1. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA FOR THE ITEMS LISTED IN THE INDIVIDUAL SPECIFICATION SECTIONS. PRODUCT DATA SHALL DEMONSTRATE COMPLIANCE WITH ALL SPECIFIED FEATURES AND REQUIREMENTS.
- 2. SHOP DRAWINGS: SUBMIT CONTRACTOR PREPARED DRAWINGS OF CONTRACTOR FABRICATED MECHANICAL SYSTEMS. DRAWINGS SHALL BE PREPARED AT 1⁄4" SCALE USING COMPUTER AIDED SOFTWARE UNLESS INDICATED OTHERWISE. DRAWINGS SHALL SHOW EXACT LOCATION OF EQUIPMENT, PIPING AND DUCTWORK, EACH SECTION OF SHOP FABRICATED DUCT OR PIPE AND LOCATION OF FIELD JOINTS, SUPPORTS AND BUILDING ATTACHMENTS.
- 3. REPORTS AND CERTIFICATES: INDICATE AND INTERPRET TEST RESULTS FOR COMPLIANCE WITH PERFORMANCE REQUIREMENTS. PROVIDE PERFORMANCE CERTIFICATES.
- 4. EQUIPMENT SEISMIC RESTRAINT: CONTRACTOR TO PROVIDE STRUCTURAL AND SEISMIC CALCULATIONS PLUS FASTENING DETAILS FOR ALL APPLICABLE EQUIPMENT TO INCLUDE ENGINEER'S STAMP AND SIGNATURE, FOR STRUCTURAL REVIEW ON A DEFERRED SUBMITTAL BASIS.

PERMITS, INSPECTIONS AND FEES

CONTRACTOR SHALL ARRANGE FOR ALL PERMITS AND INSPECTIONS REQUIRED IN CONNECTION WITH THIS INSTALLATION. THE CONTRACTOR SHALL PRESENT THE OWNER WITH PROPERLY SIGNED CERTIFICATES OF FINAL INSPECTION BEFORE THE WORK WILL BE ACCEPTED.

CONTRACTOR SHALL CALL FOR ALL INSPECTIONS BY LOCAL BUILDING OFFICIALS WHEN THEY BECOME DUE, AND SHALL NOT COVER ANY WORK UNTIL APPROVED BY THESE GOVERNING AUTHORITIES.

CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR WATER, STEAM, GAS AND DRAINAGE SERVICES, ETC., ASSOCIATED WITH THE WORK AND INCLUDE REQUIRED PAYMENTS FOR METERS, PIPING, SERVICES, CONNECTION CHARGES AND MATERIALS FURNISHED AND INSTALLED BY UTILITY COMPANIES. WORK AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH RULES OF RESPECTIVE AUTHORITIES.

FINAL CHECKOUT AND PROJECT CLOSEOUT

THE OWNER HAS FULL AUTHORITY TO SEE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE OWNER WILL REQUIRE A COMPLETE FINAL INSPECTION OF ALL PARTS OF THE WORK. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: PLUMBING, PIPING, EQUIPMENT, DUCTWORK, WIRING, AND FINISH WORK.

THE OWNER WILL REQUIRE A WRITTEN GUARANTY THAT ALL MATERIALS AND WORKMANSHIP THAT PROVE DEFECTIVE WITHIN ONE YEAR AFTER DATE OF ACCEPTANCE WILL BE REPLACED.

OPERATION AND MAINTENANCE MANUAL

PROVIDE TWO HARD COPIES AND ONE ELECTRONIC COPY (PDF FORMAT) OF THE OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT. INCLUDE WARRANTY CERTIFICATES FOR ALL EQUIPMENT WHERE EXTENDED WARRANTIES ARE EITHER OFFERED OR REQUIRED; PROVIDE SUPPLIER CONTACT INFORMATION. BASIC MATERIALS & METHODS

BASIC MATERIALS

- 1. DOMESTIC WATER PIPE: TYPE L HARD DRAWN COPPER TUBING, WROUGHT SOLDER TYPE FITTINGS, LEAD FREE SILVER SOLDER <u>OR</u> CROSS-LINKED POLYETHYLENE (PEX A) PIPE, FITTINGS, AND MANIFOLD SYSTEMS SUITABLE FOR DOMESTIC
- WATER SYSTEMS.
 2. CONDENSATE NON-POTABLE WATER PIPE: TYPE HDPE PIPE AND FITTINGS. PLASTIC VALVES ARE NOT ACCEPTABLE.
- 3. NATURAL GAS PIPE: BLACK STEEL, ASTM A120 OR A53 GRADE A OR B, STANDARD WEIGHT. FLEXIBLE CONNECTORS AT ALL OUTSIDE GRADE PENETRATIONS, ANSI Z21.24 COPPER ALLOY. STEEL FITTINGS:
 - A. LOW PRESSURE (7" WC), NPS 3/4 TO 2 INCH STEEL PIPE WITH THREADED JOINTS AND MALLEABLE-IRON THREADED FITTINGS.
- 4. VALVES: SELECT VALVES OF THE BEST TYPE AND QUALITY SUITED FOR THE SPECIFIC SERVICE AND PIPING SYSTEM USED. MINIMUM WORKING PRESSURE 150 PSIG W.O.G.
- 5. BALANCING VALVES: CIRCUIT SETTER TYPE, DUCTILE IRON BODY WITH BRONZE DISC, SUITABLE FOR FLOW MEASUREMENT, FLOW BALANCING, AND TIGHT SHUTOFF.
- 6. DIELECTRIC UNIONS: PROVIDE AT EACH JOINT BETWEEN DISSIMILAR-METALS.
- 7. ESCUTCHEON PLATES: SPRING CLIP TYPE AT WALLS AND CEILINGS.
- 8. PIPE INSULATION: FIBERGLASS PIPE INSULATION WITH FACTORY APPLIED ALL-SERVICE JACKET; FACTORY PRE-MOLDED PVC FITTING AND VALVE COVERS. THERMAL CONDUCTIVITY K=0.24 AT 100°F MEAN TEMPERATURE. THICKNESS: 1.0-INCH FOR DOMESTIC COLD, HOT AND HOT WATER CIRCULATION WATER SYSTEMS. PROVIDE A 20 GAUGE SHEET METAL SLEEVE WITH MINERAL WOOL PACKING, FULL DEPTH, AT ALL WALL PENETRATIONS.
- 9. PIPE SUPPORTS: SUPPORT SINGLE PIPES WITH INDIVIDUAL HANGERS OR PROVIDE MULTIPLE PIPE TRAPEZE HANGERS. INSTALL COLD WATER PIPE HANGERS ON THE OUTSIDE OF THE INSULATION. SUPPORT FROM BEAMS USING APPROPRIATE BEAM CLAMPS AND HANGER RODS. SUPPORT

HORIZONTAL PIPING RUNS AT FIVE FEET ON CENTERS AND AT CHANGES OF DIRECTION. CONFORM TO IMC AND UPC REQUIREMENTS.

- 10. DUCTWORK: ALL DUCTWORK SHALL BE GALVANIZED STEEL, FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, 2" W.G. PRESSURE CLASS FOR LOW PRESSURE SYSTEMS AND 4" W.G. FOR MEDIUM PRESSURE SYSTEMS. DUCT SEALER SHALL BE UL LABELED DUST SEALER AS MANUFACTURED BY 3M COMPANY OR EQUAL. EXPOSED DUCT FITTINGS SHALL BE SEALED WITH HARDCAST DUCT SEALANT TAPE APPLIED IN A NEAT AND UNIFORM STYLE. HARDCAST TAPE SHALL BE SUITABLE FOR PAINTING (PAINTING BY OTHERS). DUCT FITTINGS SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA STANDARDS. DUCT RUNS SHALL COORDINATE WITH WALLS, SUSPENDED CEILINGS, LIGHT FIXTURES, ROOF TRUSSES AND SIMILAR FINISHED WORK. DUCT OPENING SHALL BE COVERED DURING CONSTRUCTION TO PREVENT ENTRANCE OF DUST AND DEBRIS.
- 11. DUCT INSULATION: ALL SUPPLY AIR DUCTWORK, OUTSIDE AIR INTAKE DUCTWORK, RELIEF DUCTWORK, COMBUSTION AIR DUCTWORK, AND EXHAUST DUCTWORK BACK 10 FT. FROM THE EXTERIOR DISCHARGE, SHALL BE INSULATED WITH A COMMERCIAL GRADE, GLASS FIBER, REINFORCED FOIL FACED DUCT WRAP INSULATION SIMILAR TO OWENS-CORNING TYPE 150, 2" NOMINAL THICKNESS, 1.5# DENSITY, OR APPROVED EQUAL. INSULATION SHALL BE APPLIED TO COVER ALL EXTERIOR SURFACES OF DUCTWORK AND SEALED TIGHTLY TO PREVENT LEAKAGE.
- 12. OUTDOOR DUCTS AND JACKETING: RECTANGULAR DUCTS WITH MINERAL-FIBER BOARD INSULATION, THICKNESS 2 INCHES, WITH A MINIMUM INSTALLED INSULATION R-VALUE OF 7. FIELD-APPLIED ALUMINUM JACKET: SHEETS MANUFACTURED FROM ALUMINUM ALLOY COMPLYING WITH ASTM B 209, AND HAVING AN INTEGRALLY BONDED MOISTURE BARRIER OVER ENTIRE SURFACE IN CONTACT WITH INSULATION, JACKET TO HAVE EMBOSSED FINISH AND 0.04-INCH THICKNESS.
- 13. WATER HEATER STACK: PVC OR CPVC PIPE AND FITTINGS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- 14. VALVE TAGS: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR, MINIMUM 1-1/2 INCHES DIA. METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE, MINIMUM 1-1/2 INCHES DIAMETER WITH SMOOTH EDGES. TAG CHART: TYPEWRITTEN LETTER SIZE LIST OF APPLIED TAGS AND LOCATION IN ANODIZED ALUMINUM FRAME.

ADDITIONAL METHODS

COORDINATE ALL NEW WORK WITH THE CONDUITS, LIGHTS, HANGERS, STRUCTURAL MEMBERS AND OTHER TRADES.

SUBMIT PROJECT DATA, WARRANTIES, AND O&M DATA FOR REVIEW.

SEE SCHEDULES FOR EQUIPMENT REQUIREMENTS AND SPECIFICATIONS.

INSTALL ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. INSTALL ONLY PRODUCTS SPECIFICALLY DESIGNED AND APPROVED FOR THE TYPE OF OPERATION OR SERVICE.

TESTING & CLEANING

TEST THE HEATING AND DOMESTIC WATER SYSTEMS AT 100 PSI WITH NO PRESSURE DROP OVER A FOUR HOUR PERIOD, WITH SYSTEM STABILIZED AT DESIGN TEMPERATURE. OBSERVE SYSTEM FOR LEAKS, FAULTY CIRCULATION, EXPANSION AND CONTRACTION, AND REPAIR ANY DEFICIENCIES.

FLUSH AND STERILIZE THE DOMESTIC WATER SYSTEMS AS FOLLOWS: PRESSURE FLUSH THE DOMESTIC WATER PIPING SYSTEMS TO REMOVE PARTICULATE FROM THE SYSTEM. STERILIZE WITH CHLORINE TO OBTAIN 50 PPM FOR 24 HOURS; FLUSH WITH CLEAN WATER UNTIL RESIDUAL CHLORINE CONTENT IS LESS THAN 1.0 PPM. EXERCISE PROPER CARE DURING CLEANING AND FLUSHING OF SYSTEM TO ENSURE NO DAMAGE IS DONE TO ANY EQUIPMENT, VALVES, OR FITTINGS.

BALANCING & STARTUP

THE CONTRACTOR SHALL HIRE AN INDEPENDENT AIR BALANCING COMPANY TO PERFORM THE AIR BALANCING OF THE COMPLETE HEATING AND HVAC SYSTEMS PER THE SMACNA BALANCING AND ADJUSTMENT MANUAL. ADJUST AIR QUANTITIES TO WITHIN 5% OF THE DESIGN VALUES.

COMPLETE AND SUBMIT THE FINAL TESTING AND BALANCING REPORT BEFORE THE PROJECT IS COMPLETE.

SEQUENCE OF OPERATION

AIR SYSTEMS

- 1. ROOFTOP AIR CONDITIONING UNIT HEATING AND COOLING (RTU-2): THE UNIT SUPPLIED CONTROL SYSTEM CONTROLS THE OPERATION OF THE COMPRESSOR, EVAPORATOR, FAN, CONDENSING UNIT, AND GAS HEATER. A WALL-MOUNTED 7-DAY TIME CLOCK AND THERMOSTAT (SUPPLIED WITH THE UNIT) CYCLES THE UNIT COMPONENTS TO MAINTAIN THE SELECTED SPACE TEMPERATURE. A SMOKE DETECTOR IN THE FAN RETURN AIR DUCT IS WIRED TO SHUTDOWN FAN ON DETECTOR ACTIVATION, PROVIDE ALARM AT THE FIRE ALARM PANEL.
- 2. ROOFTOP AIR CONDITIONING UNIT HEATING ONLY (RTU-3 THROUGH RTU-6): THE UNIT SUPPLIED CONTROL SYSTEM CONTROLS THE OPERATION OF THE FAN AND GAS HEATER. A WALL-MOUNTED 7-DAY TIME CLOCK AND THERMOSTAT (SUPPLIED WITH THE UNIT) CYCLES THE UNIT COMPONENTS TO MAINTAIN THE SELECTED SPACE TEMPERATURE. A SMOKE DETECTOR IN THE FAN RETURN AIR DUCT IS WIRED TO SHUTDOWN FAN ON DETECTOR ACTIVATION; PROVIDE ALARM AT THE FIRE ALARM PANEL.
- 3. EXHAUST FANS: SEE FAN SCHEDULE FOR ADDITIONAL CONTROL INFORMATION, PROVIDE ALARM AT THE FIRE ALARM AND CENTRAL PANELS.
 - A. EF-1: FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. FAN SHALL RUN CONTINUOUSLY AT THE DESIGN CFM WHILE THE BUILDING IS NORMALLY OCCUPIED.

- B. EF-2: FAN TO BE CONTROLLED BY PROGRAMMABLE 7-DAY TIMECLOCK. FAN SHALL RUN CONTINUOUSLY AT THE DESIGN CFM WHILE THE BUILDING IS NORMALLY OCCUPIED.
- C. EF-3: FAN SPEED TO MODULATE UP TO THE MAXIMUM DESIGN SPEED OF 6,280 CFM THROUGH THE VARIABLE FREQUENCY DRIVE MAINTAINING THE BUILDING STATIC PRESSURE. MOTOR OPERATED DAMPER TO BE INTERLOCKED WITH FAN STATUS TO OPEN WHEN FAN IS ACTIVATED AND CLOSE WHEN FAN IS DEACTIVATED. COORDINATE WITH THE ENGINEER ON THE LOCATION OF THE ROOM STATIC PRESSURE SENSORS. INITIAL SETPOINT OF THE BUILDING PRESSURE IS +0.05" W.C. (ADJUSTABLE).
- 4. GYMNASIUM PRESSURE CONTRÓL: GYMNASIUM STATIC PRESSURE IS MAINTAINED BY MODULATING THE MOTOR OPERATED DAMPER MAINTAINING THE GYMNASIUM STATIC PRESSURE SETPOINT. PROVIDE A ROOF MOUNTED REFERENCE PRESSURE SENSOR AND TWO (2) ROOM MOUNTED STATIC PRESSURE SENSORS AND DIFFERENTIAL PRESSURE TRANSMITTER. COORDINATE WITH THE ENGINEER ON THE LOCATION OF THE ROOM STATIC PRESSURE SENSORS. INITIAL SETPOINT OF THE GYMNASIUM PRESSURE IS +0.05" W.C. (ADJUSTABLE).

PLUMBING CONTROLS

- 1. WATER HEATER (WH-1, WH-2): THE WATER HEATER PACKAGE INCLUDES INTEGRAL FACTORY WIRED OPERATING CONTROLS THAT WILL CONTROL THE OPERATION OF THE SYSTEM. INITIAL SETPOINT OF THE DOMESTIC HOT WATER IS 120°F BEFORE THE MIXING VALVE.
- 2. HOT WATER CIRCULATING PUMP (PMP-1) WILL RUN CONTINUOUSLY.