

INVITATION TO BID

Alaska Veterans & Pioneers Home Roof Replacement Project No.: 25-N0817C

Bidders are invited to submit sealed bids, in single copy: Contractor to submit a bid to provide all labor, supervision, permits, equipment and materials for removal of partial areas of existing roof assembly down to wood T&G roof deck. Installation of new roof assembly and new roof perimeter flashing. Additional work on gutters, downspouts, and heat trace, structural replacement of select beams, mechanical and electrical work associated with roof work. This project is to comply with BABAA Build America Buy America Act. See Specification 00 10 00 for more information.

This ITB consists of a Basic Bid and 3 Additive Alternates.

Additive Alternate 1: Heat Trace at Fireweed and Sunny Loop Wings.

Additive Alternate 2: Homestead Dining Roof Replacement.

Additive Alternate 3: Fireplace Chimney Surround.

A pre-bid walk through is scheduled for March 17, 2025, at 10:00 A.M. at the Alaska Veterans & Pioneers Home. Bidders are strongly encouraged to attend. Please meet in the main lobby located at 250 E. Fireweed Ave, Palmer, AK 99645

Project related questions or clarifications: Mark Moon, Project Manager at (907) 269-7812 or mark.moon@alaska.gov

Bid Deadline is 2:00pm April 8, 2025, local time. Bids will be opened publicly at 2:00 pm local time April 8, 2025, at 3601 C Street Suite 290 Anchorage, AK 99503

All Bids, bid modifications, or withdrawals transmitted by mail or email must be received prior to the scheduled time of bid opening. All bids should be addressed to: Mark Moon 3601 C Street - Suite 290 Anchorage Alaska 99503. All electronic submissions should be sent to: fcs.facilities@alaska.gov

SPECIAL CONSIDERATIONS

The Department will accept an electronic (email) submission of bids for this solicitation. Bids, bid modifications and withdrawals should be submitted to fcs.facilities@alaska.gov prior to the date and time shown above. Offerors are responsible to assure timely delivery, and receipt of their bids. Offerors are cautioned that due to mailbox restrictions, we cannot receive bids over 20MB in size. The Contracting Agency will print out bids for public opening at the time designated above.

The Engineer's Estimate: Between \$3,250,000 and \$4,800,000

The Project completion date: 215 Days after NTP

Plans and Specifications may be printed by the Bidder from:

- the State of Alaska website (www.state.ak.us) Public Notices Online button, click on the More Public Notices button, Browse Active Public Notice button, then Health & Social Services, and Procurement

OR

- the Bidder may forward the project website location/address information to the print shop of their choice for printing – all associated printing costs are payable by the Bidder.

Bidders are responsible for checking this website for addenda. Not acknowledging addenda at the time of bid will deem the Bidder non-responsive.

Issued: March 5, 2025

**STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES**

INFORMATION TO BIDDERS

The Department is concerned over the manner in which bids are submitted. Bidders are requested to study and follow the bid assembly instructions as to the method and form for submitting bids so there will be no reason to reject a bid.

EXAMINATION OF CONTRACT REQUIREMENTS

Bidders are expected to examine carefully the plans, specifications and all other documents incorporated in the contract to determine the requirements thereof before preparing bids.

Any explanation desired by bidders regarding the meaning or interpretation of drawings and specifications must be requested in writing and with sufficient time allowed for a reply to reach them before the submission of their bids. Oral explanations or instructions given before the award of the contract will not be binding. Any interpretation made will be in the form of an addendum to the specifications or drawings and will be furnished to all bidders and its receipt by the bidder shall be acknowledged.

CONDITIONS AT SITE OF WORK

Bidders are expected to visit the site to ascertain pertinent local conditions such as the location, accessibility and character of the site, labor conditions, the character and extent of the existing work within or adjacent thereto, and any other work being performed thereon.

PREPARATION OF BIDS

- (a) Bids shall be submitted on the forms furnished, and must be manually signed in ink. If erasures or other changes appear on the forms, each such erasure or change must be initialed by the person signing the proposal.
- (b) The bid schedule will provide for quotation of a price or prices for one or more pay items which may include unit price or lump sum items and alternative, optional or supplemental price schedules or a combination thereof which will result in a total bid amount for the proposed construction.

Where required on the bid form, bidders must quote on all items and **THEY ARE WARNED** that failure to do so will disqualify them. When quotations on all items are not required, bidders should insert the words "no bid" in the space provided for any item not requiring a quotation and for which no quotation is made.

- (c) The bidder shall specify the price or prices bid in figures. On unit price contracts the bidder shall also show the products of the respective unit prices and quantities written in figures in the column provided for the purpose and the total amount of the proposal obtained by adding the amounts of the several items. All the figures shall be in ink or typed.

- (d) Neither conditional nor alternative bids will be considered unless called for.
- (e) Unless specifically called for, telegraphic or telefacsimile bids will not be considered.
- (f) Bid Schedule form should be enclosed in a separate sealed envelope and enclosed with all other bidding forms required at the opening.

BID SECURITY

All bids shall be accompanied by a bid security in the form of an acceptable Bid Bond (Form 06D-14), or a certified check, cashier's check or money order made payable to the State of Alaska. The amount of the bid security is specified on the Invitation to Bid.

Bid Bonds must be accompanied by a legible Power of Attorney.

If the bidder fails to furnish an acceptable bid security with the bid, the bid shall be rejected as non-responsive. Telegraphic notification of execution of Bid Bond does not meet the requirement of bid security accompanying the bid. An individual surety will not be accepted as a bid security.

The bid securities of the two lowest bidders will be held by the Department until the Contract has been executed, after which such bid securities will be returned. All other bid securities will be returned as soon as practicable. If all bids are rejected, all bid securities will be returned as soon as practicable.

BIDDERS QUALIFICATIONS

Before a bid is considered for award, the bidder may be requested by the Department to submit a statement of facts, in detail, as to his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the contemplated work.

SUBMISSION OF BIDS

Bids must be submitted as directed on the Invitation for Bids. Do not include in the envelope any bids for other work.

ADDENDA REQUIREMENTS

The bid documents provide for acknowledgement individually of all addenda to the drawings and/or specifications on the signature page of the Proposal. All addenda shall be acknowledged on the Proposal or by telegram prior to the scheduled time of bid opening. If no addenda are received by the bidder, the word "None" should be shown as specified.

Every effort will be made by the Department to ensure that Contractors receive all addenda when issued. Addenda will be issued to the individual or company to whom bidding documents were issued. Addenda may be issued by any reasonable method such as hand delivery, mail, telefacsimile, telegraph, email, internet download, courier and in special circumstances by phone. Addenda will be issued to the address, telefacsimile number or phone number as stated on the planholder's list unless picked up in person or included with the bid documents. It is the bidder's responsibility to insure that he has received all addenda affecting the Invitation for Bids. No claim or protest will be allowed based on the bidder's allegation that he did not receive all of the addenda

for an Invitation for Bids. The Department is not responsible for issuing addenda to non-registered bidders.

WITHDRAWAL OR REVISION OF BIDS

A bidder may withdraw or revise a bid after it has been deposited with the Department, provided that the request for such withdrawal or revision is received by the designated office, in writing, by telegram, or by telefacsimile, before the time set for opening of bids.

Telegraphic or telefacsimile modifications shall include both the modification of the unit bid price and the total modification of each item modified but shall not reveal the amount of the total original or revised bids. Form 06D-16 shall be used to submit such modifications.

RECEIPT AND OPENING OF BIDS

- (a) All bids, including any amendment or withdrawal must be received by the Department prior to the scheduled time of bid opening. Any bid, amendment, or withdrawal that has not been actually received by the Department prior to the time of the scheduled bid opening will not be considered.
- (b) No responsibility will be attached to any officer or employee of the Department for the premature opening of, or failure to open, a bid improperly addressed or identified.
- (c) The Department reserves the right to waive any technicality in bids received when such waiver is in the interest of the State.

BIDDERS PRESENT

At the time fixed for bid opening, bids will be publicly opened and read for the information of bidders and others properly interested, who may be present either in person or by representative. The amount of the bid and the name of the bidder shall be compiled and distributed as soon as possible after bid opening. Bids are not open for public inspection until after the Notice of Intent to Award is issued.

BIDDERS INTERESTED IN MORE THAN ONE BID

If more than one bid is offered by any one party, by or in the name of his or their clerk or partner, all such bids will be rejected. A party who has quoted prices to a bidder is not thereby disqualified from quoting prices to other bidders or from submitting a bid directly for the work.

REJECTION OF BIDS

The Department reserves the right to reject any and all bids when such rejection is in the best interest of the State; to reject the bid of a bidder who has previously failed to perform properly, or complete on time, contracts of a similar nature; to reject the bid of a bidder who is not, in the opinion of the Contracting Officer, in a position to perform the contract; and to reject a bid as non-responsive where the bidder fails to furnish the required documents, fails to complete required documents in the manner directed, or makes unauthorized alterations to the bid documents.

AWARD OF CONTRACT

- (a) The letter of award, if the contract is to be awarded, will be issued to the lowest responsible and responsive bidder as soon as practical and usually within 40 calendar days after opening of proposals.
- (b) The successful bidder will be notified of the Department's intent to award the contract and requested to execute certain documents, including the contract form and bonds.
- (c) The contract will be awarded to the successful bidder following receipt by the Department of all required documents, properly executed, within the time specified in the intent to award. Failure to enter into a contract within the specified time shall be grounds for forfeiture of the bid security and consideration of the second low bidder for award.

Alaska Veterans & Pioneers Home Roof Replacement Project No.: 25-N0817C

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**Alaska Veterans & Pioneers Home
Roof Replacement
Project No.: 25-N0817C**

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STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

INVITATION TO BID
for Construction Contract

Date 3/5/2025

Alaska Veterans & Pioneers Home – Roof Replacement Project No.: 25-N0817C

Project Name and Number

Location of Project: Anchorage, Alaska
Contracting Officer: Mark Moon, DFCS Facilities Manager I, Acting Contracting Officer
Issuing Office: Dept. of Family & Community Services, Office of the Commissioner, Finance & Management Services

State Funded [x] Federal Aid [x]

Description of Work: - Contractor to submit a bid to provide all labor, supervision, permits, equipment and materials for removal of partial areas of existing roof assembly down to wood T&G roof deck. Installation of new roof assembly and new roof perimeter flashing. Additional work on gutters, downspouts, and heat trace, structural replacement of select beams, mechanical and electrical work associated with roof work. This project is to comply with BABAA Build America Buy America Act. See Specification 00 10 00 for more information.

This ITB consists of a Basic Bid and 3 Additive Alternates.

Additive Alternate 1: Heat Trace at Fireweed and Sunny Loop Wings.

Additive Alternate 2: Homestead Dining Roof Replacement.

Additive Alternate 3: Fireplace Chimney Surround.

The Engineer's Estimate is between:
\$3,250,000 and \$4,800,000

All work shall be completed in **215** Calendar Days, or by Interim Completion dates, if applicable, will be shown in the Special Provisions.

Bidders are invited to submit sealed bids, in single copy, for furnishing all labor, equipment, and materials and for performing all work for the project described above. Bids will be opened publicly at 2:00 pm local time, at 3601 C Street, Suite 290 Anchorage, Alaska 99503 on the 8th of April, 2025.

SUBMISSION OF BIDS

ALL BIDS INCLUDING ANY AMENDMENTS OR WITHDRAWALS MUST BE RECEIVED PRIOR TO BID OPENING. BIDS SHALL BE SUBMITTED ON THE FORMS FURNISHED AND MUST BE IN A SEALED ENVELOPE MARKED AS FOLLOWS:

Bid for Project:

25-N0817C

Alaska Veterans & Pioneers Home

Roof Replacement

*****See Special Considerations, Item 1.0*****

Mark Moon

State of Alaska

Department of Family & Community Services

Facilities Office

3601 C Street Suite 290 Anchorage, AK 99503

Bids, Bid Modifications, or Withdrawals transmitted by mail must be received at the above specified address prior to the scheduled time of bid opening. Hand-delivered bids, amendments or withdrawals must be received at **3601 C Street – Suite 290 Anchorage, Alaska 99503** prior to the scheduled time of bid opening. Electronic submissions must be sent to fcs.facilities@alaska.gov prior to the scheduled time of bid opening.

A bid guaranty is required with each bid in the amount of 5% of the amount bid. (Alternate bid items as well as supplemental bid items appearing on the bid schedule shall be included as part of the total amount bid when determining the amount of bid guaranty required for the project.)

The Department hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this Invitation, Disadvantaged Business Enterprises (DBEs) will be afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

SPECIAL CONSIDERATIONS

1.0 The Department will accept an electronic (email) submission of bids for this solicitation. Bids should be submitted to fcs.facilities@alaska.gov prior to the date and time shown on page 1. Offerors are responsible to assure timely delivery, and receipt of their bids. Offerors are cautioned that due to mailbox restrictions, we cannot receive bids over 20MB in size. The Contracting Agency will print out bids for public opening at the time designated on page 1.

NOTICE TO BIDDERS

Bidders are hereby notified that data to assist in preparing bids is available as follows:

Plans and Specifications may be printed by the Bidder from:

- the State of Alaska website under Public Notices On-line
- OR**
- the Bidder may forward the project website location/address information to the print shop of their choice for printing – all associated printing costs are payable by the Bidder.

All questions relating to technical aspects of the project should be directed to the following. Bidders requesting assistance in viewing the project must make arrangements at least 48 hours in advance with:

Project Manager: Mark Moon, DFCS Project Manager

Facilities Inbox fcs.facilities@alaska.gov Phone: (907) 907 269-7812 Email: mark.moon@alaska.gov

All questions concerning bidding procedures should be directed to:

ATTN: Mark Moon

State of Alaska

Department of Family & Community Services

Facilities Office

3601 C Street, Suite 290 Anchorage, AK 99503

907 269-7812

Other Information:

Alaska Veterans Preference

To qualify for the Veterans Preference (per AS 36.30.175), the bidder must:

1. Qualify for the Alaska Bidder's Preference
 2. Add value by performing the services or have prior experience in selling the supplies.
 3. Qualify as an Alaska Veteran & Complete/sign Alaska Veterans Affidavit (06D-17, dated 4/12)
 4. The value of the preference cannot exceed \$5,000.
-



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

REQUIRED DOCUMENTS

State Funded Contracts

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

REQUIRED FOR BID. Bids will not be considered if the following documents are not filled out and submitted at the time of bidding:

1. **Bid Form (Form 25D-9S)**
2. **Bid Schedule**
3. **Bid Security (Form 25D-14)**

REQUIRED FOR BID MODIFICATIONS. Any bid revisions must be submitted by the bidder prior to bid opening on the following form:

4. **Bid Modification (Form 25D-16)**

REQUIRED FOR CLAIMED PROCUREMENT PREFERENCE. The Department will not consider a claimed procurement preference unless a bidder submits the appropriate, signed certification(s) for the claimed preference at the time of bidding:

5. **Alaska Bidder Preference Certification (Form 25D-19)**
 6. **Alaska Veteran Preference Certification (Form 25D-17)**
 7. **Alaska Products Preference Certification (Form 25D-20)**
-

REQUIRED AFTER NOTICE OF APPARENT LOW BIDDER. The apparent low bidder is required to complete and submit the following document within 5 working days after receipt of written notification:

1. **Subcontractor List (Form 25D-5)**
-

REQUIRED FOR AWARD. In order to be awarded the contract, the successful bidder must completely fill out and submit the following documents within the time specified in the intent to award letter:

1. **Construction Contract (Form 25D-10A)**
2. **Payment Bond (Form 25D-12)**
3. **Performance Bond (Form 25D-13)**
4. **Contractor's Questionnaire (Form 25D-8)**
5. **Contractor's Certification of Subcontractors**
6. **Certificate of Insurance (from carrier)**
7. **Dept. of Labor – Notice of Work Form**



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

Proposal

for
Alaska Veterans & Pioneers Home – Roof Replacement Project No.: 25-N0817C

Project Name and Number

By

Company Name

Company Address (Street or PO Box, City, State, Zip)

**To the CONTRACTING OFFICER,
DEPARTMENT OF FAMILY & COMMUNITY SERVICES**

In compliance with your Invitation for Bids dated _____, the Undersigned proposes to furnish and deliver all the materials and do all the work and labor required in the construction of the above-referenced Project, located at or near **Palmer, Alaska**, according to the plans and specifications and for the amount and prices named herein as indicated on the Bid Schedule consisting of _____ sheet(s), which is made a part of this Bid.

The Undersigned declares that he has carefully examined the contract requirements and that he has made a personal examination of the site of the work; that he understands that the quantities, where such are specified in the Bid Schedule or on the plans for this project, are approximate only and subject to increase or decrease, and that he is willing to perform increased or decreased quantities of work at unit prices bid under the conditions set forth in the Contract Documents.

The Undersigned hereby agrees to execute the said contract and bonds within fifteen calendar days, or such further time as may be allowed in writing by the Contracting Officer, after receiving notification of the acceptance of this bid, and it is hereby mutually understood and agreed that in case the Undersigned does not, the accompanying bid guarantee shall be forfeited to the State of Alaska, Department of Family & Community Services as liquidated damages, and the said Contracting Officer may proceed to award the contract to others.

The Undersigned agrees to commence the work within 10 calendar days and to complete the work by **215** calendar days, after the effective date of the Notice to Proceed or by _____, unless extended in writing by the Contracting Officer.

The Undersigned proposes to furnish Payment Bond in the amount of **100%** and Performance Bond in the amount of **100%** (of the contract), as surety conditioned for the full, complete, and faithful performance of this contract.

The Undersigned acknowledges receipt of the following addenda to the drawings and/or specifications
(Give number and date of each).

Addenda Number	Date Issued

Addenda Number	Date Issued

Addenda Number	Date Issued

NON-COLLUSION AFFIDAVIT

The Undersigned declares, under penalty of perjury under the laws of the United States, that neither he, nor the firm, association, or corporation of which he is a member, has, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this bid.

The Undersigned has read the foregoing proposal and hereby agrees to the conditions stated therein by affixing his signature below:

Signature of Authorized Company Representative

Typed or Printed Name and Title

Phone Number

Fax Number

Email Address

STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

ALASKA BIDDER PREFERENCE CERTIFICATION

In response to the advertised procurement for:

Project Name and Number: Alaska Veterans & Pioneers Home - Roof Replacement No.: 25- N0817C

Bidder/Proposer (company name): _____

Operation of Alaska Bidder Preference

Procurement preferences under the Alaska Procurement Code are benefits that the State grants only to qualified bidders. Under AS 36.30.990(2), if a bidder is an eligible "Alaska Bidder", the Department will apply a five percent preference to the price of the bidder's proposal.

Instructions regarding Alaska Bidder Preference

A bidder that claims the Alaska Bidder Preference must review and then certify that each statement appearing under the heading "Alaska Bidder Certification" is true. The individual that signs the certification shall include his/her printed name and position within bidder's organization, *e.g.*, sole proprietor, partner, etc. If a bidder fails to submit a signed certification, the Department will not apply the claimed preference.

Alaska Bidder Certification

The bidding entity for which I am the duly authorized representative:

- (A) Holds a current Alaska business license;
- (B) Is submitting a bid or proposal for goods, services, or construction under the name appearing on the bidder's current Alaska business license;
- (C) Has maintained a place of business in the State staffed by the bidder or an employee of the bidder for a period of six months immediately preceding the date of the proposal;
- (D) Is incorporated or qualified to do business under the laws of the State, is a sole proprietorship and the proprietor is a resident of the State, is a limited liability company organized under AS 10.50 and all members are residents of the State, or is a partnership under former AS 32.05, AS 32.06, or AS 32.11 and all partners are residents of the State; and
- (E) If a joint venture, is composed entirely of ventures that qualify under the four preceding paragraphs of this Alaska Bidder Certification.

By applying my signature below, I certify under penalty of perjury that I am the duly appointed representative of this bidder, which has authorized and empowered me to legally bind it concerning its proposal, and that the foregoing statements are true and correct.

By (signature)

Date

Printed name

Alaska Business License Number

Title:



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

ALASKA VETERAN'S PREFERENCE AFFIDAVIT

In response to the Invitation to Bid for: **Department of Family & Community Services**
Project Name and Number: **Alaska Veterans & Pioneers Home – Roof Replacement,**
Project No.: 25-N0817C

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

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

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

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

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

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

(A) Served in the:

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

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

Authorized Signature

Printed Name

Date

INSTRUCTIONS FOR ALASKA PRODUCTS PREFERENCE WORKSHEET

Special Note:

All procurements, except those funded from Federal sources, shall contain Contract provisions for the preference of Alaska products. The products listed by the Bidder on this worksheet have been selected for the referenced project from the "Alaska Product Preference List" which was in force 30 days prior to the advertisement date of this contract. Bidders may obtain a copy of the appropriate listing "Alaska Preference List" by contacting their local DCED office or by writing: Dept. of Commerce & Economic Development, Alaska Products Preference Listing, P.O. Box D, Juneau, AK 99811.

BIDDERS INSTRUCTIONS:

A. **General.** The Contracting Agency may request documentation to support entries made on this form. False presentations may be subject to AS 36.30.687. All Bidder's entries must conform to the requirements covering bid preparations in general. Discrepancies in price extensions shall be resolved by multiplying the declared total value times the preference percentage and adjusting any resulting computation accordingly.

B. **Form Completion - BASIC BIDS.**

(1) Enter project number and name, the words "Basic Bid" and the CONTRACTOR'S name in the heading of each page as provided.

(2) The Bidder shall compare those candidate products appearing on the preference listing (see Special Notice comments above) against the requirements of the technical specifications appearing in the contract documents. If the Bidder determines that a candidate product can suitably meet the contract requirements, then that product may be included in the worksheet as follows.

(3) For each suitable product submitted under the "Basic Bid" enter:

- ! the product name, generic description and its corresponding technical specification section number under the heading "PRODUCT",
- ! the company name of the Alaska producer under the heading "MANUFACTURER", and,
- ! the product class (I, II, or III) and preference percentage (3, 5, or 7%, respectively) under the "CLASS/%" heading.

(4) For each product appearing on the list and to be utilized by the CONTRACTOR enter:

- ! under the heading "TOTAL DECLARED VALUE" the manufacturer's quoted price of the product, (caution: this value is to be the manufacturer's quoted price at the place of origin and shall not include costs for freight, handling or miscellaneous charges of incorporating the product into the Work), and
- ! the resulting preference--ie.: the preference percentage times the total declared value amount -- under the heading "REDUCTION AMOUNT".

(5) Continue for all "suitable" basic bid products. If the listing exceeds one page enter the words "Page # SUB" in front of the word "TOTAL" and on the first entry line of the following page enter "SUBTOTAL OF REDUCTION AMOUNT FROM PREVIOUS PAGE".

(6) On the final page of the listing enter "BASIC BID PREFERENCE GRAND" immediately before the word "TOTAL".

(7) Total the entries in the "REDUCTION AMOUNT" column for each page by commencing at the first entry for that page. If a continuation page exists, ensure that the subtotal from the previous page is computed into the running total. Number pages as appropriate.

(8) Compute a Grand Total for the Basic Bid Preference. Enter this amount on the final page of the worksheet and at line or column "C" on the Bid Schedule or Bid Schedule Summary Sheet as appropriate. Submit worksheet(s) with Bid Schedule Summary Sheet.

C. **Forms Completion - ALTERNATE BIDS.**

(1) Enter project number and name, the words "ALTERNATE BID # _____", and CONTRACTOR'S name in the heading of each page as provided.

(2) On the first entry line enter "ADDITIONAL ALASKA PRODUCTS FOR ALTERNATE BID

_____", and repeat procedures 2 through 5 under part B of these Bidder's instructions except that references to "Basic Bid" shall be replaced with the words "Alternate Bid # _____".

(3) Following the listing of all additional Alaska products enter the words "ADDITIONAL PRODUCTS PREFERENCE FOR ALTERNATE BID # _____--SUBTOTAL" and enter a subtotal amount for all additional products as listed. Subtotal amount to be determined by adding all additional product entries in the "REDUCTION AMOUNT" column.

(4) Skip three lines and enter "LESS THE FOLLOWING NON-APPLICABLE ALASKA PRODUCTS".

(5) Beginning on the next line enter the product name and manufacturer of each Alaska Product appearing on the "Basic Bid" listing which would be deleted or reduced from the Project should the "Alternate Bid" be selected. Details of entry need only be sufficient to clearly reference the subject product. (ie. "Prehung Doors by Alaska Door Co. in lieu of "Prehung Solid Core Wood Door, model "Super Door", Section 08210, by Alaska Door Co., Anchorage.) Products being reduced shall specify the amount of the reduction. Should no products require deletion enter "None". When a product is listed as a "NON-APPLICABLE ALASKA PRODUCT" for this alternate bid and if under the basic bid the Bidder received a preference on his basic bid as a result of that product, then the applicable entries under the headings "TOTAL DECLARED VALUE" and "REDUCTION AMOUNT" (for each product and from the basic bid listing) shall also be entered into the corresponding headings of this form. Where only a portion of the product has been deleted, the entry (which will differ from those on the basic bid listing) may be "pro-rated" or as otherwise substantiated.

(6) Following the listing of all non-applicable Alaska products enter the words "NON-APPLICABLE PRODUCTS PREFERENCE FORM BASIC BID --SUBTOTAL" and enter a subtotal amount for all non-applicable products as listed. Subtotal amount to be determined by adding all non-applicable entries in the "REDUCTION AMOUNT" column.

(7) At the bottom of the final page enter the words "ALTERNATE BID # _____ PREFERENCE GRAND" immediately before the word "TOTAL".

(8) Compute a Grand Total for the Alternate Bid Preference (for Alternate # _____) by subtracting the non-applicable product preference subtotal from the additional product preference subtotal. Enter on the final page as provided and at the corresponding line in column "C" on the Bid Schedule Summary Sheet. Submit worksheet(s) with the Bid Schedule Summary Sheet.

(9) A separate listing for each alternate bid is required.

BID SCHEDULE

Project: **Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C**

Bidders Please Note: Before preparing this bid schedule, read carefully, "Information to Bidders", 'Supplementary Information to Bidders", and the following:

The Bidder shall insert a fixed price in figures opposite each pay item that appears in the bid schedule to furnish all labor, material, equipment, supervision, and provide all work for each item listed. No price is to be entered or tendered for any item not appearing in the bid schedule. Conditioned or qualified bids will be considered non-responsive.

PAY ITEM	DESCRIPTION OF PAY ITEM	TOTAL BID PRICE, IN FIGURES
1. BASIC BID	All work described in the Specifications and Construction Documents consisting of the Basic Bid and Additive Alternates #1, #2 , and #3 for the <u>Alaska Veterans & Pioneers Home – Roof Replacement Project No.: 25-N0817C</u>	
a. Lump Sum Total Basic Bid		\$ _____
b. Additive Alternate #1 (Heat trace at Fireweed and Sunny Loop Wings		\$ _____
c. Additive Alternate #2 (Homestead Wing Dining Roof Replacement)		\$ _____
d. Additive Alternate #3 (Fireplace Chimney Surround)		\$ _____
e. Alaska Bidders Preference (5% of Basic Bid)		\$ _____
f. Alaska Bidders Preference Add Alt #1 (5% of Additive Alternate #1)		\$ _____
g. Alaska Bidders Preference Add Alt #2 (5% of Additive Alternate #2)		\$ _____
h. Alaska Bidders Preference Add Alt #3 (5% of Additive Alternate #3)		\$ _____
i. Alaska Veterans Preference (5% of Basic Bid - NTE \$5000)		\$ _____
j. Alaska Veterans Preference (5% of Basic Bid + Add. Alt #1 – NTE \$5000)		\$ _____
k. Alaska Veterans Preference (5% of Basic Bid + Add. Alt #1 + Add Alt #2 - NTE \$5000)		\$ _____
l. Alaska Veterans Preference (5% of Basic Bid + Add. Alt #1 + Add Alt #2 + Add Alt #3 NTE \$5000)		\$ _____
m. Alaska Products Preference – Attach Worksheet		\$ _____
n. Adjusted Basic Bid (a – e – i – m)		\$ _____
o. Adjusted Basic Bid + Adjusted Add Alt #1 (a + b - e – f – j – m)		\$ _____
p. Adjusted Basic Bid + Adj. Add Alt #1 + Adj. Add Alt #2 (a + b + c – e - f – g – k – m)		\$ _____
q. Adjusted Basic Bid + Adj. Add Alt #1 + Adj. Add Alt #2 + Adj. Add (a + b + c + d – e - f – g – h – l – m)		_____
2. UNIT PRICING	All work described in Specification Section 01 22 00 Unit Price and Construction Documents including their associated components. Unit of Measurement: Unit price to be per each 25ft section of glulam beam.	
ITEM		UNIT PRICE
<u>Per each 25ft Glulam Beam section</u>		\$ _____

BID SCHEDULE

Contractor's Name (Printed) _____

Alaska Business License # _____ Expires _____ Alaska Contractor's Registration # _____ Expires _____

Offeror is Claiming: ☐ Alaska Bidder Preference ☐ Alaska Products Pref. (worksheet) ☐ Alaska Veteran Preference

Procurement Officer: _____ Date of Receipt of Bid: _____



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

BID BOND

For

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

Project Name and Number

DATE BOND EXECUTED: _____

PRINCIPAL (Legal name and business address):

TYPE OF ORGANIZATION:

	☐ Individual	☐ Partnership
	☐ Joint Venture	☐ Corporation
STATE OF INCORPORATION:		

SURETY(IES) (Name and business address):

A.	B.	C.
PENAL SUM OF BOND:		DATE OF BID:

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

THE CONDITION OF THE FOREGOING OBLIGATION is that the Principal has submitted the accompanying bid in writing, date as shown above, on above-referenced Project in accordance with contract documents filed in the office of the Contracting Officer, and under the Invitation for Bids therefore, and is required to furnish a bond in the amount stated above.

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

If the Principal enters into the contract, then the foregoing obligation is null and void.

PRINCIPAL

Signature(s)	1.	2.	3.
Name(s) & Title(s) (Typed)	1.	2.	3.

Corporate
Seal

See Instructions on Reverse

CORPORATE SURETY(IES)

Surety A	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

Surety B	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

Surety C	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

INSTRUCTIONS

1. This form shall be used whenever a bid bond is submitted.
2. Insert the full legal name and business address of the Principal in the space designated. If the Principal is a partnership or joint venture, the names of all principal parties must be included (e.g., "Smith Construction, Inc. and Jones Contracting, Inc. DBA Smith/Jones Builders, a joint venture"). If the Principal is a corporation, the name of the state in which incorporated shall be inserted in the space provided.
3. Insert the full legal name and business address of the Surety in the space designated. The Surety on the bond may be any corporation or partnership authorized to do business in Alaska as an insurer under AS 21.09. Individual sureties will not be accepted.
4. The penal amount of the bond may be shown either as an amount (in words and figures) or as a percent of the contract bid price (a not-to-exceed amount may be included).
5. The scheduled bid opening date shall be entered in the space marked Date of Bid.
6. The bond shall be executed by authorized representatives of the Principal and Surety. Corporations executing the bond shall also affix their corporate seal.
7. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
8. The states of incorporation and the limits of liability of each surety shall be indicated in the spaces provided.
9. The date that bond is executed must not be later than the bid opening date.

STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES



BID MODIFICATION

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

Project Name and Number

Modification Number: _____

Note: Use this form to modify Manual (paper) bids only.

- Group items and provide subtotals by bid schedule section.
- All revisions shall be made to the adjusted bid amount(s)
- Changes to the adjusted bid amounts will be computed by the Department.

PAY ITEM NO.	PAY ITEM DESCRIPTION	REVISION TO UNIT BID PRICE +/-	REVISION TO BID AMOUNT +/-
		N/A	

TOTAL REVISION: \$ _____

Name of Bidding Firm

Responsible Party Signature

Date

This form may be duplicated if additional pages are needed.



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

CONSTRUCTION CONTRACT

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

Project Name and Number

This CONTRACT, between the STATE OF ALASKA, DEPARTMENT OF HEALTH & SOCIAL SERVICES, herein called the Department, acting by and through its Contracting Officer, and

Company Name

Company Address (Street or PO Box, City, State, Zip)

a/an ☐ Individual ☐ Partnership ☐ Joint Venture ☐ Sole Proprietorship ☐ Corporation incorporated under the laws of the State of _____, its successors and assigns, herein called the Contractor, is effective the date of the signature of the Contracting Officer on this document.

WITNESSETH: That the Contractor, for and in consideration of the payment or payments herein specified and agreed to by the Department, hereby covenants and agrees to furnish and deliver all the materials and to do and perform all the work and labor required in the construction of the above-referenced project at the prices bid by the Contractor for the respective estimated quantities aggregating approximately the sum of

_____ Dollars
(\$ _____), and such other items as are mentioned in the original Bid, which Bid and prices named, together with the Contract Documents are made a part of this Contract and accepted as such.

It is distinctly understood and agreed that no claim for additional work or materials, done or furnished by the Contractor and not specifically herein provided for, will be allowed by the Department, nor shall the Contractor do any work or furnish any material not covered by this Contract, unless such work is ordered in writing by the Department. In no event shall the Department be liable for any materials furnished or used, or for any work or labor done, unless the materials, work, or labor are required by the Contract or on written order furnished by the Department. Any such work or materials which may be done or furnished by the Contractor without written order first being given shall be at the Contractor's own risk, cost, and expense and the Contractor hereby covenants and agrees to make no claim for compensation for work or materials done or furnished without such written order.

The Contractor further covenants and agrees that all materials shall be furnished and delivered, and all labor shall be done and performed, in every respect, to the satisfaction of the Department, on or before: _____. It is expressly understood and agreed that in case of the failure on the part of the Contractor, for any reason, except with the written consent of the Department, to complete the furnishing and delivery of materials and the doing and performance of the work before the aforesaid date, the Department shall have the right to deduct from any money due or which may become due the Contractor, or if no money shall be due, the Department shall have the right to recover

Five Hundred dollars (\$500.00) per day for each calendar day elapsing between the time stipulated for the completion and the actual date of completion in accordance with the terms hereof; such deduction to be made, or sum to be recovered, not as a penalty but as liquidated damages.

The bonds given by the Contractor in the sum of \$ _____ Payment Bond, and \$ _____ Performance Bond, to secure the proper compliance with the terms and provisions of this Contract, are submitted herewith and made a part hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Contract and hereby agree to its terms and conditions.

CONTRACTOR

Company Name

Signature of Authorized Company Representative

Typed or Printed Name and Title

Date

(Corporate Seal)

STATE OF ALASKA DEPARTMENT OF FAMILY & COMMUNITY SERVICES

Signature of Contracting Officer

Typed or Printed Name

Date

**STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES**

SUBCONTRACTOR LIST

Project Name and Number

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

The apparent low bidder shall complete this form and submit it so as to be received by the Contracting Officer prior to the close of business on the fifth working day after receipt of written notice from the Department.

Failure to submit this form with all required information by the due date will result in the bidder being declared non-responsive and may result in the forfeiture of the Bid Security.

Scope of work must be clearly defined. If an item of work is to be performed by more than one firm, indicate the portion or percent of work to be done by each.

Check as applicable: ☐ All work on the below-referenced project will be accomplished without subcontracts greater than ½ of 1% of the contract amount.
OR
☐ Subcontractor List is as follows:

FIRM NAME, ADDRESS, & PHONE No.	AK BUSINESS LICENSE No. & CONTRACTOR'S REGISTRATION No.	SCOPE OF WORK TO BE PERFORMED

CONTINUE SUBCONTRACTOR INFORMATION ON REVERSE

I hereby certify the listed Alaska Business licenses and Contractor's registrations were valid at the time bids were opened for this project.

Signature of Authorized Company Representative

Title

Company Name

Company Address (Street or PO Box, City, State, Zip)

Date

Phone Number

FIRM NAME, ADDRESS, & PHONE No.	AK BUSINESS LICENSE No. & CONTRACTOR'S REGISTRATION No.	SCOPE OF WORK TO BE PERFORMED



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

PERFORMANCE BOND

Bond No. _____

For

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That _____
of _____ as Principal,
and _____
of _____ as Surety,
firmly bound and held unto the State of Alaska in the penal sum of _____ Dollars

(\$ _____) good and lawful money of the United States of America for the payment whereof, well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the _____ of _____ A.D., 20____, for construction of the above-named project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall well and truly perform and complete all obligations and work under said contract and if the Principal shall reimburse upon demand of the Department of Transportation and Public Facilities any sums paid him which exceed the final payment determined to be due upon completion of the project, then these presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at _____, _____ this _____ day of _____ A.D., 20____.

Principal: _____

Address: _____

By: _____

Contact Name: _____

Phone: () _____

Surety: _____

Address: _____

By: _____

Contact Name: _____

Phone: () _____

The offered bond has been checked for adequacy under the applicable statutes and regulations:

See Instructions on Reverse

INSTRUCTIONS

1. This form shall be used whenever a performance bond is required. There shall be no deviation from this form without approval from the Contracting Officer.
2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.
3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.
4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.
5. The bond shall be signed by authorized persons. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.



STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES

PAYMENT BOND

Bond No. _____

For

Alaska Veterans & Pioneers Home – Roof Replacement, Project No.: 25-N0817C

Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That _____
of _____ as Principal,
and _____
of _____ as Surety,
firmly bound and held unto the State of Alaska in the penal sum of _____ Dollars

(\$ _____) good and lawful money of the United States of America for the payment whereof,
well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns,
jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the _____ of _____
A.D., 20____, for construction of the above-referenced project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall comply with all requirements
of law and pay, as they become due, all just claims for labor performed and materials and supplies furnished upon or for the work
under said contract, whether said labor be performed and said materials and supplies be furnished under the original contract, any
subcontract, or any and all duly authorized modifications thereto, then these presents shall become null and void; otherwise they
shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at _____,
_____ this _____ day of _____ A.D., 20____.

Principal: _____

Address: _____

By: _____

Contact Name: _____

Phone: () _____

Surety: _____

Address: _____

By: _____

Contact Name: _____

Phone: () _____

The offered bond has been checked for adequacy under the applicable statutes and regulations:

Alaska Department of Family & Community Authorized Representative

Date

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, shall be used whenever a payment bond is required. There shall be no deviation from this form without approval from the Contracting Officer.
2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.
3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.
4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.
5. The bond shall be signed by authorized persons. Where such persons are signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.

2. What percent of the total value of this contract do you intend to subcontract? _____ %

3. Do you propose to purchase any equipment for use on this project?
[] No [] Yes If YES, describe type, quantity, and approximate cost:

4. Do you propose to rent any equipment for this work?
[] No [] Yes If YES, describe type and quantity:

5. Is your bid based on firm offers for all materials necessary for this project?
[] Yes [] No If NO, please explain:

C. EXPERIENCE

1. Have you had previous construction contracts or subcontracts with the State of Alaska?
[] Yes [] No

Describe the most recent or current contract, its completion date, and scope of work:

2. List, as an attachment to this questionnaire, other construction projects you have completed, the dates of completion, scope of work, and total contract amount for each project completed in the past 12 months.

I hereby certify that the above statements are true and complete.

Name of Contractor

Name and Title of Person Signing

Signature

Date

**STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES
DOCUMENT 00700 -**

**GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT FOR
BUILDINGS**

- ARTICLE 1 - DEFINITIONS**
- ARTICLE 2 - AUTHORITIES AND LIMITATIONS**
- 2.1 Authorities and Limitations
 - 2.2 Evaluations by Contracting Officer
 - 2.3 Means and Methods
 - 2.4 Visits to Site
- ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**
- 3.1 Incomplete Contract Documents
 - 3.2 Copies of Contract Documents
 - 3.3 Scope of Work
 - 3.4 Intent of Contract Documents
 - 3.5 Discrepancy in Contract Documents
 - 3.6 Clarifications and Interpretations
 - 3.7 Reuse of Documents
- ARTICLE 4 - LANDS AND PHYSICAL CONDITIONS**
- 4.1 Availability of Lands
 - 4.2 Visit to Site/Place of Business
 - 4.3 Explorations and Reports
 - 4.4 Utilities
 - 4.5 Damaged Utilities
 - 4.6 Utilities Not Shown or Indicated
 - 4.7 Survey Control
- ARTICLE 5 - BONDS AND INSURANCE**
- 5.1 Delivery of Bonds
 - 5.2 Bonds
 - 5.3 Replacement of Bond and Surety
 - 5.4 Insurance Requirements
 - 5.5 Indemnification
- ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES**
- 6.1 Supervision of Work
 - 6.2 Superintendence by CONTRACTOR
 - 6.3 Character of Workers
 - 6.4 CONTRACTOR to Furnish
 - 6.5 Materials and Equipment
 - 6.6 Anticipated Schedules
 - 6.7 Finalizing Schedules
 - 6.8 Adjusting Schedules
 - 6.9 Substitutes or "Or-Equal" Items
 - 6.10 Substitute Means and Methods
 - 6.11 Evaluation of Substitution
 - 6.12 Dividing the Work
 - 6.13 Subcontractors
 - 6.14 Use of Premises
 - 6.15 Structural Loading
 - 6.16 Record Documents
 - 6.17 Safety and Protection
 - 6.18 Safety Representative
 - 6.19 Emergencies

	6.20	Shop Drawings and Samples
	6.21	Shop Drawing and Sample Review
	6.22	Maintenance During Construction
	6.23	Continuing the Work
	6.24	Consent to Assignment
	6.25	Use of Explosives
	6.26	CONTRACTOR's Records
ARTICLE	7 -	LAWS AND REGULATIONS
	7.1	Laws to be Observed
	7.2	Permits, Licenses, and Taxes
	7.3	Patented Devices, Materials and Processes
	7.4	Compliance of Specifications and Drawings
	7.5	Accident Prevention
	7.6	Sanitary Provisions
	7.7	Business Registration
	7.8	Professional Registration and Certification
	7.9	Local Building Codes
	7.10	Air Quality Control
	7.11	Archaeological or Paleontological Discoveries
	7.12	Applicable Alaska Preferences
	7.13	Preferential Employment
	7.14	Wages and Hours of Labor
	7.15	Overtime Work Hours and Compensation
	7.16	Covenant Against Contingent Fees
	7.17	Officials Not to Benefit
	7.18	Personal Liability of Public Officials
ARTICLE	8 -	OTHER WORK
	8.1	Related Work at Site
	8.2	Access, Cutting, and Patching
	8.3	Defective Work by Others
	8.4	Coordination
ARTICLE	9 -	CHANGES
	9.1	DEPARTMENT's Right to Change
	9.2	Authorization of Changes within the General Scope
	9.3	Directive
	9.4	Change Order
	9.5	Shop Drawing Variations
	9.6	Changes Outside the General Scope; Supplemental Agreement
	9.7	Unauthorized Work
	9.8	Notification of Surety
	9.9	Differing Site Conditions
ARTICLE	10-	CONTRACT PRICE; COMPUTATION AND CHANGE
	10.1	Contract Price
	10.2	Claim for Price Change
	10.3	Change Order Price Determination
	10.4	Cost of the Work
	10.5	Excluded Costs
	10.6	CONTRACTOR's Fee
	10.7	Cost Breakdown
	10.8	Cash Allowances
	10.9	Unit Price Work
	10.10	Determinations for Unit Prices
	10.11	Disadvantaged and Women Business Enterprises (DBE and WBE) Program
ARTICLE	11-	CONTRACT TIME, COMPUTATION AND CHANGE

- 11.1 Commencement of Contract Time; Notice to Proceed
- 11.2 Starting the Work
- 11.3 Computation of Contract Time
- 11.4 Time Change
- 11.5 Extension Due to Delays
- 11.6 Essence of Contract
- 11.7 Reasonable Completion Time
- 11.8 Delay Damages

ARTICLE 12 - QUALITY ASSURANCE

- 12.1 Warranty and Guaranty
- 12.2 Access to Work
- 12.3 Tests and Inspections
- 12.4 Uncovering Work
- 12.5 DEPARTMENT May Stop the Work
- 12.6 Correction or Removal of Defective Work
- 12.7 One Year Correction Period
- 12.8 Acceptance of Defective Work
- 12.9 DEPARTMENT may Correct Defective Work

ARTICLE 13- PAYMENTS TO CONTRACTOR AND COMPLETION

- 13.1 Schedule of Values
- 13.2 Preliminary Payments
- 13.3 Application for Progress Payment
- 13.4 Review of Applications for Progress Payments
- 13.5 Stored Materials and Equipment
- 13.6 CONTRACTOR's Warranty of Title
- 13.7 Withholding of Payments
- 13.8 Retainage
- 13.9 Request for Release of funds
- 13.10 Substantial Completion
- 13.11 Access Following Substantial Completion
- 13.12 Final Inspection
- 13.13 Final Completion and Application for Payment
- 13.14 Final Payment
- 13.15 Final Acceptance
- 13.16 CONTRACTOR's Continuing Obligation
- 13.17 Waiver of Claims by CONTRACTOR
- 13.18 No Waiver of Legal Rights

ARTICLE 14- SUSPENSION OF WORK AND TERMINATION

- 14.1 DEPARTMENT May Suspend Work
- 14.2 Default of Contract
- 14.3 Rights or Remedies
- 14.4 Convenience Termination

ARTICLE 15- CLAIMS AND DISPUTES

- 15.1 Notification
- 15.2 Presenting Claim
- 15.3 Claim Validity, Additional Information & Project Manager's Action
- 15.4 Contracting Officer's Decision

ACKNOWLEDGMENT

"The State of Alaska, General Conditions of the Construction Contract for Buildings " is based on the "Standard General Conditions of the Construction Contract" as published by the National Society of Professional Engineers (document number 1910-8, 1983 edition) on behalf of the Engineers Joint Construction Documents Committee. Portions of the NSPE General Conditions are reprinted herein by the express permission of NSPE. Modifications to the NSPE text are made to provide for State laws, regulations, and established procedures.

The granting of permission by NSPE to allow the State of Alaska to preprint portions of the NSPE document 1910-8, 1983 edition does not constitute approval of the State of Alaska General Conditions of the Construction Contract for Buildings.

ARTICLE 1 - DEFINITIONS

Wherever used in the Contract Documents the following terms, or pronouns in place of them, are used, the intent and meaning, unless a different intent or meaning is clearly indicated, shall be interpreted as set forth below.

The titles and headings of the articles, sections, and subsections herein are intended for convenience of reference and shall not be considered as having bearing on their interpretation.

Whenever used in the Specifications or other Contract Documents the following terms have the meaning indicated which are applicable to both the singular and plural thereof. Working titles which have a masculine gender, are intended to refer to persons of either sex.

Terms not defined below shall have their ordinary accepted meanings within the context which they are used. Words which have a well-known technical or trade meaning when used to describe work, materials or equipment shall be interpreted in accordance with such meaning. Words defined in Article 1 are capitalized throughout these General Conditions.

Addenda - All clarifications, corrections, or changes issued graphically or in writing by the DEPARTMENT after the Advertisement but prior to the opening of Proposals.

Advertisement - The public announcement, as required by law, inviting bids for Work to be performed or materials to be furnished.

Application for Payment - The form provided by the DEPARTMENT which is to be used by the CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Approved or Approval - Means written approval by the Contracting Officer or his authorized representative as defined in Article 2.1.

A.S - Initials which stand for Alaska Statute.

Award - The acceptance, by the DEPARTMENT, of the successful bid.

Bid Bond - A type of Proposal Guaranty.

Bidder - Any individual, firm, corporation or any acceptable combination thereof, or joint venture submitting a bid for the advertised Work.

Calendar Day - Every day shown on the calendar, beginning and ending at midnight.

Change Order - A written order by the DEPARTMENT directing changes to the Contract Documents, within their general scope.

Conditions of the Contract - Those portions of the Contract Documents which define the rights and responsibilities of the contracting parties and of others involved in the Work. The Conditions of the Contract include General Conditions, Supplementary Conditions and other conditions.

Consultant - The person, firm, or corporation retained directly by the DEPARTMENT to prepare Contract Documents, perform construction administration services, or other Project related services.

Contingent Sum Work Item - When the bid schedule contains a Contingent Sum Work Item, the Work covered shall be performed only upon the written Directive of the Project Manager. Payment shall be made as provided in the Directive.

Contract - The written agreement between the DEPARTMENT and the CONTRACTOR setting forth the obligations of the parties and covering the Work to be performed, all as required by the Contract Documents.

Contract Documents - The Contract form, Addenda, the bidding requirements and CONTRACTOR's bid (including all appropriate bid tender forms), the bonds, the Conditions of the Contract and all other Contract requirements, the Specifications, and the Drawings furnished by the DEPARTMENT to the CONTRACTOR, together with all Change Orders and documents approved by the Contracting Officer, for inclusion, modifications and supplements issued on or after the Effective Date of the Contract.

Contracting Officer - The person authorized by the Commissioner to enter into and administer the Contract on behalf of the DEPARTMENT. He has authority to make findings, determinations and decisions with respect to the Contract and, when necessary, to modify or terminate the Contract. The Contracting Officer is identified on the construction Contract.

CONTRACTOR - The individual, firm, corporation or any acceptable combination thereof, contracting with the DEPARTMENT for performance of the Work.

Contract Price - The total moneys payable by the DEPARTMENT to the CONTRACTOR under the terms of the Contract Documents.

Contract Time - The number of Calendar Days or the date specified in the construction Contract and authorized time extensions which identify how much time the CONTRACTOR is allowed to achieve Final Completion.

Controlling Item - Any feature of the Work considered at the time by the Contracting Officer as essential to the orderly completion of the Work and which, if delayed, will delay the time of Final Completion of the Contract (such as an item of Work on the critical path of a network schedule).

Defective - An adjective which refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or Approval referred to in the Contract Documents, or has been damaged prior to the DEPARTMENT's Approval.

DEPARTMENT - The Alaska Department of Health and Social Services. References to "Owner", "State", "Contracting Agency", mean the DEPARTMENT.

Directive - A written communication to the CONTRACTOR from the Contracting Officer interpreting or enforcing a Contract requirement or ordering commencement of an item of Work.

Drawings - The Drawings which show the character and scope of the Work to be performed and which have been furnished by the DEPARTMENT or the DEPARTMENT's Consultant and are by reference made a part of the Contract Documents.

Effective Date of the Contract - The date on which the Contract is fully executed by both CONTRACTOR and the DEPARTMENT.

Final Acceptance - The DEPARTMENT's written acceptance of the Work following Final Completion and the performance of all Contract requirements by the CONTRACTOR.

Final Completion - The Project (or specified part thereof) has progressed to the point that all required Work is complete as determined by the Contracting Officer.

General Requirements - Sections of Division I of the Specifications which contain administrative and procedural requirements as well as requirements for temporary facilities which apply to Specification Divisions 2 through 16.

Holidays - In the State of Alaska, Legal Holidays occur on:

1. New Years Day - January 1
2. Martin Luther King's Birthday - Third Monday in January
3. President's Day - Third Monday in February
4. Seward's Day - Last Monday in March
5. Memorial Day - Last Monday in May
6. Independence Day - July 4
7. Labor Day - First Monday in September
8. Alaska Day - October 18
9. Veteran's Day - November 11
10. Thanksgiving Day - Fourth Thursday in November
11. Christmas Day - December 25
12. Every Sunday
13. Every day designated by public proclamation by the President of the United States or the Governor of the State as a legal Holiday.

If any Holiday listed above falls on a Saturday, Saturday and the preceding Friday are both legal Holidays. If the Holiday should fall on a Sunday, except (12) above, Sunday and the following Monday are both legal Holidays. See Title 44, Alaska Statutes.

Install - Means to build into the Work, ready to be used in complete and operable condition and in compliance with Contract Documents.

Invitation for Bids - A portion of the bidding documents soliciting bids for the Work to be performed.

Notice of Intent to Award - The written notice by the DEPARTMENT to all Bidders identifying the apparent successful Bidder and establishing the DEPARTMENT's intent to execute the Contract when all conditions required for execution of the Contract are met.

Notice to Proceed - A written notice to the CONTRACTOR to begin the Work and establishing the date on which the Contract Time begins.

Payment Bond - The security furnished by the CONTRACTOR and his Surety to guarantee payment of the debts covered by the bond.

Performance Bond - The security furnished by the CONTRACTOR and his Surety to guarantee performance and completion of the Work in accordance with the Contract.

Project - The total construction, of which the Work performed under the Contract Documents is the whole or a part, where such total construction may be performed by more than one CONTRACTOR.

Project Manager - The authorized representative of the Contracting Officer who is responsible for administration of the Contract.

Proposal - The offer of a Bidder, on the prescribed forms, to perform the Work at the prices quoted.

Proposal Guaranty - The security furnished with a Proposal to guarantee that the bidder will enter into a Contract if his Proposal is accepted by the DEPARTMENT.

Regulatory Requirements - Laws, rules, regulations, ordinances, codes and/or orders.

Schedule of Values - The DEPARTMENT's document, submitted by the CONTRACTOR and reviewed by the Contracting Officer, which shall serve as the basis for computing payment and for establishing the value of separate items of Work which comprise the Contract Price.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules,

performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by the CONTRACTOR to illustrate material, equipment, fabrication, or erection for some portion of the Work.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative and procedural details applicable thereto.

Subcontractor - An individual, firm, or corporation to whom the CONTRACTOR or any other Subcontractor sublets part of the Contract.

Substantial Completion - Although not fully completed, the Work (or a specified part thereof) has progressed to the point where, in the opinion of the Contracting Officer, as evidence by the DEPARTMENT's written notice, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended. The terms "Substantially Complete" and "Substantially Completed" as applied to any Work refer to Substantial Completion thereof.

Supplemental Agreement - A written agreement between the CONTRACTOR and the DEPARTMENT covering work that is not within the general scope of the Contract.

Supplementary Conditions - The part of the Contract Documents which amends or supplements these General Conditions.

Supplier - A manufacturer, fabricator, distributor, materialman or vendor of materials or equipment.

Surety - The corporation, partnership, or individual, other than the CONTRACTOR, executing a bond furnished by the CONTRACTOR.

Unit Price Work - Work to be paid for on the basis of unit prices.

Using Agency - The entity who will occupy or use the completed Project.

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

ARTICLE 2 - AUTHORIZATION AND LIMITATIONS

2.1 Authorities and Limitations

- 2.1.1 The Contracting Officer alone, shall have the power to bind the DEPARTMENT and to exercise the rights, responsibilities, authorities and functions vested in the Contracting Officer by the Contract Documents, except that the Contracting Officer shall have the right to designate in writing authorized representatives to act for him. Wherever any provision of the Contract Documents specifies an individual or organization, whether governmental or private, to perform any act on behalf of or in the interest of the DEPARTMENT that individual or organization shall be deemed to be the Contracting Officer's authorized representative under this Contract but only to the extent so specified. The Contracting Officer may, at any time during the performance of this Contract, vest in any such authorized representatives additional power and authority to act for the Contracting Officer or designate additional representatives, specifying the extent of their authority to act for the Contracting Officer; a copy of each document vesting additional authority in or removing that authority from an authorized representative or designating an additional authorized representative shall be furnished to the CONTRACTOR. The head of the Contracting Agency reserves the right to appoint a new Contracting Officer without affecting any of the CONTRACTOR's obligations to the DEPARTMENT under this Contract.
- 2.1.2 The CONTRACTOR shall perform the Work in accordance with any written order (including but not limited to instruction, direction, interpretation or determination) issued by an authorized representative in accordance with the authorized representative's authority to act for the Contracting Officer. The CONTRACTOR assumes all the risk and consequences of performing the Work in accordance with any order (including but not limited to instruction, direction, interpretation or determination) of anyone not authorized to issue such order, and of any order not in writing.

- 2.1.3 Should the Contracting Officer or his authorized representative designate Consultant(s) to act for the DEPARTMENT as provided for in Paragraph 2.1.1, the performance or nonperformance of the Consultant under such authority to act, shall not give rise to any contractual obligation or duty of the Consultant to the CONTRACTOR, any Subcontractor, any Supplier, or any other organization performing any of the Work or any Surety representing them.
- 2.1.4 The term "Contracting Officer" when used in the text of these General Conditions or other Contract Documents following this section shall also mean any duly authorized representative of the Contracting Officer when authorized in accordance with Paragraph 2.1.1.

2.2 Evaluations by Contracting Officer:

- 2.2.1 The Contracting Officer will decide all questions which may arise as to:
- a. Quality and acceptability of materials furnished;
 - b. Quality and acceptability of Work performed;
 - c. Compliance with the schedule of progress;
 - d. Interpretation of Contract Documents;
 - e. Acceptable fulfillment of the Contract on the part of the CONTRACTOR.
- 2.2.2 In order to avoid cumbersome terms and confusing repetition of expressions in the Contract Documents the terms "as ordered", "as directed", "as required", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used it shall be understood as if the expression were followed by the words "the Contracting Officer".
- When such terms are used to describe a requirement, direction, review or judgment of the Contracting Officer as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise).
- 2.2.3 The use of any such term or adjective shall not be effective to assign to the DEPARTMENT any duty of authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraphs 2.3 or 2.4.

2.3 Means & Methods:

The means, methods, techniques, sequences or procedures of construction, or safety precautions and the program incident thereto, and the failure to perform or furnish the Work in accordance with the Contract Documents are the sole responsibility of the CONTRACTOR.

2.4 Visits to Site/Place of Business:

The Contracting Officer will make visits to the site and approved remote storage sites at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. The Contracting Officer may, at reasonable times, inspect that part of the plant or place of business of the CONTRACTOR or Subcontractor that is related to the performance of the Contract. Such observations or the lack of such observations shall in no way relieve the CONTRACTOR from his duty to perform the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 Incomplete Contract Documents:

The submission of a bid by the Bidder is considered a representation that the Bidder examined the Contract Documents to make certain that all sheets and pages were provided and that the Bidder is satisfied as to the conditions to be encountered in performing the Work. The DEPARTMENT expressly denies any responsibility or liability for a bid submitted on the basis of an incomplete set of Contract Documents.

3.2 Copies of Contract Documents:

The DEPARTMENT shall furnish to the CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished, upon request, at the cost of reproduction.

3.3 Scope of Work:

The Contract Documents comprise the entire Contract between the DEPARTMENT and the CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the Regulatory Requirements of the place of the Project.

It is specifically agreed between the parties executing this Contract that it is not intended by any of the provisions of the Contract to create in the public or any member thereof a third party benefit, or to authorize anyone not a party to this Contract to maintain a suit pursuant to the terms or provisions of the Contract.

3.4 Intent of Contract Documents:

- 3.4.1 It is the intent of the Contract Documents to describe a functionally complete Project to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied, without any adjustment in Contract Price or Contract Time, whether or not specifically called for.
- 3.4.2 Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Regulatory Requirements of any governmental authority, whether such reference be specific or by implication, shall mean the edition stated in the Contract Documents or if not stated the latest standard specification, manual, code or Regulatory Requirements in effect at the time of Advertisement for the Project (or, on the Effective Date of the Contract if there was no Advertisement). However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the DEPARTMENT and the CONTRACTOR, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to the DEPARTMENT or any of the DEPARTMENT's Consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraphs 2.3 or 2.4.

3.5 Discrepancy in Contract Documents:

- 3.5.1 Before undertaking the Work, the CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures, and dimensions shown thereon and all applicable field measurements. Work in the area by the CONTRACTOR shall imply verification of figures, dimensions and field measurements. If, during the above study or during the performance of the Work, the CONTRACTOR finds a conflict, error, discrepancy or omission in the Contract Documents, or a discrepancy between the Contract Documents and any standard specification, manual, code, or Regulatory Requirement which affects the Work, the CONTRACTOR shall promptly report such discrepancy in writing to the Contracting Officer. The CONTRACTOR shall obtain a written interpretation or clarification from the Contracting Officer before proceeding with any Work affected thereby. Any adjustment made by the CONTRACTOR without this determination shall be at his own risk and expense. However, the CONTRACTOR shall not be liable to the DEPARTMENT for failure to report any conflict, error or discrepancy in the Contract Documents unless the CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

3.5.2 Discrepancy - Order of Precedence:

When conflicts, errors, or discrepancies within the Contract Documents exist, the order of precedence from most governing to least governing will be as follows:

- Contents of Addenda
- Supplementary Conditions
- General Conditions
- General Requirements
- Technical Specifications
- Drawings
- Recorded dimensions will govern over scaled dimensions
- Large scale details over small scale details
- Schedules over plans
- Architectural drawings over structural drawings Structural drawings over mechanical and electrical drawings

3.6 Clarifications and Interpretations:

The Contracting Officer will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as the Contracting Officer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

3.7 Reuse of Documents:

Neither the CONTRACTOR nor any Subcontractor, or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with the DEPARTMENT shall have or acquire any title to or ownership rights in any of the Contract Documents (or copies thereof) prepared by or for the DEPARTMENT and they shall not reuse any of the Contract Documents on extensions of the Project or any other project without written consent of the Contracting Officer.

Contract Documents prepared by the CONTRACTOR in connection with the Work shall become the property of the DEPARTMENT.

ARTICLE 4 - LANDS AND PHYSICAL CONDITIONS

4.1 Availability of Lands:

The DEPARTMENT shall furnish as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for use of the CONTRACTOR in connection with the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the DEPARTMENT, unless otherwise provided in the Contract Documents. The CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Visit to Site:

The submission of a bid by the CONTRACTOR is considered a representation that the CONTRACTOR has visited and carefully examined the site and is satisfied as to the conditions to be encountered in performing the Work and as to the requirements of the Contract Documents.

4.3 Explorations and Reports:

1. Reference is made to the Supplementary Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by the DEPARTMENT in preparation of the Contract Documents. The CONTRACTOR may for his purposes rely upon the accuracy of the factual data contained in such reports, but not upon interpretations or opinions drawn from such factual data contained therein or for the completeness or sufficiency thereof. Except as indicated in the immediately preceding sentence and in paragraphs 4.4 and 9.9, CONTRACTOR shall have full responsibility with respect to surface and subsurface conditions at the site.

2. **Hazardous Materials:**

The CONTRACTOR is to be aware under 29 CFR 1926.1101(k)(2)(ii) Construction Industry Standards, any building or facility constructed prior to 1980 may contain suspected Hazardous Materials. All known or perceived known Hazardous Materials information will be provided by the DEPARTMENT's facility staff to the CONTRACTOR upon request. Any new suspected Hazardous Materials encountered by the CONTRACTOR shall be made known to the DEPARTMENT within 3 business days of discovery. Once notified the DEPARTMENT will have an Environmental Assessment completed to verify if hazardous materials exist.

4.4 Utilities:

The horizontal and vertical locations of known underground utilities as shown or indicated by the Contract Documents are approximate and are based on information and data furnished to the DEPARTMENT by the owners of such underground utilities.

4.4.2 The CONTRACTOR shall have full responsibility for:

- a. Reviewing and checking all information and data concerning utilities.
- b. Locating all underground utilities shown or indicated in the Contract Documents which are affected by the Work.
- c. Coordination of the Work with the owners of all utilities during construction.
- d. Safety and protection of all utilities as provided in paragraph 6.17.
- e. Repair of any damage to utilities resulting from the Work in accordance with 4.4.4 and 4.5.

4.4.3 If Work is to be performed by any utility owner, the CONTRACTOR shall cooperate with such owners to facilitate the Work.

4.4.4 In the event of interruption to any utility service as a result of accidental breakage or as result of being exposed or unsupported, the CONTRACTOR shall promptly notify the utility owner and the Contracting Officer. If service is interrupted, repair work shall be continuous until the service is restored. No Work shall be undertaken around fire hydrants until provisions for continued service has been approved by the local fire authority.

4.5 Damaged Utilities:

When utilities are damaged by the CONTRACTOR, the utility owner shall have the choice of repairing the utility or having the CONTRACTOR repair the utility. In the following circumstances, the CONTRACTOR shall reimburse the utility owner for repair costs or provide at no cost to the utility owner or the DEPARTMENT, all materials, equipment and labor necessary to complete repair of the damage:

- a. When the utility is shown or indicated in the Contract Documents.
- b. When the utility has been located by the utility owner.
- c. When no locate was requested by the CONTRACTOR for utilities shown or indicated in the Contract Documents.
- d. All visible utilities.
- e. When the CONTRACTOR could have, otherwise, reasonably been expected to be aware of such utility.

4.6 Utilities Not Shown or Indicated:

If, while directly performing the Work, an underground utility is uncovered or revealed at the site which was not shown or indicated in the Contract Documents and which the CONTRACTOR could not reasonably have

been expected to be aware of, the CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by paragraph 6.19) identify the owner of such underground utility and give written notice thereof to that owner and to the Contracting Officer. The Contracting Officer will promptly review the underground utility to determine the extent to which the Contract Documents and the Work should be modified to reflect the impacts of the discovered utility. The Contract Documents will be amended or supplemented in accordance with paragraph 9.2 and to the extent necessary through the issuance of a change document by the Contracting Officer. During such time, the CONTRACTOR shall be responsible for the safety and protection of such underground utility as provided in paragraph 6.17. The CONTRACTOR may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are directly attributable to the existence of any underground utility that was not shown or indicated in the Contract Documents and which the CONTRACTOR could not reasonably have been expected to be aware of.

4.7 Survey Control:

The DEPARTMENT will identify sufficient horizontal and vertical control data to enable the CONTRACTOR to survey and layout the Work. All survey work shall be performed under the direct supervision of a registered land surveyor when required by paragraph 7.8. Copies of all survey notes will be provided the DEPARTMENT on a weekly basis with variations between the Contract Documents and actual field conditions identified. Survey notes are to be in a format acceptable to the DEPARTMENT.

ARTICLE 5 - BONDS, INSURANCE, AND INDEMNIFICATION

5.1 Delivery of Bonds:

When the CONTRACTOR delivers the executed Contract to the Contracting Officer, the CONTRACTOR shall also deliver to the Contracting Officer such bonds as the CONTRACTOR may be required to furnish in accordance with paragraph 5.2.

5.2 Bonds:

5.2.1 The CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount as shown on the Contract as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These bonds shall remain in effect for one year after the date of Final Acceptance and until all obligations under this Contract, except special guarantees as per 12.7, have been met. All bonds shall be furnished on forms provided by the DEPARTMENT (or copies thereof) and shall be executed by such Sureties as are authorized to do business in the State of Alaska. The Contracting Officer may at his option copy the Surety with notice of any potential default or liability.

5.2.2 At the option of the CONTRACTOR, bonds may be provided by individual Surety the adequacy of which shall be determined by the Contracting Officer. Any costs incurred by the CONTRACTOR or individual Surety shall be borne by the CONTRACTOR. Where individual Sureties are used, two individual Sureties must each provide the State of Alaska with security equal to the amount of each bond by one, or a combination of, the following methods:

- a. Escrow account in the name of the DEPARTMENT for the duration of the Contract. Acceptable securities would include, but not necessarily be limited to: Cash; treasury notes; bearer instruments having a specific value, or; money market certificates.
- b. First *Deed of Trust* with the DEPARTMENT designated as beneficiary, against the unencumbered value of the real property located within the State of Alaska or an agreement by any second party, including deeds of trust, mortgage, lien or judgment interests to subrogate their interests to that of the State of Alaska in the real property which has been offered by the individual Surety.

A title insurance policy with the State of Alaska as a named beneficiary and a current (within 3 months) professional appraisal or assessed valuation will be required to ascertain the true value of the property offered as collateral. If buildings or other valued improvements are involved then fire and

casualty insurance with the State of Alaska as a named insured and in limits and coverages acceptable to the Contracting Officer shall be required. The appraiser shall acknowledge in writing that the appraisal is prepared for the benefit of the DEPARTMENT and the DEPARTMENT has the right to rely on its contents. This *Deed* must be recorded in the recording office where the property is located.

With respect to clauses "a" and "b" above the *Deed of Trust* or other accepted security shall not be released until 12 months after Final Acceptance of the Project and settlement of all outstanding claims.

5.3 Replacement of Bond and Surety:

If the Surety on any bond furnished in connection with this Contract is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.2, or otherwise becomes unacceptable to the DEPARTMENT, or if any such Surety fails to furnish reports as to his financial condition as requested by the DEPARTMENT, the CONTRACTOR shall within five days thereafter substitute another bond and Surety, both of which must be acceptable to DEPARTMENT.

An individual Surety may be replaced by a corporate Surety during the course of the Contract period. If the Surety desires to dispose of the collateral posted, the DEPARTMENT may, at its option, accept substitute collateral.

5.4 Insurance Requirements:

5.4.1 The CONTRACTOR shall provide evidence of insurance with a carrier or carriers satisfactory to the DEPARTMENT covering injury to persons and/or property suffered by the State of Alaska or a third party, as a result of operations which arise both out of and during the course of this Contract by the CONTRACTOR or by any Subcontractor. This coverage will also provide protection against injuries to all employees of the CONTRACTOR and the employees of any Subcontractor engaged in Work under this Contract.

5.4.2 The CONTRACTOR shall maintain in force at all times during the performance of Work under this agreement the following policies of insurance. Where specific limits and coverages are shown, it is understood that they shall be the minimum acceptable. The requirements of this paragraph shall not limit the CONTRACTOR's responsibility to indemnify under paragraph 5.5. Additional insurance requirements specific to this Contract are contained in the Supplementary Conditions, when applicable.

a. Worker's Compensation Insurance:

The Contractor shall provide and maintain, for all employees engaged in work under this contract, statutory limits coverage as required by AS 23.30.045.

The policy must waive subrogation against the State and include Employer's Liability Protection with policy limits not less than:

\$500,000 each accident,
\$500,000 each disease.

b. Commercial General Liability Insurance: on an occurrence policy form covering all operations by or on behalf of the CONTRACTOR with combined single limits not less than:

\$1,000,000 each occurrence

\$1,000,000 for Personal Injury Liability

\$2,000,000 aggregate for Products-Completed Operations

\$2,000,000 general aggregate

The State of Alaska shall be named as additional insured. This insurance shall be considered to be primary and non-contributory to any other insurance carried by the State through self insurance or otherwise.

- c. Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with combined single limits not less than:

\$1,000,000 each occurrence

- d.

- e. Other Coverages: As specified in the Supplementary Conditions.

- 5.4.3 All insurance policies shall comply with, and be issued by insurers licensed to transact the business of insurance under AS 21. Failure to maintain insurance may, at the option of the Contracting Officer, be deemed Defective Work and remedied in accordance with the Contract.

Evidence of Insurance, consisting of a certificate of insurance or the policy declaration page with required endorsements attached thereto - all of which have been executed by the insurer's representative and issued to the DEPARTMENT - shall denote the type, amount, class of operations covered, effective (and retroactive) dates, and dates of expiration. Evidence of Insurance must provide for a 30-day prior notice of cancellation, nonrenewal or material change of conditions.

Evidence pertaining to Worker's Compensation, Commercial General Liability, or Automobile Liability is required for Award. All other coverages shall be evidenced prior to commencement of WORK. Acceptance by the DEPARTMENT of deficient evidence does not constitute a waiver of Contract requirements as provided for the Conditions of the Contract.

If a certificate of insurance is submitted as evidence it shall contain the following statement:

"This is to certify that the policies described herein comply with all aspects of the insurance requirements of (Contract Name and Number, and Project Number)."

5.5 Indemnification:

The CONTRACTOR shall indemnify, save harmless, and defend the DEPARTMENT, its agents and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from the CONTRACTOR or SUBCONTRACTOR's performance of WORK under this Contract; however, this provision has no effect if, but only if, the sole proximate cause of the injury or damage is the DEPARTMENT's negligence.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.1 Supervision of Work:

The CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. All Work under this Contract shall be performed in a skillful and workmanlike manner. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.

6.2 Superintendence by CONTRACTOR:

The CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent. The Contracting Officer shall be advised in writing of the superintendent's name, local address, and telephone number. This written advice is to be kept current until Final Acceptance by the DEPARTMENT. The superintendent will be the CONTRACTOR's representative at the site and shall have full authority to act and sign documents on behalf of the CONTRACTOR.

All communications given to the superintendent shall be as binding as if given to the CONTRACTOR. The CONTRACTOR shall cooperate with the Contracting Officer in every way possible.

6.3 Character of Workers:

The CONTRACTOR shall provide a sufficient number of competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. The CONTRACTOR shall at all times maintain good discipline and order at the site. The Contracting Officer may, in writing, require the CONTRACTOR to remove from the Work any employee the Contracting Officer deems incompetent, careless, or otherwise detrimental to the progress of the Work, but the Contracting Officer shall have no duty to exercise this right.

6.4 CONTRACTOR to Furnish:

Unless otherwise specified in the General Requirements, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance testing, start-up and completion of the Work.

6.5 Materials and Equipment:

All materials and equipment shall be of specified quality and new, except as otherwise provided in the Contract Documents. If required by the Contracting Officer, the CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to the DEPARTMENT or any of the DEPARTMENT's Consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraphs 2.3 or 2.4.

6.6 Anticipated Schedules:

- 6.6.1 Within reasonable time prior to the preconstruction conference the CONTRACTOR shall submit to the Contracting Officer for review an anticipated progress schedule indicating the starting and completion dates of the various stages of the Work.
- 6.6.2 Within fifteen days after the date of the Notice to Proceed, the CONTRACTOR shall submit to the Contracting Officer for review:

Anticipated schedule of Shop Drawing submissions; and

Anticipated Schedule of Values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by the CONTRACTOR at the time of submission.

6.7 Finalizing Schedules:

Prior to processing the first Application for Payment the Contracting Officer and the CONTRACTOR will finalize schedules required by paragraph 6.6. The finalized progress schedule will be acceptable to the DEPARTMENT as providing information related to the orderly progression of the Work to completion within the Contract Time; but such acceptance will neither impose on the DEPARTMENT nor relieve the CONTRACTOR from full responsibility for the progress or scheduling of the Work. If accepted, the finalized schedule of Shop Drawing and other required submissions will be acknowledgment by the DEPARTMENT as providing a workable arrangement for processing the submissions. If accepted, the finalized Schedule of Values will be acknowledgment by the DEPARTMENT as an approximation of anticipated value of Work accomplished over the anticipated Contract Time. Receipt and acceptance of a schedule submitted by the CONTRACTOR shall not be construed to assign responsibility for performance or contingencies to the DEPARTMENT or relieve the CONTRACTOR of his responsibility to adjust his forces, equipment, and work

schedules as may be necessary to insure completion of the Work within prescribed Contract Time. Should the prosecution of the Work be discontinued for any reason, the CONTRACTOR shall notify the Contracting Officer at least 24 hours in advance of resuming operations.

6.8 Adjusting Schedules:

Upon substantial changes to the schedule or upon request the CONTRACTOR shall submit to the Contracting Officer for acceptance (to the extent indicated in paragraph 6.7 and the General Requirements) adjustments in the schedules to reflect the actual present and anticipated progress of the Work.

6.9 Substitutes or "Or-Equal" Items:

- 6.9.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that substitution is limited or not permitted, materials or equipment of other Suppliers may be accepted by the Contracting Officer only if sufficient information is submitted by the CONTRACTOR which clearly demonstrates to the Contracting Officer that the material or equipment proposed is equivalent or equal in all aspects to that named. The procedure for review by the Contracting Officer will include the following as supplemented in the General Requirements.
- 6.9.2 Requests for review of substitute items of material and equipment will not be accepted by the Contracting Officer from anyone other than the CONTRACTOR.
- 6.9.3 If the CONTRACTOR wishes to furnish or use a substitute item of material or equipment, the CONTRACTOR shall make written application to the Contracting Officer for Approval thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as the specified. The application will state that the evaluation and Approval of the proposed substitute will not delay the CONTRACTOR's timely achievement of Substantial or Final Completion, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with the DEPARTMENT for Work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.
- 6.9.4 All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the DEPARTMENT in evaluating the proposed substitute. The DEPARTMENT may require the CONTRACTOR to furnish at the CONTRACTOR's expense additional data about the proposed substitute. The Contracting Officer may reject any substitution request which the Contracting Officer determines is not in the best interest of the DEPARTMENT.

6.10 Substitute Means and Methods:

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, the CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to the Contracting Officer, if the CONTRACTOR submits sufficient information to allow the Contracting Officer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by the Contracting Officer will be similar to that provided in paragraph 6.9 as applied by the Contracting Officer and as may be supplemented in the General Requirements.

6.11 Evaluation of Substitution:

The Contracting Officer will be allowed a reasonable time within which to evaluate each proposed substitute. The Contracting Officer will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without the Contracting Officer's prior written Approval which will be evidenced by either a Change Order or a Shop Drawing Approved in accordance with Sections 6.20 and 6.21. The Contracting Officer may

require the CONTRACTOR to furnish at the CONTRACTOR's expense a special performance guarantee or other Surety with respect to any substitute.

6.12 Dividing the Work:

The divisions and sections of the Specifications and the identifications of any Drawings shall not control the CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.13 Subcontractors:

The CONTRACTOR may utilize the services of appropriately licensed Subcontractors on those parts of the Work which, under normal contracting practices, are performed by Subcontractors, in accordance with the following conditions:

- 6.13.1 The CONTRACTOR shall not award any Work to any Subcontractor without prior written Approval of the Contracting Officer. This Approval will not be given until the CONTRACTOR submits to the Contracting Officer a written statement concerning the proposed award to the Subcontractor which shall contain required Equal Employment Opportunity documents, evidence of insurance whose limits are acceptable to the CONTRACTOR, and an executed copy of the subcontract. All subcontracts submitted for Approval must contain provisions for payment for Work done by the Subcontractor within 7 days of receipt of payment by the CONTRACTOR. No acceptance by the Contracting Officer of any such Subcontractor shall constitute a waiver of any right of the DEPARTMENT to reject Defective Work.
- 6.13.2 The CONTRACTOR shall be fully responsible to the DEPARTMENT for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions.
- 6.13.3 All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate written agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the DEPARTMENT and contains waiver provisions as required by paragraph 13.17 and termination provisions as required by Article 14.
- 6.13.4 Nothing in the Contract Documents shall create any contractual relationship between the DEPARTMENT and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of the DEPARTMENT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Regulatory Requirements. The DEPARTMENT will not undertake to settle any differences between or among the CONTRACTOR, Subcontractors, or Suppliers.
- 6.13.5 The CONTRACTOR and Subcontractors shall coordinate their work and cooperate with other trades so to facilitate general progress of Work. Each trade shall afford other trades every reasonable opportunity for installation of their work and storage of materials. If cooperative work of one trade must be altered due to lack of proper supervision, or failure to make proper provisions in time by another trade, such conditions shall be remedied by the CONTRACTOR with no change in Contract Price or Contract Time.
- 6.13.6 The CONTRACTOR shall include on his own payrolls any person or persons working on this Contract who are not covered by written subcontract, and shall ensure that all Subcontractors include on their payrolls all persons performing Work under the direction of the Subcontractor.

6.14 Use of Premises:

The CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project limits and approved remote storage sites and lands and areas identified in and permitted by Regulatory Requirements, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. The CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or

of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against the DEPARTMENT by any such owner or occupant because of the performance of the Work, the CONTRACTOR shall hold the DEPARTMENT harmless.

6.15 Structural Loading:

The CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.16 Record Documents:

The CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Directives, Change Orders, Supplemental Agreements, and written interpretations and clarifications (issued pursuant to paragraph 3.6) in good order and annotated to show all changes made during construction. These record documents together with all Approved samples and a counterpart of all Approved Shop Drawings will be available to the Contracting Officer for reference and copying. Upon completion of the Work, the annotated record documents, samples and Shop Drawings will be delivered to the Contracting Officer. Record documents shall accurately record variations in the Work which vary from requirements shown or indicated in the Contract Documents.

6.17 Safety and Protection:

The CONTRACTOR alone shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- 6.17.1 All employees on the Work and other persons and organizations who may be affected thereby;
- 6.17.2 All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
- 6.17.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction.

The CONTRACTOR shall comply with all applicable Regulatory Requirements of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. The CONTRACTOR shall notify owners of adjacent property and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the CONTRACTOR with no change in Contract Price or Contract Time except as stated in 4.6, except damage or loss attributable to unforeseeable causes beyond the control of and without the fault or negligence of the CONTRACTOR, including but not restricted to acts of God, of the public enemy or governmental authorities. The CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until Final Acceptance (except as otherwise expressly provided in connection with Substantial Completion).

6.18 Safety Representative:

The CONTRACTOR shall designate a responsible safety representative at the site. This person shall be the CONTRACTOR's superintendent unless otherwise designated in writing by the CONTRACTOR to the Contracting Officer.

6.19 Emergencies:

In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the DEPARTMENT, is obligated to act to prevent threatened damage, injury or loss. The CONTRACTOR shall give the Contracting Officer prompt written notice if the CONTRACTOR believes that any significant changes in the Work or

variations from the Contract Documents have been caused thereby. If the DEPARTMENT determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a change will be authorized by one of the methods indicated in Paragraph 9.2, as determined appropriate by the Contracting Officer.

6.20 Shop Drawings and Samples:

- 6.20.1 After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, the CONTRACTOR shall submit to the Contracting Officer for review and Approval in accordance with the accepted schedule of Shop Drawing submissions the required number of all Shop Drawings, which will bear a stamp or specific written indication that the CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as the Contracting Officer may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable the Contracting Officer to review the information as required.
- 6.20.2 The CONTRACTOR shall also submit to the Contracting Officer for review and Approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that the CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.
- 6.20.3 Before submission of each Shop Drawing or sample the CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.
- 6.20.4 At the time of each submission the CONTRACTOR shall give the Contracting Officer specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to the Contracting Officer for review and Approval of each such variation. All variations of the proposed Shop Drawing from that specified will be identified in the submission and available maintenance, repair and replacement service will be indicated. The submittal will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such variation, including costs of redesign and claims of other Contractors affected by the resulting change, all of which shall be considered by the DEPARTMENT in evaluating the proposed variation. If the variation may result in a change of Contract Time or Price, or Contract responsibility, and is not minor in nature; the CONTRACTOR must submit a written request for Change Order with the variation to notify the DEPARTMENT of his intent. The DEPARTMENT may require the CONTRACTOR to furnish at the CONTRACTOR's expense additional data about the proposed variation. The Contracting Officer may reject any variation request which the Contracting Officer determines is not in the best interest of the DEPARTMENT.

6.21 Shop Drawing and Sample Review:

- 6.21.1 The Contracting Officer will review with reasonable promptness Shop Drawings and samples, but the Contracting Officer's review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate acceptance of the assembly in which the item functions. The CONTRACTOR shall make corrections required by the Contracting Officer and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review. The CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by the Contracting Officer on previous submittals.

- 6.21.2 The Contracting Officer's review of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless the CONTRACTOR has in writing advised the Contracting Officer of each such variation at the time of submission as required by paragraph 6.20.4. The Contracting Officer if he so determines, may give written Approval of each such variation by Change Order, except that, if the variation is minor and no Change Order has been requested a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample review comments shall suffice as a modification. Approval by the Contracting Officer will not relieve the CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.20.3.
- 6.21.3 The DEPARTMENT shall be responsible for all DEPARTMENT review costs resulting from the initial submission and the resubmittal. The CONTRACTOR shall, at the discretion of the Contracting Agency, pay all review costs incurred by the DEPARTMENT as a result of any additional re-submittals.
- 6.21.4 Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to the Contracting Officer's review and Approval of the pertinent submission will be the sole expense and responsibility of the CONTRACTOR.

6.22 Maintenance During Construction:

The CONTRACTOR shall maintain the Work during construction and until Substantial Completion, at which time the responsibility for maintenance shall be established in accordance with paragraph 13.10.

6.23 Continuing the Work:

The CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the DEPARTMENT. No Work shall be delayed or postponed pending resolution of any disputes, disagreements, or claims except as the CONTRACTOR and the Contracting Officer may otherwise agree in writing.

6.24 Consent to Assignment:

The CONTRACTOR shall obtain the prior written consent of the Contracting Officer to any proposed assignment of any interest in, or part of this Contract. The consent to any assignment or transfer shall not operate to relieve the CONTRACTOR or his Sureties of any of his or its obligations under this Contract or the Performance Bonds. Nothing herein contained shall be construed to hinder, prevent, or affect an assignment of monies due, or to become due hereunder, made for the benefit of the CONTRACTOR's creditors pursuant to law.

6.25 Use of Explosives:

- 6.25.1 When the use of explosives is necessary for the prosecution of the Work, the CONTRACTOR shall exercise the utmost care not to endanger life or property, including new Work and shall follow all Regulatory Requirements applicable to the use of explosives. The CONTRACTOR shall be responsible for all damage resulting from the use of explosives.
- 6.25.2 All explosives shall be stored in a secure manner in compliance with all Regulatory Requirements, and all such storage places shall be clearly marked. Where no Regulatory Requirements apply, safe storage shall be provided not closer than 1,000 feet from any building, camping area, or place of human occupancy.
- 6.25.3 The CONTRACTOR shall notify each public utility owner having structures in proximity to the site of his intention to use explosives. Such notice shall be given sufficiently in advance to enable utility owners to take such steps as they may deem necessary to protect their property from injury. However, the CONTRACTOR shall be responsible for all damage resulting from the use of the explosives, whether or not, utility owners act to protect their property.

6.26 CONTRACTOR's Records:

- 6.26.1 Records of the CONTRACTOR and Subcontractors relating to personnel, payrolls, invoices of materials, and any and all other data relevant to the performance of this Contract, must be kept on a generally recognized accounting system. Such records must be available during normal work hours to the

Contracting Officer for purposes of investigation to ascertain compliance with Regulatory Requirements and provisions of the Contract Documents.

- 6.26.2 Payroll records must contain the name and address of each employee, his correct classification, rate of pay, daily and weekly number of hours of work, deductions made, and actual wages paid. The CONTRACTOR and Subcontractors shall make employment records available for inspection by the Contracting Officer and representatives of the U.S. and/or State Department of Labor and will permit such representatives to interview employees during working hours on the Project.
- 6.26.3 Records of all communications between the DEPARTMENT and the CONTRACTOR and other parties, where such communications affected performance of this Contract, must be kept by the CONTRACTOR and maintained for a period of three years from Final Acceptance. The DEPARTMENT or its assigned representative may perform an audit of these records during normal work hours after written notice to the CONTRACTOR.

ARTICLE 7 - LAWS AND REGULATIONS

7.1 Laws to be Observed

The CONTRACTOR shall keep fully informed of all federal and state Regulatory Requirements and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the Work, or which in any way affect the conduct of the Work. The CONTRACTOR shall at all times observe and comply with all such Regulatory Requirements, orders and decrees; and shall protect and indemnify the DEPARTMENT and its representatives against claim or liability arising from or based on the violation of any such Regulatory Requirement, order, or decree whether by the CONTRACTOR, Subcontractor, or any employee of either. Except where otherwise expressly required by applicable Regulatory Requirements, the DEPARTMENT shall not be responsible for monitoring CONTRACTOR's compliance with any Regulatory Requirements.

7.2 Permits, Licenses, and Taxes

- 7.2.1 The CONTRACTOR shall procure all permits and licenses, pay all charges, fees and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the Work. As a condition of performance of this Contract, the CONTRACTOR shall pay all federal, state and local taxes incurred by the CONTRACTOR, in the performance of this Contract. Proof of payment of these taxes is a condition precedent to final payment by the DEPARTMENT under this Contract.
- 7.2.2 The CONTRACTOR's certification that taxes have been paid (as contained in the *Release of Contract*) will be verified with the Department of Revenue and Department of Labor, prior to final payment.
- 7.2.3 If any federal, state or local tax is imposed, charged, or repealed after the date of bid opening and is made applicable to and paid by the CONTRACTOR on the articles or supplies herein contracted for, then the Contract shall be increased or decreased accordingly by a Change Order.

7.3 Patented Devices, Materials and Processes

If the CONTRACTOR employs any design, device, material, or process covered by letters of patent, trademark or copyright, the CONTRACTOR shall provide for such use by suitable legal agreement with the patentee or owner. The CONTRACTOR and the Surety shall indemnify and save harmless the DEPARTMENT, any affected third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the DEPARTMENT for any costs, expenses, and damages which it may be obliged to pay by reason of any infringement, at any time during the prosecution or after the completion of the Work.

7.4 Compliance of Specifications and Drawings:

If the CONTRACTOR observes that the Specifications and Drawings supplied by the DEPARTMENT are at variance with any Regulatory Requirements, CONTRACTOR shall give the Contracting Officer prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 9.2. as determined appropriate by the Contracting Officer. If the CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Regulatory Requirements, and without such notice to the

Contracting Officer, the CONTRACTOR shall bear all costs arising therefrom; however, it shall not be the CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings supplied by the DEPARTMENT are in accordance with such Regulatory Requirements.

7.5 Accident Prevention:

The CONTRACTOR shall comply with AS 18.60.075 and all pertinent provisions of the Construction Code Occupational Safety and Health Standards issued by the Alaska Department of Labor.

7.6 Sanitary Provisions:

The CONTRACTOR shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees and DEPARTMENT representatives as may be necessary to comply with the requirements of the State and local Boards of Health, or of other bodies or tribunals having jurisdiction.

7.7 Business Registration:

Comply with AS 08.18.011, as follows: "it is unlawful for a person to submit a bid or work as a contractor until he has been issued a certificate of registration by the Department of Commerce. A partnership or joint venture shall be considered registered if one of the general partners or venturers whose name appears in the name under which the partnership or venture does business is registered."

7.8 Professional Registration and Certification:

All craft trades, architects, engineers and land surveyors, electrical administrators, and explosive handlers employed under the Contract shall specifically comply with applicable provisions of AS 08.18, 08.48, 08.40, and 08.52. Provide copies of individual licenses within seven days following a request from the Contracting Officer.

7.9 Local Building Codes:

The CONTRACTOR shall comply with AS 35.10.025 which requires construction in accordance with applicable local building codes to include the obtaining of required permits.

7.10 Air Quality Control:

The CONTRACTOR shall comply with all applicable provisions of AS 46.03.04 as pertains to Air Pollution Control.

7.11 Archaeological or Paleontological Discoveries:

When the CONTRACTOR's operation encounters prehistoric artifacts, burials, remains of dwelling sites, or paleontological remains, such as shell heaps, land or sea mammal bones or tusks, the CONTRACTOR shall cease operations immediately and notify the Contracting Officer. No artifacts or specimens shall be further disturbed or removed from the ground and no further operations shall be performed at the site until so directed. Should the Contracting Officer order suspension of the CONTRACTOR's operations in order to protect an archaeological or historical finding, or order the CONTRACTOR to perform extra Work, such shall be covered by an appropriate Contract change document.

7.12 Applicable Alaska Preferences:

- 7.12.1 In determining the low bidder for State funded projects, a 5% bid preference has been given to "Alaska bidders", as required under AS 36.30.170. "Alaska bidder" means a person who:
- (1) holds a current Alaska business license;
 - (2) submits a bid for goods, services, or construction under the name as appearing on the person's current Alaska business license
 - (3) has maintained a place of business within the state staffed by the bidder or an employee of the bidder for a period of six months immediately preceding the date of the bid;
 - (4) is incorporated or qualified to do business under the laws of the state, is a sole proprietorship, and the proprietor is a resident of the state or is a partnership, and all partners are residents of the state; and
 - (5) if a joint venture, is composed entirely of ventures that qualify under (1) through (4), above.

- 7.12.2 In determining the low bidder for State funded projects, a 5% bid preference has been given to "Alaska Veteran bidders", as required under AS 36.30.175 for Alaska veteran-owned businesses. To qualify for the Veterans Preference (per AS 36.30.175), the bidder must:
- (1) Qualify for the Alaska Bidder's Preference
 - (2) Add value by actually performing the services or have prior experience in selling the supplies
 - (3) Qualify as an Alaska Veteran
 - (4) The value of the preference cannot exceed \$5,000.
- 7.12.3 In determining the low bidder for State funded projects, an "Alaska products" preference has been given as required under AS 36.30.326 - 36.30.332, when the bid documents designate the use of Alaska products. If the successful Bidder/CONTRACTOR proposes to use an Alaska product and does not do so, a penalty will be assessed against the successful Bidder/CONTRACTOR in an amount equal to the product preference percentage granted to the successful Bidder/CONTRACTOR plus one percent multiplied by the total declared value of the Alaska products proposed but not used.
- 7.12.4 Pursuant to AS 36.15.050 and AS 36.30.322, "agricultural/wood" products harvested in Alaska shall be used in State funded projects whenever they are priced no more than seven percent above agricultural/wood products harvested outside the state and are of a like quality as compared with agricultural/wood products harvested outside the state, when such products are not utilized, the CONTRACTOR shall document the efforts he made towards obtaining agricultural/wood products harvested in Alaska and include in this documentation a written statement that he contacted the manufacturers and suppliers identified on the Department of Commerce and Economic Development's list of suppliers of Alaska forest products concerning the availability of agricultural/wood products harvested in Alaska and, if available, the product prices. The CONTRACTOR's use of agricultural/wood products that fail to meet the requirements of this section shall be subject to the provisions of paragraphs 12.6 through 12.9 relating to Defective Work.
- 7.12.5 The CONTRACTOR shall maintain records, in a format acceptable to the Contracting Officer, which establish the type and extent of "agricultural/wood" and "Alaska" products utilized. All record keeping and documentation associated with the requirements 7.12.2 and 7.12.3 of this paragraph, must be provided to the DEPARTMENT upon written request or as otherwise provided within the Contract Documents.

7.13 Preferential Employment:

The CONTRACTOR shall comply with all applicable and valid laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect during the term of this Contract. In order to ensure that CONTRACTOR's Subcontractors will comply with all applicable laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect, the CONTRACTOR shall include in its contracts with Subcontractors under this Contract language that is substantially the same as the first sentence of this provision.

7.14 Wages and Hours of Labor:

- 7.14.1 One certified copy of all payrolls shall be submitted weekly to the State Department of Labor and, upon request, to the Contracting Officer to assure to assure compliance with AS 36.05.040, *Filing Schedule of Employees Wages Paid and Other Information*. The CONTRACTOR shall be responsible for the submission of certified copies of payrolls of all Subcontractors. The certification shall affirm that the payrolls are current and complete, that the wage rates contained therein are not less than the applicable rates referenced in these Contract Documents, and that the classification set forth for each laborer or mechanic conforms with the Work he performed. The CONTRACTOR and his Subcontractors shall attend all hearings and conferences and produce such books, papers, and documents all as requested by the Department of Labor. Should federal funds be involved, the appropriate federal agency shall also receive a copy of the CONTRACTOR's certified payrolls.
- 7.14.2 The following labor provisions shall also apply to this Contract:
- a. The CONTRACTOR and his Subcontractors shall pay all employees unconditionally and not less than once a week;

- b. wages may not be less than those stated under AS 36.05.010, regardless of the contractual relationship between the CONTRACTOR or Subcontractors and laborers, mechanics, or field surveyors;
- c. the scale of wages to be paid shall be posted by the CONTRACTOR in a prominent and easily accessible place at the site of the Work;
- d. the DEPARTMENT shall withhold so much of the accrued payments as is necessary to pay to laborers, mechanics, or field surveyors employed by the CONTRACTOR or Subcontractors the difference between
 - 1. The rates of wages required by the Contract to be paid laborers, mechanics, or field surveyors on the Work, and
 - 2. The rates of wages in fact received by laborers, mechanics or field surveyors.

7.15 Overtime Work Hours and Compensation:

Pursuant to 40 U.S.C. 327-330 and AS 23.10.060 -.110, the CONTRACTOR shall not require nor permit any laborer or mechanic in any workweek in which he is employed on any Work under this Contract to work in excess of eight hours in any Calendar Day or in excess of forty hours in such workweek on Work subject to the provisions of the *Contract Work Hours and Safety Standards Act* unless such laborer or mechanic receives compensation at a rate not less than one and one half times his basic rate of pay for all such hours worked in excess of eight hours in any Calendar Day or in excess of forty hours in such workweek whichever is the greater number of overtime hours. In the event of any violation of this provision, the CONTRACTOR shall be liable to any affected employee for any amounts due and penalties and to the DEPARTMENT for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of this provision in the sum of \$10.00 for each Calendar Day on which such employee was required or permitted to be employed on such Work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by this paragraph.

7.16 Covenant Against Contingent Fees:

The CONTRACTOR warrants that no person or selling agent has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the CONTRACTOR for the purpose of securing business. For breach or violation of this warrant, the DEPARTMENT shall have the right to annul this Contract without liability or, in its discretion, to deduct price of consideration from the Contract or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

7.17 Officials Not to Benefit:

No member of or delegate to the U.S. Congress, the Alaska State Legislature or other state official shall be admitted to any share or part of this Contract, nor to any benefit that may arise there from. However, this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

7.18 Personal Liability of Public Officials:

In carrying out any of the provisions thereof, or in exercising any power or authority granted to the Contracting Officer by the Contract, there will be no liability upon the Contracting Officer nor upon state employees authorized as his representatives, either personally or as officials of the State of Alaska, it being always understood that in such matters they act as agents and representatives of the DEPARTMENT.

ARTICLE 8 - OTHER WORK

8.1 Related Work at Site:

- 8.1.1 The DEPARTMENT reserves the right at any time to contract for and perform other or additional work on or near the Work covered by the Contract.
- 8.1.2 When separate contracts are let within the limits of the Project, the CONTRACTOR shall conduct his Work so as not to interfere with or hinder the work being performed by other contractors. The

CONTRACTOR when working on the same Project with other contractors shall cooperate with such other contractors. The CONTRACTOR shall join his Work with that of the others in an acceptable manner and shall perform it in proper sequence to that of others.

- 8.1.3 If the fact that other such work is to be performed is identified or shown in the Contract Documents the CONTRACTOR shall assume all liability, financial or otherwise, in connection with this Contract and indemnify and save harmless the DEPARTMENT from any and all damages or claims that may arise because of inconvenience, delay, or loss experienced by the CONTRACTOR because of the presence and operations of other contractors.
- 8.1.4 If the fact that such other work is to be performed was not identified or shown in the Contract Documents, written notice thereof will be given to the CONTRACTOR prior to starting any such other work. If the CONTRACTOR believes that such performance will require an increase in Contract Price or Contract Time, the CONTRACTOR shall notify the Contracting Officer of such required increase within fifteen (15) calendar days following receipt of the Contracting Officer's notice. Should the Contracting Officer find such increase(s) to be justified, a Change Order will be executed.

8.2 Access, Cutting, and Patching:

The CONTRACTOR shall afford each utility owner and any other contractor who is a party to such a direct contract with the DEPARTMENT (or the DEPARTMENT, if the DEPARTMENT is performing the additional work with the DEPARTMENT's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with the work of others. The CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work, the CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter such other work with the written consent of the Contracting Officer. The duties and responsibilities of the CONTRACTOR under this paragraph are for the benefit of other contractors to the extent that there are comparable provisions for the benefit of the CONTRACTOR in said direct contracts between the DEPARTMENT and other contractors.

8.3 Defective Work by Others:

If any part of the CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor, utility owner, or the DEPARTMENT, the CONTRACTOR shall inspect and promptly report to the Contracting Officer in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. The CONTRACTOR's failure to so report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or nonapparent defects and deficiencies in the other work.

8.4 Coordination:

If the DEPARTMENT contracts with others for the performance of other work at the site, Contracting Officer will have authority and responsibility for coordination of the activities among the various prime contractors.

ARTICLE 9 - CHANGES

9.1 DEPARTMENT's Right to Change

Without invalidating the Contract and without notice to any Surety, the DEPARTMENT may, at any time or from time to time, order additions, deletions or revisions in the Work within the general scope of the Contract, including but not limited to changes:

- 9.1.1 In the Contract Documents;
- 9.1.2 In the method or manner of performance of the Work;
- 9.1.3 In State-furnished facilities, equipment, materials, services, or site;
- 9.1.4 Directing acceleration in the performance of the Work.

9.2 Authorization of Changes within the General Scope.

Additions, deletions, or revisions in the Work within the general scope of the Contract as specified in 9.1 shall be authorized by one or more of following ways:

- 9.2.1 Directive (pursuant to paragraph 9.3)
- 9.2.2 A Change Order (pursuant to paragraph 9.4)
- 9.2.3 DEPARTMENT's acceptance of Shop Drawing variations from the Contract Documents as specifically identified by the CONTRACTOR as required by paragraph 6.20.4.

9.3 Directive

- 9.3.1 The Contracting Officer shall provide written clarification or interpretation of the Contract Documents (pursuant to paragraph 3.6).
- 9.3.2 The Contracting Officer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents.
- 9.3.3 The Contracting Officer may order the Contractor to correct Defective Work or methods which are not in conformance with the Contract Documents.
- 9.3.4 The Contracting Officer may direct the commencement or suspension of Work or emergency related Work (as provided in paragraph 6.19).
- 9.3.5 Upon the issuance of a Directive to the CONTRACTOR by the Contracting Officer, the CONTRACTOR shall proceed with the performance of the Work as prescribed by such Directive.
- 9.3.6 If the CONTRACTOR believes that the changes noted in a Directive may cause an increase in the Contract Price or an extension of Contract Time, the CONTRACTOR shall immediately provide written notice to the Contracting Officer depicting such increases before proceeding with the Directive, except in the case of an emergency. If the Contracting Officer finds the increase in Contract Price or the extension of Contract Time justified, a Change Order will be issued. If however, the Contracting Officer does not find that a Change Order is justified, the Contracting Officer may direct the CONTRACTOR to proceed with the Work. The CONTRACTOR shall cooperate with the Contracting Officer in keeping complete daily records of the cost of such Work. If a Change Order is ultimately determined to be justified, in the absence of agreed prices and unit prices, payment for such Work will be made on a "cost of the work basis" as provided in 10.4

9.4 Change Order

A change in Contract Time, Contract Price, or responsibility may be made for changes within the scope of the Work only by Change Order. Upon receipt of an executed Change Order, the CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents except as otherwise specifically provided. Changes in Contract Price and Contract Time shall be made in accordance with Articles 10 and 11.

9.5 Shop Drawing Variations

Variations by shop drawings shall only be eligible for consideration under 9.4 when the conditions affecting the price, time, or responsibility are identified by the CONTRACTOR in writing and a request for a Change Order is submitted as per 6.20.4.

9.6 Changes Outside the General Scope; Supplemental Agreement

Any change which is outside the general scope of the Contract, as determined by the Contracting Officer, must be authorized by a Supplemental Agreement signed by the appropriate representatives of the DEPARTMENT and the CONTRACTOR.

9.7 Unauthorized Work:

The CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in this Article 9, except in the case of an emergency as provided in paragraph 6.19 and except in the case of uncovering Work as provided in paragraph 12.4.2.

9.8 Notification of Surety:

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any bond to be given to a Surety, the giving of any such notice will be the CONTRACTOR's responsibility, and the amount of each applicable bond will be adjusted accordingly.

9.9 Differing Site Conditions:

- 9.9.1 The CONTRACTOR shall promptly, and before such conditions are disturbed (except in an emergency as permitted by paragraph 6.19), notify the Contracting Officer in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in the Contract, and which could not have been discovered by a careful examination of the site, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract. The Contracting Officer shall promptly investigate the conditions, and if the Contracting Officer finds that such conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or time required for, performance of this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly.
- 9.9.2 Any claim for additional compensation by the CONTRACTOR under this clause shall be made in accordance with Article 15. In the event that the Contracting Officer and the CONTRACTOR are unable to reach an agreement concerning an alleged differing site condition, the CONTRACTOR will be required to keep an accurate and detailed record which will indicate the actual "cost of the work" done under the alleged differing site condition. Failure to keep such a record shall be a bar to any recovery by reason of such alleged differing site conditions. The Contracting Officer shall be given the opportunity to supervise and check the keeping of such records.

ARTICLE 10 - CONTRACT PRICE; COMPUTATION AND CHANGE

10.1 Contract Price:

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to the CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the CONTRACTOR shall be at his expense without change in the Contract Price. The Contract Price may only be changed by a Change Order or Supplemental Agreement.

10.2 Claim for Price Change:

Any claim for an increase or decrease in the Contract Price shall be submitted in accordance with the terms of Article 15, and shall not be allowed unless notice requirements of this Contract have been met.

10.3 Change Order Price Determination:

The value of any Work covered by a Change Order for an increase or decrease in the Contract Price shall be determined in one of the following ways:

- 10.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of subparagraphs 10.9.1 through 10.9.3, inclusive).
- 10.3.2 By mutual acceptance of a lump sum price which includes overhead and profit.

- 10.3.3 When 10.3.1 and 10.3.2 are inapplicable, on the basis of the "cost of the work" (determined as provided in paragraphs 10.4 and 10.5) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 10.6).
- 10.3.4 Before a Change Order or Supplemental Agreement is Approved, the CONTRACTOR shall submit cost or pricing data regarding the changed or extra Work. The CONTRACTOR shall certify that the data submitted is, to his best knowledge and belief, accurate, complete and current as of a mutually determined specified date and that such data will continue to be accurate and complete during the performance of the changed or extra Work.

10.4 Cost of the Work:

The term "cost of the work" means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by the DEPARTMENT, such costs shall be in amount no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in subparagraph 10.5:

- 10.4.1 Payroll costs for employees in the direct employ of the CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by the DEPARTMENT and the CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by the DEPARTMENT.
- 10.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to the CONTRACTOR unless the DEPARTMENT deposits funds with the CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to the DEPARTMENT. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to the DEPARTMENT, and the CONTRACTOR shall make provisions so that they may be obtained.
- 10.4.3 Payments made by the CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by the DEPARTMENT, CONTRACTOR shall obtain competitive quotes from Subcontractors or Suppliers acceptable to the CONTRACTOR and shall deliver such quotes to the DEPARTMENT who will then determine which quotes will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of "cost of the work" plus a fee, the Subcontractor's "cost of the work" shall be determined in the same manner as the CONTRACTOR's "cost of work" as described in paragraphs 10.4 through 10.5; and the Subcontractor's fee shall be established as provided for under subparagraph 10.6.2 clause b. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.
- 10.4.4 Costs of special consultants (including but not limited to engineers, architects, testing laboratories, and surveyors) employed for services necessary for the completion of the Work.
- 10.4.5 Supplemental costs including the following:
- a. The proportion of necessary transportation, travel and subsistence expenses of the CONTRACTOR's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of the CONTRACTOR.
 - c. Rentals of all construction equipment and machinery and the parts thereof whether rented from the CONTRACTOR or others in accordance with rental agreements Approved by the DEPARTMENT and the costs of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance

with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use or similar taxes related to the Work, and for which the CONTRACTOR is liable, imposed by Regulatory Requirements.
- e. Deposits lost for causes other than negligence of the CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by the CONTRACTOR in connection with the performance and furnishing of the Work provided they have resulted from causes other than the negligence of the CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and Approval of the DEPARTMENT. No such losses, damages and expenses shall be included in the "cost of the work" for the purpose of determining the CONTRACTOR's fee. If, however, any such loss or damage requires reconstruction and the CONTRACTOR is placed in charge thereof, the CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraphs 10.6.2.a and 10.6.2.b.
- g. The cost of utilities, fuel and sanitary facilities at the site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.
- I. Cost of premiums for additional bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by the DEPARTMENT in accordance with Article 5.

10.5 Excluded Costs:

The term "cost of the work" shall not include any of the following:

- 10.5.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agency, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 all of which are to be considered administrative costs covered by the CONTRACTOR's fee.
- 10.5.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.
- 10.5.3 Any part of CONTRACTOR's capital expenses including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- 10.5.4 Cost of premiums for all bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.i above).
- 10.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of Defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.
- 10.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.6 CONTRACTOR's Fee:

The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows.

- 10.6.1 A mutually acceptable fixed fee; or if none can be agreed upon.
- 10.6.2 A fee based on the following percentages of the various portions of the "cost of the work":
- a. For costs incurred under paragraphs 10.4.1 and 10.4.2, the CONTRACTOR's fee shall be twenty percent;
 - b. For costs incurred under paragraph 10.4.3, the CONTRACTOR's fee shall be ten percent; and if a subcontract is on the basis of "cost of the work" plus a fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors and multiple tiers thereof shall be fifteen percent;
 - c. No fee shall be payable on the basis of costs itemized under paragraphs 10.4.4, 10.4.5 and 10.5;
 - d. The amount of credit to be allowed by the CONTRACTOR to the DEPARTMENT for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR's fee by an amount equal to ten percent of the net decrease; and
 - e. When both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 10.6.2.a through 10.6.2.d, inclusive.

10.7 Cost Breakdown:

Whenever the cost of any Work is to be determined pursuant to paragraphs 10.4 and 10.5, the CONTRACTOR will submit in a form acceptable to the DEPARTMENT an itemized cost breakdown together with supporting data.

10.8 Cash Allowances:

It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to the Contracting Officer. CONTRACTOR agrees that:

- 10.8.1 The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and
- 10.8.2 CONTRACTOR's cost for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

Prior to final payment, an appropriate Change Order will be issued to reflect actual amounts due the CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work:

- 10.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Contract. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by the CONTRACTOR will be made by the DEPARTMENT in accordance with paragraph 10.10.
- 10.9.2 Each unit price will be deemed to include an amount considered by the CONTRACTOR to be adequate to cover the CONTRACTOR's overhead and profit for each separately identified item. If the "Basis of Payment" clause in the Contract Documents relating to any unit price in the bid schedule requires that the said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Contract Documents.

- 10.9.3 Payment to the CONTRACTOR shall be made only for the actual quantities of Work performed and accepted or materials furnished, in conformance with the Contract Documents. When the accepted quantities of Work or materials vary from the quantities stated in the bid schedule, or change documents, the CONTRACTOR shall accept as payment in full, payment at the stated unit prices for the accepted quantities of Work and materials furnished, completed and accepted; except as provided below:
- a. When the quantity of Work to be done or material to be furnished under any item, for which the total cost of the item exceeds 10% of the total Contract Price, is increased by more than 25 percent of the quantity stated in the bid schedule, or change documents, either party to the Contract, upon demand, shall be entitled to an equitable unit price adjustment on that portion of the Work above 125 percent of the quantity stated in the bid schedule.
 - b. When the quantity of Work to be done or material to be furnished under any major item, for which the total cost of the item exceeds 10% of the total Contract Price, is decreased by more than 25 percent of the quantity stated in the bid schedule, or change documents either party to the Contract, upon demand, shall be entitled to an equitable price adjustment for the quantity of Work performed or material furnished, limited to a total payment of not more than 75 percent of the amount originally bid for the item.

10.10 Determinations for Unit Prices:

The Contracting Officer will determine the actual quantities and classifications of Unit Price Work performed by the CONTRACTOR. The Contracting Officer will review with the CONTRACTOR preliminary determinations on such matters before finalizing the costs and quantities on the Schedule of Values. The Contracting Officer's acknowledgment thereof will be final and binding on the CONTRACTOR, unless, within 10 days after the date of any such decisions, the CONTRACTOR delivers to the Contracting Officer written notice of intention to appeal from such a decision.

10.11 Disadvantaged and Women Business Enterprises (DBE & WBE) Program:

The Contract Price shall be adjusted by such means as provided in the section entitled "Phase III - Determination of Liquidated Damages and Bonuses", DISADVANTAGED AND WOMEN BUSINESS ENTERPRISE (DBE & WBE) PROGRAM, Form 25A300.

ARTICLE 11 - CONTRACT TIME; COMPUTATION AND CHANGE

11.1 Commencement of Contract Time; Notice to Proceed:

The Contract Time will commence to run on the day indicated in the Notice to Proceed.

11.2 Starting the Work:

No Work on Contract items shall be performed before the effective date of the Notice to Proceed. The CONTRACTOR shall notify the Contracting Officer at least 24 hours in advance of the time actual construction operations will begin. The CONTRACTOR may request a limited Notice to Proceed after Award has been made, to permit him to order long lead materials which could cause delays in Project completion. However, granting is within the sole discretion of the Contracting Officer, and refusal or failure to grant a limited Notice to Proceed shall not be a basis for claiming for delay, extension of time, or alteration of price.

11.3 Computation of Contract Time:

- 11.3.1 When the Contract Time is specified on a Calendar Day basis, all Work under the Contract shall be completed within the number of Calendar Days specified. The count of Contract Time begins on the day following receipt of the Notice to Proceed by the CONTRACTOR, if no starting day is stipulated therein.

Calendar Days shall continue to be counted against Contract Time until and including the date of Final Completion of the Work.

- 11.3.2 When the Contract completion time is specified as a fixed calendar date, it shall be the date of Final Completion.

11.4 Time Change:

The Contract Time may only be changed by a Change Order or Supplemental Agreement.

11.5 Extension Due to Delays:

The right of the CONTRACTOR to proceed shall not be terminated nor the CONTRACTOR charged with liquidated or actual damages because of delays to the completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including, but not restricted to the following: acts of God or of the public enemy, acts of the DEPARTMENT in its contractual capacity, acts of another contractor in the performance of a contract with the DEPARTMENT, floods, fires, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather and delays of Subcontractors or Suppliers due to such causes. Any delay in receipt of materials on the site, caused by other than one of the specifically mentioned occurrences above, does not of itself justify a time extension, provided that the CONTRACTOR shall within twenty four (24) hours from the beginning of any such delay (unless the Contracting Officer shall grant a further period of the time prior to the date of final settlement of the Contract), notify the Contracting Officer in writing of the cause of delay. The Contracting Officer shall ascertain the facts and the extent of the delay and extend the time for completing the Work when the findings of fact justify such an extension.

11.6 Essence of Contract:

All time limits stated in the Contract Documents are of the essence of the Contract.

11.7 Reasonable Completion Time:

It is expressly understood and agreed by and between the CONTRACTOR and the DEPARTMENT that the date of beginning and the time for Final Completion of the Work described herein are reasonable times for the completion of the Work.

11.8 Delay Damages:

Whether or not the CONTRACTOR's right to proceed with the Work is terminated, he and his Sureties shall be liable for damages resulting from his refusal or failure to complete the Work within the specified time.

Liquidated and actual damages for delay shall be paid by the CONTRACTOR or his Surety to the DEPARTMENT in the amount as specified in the Supplementary Conditions for each Calendar Day the completion of the Work or any part thereof is delayed beyond the time required by the Contract, or any extension thereof. If a listing of incidents resulting from a delay and expected to give rise to actual or liquidated damages is not established by the Contract Documents, then the CONTRACTOR and his Surety shall be liable to the DEPARTMENT for any actual damages occasioned by such delay. The CONTRACTOR acknowledges that the liquidated damages established herein are not a penalty but rather constitute an estimate of damages that the DEPARTMENT will sustain by reason of delayed completion. These liquidated and actual damages are intended as compensation for losses anticipated to arise, and include those items enumerated in the Supplementary Conditions.

These damages will continue to run both before and after termination in the event of default termination. These liquidated damages do not cover excess costs of completion or DEPARTMENT costs, fees, and charges related to reprourement. If a default termination occurs, the CONTRACTOR or his Surety shall pay in addition to these damages, all excess costs and expenses related to completion as provided by Article 14.2.5.

ARTICLE 12 - QUALITY ASSURANCE

12.1 Warranty and Guaranty:

The CONTRACTOR warrants and guarantees to the DEPARTMENT that all Work will be in accordance with the Contract Documents and will not be Defective. Prompt notice of all defects shall be given to the CONTRACTOR. All Defective Work, whether or not in place, may be rejected, corrected or accepted as provided for in this article.

12.2 Access to Work:

The DEPARTMENT and the DEPARTMENT's representatives, testing agencies and governmental agencies with jurisdiction interests will have access to the Work at reasonable times for their observation, inspecting and testing. The CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections:

- 12.3.1 The CONTRACTOR shall give the Contracting Officer timely notice of readiness of the Work for all required inspections, tests or Approvals.
- 12.3.2 If Regulatory Requirements of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, the CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish the Contracting Officer the required certificates of inspection, testing or approval. The CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with DEPARTMENT's acceptance of a Supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for Approval prior to the CONTRACTOR's purchase thereof for incorporation in the Work. The cost of all inspections, tests and approvals in addition to the above which are required by the Contract Documents shall be paid by the CONTRACTOR. The DEPARTMENT may perform additional tests and inspections which it deems necessary to insure quality control. All such failed tests or inspections shall be at the CONTRACTOR's expense.
- 12.3.4 If any Work (including the work of others) that is to be inspected, tested or Approved is covered without written concurrence of the Contracting Officer, it must, if requested by the Contracting Officer, be uncovered for observation. Such uncovering shall be at the CONTRACTOR's expense unless the CONTRACTOR has given the Contracting Officer timely notice of CONTRACTOR's intention to cover the same and the Contracting Officer has not acted with reasonable promptness in response to such notice.
- 12.3.5 Neither observations nor inspections, tests or Approvals by the DEPARTMENT or others shall relieve the CONTRACTOR from the CONTRACTOR's obligations to perform the Work in accordance with the Contract Documents.

12.4 Uncovering Work:

- 12.4.1 If any Work is covered contrary to the written request of the Contracting Officer, it must, if requested by the Contracting Officer, be uncovered for the Contracting Officer's observation and replaced at the CONTRACTOR's expense.
- 12.4.2 If the Contracting Officer considers it necessary or advisable that covered Work be observed inspected or tested, the CONTRACTOR, at the Contracting Officer's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Contracting Officer may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is Defective, the CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) and the DEPARTMENT shall be entitled to an appropriate decrease in the Contract Price. If, however, such Work is not found to be Defective, the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction.

12.5 DEPARTMENT May Stop the Work:

If the Work is Defective, or the CONTRACTOR fails to supply suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, the Contracting Officer may order the CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Contracting Officer to stop the Work shall not give rise to any duty on the part of the Contracting Officer to exercise this right for the benefit of the CONTRACTOR or any other party.

12.6 Correction or Removal of Defective Work:

If required by the Contracting Officer, the CONTRACTOR shall promptly, as directed, either correct all Defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by the Contracting Officer, remove it from the site and replace it with Work which conforms to the requirements of the Contract Documents. The CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.7 One Year Correction Period:

If within one year after the date of Final Completion or such longer period of time as may be prescribed by Regulatory Requirements or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be Defective, the CONTRACTOR shall promptly, without cost to the DEPARTMENT and in accordance with the Contracting Officer's written instructions, either correct such Defective Work, or, if it has been rejected by the Contracting Officer, remove it from the site and replace it with conforming Work. If the CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the DEPARTMENT may have the Defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by the CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service for the benefit of the DEPARTMENT before Substantial Completion of all the Work, the correction period for that item may begin on an earlier date if so provided in the Specifications or by Change Order. Provisions of this paragraph are not intended to shorten the statute of limitations for bringing an action.

12.8 Acceptance of Defective Work:

Instead of requiring correction or removal and replacement of Defective Work, the Contracting Officer may accept Defective Work, the CONTRACTOR shall bear all direct, indirect and consequential costs attributable to the Contracting Officer's evaluation of and determination to accept such Defective Work (costs to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the DEPARTMENT shall be entitled to an appropriate decrease in the Contract Price. If the DEPARTMENT has already made final payment to the CONTRACTOR, an appropriate amount shall be paid by the CONTRACTOR or his Surety to the DEPARTMENT.

12.9 DEPARTMENT May Correct Defective Work:

If the CONTRACTOR fails within a reasonable time after written notice from the Contracting Officer to proceed to correct Defective Work or to remove and replace rejected Work as required by the Contracting Officer in accordance with paragraph 12.6, or if the CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if the CONTRACTOR fails to comply with any other provision of the Contract Documents, the DEPARTMENT may, after 7 days' written notice to the CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph the DEPARTMENT shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, the Contracting Officer may exclude the CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend the CONTRACTOR's services related thereto, take possession of the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or approved remote storage sites or for which the DEPARTMENT has paid the CONTRACTOR but which are stored elsewhere. The CONTRACTOR shall allow the Contracting Officer and his authorized representatives such access to the site as may be necessary to enable the Contracting Officer to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of the DEPARTMENT in exercising such rights and remedies will be charged against the CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the DEPARTMENT shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of the CONTRACTOR's Defective Work. The CONTRACTOR shall not be allowed an extension of time because of

any delay in performance of the work attributable to the exercise, by the Contracting Officer, of the DEPARTMENT's rights and remedies hereunder.

ARTICLE 13 - PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values:

The Schedule of Values established as provided in paragraph 6.6 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the Contracting Officer. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Preliminary Payments:

Upon approval of the Schedule of Values the CONTRACTOR may be paid for direct costs substantiated by paid invoices and other prerequisite documents required by the General Requirements. Direct costs shall include the cost of bonds, insurance, approved materials stored on the site or at approved remote storage sites, deposits required by a Supplier prior to fabricating materials, and other approved direct mobilization costs substantiated as indicated above. These payments shall be included as a part of the total Contract Price as stated in the Contract.

13.3 Application for Progress Payment:

The CONTRACTOR shall submit to the Contracting Officer for review an Application for Payment filled out and signed by the CONTRACTOR covering the Work completed as of the date of the Application for Payment and accompanied by such supporting documentation as is required by the Contract Documents. Progress payments will be made as the Work progresses on a monthly basis or twice a month when requested by the CONTRACTOR, but only when the approved invoice exceeds \$10,000.00.

13.4 Review of Applications for Progress Payment:

Contracting Officer will either indicate in writing a recommendation of payment or return the Application for Payment to the CONTRACTOR indicating in writing the Contracting Officer's reasons for refusing to recommend payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the Application for Payment.

13.5 Stored Materials and Equipment:

If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, paid invoice or other documentation warranting that the DEPARTMENT has received the materials and equipment free and clear of all charges, security interests and encumbrances and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the DEPARTMENT's interest therein, all of which will be satisfactory to the Contracting Officer. No payment will be made for perishable materials that could be rendered useless because of long storage periods. No progress payment will be made for living plant materials until planted.

13.6 CONTRACTOR's Warranty of Title:

The CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to the DEPARTMENT no later than the time of payment free and clear of any claims, liens, security interests and further obligations.

13.7 Withholding of Payments:

The DEPARTMENT may withhold or refuse payment for any of the reasons listed below provided it gives written notice of its intent to withhold and of the basis for withholding:

- 13.7.1 The Work is Defective, or completed Work has been damaged requiring correction or replacement, or has been installed without Approval of Shop Drawings, or by an unapproved Subcontractor, or for unsuitable storage of materials and equipment.
- 13.7.2 The Contract Price has been reduced by Change Order,

- 13.7.3 The DEPARTMENT has been required to correct Defective Work or complete Work in accordance with paragraph 12.9.
- 13.7.4 The DEPARTMENT's actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.1.a through 14.2.1.k inclusive.
- 13.7.5 Claims have been made against the DEPARTMENT or against the funds held by the DEPARTMENT on account of the CONTRACTOR's actions or inactions in performing this Contract, or there are other items entitling the DEPARTMENT to a set off.
- 13.7.6 Subsequently discovered evidence or the results of subsequent inspections or test, nullify any previous payments for reasons stated in subparagraphs 13.7.1 through 13.7.5.
- 13.7.7 The CONTRACTOR has failed to fulfill or is in violation of any of his obligations under any provision of this Contract.

13.8 Retainage:

At any time the DEPARTMENT finds that satisfactory progress is not being made it may in addition to the amounts withheld under 13.7 retain a maximum amount equal to 10% of the total amount earned on all subsequent progress payments. This retainage may be released at such time as the Contracting Officer finds that satisfactory progress is being made.

13.9 Request for Release of Funds:

If the CONTRACTOR believes the basis for withholding is invalid or no longer exists, immediate written notice of the facts and Contract provisions on which the CONTRACTOR relies, shall be given to the DEPARTMENT, together with a request for release of funds and adequate documentary evidence proving that the problem has been cured. In the case of withholding which has occurred at the request of the Department of Labor, the CONTRACTOR shall provide a letter from the Department of Labor stating that withholding is no longer requested. Following such a submittal by the CONTRACTOR, the DEPARTMENT shall have a reasonable time to investigate and verify the facts and seek additional assurances before determining whether release of withheld payments is justified.

13.10 Substantial Completion:

When the CONTRACTOR considers the Work ready for its intended use the CONTRACTOR shall notify the Contracting Officer in writing that the Work or a portion of Work which has been specifically identified in the Contract Documents is substantially complete (except for items specifically listed by the CONTRACTOR as incomplete) and request that the DEPARTMENT issue a certificate of Substantial Completion. Within a reasonable time thereafter, the Contracting Officer, the CONTRACTOR and appropriate Consultant(s) shall make an inspection of the Work to determine the status of completion. If the Contracting Officer does not consider the Work substantially complete, the Contracting Officer will notify the CONTRACTOR in writing giving the reasons therefor. If the Contracting Officer considers the Work substantially complete, the Contracting Officer will within fourteen days execute and deliver to the CONTRACTOR a certificate of Substantial Completion with tentative list of items to be completed or corrected. At the time of delivery of the certificate of Substantial Completion the Contracting Officer will deliver to the CONTRACTOR a written division of responsibilities pending Final Completion with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties which shall be consistent with the terms of the Contract Documents.

The DEPARTMENT shall be responsible for all DEPARTMENT costs resulting from the initial inspection and the first re-inspection, the CONTRACTOR shall pay all costs incurred by the DEPARTMENT resulting from re-inspections, thereafter.

13.11 Access Following Substantial Completion:

The DEPARTMENT shall have the right to exclude the CONTRACTOR from the Work after the date of Substantial Completion, but the DEPARTMENT shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

13.12 Final Inspection:

Upon written notice from the CONTRACTOR that the entire Work or an agreed portion thereof is complete, the Contracting Officer will make a final inspection with the CONTRACTOR and appropriate Consultant(s) and will notify the CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or Defective. The CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies. The CONTRACTOR shall pay for all costs incurred by the DEPARTMENT resulting from re-inspections.

13.13 Final Completion and Application for Payment:

After the CONTRACTOR has completed all such corrections to the satisfaction of the Contracting Officer and delivered all maintenance and operating instructions, schedules, guarantees, bonds, certificates of payment to all laborers, Subcontractors and Suppliers, certificates of inspection, marked-up record documents and other documents - all as required by the Contract Documents; and after the Contracting Officer has indicated in writing that the Work has met the requirements for Final Completion, and subject to the provisions of paragraph 13.18, the CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all remaining certificates, warranties, guarantees, releases, affidavits, and other documentation required by the Contract Documents.

13.14 Final Payment:

- 13.14.1 If on the basis of the Contracting Officer's observation of the Work during construction and final inspection, and the Contracting Officer's review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents; and the Contracting Officer is satisfied that the Work has been completed and the CONTRACTOR's other obligations under the Contract Documents have been fulfilled, the DEPARTMENT will process final Application for Payment. Otherwise, the Contracting Officer will return the Application for Payment to the CONTRACTOR, indicating in writing the reasons for refusing to process final payment, in which case the CONTRACTOR shall make the necessary corrections and resubmit the final Application for Payment.
- 13.14.2 If, through no fault of the CONTRACTOR, Final Completion of the Work is significantly delayed, the Contracting Officer shall, upon receipt of the CONTRACTOR's final Application for Payment, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by the DEPARTMENT for Work not fully completed or corrected is less than the retainage provided for in paragraph 13.9, and if bonds have been furnished as required in paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the CONTRACTOR to the DEPARTMENT with the application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

13.15 Final Acceptance:

Following certification of payment of payroll and revenue taxes, and final payment to the CONTRACTOR, the DEPARTMENT will issue a letter of Final Acceptance, releasing the CONTRACTOR from further obligations under the Contract, except as provided in paragraph 13.17.

13.16 CONTRACTOR's Continuing Obligation:

The CONTRACTOR's obligation to perform and complete the Work and pay all laborers, Subcontractors, and materialmen in accordance with the Contract Documents shall be absolute. Neither any progress or final payment by the DEPARTMENT, nor the issuance of a certificate of Substantial Completion, nor any use or occupancy of the Work or any part thereof by the DEPARTMENT or Using Agency, nor any act of acceptance by the DEPARTMENT nor any failure to do so, nor any review and Approval of a Shop Drawing or sample submission, nor any correction of Defective Work by the DEPARTMENT will constitute an acceptance of

Work not in accordance with the Contract Documents or a release of the CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents.

13.17 Waiver of Claims by CONTRACTOR:

The making and acceptance of final payment will constitute a waiver of all claims by the CONTRACTOR against the DEPARTMENT other than those previously made in writing and still unsettled.

13.18 No Waiver of Legal Rights:

The DEPARTMENT shall not be precluded or be estopped by any payment, measurement, estimate, or certificate made either before or after the completion and acceptance of the Work and payment therefor, from showing the true amount and character of the Work performed and materials furnished by the CONTRACTOR, nor from showing that any payment, measurement, estimate or certificate is untrue or is incorrectly made, or that the Work or materials are Defective. The DEPARTMENT shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the CONTRACTOR or his Sureties, or both, such damages as it may sustain by reason of his failure to comply with requirements of the Contract Documents. Neither the acceptance by the DEPARTMENT, or any representative of the DEPARTMENT, nor any payment for or acceptance of the whole or any part of the Work, nor any extension of the Contract Time, nor any possession taken by the DEPARTMENT, shall operate as a waiver of any portion of the Contract or of any power herein reserved, or of any right to damages. A waiver by the DEPARTMENT of any breach of the Contract shall not be held to be a waiver of any other subsequent breach.

ARTICLE 14 - SUSPENSION OF WORK, DEFAULT AND TERMINATION

14.1 DEPARTMENT May Suspend Work:

- 14.1.1 The DEPARTMENT may, at any time, suspend the Work or any portion thereof by notice in writing to the CONTRACTOR. If the Work is suspended without cause the CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if the CONTRACTOR makes an Approved claim therefor as provided in Article 15. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that suspension is due to the fault or negligence of the CONTRACTOR, or that suspension is necessary for Contract compliance, or that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the CONTRACTOR.
- 14.1.2 In case of suspension of Work, the CONTRACTOR shall be responsible for preventing damage to or loss of any of the Work already performed and of all materials whether stored on or off the site or Approved remote storage sites.

14.2 Default of Contract:

- 14.2.1 If the CONTRACTOR:
- a. Fails to begin the Work under the Contract within the time specified in the Proposal, or
 - b. Fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficiently skilled workmen, suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 6.6 as revised from time to time), or
 - c. Performs the Work unsuitably or neglects or refuses to remove materials or to correct Defective Work, or
 - d. Discontinues the prosecution of the Work, or
 - e. Fails to resume Work which has been discontinued within a reasonable time after notice to do so, or
 - f. Becomes insolvent, except that if the CONTRACTOR declares bankruptcy termination in accordance with all U.S.C. 362 and/or 11 U.S.C. 365. In the event the CONTRACTOR declares bankruptcy the CONTRACTOR agrees that the Contract will be assumed or rejected in a timely manner so that the Contract will be completed by the date specified in the Contract Documents, or

- g. Allows any final judgment to stand against him unsatisfied for period of 60 days, or
 - h. Makes an assignment for the benefit of creditors without the consent of the Contracting Officer, or
 - i. Disregards Regulatory Requirements of any public body having jurisdiction, or
 - j. Otherwise violates in any substantial way any provisions of the Contract Documents, or
 - k. For any cause whatsoever, fails to carry on the Work in an acceptable manner, the Contracting Officer may give notice in writing to the CONTRACTOR and his Surety of such delay, neglect, or default.
- 14.2.2 If the CONTRACTOR or Surety, within the time specified in the above notice of default, shall not proceed in accordance therewith, then the DEPARTMENT may, upon written notification from the Contracting Officer of the fact of such delay, neglect or default and the CONTRACTOR's failure to comply with such notice, have full power and authority without violating the Contract, to take the prosecution of the Work out of the hands of the CONTRACTOR. The DEPARTMENT may terminate the services of the CONTRACTOR, exclude the CONTRACTOR from the site and take possession of the Work and of all the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by the CONTRACTOR (without liability to the CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which the DEPARTMENT has paid the CONTRACTOR but which are stored elsewhere, and finish the Work as the DEPARTMENT may deem expedient. The DEPARTMENT may enter into an agreement for the completion of said Contract according to the terms and provisions thereof, or use such other methods that in the opinion of the Contracting Officer are required for the completion of said Contract in an acceptable manner.
- 14.2.3 The Contracting Officer may, by written notice to the CONTRACTOR and his Surety or his representative, transfer the employment of the Work from the CONTRACTOR to the Surety, or if the CONTRACTOR abandons the Work undertaken under the Contract, the Contracting Officer may, at his option with written notice to the Surety and without any written notice to the CONTRACTOR, transfer the employment for said Work directly to the Surety. The Surety shall submit its plan for completion of the Work, including any contracts or agreements with third parties for such completion, to the DEPARTMENT for Approval prior to beginning completion of the Work. Approval of such contracts shall be in accordance with all applicable requirements and procedures for Approval of subcontracts as stated in the Contract Documents.
- 14.2.4 Upon receipt of the notice terminating the services of the CONTRACTOR, the Surety shall enter upon the premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the Work included under the Contract and employ by contract or otherwise any person or persons to finish the Work and provide the materials therefor, without termination of the continuing full force and effect of this Contract. In case of such transfer of employment to the Surety, the Surety shall be paid in its own name on estimates covering Work subsequently performed under the terms of the Contract and according to the terms thereof without any right of the CONTRACTOR to make any claim for the same or any part thereof.
- 14.2.5 If the Contract is terminated for default, the CONTRACTOR and the Surety shall be jointly and severally liable for damages for delay as provided by paragraph 11.8, and for the excess cost of completion, and all costs and expenses incurred by the DEPARTMENT in completing the Work or arranging for completion of the Work, including but not limited to costs of assessing the Work to be done, costs associated with advertising, soliciting or negotiating for bids or proposals for completion, and other procurement costs. Following termination the CONTRACTOR shall not be entitled to receive any further balance of the amount to be paid under the Contract until the Work is fully finished and accepted, at which time if the unpaid balance exceeds the amount due the DEPARTMENT and any amounts due to persons for whose benefit the DEPARTMENT has withheld funds, such excess shall be paid by the DEPARTMENT to the CONTRACTOR. If the damages, costs, and expenses due the DEPARTMENT exceed the unpaid balance, the CONTRACTOR and his Surety shall pay the difference.
- 14.2.6 If, after notice of termination of the CONTRACTOR's right to proceed under the provisions of this clause, it is determined for any reason that the CONTRACTOR was not in default under the provisions of this

clause, or that the delay was excusable under the provisions of this clause, or that termination was wrongful, the rights and obligations of the parties shall be determined in accordance with the clause providing for convenience termination.

14.3 Rights or Remedies:

Where the CONTRACTOR's services have been so terminated by the DEPARTMENT, the termination will not affect any rights or remedies of the DEPARTMENT against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due the CONTRACTOR by the DEPARTMENT will not release the CONTRACTOR from liability.

14.4 Convenience Termination:

- 14.4.1 The performance of the Work may be terminated by the DEPARTMENT in accordance with this section in whole or in part, whenever, for any reason the Contracting Officer shall determine that such termination is in the best interest of the DEPARTMENT. Any such termination shall be effected by delivery to the CONTRACTOR of a *Notice of Termination*, specifying termination is for the convenience of the DEPARTMENT the extent to which performance of Work is terminated, and the date upon which such termination becomes effective.

Immediately upon receipt of a *Notice of Termination* and except as otherwise directed by the Contracting Officer, the CONTRACTOR shall:

- a. Stop Work on the date and to the extent specified in the *Notice of Termination*;
- b. Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portion of the Work as is not terminated;
- c. Terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the *Notice of Termination*;
- d. With the written Approval of the Contracting Officer, to the extent he may require, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, the cost of which would be reimbursable, in whole, or in part, in accordance with the provisions of the Contract;
- e. Submit to the Contracting Officer a list, certified as to quantity and quality, of any or all items of termination inventory exclusive of items the disposition of which had been directed or authorized by the Contracting Officer;
- f. Transfer to the Contracting Officer the completed or partially completed record drawings, Shop Drawings, information, and other property which, if the Contract had been completed, would be required to be furnished to the DEPARTMENT;
- g. Take such action as may be necessary, or as the Contracting Officer may direct, for the protection and preservation of the property related to the Contract which is in the possession of the CONTRACTOR and in which the DEPARTMENT has or may acquire any interest.

The CONTRACTOR shall proceed immediately with the performance of the above obligations.

- 14.4.2 When the DEPARTMENT orders termination of the Work effective on a certain date, all Work in place as of that date will be paid for in accordance with Article 13 of the Contract. Materials required for completion and on hand but not incorporated in the Work will be paid for at invoice cost plus 15 % with materials becoming the property of the DEPARTMENT - or the CONTRACTOR may retain title to the materials and be paid an agreed upon lump sum. Materials on order shall be cancelled, and the DEPARTMENT shall pay reasonable factory cancellation charges with the option of taking delivery of the materials in lieu of payment of cancellation charges. The CONTRACTOR shall be paid 10% of the cost, freight not included, of materials cancelled, and direct expenses only for CONTRACTOR chartered freight transport which cannot be cancelled without charges, to the extent that the CONTRACTOR can establish them. The extra costs due to cancellation of bonds and insurance and that part of job start-up and phase-out costs not amortized by the amount of Work accomplished shall be paid by the DEPARTMENT. Charges for loss of profit or consequential damages shall not be recoverable except as provided above.

- 14.4.3 The termination claim shall be submitted promptly, but in no event later than 90 days from the effective date of termination, unless extensions in writing are granted by the Contracting Officer upon written request of the CONTRACTOR made within the 90 day period. Upon failure of the CONTRACTOR to submit his termination claim within the time allowed, the Contracting Officer may determine, on the basis of information available to him, the amount, if any, due to the CONTRACTOR by reason of the termination and shall thereupon pay to the CONTRACTOR the amount so determined.
- 14.4.4 The CONTRACTOR and the Contracting Officer may agree upon whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of Work pursuant to this section. The Contract shall be amended accordingly, and the CONTRACTOR shall be paid the agreed amount.

In the event of the failure of the CONTRACTOR and the Contracting Officer to agree in whole or in part, as provided heretofore, as to the amounts with respect to costs to be paid to the CONTRACTOR in connection with the termination of the Work the Contracting Officer shall determine, on the basis of information available to him, the amount, if any, due to the CONTRACTOR by reason of the termination and shall pay to the CONTRACTOR the amount determined as follows:

- a. All costs and expenses reimbursable in accordance with the Contract not previously paid to the CONTRACTOR for the performance of the Work prior to the effective date of the *Notice of Termination*;
 - b. So far as not included under "a" above, the cost of settling and paying claims arising out of the termination of the Work under subcontracts or orders which are properly chargeable to the terminated portions of the Contract;
 - c. The reasonable costs of settlement with respect to the terminated portion of the Contract heretofore, to the extent that these costs have not been covered under the payment provisions of the Contract.
- 14.4.5 The CONTRACTOR shall have the right of appeal under the DEPARTMENT's claim procedures, as defined in Article 15, for any determination made by the Contracting Officer, except if the CONTRACTOR has failed to submit his claim within the time provided and has failed to request extension of such time, CONTRACTOR shall have no such right of appeal.

In arriving at the amount due the CONTRACTOR under this section, there shall be deducted:

- a. All previous payments made to the CONTRACTOR for the performance of Work under the Contract prior to termination;
 - b. Any claim for which the DEPARTMENT may have against the CONTRACTOR;
 - c. The agreed price for, or the proceeds of sale of, any materials, supplies, or other things acquired by the CONTRACTOR or sold pursuant to the provisions of this section and not otherwise recovered by or credited to the DEPARTMENT; and,
 - d. All progress payments made to the CONTRACTOR under the provisions of this section.
- 14.4.6 Where the Work has been terminated by the DEPARTMENT said termination shall not affect or terminate any of the rights of the DEPARTMENT against the CONTRACTOR or his Surety then existing or which may thereafter accrue because of such default. Any retention or payment of monies by the DEPARTMENT due to the CONTRACTOR under the terms of the Contract shall not release the CONTRACTOR or his Surety from liability.

Unless otherwise provided for in the Contract Documents, or by applicable statute, the CONTRACTOR, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the DEPARTMENT at all reasonable times at the office of the CONTRACTOR, all its books, records, documents, and other evidence bearing on the cost and expenses of the CONTRACTOR under his Contract and relating to the Work terminated hereunder.

ARTICLE 15 - CLAIMS AND DISPUTES

15.1 Notification:

In addition to the notice requirements set out elsewhere in this Contract, if the CONTRACTOR becomes aware of any act or occurrence which may form the basis of a claim by the CONTRACTOR for additional compensation or an extension of time for performance, or if any dispute arises regarding a question of fact or interpretation of the Contract, the CONTRACTOR shall immediately inform the Project Manager. If the matter cannot be resolved by agreement within 7 days, the CONTRACTOR shall, within the next 14 days, submit an "Intent to Claim" in writing to the Project Manager.

The claim, if not resolved, shall be presented to the Project Manager, in writing, within 60 days following receipt of the "Intent to Claim". Receipt of the claim will be acknowledged in writing by the Project Manager.

The CONTRACTOR agrees that unless these written notices are provided, the CONTRACTOR will have no entitlement to additional time or compensation for such act, event or condition. The CONTRACTOR shall in any case continue diligent performance of the Contract.

15.2 Presenting Claim:

The claim shall specifically include the following:

- 15.2.1 The act, event or condition giving rise to the claim.
- 15.2.2 The Contract provisions which apply to the claim and under which relief is provided.
- 15.2.3 The item or items of Contract Work affected and how they are affected.
- 15.2.4 The specific relief requested, including Contract Time if applicable, and the basis upon which it was calculated.

15.3 Claim Validity, Additional Information, and Project Manager's Actions:

The claim, in order to be valid, must not only show that the CONTRACTOR suffered damages or delay but that those conditions were actually a result of the act, event or condition complained of and that the Contract provides entitlement to relief to the CONTRACTOR for such act, event, or condition. The Project Manager reserves the right to make written request to the CONTRACTOR at any time for additional information which the CONTRACTOR may possess relative to the claim. The CONTRACTOR agrees to provide the Project Manager such additional information within 30 days of receipt of such a request. Failure to furnish such additional information may be regarded as a waiver of the claim. The Claim, if not resolved by agreement within 60 days of its receipt, will automatically be forwarded to the Contracting Officer for formal written decision.

15.4 Contracting Officer's Decision:

The CONTRACTOR will be furnished the Contracting Officers decision within the next 90 days, unless additional information is requested by the Contracting Officer. The Contracting Officer's decision is final and conclusive unless fraudulent as to the claim or unless, within 14 days of receipt of the decision, the CONTRACTOR delivers a written Notice of Appeal to the Appeals Officer. Procedures for appeals and hearings are covered under AS 36.30.625 and AS 36.30.630.

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SECTION 00800
SUPPLEMENTARY CONDITIONS
MODIFICATIONS TO THE GENERAL CONDITIONS
(STATE FUNDED CONTRACTS)

The following supplements modify, change, delete from, add to the "General Conditions of the Construction Contract for Buildings", revised December, 1987 (c) 4/96. Where any article of the General Conditions is modified, or and Paragraph, Subparagraph, or Clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph, of Clause shall remain in effect.

SC-1-DEFINITIONS

At General Conditions Article 1, add the following definitions:

“APPROVED. ‘Approved’ or ‘Approval’ as used in this contract document shall mean that the Department has received a document, form or submittal from the contractor and that the Department has taken “No exceptions” to the item submitted. Unless the context clearly indicates otherwise, approved or approval shall not mean that the Department approves of the methods or means, or that the item or form submitted meets the requirements of the contract or constitutes acceptance of the Contractor’s work. Where approved or approval means acceptance, then such approval must be set forth in writing and signed by the contracting officer or his designee.

ARCHITECT. Where used in the contract documents, “ARCHITECT” shall mean the DEPARTMENT’S ENGINEER.

ARCHITECT/ENGINEER. Where used in the contract documents, “ARCHITECT/ENGINEER” shall mean the DEPARTMENT’S ENGINEER.

ENGINEER. The DEPARTMENT’S authorized representative of the Contracting Officer, as defined in the DEPARTMENT’S *delegation of authority letter* to be issued after notice-to-proceed, who is responsible for administration of the contract.

EQUIPMENT. All machinery together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the work.

FURNISH. To procure, transport, and deliver to the project site materials, labor, or equipment, for installation or use on the project.

INSPECTOR. The Engineer’s authorized representative assigned to make detailed observations relating to contract performance.

INTERIM WORK AUTHORIZATION. A written order by the Engineer initiating changes to the Contract, within its general scope, until a subsequent Change Order is executed.

LABORATORY. The official testing laboratories of the DEPARTMENT or such other laboratories as may be designated by the Engineer or identified in the contract documents.

MATERIALS. Any substances specified for use in the construction of the project.

PRECONSTRUCTION CONFERENCE. A meeting between the CONTRACTOR and the Engineer, and other parties affected by the construction, to discuss the project before the CONTRACTOR begins work.

QUALITY ASSURANCE (QA). Where referred to in the technical specifications (Divisions 2 through 16), Quality Assurance refers to measures to be provided by the CONTRACTOR as specified.

QUALITY CONTROL (QC). Tests and inspections by the CONTRACTOR to insure the acceptability of materials incorporated into the work. QC test reports are used as a basis upon which to determine whether the Work conforms to the requirements of the Contract Documents and to determine its acceptability for payment.

TRAFFIC CONTROL PLAN (TCP). A drawing of one or more specific plans that detail the routing of pedestrian, and/or vehicular traffic through or around a construction area.

UTILITY. The privately, publicly or cooperatively owned lines, facilities and systems for producing, transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway or street drainage, and other similar commodities, including publicly owned fire and police signal systems, street lighting systems, and railroads which directly or indirectly serve the public or any part thereof. The term "utility" shall also mean the utility company, inclusive of any wholly owned or controlled subsidiary."

At General Conditions Article 1, definition of **Contract Time**, last sentence, Replace "...Final Completion..." with:

"...Substantial Completion..."

At General Conditions Article 1, definition of **Conditions of the Contract**: Delete the text of this definition in its entirety.

At General Conditions Article 1, definition of **Contract Time**: Delete the text of this definition and replace with the following:

"The number of Calendar Days following issuance of Notice-to-Proceed in which the project shall be rendered Substantially Complete, or if specified as a calendar date, the Substantial Completion date specified in the Contract Documents."

At General Conditions Article 1, definition of **Controlling Item**: Delete the text of this definition and replace with the following:

"Any feature of the Work on the critical path of a network schedule."

At General Conditions Article 1, definition of **Defective**: Delete the text of this definition and replace with the following:

"Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents."

At General Conditions Article 1, definition of **Effective Date of the Contract**: Delete the text of this definition in its entirety.

At General Conditions Article 1, definition **Shop Drawings**: Add the following text:

"Where used in the Contract Documents, "Shop Drawings" shall also mean "Submittals".

At General Conditions Article 1, second paragraph: Delete this paragraph in its entirety and replace with the following:

"The titles and headings of the articles, sections, and subsections herein are intended for convenience of reference."

At General Conditions Article 1, third paragraph starting with "Whenever used in the Specifications....", Delete this paragraph in its entirety.

At General Conditions Article 1, fourth paragraph, last sentence: Revise it to read as follows:

"Words defined in Article 1 are to be interpreted as defined."

SC-2.1-AUTHORITIES AND LIMITATIONS

At General Conditions Article 2.1.1, delete this paragraph in its entirety and replace with the following:

"The Contracting Officer alone, shall have the power to bind the DEPARTMENT and to exercise the rights, responsibilities, authorities and functions vested in the Contracting Officer by the Contract Documents. The Contracting Officer shall have the right to designate in writing authorized representatives to act for him. Wherever any provision of the Contract Documents specifies an individual or organization, whether governmental or private, to perform any act on behalf of or in the interest of the DEPARTMENT that individual or organization shall be deemed to be the Contracting Officer's authorized representative under this Contract but only to the extent so specified. "

At General Conditions Article 2.1.4 starting with "The term of "Contracting Officer" when used...", delete this article in its entirety.

SC-2.4-VISITS TO SITE/PLACE OF BUSINESS

At General Conditions Article 2.4, delete this article in its entirety.

SC-4.1-AVAILABILITY OF LANDS

At General Conditions Article 4.1, add the following:

"The CONTRACTOR shall provide all waste and disposal areas, including disposal areas for hazardous or contaminated materials, at no additional cost to the DEPARTMENT."

SC-4.3-EXPLORATIONS AND REPORTS

At General Conditions Article 4.3, add the following text:

"A copy of the geotechnical reports and addendum that were used in the preparation of these contract documents (See Section 00300 , Information Available to Bidders) is provided to all planholders listed with the DEPARTMENT as General Contractors, and is available to other planholders upon request. While referenced by or provided with the Contract Documents; the recommendations, engineering details, and other information contained in these reports of explorations shall not be construed to supercede or constitute conditions of the Contract Documents."

SC-4.7-SURVEY CONTROL

At General Conditions Article 4.7, delete the third sentence and substitute the following text:

"Copies of all survey notes shall be provided to the DEPARTMENT at an interval determined by the Project Manager. The Project Manager may request submission on a weekly or longer period at his discretion. Any variations between the Contract Documents and actual field conditions shall be identified in the survey notes."

SC-5.2-BONDS

At General Condition Article 5.2, delete the second, third, fourth, fifth, and sixth paragraphs in their entirety.

SC-5.4.2-INSURANCE REQUIREMENTS, GENERAL

At General Condition Article 5.4.2, revise the first sentence to read as follows:

"The CONTRACTOR shall maintain in force at all times during the performance of the work under this agreement the following policies and minimum limits of liability."

SC-5.4.2a-WORKMANS COMPENSATION INSURANCE

At General Condition Article 5.4.2a, replace paragraph "a" in its entirety and replace it with the following:

- "a. Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees of the Contractor engaged in work under this contract, Workers' Compensation Insurance as required by AS 23.30.045. The Contractor shall be responsible for Workers' Compensation Insurance for any subcontractor who provides services under this contract, to include:
1. Waiver of subrogation against the State and Employer's Liability Protection in the amount of \$500,000 each accident/\$500,000 each disease.
 2. If the Contractor directly utilizes labor outside of the State of Alaska in the prosecution of the work, "Other States" endorsement shall be required as a condition of the contract.
 3. Whenever the work involves activity on or about navigable waters, the Workers' Compensation policy shall contain a United States Longshoreman's and Harbor Worker's Act endorsement, and when appropriate, a Maritime Employer's Liability (Jones Act) endorsement with a minimum limit of \$1,000,000."

SC-5.4b-COMPREHENSIVE GENERAL LIABILITY INSURANCE

At General Conditions Article 5.4b, delete minimum limits of liability items 1 and 2 in their entirety and substitute the following text:

- "1. If the CONTRACTOR carries a *Comprehensive General Liability* policy, the limits of liability shall not be less than a Combined Single Limit for bodily injury, property damage and Personal Injury Liability of:
- \$1,000,000 each occurrence
\$2,000,00 aggregate
2. If the CONTRATOR carries a *Commercial General Liability* policy, the limits of liability shall not be less than:

\$1,000,000 each occurrence (Combined Single Limit for bodily injury and property damage)
\$1,000,000 for Personal Injury Liability

\$2,000,000 aggregate for Products-Completed Operations
\$2,000,000 general aggregate

The State of Alaska, DEPARTMENT of Health & Social Services shall be named as an "Additional Insured" under all liability coverages listed above."

SC-5.4.2d-BUILDERS RISK INSURANCE (SUBCONTRACTORS)

At General Condition Article 5.4.2d, revise the last sentence to read as follows:

"Builders Risk Insurance will only be required of subcontractors if so stated in the Supplementary Conditions."

SC-5.4.3-INSURANCE REQUIREMENTS, EVIDENCE OF INSURANCE

At General Conditions Article 5.4.3, delete this subsection and replace with the following:

"In addition to providing the above coverages the Contractor shall, in any contract or agreement with subcontractors performing work, require that all indemnities and waivers of subrogation it obtains, and that any stipulation to be named as an additional insured it obtains, also be extended to waive rights of subrogation against the State of Alaska and to add the State of Alaska as additional named indemnitee and as additional insured.

Evidence of insurance shall be furnished to the Department prior to the award of the contract. Such evidence, executed by the carrier's representative and issued to the Department, shall consist of a certificate of insurance or the policy declaration page with required endorsements attached thereto which denote the type, amount, class of operations covered, effective (and retroactive) dates, and dates of expiration. Acceptance by the Department of deficient evidence does not constitute a waiver of contract requirements.

When a certificate of insurance is furnished, it shall contain the following statement:
"This is to certify that the policies described herein comply with all aspects of the insurance requirements of (Project Name and Number)."

SC-6.6.1-PROGRESS SCHEDULE

At General Condition Article 6.6.1, change the phrase "Within reasonable time prior to the Pre-Construction Conference..." to read:

"Within seven days after the Pre-Construction Conference."

SC-6.6.2-SCHEDULE OF SHOP DRAWINGS AND SCHEDULE OF VALUES

At General Condition Article 6.6.2, change the phrase "Within fifteen days after the date of the Notice To Proceed,..." to read:

"Prior to submitting the CONTRACTOR's first Application for Payment..."

SC-6.9-SUBSTITUTES "OR EQUAL" ITEMS

Add the following article:

"6.9.5 - Substitutions shall be permitted during or after the bid period as allowed and in accordance with Document 00020 - Invitation for Bids, Document 00700 – General Conditions, and Document 01630 - Product Options and Substitutions."

SC-6.13.1-SUBCONTRACT PROVISIONS

At General Condition Article 6.13.1, delete the third sentence and add the following text:

"All subcontracts shall contain provisions for prompt payment, release of retainage, and interest on late payment amounts and retainage as specified in A.S. 36.90.210. Contracts between subcontractors, regardless of tier, must also contain these provisions."

SC-6.27-LOAD RESTRICTIONS

Add new General Conditions Article 6.27 as follows:

"6.27 Load Restrictions

The CONTRACTOR shall comply with all load restrictions as set forth in the "Administrative Permit Manual", and Title 17, Chapter 25, of the Alaska Administrative Code in the hauling of materials on public roads, beyond the limits of the project, and on all public roads within the project limits that are scheduled to remain in use upon completion of the project.

Overload permits may, at the discretion of the State, be issued for travel beyond the project limits for purposes of mobilization and/or demobilization. Issuance of such a permit will not relieve the CONTRACTOR of liability for damage which may result from the moving of equipment.

The operation of equipment of such weight or so loaded as to cause damage to any type of construction will not be permitted. No overloads will be permitted on the base course or surface course under construction. No loads will be permitted on a concrete pavement, base or structure before the expiration of the curing period. The CONTRACTOR shall be responsible for all damage done by his equipment."

SC-7.12-APPLICABLE ALASKA PREFERENCES

At General Condition Article 7.12.2, delete the last portion of the first sentence commencing at the words, "...when the bid documents designate..." and replace with the words:

"...when the bidder designates the use of Alaska products. The Bidder shall complete the Alaska Products Preference Worksheet per its instructions and submit it with the Bid Proposal." Continue with existing second sentence.

SC-7.13-PREFERENTIAL EMPLOYMENT

At General Condition Article 7.13, delete the text of this article in its entirety.

SC-7.14.1-CERTIFIED PAYROLLS

At General Condition Article 7.14.1, add the following text:

"Regardless of project funding source, copies of all certified payrolls supplied to the State DEPARTMENT of Labor by the CONTRACTOR shall be supplied also to the Project Manager upon request, including submittals made by, or on behalf of, subcontractors."

Add General Condition Article 7.14.3, as follows:

“Within three calendar days of award of a construction contract, the CONTRACTOR shall file a “Notice of Work” with the Department of Labor and shall pay all related fees. The Contracting Officer will not issue Notice to Proceed to the CONTRACTOR until such notice and fees have been paid to the Department of Labor. Failure of the CONTRACTOR to file the Notice of Work and pay fees within this timeframe shall not constitute grounds for an extension of contract time or adjustment of contract price.”

SC-7.16-COVENANT AGAINST CONTINGENT FEES

At General Conditions Article 7.16, delete the text of this article in its entirety.

SC-7.17-OFFICIALS NOT TO BENEFIT

At General Conditions Article 7.17, delete the text of this article in its entirety.

SC-7.18-PERSONAL LIABILITY OF PUBLIC OFFICIALS

At General Conditions Article 7.18, delete the text of this article in its entirety.

SC-9.4-CHANGE ORDER

At General Conditions Article 9.4, change the first sentence to read:

“A change in Contract Time, Contract Price, or responsibility may be made for changes within the scope of the Work by Change Order.”

At General Conditions Article 9.4, add the following sentence:

“A Change Order shall be considered executed when it is signed by the DEPARTMENT.”

SC-9.10-INTERIM WORK AUTHORIZATION

At General Conditions Article 9.10, add the following new paragraph:

“9.10 Interim Work Authorization

An Interim Work Authorization may be used to establish a change within the scope of the Work; however, only a Change Order shall establish associated changes in Contract Time and Price. Work authorized by Interim Work Authorization shall be converted to a Change Order. The basis of payment shall be as stated in the Interim Work Authorization, unless it states that the basis of payment has not been established and is to be negotiated, in which case the Cost of the Work shall be documented pursuant to Article 10.4, to establish a basis for negotiating a lump sum price for the Change Order.”

SC-10.3.2-CHANGE ORDER PRICE DETERMINATION FOR LUMP SUM CHANGE ORDERS

At General Conditions Article 10.3.2, Delete this paragraph in its entirety and replace it with the following.

“10.3.2 By mutual acceptance of a lump sum price which includes overhead and profit. The following maximum rates of cost markup (to cover both overhead and profit of the CONTRACTOR) shall be used in the negotiation of a Lump Sum Change Order:

-
- a. 17% - where a cost is borne directly by prime contractor (first tier contractor).
 - b. 10% - where a cost is borne by a subcontractor (lower tier contractor).

Where the cost is borne by a subcontractor acting as a first tier contractor, the allowable overhead and profit markup for lump sum change orders shall not exceed 17%. Any lower tier subcontractors, including the CONTRACTOR in this case, for whom the first tier subcontractor performs the work, shall be allowed an overhead and profit markup that does not exceed 10%.

SC-10.4-COST OF THE WORK

At General Conditions Article 10.4.1, replace the second sentence from the end of the paragraph with the following:

"Such employees shall include manual workers up through the level of foreman but shall not include general foremen, superintendents, and non-manual employees."

At General Conditions Article 10.4.2, replace the first sentence with the following:

"Cost of all materials and equipment furnished and incorporated or consumed in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith."

SC-10.4.5.c-COST OF THE WORK (SUPPLEMENTAL COSTS)

At General Condition Article 10.4.5.c, add the following:

"For any machinery or special equipment (other than small tools) which has been authorized by the Project Manager, the CONTRACTOR shall receive the rental rates in the current edition and appropriate volume of the "Rental Rate Blue Book for Construction Equipment", published by Dataquest, Inc., 1290 Ridder Park Drive, San Jose, CA 95131. Hourly rental rates shall be determined as follows:

The established hourly rental rate shall be equal to the adjusted monthly rate for the basic equipment plus the adjusted monthly rate for applicable attachments, both divided by 176, and multiplied by the area adjustment factor, plus the estimated hourly operating cost.

The adjusted monthly rate is that resulting from application of the rate adjustment formula in order to eliminate replacement cost allowances in machine depreciation and contingency cost allowances.

Attachments shall not be included unless required for the time and materials work.

For equipment not listed in The Blue Book, the CONTRACTOR shall receive a rental rate as agreed upon before such work is begun. If agreement cannot be reached, the DEPARTMENT reserves the right to establish a rate based on similar equipment in the Blue Book or prevailing commercial rates in the area.

These rates shall apply for equipment used during the CONTRACTOR's regular shift of 10 hours per day. Where the equipment is used more than 10 hours per day, either on the CONTRACTOR's normal work or on time and materials, and either on single or multiple shifts, an overtime rate, computed as follows, shall apply:

The hourly overtime rate shall be equal to the adjusted monthly rate for the basic equipment plus the adjusted monthly rate for applicable attachments, both divided by 352, and multiplied by the area adjustment factor, plus the estimated hourly operating cost.

Equipment which must be rented or leased specifically for work required under this section shall be authorized in writing by the Project Manager. The CONTRACTOR shall be paid invoice price plus 15%.

When it is necessary to obtain equipment from sources beyond the project limits exclusively for time and materials, work, the actual cost of transferring the equipment to the site of the work and return will be allowed as an additional item of expense. Where the move is made by common carrier, the move-in allowance will be limited to the amount of the freight bill or invoice. If the CONTRACTOR hauls the equipment with his own forces, the allowance will be limited to the rental rate for the hauling unit plus operator wages. In the event that the equipment is transferred under its own power, the moving allowance will be limited to one-half of the normal hourly rental rate plus operator's wages. In the event that the move-out is to a different location, payment will in no instance exceed the amount of the move-in. Move-in allowance shall not be made for equipment brought to the project for time and materials work which is subsequently retained on the project and utilized for completion of contract items, camp maintenance, or related work.

Equipment ordered to be on a stand-by basis shall be paid for at the stand-by rental rate for the number of hours in the CONTRACTOR'S normal work shift, but not to exceed 8 hours per day. The stand-by rental rate shall be computed as follows:

The hourly stand-by rate shall be equal to the adjusted monthly rate for the basic equipment plus the adjusted monthly rate for applicable attachments, both divided by 352, all multiplied by the area adjustment factor.

Time will be recorded to the nearest one-quarter hour for purposes of computing compensation to the CONTRACTOR for equipment utilized under these rates.

The equipment rates as determined above shall be full compensation, including overhead and profit, for providing the required equipment and no additional compensation will be made for other costs such as, but not limited to, fuels, lubricants, replacement parts or maintenance costs. Cost of repairs, both major and minor, as well as charges for mechanic's time utilized in servicing equipment to ready it for use prior to moving to the project and similar charges will not be allowed."

SC-10.11-DISADVANTAGED BUSINESSSS ENTERPRISE PROGRAM

At General Conditions Article 10.11, Delete this paragraph in its entirety for this State Funded Contract.

SC-11.3-COMPUTATION OF CONTRACT TIME

At General Condition Article 11.3.1, third sentence, change "...the date of Final Completion..." to:

"...the date of Substantial Completion..."

At General Condition Article 11.3.2, first sentence, change "...the date of Final Completion..." to:

"...the date of Substantial Completion."

Add General Condition Article 11.3.3, to state as follows:

" The Contract Time shall be as stated on form 25D-9, Proposal."

SC-11.8-DELAY DAMAGES

At General Condition Article 11.8, add the following:

"For each calendar day that the work remains incomplete after the expiration of the Contract Time,

liquidated damages in the amount of \$500 per calendar day shall be assessed to the CONTRACTOR. If no money is due the CONTRACTOR, the DEPARTMENT shall have the right to recover said sum from the CONTRACTOR, the surety or both. The amount of these deductions is to reimburse the DEPARTMENT for estimated liquidated damages incurred as a result of the CONTRACTOR's failure to complete the work within the time specified. As liquidated damages, such deductions are not to be considered as penalties.

Permitting the CONTRACTOR to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the DEPARTMENT of any of its rights under the Contract."

SC 12-ONE YEAR CORRECTION PERIOD

At General Condition Article 12.7, in the first sentence, change the phrase " Final Completion" to:

"Substantial Completion of the relevant portion of the Work..."

SC 13.3-APPLICATION FOR PROGRESS PAYMENT

At General Conditions Article 13.3, revise the last sentence to read as follows:

"Progress payments will be made as the Work progresses on a monthly basis."

SC 13.13-FINAL COMPLETION AND APPLICATION FOR PAYMENT

At General Conditions Article 13.13, first sentence, delete the following items:

"maintenance and operating instructions
certificates of inspection
marked up record documents"

The preceding items are some of the requirements for Substantial Completion, as addressed in Section 01701.

SC 13.16-CONTRACTOR'S CONTINUING OBLIGATION

At General Condition Article 13.16, add the following paragraph:

"When it is anticipated that restarting, testing, adjusting, or balancing of systems will be required following Final Acceptance and said requirements are noted in Section(s) 01650, such Work shall constitute a continuing obligation under the Contract."

SC 14.2-DEFAULT OF CONTRACT

At General Conditions Article 4.2, delete this section in its entirety and replace with the following:

"14.2.1 The Contracting Officer may give the contractor and his surety a written Notice to Cure Default if the contractor:

- a. fails to begin work in the time specified,
- b. fails to use sufficient resources to assure prompt completion of the work,
- c. performs the work unsuitably or neglect or refuse to remove and replace rejected materials or work,
- d. stops work,
- e. fails to resume stopped work after receiving notice to do so,

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- f. becomes insolvent (except that if you declare bankruptcy, termination will be under Title 11 US Code 362 and/or 365. Your bankruptcy does not relieve the surety of any obligations to assume the Contract and complete the work in a timely manner.
 - g. Allows any final judgment to stand against him unsatisfied for period of 60 days, or
 - h. Makes an assignment for the benefit of creditors without the consent of the Contracting Officer, or
 - i. Disregards Regulatory Requirements of any public body having jurisdiction, or
 - j. Otherwise violates in any substantial way any provisions of the Contract Documents, or
 - k. fails to comply with Contract minimum wage payments or civil rights requirements, or
 - l. are party to fraud, deception, misrepresentation , or
 - m. for any cause whatsoever, fails to carry on the Work in an acceptable manner.
- 14.2.2 The Notice to Cure Default will detail the conditions determined to be in default, the time within which to cure the default and may, in the Contracting Officer's discretion, specify the actions necessary to cure the default. Failure to cure the delay, neglect or default within the time specified in the Contracting Officer's written notice to cure authorizes the Department to terminate the contract. The Contracting Officer may allow more time to cure than originally stated in the Notice to Cure Default if he deems it to be in the best interests of the Department. The Department will provide you and your surety with a written Notice of Default Termination that details the default and the failure to cure it.
- 14.2.3 If the CONTRACTOR or Surety, within the time specified in the above notice of default, shall not proceed in accordance therewith, then the DEPARTMENT may, upon written notification from the Contracting Officer of the fact of such delay, neglect or default and the CONTRACTOR's failure to comply with such notice, have full power and authority without violating the Contract, to take the prosecution of the Work out of the hands of the CONTRACTOR. The DEPARTMENT may terminate the services of the CONTRACTOR, exclude the CONTRACTOR from the site and take possession of the Work and of all the CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by the CONTRACTOR (without liability to the CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which the DEPARTMENT has paid the CONTRACTOR but which are stored elsewhere, and finish the Work as the DEPARTMENT may deem expedient. The DEPARTMENT may enter into an agreement for the completion of said Contract according to the terms and provisions thereof, or use such other methods that in the opinion of the Contracting Officer are required for the completion of said Contract in an acceptable manner.
- 14.2.4 The Contracting Officer may, by written notice to the CONTRACTOR and his Surety or his representative, transfer the employment of the Work from the CONTRACTOR to the Surety, or if the CONTRACTOR abandons the Work undertaken under the Contract, the Contracting Officer may, at his option with written notice to the Surety and without any written notice to the CONTRACTOR, transfer the employment for said Work directly to the Surety. The Surety shall submit its plan for completion of the Work, including any contracts or agreements with third parties for such completion, to the DEPARTMENT for Approval prior to beginning completion of the Work. Approval of such contracts shall be in accordance with all applicable requirements and procedures for Approval of subcontracts as stated in the Contract Documents.
- 14.2.5 After the notice of termination is issued, the Department may take over the work and complete it by contract or otherwise and may take possession of and use materials, appliances, equipment or plant on the work site necessary for completing the work.
- 14.2.6 Rather than taking over the work itself, the Department may transfer the obligation to perform the work from the contractor to your surety. The surety must submit its plan for completion of the work, including any contracts or agreements with third parties for completion, to the
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Department for approval prior to beginning work. The surety must follow the Contract requirements for approval of subcontracts, except that the limitation on percent of work subcontracted will not apply.

- 14.2.7 On receipt of the transfer notice, the surety must take possession of all materials, tools, and appliances at the work site, employ an appropriate work force, and complete the Contract work, as specified. The Contract specifications and requirements shall remain in effect. However the Department will make subsequent Contract payments directly to the Surety for work performed under the terms of the Contract. You forfeit any right to claim for the same work or any part thereof. You are not entitled to receive any further balance of the amount to be paid under the Contract.
- 14.2.8 Upon receipt of the notice terminating the services of the CONTRACTOR, the Surety shall enter upon the premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the Work included under the Contract and employ by contract or otherwise any person or persons to finish the Work and provide the materials therefor, without termination of the continuing full force and effect of this Contract. In case of such transfer of employment to the Surety, the Surety shall be paid in its own name on estimates covering Work subsequently performed under the terms of the Contract and according to the terms thereof without any right of the CONTRACTOR to make any claim for the same or any part thereof.
- 14.2.9 If the Contract is terminated for default, the CONTRACTOR and the Surety shall be jointly and severally liable for damages for delay as provided by paragraph 11.8, and for the excess cost of completion, and all costs and expenses incurred by the DEPARTMENT in completing the Work or arranging for completion of the Work, including but not limited to costs of assessing the Work to be done, costs associated with advertising, soliciting or negotiating for bids or proposals for completion, and other procurement costs. Following termination the CONTRACTOR shall not be entitled to receive any further balance of the amount to be paid under the Contract until the Work is fully finished and accepted, at which time if the unpaid balance exceeds the amount due the DEPARTMENT and any amounts due to persons for whose benefit the DEPARTMENT has withheld funds, such excess shall be paid by the DEPARTMENT to the CONTRACTOR. If the damages, costs, and expenses due the DEPARTMENT exceed the unpaid balance, the CONTRACTOR and his Surety shall pay the difference.
- 14.2.10 If, after notice of termination of the CONTRACTOR's right to proceed under the provisions of this clause, it is determined for any reason that the CONTRACTOR was not in default under the provisions of this clause, or that the delay was excusable under the provisions of this clause, or that termination was wrongful, the rights and obligations of the parties shall be determined in accordance with the clause providing for convenience termination.

14.3 Rights or Remedies:

Where the CONTRACTOR's services have been so terminated by the DEPARTMENT, the termination will not affect any rights or remedies of the DEPARTMENT against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due the CONTRACTOR by the DEPARTMENT will not release the CONTRACTOR from liability.

14.4 Convenience Termination:

- 14.4.1 The performance of the Work may be terminated by the DEPARTMENT in accordance with this section in whole or in part, whenever, for any reason the Contracting Officer shall determine that such termination is in the best interest of the DEPARTMENT. Any such termination shall be effected by delivery to the CONTRACTOR of a Notice of Termination, specifying termination is for the convenience of the DEPARTMENT the extent to which performance of Work is terminated, and the date upon which such termination becomes effective.

14.4.2 Immediately upon receipt of a Notice of Termination and except as otherwise directed by the Contracting Officer, the CONTRACTOR shall:

- a. Stop Work on the date and to the extent specified in the Notice of Termination;
- b. Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portion of the Work as is not terminated;
- c. Terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;
- d. With the written Approval of the Contracting Officer, to the extent he may require, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, the cost of which would be reimbursable, in whole, or in part, in accordance with the provisions of the Contract;
- e. Submit to the Contracting Officer a list, certified as to quantity and quality, of any or all items of termination inventory exclusive of items the disposition of which had been directed or authorized by the Contracting Officer;
- f. Transfer to the Contracting Officer the completed or partially completed record drawings, Shop Drawings, information, and other property which, if the Contract had been completed, would be required to be furnished to the DEPARTMENT;
- g. Take such action as may be necessary, or as the Contracting Officer may direct, for the protection and preservation of the property related to the Contract which is in the possession of the CONTRACTOR and in which the DEPARTMENT has or may acquire any interest.

The CONTRACTOR shall proceed immediately with the performance of the above obligations.

14.4.3 When the DEPARTMENT orders termination of the Work effective on a certain date, all Work in place as of that date will be paid for in accordance with Article 13 of the Contract. Materials required for completion and on hand but not incorporated in the Work will be paid for at invoice cost plus 15 % with materials becoming the property of the DEPARTMENT - or the CONTRACTOR may retain title to the materials and be paid an agreed upon lump sum. Materials on order shall be cancelled, and the DEPARTMENT shall pay reasonable factory cancellation charges with the option of taking delivery of the materials in lieu of payment of cancellation charges. The CONTRACTOR shall be paid 10% of the cost, freight not included, of materials cancelled, and direct expenses only for CONTRACTOR chartered freight transport which cannot be cancelled without charges, to the extent that the CONTRACTOR can establish them. The extra costs due to cancellation of bonds and insurance and that part of job start-up and phase-out costs not amortized by the amount of Work accomplished shall be paid by the DEPARTMENT. Charges for loss of profit or consequential damages shall not be recoverable except as provided above.

- a. The following costs are not payable under a termination settlement agreement or Contracting Officer's determination of the termination claim:
 1. Loss of anticipated profits or consequential or compensatory damages
 2. Unabsorbed home office overhead (also termed "General & Administrative Expense") related to ongoing business operations
 3. Bidding and project investigative costs
 4. Direct costs of repairing equipment to render it operable for use on the terminated work

14.4.4 The termination claim shall be submitted promptly, but in no event later than 90 days from the effective date of termination, unless extensions in writing are granted by the Contracting Officer upon written request of the CONTRACTOR made within the 90 day period. Upon

failure of the CONTRACTOR to submit his termination claim within the time allowed, the Contracting Officer may determine, on the basis of information available to him, the amount, if any, due to the CONTRACTOR by reason of the termination and shall thereupon pay to the CONTRACTOR the amount so determined.

- 14.4.5 The CONTRACTOR and the Contracting Officer may agree upon whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of Work pursuant to this section. The Contract shall be amended accordingly, and the CONTRACTOR shall be paid the agreed amount.
- 14.4.6 In the event of the failure of the CONTRACTOR and the Contracting Officer to agree in whole or in part, as provided heretofore, as to the amounts with respect to costs to be paid to the CONTRACTOR in connection with the termination of the Work the Contracting Officer shall determine, on the basis of information available to him, the amount, if any, due to the CONTRACTOR by reason of the termination and shall pay to the CONTRACTOR the amount determined as follows:
- a. All costs and expenses reimbursable in accordance with the Contract not previously paid to the CONTRACTOR for the performance of the Work prior to the effective date of the Notice of Termination;
 - b. So far as not included under "a" above, the cost of settling and paying claims arising out of the termination of the Work under subcontracts or orders which are properly chargeable to the terminated portions of the Contract;
 - c. So far as practicable, claims by the contractor for idled or stand-by equipment shall be made as follows: Equipment claims will be reimbursed as follows:
 1. Contractor-owned equipment usage, based on the contractor's ownership and operating costs for each piece of equipment as determined from the contractor's accounting records. Under no circumstance, may the contractor base equipment claims on published rental rates.
 2. Idle or stand-by time for Contractor-owned equipment, based on your internal ownership and depreciation costs. Idle or stand-by equipment time is limited to the actual period of time equipment is idle or on stand-by as a direct result of the termination, not to exceed 30 days. Operating expenses will not be included for payment of idle or stand-by equipment time.
 3. Rented equipment, based on reasonable, actual rental costs. Equipment leased under "capital leases" as defined in Financial Accounting Standard No. 13 will be considered Contractor-owned equipment. Equipment leased from an affiliate, division, subsidiary or other organization under common control with you will be considered Contractor-owned equipment, unless the lessor has an established record of leasing to unaffiliated lessees at competitive rates consistent with the rates you have agreed to pay and no more than forty percent of the lessor's leasing business, measured in dollars, is with organizations affiliated with the lessor.
- 14.4.7 The CONTRACTOR shall have the right of appeal under the DEPARTMENT's claim procedures, as defined in Article 15, for any determination made by the Contracting Officer, except if the CONTRACTOR has failed to submit his claim within the time provided and has failed to request extension of such time, CONTRACTOR shall have no such right of appeal. In arriving at the amount due the CONTRACTOR under this section, there shall be deducted:
- a. All previous payments made to the CONTRACTOR for the performance of Work under the Contract prior to termination;
 - b. Any claim for which the DEPARTMENT may have against the CONTRACTOR;
 - c. The agreed price for, or the proceeds of sale of, any materials, supplies, or other things acquired by the CONTRACTOR or sold pursuant to the provisions of this section and not otherwise recovered by or credited to the DEPARTMENT; and,

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- d. All progress payments made to the CONTRACTOR under the provisions of this section.
- 14.4.8 Where the Work has been terminated by the DEPARTMENT said termination shall not affect or terminate any of the rights of the DEPARTMENT against the CONTRACTOR or his Surety then existing or which may thereafter accrue because of such default. Any retention or payment of monies by the DEPARTMENT due to the CONTRACTOR under the terms of the Contract shall not release the CONTRACTOR or his Surety from liability.
- 14.4.9 The contractor's termination claim may not include claims that pre dated the notice for termination for convenience. Those claims shall be prosecuted by the contractor under Article 15.
- 14.4.10 The contractor's termination claim may not exceed the total dollar value of the contract as awarded plus agreed upon change orders less the amounts that have been paid for work completed.
- a. Unless otherwise provided for in the Contract Documents, or by applicable statute, the CONTRACTOR, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the DEPARTMENT at all reasonable times at the office of the CONTRACTOR, all its books, records, documents, and other evidence bearing on the cost and expenses of the CONTRACTOR under his Contract and relating to the Work terminated hereunder.
 - b. Definitions. In this Subsection 108-1.09, the term "cost" and the term "expense" mean a monetary amount in U.S. Dollars actually incurred by you, actually reflected in your contemporaneously maintained accounting or other financial records and supported by original source documentation.
 - c. Cost Principles. The Department may use the federal cost principles at 48 CFR §§ 31.201-1 to 31.205-52 (or succeeding cost principles for fixed price contracts) as guidelines in determining allowable costs under this Subsection to the extent they are applicable to construction contracts and consistent with the specifications of this Contract. The provisions of this contract control where they are more restrictive than, or inconsistent with, these federal cost principles."

SC-15-CLAIMS AND DISPUTES

At General Conditions Article 15 – Claims and Disputes, delete this section in its entirety and substitute the following text:

"ARTICLE 15 - CLAIMS FOR ADJUSTMENT AND DISPUTES

15.1 Notification

- 15.1.1 The CONTRACTOR shall notify the DEPARTMENT in writing as soon as the CONTRACTOR becomes aware of any act or occurrence which may form the basis of a claim for additional compensation or an extension of Contract Time or of any dispute regarding a question of fact or interpretation of the Contract. The DEPARTMENT has no obligation to investigate any fact or occurrence that might form the basis of a claim or to provide any additional compensation or extension of Contract Time unless the CONTRACTOR has notified the DEPARTMENT in writing in a timely manner of all facts the CONTRACTOR believes form the basis for the claim.
- 15.1.2 If the CONTRACTOR believes that he is entitled to an extension of Contract Time, then the CONTRACTOR must state the contract section on which he basis his extension request, provide the DEPARTMENT with sufficient information to demonstrate that the CONTRACTOR has suffered excusable delay, and show the specific amount of time to which the CONTRACTOR is entitled. The DEPARTMENT will not grant an extension of Contract Time if the CONTRACTOR does not timely submit revised schedules under **Section 01310.**

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- 15.1.3 If the matter is not resolved by agreement within 7 days, the CONTRACTOR shall submit an Intent to Claim, in writing, to the DEPARTMENT within the next 14 days.
- 15.1.4 If the CONTRACTOR believes additional compensation or time is warranted, then he must immediately begin keeping complete, accurate, and specific daily records concerning every detail of the potential claim including actual costs incurred. The CONTRACTOR shall provide the DEPARTMENT access to any such records and furnish the DEPARTMENT copies, if requested. Equipment costs must be based on the CONTRACTOR's internal rates for ownership, depreciation, and operating expenses and not on published rental rates. In computing damages, or costs claimed for a change order, or for any other claim against the Department for additional time, compensation or both, the contractor must prove actual damages based on internal costs for equipment, labor or efficiencies. Total cost, modified total cost or jury verdict forms of presentation of damage claims are not permissible to show damages. Labor inefficiencies must be shown to actually have occurred and can be proven solely based on job records. Theoretical studies are not a permissible means of showing labor inefficiencies. Home office overhead will not be allowed as a component of any claim against the Department.
- 15.1.5 If the claim or dispute is not resolved by the DEPARTMENT, then the CONTRACTOR shall submit a written Claim to the Contracting Officer within 90 days after the CONTRACTOR becomes aware of the basis of the claim or should have known the basis of the claim, whichever is earlier. The Contracting Officer will issue written acknowledge of the receipt of the Claim.
- 15.1.6 The CONTRACTOR waives any right to claim if the DEPARTMENT was not notified properly or afforded the opportunity to inspect conditions or monitor actual costs or if the Claim is not filed on the date required.

15.2 Presenting the Claim

- 15.2.1 The Claim must include all of the following:
- a. The act, event, or condition the claim is based on
 - b. The Contract provisions which apply to the claim and provide relief
 - c. The item or items of Contract work affected and how they are affected
 - d. The specific relief requested, including Contract Time if applicable, and the basis upon which it was calculated
 - e. A statement certifying that the claim is made in good faith, that the supporting cost and pricing data are accurate and complete to the best of your knowledge and belief, and that the amount requested accurately reflects the Contract adjustment which the CONTRACTOR believes is due.

15.3 Claim Validity, Additional Information, and DEPARTMENT's Action

- 15.3.1 The Claim, in order to be valid, must not only show that the CONTRACTOR suffered damages or delay but that it was caused by the act, event, or condition complained of and that the Contract provides entitlement to relief for such act, event, or condition.
- 15.3.2 The DEPARTMENT can make written request to the CONTRACTOR at any time for additional information relative to the Claim. The CONTRACTOR shall provide the DEPARTMENT the additional information within 30 days of receipt of such a request. Failure to furnish the additional information may be regarded as a waiver of the Claim.

15.4 Contracting Officer's Decision

The CONTRACTOR will be furnished the Contracting Officer's Decision within 90 days, unless the Contracting Officer requests additional information or gives the CONTRACTOR notice that the time for issuing a decision is being extended for a specified period under AS 36.30.620. The Contracting Officer's decision is final and conclusive unless, within 14 days of receipt of the decision, the

CONTRACTOR delivers a Notice of Appeal to the Appeals Officer. Procedures for appeals are covered under AS 36.30.625 and AS 36.30.630.

15.5 Fraud and Misrepresentation in Making Claims

Criminal and Civil penalties authorized under AS 36.30.687 (including, but not limited to, forfeiture of all claimed amounts) may be imposed on the CONTRACTOR if the CONTRACTOR makes or uses a misrepresentation in support of a claim or defraud or attempt to defraud the DEPARTMENT at any stage of prosecuting a claim under this Contract."

END OF SECTION

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SECTION 01005
ADMINISTRATIVE PROVISIONS

PART I GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Local Conditions
- B. Permits, Fees, and Inspections
- C. Alternates
- D. Preconstruction Meeting
- E. Applications for Payment
- F. Contractor Use of Premises
- G. Owner Occupancy
- H. Owner - Furnished Products
- I. Coordination
- J. Reference Standards

1.02 RELATED REQUIREMENTS

- A. General and Special Conditions

1.03 LOCAL CONDITIONS

- A. Bidders shall familiarize themselves with the Contract Documents and existing conditions, which affect Work, required by the Contract Documents. It will be assumed that bidders have made a personal examination of the jobsite, existing conditions, and documents for prior construction projects associated with this facility made available by the Owner for review by Bidders during the bid period.
- B. Failure to visit the jobsite, to review existing conditions, or to review documents for prior construction projects associated with this facility made available by the Owner for review by Bidders during the bid period will in no way relieve the successful Bidder from the necessity of furnishing any materials or performing any Work that may be required to complete the Work in accordance with the Contract Documents with no additional cost to the Owner.
- C. For building access and for access to the documents for prior construction projects associated with this facility contact:
Jeffrey Grey, Acting Maintenance Foreman, 907 761-6531
jeffrey.grey@alaska.gov

1.04 PERMITS, FEES, AND INSPECTIONS

- A. Obtain, pay for, and comply with the requirements of all permits, fees, and inspections required by public authorities.
- B. Transmit copies of permit applications, permits received, and public authority inspection reports to the Contracting Officer within three days of making permit application or receiving permits or reports.

1.05 ALTERNATES

- A. Alternates will be exercised at the option of Owner as specified on Bid Schedule. Accepted alternates will be indicated on the Contract and included within the conformed Contract Documents.
- B. Coordinate related work and modify surrounding work affected by accepted alternates as required to complete the Work.
- C. Provide all Work as part of the Base Bid except that Work specifically indicated to be provided as part of an alternate.

1.06 PRECONSTRUCTION MEETING

- A. Attend Owner initiated preconstruction meeting.

1.07 APPLICATIONS FOR PAYMENT

- A. Submit two copies of each application under procedures of Section 01027.
- B. Content and Format: That specified for schedule of values in Section 01027.

1.08 CONTRACTOR USE OF PREMISES

- A. Limit use of premises for Work and for construction operations, to allow for Owner occupancy, Work of other Contractors, and public access.
- B. Limit areas of construction operations to those areas requiring renovation only.
- C. Give written notice two weeks in advance of beginning of Work in any Work area.
- D. Do not smoke except in specifically designated smoking areas.
- E. Take reasonable and adequate precautions to protect the Owner's property from damage during execution of Work. Restore any damage to Owner property resulting from execution of Work or replace in a manner satisfactory to the Contracting Officer.
- F. Take reasonable and adequate precautions to protect the Owner's property from damage during execution of Work. Restore any damage to Owner property resulting from execution of Work or replace in a manner satisfactory to the Contracting Officer.
- G. Limit construction activities which generate noise levels in excess of NC=40 in classrooms, NC=50 in office areas, and NC=60 in other areas.
- H. Limit construction access to building to the location indicated. Keep construction access points locked at all times.
- I. Move Owner tools, equipment, shelving, stored materials, etc. as required to accomplish Work. Return to original location as soon as possible.
- J. Protect Owner tools, equipment, shelving, stored materials, and equipment, etc. from Work.
- K. In Owner occupied areas:

1. Limit use of premises for Work and for construction operations to between 7:00 a.m. and 5:00 p.m. Monday through Friday. If requested by the Contractor and approved by the Project Manager, the Contractor may work on the project outside these hours if the Contractor's activities do not interfere with owner operations.
 2. Cover and protect from dust and debris, at the start of each work day, electronic office equipment such as personal computers, computer terminals, facsimile machines, copiers, printers, postage meters, VCRs, monitors, typewriters, etc. Remove protection at the end of each work day.
 3. Do not use furniture, such as countertops, desks, filing cabinets, book shelves, and tables as work surfaces or as steps to access Work.
 4. At the end of each workday, move back to original location equipment and furniture moved to accommodate Work. Do not move electronic equipment unless absolutely necessary to accomplish Work.
 5. At the end of each workday replace ceiling tiles removed to access Work.
 6. At the end of each work day, clean work areas, including floors with a vacuum, and remove tools, equipment, and construction material from work areas.
- M. Coordinate temporary shutdowns of any of the existing facilities' mechanical or electrical systems affecting systems in Owner occupied areas with the Contracting Officer. Schedule shutdowns for nights and weekends. Provide a minimum five-day notice.
- N. Existing systems shall be fully operational for intended purpose at the beginning of each Owner workday.

1.09 OWNER OCCUPANCY

- A. The Owner will occupy premises during entire period of construction for the conduct of its normal operations.
- B. Maintain IBC complying access to and through corridors, stairways, and building exits at all times.
- C. Cooperate with Owner to minimize conflict and to facilitate its operations. In case of conflict accept Contracting Officer's direction as final and adjust use of premises accordingly.
- D. Coordinate Work in and use of premises with the Owner

1.10 COORDINATION

- A. Coordinate Work of the various Sections of Specifications prior to ordering materials and fabrication to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later. Notify Contracting Officer of conflicts between elements prior to installation of any element.
- B. Verify characteristics of elements of interrelated operating equipment are compatible;

coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

- C. Coordinate space requirements and installation of mechanical and electrical Work, which is indicated diagrammatically on Drawings. Follow routing shown for ducts and conduits as closely as practical. Make piping, duct, and conduit runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, unless otherwise indicated, conceal pipes, ducts, and wiring in the construction.
- E. After Owner acceptance of Work, coordinate access to site by various trades for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner activities.

1.11 REFERENCE STANDARDS

- A. For products or workmanship specified by association, trades, or regulatory agency standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Obtain a copy of standards referenced. Maintain a copy at the jobsite during execution of Work to which the standard applies.
- C. The date of the standard is that in effect as of the bid date except when a specific date is specified.

1.12 ONE YEAR CORRECTION PERIOD

- A. If within one year after the date of Final Completion or such longer period of time as may be prescribed by Regulatory Requirements or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work, materials, or products are found to be defective, the Contractor shall promptly, without cost to the Owner and in accordance with the Contracting Officer's written instructions, either correct such defective Work, or, if it has been rejected by the Contracting Officer, remove it from the site and replace it with conforming Work.
- B. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the Owner may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect, and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) will be paid by the Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service for the benefit of the Owner before Substantial Completion of all the Work, the correction period for that item may begin on an earlier date if so provided in the Specifications of by Change Order.
- D. Provisions of this paragraph are not intended to shorten the statute of limitations for bringing an action.

Alaska Veterans & Pioneers Home
Roof Replacement
Project No.: 25-N0817C

SECTION 01005
ADMINISTRATIVE PROVISIONS

PART 2	PRODUCTS	Not Used
PART 3	PARTS	Not Used

END OF SECTION

SECTION 01010
SUMMARY OF WORK

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Basic Bid.
- B. Work by Others.
- C. Hazardous Materials
- D. Work Inside Facility
- E. Work Plans and Access to Facility, Individual Work Areas
- F. Shut Offs/Disruptions to Service
- G. Use of Premises.
- H. Using Agency Occupancy.
- I. Coordination
- J. Parking/Staging

1.02 RELATED REQUIREMENTS

- A. Document 00200 – Information available to bidders.
- B. Document 00700 - General Conditions: Provisions for use of site, and Using Agency occupancy. Relations of CONTRACTOR- Subcontractors.
- C. Document 00800 - Supplementary Conditions: Modifications to General Conditions.
- D. Section 01400 – Quality Control
- E. Section 01540 – Security.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work covered by the contract documents is located
- B. The DEPARTMENT is acting for the State of Alaska.

1.04 CONTRACT METHOD

- A. Construct the Work under a single lump sum Contract.

1.05 BASIC BID

- A. That portion of the Work described within these documents (taken as a whole) as the Basic Bid scope. Basic Bid work includes all work shown on the plans and specifications.
- B. Project will be constructed under a general construction contract.

1.06 WORKS BY OTHERS

- A. Cooperate with other Contractors and the DEPARTMENT to minimize conflict with construction operation.

1.07 HAZARDOUS MATERIALS

- A. All light fixtures to be removed shall be treated as positive for containing PCBs unless proven otherwise.

- B. CONTRACTOR to be aware that other hazardous materials may be within the facility. See Section 00700 Article 4.3.

1.08 WORK INSIDE FACILITY

- A. Work within the facility shall be conducted only between the hours of 7:00 am and 5:00 pm, unless specifically approved by the Maintenance Supervisor. Requests for work outside of these hours must be submitted in writing 24 hours in advance.
- B. CONTRACTOR shall not under any circumstances leave tools or equipment unattended within the limits of the project site unless secured in a locked tool storage shed/box or vehicle. CONTRACTOR will be liable for any damages to persons and/or property resulting from unattended tools or equipment.
- C. No firearms or ammunition allowed on the grounds, to include locked vehicles.
- D. The use of powder-activated tools must be approved by the project manager. Request for such tools must be submitted to the Maintenance Supervisor in writing three (3) working days in advance.

1.09 SHUTOFFS / DISRUPTIONS TO SERVICE

- A. Work with the Maintenance Supervisor to schedule disruption for a time, which minimizes impact on facility operations. Provide the Engineer written notification of any disruption to service at least 24 hours in advance of scheduled disruption or shutoff.
- B. Plan work to minimize down time. Work with DEPARTMENT to schedule disruption for a time that minimizes impact on USING AGENCY's operations.
- C. Provide written work plan and schedule for disruptions to service that exceed one hour.
- D. Contractor must provide protection as stated in Municipal Fire Codes and Safety Codes while working on the fire protection system.

1.10 CONTRACTOR'S USE OF PREMISES

- A. Coordinate use of the premises under direction of DEPARTMENT.
- B. Assume full responsibility for protection and safekeeping of products under this Contract.
- C. Assume full responsibility for the protection of the existing facility and contents, from damage due to construction operations.

1.11 USING AGENCY OCCUPANCY

- A. The User Agency will continue operations adjacent to the site during entire construction period. Cooperate with DEPARTMENT in scheduling operations to minimize conflict and to facilitate the User Agency's operations.
- B. CONTRACTOR shall provide Material Safety Data Sheets for all products that may produce unpleasant odors.

1.12 COORDINATION

- A. Coordinate Work of the various elements of the plans to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- B. Verify if characteristics of elements of interrelated operating equipment are compatible; coordinate Work of various trades having interdependent responsibilities for installing,

connecting to, and placing in service, such equipment.

- C. Coordinate space requirements and installation of mechanical and electrical work, which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs. Coordinate work with existing elements in the building. Do not locate piping, conduit or other products where they will block access to equipment or junction boxes.
- D. In finished areas except as otherwise shown, conceal pipes, ducts, and wiring in the construction. .
- E. Execute cutting and patching to integrate elements of Work, provide openings for penetrations of existing surfaces. Seal penetrations through floors, walls, partitions, and ceilings.

1.13 PARKING / STAGING

- A. CONTRACTOR to coordinate staging area with Facility Maintenance Supervisor.
- B. CONTRACTOR may use established facility parking.
- C. CONTRACTOR will be responsible for all additional required storage/staging and parking off site at no charge to the Department.

PART 2 PRODUCTS	Not Used
PART 3 EXECUTION	Not used

END OF SECTION

SECTION 01020
INTENT OF DOCUMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Explanation of intent and terminology of the Construction Documents.

1.02 RELATED REQUIREMENTS

- A. Document 00700 - General Conditions: Article 1 Definitions relating to 'Drawings' and 'Specifications'.
- B. Document 00700 - General Conditions: Article 3 Contract Documents relating to Intent, Amending, and Reuse.

1.03 SPECIFICATION FORMAT AND COMPOSITION

- A. Specifications are divided into Divisions and Sections for the convenience of writing and using. Titles are not intended to imply a particular trade jurisdiction. DEPARTMENT is not bound to define the limits of any subcontract and will not enter into disputes between the CONTRACTOR and his employees, including Subcontractors.
- B. Pages are numbered independently for each Section and recorded in the Table of Contents. Section number is shown with the page number at the bottom of each page. The end of each Section of the specifications is ended by "End of Section". It is CONTRACTOR'S responsibility to verify that Contract Documents received for bidding and/or construction are complete in accordance with Table of Contents.
- C. The language employed in the Contract Documents is addressed directly to the CONTRACTOR. Imperative or indicative language is generally employed throughout, and requirements expressed are the mandatory responsibility of the CONTRACTOR, even though the work specified may be accomplished by specialty subcontractors engaged by the CONTRACTOR. References to third parties in this regard shall not be interpreted in any way as to relieve the CONTRACTOR of his or her responsibility under this Contract.
- D. These Specifications are of the abbreviated or "streamlined" type and may include incomplete sentences.
- E. Omissions of words or phrases such as "the CONTRACTOR shall," "in conformity therewith," "shall be," "as noted on the Drawings," "according to the Drawings," "a," "an," "the" and "all" are intentional.
- F. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings.

1.04 DRAWINGS: CONTENT EXPLANATION

- A. Drawings, Dimensions and Measurements.
 - 1. Contract Documents do not purport to describe in detail, absolute and complete construction information. In some instances, drawings are diagrammatic.

2. CONTRACTOR shall provide verification of actual site conditions and shall provide complete and operational systems as specified when drawings do not provide full detail.
3. Where on any of the Drawings a portion of the work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other portions of the Work.
4. Wherever a detail is referenced and developed for a specific condition, same or similar detail shall apply to identical or similar conditions elsewhere on Project even though not specifically referenced.
5. Where the word "similar" occurs on the Drawings, it shall be interpreted in its general sense and not as meaning identical, all details shall be worked out in relation to their location and their connection with other parts of the work.
6. The figured dimensions on the Drawings or notes indicating dimensions shall be used instead of measurements of the Drawings by scale.
7. No scale measurements shall be used as a dimension to work with except on "full size" Drawings not dimensioned.

1.05 COMMON TERMINOLOGY

A. Certain items used generally throughout the Specifications and Drawings are used as follows:

1. Indicated: The term "indicated" is a cross reference to details, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "schedules", and "specified" are used in lieu of "indicate", it is for the purpose of helping the reader accomplish the cross reference, and no limitation of location is intended except as specifically noted.
2. Installer: The person or entity engaged by CONTRACTOR, his Subcontractor or sub-subcontractor for the performance of a particular unit of Work at the Project site, including installation, erection, application, and similar required operations. It is a general requirement that installers be recognized experts in the work they are engaged to perform.
3. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean "...supply and deliver to the Project site, ready for unpacking, assembly and installation..."
4. Provide: Except to the extent further defined, the term "provide" means to furnish and install, complete and ready for the intended use.
5. Guarantee and Warranty: "Warranty" is generally used in conjunction with products manufactured or fabricated away from the Project site, and "guarantee" is generally used in conjunction with units of work which require both products and substantial amounts of labor at the Project site. The resulting difference is that warranties are frequently issued by manufacturers, and guarantees are generally issued by CONTRACTOR and frequently supported (partially) by product warranties from manufacturers.

1.06 CONFLICTS

- A. Report any conflicts to Contracting Officer for clarification.

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Section 01020
Intent of Documents

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION - 01027
APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures for preparation and submittal of Applications for Payment.

1.02 RELATED REQUIREMENTS

- A. Document 00510 - Construction Contract - Contract Form 06D-10a and Bid Schedule: Method of Payment and Contract Price and Amounts of Liquidated Damages.
- B. Document 00700 - General Conditions: Progress Payments, and Final Payment.
- C. Section 00800 – Supplementary Conditions to General Conditions of the Construction Contract for Buildings: SC-11.2 and SC-11.8.
- D. Section 01300 - Submittals: Procedures, Schedule of Values .
- E. Section 01700 - Contract Closeout: Closeout Procedures.

1.03 FORMAT

- A. Application for Payment form in format approved by the DEPARTMENT.

1.04 PREPARATION OF APPLICATIONS

- A. Type required information on Application for Payment form approved by DEPARTMENT.
- B. Execute certification by original signature of authorized officer upon each copy of the Application for Payment.
- C. Submit names of individuals authorized to be responsible for information submitted on application for payment.
- D. Indicate breakdown of costs for each item of the Work on accepted schedule of values. Provide dollar value in each column for each line item for portion of Work performed and for stored products.
- E. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.
- F. Prepare Application for Final Payment as specified in Section 01700.

1.05 SUBMITTAL PROCEDURES

- A. Submit two copies of each Application for Payment at times stipulated in Contract.
- B. Submit under transmittal letter specified in Section 01300.

1.06 SUBSTANTIATING DATA

- A. When DEPARTMENT requires substantiating information, submit data justifying line item amounts in question.
- B. Substantiating data required under 7.12.3 and 7.12.4 shall be submitted (or updated) when the Application for Payment includes a current request for payment on an item of Work required to include Alaska "agricultural/wood" products.
- C. Provide one copy of data with cover letter for each copy of Application. Show Application number and date, and line item by number and description.

1.07 SUBMITTALS WITH APPLICATION FOR PAYMENT

- A. Submit the following with each Application for Payment.
 - 1. Updated construction schedule as required by Section 01300 - Submittals.
 - 2. Updated Schedule of Values as required by Section 01300 – Submittals: Schedule of Values.
 - 3. The contractor's as-builts will be reviewed prior to approving each application for payment.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01028
CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures for processing Change Orders.

1.02 RELATED REQUIREMENTS

- A. Document 00312 - Bid Schedule: Total amount bid for lump sum items
- B. Document 00510 - Contract Form: Total amount of Contract Price, as awarded
- C. Document 00700 - General Conditions: Governing requirements for changes in the Work, in Contract Price, and Contract Time.
- D. Document 00800 - Supplementary Conditions: Modifications to Document 00700 - General Conditions.
- E. Section 01027 - Applications for Payment.
- F. Section 01300 - Submittals: Construction Progress Schedules, Schedule of Values.
- G. Section 01600 – Material and Equipment: Product Options, Substitutions.
- H. Section 01700 – Contract Closeout: Project Record Documents.

1.03 SUBMITTALS

- A. Submit name of the individual authorized to accept changes, and to be responsible for informing others in CONTRACTOR's employ of changes in the Work.
- B. Change Order Forms will be prepared by the DEPARTMENT.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

- A. Maintain detailed records of work done on a Cost of the Work plus a Fee basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work. Incomplete or unsubstantiated costs will be disallowed.
- B. CONTRACTOR shall submit a complete, detailed, itemized cost breakdown addressing impact on Contract Time and Contract Price with each proposal.
- C. On request, provide additional data to support computations:
 - 1. Quantities of products, labor, and equipment.
 - 2. Taxes, insurance and bonds.
 - 3. Overhead and profit.

4. Justification for any change in Contract Time.
 5. Credit for deletions from Contract, similarly documented.
- D. Support each claim for additional costs, and for work done on a cost of the Work plus a Fee basis, with additional information:
1. Origin and date of claim.
 2. Dates and times work was performed, and by whom.
 3. Time records and wage rates paid.
 4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.05 PRELIMINARY PROCEDURES

- A. DEPARTMENT may submit a Proposal Request which includes Detailed description of change with supplementary or revised Drawings and Specifications, the projected time for executing the change, with a stipulation of any overtime work required, and the period of time during which the requested price will be considered valid.
- B. CONTRACTOR may initiate a change by submittal of a request to DEPARTMENT describing the proposed change with a statement of the reason for the change, and the effect on Contract Price and Contract Time with full documentation.

1.06 CONSTRUCTION CHANGE AUTHORIZATION

- A. Shall be in accordance with Article 9 - Changes: in Document 00700 - General Conditions.

1.07 FIXED PRICE CHANGE ORDER

- A. CONTRACTOR shall submit an itemized price proposal in sufficient detail to fully explain the basis for the proposal. Attach invoices and receipts for products, equipment, subcontracts and as requested by the DEPARTMENT. CONTRACTOR and the DEPARTMENT shall then negotiate an equitable price (and time adjustment if appropriate) in good faith. The Change Order will reflect the results of those negotiations. If negotiations break down CONTRACTOR may be directed to perform the work under COST OF THE WORK CHANGE ORDER.

1.08 UNIT PRICE CHANGE ORDER

- A. For pre-determined Unit Prices and quantities, Change Order will be executed on a lump sum basis.
- B. For unit costs or quantities of units of Work which are not predetermined, execute Work under a Directive. Changes in Contract Price or Contract Time will be computed as specified for cost of the Work plus fee via Change Order.

1.09 COST OF THE WORK CHANGE ORDER

- A. CONTRACTOR shall submit documentation required in 1.04 daily for certification by the Project Manager. Project Manager will indicate by signature that the submitted documentation is acceptable.

- B. After completion of the change and within 14 Calendar Days, unless extended by the Project Manager, the CONTRACTOR shall submit in final form an itemized account with support data of all costs. Support data shall have been certified by the Project Manager, as required above in paragraph A.

1.10 EXECUTION OF CHANGE ORDERS

- A. DEPARTMENT will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

1.11 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price as shown on Change Order.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub schedules to adjust times for other items of Work affected by the change, and resubmit.
- C. Promptly enter changes in project record documents.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01040
COORDINATION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Coordination of Work of Contract.

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work.
- B. Section 01045 – Cutting and Patching.
- C. Section 01200 – Project Meetings.
- D. Section 01600 – Material and Equipment: Substitutions.
- E. Section 10701 – Contract Closeout Procedures.

1.03 DESCRIPTION

- A. Coordinate scheduling, submittals, and work of the various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
- B. Coordinate sequence of Work to accommodate Using Agency occupancy as specified in Section 01005.

1.04 MEETINGS

- A. Coordinate sequence of Work to accommodate Using Agency occupancy as specified in Section 01005.

1.05 COORDINATION OF SUBMITTALS

- A. Schedule and coordinate submittals specified in Section 01300.
- B. Coordinate Work of various sections having interdependent responsibilities for installing connecting to, and placing in service, such equipment.
- C. Coordinated requests for substitutions to assure compatibility of space, of operating elements, and effect on Work of other sections.

1.06 COORDINATION OF SPACE

- A. Coordinate use of Project space and sequence of installation of mechanical and electrical Work which is indicated diagrammatically on Drawings. Follow routings shown for pipes, ducts, and conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- B. In finished areas, except as otherwise shown, conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

1.07 COORDINATION OF CONTRACT CLOSEOUT

- A. Coordinate completion and cleanup of Work of separate sections in preparation for Substantial Completion.
- B. After Using Agency occupancy of premises, coordinate access to site by various sections for correction of Defective Work and Work not in accordance with Contract Documents, to minimize disruption of Using Agency activities.
- C. Assemble and coordinate close submittal specified in Section 01701.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01045
CUTTING AND PATCHING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Requirements and limitations for cutting and patching of Work.

1.02 RELATED REQUIREMENTS

- A. Section 01005 – Administrative Provisions
- B. Section 01010 - Summary of Work.
- C. Section 01600 - Materials and Equipment: Substitutions.
- D. Individual Specifications Sections:
 - 1. Cutting and patching incidental to Work of the section.
 - 2. Advance notification to other sections of openings required in Work of those sections.
 - 3. Limitations on cutting structural members.

1.03 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather-exposed or moisture-resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight-exposed elements.
 - 5. Work of DEPARTMENT or separate Contractor.
- B. Include in request:
 - 1. Identification of Project and DEPARTMENT's Project number.
 - 2. Location and description of affected Work.
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed Work, and products to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on Work of DEPARTMENT or separate Contractor.
 - 7. Written permission of affected separate Contractor.
 - 8. Date and time Work will be executed.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Those required for original installation.
- B. For any change in materials, submit request for substitution under provisions of Section 01600.

3.01 GENERAL

- A. Execute cutting, fitting, and patching to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install ill-timed Work.
 - 3. Remove and replace non-conforming and Defective Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

3.02 INSPECTION

- A. Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- B. Notify the Department immediately of any suspected hazardous materials.
- C. After uncovering, inspect conditions affecting performance of work.
- D. Beginning of cutting or patching means acceptance of existing conditions.

3.03 PREPARATION

- A. Provide supports to assure structural integrity of surroundings; devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering Work; maintain excavations free of water.

3.04 PERFORMANCE

- A. Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- B. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval. Cutting structural reinforcement with heat is strictly forbidden without prior written approval.
- C. Restore Work with new products in accordance with requirements of Contract Documents.
- D. Fit Work tightly to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- E. At penetrations of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, full thickness of the construction element or in accordance with listed U.L. assembly requirements.
- F. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

END OF SECTION

SECTION 01073
EXPLANATIONS: DRAWINGS AND SPECIFICATIONS

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Explanation of terminology used within the Drawings and Specifications.

1.2 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions
- B. Section 01010 - Summary of Work
- C. Section 01020 - Intent of Documents

1.3 SPECIFICATION FORMAT AND COMPOSITION

- A. Specifications are divided into Divisions and Sections for the convenience of writing and using. Titles are not intended to imply a particular meaning or to fully describe the Work of each Division or Section and are not an integral part of the text that specifies the requirements. Contracting Officer is not bound to define the limits of any subcontract and will not enter into disputes between the Contractor and his employees, including subcontractors.
- B. Pages are numbered independently for each Section. Section number is shown with the page number at the bottom of each page. "End of Section" is noted on the last page of each Section. It is Contractor's responsibility to verify that Contract Documents received for bidding and construction are complete in accordance with Table of Contents.
- C. These Specifications are of the abbreviated, or "streamlined" type, and include incomplete sentences.
- D. Omissions of words or phrases such as "the Contractor shall," "in conformity therewith," "shall be," "as noted on the Drawings," "according to the Drawings," "a," "an," "the" and "all" are intentional.
- E. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings.

1.4 DRAWINGS: CONTENT EXPLANATION

- A. Where on any of the Drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other portions of the Work.
- B. Wherever a detail is referenced and developed for a specific condition, same or similar detail shall apply to identical or similar conditions elsewhere on Project even though not specifically referenced.
- C. Where the word "similar" occurs on the Drawings, it shall be interpreted in its general sense and not as meaning identical, all details shall be worked out in relation to their location and their connection with other parts of the Work.

- D. The figured dimensions on the Drawings or notes indicating dimensions shall be used instead of measurements of the Drawings by scale. No scale measurements shall be used as a dimension.
- E. Provide piping, ductwork, equipment, and accessories indicated on the Drawings unless it is specifically indicated that the piping, ductwork, equipment, or accessory is existing.
- F. Unless otherwise indicated, abbreviations and symbols used in the Drawings and Specifications are intended to have the meaning commonly accepted in the construction industry. Contact the Contracting Officer for definition if any question arises concerning them.
- G. Certain items used generally throughout the Specifications and Drawings are used as follows:
 - 1. Indicated: The term "indicated" is a cross reference to details, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "schedules", and "specified" are used in lieu of "indicate", it is for the purpose of helping the reader accomplish the cross reference, and no limitation of location is intended except as specifically noted.
 - 2. Installer: The person or entity engaged by Contractor, his subcontractor or sub-subcontractor for the performance of a particular unit of work at the Project site, including installation, erection, application, and similar required operations. It is a general requirement that installers be recognized experts in the Work they are engaged to perform.
 - 3. Provide: Except to the extent further defined, the term "provide" means to supply and install, complete and ready for the intended use.
 - 4. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean the same as "provide".
 - 5. Guarantee and Warranty: "Warranty" is generally used in conjunction with products manufactured or fabricated away from the Project site, and "guarantee" is generally used in conjunction with units of work which require both products and substantial amounts of labor at the Project site. The resulting difference is that warranties are frequently issued by manufacturers, and guarantees are generally issued by Contractor and frequently supported (partially) by product warranties from manufacturers.
 - 6. Work: Work is the act of, and the result of, performing services, furnishing labor, furnishing and incorporating materials and equipment into the Project and performing other duties and obligations, all as required by the Contract Documents. Such Work, however incremental, shall culminate in the entire completed Project, or the various separately identifiable parts thereof.
 - 7. Contracting Officer: Contracting Officer means Contracting Officer or Contracting Officer's Representative.

1.5 CONFLICTS

- A. Report any conflicts to Contracting Officer for clarification.

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Section 01073
Explanations: Drawings and Specifications

PART 2
[Not Used]

PRODUCTS

PART 3
[Not Used]

EXECUTION

END OF SECTION

SECTION 01090
REFERENCE STANDARDS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Quality Assurance.
- B. Applicability of Reference Standards.
- C. Provision of Reference Standards at site.
- D. Acronyms used in Contract Documents for Reference Standards. Source of Reference Standards.

1.02 RELATED REQUIREMENTS

- A. Document 00700 - General Conditions: Paragraph 3.4.2.

1.03 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Project Advertisement date, or Effective Date of the Contract when there was no Advertisement, except when a specific date is specified.
- C. When required by an individual Specification section, obtain copy of standard. Maintain copy at site during submittals, planning, and progress of the specific Work, until Final Completion.
- D. Should specified reference standards conflict with Contract Documents, request clarification from the Architect/Engineer before proceeding. Local code requirements, where more stringent than referenced standards, shall govern.
- E. Neither the contractual relationship, duties, nor responsibilities of the parties in Contract nor those of the Architect/Engineer shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

1.04 SCHEDULE OF REFERENCES

AA	Aluminum Association 818 Connecticut Avenue, N.W. Washington, DC 20006
AABC	Associated Air Balance Council 1000 Vermont Avenue, N.W. Washington, DC 20005
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute Box 19150 Reford Station Detroit, MI 48219

ADC	Air Diffusion Council 230 North Michigan Avenue Chicago, IL 60601
AGC	Associated General Contractors America 1957 E Street, N.W. Washington, DC 20006
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AITC	American Institute of Timber Construction 333 W. Hampden Avenue Englewood, CO 80110
AISC	American Institute of Steel Construction 400 North Michigan Avenue Eighth Floor Chicago, IL 60611
AISI	American iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
APA	American Plywood Association Box 11700 Tacoma, WA 98411
ARI	Air-Conditioning and Refrigeration Institute 1815 North Fort Myer Drive Arlington, VA 22209
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers 1791 Tullie Circle, N.E. Atlanta, GA 30329
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASPA	American Sod Producers Association Association Building Ninth and Minnesota Hastings, NE 68901

ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
AWI	Architectural Woodwork Institute 2310 South Walter Reed Drive Arlington, VA 22206
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society 550 LeJeune Road Miami, FL 33135
CDA	Copper Development Association 57th Floor, Chrysler Building 405 Lexington Avenue New York, NY 10174
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue, N.W. Washington, DC 20036
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60195
EJMA	Expansion Joint Manufacturers Association 707 Westchester Avenue White Plains, NY 10604
FGMA	Flat Glass Marketing Association 3310 Harrison White Lakes Professional Building Topeka, KS 66611
FM	Factory Mutual System 1151 Boston-Providence Turnpike Norwood, MA 02062
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Building 197 Washington, DC 20407

GA	Gypsum Association 1603 Orrington Avenue Evanston, IL 60201
IEEE	Institute of Electrical and Electronics Engineers 345 East 47th Street New York, NY 10017
IMIAC	International Masonry Industry All-Weather Council International Masonry Institute 815 15th Street, N.W. Washington, DC 20005
MFMA	Maple Flooring Manufacturers Association 2400 East Devon Suite 205 Des Plaines, IL 60018
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
ML/SFA	Metal Lath/Steel Framing Association Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, VA 22180
NEMA	National Electrical Manufacturers' Association 2101 L Street, N.W. Washington, DC 20037
NFPA	National Fire Protection Association Battery March Park Quincy, MA 02269
NFPA	National Forest Products Association 1619 Massachusetts Avenue, N.W. Washington, DC 20036
NSWMA	National Solid Wastes Management Association 1120 Connecticut Avenue, N.W. Washington, DC 20036
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Avenue Des Plaines, IL 60018

PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077
PCI	Prestressed Concrete Institute 201 North Wacker Drive Chicago, IL 60606
PS	Product Standard U.S. Department of Commerce Washington, DC 20203
RIS	Redwood Inspection Service One Lombard Street San Francisco, CA 94111
RCSHSB	Red Cedar Shingle and Handsplit Shake Bureau 515 116th Avenue Bellevue, WA 98004
SDI	Steel Deck Institute Box 3812 St. Louis, MO 63122
SDI	Steel Door Institute 712 Lakewood Center North Cleveland, OH 44107
SIGMA	Sealed Insulating Glass Manufacturers Association 111 East Wacker Drive Chicago, IL 60601
SJI	Steel Joist Institute 1703 Parham Road Suite 204 Richmond, VA 23229
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 8224 Old Court House Road Vienna, VA 22180
SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15213
TAS	Technical Aids Series Construction Specifications Institute 601 North Madison Street Alexandria, VA 22314
TCA	Tile Council of America, Inc. Box 326 Princeton, NJ 08540

Alaska Veterans & Pioneers Home
Roof Replacement
Project No.: 25-N0817C

Section 01090
Reference Standards

UL Underwriters' Laboratories, Inc.
 333 Pfingston Road
 Northbrook, IL 60062

WCLIB West Cost Lumber Inspection Bureau
 Box 23145
 Portland, OR 97223

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01120
ALTERATION PROJECT PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedural requirements.
- B. Rehabilitation and renovation of existing spaces and materials.

1.02 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions
- B. Section 01010 – Summary of Work
- C. Section 01045 - Cutting and Patching

PART 2 PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in individual Specification Sections.
- B. Match existing products and work for patching and extending Work.
- C. Determine type and quality of existing products by inspection and any necessary testing, and workmanship by use of existing as a standard. Presence of a product, finish, or type of Work, requires that patching, extending, or matching shall be performed as necessary to make Work complete and consistent with existing quality and Contract Documents.

PART 3 EXECUTION

3.01 GENERAL

- A. Remove existing work, materials and items as indicated on the Drawings, as required by job site conditions, as scheduled, and as specified herein, to accomplish new Work and alteration in the existing building.
- B. Remove work carefully and only to the extent required for the final Work. Minimize damage to adjacent materials.
- C. When portions of existing conditions are shown, it is not meant to indicate that all existing conditions are shown.
- D. Patch existing surfaces which are made defective in appearance or function by the execution of Work.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools and electric hammers are not permitted.
- F. Conduct all operations with a minimum of noise.
- G. Take reasonable and adequate precautions to protect the Owner's property from

damage during demolition Work, moving of debris, and damage by the elements. Restore any damage to Owner property due to the aforesaid work or replace in a manner satisfactory to the Contracting Officer.

- H. Provide and maintain suitable barricades, shelters, lights, and danger signals during the progress of the Work. Provide barricades meeting the requirements of the applicable building codes. Assume the responsibility of barriers to completion of Contract and remove at completion of Contract.
- I. Locate penetrations to avoid structural members.

3.02 INSPECTION

- A. Verify that demolition is complete, and areas are ready for installation of new Work.
- B. Beginning of restoration Work means acceptance of existing conditions.

3.03 PREPARATION

- A. Plan all work in advance, informing Contracting Officer of procedure and schedule.
- B. Verify existing conditions affecting Work including existing sizes and materials indicated prior to beginning Work or ordering materials that are affected by existing conditions. Notify Contracting Officer of conflicts in writing.
- C. Erect dust-proof partitions where demolition work is in progress and as directed. Such partitions shall remain in place until their removal is directed.
- D. Where openings are to be cut in existing structures, cut such openings with care. Where materials, equipment, frames, etc., are to be removed, remove such items with care to minimize damage to adjacent materials.
- E. Cut, move, or remove items as necessary for access to alterations and renovations Work; replace and restore at completion.
- F. Cut pockets, openings, chases, depressions, etc., to install or allow for installation of materials or equipment.
- G. Remove from site unsuitable material not marked for salvage, such as rotted wood, rusted metals, and deteriorated masonry and concrete; replace materials as specified for finished Work.
- H. Remove from site, including concealed spaces, debris and abandoned items resulting from demolition operations from the site promptly. No accumulation of debris will be permitted.
- I. Prepare surfaces and remove surface finishes to provide for proper installation of new Work and new finishes.
- J. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

3.04 INSTALLATION

- A. Coordinate Work of alterations and renovations to expedite completion and to accommodate Owner occupancy. Remove, cut, and patch Work in a manner to

minimize damage and to provide means of restoring products and finishes to original condition.

- B. Refinish visible existing surfaces to remain in renovated rooms and spaces with a neat transition to adjacent new finishes.
- C. In addition to specified replacement of equipment restore existing mechanical and electrical systems to full operational condition.
- D. Install products as specified in individual Specification Sections.

3.05 TRANSITIONS

- A. Where new Work abuts or aligns with existing, make a smooth and even transition. Patched Work shall match existing adjacent work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Contracting Officer.

3.06 ADJUSTMENTS

- A. Where removal of partitions results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition for Contracting Officer review.
- B. Trim existing doors as necessary to clear new floor finishes; refinish trimmed areas.
- C. Fit Work at penetrations of surfaces as specified in Sections 01005 and 01045.

3.07 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are disturbed, damaged, or otherwise made defective in appearance or function by the execution of Work under this Contract. Restore to original condition.
- B. Repair substrate prior to patching finish.

3.08 FINISHES

- A. Finish surfaces as specified in individual Sections.
- B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.09 CLEANING

- A. In addition to cleaning specified in Section 01500, clean Owner-occupied areas of Work daily.
- B. After the demolition Work in any area is completed, clean the area before new construction is started.

END OF SECTION

SECTION 01126 - CONTRACTOR'S CERTIFICATION OF SUBCONTRACTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Procedures for preparing, submitting and accepting subcontracts.

1.2 RELATED REQUIREMENTS

- A. Bidding and Contract Requirement Document 00100 - Instructions to Bidders, Requirements of Apparent Low Bidder.
- B. Bidding and Contract Requirement Document 00101 – Supplemental Information to Bidders.
- C. Bidding and Contract Requirement Document 00430 - Subcontractor List
- D. Bidding and Contract Requirement Section 00700 - General Conditions: Article 6.13 - Subcontractors.
- E. Bidding and Contract Requirement Section 00800 – Supplementary Conditions: Paragraph SC-6.13 – Replacing Subcontractors
- F. Section 01300 - Submittals: Submittal Procedures.
- G. Section 01305 – Submittal Register Form.

1.3 SUBMITTALS

- A. Submit under transmittal letter specified in Section 01300 Submittals.
- B. CONTRACTOR shall submit the initial and final Subcontractor Certification Form(s).

1.4 PREPARATION OF CERTIFICATION

- A. CONTRACTOR to prepare and sign certification forms for all subcontractors regardless of subcontract amount (see Section 00700, Paragraph 6.13.1).
- B. Submit certification form to the DEPARTMENT for approval prior to the subcontractor's start of work. Attach additional information to the certification form where required,
- C. Certification Forms: Use only forms provided by the DEPARTMENT.
- D. The DEPARTMENT will reject substitute certification forms.

1.5 CONSIDERATION OF CERTIFICATION

- A. The DEPARTMENT will review each certification form after receipt and within a reasonable period of time, for the following:
 - 1. Completeness, including the attachments.
 - 2. Proper execution (signatures), including the attachments.
 - 3. Contractor restrictions for adding subcontractors, changing subcontractors, and value of contract.
- B. The DEPARTMENT will return any submittals that are incomplete or not properly executed under a transmittal letter denoting the deficiencies found. The CONTRACTOR shall correct and resubmit according to Section 01300 Submittals.
- C. SUBCONTRACTORS NOT APPROVED BY THE DEPARTMENT SHALL NOT BE ALLOWED ON SITE.
- D. The DEPARTMENT will not process payments for work performed by a non-certified subcontractor.

1.6 ACKNOWLEDGEMENT OF CERTIFICATION

- A. Submittals examined by the DEPARTMENT and determined to be complete and properly executed shall be acknowledged as such by the DEPARTMENT on the approval line of the certification form and returned to the CONTRACTOR.

1.7 CHANGES TO APPROVED SUBCONTRACTORS LIST

- A. Deletion or replacement of subcontractors listed on approved form 06D-5, or the addition of subcontractors not listed on approved form 06D-5 shall be in accordance with Bidding and Contract Requirement Document 00101, Supplementary Information to Bidders.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01126

STATE OF ALASKA Department of Family & Community Services FMS Facilities	SUBCONTRACTOR CERTIFICATION	

Note: The Contractor shall provide this form for ALL subcontractors working on this project. This form is applicable to all projects, including Small Procurement Contracts, and must be completed in full.

PROJECT: Alaska Veterans & Pioneers Home - Roof Replacement PROJ. #: 25-N0817C

PRIME CONTRACTOR: _____

Pursuant to the Contract Documents, we hereby stipulate the following concerning the award of Work to the last Subcontractor on the following list:

1. First Tier Subcontractor: _____ DBE? Yes ☐ No ☐
 Second Tier: _____ DBE? Yes ☐ No ☐
 Third Tier: _____ DBE? Yes ☐ No ☐
 Fourth Tier: _____ DBE? Yes ☐ No ☐
2. Date of Subcontract: _____
3. Amount of Subcontract: \$ _____
4. Scope of Work: _____

5. Are the following documents kept on file by both the Contractor and the Subcontractor (check the appropriate answer)?

EEO-1 Certification (Form 25A304), federally funded projects only	Yes ☐	No ☐
Contract Minimum Wage Schedule	Yes ☐	No ☐
Civil Rights Representative (Form 25A302)	Yes ☐	No ☐
6. Does the Subcontract contain provisions for prompt payment, release of retainage, and interest on late payment and retainage conforming to AS 36.90.210?
 Yes ☐ No ☐
7. Does the Subcontract specifically bind the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the Department and does it contain waiver provisions and termination provisions as required by the Contract Documents?
 Yes ☐ No ☐
8. a. Does the Subcontractor have adequate insurance coverages as specified in the Contract Documents?
 Yes ☐ No ☐
 If not, does the Contractor stipulate that the insurance limits of the Subcontractor are acceptable to the Contractor and that he has notified his insurance carrier of the reduced insurance limits?
 Yes ☐ No ☐
 b. Does the evidence of insurance certify that the policies described thereon comply with all aspects of the insurance requirements for this project?
 Yes ☐ No ☐

PROJECT: _____ PROJ. #: _____

Subcontractor Name: _____

c. Does the evidence of insurance list the Department as an "Additional Insured" or "Certificate Holder"?

Yes ☐ No ☐

d. Does the evidence of insurance commit to providing 30 day written notice of cancellation or reduction of any coverage?

Yes ☐ No ☐

e. Insurance Expiration dates:

Comprehensive or Commercial General Liability: _____

Automobile: _____ Workers' Compensation: _____

(Other): _____

9. Copies of the following professional certifications, licenses, and registrations are attached (circle all that apply):

Business License (mandatory)

Contractor License (mandatory)

Land Surveyor's License

Electrical Administrator's License (mandatory for electrical subs)

Mechanical Administrator's License (mandatory for mechanical subs)

Engineer/Architect

Other: _____

10. Exceptions to any of the above are explained as follows: _____

CERTIFICATION (to be completed and signed by PRIME CONTRACTOR): I certify all the above to be true and correct.

CONTRACTOR'S Signature: _____

CONTRACTOR'S Printed Name: _____

CONTRACTOR'S Company: _____

Date: _____

DEPARTMENT'S APPROVAL/DISAPPROVAL

The subject subcontract is **APPROVED**. Nothing in this approval should be construed as relieving the Prime Contractor of the responsibility for complete performance of the work or as a waiver of any right of the Department to reject defective work.

SIGNATURE: _____ **DATE:** _____
DFCS Contracting Officer

The subject subcontract is **NOT APPROVED** for the following reasons:

SIGNATURE: _____ **DATE:** _____
Project Manager

SECTION 01200
PROJECT MEETINGS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. CONTRACTOR participation in preconstruction conferences.
- B. CONTRACTOR administration of progress meetings.

1.02 RELATED REQUIREMENTS

- A. Document 00120 - Supplementary Instructions to Bidders: Pre-Bid Conference.
- B. Section 01010 – Summary of Work: Coordination.
- C. Section 01300 - Submittals: Construction Progress Schedules, Shop drawings, Product data, and Samples.
- D. Section 01400 - Quality Control.
- E. Section 01700 - Contract Closeout: Project Record Documents, Operation and Maintenance Data.

1.03 PRECONSTRUCTION CONFERENCES.

- A. DEPARTMENT will administer preconstruction conference for execution of Contract and exchange of preliminary submittals and review of administrative procedures.
- B. DEPARTMENT will administer site mobilization conference at Project site for clarification of CONTRACTOR responsibilities in use of site and coordination with Using Agency for occupancy throughout the duration of the work. CONTRACTOR shall provide the detailed written work plan in preparation for this meeting.

1.04 PROGRESS MEETINGS

- A. Contractor shall schedule and administer weekly Project meetings throughout progress of the Work (unless this requirement is waived by the Project Manager), and other meetings as required to coordinate work, and preinstallation conferences.
- B. Attendance: Job superintendent, major Subcontractors and Suppliers; DEPARTMENT and Consultants as appropriate to agenda topics for each meeting.
- C. Minimum Required Agenda: Review of Work progress, status of progress schedule and adjustments thereto, Work anticipated in the next week, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, and other items affecting progress of Work.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures.
- B. Construction Progress Schedules.
- C. Schedule of Values.
- D. Shop Drawings, Product Data, and Samples.
- E. Field Samples.

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work.
- B. Section 01027 - Applications for Payment.
- C. Section 01400 - Quality Control: Manufacturers' Field Services, Testing Laboratory Services.
- D. Section 01600 - Material and Equipment: Products List.
- E. Section 01700 - Contract Closeout: Closeout Procedures.

1.03 PROCEDURES

- A. Deliver submittals to DEPARTMENT as directed.
- B. Transmit each item under DEPARTMENT accepted form. Identify Project, CONTRACTOR, Subcontractor, Major Supplier, identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents by submitting a DEPARTMENT supplied Substitution Request Form. Provide a minimum of 8 1/2" x 5 1/2" blank space on the front page for CONTRACTOR, and Consultant review stamps.
- C. Submit initial progress schedules and Schedule of Values in five copies in accordance with paragraph SC6.6 of Document 00800 - Supplementary Conditions prior to submitting first Application for Payment. Form and content shall be reviewed by the DEPARTMENT. After review by DEPARTMENT revise and resubmit as required. Submit subsequent updated schedules (10) days prior to each Application for Payment.
- D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- E. After DEPARTMENT review of submittal, revise and resubmit as required, identifying changes made since previous submittal. Provide total number of submittals as required for the first submission, if 6 are required and 4 were returned for revisions, submit 6 again. The DEPARTMENT and Consultants will not return the first or revised copies of rejected submittals for re-use. DO NOT submit partial copies of submittals for incorporation into rejected submittal packages which have been kept by the DEPARTMENT and/or Consultants. Provide COMPLETE copies for each review.
- F. If drawings, product submittals, samples, mock-ups, or other required submittals are incomplete or not properly submitted, the DEPARTMENT will not review the submittal

and will immediately return submittal to CONTRACTOR. DEPARTMENT will review a submittal no more than three times (incomplete or improper submittals count as one). CONTRACTOR shall pay all review costs associated with more than three reviews, unless a resubmittal is required due to new comments addressing previously submitted information.

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit horizontal bar Gantt chart (see below for electronic version requirements). Schedule shall show:

1. Separate bar for each major trade or operation, identifying the duration of each activity and precedent activities.
2. Complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Show each work plan and separate work area as a separate activity or group of activities.
3. Submittal dates for required for Shop Drawings, product data, and samples, and product delivery dates, including those furnished by DEPARTMENT and those under allowances.
4. All required submittals and indicating the date for each required submittal.
5. Show projected percentages of completion for each item of Work and submittal as of time of each Application for Progress Payment. See below for electronic version requirements.
6. **ELECTRONIC VERSION: REQUIRED FOR ALL PROJECTS WHEN THE ORIGINAL CONTRACT AMOUNT IS EQUAL TO OR GREATER THAN \$500,000.00.** Submit Progress Schedule plotted on paper no larger than 24" x 36" and no smaller than 8 1/2" x 11" from the electronic program. Provide in electronic form on CD for IBM and compatible using Microsoft Project 2000 version 9.0. CD will not be returned by the DEPARTMENT.
7. Submit Progress Schedule percentages in Tracking Gantt form plotted from and in electronic form as stated above.

1.05 SCHEDULE OF VALUES

A. FORMAT

1. Form and content must be acceptable to DEPARTMENT.
2. CONTRACTOR's standard form or media-driven printout will be considered on request.
3. Follow table of contents of Project manual for listing component parts. Identify each line item by number and title of listed Specification sections.

B. CONTENT

1. List installed value of each major item of Work and each subcontracted item of Work as a separate line item to serve as a basis for computing values for progress payments. Round off values to nearest dollar.
2. For each major subcontract, list products and operations of that subcontract as separate line items.
3. Coordinate listings with progress schedule.
4. Component listings shall each include a directly proportional amount of

CONTRACTOR's overhead and profit.

5. For items on which payments will be requested for stored products, list sub-values for cost of stored products with taxes paid.
6. Specific line-item Values as indicated below shall be minimum acceptable amounts and must be included on all approved Schedules of Values and Applications for Payment.
 - a. **Section 01700 - Contract Closeout. Value of all required Substantial Completion Submittals and Closeout Submittals shall be not less than 10% of the final contracted amount.**
 - b. No progress payments will be made for Substantial Completion Submittals and Closeout Submittals until **all** submittals have been submitted to and accepted by the DEPARTMENT.
7. The sum of values listed shall equal total Contract Price.

C. SUBMITTAL

1. Submit four copies of Schedule prior to submitting the CONTRACTOR's first Application for Payment. Subsequent updated Schedule of Values shall be presented for review ten days prior to each Application for Payment.
2. Transmit under DEPARTMENT accepted form transmittal letter. Identify Project by DEPARTMENT title and Project number; identify Contract by DEPARTMENT Contract number.

D. SUBSTANTIATING DATA

1. When DEPARTMENT requires substantiating information, submit data justifying line-item amounts in question.
2. Provide one copy of data with cover letter for each copy of the Application for Payment. Show application number and date, and line item by number and description.

1.06 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. SHOP DRAWINGS:

1. Present in a clear and thorough manner. Label each Shop Drawing with DEPARTMENT's Project name and Project number; identify each element of the Shop Drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.
2. Identify field dimensions; show relation to adjacent or critical features or Work or products.
3. Minimum Sheet Size: 8-1/2"x11". Larger sheets may be submitted in multiples of 8-1/2"x11".

B. PRODUCT DATA

1. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification section and Article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
2. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work.

Delete information not applicable.

C. SAMPLES

1. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for DEPARTMENT selection.
2. Submit samples to illustrate functional characteristics of products, including parts and attachments.
3. Approved samples, which may be used in the Work, are indicated in the Specification section.
4. Label each sample with identification required for transmittal letter.
5. Provide field samples of finishes at Project, at location acceptable to DEPARTMENT, as required by individual Specification section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed Work.

D. MANUFACTURER'S INSTRUCTIONS

1. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation start-up, adjusting, and finishing, in quantities specified for product data.
2. Manufacturer's instructions for storage, preparation, assembly, installation, start-up, adjusting, balancing, and finishing under provisions of Section 01400.

E. CONTRACTOR REVIEW

1. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.
2. Coordinate submittals with requirements of Work and of Contract Documents.
3. Sign or initial each sheet of Shop Drawings and product data, and each sample label to certify compliance with requirements of Contract Documents. Notify DEPARTMENT in writing at time of submittal, of any deviations from requirements of Contract Documents.
4. Do not fabricate products or begin Work that requires submittals until return of submittal with DEPARTMENT acceptance.

F. SUBMITTAL REQUIREMENTS

1. Each submittal to be numbered by Specification Section and Paragraph. Revisions shall be identified by a hyphen after the paragraph, with a letter designator. Example: 1st submittal "01010 1.08A" 2nd submittal 01010 1.08A - A".
2. Transmit submittals in accordance with the required submittal schedule and in such sequence to avoid delay in the Work.
3. Provide 8 1/2" x 5 1/2" blank space on each submittal for CONTRACTOR and Consultant stamps.
4. Apply CONTRACTOR'S stamp, signed or initialed, certifying to review, verification of products, field dimensions and field construction criteria, and coordination of information with requirements of Work and Contract Documents.
5. Coordinate submittals into logical groupings to facilitate interrelation of the several items:

- a. Finishes which involve DEPARTMENT selection of colors, textures, or patterns.
 - b. Associated items that require correlation for efficient function or for installation.
6. Submit number of opaque reproductions of shop drawings CONTRACTOR requires, plus six that will be retained by DEPARTMENT.
7. Submit number of copies of product data and manufacturer's instructions CONTRACTOR requires, plus three copies, which will be retained by DEPARTMENT.
8. Submit number of samples specified in individual Specifications sections.
9. Submit under DEPARTMENT accepted transmittal form letter. Identify Project by title and DEPARTMENT Project number; identify Contract by DEPARTMENT contract number. Identify Work and product by Specification section and Article number.
10. Each submittal shall have as its face document a completed DEPARTMENT furnished Submittal Summary form.
11. Each submittal shall include the manufacturer's name and address, and supplier's name, address and telephone number.

G. RESUBMITTALS

1. After DEPARTMENT review of submittal, revise and resubmit as required, identifying changes made since previous submittal. Provide total number of submittals as required for the first submission, if 6 are required and 4 were returned for revisions, submit 6 again. The DEPARTMENT and Consultants will not return the first or revised copies of rejected submittals for re-use. DO NOT submit partial copies of submittals for incorporation into rejected submittal packages which have been kept by the DEPARTMENT and/or Consultants. Provide COMPLETE copies for each review.

H. DEPARTMENT REVIEW

1. DEPARTMENT or authorized agent will review Shop Drawings, product data, and samples and return submittals within (14) working days.
2. DEPARTMENT or authorized agent will examine shop drawings for general arrangement, overall dimensions, and suitability, and will return to the CONTRACTOR marked as follows.
 - "No Exceptions Taken" - denotes that the submittal generally meets the requirements of the Contract Documents. "No Exceptions Taken" does not indicate a review of the CONTRACTOR's design except for general compliance with the requirements of the Contract Documents.
 - "Make Corrections Noted" - denotes review is conditional on compliance with notes made on the submittal.
 - "Revise and Resubmit" - denotes that revisions are required in the submittal in order for the submittal to be generally consistent with the requirements of the Contract Documents. Required revisions will be

identified to the CONTRACTOR.

- "Rejected" - denotes that the submittal does not meet the requirements of the Contract Documents and shall not be used in the Work. Reasons for rejection will be identified to the CONTRACTOR.

3. Review by the DEPARTMENT of shop and erection drawings shall not be construed as a complete check but will indicate only that the general method of construction and detailing is consistent with the requirements of the Contract Documents. Review of such drawings shall not relieve the CONTRACTOR of the responsibility for errors, dimensions, and detail design.
4. DEPARTMENT will require submittal of all required color and finish samples to approve any on color or finish.

I. DISTRIBUTION

1. Duplicate and distribute reproductions of Shop Drawings, copies of product data, and samples, which bear Consultant's stamp, to job site file, record documents file, Subcontractors, Suppliers, and other entities requiring information.

J. SCHEDULE OF SUBMITTALS

1. Submittal Register Form to be completed by CONTRACTOR and approved by DEPARTMENT prior to submittal of any items.
2. Submit shop drawings, product data and samples as required for each specification section.
3. Format.

a. Submittal schedule form as provided by DEPARTMENT.

1.07 FIELD SAMPLES

- A. Provide field samples of finishes at Project as required by individual Specifications section. Install sample complete and finished. Acceptable samples in place may be retained in completed Work.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. General Quality Control.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Manufacturer's Certificates.
- E. Mockups.
- F. Manufacturers' Field Services.
- G. Testing Laboratory Services.
- H. Departmental Inspection Services.

1.02 RELATED REQUIREMENTS

- A. Document 00700 - General Conditions: Inspection and testing required by governing authorities.
- B. Section 01010 – Summary of Work: Work Plans and Access to Facility, Individual Work Areas, and Tests required for inspection of the existing roof deck and structural members.
- C. Section 01090 - Reference Standards: Applicability of Reference Standards.
- D. Section 01300 - Submittals: Shop Drawings, Product Data, and Samples

1.03 QUALITY CONTROL, GENERAL

- A. Maintain quality control over Suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform Work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.05 MANUFACTURERS' INSTRUCTIONS

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

1.06 MANUFACTURERS' CERTIFICATES

- A. When required by individual Specifications section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.07 MOCKUPS

- A. When required by individual Specifications section, erect complete, full-scale mockup of assembly at site, perform required tests, and remove mockup at completion, when approved by DEPARTMENT.

1.08 MANUFACTURERS' FIELD SERVICES

- A. When required by manufacturer or when specified in respective Specification sections, require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.
- B. Require manufacturer's representative to submit written report to DEPARTMENT listing observations and recommendations.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Electricity, Lighting.
- B. Heat, Ventilation.
- C. Telephone Service.
- D. Water.
- E. Sanitary Facilities.
- F. Dust Control (Exterior).
- G. Construction Enclosures.
- H. Barriers.
- I. Barricades, Warnings, and Markings (Airport Operations).
- J. Protection of Installed Work.
- K. Security.
- L. Water Control.
- M. Cleaning During Construction.
- N. Removal.
- O. Waste Storage Equipment.
- P. Cleaning of the Project Area.
- Q. Disposal.
- R. Tool Control

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work: Use of Premises.
- B. Section 01010 - Summary of Work: Shutoffs and Disruptions to Service.
- C. Section 01540 - Security.
- D. Section 01700 - Contract Closeout: Final cleaning.

1.03 ELECTRICITY, LIGHTING

- A. Connect to existing service, provide branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords. DEPARTMENT will pay costs of energy used.
- B. Provide lighting for construction operations.
- C. Take precautions to conserve energy. Wasteful use of power will be back charged to the CONTRACTOR.

1.04 HEAT, VENTILATION

- A. Provide as required to maintain specified conditions for construction operations, to protect materials and finishes from damage due to temperature or humidity.
- B. Do not use permanent facilities for temporary purposes.
- C. Fully exhaust to the outside welding fumes generated from operations related to performance of the Work.
- D. Provide ventilation of enclosed areas to cure materials, to disperse humidity, and to prevent accumulations of dust, fumes, vapors, or gases.

1.05 TELEPHONE SERVICE

- A. Provide telephone service if required for construction operations.

1.06 WATER

- A. Provide service required for construction operations. Extend branch piping with outlets located so that water is available by use of hoses.
- B. The DEPARTMENT will pay for water used.
- C. Hoses or temporary piping will not be permitted in public areas where a hazard to the public may be created.

1.07 SANITARY FACILITIES

- A. Designated existing facilities may be used during construction operation; maintain in clean sanitary condition. Do not use facilities for construction for cleaning of construction equipment.

1.08 DUST CONTROL

- A. Execute Work by methods that minimize raising of dust or airborne debris from construction or demolition operations
- B. Provide positive means to prevent air-borne dust from dispersing into the atmosphere

1.09 CONSTRUCTION ENCLOSURES

- A. Provide temporary enclosures/partitions around areas inside the facility that are affected by the construction. Enclosures/partitions shall:
 - 1. Isolate construction from Using Agency and residents. Enclosure/partitions must be secured with a padlock.
 - 2. Prevent the penetration of dust and/or moisture into occupied areas. Partitions must be sealed at ceiling and floor.
 - 3. Prevent damage to existing materials, finishes, and equipment or other existing building components and contents.
 - 4. Be designed and stamped by an engineer licensed by the State of Alaska if over 12 feet high.
 - 5. Be constructed of metal studs, painted GWB, 10 mil polyethylene, and sound attenuation insulation. Enclosures/Partitions shall extend from floor to ceiling with complete closure at adjoining walls.

- B. The CONTRACTOR shall include his plan for construction enclosures in the work plan prepared under Section 01010.

1.10 BARRIERS

- A. Provide as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barriers to provide both separation and safety to adjacent building occupants..

1.11 PROTECTION OF INSTALLED WORK

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects, and storage.

1.12 SECURITY.

- A. Provide security program and facilities to protect Work, existing facilities, and Using Agency's operations from unauthorized entry, vandalism, and theft. Coordinate with DEPARTMENT security program.

1.13 WATER CONTROL

- A. Protect the interior of the facility from water and/or moisture infiltration

1.14 CLEANING DURING CONSTRUCTION

- A. In accordance with Part 2 and Part 3 of this specification.

1.15 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore existing facilities used during construction to specify, or to original, condition.

PART 2 PRODUCTS

2.01 WASTE STORAGE EQUIPMENT

- A. Provide covered containers for deposit of materials, waste materials, debris, and rubbish.

PART 3 EXECUTION

3.01 CLEANING OF THE PROJECT AREA

- A. Maintain all areas under CONTRACTOR's control free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to closing the space.
- C. Immediately clean interior areas after completion of the work to provide suitable conditions for building occupants and residents. All resident occupied areas and areas used by the public require cleanup at the end of each shift.

- D. Broom clean interior areas prior to start of surface finishing and continue cleaning on an as needed basis.
- E. Control cleaning operations so that dust and other particulates will not adhere to wet or newly coated surfaces.

3.02 DISPOSAL

- A. Promptly remove waste materials, debris, and rubbish from site periodically and dispose of in accordance with all Federal, State and local regulations.

END OF SECTION

SECTION 01600
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Products.
- B. Transportation and Handling.
- C. Storage and Protection.
- D. Product Options.
- E. Products List.
- F. Substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions.
- B. Section 01010 - Summary of Work.
- C. Section 01090 - Reference Standards.
- D. Section 01400 - Quality Control: Manufacturers' Certificates.
- E. Section 01700 – Contract Closeout: Closeout Procedures, Operation and Maintenance Data, Warranties, Spare Parts and Maintenance Materials.

1.03 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.
- D. Do not use materials and equipment removed from existing structure, except as specifically required, or allowed, by Contract Documents.

1.04 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Immediately on delivery, inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Accessories and installation hardware are correct.
 - 4. Containers and packages are intact and labels legible.
 - 5. Products are protected and undamaged.

1.05 STORAGE AND PROTECTION

- A. **HANDLE AND STORE MATERIALS FOR CONSTRUCTION, PRODUCTS OF DEMOLITION, AND OTHER ITEMS TO AVOID DAMAGE TO BUILDING.**
- B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- C. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.
- D. Provide Material Safety Data Sheets (MSDS) for all products which may produce unpleasant or noxious odors. CONTRACTOR shall provide for adequate venting if needed.

1.06 OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions by meeting product description: Submit a request for substitution for any manufacturer not specifically named that meets the product description specifications.
- C. Products Specified by Naming One or More Manufacturers followed by the term "No Substitutions": Use only specified manufacturers, no substitutions allowed.

1.07 PRODUCTS LIST

- A. Within 7 days after date of Notice to Proceed, transmit four copies of a list of products, which are proposed for installation, including name of manufacturer.
- B. Tabulate products by Specifications section number, title, and Article number
- C. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- D. DEPARTMENT will reply in writing within five days stating whether there is reasonable objection to listed items. Failure to object to a listed item shall not constitute a waiver of requirements of Contract Documents.

1.08 SUBSTITUTIONS

- A. SUBSTITUTION SUBMITTAL PERIOD
 - 1. Product substitution requests will be considered only within 7 days after date established in Notice to Proceed. Subsequent requests will be considered only in case of product unavailability or other conditions beyond control of CONTRACTOR. (Submit on Substitution Request Form "B")
- B. LIMITATIONS ON SUBSTITUTIONS
 - 1. **Only one request for substitution will be considered for each product** from each Prime Bidder/CONTRACTOR. When substitution is not accepted, Prime Bidder/CONTRACTOR shall provide specified product.
 - 2. Substitutions will not be considered when indicated on Shop Drawings or product data submittals.
 - 3. Substitute products shall not be ordered or installed without written acceptance.
 - 4. DEPARTMENT will determine acceptability of substitutions.
- C. REQUESTS FOR SUBSTITUTIONS
 - 1. Submit separate request for each substitution. Document each request with

complete data substantiating compliance of proposed substitution with requirements of Contract Documents.

2. Identify product by Specification section and Article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and Suppliers as appropriate.
3. Attach product data as specified in Section 01340.
4. List similar projects using product, dates of installation, and names of design Consultant(s) and owner.
5. Give itemized comparison of proposed substitution with specified product, listing variations, and reference to Specification sections and Article numbers.
6. Give quality and performance comparison between proposed substitution and the specified product.
7. Give cost data comparing proposed substitution with specified product, and amount of net change to Contract Price.
8. List availability of maintenance services and replacement materials.
9. State effect of substitution on construction schedule, and changes required in other Work or products.

D. CONTRACTOR REPRESENTATION

1. Request for substitution constitutes a representation that CONTRACTOR has investigated proposed product and has determined that it is equal to or superior in all respects to specified product.
2. CONTRACTOR will provide same warranty for substitution as for specified product.
3. CONTRACTOR will coordinate installation of accepted substitute, making such changes as may be required for Work to be complete in all respects.
4. CONTRACTOR certifies that cost data presented is complete and includes all related costs under this Contract.
5. CONTRACTOR waives claims for additional costs related to substitution which may later become apparent.

E. SUBMITTAL PROCEDURES

1. Submit five copies of complete request for Substitution Request Form. Request to include complete product information and data, color swatch board, and certification that proposed product meets or exceeds all requirements for the specified product.
2. DEPARTMENT will review CONTRACTOR's requests for substitutions within 5 days of receipt.
3. After receipt of submittal, DEPARTMENT will notify CONTRACTOR, in writing, of decision to accept or reject requested substitution within 5 days.
4. For accepted products, submit Shop Drawings, product data, and samples under provisions of Section 01300.

PART 2 PRODUCTS
PART 3 EXECUTION

Not Used
Not Used

Alaska Veterans & Pioneers Home
Roof Replacement
25-N0817C

Section 01600
Material and Equipment

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Closeout Procedures.
- B. Final Cleaning.
- C. Project Record Documents.
- D. Operation and Maintenance Data.
- E. Warranties.
- F. Spare Parts and Maintenance Materials.
- G. Maintenance Service.

1.02 RELATED REQUIREMENTS

- A. Document 00700 - General Conditions: Fiscal provisions, legal submittals, and other administrative requirements.
- B. Section 01010 - Summary of Work: Using Agency Occupancy.
- C. Section 01400 – Quality Control: Departmental Inspection Services.
- D. Section 01500 - Construction Facilities and Temporary Controls: Cleaning during construction.

1.03 CLOSEOUT PROCEDURES

- A. Substantial Completion and Final Completion:
 - 1. Substantial Completion:
 - a. Submit the following prior to requesting a Substantial Completion Inspection:
 - 1. Evidence of Compliance with Requirements of Governing Authorities:
 - I. Certificate of Occupancy.
 - II. Required Certificates of Inspection.
 - 2. Project Record Documents in accordance with sub section 1700-1.05
 - 3. Operation and Maintenance Data in accordance with sub section 1700-1.06
 - 4. Spare Parts and Maintenance Materials in accordance with sub section 1700-1.08
 - b. Substantial Completion shall be considered by the DEPARTMENT when:
 - 1. Written notice is provided 7 days in advance of inspection date.
 - 2. List of items to be completed or corrected is submitted.
 - 3. Operation and Maintenance Manuals are submitted and approved by the DEPARTMENT.
 - 4. Equipment and systems have been tested, adjusted, balanced and are fully operational.
 - 5. Automated and manual controls are fully operational.
 - 6. Operation of system has been demonstrated to DEPARTMENT

Personnel.

7. Certificate of Occupancy is submitted.
 8. Certificates of Inspection for required inspections have been submitted.
 9. Project Record Documents for the Work or the portion of the Work being accepted are submitted and approved.
 10. Spare parts and maintenance materials are turned over to DEPARTMENT.
 11. All keys are turned over to the DEPARTMENT.
- c. Should the DEPARTMENT inspection find Work is not substantially complete, the Department will promptly notify CONTRACTOR in writing, listing observed deficiencies.
 - d. The CONTRACTOR shall remedy deficiencies and send a second written notice of Substantial Completion.
 - e. When the DEPARTMENT finds Work is substantially complete the DEPARTMENT will prepare a certificate of Substantial Completion in accordance with provisions of General Conditions

B. FINAL COMPLETION:

1. When CONTRACTOR considers Work is complete, submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Work has been inspected for compliance with Contract Documents.
 - c. Work has been completed in accordance with Contract Documents, and deficiencies listed with certificate of Substantial Completion have been corrected.
 - d. Work is complete and ready for final inspection.
2. Should the DEPARTMENT inspection find Work incomplete, DEPARTMENT will promptly notify CONTRACTOR in writing listing observed deficiencies.
3. CONTRACTOR shall remedy deficiencies and send a second certification of Final Completion.
4. When DEPARTMENT finds Work is complete, DEPARTMENT will consider closeout submittals.

C. REINSPECTION FEES

1. Should status of completion of Work require more than two re-inspections by the DEPARTMENT due to failure of Work to comply with CONTRACTOR's responsibility, the DEPARTMENT will deduct the cost of re-inspection from final payment to CONTRACTOR as provided in the Contract Documents.
2. Re-inspection fees shall not exceed \$5,000 for any one re-inspection.

D. CLOSEOUT SUBMITTALS

1. Warranties and Bonds: Under provisions of Section 01700.
2. Evidence of Payment: In accordance with Conditions of the Contract.
3. Consent of Surety to Final Payment.
4. Certificates of Insurance for Products and Completed Operations: In accordance with Supplementary Conditions.

5. Certificate of Release.

E. APPLICATION FOR FINAL PAYMENT

1. Submit application for final payment in accordance with provisions of the General Conditions of the Contract.
- F. Using Agency will occupy Facility for the purpose of conduct of business, under provision stated in certificate of Substantial Completion.
- G. DEPARTMENT will issue a summary Change Order reflecting final adjustments to Contract Price not previously made by Change Order.

1.04 FINAL CLEANING

- A. Execute final cleaning prior to Substantial Completion inspection.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment. Clean roofs, gutters, downspouts, and drainage systems.
- C. Clean site; sweep paved areas, rake clean other surfaces.
- D. Use materials which will not create hazards to health or property, and which will not damage surfaces. Follow manufacturers' recommendations.
- E. Maintain cleaning until the DEPARTMENT issues certificate of substantial Completion.
- F. Remove waste, debris, and surplus materials from the site. Clean grounds; remove stains, spills, and foreign substances from paved areas and sweep clean. Rake clean other exterior surfaces.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following Record Documents; record actual revisions to the Work:
 1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.
 6. Manufacturers instructions for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by DEPARTMENT.
- C. Store Record Documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. SPECIFICATIONS: Legibly mark and record at each product section description of actual products installed, including the following:
 1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and Modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction graphically to scale including:

1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

1.06 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Submit data bound in 8-1/2 by 11-inch (A4) text pages, 3-D side ring binders with durable plastic covers.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are requested.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with the tab titling clearly printed under reinforced laminated plastic tabs.
- D. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, typed on 24-pound white paper, in 3 parts as follows:
 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, CONTRACTOR, subcontractors, and major equipment suppliers.
 2. Part 2: Operations and maintenance instructions, arranged by system and subdivided by Specification Section. For each category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for [special] finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
 3. Part 3: Project Documents and Certificates, including the following:
 - a. Shop drawings and product data.
 - b. Certificates.
 - c. Originals of warranties and bonds.
- E. Submit one draft copy of completed volumes five working days prior to Substantial Completion inspection. This copy will be reviewed and returned, with DEPARTMENT comments. Revise content of all document sets as required prior to final submission.
- F. Submit two sets of revised final volumes and a digital copy on a CD Rom disc within ten days after Substantial Completion Inspection.

1.07 WARRANTIES

- A. As a condition precedent to Final Payment, all guaranties and warranties as specified under various sections of the Contract Documents shall be obtained by the CONTRACTOR and

delivered to the OWNER, in duplicate giving a summary of guarantees attached and stating the following in respect to each:

1. Character of Work affected.
 2. Name of Subcontractors.
 3. Period of Guarantee.
 4. Conditions of Guarantee.
- B. Delivery of said guarantees and/or warranties shall not relieve the CONTRACTOR from any obligations assumed under any other provision of the Contract.
- C. If, within any guarantee period, repairs or changes are required in connection with the guaranteed Work, which in the opinion of the OWNER is rendered necessary as the result of the use of materials, equipment or workmanship, which are defective, or inferior, or not in accordance with the terms of the Contract, the CONTRACTOR shall, upon receipt of notice from the OWNER, and without expense to the OWNER, proceed within seven (7) calendar days to:
1. Place in satisfactory conditions in every particular all of such guaranteed Work, correct all defects therein, and make good all damages to the structure or site.
 2. Make good all Work or materials, or the equipment and contents of structures or site disturbed in fulfilling any such guarantee.
- D. If the CONTRACTOR, after notice, fails to comply without the terms of the guarantee, the OWNER may have the defects corrected and the CONTRACTOR and CONTRACTOR's Surety shall be liable for all expenses incurred in connection therewith, including Engineer's fees.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to project site and place in location as directed, obtain receipt prior to final payment.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY
SERVICES, FMS FACILITIES
ALASKA VETERANS & PIONEERS HOME
ROOF REPLACEMENT
PROJECT NO. 25-NO817C
PALMER, ALASKA

PROJECT SPECIFICATIONS
CONSTRUCTION DOCUMENTS

MARCH 4, 2025

OWNER:

STATE OF ALASKA
DEPARTMENT OF FAMILY & COMMUNITY SERVICES, FMS FACILITIES

ARCHITECT:

COLLINS ARCHITECTURE + ENERGY CONSERVATION, LLC
16800 EAST PLUMLEY
PALMER, AK 99645
907-982-5322
JASON COLLINS

STRUCTURAL ENGINEER

PND ENGINEERS, INC.
625 S. COBB ST. SUITE 202
PALMER, AK 99645
907-707-1081
DAVID BENTTI

MECHANICAL ENGINEER

JERNSTROM ENGINEERING, LLC
721 W. 1ST AVE. SUITE 100
ANCHORAGE, AK 99501
907-522-1042
JIM BENNETTS

ELECTRICAL ENGINEER

BR ENGINEERING, LLC
191 E. SWANSON AVE. SUITE 103
WASILLA, AK 99654
907-529-6565
BRIAN RIGGAN

ALASKA VETERANS & PIONEERS HOME REROOF PROJECT

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BUILD AMERICAN BUY AMERICA ACT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Build America, Buy America Act Language for Inclusion Into Contracts (to include loans, grants, and loan guarantee documents)
- B. BABAA was enacted on November 15, 2021, as part of the Infrastructure Investment and Jobs Act (IIJA), P.L. 117-58. With passage of the IIJA, Federal financial assistance projects for infrastructure must comply with domestic content procurement preference requirements established in BABAA § 70912 and § 70913. Buy America's domestic content procurement preference applies to all the iron, steel, manufactured products, and construction materials used for infrastructure projects under an award.

The Act establishes a domestic content procurement preference for Federal infrastructure programs. Section 70914(a) of the Act establishes that no later than 180 days after the date of enactment, agencies must ensure that none of the funds made available for infrastructure projects may be obligated by the Department unless it has taken steps to ensure that the iron, steel, manufactured products, and construction materials used in a project are produced in the United States. In section 70912, the Act defines a project to include "the construction, alteration, maintenance, or repair of infrastructure in the United States" and includes within the definition of infrastructure the structures, facilities, and equipment for buildings and real property. Thus, starting May 14, 2022, new awards of Federal financial assistance from a program for infrastructure, and any of those funds obligated by the grantee, are covered under the BABAA provisions of the Act, unless covered by a waiver.

1.2 PRECONSTRUCTION MEETINGS

- A. Preconstruction Conference:
 - 1. Meet with Owner, Architect, and Project Manager to review the requirement of BABAA, including but not limited to Certification Requirements, tracking, and confirmation timing relative to Pay Applications.

1.3 INFORMATIONAL SUBMITTALS

- A. Provide supplier BABAA Compliance Certification Requirements for all materials, manufactured items, and products used on the project.

- B. Provide General Contractor BABAA Compliance Certification Requirements for all materials, manufactured items, and products used on the project.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. **Domestic Preference Requirements for Federal Financial Assistance to Non-Federal Entities.** Federal Financial Assistance to Non-Federal Entities, defined pursuant to 2 CFR 200.1 as any State, local government, Indian tribe, Institution of Higher Education, or nonprofit organization, shall be governed by the requirements of Section 70914 of the Build America, Buy America Act (BABAA), under Title IX of the Infrastructure Investment and Jobs Act, Pub. L. 177-58. Any requests for waiver of these requirements must be submitted pursuant to USDA's guidance available online at USDA Buy America Waivers for Federal Financial Assistance | USDA.

- B. **Language for Inclusion into Professional Services Agreements**

Short Form for Entities Experienced Working with Domestic Preference Requirements
This agreement is for professional services related to a project that is subject to the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. 177-58. While professional services are not subject to BABAA, the Provider understands that they are responsible for ensuring that, absent a waiver by the [name of Federal Agency], Provider shall not approve for use in this project, any iron, steel, manufactured products, or construction materials unless such materials have been produced in the United States. Provider shall obtain all necessary compliance certificates for work that is within provider's scope of work. Failure to do so shall be a default under this agreement. Guidance on complying with BABAA is outlined by the Office of Management and Budget's Memorandum M-22-11, Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure, April 18, 2022.

- C. **More Detailed Form for Entities Less Experienced Working with Domestic Preference Requirements**

This agreement is for services related to a project that is subject to the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. 177-58. Absent an approved waiver, all iron, steel, manufactured products, and construction materials used in this project must be produced in the United States, as further outlined by the Office of Management and Budget's Memorandum M-22-11, Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure, April 18, 2022.

D. Description of Services

1. Opinions of total project costs and revisions thereof should reflect compliance with BABAA requirements.
2. Determine and certify that to the best of Provider's knowledge and belief all iron and steel products, manufactured products, and construction materials referenced in any technical analysis/report; the plans, specifications, and bidding documents; any bid addenda; and change orders comply with all federal requirements, including BABAA.
3. Review and approve or take action with respect to shop drawings, samples, and other required Contractor submittals, including applications for payment, to ensure compliance with BABAA.
4. Review substitutes and "or equals" for conformity with contract conditions, [insert name of Agency] regulations, and BABAA requirements.
5. Obtain and review manufacturers' and contractors' certifications on compliance with BABAA requirements and maintain copies of certifications in project files.
6. Assist Owner, if needed, in due diligence related to any BABAA waiver request.

E. Advertisement for Bids

This agreement is for services related to a project that is subject to the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. 177-58. Absent an approved waiver, all iron, steel, manufactured products, and construction materials used in this project must be produced in the United States, as further outlined by the Office of Management and Budget's Memorandum M-22-11, Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure, April 18, 2022.

F. Instructions to Bidders

Any request for substitute or "or equal" shall include the Manufacturer's Certification of compliance with the Build America, Buy America Act (BABAA) requirements mandated by Title IX of the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. 177-58.

1. BABAA requirements apply to this project.

G. Bid Form

Bidder's representation section: Bidder is familiar with all laws and regulations that may affect cost, progress, and performance of the work, including BABAA requirements.

H. General or Supplemental Conditions

1. Definitions section:
 - a. Build America, Buy America Act (BABAA) – Requirements instituted by the Bipartisan Infrastructure Law of 2021 mandating domestic preference that all iron and steel, manufactured products, and construction materials are produced in the United States.
 - b. Construction Materials – Those articles, materials, or supply – other than an item of primarily iron or steel; a manufactured product; cement and

cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives – that are or consist primarily of: non-ferrous metals, plastic and polymer-based products, glass, lumber or drywall.

- c. **Manufactured Product** – Items assembled out of components, or otherwise made or processed from raw materials into finished products. Manufactured products must be manufactured (assembled) in the United States, and the cost of components that were mined, produced, or manufactured in the United States must be greater than 55 percent of the total cost of all components of the project.
- d. **Manufacturer's Certification** – Documentation provided by a Manufacturer, certifying that the items provided by Manufacturer meet the domestic preference requirements of BABAA.

2. Application of a Buy America Preference:

- a. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- b. All manufactured products used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
- c. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.
- d. A Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of or permanently affixed to the structure.

PART 3 - EXECUTION

A. Contractor's Responsibilities

1. All products must meet BABAA requirements.
2. Contractor shall include Manufacturer's Certification for BABAA requirements with all applicable submittals. If a specific manufacture is used in the bidding, a statement that Manufacturer will comply with BABAA must be included with the bid submission. Contractor shall comply with BABAA requirements, including coordination with manufacturers, distributors, and suppliers to correct deficiencies in any BABAA documentation.
3. Engineer/Architect approval of shop drawings or samples shall include review of BABAA documentation.
4. Contractor shall certify upon completion that all work and materials have complied with BABAA requirements.
5. For any change orders, Contractor shall provide BABAA documentation for any new products or materials required by the change.
6. Installation of materials or products that are not compliant with BABAA requirements shall be considered defective work. Contractor should ensure that Engineer/Architect has an approved Manufacturer's Certification or waiver prior to items being delivered to the project site.
7. By submitting an application for payment, based in whole or in part on furnishing equipment or materials, Contractor certifies that such equipment and materials, to contractor's knowledge, are compliant with BABAA requirements.

B. Waiver Request

1. Products in some cases may not be available or have an excessive cost in meeting BABAA. In these cases, BABAA allows a Waiver may be submitted. For this project, no time or allowance has been allocated for a Waiver Request. General Contractors shall assume that a Waiver will not be available for any of the products or deliverables on this project.

C. Federal Requirements

1. Domestic Preference: Iron and steel products, Manufactured Products, and Construction Materials used in this project comply with the Build America, Buy America Act (BABAA) requirements mandated by Title IX of the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. 117-58.

SAMPLE CONTRACTOR CERTIFICATION

**Build America, Buy America Act
Alaska Veteran's and Pioneers Home
25-NO817C-1 Roof Repairs
Contractor / Subcontractor Certification**

The undersigned certifies, to the best of their knowledge and belief, that:

The Build America, Buy America Act (BABAA) requires that no federal financial assistance for "infrastructure" projects is provided "unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States." Section 70914 of Public Law No. 117-58, §§ 70901-52.

The undersigned certifies that for the _____ (Project Name and Location) the iron, steel, manufactured products, and construction materials used in this contract are in full compliance with the BABAA requirements including:

1. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. All manufactured products purchased with Federal financial assistance must be produced in the United States. For a manufactured product to be considered produced in the United States, the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55% of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

"The, _____ [Contractor or Subcontractor] _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the [Contractor or Subcontractor] understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any."

Signature of [Contractor's or Subcontractor's] Authorized Official

Date

Name and Title of [Contractor's or Subcontractor's] Authorized Official

Date

END OF SECTION 00 10 00

SECTION 01 22 00

UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.

1.3 DEFINITIONS

- A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the Part 3 "Schedule of Unit Prices" Article contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Removal and replacement of damaged glulam roof beam(s).
1. Description: The existing low roof edge is supported by a glulam beam that is wrapped in metal flashing. A number of known damaged beams are being replaced as part of the Base Bid contract. The condition of all the beams throughout the facility is unknown. The work for unit price will include:
 - a. As they are uncovered the beams shall be reviewed by Contractor, Owner PM, Architect, and Structural Engineer.
 - b. Beams that are determined to be damaged enough to be replaced are to be removed and replaced.
 - c. A damaged beam shall be removed from post to post, including steel insert connections, roof edge blocking, and underside ledger blocking.
 - d. Replace the damaged beam and ledger blocking per Detail 2/A-501.
 - e. See sheet S-102 for structural details and requirements. Some beams may extend into the building and under the existing roof decking. Roof decking will need to be shored during beam replacement and be re-attached to the new beam from the underside of the roof decking.
 2. Determination: Upon removal of the flashing, if a beam is identified to have damage, rot, or show heavy signs of water damage notify the PM. The PM will notify the Architect and Structural Engineer, who will confirm whether a beam needs to be replaced.
 3. Reference Details: See Details 1/A-501 and 2/A-501. Also see sheet S-102.
 4. Unit of Measurement: Unit price is to be per each 25ft section of glulam beam. Note that there may be multiple locations where this occurs. Unit Price is per each 25ft section.

END OF SECTION 01 22 00

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other Work of the Contract.
- C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. Alternate No. 1: Heat trace at Fireweed and Sunny Loop Wings
 - 1. Base Bid: No work in this area.
 - 2. Alternate: Provide heat trace at Fireweed and Sunny Loop Wings as indicated on Drawing E-202 and E-203 and as specified in Section 26 05 80 Heating Cables.

- B. Alternate No. 2: Homestead Dining Room Roof Replacement
 - 1. Base Bid: No work in this area.
 - 2. Alternate: Provide a Homestead Dining Room Roof Replacement as indicated on Drawings and Specifications. The work includes:
 - a. Remove existing IRMA Roof System down to structural decking.
 - b. Remove parapet flashing surrounding this roof area.
 - c. Protect existing roof sheathing.
 - d. Provide new EPDM Roof Assembly.
 - e. Provide revised parapet with extended blocking and prefinished metal flashing cap as noted in details.
 - f. Provide new roof and overflow drains connected to existing piping, see Mechanical.
 - g. Provide new heat trace at roof drains, see electrical.

- C. Alternate No. 3: Fireplace Chimney Surround
 - 1. Base Bid: Clean and seal concrete cap.
 - 2. Alternate: Provide a insulated prefinished metal surround at the existing stone chimney as indicated on Drawings and Specifications. The work includes:
 - a. Clean and prepare concrete and stone for new cladding.
 - b. Metal furring as required for new work to mount plumb and square.
 - c. Composite insulated sheathing boards.
 - d. Ice and water shield.
 - e. New prefinished metal siding, roofing, and flashing.
 - f. Extension of masonry flues.
 - g. New flue weather caps.

END OF SECTION 012300

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Recycling nonhazardous demolition and construction waste.
 - 2. Disposing of nonhazardous demolition and construction waste.

1.3 DEFINITIONS

- A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste and Form CWM-8 for demolition waste. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons (tonnes).
 - 4. Quantity of waste recycled, both estimated and actual in tons (tonnes).
 - 5. Total quantity of waste recovered (recycled) in tons (tonnes).
 - 6. Total quantity of waste recovered (recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.7 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements. Superintendent may serve as Waste Management Coordinator.
- B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan including responsibilities of each contractor and waste management coordinator.
 - 2. Review requirements for documenting quantities of each type of waste and its disposition.
 - 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - 5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Use Form CWM-1 for construction waste and Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste and Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there were no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Use Form CWM-5 for construction waste and Form CWM-6 for demolition waste. Include the following:
 - 1. Total quantity of waste.
 - 2. Estimated cost of disposal (cost per unit). Include transportation and tipping fees and cost of collection containers and handling for each type of waste.
 - 3. Total cost of disposal (with no waste management).
 - 4. Revenue from recycled materials.
 - 5. Savings in transportation and tipping fees that are avoided.
 - 6. Handling and transportation costs. Include cost of collection containers for each type of waste.
 - 7. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total nonhazardous solid waste generated by the Work. Practice efficient waste

management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling of materials, including the following:

1. Demolition Waste:
 - a. Roofing.
 - b. Insulation.
 - c. Piping.
 - d. Supports and hangers.
 - e. Mechanical equipment.
 - f. Electrical conduit.
 - g. Copper wiring.
 - h. Electrical devices.
2. Construction Waste:
 - a. Metals.
 - b. Roofing.
 - c. Insulation.
 - d. Piping.
 - e. Electrical conduit.
 - f. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Wood crates.
 - 6) Wood pallets.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in Section 01 50 00 "Temporary Facilities and Controls."
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within 7 days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
 2. Comply with Section 01 50 00 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- B. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 4. Store components off the ground and protect from the weather.
 5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

3.3 RECYCLING DEMOLITION WASTE

- A. Metals: Separate metals by type.
- B. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.

- C. Conduit: Reduce conduit to straight lengths and store by material and size.

3.4 RECYCLING CONSTRUCTION WASTE

- A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
3. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

- B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.5 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

- B. General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Owner's property.

- C. Burning: Do not burn waste materials.

3.6 ATTACHMENTS

- A. Form CWM-1 for construction waste identification.
- B. Form CWM-2 for demolition waste identification.
- C. Form CWM-3 for construction waste reduction work plan.
- D. Form CWM-4 for demolition waste reduction work plan.
- E. Form CWM-5 for cost/revenue analysis of construction waste reduction work plan.

- F. Form CWM-6 for cost/revenue analysis of demolition waste reduction work plan.
- G. Form CWM-7 for construction waste reduction progress report.
- H. Form CWM-8 for demolition waste reduction progress report.

END OF SECTION 01 74 19

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused or recycled.
- B. Related Requirements:
 - 1. Section 01 10 00 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

5. Review areas where existing construction is to remain and requires protection.

1.5 INFORMATIONAL SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 2. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- B. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations. Submit before Work begins.
- C. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

1.8 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
 - 1. Inventory and record the condition of items to be removed and salvaged.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 2. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - f. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 50 00 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
 - 6. Maintain adequate ventilation when using cutting torches.

7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly. Comply with requirements in Section 01 74 19 "Construction Waste Management and Disposal."

- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Section 07 41 13 for new roofing requirements.
1. Remove existing roofing, flashings, copings, and roof accessories.
 2. Remove existing roofing system down to substrate.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction or recycle them according to Section 01 74 19 "Construction Waste Management and Disposal."
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 4. Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood products.
2. Wood-preservative-treated lumber.
3. Dimension lumber framing.
4. Miscellaneous lumber.
5. Plywood backing panels.

B. Related Requirements:

1. Section 061600 "Sheathing" for sheathing, subflooring, and underlayment.
2. Section 061753 "Shop-Fabricated Wood Trusses" for wood trusses made from dimension lumber.
3. Section 064013 "Exterior Architectural Woodwork" for exterior wood stairs and railings.

1.2 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates:

1. For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

1.5 DELIVERY, STORAGE, AND HANDLING

- ### **A.**
- Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS

- #### **A.**
- Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
 4. Dress lumber, S4S, unless otherwise indicated.
- #### **B.**
- Maximum Moisture Content:
1. Boards: 15 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- #### **A.**
- Preservative Treatment by Pressure Process: AWPA U1, Use categories as follows:
1. UC3A (Commodity Specification A): Coated sawn products in exterior construction not in contact with ground but exposed to all weather cycles including intermittent wetting. Include the following items:

- a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - b. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
- 2. UC3A (All Other Commodity Specifications): Coated products excluding sawn products in exterior construction not in contact with ground, exposed to all weather cycles but protected from liquid water. Include the following items:
 - a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - b. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
 - c. Wood floor plates that are installed over concrete slabs-on-grade.
- 3. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium..
- 4. For exposed items indicated to receive a stained or natural finish, chemical formulations are not to require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

2.3 DIMENSION LUMBER FRAMING

- A. Load-Bearing Partitions by Grade: Construction or No. 2 grade.
 - 1. Application: Exterior walls and interior load-bearing partitions.
 - 2. Species:
 - a. Hem-fir (north); NLGA.
 - b. Douglas fir-larch; WCLIB or WWPA.
 - c. Spruce-pine-fir; NLGA.
 - d. Hem-fir; WCLIB or WWPA.
 - e. Douglas fir-larch (north); NLGA.
- B. Joists, Rafters, and Other Framing by Grade: Construction or No. 2 grade.
 - 1. Species:
 - a. Hem-fir (north); NLGA.
 - b. Douglas fir-larch; WCLIB or WWPA.

- c. Spruce-pine-fir; NLGA.
 - d. Hem-fir; WCLIB or WWPA.
 - e. Douglas fir-larch (north); NLGA.
- C. Exposed Framing: Hand-select material indicated to receive a stained or natural finish for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
 - 1. Species and Grade:
 - a. As indicated above for load-bearing construction of same type.

2.4 MISCELLANEOUS LUMBER

- A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
- B. Dimension Lumber Items: Standard, Stud, or No. 3 grade lumber of any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Spruce-pine-fir; NLGA.
 - 3. Hem-fir; WCLIB or WWPA.
 - 4. Western woods; WCLIB or WWPA.
 - 5. Northern species; NLGA.
- C. Roofing Nailers: Structural- or No. 2-grade lumber or better; kiln-dried Douglas fir, southern pine, or wood having similar decay-resistant properties.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 FASTENERS

- A. General: Fasteners are to be of size and type indicated and comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M or ASTM F2329
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.6 METAL FRAMING ANCHORS

- A. Hold-Downs: Brackets for bolting to wall studs and securing to foundation walls with anchor bolts or to other hold-downs with threaded rods and designed with first of two bolts placed seven bolt diameters from reinforced base.
 1. See structural drawings for sizing.
- B. Materials: Unless otherwise indicated, fabricate from the following materials:
 1. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation.
 - a. Use for interior locations unless otherwise indicated.
 2. Heavy-Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch thick.
 - a. Use for wood-preservative-treated lumber and where indicated.

2.7 MISCELLANEOUS MATERIALS

- A. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

- B. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- E. Do not splice structural members between supports unless otherwise indicated.
- F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- G. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- H. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- I. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- J. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.10.1, "Fastening Schedule," in ICC's International Building Code (IBC).
- K. Securely attach roofing nailers to substrates by anchoring and fastening to withstand bending, shear, or other stresses imparted by Project wind loads and fastener-resistance loads as designed in accordance with ASCE/SEI 7.
- L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach wood blocking to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Attach wood roofing nailers securely to substrate to resist the designed outward and upward wind loads indicated on Drawings and in accordance with ANSI/SPRI ED-1, Tables A6 and A7.
- D. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 INSTALLATION OF WOOD FURRING

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal size furring vertically at 24 inches o.c.

3.4 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 06 10 00

SECTION 06 16 00

SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Roof sheathing.
 - 2. Composite nail base insulated roof sheathing.
- B. Related Requirements:
 - 1. Section 06 10 00 "Rough Carpentry" for plywood backing panels.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Roof sheathing.
 - 2. Composite nail base insulated roof sheathing.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PANEL PRODUCTS

- A. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- B. Factory mark panels to indicate compliance with applicable standard.

2.2 ROOF SHEATHING

- A. Plywood Sheathing, Roofs: Exterior, Structural I sheathing.
 - 1. Span Rating: Not less than 24/0

2. Nominal Thickness: Not less than 15/32 inch
- B. Oriented-Strand-Board Sheathing, Roofs: DOC PS 2, Exposure 1, Structural I sheathing.
1. Span Rating: Not less than 24/0
 2. Nominal Thickness: Not less than 15/32 inch

2.3 COMPOSITE NAIL BASE INSULATED ROOF SHEATHING

- A. Basis of Design: Hunter Panels, Cool-Vent, Vented Nailbase Polyisocyanurate Insulation Panel for Steep Slope Roof Applications
- B. Oriented-Strand-Board-Surfaced, Polyisocyanurate-Foam Sheathing: ASTM C1289, Type V with DOC PS 2, Exposure 1 oriented strand board on one face.
1. Polyisocyanurate-Foam Thickness: See drawings.
 2. Oriented-Strand-Board Nominal Thickness: 7/16 inch
- C. Vented, Oriented-Strand-Board-Surfaced, Polyisocyanurate-Foam Sheathing: ASTM C1289, Type II, Class 1, with DOC PS 2, Exposure 1 oriented strand board adhered to spacers on one face.
1. Polyisocyanurate-Foam Thickness: See drawings
 2. Oriented-Strand-Board Nominal Thickness: 7/16 inch
 3. Spacers: Wood furring strips or blocks not less than 3/4 inch thick and spaced not more than 24 inches o.c.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
1. For roof, parapet and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.
 2. For roof, parapet, and wall sheathing, provide fasteners with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours in accordance with ASTM B117.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Screws for Fastening Sheathing to Wood Framing: ASTM C1002.
- E. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

- F. Screws for Fastening Composite Nail Base Insulated Roof Sheathing to Metal Roof Deck: Steel drill screws, in type and length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours in accordance with ASTM B117. Provide washers or plates if recommended by sheathing manufacturer.

2.5 MISCELLANEOUS MATERIALS

- A. Adhesives for Field Gluing Panels to Wood Framing: Formulation complying with APA AFG-01 or ASTM D3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. Table 2304.10.1, "Fastening Schedule," in the ICC's International Building Code.
 - 2. ICC-ES evaluation report for fastener.
- D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 INSTALLATION OF WOOD STRUCTURAL PANEL

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Wall and Roof Sheathing:
 - a. Screw to wood framing.
 - b. Screw to cold-formed metal framing.
 - c. Space panels 1/8 inch apart at edges and ends.

END OF SECTION 06 16 00

SECTION 06 18 00

GLUED-LAMINATED CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Structural glued-laminated timber.
 - 2. Timber connectors.
- B. Related Requirements:
 - 1. Section 06 10 00 "Rough Carpentry" for dimension lumber items associated with structural glued-laminated timber.
 - 2. Section 06 15 16 "Wood Roof Decking" for glued-laminated wood roof decking.

1.2 DEFINITIONS

- A. Structural Glued-Laminated (Glulam) Timber: An engineered, stress-rated timber product assembled from selected and prepared wood laminations bonded together with adhesives and with the grain of the laminations approximately parallel longitudinally.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include data on lumber, adhesives, fabrication, and protection.
 - 2. For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
 - 3. For connectors. Include installation instructions.

1.4 INFORMATIONAL SUBMITTALS

- A. Research/Evaluation Reports: For structural glued-laminated timber and timber connectors, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with provisions in AITC 111.

- B. Individually wrap members using plastic-coated paper covering with water-resistant seams.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Structural glued-laminated timber and connectors are to withstand the effects of structural loads shown on Drawings without exceeding allowable design working stresses listed in ANSI 117 or determined according to ASTM D3737 and acceptable to authorities having jurisdiction.
- B. Seismic Performance: Structural glued-laminated timber and connectors are to withstand the effects of earthquake motions determined according to ASCE/SEI 7.

2.2 STRUCTURAL GLUED-LAMINATED TIMBER

- A. General: Provide structural glued-laminated timber that complies with ANSI A190.1 and ANSI 117 or research/evaluation reports acceptable to authorities having jurisdiction.
 - 1. Factory mark each piece of structural glued-laminated timber with AITC Quality Mark or APA-EWS trademark. Place mark on surfaces that are not exposed in the completed Work.
 - 2. Provide structural glued-laminated timber made from single species.
 - 3. Provide structural glued-laminated timber made from solid lumber laminations; do not use laminated veneer lumber.
 - 4. Provide structural glued-laminated timber made with wet-use adhesive complying with ANSI A190.1.
- B. Species and Grades for Structural Glued-Laminated Timber:
 - 1. Douglas fir-larch in grades needed to comply with "Performance Requirements" Article.
- C. Species and Grades: For beams.
 - 1. Species and Beam Stress Classification: Douglas fir-larch, 24F-1.8E
 - 2. Lay-up: Either balanced or unbalanced.
- D. Appearance Grade: Architectural, complying with AITC 110.

2.3 TIMBER CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- B. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings or comparable product by one of the following:
 - 1. Simpson Strong-Tie Co., Inc.
 - 2. USP Structural Connectors.
- C. Provide bolts, 3/4 inch unless otherwise indicated, complying with ASTM A 307, Grade A; nuts complying with ASTM A 563; and, where indicated, flat washers.
- D. Materials: Unless otherwise indicated, fabricate from the following materials:
 - 1. Structural-steel shapes, plates, and flat bars complying with ASTM A 36/A 36M.
 - 2. Round steel bars complying with ASTM A 575, Grade M 1020.
- E. Finish steel assemblies and fasteners with rust-inhibitive primer, 2-mil dry film thickness.

2.4 MISCELLANEOUS MATERIALS

- A. End Sealer: Manufacturer's standard, transparent, colorless wood sealer that is effective in retarding the transmission of moisture at cross-grain cuts and is compatible with indicated finish.
- B. Penetrating Sealer: Manufacturer's standard, transparent, penetrating wood sealer that is compatible with indicated finish.

2.5 FABRICATION

- A. Shop fabricate for connections to greatest extent possible, including cutting to length and drilling bolt holes.
 - 1. Dress exposed surfaces as needed to remove planing and surfacing marks.
- B. Camber: Fabricate horizontal and inclined members of less than 1:1 slope with either circular or parabolic camber equal to 1/500 of span.
- C. End-Cut Sealing: Immediately after end cutting each member to final length, apply a saturation coat of end sealer to ends and other cross-cut surfaces, keeping surfaces flood coated for not less than 10 minutes.
- D. Seal Coat: After fabricating, sanding, and end-coat sealing, apply a heavy saturation coat of penetrating sealer on surfaces of each unit.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates in areas to receive structural glued-laminated timber, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Erect structural glued-laminated timber true and plumb and with uniform, close-fitting joints. Provide temporary bracing to maintain lines and levels until permanent supporting members are in place.
 - 1. Handle and temporarily support glued-laminated timber to prevent surface damage, compression, and other effects that might interfere with indicated finish.
- B. Framing Built into Masonry: Provide 1/2-inch clearance at tops, sides, and ends of members built into masonry; bevel cut ends 3 inches; and do not embed more than 4 inches unless otherwise indicated.
- C. Cutting: Avoid extra cutting after fabrication. Where field fitting is unavoidable, comply with requirements for shop fabrication.
- D. Fit structural glued-laminated timber by cutting and restoring exposed surfaces to match specified surfacing.
 - 1. Predrill for fasteners using timber connectors as templates.
 - 2. Finish exposed surfaces to remove planing or surfacing marks and to provide a finish equivalent to that produced by machine sanding with No. 120 grit sandpaper.
 - 3. Coat cross cuts with end sealer.
- E. Install timber connectors as indicated.
 - 1. Unless otherwise indicated, install bolts with same orientation within each connection and in similar connections.
 - 2. Install bolts with orientation as indicated or, if not indicated, as directed by Architect.

3.3 ADJUSTING

- A. Repair damaged surfaces and finishes after completing erection. Replace damaged structural glued-laminated timber if repairs are not approved by Architect.

3.4 PROTECTION

- A. Do not remove wrappings on individually wrapped members until they no longer serve a useful purpose, including protection from weather, sunlight, soiling, and damage from work of other trades.
 - 1. Coordinate wrapping removal with finishing work. Retain wrapping where it can serve as a painting shield.
 - 2. Slit underside of wrapping to prevent accumulation of moisture inside the wrapping.

END OF SECTION 06 18 00

SECTION 06 20 13

EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Exterior trim.
 2. Engineered wood soffits.

1.2 DEFINITIONS

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Compliance Certificates:
1. For lumber that is not marked with grade stamp.
 2. For preservative-treated wood that is not marked with treatment-quality mark.
- B. Evaluation Reports: For the following, from ICC-ES:
1. Wood-preservative-treated wood.
- C. Sample Warranties: For manufacturer's warranties.

1.5 QUALITY ASSURANCE

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation.
 - 1. Protect materials from weather by covering with waterproof sheeting, securely anchored.
 - 2. Provide for air circulation around stacks and under coverings.

1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
- B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
 - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.8 WARRANTY

- A. Engineered Wood Manufacturer's Warranty: Manufacturer agrees to repair or replace components of engineered wood siding, soffits, and trim that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, deformation or deterioration beyond normal weathering.
 - 2. Warranty Period for Factory-Applied Finish: Five years from date of Substantial Completion.
 - 3. Warranty Period: Siding, Soffits, and Trim (Excluding Finish), 25 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade

lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of inspection agency, indicating grade, species, moisture content at time of surfacing, and mill.
2. For exposed lumber, mark grade stamp on end or back of each piece.

B. Hardboard: ANSI A135.4.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Water-Repellent Preservative Treatment by Nonpressure Process: AWWA N1; dip, spray, flood, or vacuum-pressure treatment.

1. Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated material from untreated material.

B. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC3b.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent, respectively.
2. Preservative Chemicals: Acceptable to authorities having jurisdiction
3. For exposed items indicated to receive transparent finish, do not use chemical formulations that contain colorants or that bleed through or otherwise adversely affect finishes.
4. Do not use material that is warped or does not comply with requirements for untreated material.
5. Mark lumber with treatment-quality mark of an inspection agency approved by the ALSC's Board of Review.

2.3 EXTERIOR TRIM

A. Lumber Trim for Transparent Finish (Stain or Clear Finish):

1. Species and Grade:
 - a. Western red cedar; NLGA, WCLIB, or WWPA Grade A
 - b. Hem-fir; pressure-preservative treated; NLGA, WCLIB, or WWPA 1 Common
2. Maximum Moisture Content: 19 percent
3. Face Surface: Surfaced (smooth)

B. Lumber Trim for Opaque Finish (Painted Finish):

1. Species and Grade:
 - a. Western red cedar; NLGA, WCLIB, or WWPA Grade A
 - b. Hem-fir; NLGA, WCLIB, or WWPA Prime or D finish

2. Maximum Moisture Content: 19 percent
3. Finger Jointing: Not allowed
4. Face Surface: Surfaced (smooth)
5. Factory Priming: Factory coated on both faces and all edges, with exterior primer compatible with topcoats specified.

2.4 ENGINEERED WOOD SOFFITS

- A. Engineered Wood Soffits: ANSI A135.6, primed with manufacturer's standard exterior primer.
 1. Type: 7/16-inch- thick flat panels.
 2. Texture: Wood grain
 3. Colors, Textures, and Patterns: As selected by Architect from manufacturer's full range.

2.5 MISCELLANEOUS MATERIALS

- A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.
 1. For face-fastening siding, provide ringed-shank siding nails or hot-dip galvanized-steel siding nails unless otherwise indicated.
- B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.
- C. Flashing: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim" for flashing materials installed in exterior finish carpentry.
- D. Insect Screening for Soffit Vents: Aluminum, 18-by-16-inch black mesh
- E. Continuous Soffit Vents: Aluminum hat channel shape with stamped louvers, 2 inches wide and in lengths not less than 96 inches
 1. Net-Free Area: 6 sq. in./linear ft.
 2. Finish: Mill finish or White paint
- F. Sealants: Latex, complying with ASTM C834 Type OP, Grade NF and applicable requirements in Section 079200 "Joint Sealants," and recommended by sealant and substrate manufacturers for intended application.

2.6 FABRICATION

- A. Back out or kerf backs of standing and running trim wider than 5 inches except members with ends exposed in finished work.

- B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed.
 - 1. Cut to required lengths and prime ends.
 - 2. Comply with requirements in Section 099113 "Exterior Painting."

3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
 - 1. Do not use manufactured units with defective surfaces, sizes, or patterns.
- B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials.
 - 1. Use concealed shims where necessary for alignment.
 - 2. Scribe and cut exterior finish carpentry to fit adjoining work.
 - 3. Refinish and seal cuts as recommended by manufacturer.
 - 4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
 - 5. Coordinate exterior finish carpentry with materials and systems in or adjacent to it.
 - 6. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

3.4 INSTALLATION OF STANDING AND RUNNING TRIM

- A. Install flat-grain lumber with bark side exposed to weather.
- B. Install cellular PVC trim to comply with manufacturer's written instructions.
- C. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary.
 - 1. Use scarf joints for end-to-end joints.
 - 2. Stagger end joints in adjacent and related members.
- D. Fit exterior joints to exclude water.
 - 1. Cope at returns and miter at corners to produce tight-fitting joints, with full-surface contact throughout length of joint.
 - 2. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.
- E. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3.5 ADJUSTING

- A. Replace exterior finish carpentry that is damaged or does not comply with requirements.
 - 1. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.
- B. Adjust joinery for uniform appearance.

3.6 CLEANING

- A. Clean exterior finish carpentry on exposed and semiexposed surfaces.
- B. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 06 20 13

SECTION 07 01 50

PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of This Section Includes:

1. Full roof tear-off.
2. Partial roof tear-off.
3. Temporary roofing.
4. Roof re-cover preparation.
5. Base flashing removal.
6. Fastener pull-out testing.
7. Disposal.

B. Related Requirements:

1. Section 011000 "Summary" for use of premises and for phasing requirements.
2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.

1.2 ALLOWANCES

- A. Allowance for removal of existing deteriorated wood roof deck, and replacement with new wood deck, is specified under Section 012100 "Allowances."
- B. Allowance for removal of existing deteriorated wood nailers and curbs, and replacement with new wood, is specified under Section 012100 "Allowances."

1.3 UNIT PRICES

- A. Work of this Section is affected by roof sheathing removal and replacement unit price

1.4 DEFINITIONS

- A. EPS: Molded (expanded) polystyrene.
- B. Full Roof Tear-off: Removal of existing roofing system down to existing roof deck.
- C. OSB: Oriented strand board.

- D. Partial Roof Tear-off: Removal of selected components and accessories from existing roofing system.
- E. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.
- F. Roof Re-Cover Preparation: Existing roofing system is to remain and be prepared for new roof installed over it.

1.5 PREINSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting removal Work, conduct conference at Project site.
 - 1. Meet with Owner, Architect, Project Manager, testing and inspecting agency representative, roofing Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing tear-off, including, but not limited to, the following:
 - a. Reroofing preparation, including roofing system manufacturer's written instructions.
 - b. Temporary protection requirements for existing roofing system components that are to remain.
 - c. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
 - d. Existing roof deck conditions requiring Architect notification.
 - e. Existing roof deck removal procedures and Owner notifications.
 - f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
 - g. Structural loading limitations of roof deck during reroofing.
 - h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
 - i. HVAC shutdown and sealing of air intakes.
 - j. Existing conditions that may require Architect notification before proceeding.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Temporary Roofing Submittal: Product data and description of temporary roofing system.
 - 1. If temporary roof remains in place, include surface preparation requirements needed to receive permanent roof, and submit a letter from roofing manufacturer stating acceptance of the temporary roof and that its inclusion does not adversely

affect the new roofing system's resistance to fire and wind or specified special warranty.

1.7 FIELD CONDITIONS

- A. Existing Roofing System: Prefinished metal panel roofing.
- B. Owner will occupy portions of building immediately below reroofing area.
 - 1. Conduct reroofing so Owner's operations are not disrupted.
 - 2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
 - 3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
 - 4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.
 - a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
 - 1. Construction Drawings for existing roofing system are provided for Contractor's convenience and information, but they are not a warranty of existing conditions. They are intended to supplement rather than serve in lieu of Contractor's own investigations. Contractor is responsible for conclusions derived from existing documents.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
 - 1. Remove only as much roofing in one day as can be made watertight in the same day.

PART 2 - PRODUCTS

2.1 TEMPORARY PROTECTION MATERIALS

- A. EPS Insulation: ASTM C578.
- B. Plywood: DOC PS 1, Grade CD, Exposure 1.
- C. OSB: DOC PS 2, Exposure 1.

2.2 TEMPORARY ROOFING MATERIALS

- A. Design and selection of materials for temporary roofing are Contractor's responsibilities.
- B. Base Sheet: ASTM D4601/D4601M, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet.
- C. Base Sheet Fasteners: Capped head, factory-coated steel fasteners.

2.3 INFILL AND REPLACEMENT MATERIALS

- A. Use infill materials matching existing roofing system materials unless otherwise indicated.
- B. Wood blocking, curbs, and nailers are specified in Section 06 10 00 "Rough Carpentry."
- C. Plywood roof sheathing is specified in Section 06 16 00 "Sheathing."
- D. Fasteners: Factory-coated steel fasteners with metal or plastic plates listed in FM Approvals' RoofNav, and acceptable to new roofing system manufacturer.

2.4 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new roofing system.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protection of In-Place Conditions:

1. Protect existing roofing system that is not to be reroofed.
 2. Loosely lay 1-inch- minimum thick, EPS insulation over existing roofing in areas not to be reroofed.
 - a. Loosely lay 15/32-inch plywood or OSB panels over EPS. Extend EPS past edges of plywood or OSB panels a minimum of 1 inch
 3. Limit traffic and material storage to areas of existing roofing that have been protected.
 4. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.
 5. Comply with requirements of existing roof system manufacturer's warranty requirements.
- B. Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.
- C. Shut off rooftop utilities and service piping before beginning the Work.
- D. Test existing roof drains to verify that they are not blocked or restricted.
1. Immediately notify Architect of any blockages or restrictions.
- E. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.
1. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- F. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

3.2 ROOF TEAR-OFF

- A. Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.
- C. Full Roof Tear-off: Where indicated on Drawings, remove existing roofing and other roofing system components down to the existing roof deck.
1. Remove substrate board, vapor retarder, roof insulation, cover board, and roofing.
 2. Remove base flashings and counter flashings.
 3. Remove perimeter edge flashing and gravel stops.
 4. Remove copings.
 5. Remove expansion-joint covers.
 6. Remove flashings at pipes, curbs, mechanical equipment, and other penetrations.

7. Remove wood blocking, curbs, and nailers.
 8. Bitumen and felts that are firmly bonded to concrete decks are permitted to remain if felts are dry.
 - a. Remove unadhered bitumen, unadhered felts, and wet felts.
- D. Partial Roof Tear-off: Where indicated on Drawings, remove existing roofing down to existing roofing and immediately check for presence of moisture.
1. Engage a qualified testing agency to perform the following test:
 - a. Coordinate with Owner's testing agency to schedule times for tests and inspections immediately after removal.
 2. Survey exposed substrate that is to remain using infrared color thermography according to ASTM C1153.
 - a. Prepare survey report of initial scan indicating locations of entrapped moisture, if any, and area calculations of locations of entrapped moisture.
 3. Remove wet or damp materials below existing roofing and above deck as directed by Architect.
 4. Inspect wood blocking, curbs, and nailers for deterioration and damage.
 - a. If wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.
 5. Bitumen and felts that are firmly bonded to decks are permitted to remain if felts are dry.
 - a. Remove unadhered bitumen, unadhered felts, and wet felts.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Architect.
1. Do not proceed with installation until directed by Architect.
- C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect.
1. Do not proceed with installation until directed by Architect.
- D. Provide additional deck securement as indicated on Drawings.

E. Replace damaged roof decking as directed by Architect.

1. Roof decking replacement will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

3.4 TEMPORARY ROOFING

A. Install approved temporary roofing over area to be reroofed.

B. Install temporary roofing over area to be reroofed.

C. Remove temporary roofing before installing new roofing.

D. Prepare temporary roof to receive new roofing according to approved temporary roofing proposal.

1. Restore temporary roofing to watertight condition.
2. Obtain approval for temporary roof substrate from roofing manufacturer and Architect before installing new roof.

3.5 BASE FLASHING REMOVAL

A. Remove existing base flashings.

1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal counterflashings that are to remain.

1. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish as existing.

C. Inspect wood blocking, curbs, and nailers for deterioration and damage.

1. If wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.

D. When directed by Architect, replace parapet framing, wood blocking, curbs, and nailers to comply with Section 06 10 00 "Rough Carpentry."

3.6 DISPOSAL

A. Collect demolished materials and place in containers.

1. Promptly dispose of demolished materials.
2. Do not allow demolished materials to accumulate on-site.
3. Storage or sale of demolished items or materials on-site is not permitted.

- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 07 01 50

SECTION 07 21 00

THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Polyisocyanurate foam-plastic board insulation.
 - 2. Glass-fiber blanket insulation.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Polyisocyanurate foam-plastic board insulation.
 - 2. Glass-fiber blanket insulation.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- B. Research Reports: For foam-plastic insulation, from ICC-ES.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
 - 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
 - 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Maximum flame-spread and smoke-developed indexes less than 200 and 450 when tested in accordance with ASTM E84.
- B. Fire-Resistance Ratings: Comply with ASTM E119 or UL 263; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Indicate design designations from UL's "Fire Resistance Directory" or from listings of another qualified testing agency.
- C. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
- D. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.
- E. Thermal-Resistance Value (R-Value): R-value as indicated on Drawings in accordance with ASTM C518.

2.2 POLYISOCYANURATE FOAM-PLASTIC BOARD INSULATION

- A. Polyisocyanurate Board Insulation, Glass-Fiber-Mat Faced, ASTM C1289, glass-fiber-mat faced, Type II, Class 2.

2.3 GLASS-FIBER BLANKET INSULATION

- A. Glass-Fiber Blanket Insulation, Unfaced, ASTM C665, Type I; passing ASTM E136 for combustion characteristics.

2.4 INSULATION FASTENERS

- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
 - 1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
 - 2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- B. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches square or in diameter.

2.5 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
 - 1. Glass-Fiber Insulation: ASTM C764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E84.
 - 2. Spray Polyurethane Foam Insulation: ASTM C1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E84.
 - 3. Polyurethane Pour-In-Place Insulation: Closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E84, specifically formulated for pour-in-place applications.
- B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.
- C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Install insulation with manufacturer's R-value label exposed after insulation is installed.
- D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- E. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
 - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 - 4. Attics: Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
 - 5. For metal-framed wall cavities where cavity heights exceed 96 inches support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
 - 6. For wood-framed construction, install blankets in accordance with ASTM C1320 and as follows:
 - a. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
 - 1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft.
 - 2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

3.4 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
- B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 21 00

SECTION 07 27 15

NONBITUMINOUS SELF-ADHERING SHEET AIR BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Self-adhering air barrier.
 - 1. Vapor-retarding nonbituminous sheet.
- B. Related Requirements:
 - 1. Section 06 16 00 "Sheathing" for wall sheathings and wall sheathing joint-and-penetration treatments.

1.2 DEFINITIONS

- A. Air-Barrier Accessory: A transitional component of the air barrier that provides continuity.
- B. Air-Barrier Assembly: The collection of air-barrier materials and accessories applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.
- C. Air-Barrier Material: A primary element that provides a continuous barrier to the movement of air.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review air-barrier requirements and installation, special details, mockups, air-leakage and bond testing, air-barrier protection, and work scheduling that covers air barriers.

1.4 ACTION SUBMITTALS

- A. Product Data: Self-adhering air barrier. Include manufacturer's written instructions for evaluating, preparing, and treating each substrate; technical data; and tested physical and performance properties of products.
 - 1. Vapor-retarding nonbituminous sheet.

B. Shop Drawings: For air-barrier assemblies.

1. Show locations and extent of air-barrier materials, accessories, and assemblies specific to Project conditions.
2. Include details for substrate joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.
3. Include details of interfaces with other materials that form part of air barrier.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: From air-barrier manufacturer, certifying compatibility of air barriers and accessory materials with Project materials that connect to or that come in contact with air barrier.
- B. Product Test Reports: For each air-barrier assembly, for tests performed by a qualified testing agency.
- C. Field quality-control reports.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- B. Protect stored materials from direct sunlight.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended in writing by air-barrier manufacturer.
 1. Protect substrates from environmental conditions that affect air-barrier performance.
 2. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain primary air-barrier materials and air-barrier accessories from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Air-Barrier Performance: Air-barrier assembly and seals with adjacent construction to be capable of performing as a continuous air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air-barrier assemblies to be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.
- B. Air-Barrier Assembly Air Leakage: Maximum 0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft., when tested in accordance with ASTM E2357.

2.3 NONBITUMINOUS SHEET AIR BARRIER

- A. Vapor-Retarding Nonbituminous Sheet: Minimum 10-mil- thick, self-adhering sheet consisting of 5 mils of air-barrier film and a 5-mil- thick, acrylic adhesive with release liner on adhesive side and formulated for application with primer that complies with VOC limits.
 - 1. Physical and Performance Properties:
 - a. Air Permeance: Maximum 0.004 cfm/sq. ft. of surface area at 1.57-lbf/sq. ft. pressure difference; ASTM E2178.
 - b. Puncture Resistance: Minimum 40 lbf ASTM E154/E154M.
 - c. Vapor Permeance: Maximum 1.0 perm ASTM E96/E96M, Desiccant Method.
 - d. Adhesion to Substrate: Minimum 16 lbf/sq. in. when tested in accordance with ASTM D4541 as modified by ABAA.
 - e. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
 - f. UV Resistance: Can be exposed to sunlight for 150 days in accordance with manufacturer's written instructions.

2.4 ACCESSORY MATERIALS

- A. Requirement: Provide primers, transition strips, termination strips, joint sealants, counterflashing strips, flashing sheets and metal termination bars, termination mastic, substrate patching materials, adhesives, tapes, foam sealants, lap sealants, and other accessory materials that are recommended in writing by air-barrier manufacturer to produce a complete air-barrier assembly and that are compatible with primary air-barrier material and adjacent construction to which they may seal.
- B. Primer: Liquid primer recommended for substrate by air-barrier material manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 - 1. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
 - 2. Verify that substrates have cured and aged for minimum time recommended in writing by air-barrier manufacturer.
 - 3. Verify that substrates are visibly dry and free of moisture.
 - 4. Verify that masonry joints are flush and completely filled with mortar.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

- A. Clean, prepare, treat, fill, and seal substrate and joints and cracks in substrate in accordance with manufacturer's written instructions and details. Provide clean, dust-free, and dry substrate for air-barrier application.
- B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate-patching membrane.
- E. Remove excess mortar from masonry ties, shelf angles, and other obstructions.
- F. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.
- G. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.
- H. Bridge isolation joints, expansion joints, and discontinuous wall-to-wall, deck-to-wall, and deck-to-deck joints with air-barrier accessory material that accommodates joint movement in accordance with manufacturer's written instructions and details.

3.3 INSTALLATION OF NONBITUMINOUS SHEET AIR BARRIER

- A. Install materials in accordance with air-barrier manufacturer's written instructions and details to form a seal with adjacent construction and ensure continuity of air and water barrier.
 - 1. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
- B. Prepare, treat, and seal inside and outside corners and vertical and horizontal surfaces at terminations and penetrations with termination mastic.
- C. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier sheet on same day. Reprime areas exposed for more than 24 hours.
- D. Apply and firmly adhere air-barrier sheets over area to receive air barrier. Accurately align sheets and maintain uniform 2-1/2-inch- minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure airtight installation.
 - 1. Apply sheets in a shingled manner to shed water.
 - 2. Roll sheets firmly to enhance adhesion to substrate.
- E. Apply continuous air-barrier sheets over accessory strips bridging substrate cracks, construction, and contraction joints.
- F. Seal top of through-wall flashings to air-barrier sheet with an additional 6-inch- wide, transition strip.
- G. Seal exposed edges of sheet at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with termination mastic.
- H. Install air-barrier sheet and accessory materials to form a seal with adjacent construction and to maintain a continuous air barrier.
 - 1. Coordinate air-barrier installation with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
 - 2. Install transition strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over each substrate.
- I. Connect and seal exterior wall air-barrier sheet continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
- J. At end of each working day, seal top edge of air-barrier material to substrate with termination mastic.

- K. Apply joint sealants forming part of air-barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- L. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of contact over firm bearing to perimeter frames, with not less than 1 inch of full contact.
 - 1. Transition Strip: Roll firmly to enhance adhesion.
- M. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, doors, and miscellaneous penetrations of air-barrier material with foam sealant.
- N. Repair punctures, voids, and deficient lapped seams in air barrier. Slit and flatten fishmouths and blisters. Patch with air-barrier sheet extending 6 inches beyond repaired areas in all directions.
- O. Do not cover air barrier until it has been tested and inspected by testing agency.
- P. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.

3.4 CLEANING AND PROTECTION

- A. Protect air-barrier system from damage during application and remainder of construction period, in accordance with manufacturer's written instructions.
 - 1. Protect air barrier from exposure to UV light and harmful weather exposure as recommended in writing by manufacturer. If exposed to these conditions for longer than recommended, remove and replace air barrier or install additional, full-thickness, air-barrier application after repairing and preparing the overexposed materials in accordance with air-barrier manufacturer's written instructions.
 - 2. Protect air barrier from contact with incompatible materials and sealants not approved by air-barrier manufacturer.
- B. Clean spills, stains, and soiling from construction that would be exposed in the completed Work, using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

END OF SECTION 07 27 15

SECTION 07 27 46

SELF ADHERED VAPOR RETARDERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: a fully self- adhered, non-asphaltic, durable, impermeable air, water, and vapor barrier membrane with an aggressive pressure-sensitive adhesive, incorporated in exterior low and steep sloped roofing assemblies, at locations indicated on Drawings and elsewhere as noted and as required by code.
- B. Related Requirements:
 - 1. Section 06 16 00 Sheathing
 - 2. Section 07 21 00 "Thermal Insulation" for vapor retarders integral with insulation products.
 - 3. Section 07 41 13 Formed Metal Roof Panels

1.2 ACTION SUBMITTALS

- A. Product Data: Submit manufacturers' current product data sheets, details and installation instructions for the water-resistive vapor impermeable air barrier membrane components and accessories.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each product, for tests performed by a qualified testing agency.
 - 1. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 - 2. ASTM E96/96M - Test Methods for Water Vapor Transmission of Materials
- B. Fire Performance Characteristics: Provide water-resistive barrier meeting the following fire-test characteristics.
 - 1. Surface-Burning Characteristics: ASTM E84
 - a. Flame spread index: 5 or less
 - b. Smoke developed index: 15 or less
 - 2. Conforms to UL 790 and CAN/ ULC-S107. Utilizing a ¼" thermal board applied to the roof deck will create a UL Class roof assembly

PART 2 - PRODUCTS

2.1 REINFORCED-POLYETHYLENE VAPOR RETARDERS

- A. Provide a fully self-adhered water and vapor impermeable air barrier membrane and accessories obtained from a single-source manufacture to ensure total system compatibility and integrity.
- B. Water and Vapor Impermeable Self-Adhered Air Barrier Materials for Low and Steep Sloped Roofs. Basis of Design Products:
 - 1. Vaproshield Blockshield SA Plus
 - 2. GAF SA Vapor Retarder XL
 - 3. Carlisle VapAir Seal 725ROr equal meeting the requirements within this specification and coordinating with other materials in the project.
- C. Properties:
 - 1. Thickness: >0.26mm
 - 2. Water Vapor Permeance: < 0.1
 - 3. Air Permeability: <0.001
 - 4. Peel resistance: 25 lbf/ft

2.2 ACCESSORIES

- A. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
- B. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.
- C. Vapor-Retarder Fasteners: Pancake-head, self-tapping steel drill screws; with fender washers.
- D. Roof Roller: Utilize roller tool designed to provide optimal leverage for roller-based self-adhered membrane. Provide roller incorporating heavy duty design die-cast second handle for additional leverage, two handed operations to firmly secure the adhesive to the substrate.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to vapor retarders, including removing projections capable of puncturing vapor retarders.

- B. All surfaces must be dry, sound, clean, free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the water and vapor impermeable air barrier membrane and flashings. Fill voids and gaps in substrate greater than 7/8 inch (22 mm) in width to provide an even surface.

3.2 INSTALLATION OF VAPOR RETARDERS ON FRAMING

- A. Place vapor retarders on side of construction indicated on Drawings.
- B. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives, vapor retarder fasteners, or other anchorage system as recommended by manufacturer. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.
- C. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs and sealing with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Locate all joints over framing members or other solid substrates.
- D. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.
- E. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

3.3 PROTECTION

- A. Protect vapor retarders from damage until concealed by permanent construction.

END OF SECTION 07 27 46

SECTION 07 41 13

FORMED METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exposed-fastener, lap-seam, metal roof panels.

B. Related Requirements:

1. Section 07 72 53 "Snow Guards" for prefabricated devices designed to hold snow on the roof surface, allowing it to melt and drain off slowly.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site

1. Meet with Owner, Architect, Owner's insurer if applicable, metal panel Installer, metal panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal panels, including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to metal panel installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review structural loading limitations of deck, purlins and rafters during and after roofing.
6. Review flashings, special details, drainage, penetrations, equipment curbs, and condition of other construction that affect metal panels.
7. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
8. Review temporary protection requirements for metal panel systems during and after installation.
9. Review procedures for repair of metal panels damaged after installation.
10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.3 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.
 - 1. Exposed-fastener, lap-seam, metal roof panels.
- B. Shop Drawings:
 - 1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
 - 2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 - 1. Metal Panels: 12 inches long by actual panel width. Include fasteners, closures, and other metal panel accessories.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For exposed-fastener, lap-seam metal roof panels, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal panels to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Retain strippable protective covering on metal panels during installation.

1.8 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.9 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.
- B. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including rupturing, cracking, or puncturing.
 - b. Deterioration of metals and other materials beyond normal weathering.
 - 2. Warranty Period: Two years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 45 years for Film Integrity. 35 years for chalk and fade. Warranty period from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
 1. Wind Loads: As indicated on Drawings.
 2. Other Design Loads: As indicated on Drawings
 3. Deflection Limits: For wind loads, no greater than 1/240 of the span.
- B. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E1646 at the following test-pressure difference:
- C. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E2140.
- D. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 1. Uplift Rating: UL 90.
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces

2.2 EXPOSED-FASTENER, LAP-SEAM, METAL ROOF PANELS

- A. Provide factory-formed metal roof panels designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Include accessories required for weathertight installation.

- B. Tapered-Rib-Profile, Exposed-Fastener Metal Roof Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs.
1. Basis of Design: Metal Sales Clip-Loc
 2. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.
 - a. Nominal Thickness: 0.0223 inch (24 gauge)
 - b. Exterior Finish: Three-coat fluoropolymer
 - c. Color: As selected by Architect from manufacturer's full range
 3. Major-Rib Spacing: 8 inches o.c.
 4. Panel Coverage: 16 inches
 5. Panel Height: 1.625 inches

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer when recommended by underlayment manufacturer. If manufacturer recommends use of primer for the weather and temperature conditions at the time of install, it will be required as part of the contract.
1. Basis of Design: ms-HT Underlayment
 2. Thermal Stability: Stable after testing at 220 deg F; ASTM D1970.
 3. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D1970.
 4. Self sealing around penetrating fasteners.
 5. Install with laps per manufacturer's recommendations, but minimally 3" on side laps and 6" on end laps, downslope laps, and roof to wall transitions.

2.4 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C645; cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
 3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.
- D. Gutters: Formed from same material as roof panels, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Furnish gutter supports spaced a maximum of 36 inches o.c., fabricated from same metal as gutters. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match roof fascia and rake trim.
- E. Downspouts: Formed from same material as roof panels. Fabricate in 10-foot- long sections, complete with formed elbows and offsets, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Finish downspouts to match gutters.
- F. Roof Curbs: Fabricated from same material as roof panels, 0.048-inch- nominal thickness; with bottom of skirt profiled to match roof panel profiles and with welded top box and integral full-length cricket. Fabricate curb subframing of 0.060-inch- nominal thickness, angle-, C-, or Z-shaped steel sheet. Fabricate curb and subframing to withstand indicated loads of size and height indicated. Finish roof curbs to match metal roof panels.
1. Insulate roof curb with 2-inch- thick, polyisocyanurate rigid insulation. Provide composite insulation panels with ½" plywood sheathing adhered to the face of the insulation. Seal all joints in panels.
 2. Completely seal off roof deck penetration with closed cell spray foam. Minimum depth 3" or equivalent to roof assembly thickness.
- G. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- H. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.
3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.5 FABRICATION

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
 3. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
 5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
 - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

2.6 FINISHES

- A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Steel Panels and Accessories:
 - 1. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.
 - 1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
 - 2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.
 - a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.3 INSTALLATION OF UNDERLAYMENT

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated on Drawings, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.
 - 1. Apply over the entire roof surface.
- B. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 07 62 00 "Sheet Metal Flashing and Trim."

3.4 INSTALLATION OF METAL ROOF PANELS

- A. Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 1. Shim or otherwise plumb substrates receiving metal panels.
 - 2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air or water-resistive barriers and flashings that are concealed by metal panels are installed.
 - 3. Install screw fasteners in predrilled holes.
 - 4. Locate and space fastenings in uniform vertical and horizontal alignment.
 - 5. Install flashing and trim as metal panel work proceeds.
 - 6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
 - 7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
 - 8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.
- B. Fasteners:
 - 1. Steel Panels: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.

- C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.
- D. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
 - 1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.
 - 2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
 - 3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
 - 4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
 - 5. Flash and seal panels with weather closures at perimeter of all openings.
- E. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal panel manufacturer; or, if not indicated, provide types recommended in writing by metal panel manufacturer.
- F. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that are permanently watertight.
 - 1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof performance.
 - 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- G. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

- H. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.
 - 1. Provide elbows at base of downspouts to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.
- I. Roof Curbs: Install flashing around bases where they meet metal roof panels.
- J. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.5 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 41 13

SECTION 07 53 23

ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ethylene-propylene-diene-terpolymer (EPDM) roofing.
2. Accessory roofing materials.
3. Substrate board.
4. Vapor retarder.
5. Roof insulation.
6. Insulation accessories and cover board.

B. Related Requirements:

1. Section 061000 "Rough Carpentry for wood nailers, curbs, and blocking and for wood-based, structural-use roof deck panels.
2. Section 061600 "Sheathing" for wood-based, structural-use roof deck panels.
3. Section 072100 "Thermal Insulation" for insulation beneath the roof deck.
4. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
5. Section 077100 "Roof Specialties" for manufactured copings and roof edge flashings.
6. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.2 DEFINITIONS

- A. Roofing Terminology:** Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference:** Conduct conference at Project site.

1. Meet with Owner, Architect, Project Manager, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Ethylene-propylene-diene-terpolymer (EPDM) roofing.
2. Accessory roofing materials.
3. Substrate board.
4. Vapor retarder.
5. Roof insulation.
6. Insulation accessories and cover board.

B. Product Data Submittals:

1. For insulation and roof system component fasteners, include copy of SPRI's Directory of Roof Assemblies listing.

C. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, thickness, and slopes.
5. Roof plan showing orientation of roof membrane and fastening spacings and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Manufacturer Certificates:
 - 1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - a. Submit evidence of complying with performance requirements.
- C. Product Test Reports: For components of roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.
- D. Evaluation Reports: For components of roofing system, from ICC-ES.
 - 1. Field Test Reports:
 - 2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
- E. Field quality-control reports.
- F. Sample Warranties: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, substrate board, roof pavers, and other components of roofing system.
 - 2. Warranty Period: 20 years from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing system and base flashings to withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings to remain watertight.
 - 1. Accelerated Weathering: Roof membrane to withstand 2000 hours of exposure when tested in accordance with ASTM G152, ASTM G154, or ASTM G155.
 - 2. Impact Resistance: Roof membrane to resist impact damage when tested in accordance with ASTM D3746, ASTM D4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

- B. Material Compatibility: Roofing materials to be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- C. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures when tested in accordance with FM Approvals 4474, UL 580, or UL 1897:
 - a. See Structural Drawings.
- D. SPRI's Directory of Roof Assemblies Listing: Roof membrane, base flashings, and component materials comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and are listed in SPRI's Directory of Roof Assemblies for roof assembly identical for that specified for this Project.
 - a. Wind Uplift Load Capacity: See Structural Drawings.
- E. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class C; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

- A. EPDM Sheet: ASTM D4637/D4637M, Type II, scrim or fabric internally reinforced, EPDM sheet.
 - 1. Thickness: 60 mils nominal.
 - 2. Exposed Face Color: Black
 - 3. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

2.3 ACCESSORY ROOFING MATERIALS

- A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
 - 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil thick EPDM, partially cured or cured, according to application.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Roof Vents: As recommended by roof membrane manufacturer.
 - 1. Size: Not less than 4-inch diameter.
- E. Bonding Adhesive: Manufacturer's standard.

- F. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 3-inch wide minimum, butyl splice tape with release film.
- G. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- H. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to roofing system manufacturer.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 SUBSTRATE BOARD

- A. Glass-Mat Gypsum Roof Substrate Board: ASTM C1177/C1177M, water-resistant gypsum board.
 - 1. Thickness: Type X, 5/8 inch
 - 2. Surface Finish: Factory primed
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate panel to roof deck.

2.5 VAPOR RETARDER

- A. Polyethylene Film: ASTM D4397, 6 mils thick, minimum, with maximum permeance rating of 0.13 perm
 - 1. Tape: Pressure-sensitive tape of type recommended by vapor retarder manufacturer for sealing joints and penetrations in vapor retarder.
 - 2. Adhesive: Manufacturer's standard lap adhesive, listed by FM Approvals for vapor retarder application.

2.6 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM roof membrane manufacturer, approved for use in SPRI's Directory of Roof Assemblies listed roof assemblies.
- B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2 coated glass-fiber facer on both major surfaces.
 - 1. Compressive Strength: 20 psi

2. Size: 48 by 96 inches
 3. Thickness:
 - a. Base Layer: 3 inches
 - b. Upper Layer: 3 inches
- C. Tapered Insulation: Provide factory-tapered insulation boards.
1. Material: Match roof insulation
 2. Minimum Thickness: 1/4 inch
 3. Slope:
 - a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
 - b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.7 INSULATION ACCESSORIES AND COVER BOARD

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
 1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
- D. Polyisocyanurate Insulation Cover Board: ASTM C1289 Type II, Class 4, Grade 1, 1/2 inch (13 mm) thick, with a minimum compressive strength of 80 psi (551 kPa).
- E. Protection Mat: Woven or nonwoven polypropylene, polyolefin, or polyester fabric; water permeable and resistant to UV degradation; type and weight as recommended by roofing system manufacturer for application.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.

2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation in accordance with roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system in accordance with roofing system manufacturer's written instructions, SPRI's Directory of Roof Assemblies assembly requirements.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.
- D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified separately.

3.4 INSTALLATION OF SUBSTRATE BOARD

- A. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.
 1. At steel roof decks, install substrate board at right angle to flutes of deck.
 - a. Locate end joints over crests of steel roof deck.
 2. Tightly butt substrate boards together.
 3. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.

4. Fasten substrate board to top flanges of steel deck in accordance with recommendations in SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity.
5. Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof in accordance with roofing system manufacturers' written instructions.

3.5 INSTALLATION OF VAPOR RETARDER

- A. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 and 6 inches respectively.
 1. Extend vertically up parapet walls and projections to a minimum height equal to height of insulation and cover board.
 2. Continuously seal side and end laps with tape or adhesive.
- B. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 and 6 inches respectively.
 1. Extend vertically up parapet walls and projections to a minimum height equal to height of insulation and cover board.
 2. Seal laps by rolling.
- C. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.6 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Wood and Wood Panel Decking:
 1. Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows
 - a. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.

- b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
 - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
 - 1) Trim insulation so that water flow is unrestricted.
 - e. Fill gaps exceeding 1/4 inch with insulation.
 - f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
 - g. Mechanically attach base layer of insulation and substrate board using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to wood or wood panel decks.
2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
- a. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
 - b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
 - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
 - 1) Trim insulation so that water flow is unrestricted.
 - e. Fill gaps exceeding 1/4 inch with insulation.
 - f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

3.7 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
- 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - 2. At internal roof drains, conform to slope of drain sump.
 - a. Trim cover board so that water flow is unrestricted.
 - 3. Cut and fit cover board tight to nailers, projections, and penetrations.
 - 4. Adhere cover board to substrate using adhesive in accordance with SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity, as follows:

- a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.8 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing in accordance with roofing system manufacturer's written instructions.
- B. Unroll membrane roof membrane and allow to relax before installing.
- C. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- E. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- G. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement.
 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 2. Apply lap sealant and seal exposed edges of roofing terminations.
 3. Apply a continuous bead of in-seam sealant before closing splice if required by roofing system manufacturer.

3.9 INSTALLATION OF MECHANICALLY FASTENED ROOF MEMBRANE

- A. Mechanically fasten roof membrane over area to receive roofing in accordance with roofing system manufacturer's written instructions.
- B. Unroll roofing membrane and allow to relax before installing.
- C. For in-splice attachment, install roof membrane with long dimension perpendicular to steel roof deck flutes.
- D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Mechanically fasten or adhere roof membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.

- G. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement.
 - 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 - 2. Apply lap sealant and seal exposed edges of roofing terminations.
 - 3. Apply a continuous bead of in-seam sealant before closing splice if required by roofing system manufacturer.
- H. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- I. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.
- J. Through-Membrane Attachment: Secure roofing using fastening plates or metal battens, and mechanically fasten roof membrane to roof deck. Cover battens and fasteners with a continuous cover strip.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Perform the following tests:
 - 1. Flood Testing: Flood test each roofing area for leaks, in accordance with recommendations in ASTM D5957, after completing roofing and flashing. Install temporary containment assemblies, plug or dam drains, and flood with potable water.
 - a. Perform tests before overlying construction is placed.
 - b. Flood to a minimum depth of 1 inch and not exceeding a depth of 4 inches. Maintain 2 inches of clearance from top of base flashing.
 - c. Flood each area for 24 hours.
 - d. After flood testing, repair leaks, repeat flood tests, and make further repairs until roofing and flashing installations are watertight.
 - 1) Cost of retesting is Contractor's responsibility.
 - e. Testing agency to prepare survey report indicating locations initial leaks, if any, and final survey report.
- C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
- D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and in accordance with warranty requirements.

3.12 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
1. Owner: <Insert name of Owner>.
 2. Owner Address: <Insert address>.
 3. Building Name/Type: <Insert information>.
 4. Building Address: <Insert address>.
 5. Area of Work: <Insert information>.
 6. Acceptance Date: _____.
 7. Warranty Period: <Insert time>.
 8. Expiration Date: _____.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding 127 mph;
 - c. fire;

- d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.

3. Title: _____.

END OF SECTION 07 53 23

SECTION 076200

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Roof-drainage sheet metal fabrications.
2. Low-slope roof sheet metal fabrications.
3. Steep-slope roof sheet metal fabrications.
4. Wall sheet metal fabrications.
5. Miscellaneous sheet metal fabrications.

B. Related Requirements:

1. Section 06 10 00 "Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 07 71 00 "Roof Specialties" for manufactured copings, roof-edge specialties, roof-edge drainage systems, reglets, and counterflashings.
3. Section 07 72 00 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

1.2 COORDINATION

- A.** Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B.** Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Roof-drainage sheet metal fabrications.
2. Low-slope roof sheet metal fabrications.
3. Steep-slope roof sheet metal fabrications.
4. Wall sheet metal fabrications.
5. Miscellaneous sheet metal fabrications.

B. Product Data Submittals:

1. Underlayment materials.

2. Elastomeric sealant.
3. Butyl sealant.
4. Epoxy seam sealer.

C. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
10. Include details of special conditions.
11. Include details of connections to adjoining work.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.6 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, are to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim are not to rattle, leak, or loosen, and are to remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested in accordance with ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:
 1. Design Pressure: As indicated on Drawings
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 1. Temperature Change: 120 deg F, ambient; 180 deg F material surfaces

2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet in accordance with ASTM A653/A653M, G90 coating designation, prepainted by coil-coating process to comply with ASTM A755/A755M.

1. Surface: Smooth, flat
2. Exposed Coil-Coated Finish:
 - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions[**for seacoast and severe environments**].
3. Color: As selected by Architect from manufacturer's full range
4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer in accordance with underlayment manufacturer's written instructions.
 1. Source Limitations: Obtain underlayment from single source from single manufacturer.
 2. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F or lower.

2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal, unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Zinc-Coated (Galvanized) or Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329/F2329M.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.
- G. Asphalt Roofing Cement: ASTM D4586/D4586M, asbestos free, of consistency required for application.
- H. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated.
 1. Source Limitations: Obtain reglets from single source from single manufacturer.
 2. Material: Galvanized steel, 0.022 inch thick.
 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 4. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
5. Finish: With manufacturer's standard color coating

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances:

1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Seams:

1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters:

1. Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required.
2. Fabricate in continuous seamless gutters. All gutters shall be in continuous length for each elevation (run). No end laps allowed.
3. Furnish flat-stock gutter brackets, gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard, but with thickness not less than twice the gutter thickness.
4. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters.

5. Gutter Profile: **[Style A] [Style B] [Style C] [Style D] [Style E] [Style F] [Style G] [Style H] [Style I] [Style J] [Style K] [Style L]** in accordance with cited sheet metal standard.
 6. Expansion Joints: Lap type
 7. Accessories: **[Continuous, removable leaf screen with sheet metal frame and hardware cloth screen] [Wire-ball downspout strainer] [Valley baffles]**.
 8. Gutters with Girth up to 15 Inches (380 mm): Fabricate from the following materials:
 - a. Aluminum: 0.032 inch thick.
 - b. Galvanized Steel: 0.022 inch thick.
- B. Downspouts: Fabricate rectangular downspouts to dimensions indicated on Drawings, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors.
1. Manufactured Hanger Style in accordance with SMACNA's "Architectural Sheet Metal Manual."
 2. Hanger Style: **<Insert description>**.
 3. Fabricate from the following materials:
 - a. Galvanized Steel: 0.022 inch thick.
- C. Conductor Heads: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and shape required, complete with outlet tubes, exterior flange trim, and built-in overflows. Fabricate from the following materials:
1. Galvanized Steel: 0.028 inch thick.
- D. Splash Pans: Fabricate to dimensions and shape required and from the following materials:
1. Aluminum: 0.040 inch thick.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop) and Fascia Cap: Fabricate in minimum 96-inch-long, but not exceeding 12-foot- long sections. Furnish with 6-inch- wide, joint cover plates.
1. Joint Style: Overlapped, 4 inches wide
 2. Fabricate with scuppers spaced 10 feet apart, to dimensions required with 4-inch- wide flanges and base extending 4 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
 3. Fabricate from the following materials:
 - a. Galvanized Steel: 0.028 inch thick.
- B. Copings: Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and interior leg. Miter corners, fasten and seal watertight.
1. Coping Profile: See drawings, in accordance with SMACNA's "Architectural Sheet Metal Manual."

2. Joint Style: Butted with expansion space and 6-inch- wide, concealed backup plate
3. Fabricate from the following materials:
 - a. Galvanized Steel: 0.040 inch thick.
- C. Base Flashing: from the following materials:
 1. Galvanized Steel: 0.028 inch thick.
- D. Counterflashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- E. Flashing Receivers: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.028 inch thick.

2.8 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- B. Valley Flashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.028 inch thick.
- C. Drip Edges: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- E. Counterflashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- F. Flashing Receivers: Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.
- G. Roof-Penetration Flashing: Fabricate from the following materials:
 1. Galvanized Steel: 0.028 inch thick.

2.9 WALL SHEET METAL FABRICATIONS

- A. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch- high, end dams. Fabricate from the following materials:
 1. Galvanized Steel: 0.022 inch thick.

2.10 MISCELLANEOUS SHEET METAL FABRICATIONS

- A. Equipment Support Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Self-Adhering, High-Temperature Sheet Underlayment:
 - 1. Install self-adhering, high-temperature sheet underlayment; wrinkle free.
 - 2. Prime substrate if recommended by underlayment manufacturer.
 - 3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
 - 4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses.
 - 5. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller.
 - 6. Roll laps and edges with roller.
 - 7. Cover underlayment within 14 days.

3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of sealant.

3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
 5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
 6. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
 8. Do not field cut sheet metal flashing and trim by torch.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws or substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated.
 - a. Form joints to completely conceal sealant.
 - b. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
 - c. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F
 2. Prepare joints and apply sealants to comply with requirements in Section 07 92 00 "Joint Sealants."

3.4 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters:
 - 1. Join sections with riveted and soldered joints or joints sealed with sealant.
 - 2. Provide for thermal expansion.
 - 3. Attach gutters at eave or fascia to firmly anchor them in position.
 - 4. Provide end closures and seal watertight with sealant.
 - 5. Slope to downspouts.
 - 6. Fasten gutter spacers to front and back of gutter.
 - 7. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 12 inches apart.
 - 8. Anchor gutter with gutter brackets spaced not more than 12 inches apart to roof deck unless otherwise indicated, and loosely lock to front gutter bead.
 - 9. Anchor gutter with spikes and ferrules spaced not more than 24 inches apart.
 - 10. Install gutter with expansion joints at locations indicated on Drawings, but not exceeding, 50 feet apart. Install expansion-joint caps.
 - 11. Install continuous gutter screens on gutters with noncorrosive fasteners, removable for cleaning gutters.
- C. Downspouts:
 - 1. Join sections with 1-1/2-inch telescoping joints.
 - 2. Provide hangers with fasteners designed to hold downspouts securely to walls.
 - 3. Locate hangers at top and bottom and at approximately 60 inches o.c.
 - 4. Connect downspouts to underground drainage system.
- D. Splash Pans:
 - 1. Install where downspouts discharge on low-slope roofs or ground.
 - 2. Set in asphalt roofing cement or elastomeric sealant compatible with the substrate.
- E. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch below scupper or gutter discharge.

3.5 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing:

1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.

C. Copings:

1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.

D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless steel draw band and tighten.

E. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.

1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
2. Extend counterflashing 4 inches over base flashing.
3. Lap counterflashing joints minimum of 4 inches
4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.

F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.6 INSTALLATION OF WALL FLASHINGS

A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings.

3.7 INSTALLATION OF MISCELLANEOUS FLASHING

A. Equipment Support Flashing:

1. Coordinate installation of equipment support flashing with installation of roofing and equipment.
2. Weld or seal flashing with elastomeric sealant to equipment support member.

3.8 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.9 CLEANING

- A. Clean off excess sealants.

3.10 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 07 62 00

SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Roof curbs.
 - 2. Gravity ventilators.
 - 3. Pipe and duct supports.
 - 4. Pipe portals.
 - 5. Preformed flashing sleeves.
- B. Related Requirements:
 - 1. Section 076100 "Sheet Metal Roofing" for shop- and field-formed roof curbs and snow guards for sheet metal roofing.
 - 2. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.
 - 3. Section 077253 "Snow Guards" for snow guards.
 - 4. Section 233423 "HVAC Power Ventilators" for power roof-mounted ventilators.

1.2 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof accessories.

1. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.

1.4 INFORMATIONAL SUBMITTALS

- A. Sample Warranties: For manufacturer's special warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

1.6 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories to withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Wind-Restraint Performance: As indicated on Drawings

2.2 ROOF CURBS

- A. Roof Curbs: Internally reinforced roof-curb units capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on

Drawings, bearing continuously on roof structure, and capable of meeting performance requirements; with welded or mechanically fastened and sealed corner joints, and integrally formed deck-mounting flange at perimeter bottom.

- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Supported Load Capacity: Coordinate load capacity with information on Shop Drawings of equipment to be supported
- D. Steel: Zinc-coated (galvanized) steel sheet, 0.064 inch thick.
 - 1. Finish: Two-coat fluoropolymer
 - 2. Color: As selected by Architect from manufacturer's full range
- E. Construction:
 - 1. Curb Profile: Profile as indicated on Drawings compatible with roofing system.
 - 2. On ribbed or fluted metal roofs, form deck-mounting flange at perimeter bottom to conform to roof profile.
 - 3. Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.
 - 4. Top Surface: Level top of curb, with roof slope accommodated by sloping deck-mounting flange
 - 5. Sloping Roofs: Where roof slope exceeds 1:48, fabricate curb with perimeter curb height tapered to accommodate roof slope so that top surface of perimeter curb is level. Equip unit with water diverter or cricket on side that obstructs water flow.
 - 6. Insulation: Factory insulated with 2-inch thick rigid board insulation.
 - 7. Nailer: Factory-installed wood nailer along top flange of curb continuous around curb perimeter.
 - 8. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb, of size and spacing required to meet wind uplift requirements.
 - 9. Platform Cap: Where portion of roof curb is not covered by equipment, provide weathertight platform cap formed from 3/4-inch- thick plywood covered with metal sheet of same type, thickness, and finish as required for curb.
 - 10. Metal Counterflashing: Manufacturer's standard, removable, fabricated of same metal and finish as curb.

2.3 PIPE AND DUCT SUPPORTS

- A. Fixed-Height Cradle-Type Pipe Supports: Polycarbonate pipe stand accommodating up to 1-1/2-inch- diameter pipe or conduit; with provision for pipe retainer and with manufacturer's support pad or deck plate as recommended for penetration-free installation over roof membrane type; as required for quantity of pipe runs and sizes.
- B. Adjustable-Height Structure-Mounted Pipe Supports: Extruded-aluminum tube, filled with urethane insulation; 2 inches in diameter; accommodating up to 7-inch- diameter

pipe or conduit, with provision for pipe retainer; with aluminum baseplate, EPDM base seal, manufacturer's recommended hardware for mounting to structure or structural roof deck as indicated, stainless steel roller and retainer, and extruded-aluminum carrier assemblies; as required for quantity of pipe runs and sizes.

2.4 PIPE PORTALS

- A. Curb-Mounted Pipe Portal: Insulated roof-curb units with welded or mechanically fastened and sealed corner joints, stepped integral metal cant raised the thickness of roof insulation, and integrally formed deck-mounting flange at perimeter bottom; with weathertight curb cover with single or multiple collared openings and pressure-sealed conically shaped EPDM protective rubber caps sized for piping indicated, with stainless steel snaplock swivel clamps.
- B. Flashing Pipe Portal: Formed aluminum membrane-mounting flashing flange and sleeve with collared opening and pressure-sealed conically shaped EPDM protective rubber cap sized for piping indicated, with stainless steel snaplock swivel clamps.

2.5 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 18 inches high, with removable metal hood and slotted metal collar.
 - 1. Metal: Aluminum sheet, 0.063 inch thick.
 - 2. Diameter: As indicated on Drawings
 - 3. Finish: Manufacturer's standard
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.
 - 1. Height: 18 inches
 - 2. Diameter: As indicated on Drawings
 - 3. Finish: Manufacturer's standard

2.6 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 coating designation
 - 1. Exposed Coil-Coated Finish: Prepainted by the coil-coating process to comply with ASTM A755/A755M. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer Finish: AAMA 621. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight.
- B. Aluminum Sheet: ASTM B209 manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
 - 1. Mill Finish: As manufactured.

2. Exposed Coil-Coated Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer Finish: AAMA 2605. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight.
- C. Stainless Steel Sheet and Shapes: ASTM A240/A240M or ASTM A666, Type 304.
- D. Steel Shapes: ASTM A36/A36M, hot-dip galvanized according to ASTM A123/A123M unless otherwise indicated.
- E. Steel Tube: ASTM A500/A500M, round tube.
- F. Galvanized-Steel Tube: ASTM A500/A500M, round tube, hot-dip galvanized according to ASTM A123/A123M.
- G. Steel Pipe: ASTM A53/A53M, galvanized.

2.7 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Cellulosic-Fiber Board Insulation: ASTM C208, Type II, Grade 1, thickness as indicated.
- C. Glass-Fiber Board Insulation: ASTM C726, nominal density of 3 lb/cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F, thickness as indicated.
- D. Polyisocyanurate Board Insulation: ASTM C1289, thickness and thermal resistivity as indicated.
- E. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, and complying with AWPA C2; not less than 1-1/2 inches thick.
- F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- G. Underlayment:
 1. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
- H. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of

material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:

1. Fasteners for Zinc-Coated or Aluminum-Zinc Alloy-Coated Steel: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A153/A153M or ASTM F2329.
 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- I. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
 - J. Elastomeric Sealant: ASTM C920, elastomeric polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
 - K. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
 - L. Asphalt Roofing Cement: ASTM D4586/D4586M, asbestos free, of consistency required for application.

2.8 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install roof accessories according to manufacturer's written instructions.
 - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of underlayment and cover with manufacturer's recommended slip sheet.
 - 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Roof Curb Installation: Install each roof curb so top surface is level.
- D. Preformed Flashing-Sleeve and Flashing-Pipe Portal Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions; flash sleeve flange to surrounding roof membrane according to roof membrane manufacturer's instructions.
- E. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions.
- B. Clean off excess sealants.
- C. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 07 72 00

SECTION 07 72 53

SNOW GUARDS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Rail-type, seam-mounted snow guards.

1.2 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 1. Rail-type, seam-mounted snow guards.
- B. Shop Drawings: Include roof plans showing layouts and attachment details of snow guards.
 - 1. Include details of rail-type snow guards.
- C. Samples:
 - 1. Rail-Type Snow Guards: Bracket, 12-inch- long rail, and installation hardware.
 - a. For units with factory-applied finishes, submit manufacturer's standard color selections

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of snow guard, for tests performed by a qualified testing agency, indicating load at failure of attachment to roof system identical to roof system used on this Project.

1.4 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit adhesive-mounted snow guards to be installed, and adhesive cured, according to adhesive manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Performance Requirements: Provide snow guards that withstand exposure to weather and resist thermally induced movement without failure, rattling, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
 - 1. Temperature Change: 120 deg F ambient; 180 deg F material surfaces
- B. Structural Performance: Snow guards to withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
 - 1. Snow Loads: As indicated on Drawings

2.2 RAIL-TYPE SNOW GUARDS

- A. Rail-Type, Seam-Mounted Snow Guards:
 - 1. Basis of Design: S-5!
 - 2. Description: Snow guard rails fabricated from metal pipes, bars, or extrusions, anchored to brackets and equipped with one rail
 - 3. Brackets and Baseplate: ASTM A240/A240M, Type 304 stainless steel; 180-grit polished finish, uniform, directionally textured finish
 - 4. Bars: Galvanized steel, G60 (Z180) coating
 - a. Profile: Square
 - 5. Seam Clamps: ASTM B221 aluminum extrusion or ASTM B85/B85M aluminum casting with stainless steel set screws incorporating round nonpenetrating point; designed for use with applicable roofing system to which clamp is attached.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, snow guard attachment, and other conditions affecting performance of the Work.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install snow guards according to manufacturer's written instructions.
 - 1. Space rows as indicated on Drawings
 - 2. Space rows as recommended by manufacturer.
- B. Attachment for Exposed Fastened Metal Roofing:
 - 1. Do not use fasteners that will void metal roofing finish warranty.
 - 2. Rail-Type, Snow Guards:
 - a. Install brackets in straight rows.
 - b. Mechanically fasten to metal roofing, using sealant and mechanical fasteners identical to those used to secure metal roofing to substrate.
 - c. Install cross members to brackets.

END OF SECTION 07 72 53

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Silicone joint sealants.
 - 2. Nonstaining silicone joint sealants.
 - 3. Urethane joint sealants.
 - 4. Mildew-resistant joint sealants.
 - 5. Butyl joint sealants.
 - 6. Latex joint sealants.

1.2 ACTION SUBMITTALS

- A. Product Data:
 - 1. Silicone joint sealants.
 - 2. Nonstaining silicone joint sealants.
 - 3. Urethane joint sealants.
 - 4. Mildew-resistant joint sealants.
 - 5. Butyl joint sealants.
 - 6. Latex joint sealants.
- B. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

1.4 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.5 WARRANTY

- A. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion.
- B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 2. Disintegration of joint substrates from causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, 100/50, T, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Uses T and NT.

- B. Silicone, M, P, 100/50, T, NT: Multicomponent, pourable, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type M, Grade P, Class 100/50, Uses T and NT.

2.3 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested in accordance with ASTM C1248.
- B. Silicone, Nonstaining, S, NS, 100/50, T, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Uses T and NT.

2.4 URETHANE JOINT SEALANTS

- A. Urethane, S, NS, 100/50, T, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Uses T and NT.

2.5 MILDEW-RESISTANT JOINT SEALANTS

- A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.
- B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.

2.6 BUTYL JOINT SEALANTS

- A. Butyl-Rubber-Based Joint Sealants: ASTM C1311.

2.7 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.

2.8 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

- B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.9 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate

capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

- a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
 - d. Exterior insulation and finish systems.
3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants in accordance with requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 unless otherwise indicated.
 4. Provide flush joint profile at locations indicated on Drawings in accordance with Figure 8B in ASTM C1193.
 5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings in accordance with Figure 8C in ASTM C1193.
- a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 00

SECTION 09 29 00

GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.
 - 2. Texture finishes.

1.2 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Gypsum wallboard.
 - 2. Gypsum board, Type X.
 - 3. Gypsum ceiling board.
 - 4. Textured finishes.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.4 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.

2.3 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.4 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C1396/C1396M.
 - 1. Thickness: 1/2 inch
 - 2. Long Edges: Tapered
- B. Gypsum Board, Type X: ASTM C1396/C1396M.
 - 1. Thickness: 5/8 inch
 - 2. Long Edges: Tapered
- C. Gypsum Ceiling Board: ASTM C1396/C1396M.
 - 1. Thickness: 1/2 inch
 - 2. Long Edges: Tapered.

2.5 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Glass-Mat Gypsum Sheathing Board: ASTM C1177/C1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.
 - 1. Core: 5/8 inch Type X

2.6 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet]
 - 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (control) joint.

2.7 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
 - 2. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
 - 1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use setting-type, sandable topping compound.
 - 4. Finish Coat: For third coat, use setting-type, sandable topping compound.
 - 5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound
- D. Joint Compound for Exterior Applications:
 - 1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
 - 2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

2.8 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
 - 1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation."
- E. Vapor Retarder: As specified in Section 07 26 00 "Vapor Retarders."

2.9 TEXTURE FINISHES

- A. Primer: As recommended by textured finish manufacturer.
- B. Non-Aggregate Finish: Premixed, vinyl texture finish for spray application.
 - 1. Texture: Orange peel

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 INSTALLATION OF INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Wallboard Type: As indicated on Drawings
 - 2. Type X: As indicated on Drawings or where required for fire-resistance-rated assembly
 - 3. Ceiling Type: Ceiling surfaces.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.

2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLATION OF EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

- A. Apply panels perpendicular to supports, with end joints staggered and located over supports.
 1. Install with 1/4-inch open space where panels abut other construction or structural penetrations.
 2. Fasten with corrosion-resistant screws.

3.5 INSTALLATION OF TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints in accordance with ASTM C840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 1. Cornerbead: Use at outside corners unless otherwise indicated.
 2. LC-Bead: Use at exposed panel edges

3.6 FINISHING OF GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and in accordance with ASTM C840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- E. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.

3.7 APPLICATION OF TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.
- C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written instructions.

3.8 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 29 00

SECTION 09 91 13

EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Primers.
 - 2. Finish coatings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include preparation requirements and application instructions.
 - 2. Indicate VOC content.
- B. Samples: For each type of topcoat product.
- C. Samples for Initial Selection: For each type of topcoat product.
- D. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- E. Product Schedule: Use same designations indicated on Drawings and in the Exterior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint Products: 5 percent, but not less than 1 gal. of each material and color applied.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each paint product from single source from single manufacturer.

2.2 PAINT PRODUCTS, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturer for use in paint system and on substrate indicated.
- B. Colors: As selected by Architect from manufacturer's full range.
 - 1. 100 percent of surface area will be painted with deep tones.

2.3 PRIMERS

- A. Exterior Wood Preservative: Solvent-based, zinc or copper naphthenate, penetrating antifungal treatment for exterior wood.
- B. Exterior, Latex Wood Primer: White, waterborne-emulsion primer formulated for resistance to extractive bleeding, mold, and microbes; for hiding stains; and for use on exterior wood subject to extractive bleeding.
- C. Exterior, Latex Block Filler: Water-based, pigmented, high-solids, emulsion coating formulated to bridge and fill porous surfaces of exterior concrete masonry units in preparation for specified subsequent coatings.
 - 1. Minimum Solids Content: Manufacturer's standard percentage solids by volume.
- D. Water-Based, Rust-Inhibitive Primer: Corrosion-resistant, water-based-emulsion primer formulated for resistance to flash rusting when applied to cleaned, exterior ferrous metals subject to mildly corrosive environments.
- E. Epoxy Metal Primer: Corrosion-resistant, solvent-based, two-component epoxy primer formulated for use on prepared, exterior ferrous- and galvanized-metal surfaces.

2.4 FINISH COATINGS

- A. Exterior Latex Paint, Low Sheen: Water-based, pigmented coating; formulated for alkali, mold, microbial, and water resistance and for use on exterior surfaces, such as portland cement plaster, concrete, and primed wood.
 - 1. Gloss and Sheen Level: Manufacturer's standard low-sheen finish.
- B. Exterior, Water-Based, Light Industrial Coating, Low Sheen: Corrosion-resistant, water-based, pigmented, emulsion coating formulated for resistance to blocking (sticking of two painted surfaces), water, alkalis, moderate abrasion, and mild chemical exposure and for use on exterior, primed, wood and metal surfaces.
 - 1. Gloss and Sheen Level: Manufacturer's standard low-sheen finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Fiber-Cement Board: 12 percent.

3. Masonry (Clay and Concrete Masonry Units): 12 percent.
 4. Wood: 15 percent.
 5. Portland Cement Plaster: 12 percent.
 6. Gypsum Board: 12 percent.
- C. Portland Cement Plaster Substrates: Verify that plaster is fully cured.
- D. Exterior Gypsum Board Substrates: Verify that finishing compound is dry and sanded smooth.
- E. Verify suitability of substrates, including surface conditions and compatibility, with finishes and primers.
- F. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems specified in this Section.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
1. SSPC-SP 2.

- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- I. Aluminum Substrates: Remove loose surface oxidation.
- J. Wood Substrates:
 - 1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
 - 2. Sand surfaces that will be exposed to view, and remove sanding dust.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- K. Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

3.3 INSTALLATION

- A. Apply paints in accordance with manufacturer's written instructions.
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
 - 3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
 - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. Primers specified in the Exterior Painting Schedule may be omitted on items that are factory primed or factory finished if compatible with intermediate and topcoat coatings and acceptable to intermediate and topcoat paint manufacturers.
- B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- D. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed to view:
 - a. Equipment, including panelboards and switch gear.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Tanks that do not have factory-applied final finishes.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written instructions.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
 1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
 2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
 3. Allow empty paint cans to dry before disposal.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Galvanized-Metal Substrates:

1. Latex System

- a. Prime Coat: Water-based, galvanized-metal primer.
- b. Intermediate Coat: Matching topcoat.
- c. Topcoat: Exterior latex paint, low sheen

B. Glue-Laminated Wood Substrates:

1. Latex over Latex Primer System

- a. Prime Coat: Exterior, latex wood primer.
- b. Intermediate Coat: Matching topcoat.
- c. Topcoat: Exterior latex paint, low sheen

C. Exposed Wood-Framing Substrates:

1. Latex over Latex Primer System

- a. Prime Coat: Exterior, latex wood primer.
- b. Intermediate Coat: Matching topcoat.
- c. Topcoat: Exterior latex paint, low sheen

D. Dressed-Lumber Substrates: Trim, Architectural woodwork, Doors, Windows, Board siding, and Railings as noted on the drawings and Finish Schedule.

1. Latex over Latex Primer System

- a. Prime Coat: Exterior, latex wood primer.
- b. Intermediate Coat: Matching topcoat.
- c. Topcoat: Exterior latex paint, low sheen

END OF SECTION 09 91 13

SECTION 09 91 23

INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Primers.
 - 2. Water-based finish coatings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include preparation requirements and application instructions.
 - 2. Indicate VOC content.
- B. Samples: For each type of topcoat product.
- C. Samples for Initial Selection: For each type of topcoat product.
- D. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- E. Product Schedule: Use same designations indicated on Drawings and in the Interior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint Products: 5 percent, but not less than 1 gal. of each material and color applied.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures of less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each paint product from single source from single manufacturer.

2.2 PAINT PRODUCTS, GENERAL

- A. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- B. Colors: As selected by Architect from manufacturer's full range.

2.3 PRIMERS

- A. Interior, Institutional Low-Odor/VOC Primer Sealer: Water-based primer sealer with low-odor characteristics and a VOC of less than 10 grams per liter for use on new interior plaster, concrete, and gypsum wallboard surfaces that are subsequently to be painted with latex finish coats.
- B. Interior Latex Primer for Wood: Waterborne-emulsion primer formulated for resistance to extractive bleeding, mold, and microbials; for hiding stains; and for use on interior wood subject to extractive bleeding.

2.4 WATER-BASED FINISH COATS

- A. Interior, Latex, Institutional Low Odor/VOC, Flat: White or colored latex paint with low-odor characteristics and a VOC of less than 10 grams per liter, for use in areas, such as hospitals and other occupied buildings, where the odor and VOC levels of conventional latex products would preclude their use.
 - 1. Gloss and Sheen Level: Manufacturer's standard flat finish.
- B. Interior, Latex, Institutional Low Odor/VOC, Low Sheen: White or colored latex paint with low-odor characteristics and a VOC of less than 10 grams per liter, for use in areas, such as hospitals and other occupied buildings, where the odor and VOC levels of conventional latex products would preclude their use.
 - 1. Gloss and Sheen Level: Manufacturer's standard low-sheen finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Fiber-Cement Board: 12 percent.
 - 3. Masonry (Clay and CMUs): 12 percent.
 - 4. Wood: 15 percent.
 - 5. Gypsum Board: 12 percent.
 - 6. Plaster: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

- E. Proceed with coating application only after unsatisfactory conditions have been corrected.

- 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 INSTALLATION

- A. Apply paints according to manufacturer's written instructions.
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

- B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp line
 - 1. Paint the following work where exposed in occupied spaces:
 - a. Equipment, including panelboards.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - h. Other items as directed by Architect.
 - 2. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

- A. Dry-Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry-film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry-film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry-film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
 - 1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
 - 2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
 - 3. Allow empty paint cans to dry before disposal.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

- A. Exposed Wood Framing:
 - 1. Institutional Low-Odor/VOC Latex System
 - a. Prime Coat: Interior latex primer for wood.
 - b. Intermediate Coat: Matching topcoat.
 - c. Topcoat: Interior, latex, institutional low odor/VOC, low sheen
- B. Finish Carpentry: Wood trim, Doors, Windows, and Wood board paneling as indicated on the drawings and Finish Schedule.
 - 1. Institutional Low-Odor/VOC Latex System
 - a. Prime Coat: Interior latex primer for wood.
 - b. Intermediate Coat: Matching topcoat.
 - c. Topcoat: Interior, latex, institutional low odor/VOC, low sheen
- C. Gypsum Board and Plaster Substrates:
 - 1. Institutional Low-Odor/VOC Latex System
 - a. Prime Coat: Interior, institutional low-odor/VOC primer sealer.
 - b. Intermediate Coat: Matching topcoat.
 - c. Topcoat: Interior, latex, institutional low odor/VOC

END OF SECTION 09 91 23

SECTION 21, 22, 23

GENERAL PROVISIONS

GENERAL PROVISIONS (DIVISION 21, 22, 23)

1. SCOPE OF WORK

This project is generally described as replacing the existing roof and appurtenances penetrating the existing roof at the Alaska pioneer and veterans home located in Palmer, Alaska.

2. 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 not 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, fittings and accessories that may be required for a complete installation.

3. 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:

- A. 2015 Uniform Plumbing Code
- B. 2015 International Mechanical Code
- C. 2015 International Fuel Gas Code
- D. 2015 International Fire Code
- E. 2015 International Building Code
- F. 2015 International Energy Conservation Code
- G. Requirements of OSHA and EPA
- H. National Fire Protection Association codes, latest editions
- I. ASME codes for boiler and pressure vessels, latest editions
- J. SMACNA HVAC duct construction standards, latest editions
- K. All local and state amendments
- L. Requirements of all agencies having jurisdictional authority over installation

4. 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.

5. 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.

6. 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.

7. SUBMITTALS

Submit technical data and required information on equipment and materials as follows:

- A. 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.

- B. 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.
- C. Reports and certificates: indicate and interpret test results for compliance with performance requirements. Provide performance certificates.
- D. Equipment and materials seismic restraint: contractor to provide structural and seismic calculations plus fastening details for all applicable equipment and materials to include engineer's stamp and signature, for structural review on a deferred submittal basis.

8. PERMITS, INSPECTIONS AND FEES

Contractor shall arrange and pay for all permits, fees, 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.

9. 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.

10. OPERATION AND MAINTENANCE MANUAL

Include warranty certificates for all equipment where extended warranties are either offered or required; provide supplier contact information.

END OF SECTION 21, 22, 23

SECTION 22 00 00

COMMON WORK RESULTS FOR PLUMBING

1. Plumbing equipment shall be provided in conformance with mechanical drawing schedules. Any substitutions must be an approved equal.
2. Plumbing accessories including valves, fittings and appurtenances shall be selected for the specific service and system used.
3. Firestopping: penetrations through fire-rated assemblies shall be fire stopped with UL listed firestopping systems installed in accordance with UL listing for assembly penetration.

END OF SECTION 22 00 00

SECTION 22 13 00

SANITARY WASTE AND VENT PIPING

Piping materials within plenums shall be listed and labeled as having a flame spread index of not more than 25 and a smoke developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723.

SOIL / WASTE / VENT:

1. Cast iron with no-hub fittings.
2. Minimum slope requirements:
 - A. 1/4" per foot for 3" and smaller pipes.
 - B. 1/8" per foot for 4" and larger pipes.

Test the soil, waste, and vent systems per the UPC.

END OF SECTION 22 13 00

SECTION 23 00 00

COMMON WORK RESULTS FOR HVAC

1. HVAC equipment shall be provided in conformance with mechanical drawing schedules. Any substitutions must be an approved equal.
2. HVAC accessories including dampers, fittings and appurtenances shall be selected for the specific service and system used.
3. Firestopping: penetrations through fire-rated assemblies shall be fire stopped with UL listed firestopping systems installed in accordance with UL listing for assembly penetration.

END OF SECTION 23 00 00

SECTION 23 31 00

HVAC DUCTWORK

DUCTWORK:

1. 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.
2. Duct sealer shall be UL labeled dust sealer as manufactured by 3m company or equal.
3. Exposed duct fittings shall be sealed with hard cast duct sealant tape applied in a neat and uniform style. Hard cast tape shall be suitable for painting (painting by others).
4. Duct fittings shall be fabricated in accordance with SMACNA standards.
5. Duct runs shall coordinate with walls, suspended ceilings, light fixtures, roof trusses and similar finished work.
6. Duct opening shall be covered during construction to prevent entrance of dust and debris.

END OF SECTION 23 31 00

SECTION 26 05 00

COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General Requirements specifically applicable to Division 26, in addition to Division 01 provisions.
- B. The electrical system equipment and installation shall comply with all provisions and requirements of this specification, as well as any and all applicable national, state and local codes and standards.

1.2 WORK SEQUENCE

- A. Construct Work in sequence under provisions of Division 01.

1.3 COORDINATION

- A. Coordinate the Work specified in this Division under provisions of Division 01.
- B. Prepare drawings showing proposed rearrangement of Work to meet job conditions, including changes to Work specified under other Sections. Obtain permission of Architect prior to proceeding.
- C. Review all drawings and specifications in the Contract Documents associated with this Project for a complete understanding of the Project requirements. Contract Documents are issued in their entirety, not as discrete sets by trade or discipline, and it is necessary for all trades to coordinate work requirements noted throughout the drawings and specifications.

1.4 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code, latest adopted edition including all state and local amendments.
- B. NECA - Standard of Installation.
- C. NETA ATS – Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- D. Electrical Reference Symbols: The Electrical "Legend" on drawings is standardized version for this project. All symbols shown may not be used on drawings. Use legend as reference for symbols used on plans.
- E. Electrical Drawings: Drawings are diagrammatic; complimentary to the Architectural drawings; not intended to show all features of work. Install material not dimensioned on drawings in a manner to provide a symmetrical appearance. Do not scale drawings for

exact equipment locations. Review Architectural, Civil, Structural, and Mechanical Drawings and adjust work to conform to conditions shown thereon. Field verification of dimensions, locations and levels is directed.

1.5 REGULATORY REQUIREMENTS

- A. Conform to ANSI/NFPA 70.
- B. Conform to the latest adopted edition of the International Building Code and the International Fire Code including all state and local amendments thereto.
- C. Obtain electrical permits, plan review, and inspections from authority having jurisdiction.

1.6 SUBMITTALS

- A. Submit inspection and permit certificates under provisions of Division 01.
- B. Submittal review is for general design and arrangement only and does not relieve the Contractor from any requirements of Contract Documents. Submittal not checked for quantity, dimension, fit or proper operation. Where deviations of substitute product or system performance have not been specifically noted in the submittal by the Contractor, provisions of a complete and satisfactory working installation is the sole responsibility of the Contractor.
- C. In addition to requirements referenced in Division 01, the following is required for work provided under this division of the specification.
 - 1. Provide material and equipment submittals containing complete listings of material and equipment shown on Electrical Drawings and specified herein. Separate from work furnished under other divisions.
 - 2. Submittals shall be provided in PDF format with each section indexed in the PDF document. Submittals for Division 26 shall be complete and submitted at one time. Unless given prior approval, partial submittals will be returned unreviewed.
 - 3. Clearly identify all material and equipment by item, name or designation used on drawings and in specifications.
 - 4. Submit only pages which are pertinent; mark catalog sheets to identify pertinent products, referenced to Specification Section and Article number. Show reference standards, performance characteristics, and capacities; wiring diagrams and controls; component parts; finishes; dimensions; and required clearances.
 - 5. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the work. Delete information not applicable.
 - 6. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.

7. Coordinate submittals with requirements of work and of Contract Documents.
8. Certify in writing that the submitted shop drawings and product data are in compliance with requirements of Contract Documents. Notify Architect/Engineer in writing at time of submittal, of any deviations from requirements of Contract Documents.
9. Do not fabricate products or begin work which requires submittals until return of submittal with Architect/Engineer acceptance.
10. Equipment scheduled by manufacturer's name and catalog designations, manufacturer's published data and/or specification for that item, in effect on bid date, are considered part of this specification. Approval of other manufacturer's item proposed is contingent upon compliance therewith.

1.7 SUBSTITUTIONS

- A. In accordance with the General Conditions and the General Requirements, Substitution and Product Options, all substitute items must fit in the available space and be of equal or better-quality including efficiency performance, size, and weight, and must be compatible with existing equipment.

1.8 DIMENSIONS

- A. Before ordering any material or doing any work, the Contractor shall verify all dimensions, including elevations, and shall be responsible for the correctness of the same. No extra charge or compensation will be allowed on account of differences between actual dimensions and measurements indicated on the drawings.
- B. Any differences which may be found shall be submitted to the Engineer for consideration before proceeding with the work.

1.9 MANUFACTURER'S DIRECTIONS

- A. All manufactured articles shall be applied, installed and handled as recommended by the manufacturer, unless specifically called out otherwise in the plans. Advise the owner of any such conflicts before installation.

1.10 COOPERATION AND CLEANING UP

- A. The Contractor for the work under each section of the specifications shall coordinate his work with the work described in all other sections of the specifications to the end that, as a whole, the job shall be a finished one of its kind, and shall carry on his work in such a manner that none of the work under any section of these specifications shall be handicapped, hindered or delayed at any time.
- B. At all times during the progress of the work, the Contractor shall keep the premises clean and free of unnecessary materials and debris. The Contractor shall, on direction at any time from the Owner, clear any designated areas or area of materials and debris. On completion of any portion of the work, the Contractor shall remove from the premises all

tools and machinery and all debris occasioned by the work, leaving the premises free of all obstructions and hindrances.

1.11 PROJECT RECORD DRAWINGS

- A. Maintain project record drawings in accordance with Division 01.
- B. In addition to the other requirements, mark up a clean set of drawings as the work progresses to show the dimensioned location and routing of all electrical work which will become permanently concealed. Show routing of work in permanently concealed blind spaces within the building. Show complete routing and sizing of any significant revisions to the systems shown.
- C. Record drawing field mark-ups shall be maintained on-site and shall be available for examination of the Owner's Representative at all times.

1.12 OPERATION AND MAINTENANCE MANUALS

- A. Provide operation and maintenance manuals for training of Owner's Representative in operation and maintenance of systems and related equipment. In addition to requirements referenced in Division 01, the following is required for work provided under this section of the specifications.
- B. Manuals shall be separate from work furnished under other divisions. Prepare a separate chapter for instruction of each class of equipment or system. Index and clearly identify each chapter and provide a table of contents.
- C. Unless otherwise noted in Division 01, provide one copy of all material for approval.
- D. The following is the suggested outline for operation and maintenance manuals and is presented to indicate the extent of items required in manuals.
 - 1. Provide the following items in sequence for each chapter shown in Table of Contents:
 - a. Describe the procedures necessary for personnel to operate the system including start-up, operation, emergency operation and shutdown.
 - 1) Give complete instructions for energizing equipment and making initial settings and adjustments whenever applicable.
 - 2) Give step-by-step instructions for shutdown procedure if a particular sequence is required.
 - 3) Include test results of all tests required by this and other sections of the specifications.
 - b. Maintenance Instructions:

- 1) Provide instructions for minor repair or adjustments required for preventive maintenance routines, limited to repairs and adjustments which may be performed without special tools or test equipment and which requires no special training or skills.
- 2) Provide manufacturers' descriptive literature including approved shop drawings covering devices used in system, together with illustrations, exploded views, etc. Also include special devices provided by the Contractor.
- 3) Provide any information of a maintenance nature covering warranty items, etc., which have not been discussed elsewhere.
- 4) Include list of all equipment furnished for project, where purchased, technical representative if applicable and a local parts source with a tabulation of descriptive data of all electrical-electronic spare parts and all mechanical spare parts proposed for each type of equipment or system. Properly identify each part by part number and manufacturer.

1.13 DEMONSTRATION OF ELECTRICAL SYSTEMS

A. During substantial completion inspection:

1. Conduct operating test for approval under provisions of Division 01.
2. Demonstrate installation to operate satisfactorily in accordance with requirements of Contract Documents.
3. Should any portion of installation fail to meet requirements of Contract Documents, repair or replace items failing to meet requirements until items can be demonstrated to comply.
4. Have instruments available for measuring voltage and current values, and for demonstration of continuity, grounds, or open circuit conditions.
5. Provide personnel to assist in taking measurements and making tests.

1.14 WARRANTY

- A. In addition to the requirements of Division 01, or as specified in other sections. Warrant all materials, installation and workmanship for one (1) year from date of acceptance.
- B. Copies of manufacturer product warranties for all equipment shall be included in the operation and installation manuals.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. All Materials and Equipment shall be new.

- B. All Materials and Equipment shall be listed by Underwriter's Laboratories or equivalent third party listing agency for the use intended.
- C. All Materials and Equipment shall comply with BABAA Build America Buy American Act.
- D. Materials and Equipment shall be acceptable to the authority having jurisdiction as suitable for the use intended when installed per listing and labeling instructions.
- E. No materials or equipment containing asbestos in any form shall be used. Where materials or equipment provided by this Contractor are found to contain asbestos such items shall be removed and replaced with non-asbestos containing materials and equipment at no cost to the Owner.
- F. In describing the various items of equipment, in general, each item will be described singularly, even though there may be numerous similar items.

PART 3 - EXECUTION

3.1 WORKMANSHIP

- A. Install Work using procedures defined in NECA Standard of Installation and/or the manufacturer's installation instructions.

3.2 TESTS

- A. Notify the Owner's representative at least 72 hours prior to conducting any tests.
- B. Perform additional tests required under other sections of these specifications.
- C. Perform all tests in the presence of the Owner's representative.
- D. The Contractor shall provide written notification to the Owner's representative and the State Electrical Inspector thirty days in advance of requests for rough-in and substantial completion inspections.

3.3 PENETRATIONS OF FIRE BARRIERS

- A. Related information to this section appears in Division 07, Fire Stopping.
- B. All holes or voids created to extend electrical systems through fire rated floors, walls or ceiling shall be sealed with an asbestos-free intumescent fire stopping material capable of expanding 8 to 10 times when exposed to temperatures 250°F or higher.
- C. Materials shall be suitable for the fire stopping of penetrations made by steel, glass, plastic and shall be capable of maintaining an effective barrier against flame, smoke and gases in compliance with the requirements of ASTM E814 and UL 1479.
- D. The rating of the fire stops shall be the same as the time-rated floor, wall or ceiling assembly.

- E. Install fire stopping materials in accordance with the manufacturer's instructions.
- F. Unless protected from possible loading or traffic, install fire stopping materials in floors having void openings of four (4) inches or more to support the same floor load requirements as the surrounding floor.

END OF SECTION 26 05 00

SECTION 26 05 05

SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Electrical Demolition.

1.2 RELATED SECTIONS

- A. Division 01 - Alteration Project Procedures.
- B. Division 02 - Minor Demolition for Remodeling.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition Drawings are based on a non-destructive walkthrough and existing record documents. Report discrepancies to Owner before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.

3.2 PREPARATION

- A. Disconnect electrical systems in walls, roofs, and ceilings scheduled for removal.
- B. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- C. Existing Electrical Service: Maintain existing system in service.
- D. Existing Telephone System: Maintain existing system in service.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Demolish and extend existing electrical work under provisions of Division 01, Division 02, and this Division.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned wiring to source of supply.
- D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes.
- E. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- F. Repair adjacent construction and finishes damaged during demolition and extension work.
- G. Maintain access to existing electrical installations which remain active.
- H. Extend existing installations using materials and methods as specified.
- I. Where materials or equipment are to be reused and installed by the Contractor, it shall be the Contractor's responsibility to maintain condition of materials and equipment equal to the existing condition of the equipment before the work began. Repair or replace damaged materials or equipment at not additional cost to the Owner.

3.4 EXISTING PANELBOARDS

- A. Ring out circuits in existing panel affected by the Work. Where additional circuits are needed, reuse circuits available for reuse. Install new breakers as indicated.
- B. Tag unused circuits as spare.
- C. Where existing circuits are indicated to be reused, use sensing measuring devices to verify circuits feeding Project area or are not in use.
- D. Remove existing wire no longer in use from panel to equipment.
- E. Provide new updated directories where circuits have been modified or rewired.

3.5 INSTALLATION

- A. Install relocated materials and equipment under the provisions of Division 01.

3.6 DISPOSAL

- A. Dispose of all hazardous waste in accordance with all local, State and Federal requirements.

END OF SECTION 26 25 05

SECTION 26 05 19

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Building Wire.
- B. Cable.
- C. Wiring Connections and Terminations.

1.2 RELATED SECTIONS

- A. Section 26 05 53 – Identification for Electrical Systems.

1.3 REFERENCES

- A. Federal Specification FS-A-A59544 – Cable and Wire, Electrical (Power, Fixed Installation).
- B. Federal Specification FS-J-C-30B – Cable Assembly, Power, Electrical.
- C. ANSI/NEMA WC 70-2009 – Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.
- D. NETA ATS – Acceptance testing specifications for Electrical Power Distribution and Systems.
- E. NFPA 70 – National Electrical Code.
- F. NFPA 262 – Standard Method of test for flame travel and smoke of wires and cables for use in air-handling spaces.
- G. UL 83 – Thermoplastic Insulated Wire and Cable.
- H. UL 1479 – Standard for Fire Tests of Through Wall Penetration Fire Stops.
- I. UL 1581 – Reference Standard for Electrical Wires, Cables and Flexible Cords.

1.4 SUBMITTALS

- A. Submit data under provisions of Division 01 and Section 26 05 00.
- B. Product Data: Submit product data for all components provided which fall under this section showing configurations, finishes, and dimensions. Each catalog sheet should

be clearly marked to indicate exact part number provided, including all options and accessories.

1.5 QUALITY ASSURANCE

- A. Provide wiring materials located in plenums with peak optical density not greater than 0.5, average optical density not greater than 0.15, and flame spread not greater than 5 feet (1.5m) when tested in accordance with NFPA 262.

PART 2 - PRODUCTS

2.1 BUILDING WIRE

- A. Thermoplastic-insulated Building Wire: NEMA WC 70.
- B. Branch Circuits 6 AWG and Smaller: Copper conductor, 600 volt insulation, THHN/THWN or XHHW-2. 6 and 8 AWG, stranded conductor; smaller than 8 AWG, solid or stranded conductor.
- C. Branch Circuit Wire Color Code:
 - 1. Color code wires by line or phase as follows:
 - a. Black, red, blue and white for 120/208V systems.
 - 2. For conductors 6 AWG and smaller, insulation shall be colored. For conductors 4 AWG and larger, identify with colored phase tape at all terminals, splices, and boxes.
 - 3. Grounding conductors 6 AWG and smaller shall have green colored insulation. For 4 AWG and larger, use green tape at both ends and at all other visible points in between, including pull and junction boxes.
- D. Control Circuits: Copper, stranded conductor 600 volt insulation, THHN/THNN or XHHW-2.

2.2 WIRING CONNECTIONS AND TERMINATIONS

- A. For conductors 8 AWG and smaller:
 - 1. Dry interior areas: Spring wire connectors, pre-insulated “twist-on” rated 105 degrees C per UL 468C. Where stranded conductors are terminated on screw type terminals, install crimp insulated fork or ring terminals. Thomas & Betts Sta-Kon or equal.
 - 2. Wet or exterior: Spring wire connectors, pre-insulated “twist-on”, resin filled rated for direct burial per UL 486D.
- B. For conductors 6 AWG and larger:

1. Bus lugs and bolted connections: 600 V, 90 degrees C., two hole long barrel irreversible compression copper tin plated. Thomas & Betts or approved equal.
2. Two way connector for splices or taps: 600 V, 90 degrees C., compression long barrel, copper tin plated. Thomas & Betts or approved equal. Insulate with Scotch 23 rubber insulating base covering and Scotch 33+ outer wrap.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

- A. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 18 AWG for control wiring.
- B. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 75 feet.
- C. Splice only in junction or outlet boxes.
- D. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- E. Wiring shall be rated for 90° C minimum.
- F. Do not share neutral conductors. Provide a dedicated neutral conductor for each branch circuit that requires a neutral.

3.2 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Verify that raceway is complete and properly supported prior to pulling conductors. Use UL listed wire pulling lubricant for pulling 4 AWG and larger wires.
- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- C. Do not install XHHW-2 conductors when ambient temperatures are below –5 degrees C and THHN/THWN conductors when ambient temperatures are below 0 degrees C.
- D. Conductors shall be carefully inspected for insulation defects and protected from damage as they are installed in the raceway. Where the insulation is defective or damaged, the cable section shall be repaired or replaced at the discretion of the Owner and at no additional cost to the Owner.
- E. Route conductors from each system in independent raceway system and not intermix in the same raceway, enclosure, junction box, wireway, or gutter as another system unless otherwise shown on the plans.
- F. No more than six current carrying conductors shall be installed in any homerun unless otherwise indicated on the drawings or without prior approval from the Engineer.

- G. Completely and thoroughly swab raceway system before installing conductors.
- H. When two or more neutrals are installed in one conduit, identify each with the proper circuit number in accordance with Section 26 05 53.

3.3 WIRING CONNECTIONS AND TERMINATIONS

- A. Stranded wire shall not be wrapped around screw terminals.
- B. Splice only in accessible junction boxes.
- C. Thoroughly clean wires before installing lugs and connectors.
- D. Make splices, taps and terminations to carry full ampacity of conductors without perceptible temperature rise.
- E. Terminate spare conductors with twist on connectors or heat shrink insulation to proper voltage rating.
- F. Control systems wiring in conjunction with mechanical, electrical or miscellaneous equipment to be identified in accordance with wiring diagrams furnished with equipment.
- G. Do not exceed manufacturer's recommended pull tensions.

3.4 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 01 and Section 26 01 26.
- B. Inspect wire and cable for physical damage and proper connection.
- C. Torque conductor connections and terminations to manufacturer's recommended values.

3.5 WIRE AND CABLE INSTALLATION SCHEDULE

- A. All Locations: Building wire and/or remote control and signal cable in raceways.

END OF SECTION 26 05 19

SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Electrical Equipment and Raceway Grounding and Bonding.

1.2 RELATED SECTIONS

- A. The Work under this section is subject to requirements of the Contract Documents including the General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements, Section 26 05 00 – Common Work Results for Electrical.
- B. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables.

1.3 REFERENCE STANDARDS

- A. ANSI/NFPA 70 – National Electrical Code.
- B. ASTM B 3 – Standard Specification for Soft or Annealed Copper Wire.
- C. IEEE Std 142 – Recommended Practice for Grounding of Industrial and Commercial Power System.
- D. UL 467 – Standard for Grounding and Bonding Equipment.

1.4 SYSTEM DESCRIPTION

- A. Provide a complete grounding system for equipment as required by State and Local Codes, NEC, applicable portions of other NFPA codes, and as indicated herein.

1.5 SUBMITTALS

- A. Submittals are not requested for this section.

1.6 COORDINATION

- A. Division 01 – Administrative Requirements: Requirements for Coordination.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Grounding Conductors: Copper conductor bare or green insulated.

- B. Mechanical Grounding and Bonding Connectors: Non-reversible crimp type lugs only. Use factory made compression lug for all terminations.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide a separate, insulated equipment-grounding conductor in all branch circuits. Terminate each end on a grounding lug, bus, or bushing. Multiple conductors on single lug not permitted. Each grounding conductor shall terminate on its own terminal lug.
- B. Bond together exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, receptacle ground connectors.
- C. Grounding conductors for branch circuits shall be sized in accordance with NEC, except minimum size grounding conductor shall be No. 12 AWG.
- D. Grounding conductor is in addition to neutral conductor and in no case shall neutral conductor serve as grounding means.

3.2 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- B. Continuity Test: Continuity test shall be performed on all power receptacles to ensure that the ground terminals are properly grounded to the facility ground system.

END OF SECTION 26 05 26

SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section included hangers and supports for Power Systems.
- B. Conduit Supports.
- C. Formed Steel Channel.
- D. Spring Steel Clips.
- E. Sleeves.
- F. Mechanical Sleeve Seals.

1.2 RELATED SECTIONS

- A. The Work under this section is subject to requirements of the Contract Documents including the General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements, and Section 26 05 00 – Common Work Results for Electrical.

1.3 REFERENCES

- A. International Building Code (IBC), Chapter 16 – Structural Design.

1.4 SUBMITTALS

- A. Division 01: Requirements for submittals.
- B. Product Data: Submit product data for specialty supports.

1.5 QUALITY ASSURANCE

- A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.
- B. Perform Work in accordance with State of Alaska Standard Specifications.

PART 2 - PRODUCTS

2.1 CONDUIT SUPPORTS

- A. Manufacturers:

1. Allied Tube & Conduit Corp.
 2. Minerallac Fastening Systems.
 3. O-Z Gedney Co.
 4. Substitutions: per Division 01
- B. Hanger Rods: Threaded high tensile strength galvanized carbon steel with free running threads.
- C. Beam Clamps: Malleable Iron, with tapered hole in base and back to accept either bolt or hanger rod. Set screw: hardened steel.
- D. Conduit clamps for trapeze hangers: Galvanized steel, notched to fit trapeze with single bolt to tighten.
- E. Conduit clamps - general purpose: One-hole malleable iron for surface mounted conduits.
- F. Cable Ties: High strength nylon temperature rated to 185 degrees F. self-locking.

2.2 FORMED STEEL CHANNEL

- A. Manufacturers:
1. B-Line Systems.
 2. Allied Tube & Conduit Corp.
 3. Unistrut Corp.
 4. Substitutions: per Division 01.
- B. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

2.3 SLEEVES

- A. Sleeves Through Non-fire Rated Floors: 18 gage thick galvanized steel.
- B. Sleeves Through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe or 18 gage thick galvanized steel.
- C. Sleeves Through Fire Rated and Fire Resistive Floors and Walls, and Fire Proofing: Prefabricated fire rated sleeves including seals, UL listed.
- D. Fire-stopping Insulation: Glass fiber type, non-combustible.

2.4 MECHANICAL SLEEVE SEALS

- A. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Division 01: Verification of existing conditions before starting work.
- B. Verify openings are ready to receive sleeves.

3.2 PREPARATION

- A. Obtain permission from Owner's Representative before using powder-actuated anchors.
- B. Obtain permission from Owner's Representative before drilling or cutting structural members.

3.3 INSTALLATION - GENERAL

- A. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using expansion anchors, preset inserts, beam clamps, or spring steel clips.
- B. Use toggle bolts or hollow wall fasteners in hollow masonry partitions and walls; expansion anchors or preset inserts in solid masonry walls; self-drilling anchors or expansion anchor on concrete surfaces; sheet metal screws in sheet metal studs; and wood screws in wood construction.
- C. Do not support raceways, low voltage pathways, cables, or boxes from ceiling suspension wires or suspended ceiling systems. Provide support from building structure independently to allow ceiling removal and replacement without removal of electrical system. If dedicated support wires are used, wires and wire clips must be painted or color-coded.
- D. Do not fasten supports to piping, ductwork, mechanical equipment, conduit, or ceiling suspension system.
- E. Do not penetrate by drilling or screwing into metal roof decking. All penetrations into metal roof decking must be approved by the Project Manager in writing.
- F. Fabricate supports from structural steel or steel channel, rigidly welded or bolted to present a neat appearance. Use hexagon head bolts with spring lock washers under all nuts.
- G. Install surface-mounted cabinets with minimum of four anchors.

- H. Securely fasten fixtures and equipment to building structure in accordance with manufacturer's recommendations and to provide necessary earthquake anchorage.
- I. Earthquake Anchorages:
 - 1. Equipment weighing more than 50 pounds shall be adequately anchored to the building structure to resist lateral earthquake forces.
 - 2. Total lateral (earthquake) forces shall be 1.5 times the equipment weight acting laterally in any direction through the equipment center of gravity. Provide adequate backing at structural attachment points to accept the forces involved.
- J. Use drilled-in expansion anchors, or drilled and screw-in anchors such as Kwik-Con II or Tapcon.

3.4 INSTALLATION - SLEEVES

- A. Exterior watertight entries: Seal with adjustable interlocking rubber links.
- B. Conduit penetrations not required to be watertight: Sleeve and fill with silicon foam.
- C. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- D. Extend sleeves through floors 1 inch above finished floor level. Caulk sleeves.
- E. Where conduit or raceway penetrates floor, ceiling, or wall, close off space between conduit or raceway and adjacent work with fire stopping insulation and caulk airtight. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
- F. Install stainless steel escutcheons at finished surfaces.

END OF SECTION 26 05 29

SECTION 26 05 33

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Metal Conduit.
- B. Flexible Metal Conduit.
- C. Liquidtight Metal Conduit.
- D. Electrical Metallic Tubing.
- E. Surface Mounted Raceway.
- F. Fittings and Conduit Bodies.
- G. Wall and Ceiling Outlet Boxes.
- H. Pull and Junction Boxes.

1.2 RELATED SECTIONS

- A. The Work under this section is subject to requirements of the Contract Documents including the General Conditions, Supplementary Conditions, and sections under Division 01 - General Requirements and Section 26 05 00 – Common Work Results for Electrical.
- B. Division 07 - Thermal and Moisture Protection.
- C. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables.
- D. Section 26 05 26 – Grounding and Bonding for Electrical Systems.
- E. Section 26 05 29 – Hangers and Supports for Electrical Systems.
- F. Section 26 05 53 – Identification for Electrical Systems.

1.3 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
 - 2. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.

3. ANSI C80.5 - Rigid Aluminum Conduit.

B. American Society for Testing and Materials (ASTM):

1. ASTM A 123 – Specification for Zinc Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strip.

C. National Electrical Manufacturers Association (NEMA):

1. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

2. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.

3. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

D. Underwriters Laboratory (UL):

1. UL 6 - Rigid Steel Conduit, Zinc Coated.

2. UL6A - Rigid Aluminum Conduit.

3. UL 514B – Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

E. National Fire Protection Association (NFPA):

1. NFPA 70 - National Electrical Code.

F. International Building Code (IBC):

1. IBC chapters 16 and 17 seismic requirements.

1.4 RACEWAY AND BOX INSTALLATION SCHEDULE

A. Raceway Minimum Size:

1. Above Grade or Slab on Grade: Provide 3/4 inch minimum, unless otherwise noted.

B. Outdoor Above Grade, Damp or Wet Interior Locations:

1. Raceway: Provide rigid steel conduit or intermediate metal conduit.

2. Boxes and Enclosures: Provide weatherproof malleable iron for branch circuit junction and outlet boxes. Provide weatherproof NEMA 3R sheet metal enclosures for safety and disconnect switches and NEMA 4 sheet metal enclosures with gaskets for motor controllers and control panels.

3. Fittings: Provide galvanized malleable iron with gaskets. Provide Myers threaded hubs for all conduit entries into top and side of sheet metal enclosures.

C. Concealed Dry Locations:

1. Raceway: Provide rigid steel conduit, intermediate metal conduit, or electrical metallic tubing.
2. Boxes and Enclosures: Provide sheet-metal boxes. Provide vapor barrier boxes in exterior walls and the ceiling.
3. Fittings: Provide galvanized malleable iron and steel.

D. Exposed Dry Locations:

1. Raceway: Provide rigid steel conduit or intermediate metal conduit. EMT conduit may be used where exposed conduit is allowed where it is not subject to physical damage or where installed on the ceiling or a minimum of ten feet above the floor.
2. Boxes and Enclosures: Provide sheet-metal boxes with raised steel covers.
3. Fittings: Provide galvanized malleable iron and steel.
4. Surface Raceway and Boxes. Where specifically noted on the Drawings, provide surface raceway and boxes.

- E. Equipment Connections: Provide short extensions (three feet maximum) of flexible metal conduit for connections to motors, vibrating equipment or equipment that requires removal for maintenance or replacement. Use Liquidtight flexible conduit and fittings for motors and equipment in damp or wet locations or subject to spilling of liquids as at pumps, kitchen equipment, in mechanical rooms, boiler rooms, pump rooms, etc.

- F. Liquidtight flexible nonmetallic conduit and electrical nonmetallic tubing are not approved raceway systems for this project.

1.5 DESIGN REQUIREMENTS

A. Raceway Minimum Size:

1. Line Voltage Circuits: Raceway is sized on the drawings for copper conductors with 600-Volt type XHHW insulation, unless otherwise noted. Where a raceway size is not shown on the drawings, it shall be calculated to not exceed the percentage fill specified in the NEC Table 1, Chapter 9 using the conduit dimensions of the NEC Table 4, Chapter 9 and conductor properties of the NEC Table 5, Chapter 9.

- B. Box Minimum Size: Provide all boxes sized and configured per NEC Article 370 and as specified in this section.

- C. Seismic Support: Provide support in accordance with section 26 05 29 – Hangers and Supports for Electrical Systems.

1.6 SUBMITTALS

- A. Submittals are not requested for this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

PART 2 - PRODUCTS

2.1 RIGID METAL CONDUIT (RMC)

- A. Rigid Steel Conduit: ANSI C80.1, UL 6.
- B. Fittings and Conduit Bodies: NEMA FB 1, UL 514B; Galvanized malleable iron with threaded hubs for all conduit entries. Provide threaded connections and couplings only. Set Screw and running thread fittings are not permitted.
- C. Provide insulated throat bushings at all conduit terminations.

2.2 INTERMEDIATE METAL CONDUIT (IMC)

- A. Product Description: ANSI C80.6, UL 1242; Galvanized Steel Conduit.
- B. Fittings and Conduit Bodies: NEMA FB 1, UL 514B; use fittings and conduit bodies specified above for rigid steel conduit.
- C. Provide insulated throat bushings at all conduit terminations.

2.3 FLEXIBLE METAL CONDUIT (FMC)

- A. Product Description: UL 1; galvanized or zinc-coated flexible steel, full or reduced-wall thickness.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel or malleable iron with insulated throat bushings. Die cast zinc or threaded inside throat fittings are not acceptable.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- A. Product Description: UL 360, flexible metal conduit with interlocked steel construction and PVC jacket.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; liquid tight steel or malleable iron with insulated throat bushings. Die cast fittings are not acceptable.

2.5 ELECTRICAL METALLIC TUBING (EMT)

- A. Product Description: ANSI C80.3, UL 797; galvanized steel tubing.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel or malleable iron, compression type with insulated throat bushings. Zinc die cast, set screw, or indentor fittings are not acceptable.
- C. Provide factory elbows on sizes 1-½" and larger.

2.6 RIGID NONMETALLIC CONDUIT (RNC)

- A. Not approved for use on this project.

2.7 HIGH DENSITY POLYETHYLENE CONDUIT (HDPE)

- A. Not approved for use on this project.

2.8 ELECTRICAL NONMETALLIC TUBING (ENT)

- A. Not approved for use on this project.

2.9 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, UL514A galvanized steel, with plaster ring where applicable.
 - 1. Minimum Size: 4 inches square or octagonal, 1-1/2 inches deep, unless otherwise noted.
- B. Vapor Barrier Boxes: Airtight box with vapor barrier flange and integral wire entry seal. Lessco, Nutek, Enviroseal, or approved equal.
- C. Cast Boxes: NEMA FB 1, Type FD, galvanized malleable iron. Furnish gasketed cover by box manufacturer. Furnish threaded hubs. "Bell" boxes are not acceptable.

2.10 PULL AND JUNCTION BOXES

- A. Sheet Metal Pull and Junction Boxes: ANSI/NEMA OS 1, UL514A galvanized steel.
 - 1. Minimum Size: 4 inches square or octagonal, 1-1/2 inches deep, unless otherwise noted.
- B. Sheet Metal Boxes Larger Than 12 Inches in Any Dimension: Hinged enclosure Hoffman or approved equal.
- C. Cast Metal Boxes for Outdoor and Wet Location Installations: NEMA 250, Type 4; flat-flanged, surface mounted junction box, UL listed as raintight:
 - 1. Material: Galvanized cast iron or copper-free cast aluminum.

2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover and screws.

2.11 EXPANSION FITTINGS

- A. Galvanized malleable iron, galvanized with grounding bond jumper.

2.12 BUSHINGS

- A. Non-grounding: Threaded impact resistant plastic.
- B. Grounding: Insulated galvanized malleable iron/steel with hardened screw bond to raceway and conductor lug.

2.13 LOCKNUTS

- A. Threaded Electro Zinc Plated Steel designed to cut through protective coatings for ground continuity.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Ground and bond raceway and boxes in accordance with Section 26 05 26.
- B. Provide seismic support and fasten raceway and box supports to structure and finishes in accordance with Section 26 05 29.
- C. Identify raceway and boxes with origin and destination in accordance with Section 26 05 53.
- D. Unless otherwise noted, do not inter-mix conductors from separate panelboards or any other system in the same raceway system or junction boxes.

3.2 INSTALLATION - GENERAL RACEWAY

- A. Install raceway for all systems, unless otherwise noted.
- B. Install an equipment grounding conductor inside of all raceways containing line voltage conductors.
- C. Provide raceways concealed in construction unless specifically noted otherwise, or where installed at surface cabinets, motor and equipment. Do not route conduits on roofs, outside of exterior walls, or along the surface of interior finished walls unless specifically noted on the plans.
- D. Raceway routing and boxes are shown in approximate locations unless dimensioned. Where raceway routing is not denoted, field-coordinate to provide complete wiring system.

- E. Arrange raceway and boxes to maintain a minimum of 6 feet 6 inches of headroom and present a neat appearance. Install raceways level and square to a tolerance of 1/8" per 10 feet. Route exposed raceways and raceways above accessible ceilings parallel and perpendicular to walls, ceiling, and adjacent piping.
- F. Maintain 12-inch clearance between raceway and heat sources such as flues, steam pipes, heating pipes, heating appliances, and other surfaces with temperatures exceeding 104 degrees F.
- G. Do not install raceway imbedded in spray applied fireproofing. Seal raceway penetrations of fire-rated walls, ceilings, floors in accordance with the requirements of Section 26 05 00 and Division 07.
- H. Route raceway through roof openings for piping and ductwork where possible; otherwise, route through roof jack with pitch pocket. Coordinate all requirements with Division 07 of these specifications.
- I. Where raceway penetrates fire-rated walls and floors, seal opening around conduit with UL listed firestop sealant or intumescent firestop, preserving the fire time rating of the construction. Install in accordance with Section 07 84 00 Firestopping.
- J. Raceways and boxes penetrating vapor barriers or penetrating areas from cold to warm shall be taped and sealed with a non-hardening duct sealing compound to prevent the accumulation of moisture, and shall include a vapor barrier on the outside.
- K. Arrange raceway supports to prevent misalignment during wiring installation. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- L. Do not attach raceway to ceiling support wires or other piping systems and do not fasten raceway with wire or perforated pipe straps. Remove all wire used for temporary raceway support during construction, before conductors are pulled. Raceway shall be installed to permit ready removal of equipment, piping, ductwork, or ceiling tiles.
- M. Cut conduit square; de-burr cut ends. Bring conduit to the shoulder of fittings and couplings and fasten securely. Where locknuts are used, install with one inside box and one outside with dished part against box.
- N. Use threaded raintight conduit hubs for fastening conduit to cast boxes, and for fastening conduit to sheet metal boxes in damp or wet locations. Sealing locknuts are not acceptable.
- O. Install no more than the equivalent of three 90-degree bends between boxes.
- P. Install conduit bodies to make sharp changes in direction, such as around beams. "Goosenecks" in conduits are not acceptable.
- Q. Provide protective plastic bushings or insulated throat bushings at each raceway termination not installed to an enclosure. Bushings shall be threaded to the raceway end or connector.

- R. Avoid moisture traps; install junction box with drain fitting at low points in raceway system.
- S. Install fittings and flexible metal conduit to accommodate 3-axis movements where raceway crosses seismic joints.
- T. Install fittings designed and listed to accommodate expansion and contraction where raceway crosses control and expansion joints.
- U. Provide weatherhead on all raceway stub ups which are outdoors and do not terminate into equipment.
- V. Use cable sealing fittings forming a watertight non-slip connection to pass cords and cables into conduit. Size cable sealing fitting for the conductor outside diameter. Use Appleton CG series or equal cable sealing fittings.
- W. Use suitable caps to protect installed raceway against entrance of dirt and moisture.
- X. Paint all exposed conduit to match surface to which it is attached or crosses. Clean greasy or dirty conduit prior to painting in accordance with paint manufacturer's instructions. Where raceway penetrates non-rated ceilings, floors or walls, provide patching, paint and trim to retain architectural aesthetics similar to surroundings.

3.3 INSTALLATION – GENERAL BOXES

- A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance. All electrical box locations shown on Drawings are approximate unless dimensioned.
- B. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only. Where installation is inaccessible, install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaries.
- C. Coordinate layout and installation of boxes to provide adequate headroom and working clearance.
- D. Use multiple-gang boxes where more than one device are mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems and where normal and emergency power circuits occur in the same box.
- E. Adjust box location up to 6 feet prior to rough-in to accommodate intended purpose.
- F. Locate and install boxes to maintain headroom and to present a neat appearance.
- G. Provide knockout closures for unused openings.
- H. Install boxes in walls without damaging wall insulation or reducing its effectiveness.
- I. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness.

- J. Use stamped steel stud bridges for flush outlets in hollow stud wall, and adjustable steel channel fasteners for flush ceiling outlet boxes. Accurately position bridges to allow for surface finish thickness.
- K. Do not install flush mounted boxes back-to-back in walls; install with minimum 6 inches separation.
- L. Install with minimum 24 inches separation in fire rated walls. Limit penetrations in fire rated walls to 16 square inches each and a maximum total combined penetration area of 100 square inches in any given 100 square feet of wall. Where penetrations are in excess of these requirements provided UL listed fire stop wrap acceptable to Authority having Jurisdiction.
- M. Do not fasten boxes to ceiling support wires or other piping systems.
- N. Support boxes independently of conduit.
- O. Clean interior of boxes to remove dust, debris, and other material and clean exposed surfaces and restore finish.
- P. Provide blank covers or plates for all boxes that do not contain devices.

END OF SECTION 26 05 33

SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Tape Labels.
- B. Wire and Cable Markers.

1.2 RELATED SECTIONS

- A. The Work under this section is subject to requirements of the Contract Documents including the General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements, and Section 26 05 00 – Common Work Results for Electrical.
- B. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables.
- C. Section 26 05 33 – Raceway and Boxes for Electrical Systems.

1.3 SUBMITTALS

- A. Division 01 and Section 26 05 00 – Common Work Results for Electrical.
- B. Manufacturer's Installation Instructions: Indicate installation instructions, special procedures, and installation.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Install labels and nameplates only when ambient temperature and humidity conditions for adhesive are within range recommended by manufacturer.

PART 2 - PRODUCTS

2.1 TAPE LABELS

- A. Product Description: Adhesive tape labels, with 3/16 inch Bold Black letters on clear background made using Dymo Rhino series label printer or approved equal.
- B. Embossed adhesive tape will not be permitted for any application.

2.2 WIRE MARKERS

- A. Power and Lighting Description: Machine printed heat-shrink tubing, cloth or wrap-on type, for all neutrals and Phase conductors.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION

- A. Degrease and clean surfaces to receive tape labels.
- B. Install tape labels parallel to equipment lines.

3.2 WIRE IDENTIFICATION

- A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identification shall be as follows:
 - 1. Markers shall be located within one inch of each cable end, except at panelboards, where markers for branch circuit conductors shall be visible without removing panel deadfront.
 - 2. Each wire and cable shall carry the same labeled designation over its entire run, regardless of intermediate terminations.
 - 3. Color code phases, neutral, and ground per NEC requirements and Section 26 05 19.
 - 4. For power and lighting circuits, identify with branch circuit or feeder number.

3.3 JUNCTION BOX IDENTIFICATION

- A. Label each lighting and power junction box with the panelboard name and circuit number.
- B. Label all junction boxes for heat trace systems with the type of system cables contained in the box.
- C. For junction boxes above ceilings, mark the box cover with the circuit or system designation using permanent black marker. For junction boxes in finished areas, mark the inside of the cover with the circuit or system designation using permanent black marker.

END OF SECTION 26 05 53

SECTION 26 05 80

HEATING CABLES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Self-regulating roof and gutter de-icing cables (inside pipe).

1.2 RELATED SECTIONS

- A. The Work under this section is subject to requirements of the Contract Documents including the General Conditions, Supplementary Conditions, and sections under Division 01 - General Requirements and Section 26 05 00 – Common Work Results for Electrical.
- B. Section 07 71 23 - Manufactured Gutters and Downspouts.
- C. Divisions 21, 22 and 23.
- D. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables.
- E. Section 26 05 33 – Raceway and Boxes for Electrical Systems.
- F. Section 26 05 53 – Identification for Electrical Systems: Nameplates for Heat Trace Controls.

1.3 SUBMITTALS

- A. Product Data: Provide data for heating cable, terminations, and control components.
- B. Shop Drawings: Indicate heating cable layout, locations of terminations, and branch circuit connections.
- C. Manufacturer's Installation Instructions: Indicate installation instructions.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Drawings: Accurately record actual locations of heating cable, splices, termination kits, and branch circuit connections.
- B. Maintenance Data: Include repair methods, parts list of components, and instructions for testing the insulation resistance.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three years' experience.

1.6 COORDINATION

- A. Coordinate Work under provisions of Division 01.

1.7 WARRANTY

- A. The heat tracing cable shall be warranted against manufacturing defects for 10 years from date of shipment.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS – SELF REGULATING ROOF AND GUTTER DE-ICING CABLE (INSIDE PIPE)

- A. Raychem.
- B. Thermon.
- C. Chromalox.
- D. Nelson (Emerson).
- E. Substitutions: Under the provisions of Division 01.

2.2 SELF-REGULATING ROOF AND GUTTER DE-ICING CABLE (INSIDE PIPE)

- A. Heating cables installed inside roof drains, gutters, or downspout piping shall be the self-regulating type, listed for use as snow and ice de-icing cables. Typical examples of this type of application would be as follows:
 - 1. Freeze protection for downspout gutters, where the heating cables are physically installed inside the drain piping.
 - 2. Freeze protection for roof gutters, where the heating cables are physically located inside the gutter.
- B. The heating cable shall consist of two 16-gauge tin-coated-copper bus wires embedded in parallel in a self-regulating polymer core. Power output shall vary in response to temperature all along its length, allowing the heating cable to be crossed over itself without overheating, to be cut to length in the field. The heating cable shall be covered by a crosslinked dielectric jacket and protected by a tinned-copper braid and a modified polyolefin or fluoropolymer outer jacket. The heating cable shall have a jacket that is resistant to UV radiation and listed as such as the heating cables will be exposed to sun on the roof.
- C. Self-regulating heating cable be manufactured and tested for a design life of 20 years based on accelerated aging techniques specified in IEEE Standards 1, 98, & 99 and UL Standard 746B.

- D. The heating cable shall be of parallel circuit construction to allow the cable to be spliced if it is inadvertently cut during or after construction, and to be powered from both ends if it becomes advantageous to divide a circuit in two.
- E. The heating cable shall operate on 208 volts without the use of transformers.
- F. Heating cables installed inside roof drains shall have a minimum nominal power output of 5W/ft at the operating voltage.
- G. The heating cable power connection and end seal terminations shall be made in an above grade in an accessible NEMA 4X junction box, or as required by the Manufacturer.
- H. Accessories shall be listed for use with the heating cable, as recommended by the manufacturer:
 - 1. Power Connection Kit: Nema 4X rated or NEMA 1 rated if installed indoors.
 - 2. End Seal Kit: NEMA 4X rated, above-insulation end seal, cold-applied.
 - 3. Splice or Tee Connection Kit: Cold-applied, low-profile re-enterable splice for in-line connection.

2.3 CONTROLS

- A. Each heating cable circuit shall be protected by a 30-mA ground-fault protection device and be provided with a disconnecting means capable of being locked in the open position.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that piping is ready to receive work.
- B. Verify field measurements are as shown on Drawings.
- C. Verify that required utilities are available, in proper location, and ready for use.
- D. Beginning of installation means installer accepts conditions.

3.2 INSTALLATION

- A. Where heating cables are physically attached to piping, secure cables using adhesive backed glass fiber tape at 1-foot intervals.
- B. All power termination junctions shall be installed so they are accessible.
- C. The heating cable shall be installed according to the manufacturer's recommendations, the instructions supplied with the heating cable and components.

- D. Heating-cable repairs and splices shall be made using a splice kit provided by the manufacturer and specifically approved for the purposes. They shall pass the Megger test after installation.
- E. Install caution signs or markings on maximum 20ft centers along the pipeline or vessel that is heat traced and on or adjacent to equipment in the piping system that requires periodic servicing.
- F. Do not exceed the maximum length allowable by the heat trace manufacturer for the circuit breaker installed.
- G. Clearly label any device controlling heat trace circuits with permanent markings per Section 26 05 53 – Identification for Electrical Systems.

3.3 FIELD QUALITY CONTROL

- A. Upon completion of thermal insulation installation, the heater cable shall be meggered to verify no damage has occurred. Tests should use at least a 500 VDC megger. Do not use a megger with an excess of 2500 VDC. Minimum acceptable readings should be 20 megohms per circuit, regardless of length. Field megger tests shall be recorded for each heater cable, and certified reports shall be submitted to the Owner.
- B. Each circuit shall be energized and voltage and current measured and documented to verify the installation is properly functioning.

END OF SECTION 26 05 80

ALASKA VETERANS & PIONEERS HOME

24-14 25-NO817C ROOF REPLACEMENT

250 EAST FIREWEED
PALMER, ALASKA 99645

3/4/2025
CONSTRUCTION DOCUMENTS

DESIGN TEAM

ARCHITECT

COLLINS ARCHITECTURE + ENERGY CONSERVATION, LLC
16800 EAST PLUMLEY
PALMER, AK 99645
907.982.5322
JASON COLLINS

STRUCTURAL ENGINEER

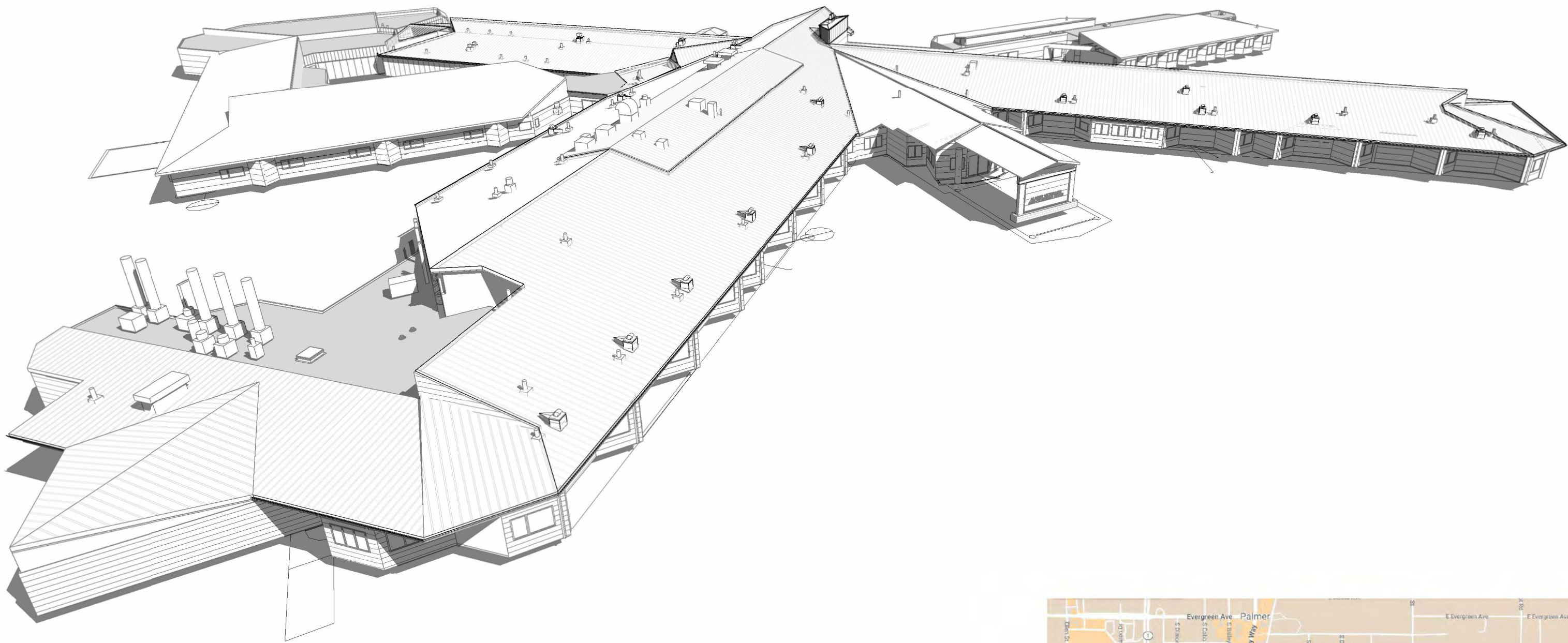
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DAVID BENTTI

MECHANICAL ENGINEER

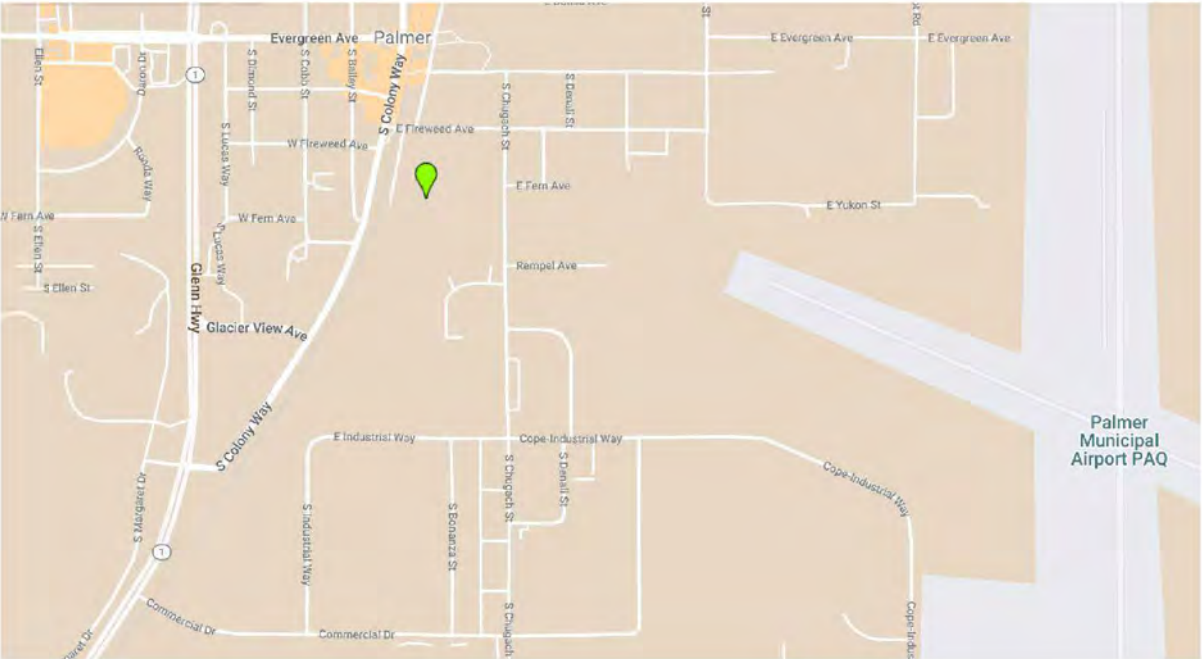
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ELECTRICAL ENGINEER

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BRIAN RIGGAN



1 3D PERSPECTIVE-ROOF



REFERENCE LOCATION MAP

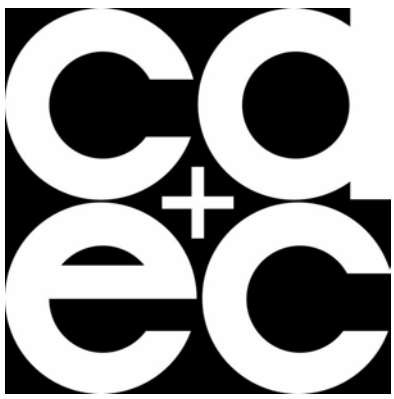


REFERENCE AERIAL PHOTOGRAPH

GENERAL PROJECT NOTES

THE FOLLOWING ARE GENERAL PROJECT NOTES FOR CONTRACT CONDITIONS:

- CONTRACT REQUIREMENTS - SEE BIDDING DOCUMENTS FOR GENERAL CONTRACT REQUIREMENTS AND DIVISION 1 SPECIFICATIONS.
- ACCESS - CONTRACTORS MAY UTILIZE LADDERS OR SCAFFOLDING AROUND THE BUILDING PERIMTER AS NECESSARY. AVPH STAFF HAVE REQUESTED THAT LADDERS NOT BE LEFT UNATTENDED FOR LONGER PERIODS OF TIME.
- ACCESS TIMES - WORK TIMES ARE LIMITED TO BETWEEN 7AM - 7PM.
- PARKING - CONTRACTORS MAY USE AVPH PARKING NEAR THE MAINTENANCE FACILITY IN THE SE CORNER OF THE LOT.
- WASHROOMS - CONTRACTORS MAY UTILIZE THE AVPH PUBLIC WASHROOMS ACCESS OFF THE MAIN ENTRY.
- DEMOLITION, CONSTRUCTION WASTE, AND RECYCLING CONTAINERS - COORDINATE ON-SITE DUMPSTER AND RECYCLING TIPOFF BINS LOCATION WITH AVPH STAFF BEFORE DELIVERY.
- POWER - CONTRACTOR MAY UTILIZE AVAILABLE EXTERIOR BUILDING POWER OUTLETS WHERE AVAILABLE. IF EXTENSION CORDS CROSS ANY PEDESTRIAN AREAS, PROVIDE CORD COVERS TO REDUCE ANY TRIP HAZARDS.
- WATER - CONTRACTOR MAY UTILIZE EXTERIOR HOSE BIBS WHEN NECESSARY. IF EXTENSION HOSES CROSS ANY PEDESTRIAN AREAS, PROVIDE COVERS TO REDUCE ANY TRIP HAZARDS.



COLLINS ARCHITECTURE +
ENERGY CONSERVATION, LLC

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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT

250 EAST FIREWEED
PALMER, ALASKA 99645

CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

COVER SHEET

G-001

FULL SIZE DRAWING 22" x 34"

DRAWING ABBREVIATIONS

AC	AIR CONDITION	NA	NOT APPLICABLE
A/E	ARCHITECT/ENGINEER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
AB	AIR BARRIER	NIC	NOT IN CONTRACT
ACT	ACOUSTIC CEILING TILE	NRC	NOISE REDUCTION COEFFICIENT
ADA	AMERICANS WITH DISABILITIES ACT	NTS	NOT TO SCALE
ADMIN	ADMINISTRATION		
AFF	ABOVE FINISHED FLOOR	OC	ON CENTER
AGG	AGGREGATE	OD	OUTSIDE DIAMETER
AHU	AIR HANDLING UNIT	OFD	OVERFLOW DRAIN
ALT	ALTERNATE	OFF	OFFICE
ALUM	ALUMINUM	OPP	OPPOSITE
ARCH	ARCHITECT	OWSJ	OPEN WEB STEEL JOIST
ASSY	ASSEMBLY	OPER	OPERABLE
AVG	AVERAGE	ORD	OVERFLOW ROOF DRAIN
		ORIG	ORIGINAL
BB	BASEBOARD	PCF	POUNDS PER CUBIC FOOT
BLDG	BUILDING	PERF	PERFORATED
BLKG	BLOCKING	PH	PHASE
BOS	BOTTOM OF STEEL	PLAM	PLASTIC LAMINATE
BOT	BOTTOM	PLYWD	PLYWOOD
BUR	BUILT-UP ROOFING	PSF	POUNDS PER SQUARE FOOT
		PSI	POUNDS PER SQUARE INCH
CAB	CABINET	PT	PRESSURE TREATED
CD	CONSTRUCTION DOCUMENTS	PTD	PAPER TOWEL DISPENSER
CFCI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	PWR	POWER
CFM	CUBIC FEET PER MINUTE		
CG	CORNER GUARD	QT	QUARRY TILE
CIP	CAST-IN-PLACE	QTY	QUANTITY
CJ	CONTROL JOINT		
CL	CENTER LINE	RB	RESILIENT BASE
CLG	CEILING	RCP	REFLECTED CEILING PLAN
CLG HT	CEILING HEIGHT	RD	ROOF DRAIN
CMU	CONCRETE MASONRY UNIT	REF	REFERENCE
CO	CLEANOUT	REQ	REQUIRE
COL	COLUMN	REQD	REQUIRED
COMM	COMMUNICATION	RESIL	RESILIENT
CONC	CONCRETE	REST	RESTROOM
CONF	CONFERENCE	RF	RESILIENT FLOORING
CONT	CONTINUE	RFG	ROOFING
COORD	COORDINATE	RHR	RIGHT HAND REVERSE
CORR	CORRIDOR	RL	RAIN LEADER
CPT	CARPET	RM	ROOM
CT	CERAMIC TILE	RO	ROUGH OPENING
CTR	CENTER		
CU FT	CUBIC FEET	SCHED	SCHEDULE
CW	COLD WATER	SD	SMOKE DETECTOR
		SF	SQUARE FOOT (FEET)
DBL	DOUBLE	SFTWD	SOFTWOOD
DCW	DOMESTIC COLD WATER	SGL	SINGLE
DD	DESIGN DEVELOPMENT	SHT MTL	SHEET METAL
DEMO	DEMOLITION	SIM	SIMILAR
DEPT	DEPARTMENT	SPEC	SPECIFICATION
DET	DETAIL	SQ	SQUARE
DHW	DOMESTIC HOT WATER	SQ IN	SQUARE INCH
DIA	DIAMETER	SQ YD	SQUARE YARD
DIFF	DIFFUSER	SST	STAINLESS STEEL
DIST	DISTANCE	ST	STAIRS
DOC	DOCUMENT	STD	STANDARD
DR	DOOR	STOR	STORAGE
DS	DOWNSPOUT	STR	STRINGERS
		SV	SHEET VINYL
EA	EACH		
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM	TD	TRENCH DRAIN
EJ	EXPANSION JOINT	TEL	TELEPHONE
ELEV	ELEVATOR	TEMP	TEMPORARY
EPS	EXPANDED POLYSTYRENE BOARD (INSULATION)	THK	THICKNESS
EQ	EQUAL	TOF	TOP OF FOOTING
EXP	EXPOSED	TOM	TOP OF MASONRY
EXT	EXTINGUISHER	TOP	TOP OF PARAPET
		TOPO	TOPOGRAPHY
FA	FIRE ALARM	TOS	TOP OF STEEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL	TV	TELEVISION
FCO	FLOOR CLEANOUT	TYP	TYPICAL
FD	FLOOR DRAIN		
FED	FEDERAL	UON	UNLESS OTHERWISE NOTED
FIN	FINISH		
FIN FLR	FINISH FLOOR	WD	WOOD
FIXT	FIXTURE	WR	WASHROOM
FLR	FLOOR		
FRP	FIBERGLASS REINFORCED PLASTIC		
FRT	FIRE RETARDANT TREATED WOOD		
FT	FOOT OR FEET		
FTG	FOOTING		
GALV	GALVANIZED		
GB	GRAB BAR		
GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED		
GFGI	GOVERNMENT INSTALLED FURNISHED INSTALLED BY GOVERNMENT		
GYP	GYP SUM (ALSO GYP BD.)		
GYP BDG	GYP SUM BOARD		
HB	HOSE BIBB		
HDPE	HIGH DENSITY POLYETHYLENE		
HEPA	HIGH EFFICIENCY PARTICULATE AIR		
HM	HOLLOW METAL		
HORIZ	HORIZONTAL		
HT	HEIGHT		
HW	HOT WATER		
IBC	INTERNATIONAL BUILDING CODE		
INT	INTERIOR		
JAN	JANITOR		
LAV	LAVATORY		
LBS	POUND		
LF	LINEAR FEET (FOOT)		
LHR	LEFT HAND REVERSE		
LIN	LINEAR		
MATL	MATERIAL		
MAX	MAXIMUM		
MECH	MECHANICAL		
MEMB	MEMBRANE		
MFR	MANUFACTURER		
MIN	MINIMUM		
MIR	MIRROR		
MISC	MISCELLANEOUS		
MTL	METAL		

DRAWING LEGEND

NUMBERING SYSTEM:

DISCIPLINE:
C - CIVIL
L - LANDSCAPE
A - ARCHITECTURE
M - MECHANICAL
E - ELECTRICAL
P - PLUMBING
S - STRUCTURAL
K - FOOD SERVICE

DISCIPLINE MODIFIER

SHEET NUMBER WITHIN SERIES

REFER TO AEC CAD STANDARDS FOR PROPER SHEET NUMBERING

XX100

ANNOTATION CALLOUTS/DRAWING SYMBOLS

GENERAL PROJECT NOTES

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY THROUGHOUT THE PROJECT CONSTRUCTION.

- GENERAL CONTRACTOR RESPONSIBLE FOR PROVIDING **COMPLETE INSTALLATION** OF FINISHED PRODUCTS.
- DRAWINGS SHALL NOT BE SCALED.
- ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE CODES REFERENCED IN THE CODE SUMMARY.
- WHERE NOTATION INDICATES "TYPICAL", THE WORK INDICATED SHALL OCCUR AT ALL SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
- DIMENSIONS** ARE TO FACE OF FRAMING UNLESS NOTED OTHERWISE. DIMENSIONS NOTED "CLEAR" ARE TO FACE OF FINISH.
- PROVIDE **CONTINUOUS VAPOR BARRIER** THROUGHOUT THE BUILDING ENVELOPE. VAPOR BARRIER SHOULD LAP 6" MINIMUM. ALL EDGES SHOULD BE SEALED WITH A NON-CURING ACOUSTIC SEALANT.
- PENETRATIONS OF THE BUILDING EXTERIOR, INCLUDING BY MECHANICAL AND ELECTRICAL ITEMS, SHALL BE INSULATED AND SEALED TO MAINTAIN THE THERMAL AND VAPOR BOUNDARIES OF THE BUILDING.
- AT **FIRE AND SMOKE RATED ASSEMBLIES** (WALLS, FLOORS, CEILINGS), PROVIDE RATED PENETRATIONS AND SEALANTS AS INDICATED. GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A UL-LISTED TESTED ASSEMBLY AND PENETRATION DETAIL (NOT JUST A PRODUCT NOTING FIRE BARRIER, ETC.)
- PROVIDE BLOCKING FOR ATTACHMENT OF ACCESSORIES AND EQUIPMENT AS REQUIRED BY MANUFACTURER. NOTE THAT NOT ALL BLOCKING IS INDICATED ON DRAWINGS AS MANUFACTURERS HAVE SPECIFIC REQUIREMENTS.
- ALL **CHASES** TO BE 1-HOUR CONSTRUCTION, TYPICAL.
- FOR **WOOD FRAMED AREAS**:
 - PLUMBING WALLS ARE 2X6 AT 16" O.C. UNLESS NOTED OTHERWISE.
 - INTERIOR WALLS ARE 2X4 AT 16" O.C. UNLESS NOTED OTHERWISE.
 - DOOR AND WINDOW HEADERS TO BE DOUBLE 2X10S UNLESS NOTED OTHERWISE.

SHEET LIST

SHEET LIST	
SHEET NUMBER	SHEET NAME
00 GENERAL	
G-001	COVER SHEET
G-002	GENERAL NOTES, ABBR., SHEET INDEX
G-003	CODE PLAN
G-100	CONSTRUCTION ASSEMBLIES
02 ARCH DEMO	
AD130	DEMO ROOF PLAN
AD201	DEMO ELEVATIONS
AD310	DEMO WALL SECTION
03 STRUCTURAL	
S-001	GENERAL STRUCTURAL NOTES AND INTERPRETATION OF DRAWINGS
S-101	WIND UPLIFT PLAN
S-102	BEAM REPLACEMENT PLAN
05 ARCH	
A-101	FIRST FLOOR PLAN
A-130	ROOF PLAN
A-131	ROOF PLAN - RAVEN
A-132	ROOF PLAN - CORDOVA
A-133	ROOF PLAN - HOMESTEAD
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS, PARTIAL
A-301	BUILDING CROSS SECTION
A-304	FAN ROOM SECTIONS
A-310	WALL SECTIONS
A-501	EXTERIOR DETAILS
A-502	ROOF DETAILS
A-503	ALTERNATE 3 CHIMNEY SURROUND
A-504	PENETRATION DETAILS
A-800	REFERENCE VIEWS- 3D PERSPECTIVE
A-801	REFERENCE VIEWS -AERIAL PERSPECTIVES
06 MECHANICAL	
M-001	LEGENDS, ABBREVIATIONS & SCHEDULES
M-101	CORDOVA WING ROOF DEMOLITION PLAN
M-102	RAVEN WING ROOF DEMOLITION PLAN
M-103	HOMESTEAD WING ROOF DEMOLITION PLAN
M-104	CORDOVA WING ROOF REMODEL PLAN
M-105	RAVEN WING ROOF REMODEL PLAN
M-106	HOMESTEAD WING ROOF REMODEL PLAN
07 ELECTRICAL	
E-001	ELECTRICAL LEGEND, GENERAL NOTES AND DETAILS
E-101	RAVEN WING ELECTRICAL DEMOLITION PLAN
E-102	CORDOVA WING ELECTRICAL DEMOLITION PLAN
E-103	HOMESTEAD WING ELECTRICAL DEMOLITION PLAN
E-104	FIREWEED WING ELECTRICAL DEMOLITION PLAN
E-201	RAVEN WING ELECTRICAL REMODEL PLAN
E-202	CORDOVA WING ELECTRICAL REMODEL PLAN
E-203	HOMESTEAD WING ELECTRICAL REMODEL PLAN
E-204	FIREWEED WING ELECTRICAL REMODEL PLAN

DRAWING REVISIONS

1 -/-/22 DCVR-0001

REVISIONS THAT APPLY TO EACH SHEET ARE NOTED ON INDIVIDUAL SHEETS. THESE ARE INDICATED ON EACH SHEETS TITLEBLOCK.



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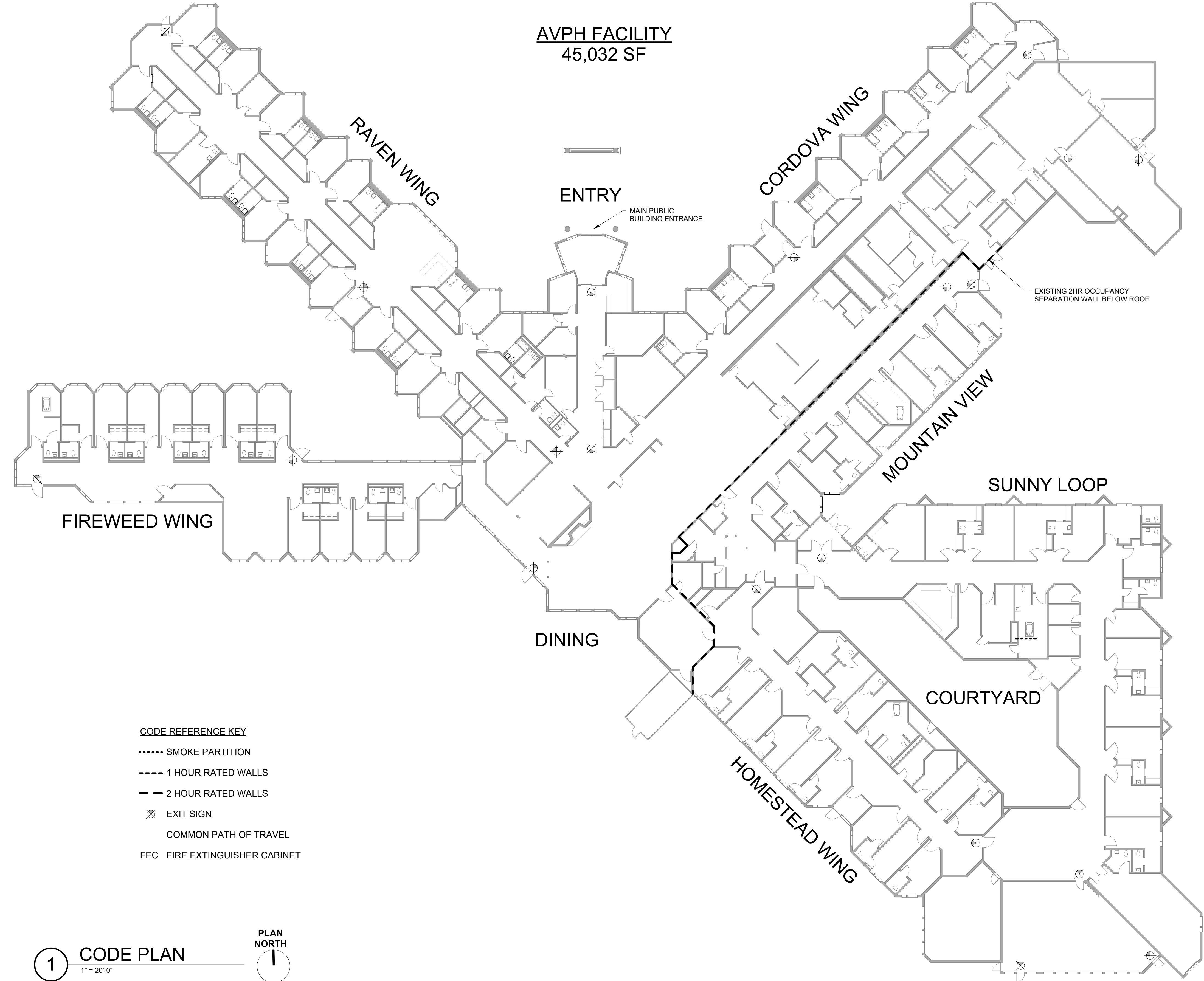
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

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GENERAL NOTES,
ABBR., SHEET
INDEX

G-002

FULL SIZE DRAWING 22" x 34"



AVPH FACILITY
45,032 SF

ENTRY

MAIN PUBLIC
BUILDING ENTRANCE

CORDOVA WING

MOUNTAIN VIEW

SUNNY LOOP

FIREWEED WING

DINING

COURTYARD

HOMESTEAD WING

CODE REFERENCE KEY

----- SMOKE PARTITION

----- 1 HOUR RATED WALLS

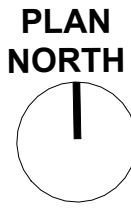
----- 2 HOUR RATED WALLS

⊗ EXIT SIGN

COMMON PATH OF TRAVEL

FEC FIRE EXTINGUISHER CABINET

1 CODE PLAN
1" = 20'-0"



CODE REFERENCES

THE FOLLOWING CODES AND STANDARDS WILL BE UTILIZED IN THE BUILDING DESIGN AND CONSTRUCTION. IN ACCORDANCE WITH THE MOST CURRENTLY ADOPTED CODE REQUIREMENT, ALASKA AMENDMENTS, AND RFP REQUIREMENTS. WHERE DATES ARE NOT GIVEN THE LATEST EDITION AT TIME OF CONTRACT AWARD WILL BE USED.

1. ALASKA ADMINISTRATION CODE
2. IBC - INTERNATIONAL BUILDING CODE, 2021
3. IEC - INTERNATIONAL ELECTRICAL CODE, 2021
4. IEBC - INTERNATIONAL EXISTING BUILDING CODE, 2021
5. IFC - INTERNATIONAL FIRE CODE, 2021
6. IFGC - INTERNATIONAL FUEL GAS CODE, 2021
7. IMC - INTERNATIONAL MECHANICAL CODE, 2021
8. UPC - UNIFORM PLUMBING CODE
9. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS:
 - A. NFPA 1 UNIFORM FIRE CODE, 2015
 - B. NFPA 10 PORTABLE FIRE EXTINGUISHERS, 2013
 - C. NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS, 2016
 - D. NFPA 24 PRIVATE FIRE SERVICE MAINS, 2013
 - E. NFPA 25 INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS, 2014
 - F. NFPA 70
 - G. NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE, 2016
 - H. NFPA 101 LIFE SAFETY CODE, 2015
 - I. NFPA 170 FIRE SAFETY SYMBOLS, 2015
 - J. NFPA 241 SAFEGUARDS DURING CONSTRUCTION, 2013
 - K. ANSI S3.41 AUDIBLE EMERGENCY EVACUATION SIGNALS, 2015
 - L. AWWA M14 RECOMMENDED PRACTICE FOR BACKFLOW PREVENTION CROSS CONNECTION CONTROL, 4TH ED.
 - M. TIA 569-B COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS, PATHWAYS AND SPACES, 2004

CODE DATA

GENERAL DESCRIPTION OF THE FACILITY
FACILITY IS AN EXISTING BUILDING.

GENERAL DESCRIPTION OF THE CURRENT WORK
CURRENT SCOPE OF WORK IS LIMITED TO REPLACING AREAS OF THE ROOF FINISH AND INSULATION FOR THE FACILITY.

BUILDING AND OCCUPANCY CLASSIFICATION
OCCUPANCY TYPE: I1 - CONVALESCENT FACILITY

CONSTRUCTION TYPE: IV - ORIGINAL
V-A - 1983
V-B - 1998 MEZZANINE ROOF INFILL

SPACE DEFINING REQUIREMENTS
ALLOWABLE AREA: 18,000 SF, FOR V-B

AREA INCREASE DUE TO FRONTAGE: 75%
AREA INCREASE DUE TO SPRINKLER SYSTEM: 300%
TOTAL ALLOWABLE AREA: 18,000 SF + (300%) + (75%)
85,500 SF

ACTUAL AREA: 67,332 SF = OK

ALLOWABLE STORIES/HEIGHT: 2 / 40 FT
ACTUAL STORIES/HEIGHT: 1 / 40 FT

NON-SEPARATE OCCUPANCIES

FIRE RESISTIVE REQUIREMENTS BASED ON CONSTRUCTION
STRUCTURAL FRAME: 0
BEARING WALLS: 0
NON-BEARING WALLS: 0
FLOOR CONSTRUCTION: 0
ROOF CONSTRUCTION: 0

FIRE RESISTIVE REQUIREMENTS BASED ON DISTANCE
NORTH: >10' NO RATING REQUIRED
EAST: >10' NO RATING REQUIRED
SOUTH: >10' NO RATING REQUIRED
WEST: >10' NO RATING REQUIRED

FIRE PROTECTION
AUTOMATIC SPRINKLER SYSTEM

710 SMOKE PARTITIONS
710.4 CONTINUOUS TO U/S FLOOR OR ROOF
710.6 PENETRATIONS AND JOINTS SHALL BE FILLED TO LIMIT THE PASSAGE OF SMOKE
710.7 DUCTS AND TRANSFER OPENINGS - AIR TRANSFER OPENINGS SHALL BE PROVIDED WITH A SMOKE DAMPER COMPLYING WITH 716.3.2.

716 DUCT AND TRANSFER OPENINGS
716.3.2 SMOKE DAMPER RATINGS - ACTIVATED BY SMOKE DETECTOR IN DUCT OR IN CORRIDOR.
716.6.3 HORIZONTAL ASSEMBLIES - NONFIRE RESISTANCE RATED FLOOR ASSEMBLIES. DUCTS CONNECTING 2 STORIES ANNULAR SPACE AROUND DUCT PROTECTED WITH NON-COMBUSTIBLE MATERIAL THAT RESISTS THE PASSAGE OF FLAME.

SCOPE OF CURRENT WORK

- SCOPE OF WORK INCLUDES :
1. REMOVAL OF PARTIAL AREAS OF EXISTING ROOF ASSEMBLY DOWN TO WOOD T&G ROOF DECK
 2. INSTALLATION OF NEW ROOF ASSEMBLY
 3. ROOF PERIMETER FLASHING
 4. GUTTERS, DOWNSPOUTS, AND HEAT TRACE
 5. STRUCTURAL REPLACEMENT OF SELECT BEAMS
 6. MECHANICAL AND ELECTRICAL WORK ASSOCIATED WITH ROOF WORK



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CONSTRUCTION DOCUMENTS

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CODE PLAN

G-003

FULL SIZE DRAWING 22" x 34"



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CONSTRUCTION DOCUMENTS

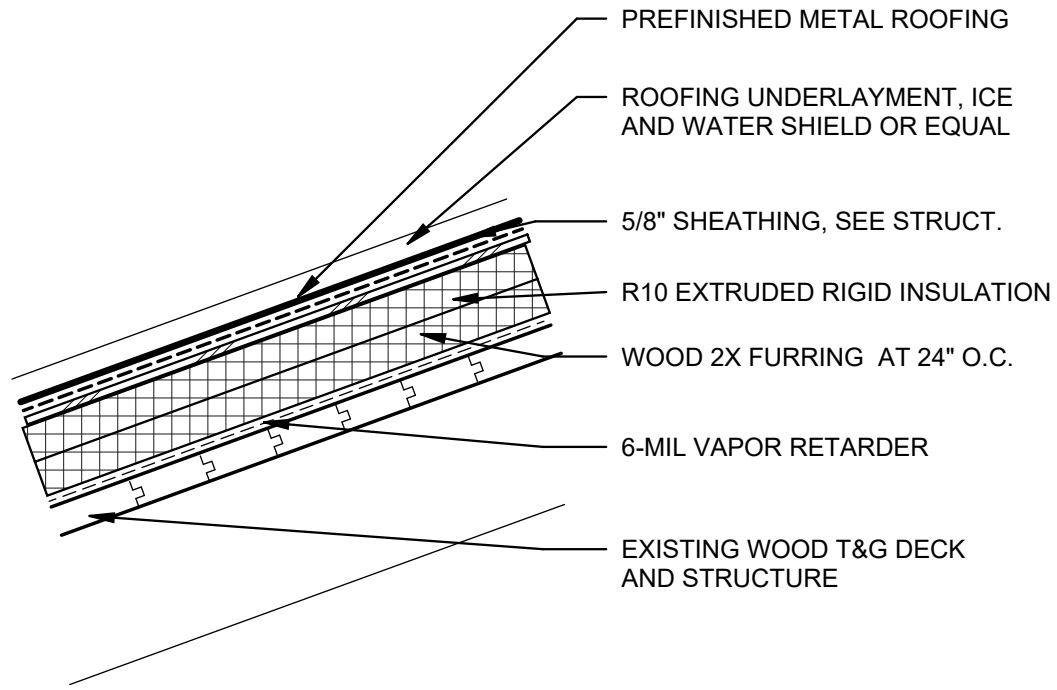
PROJECT #	24-14
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REV.	

CONSTRUCTION
ASSEMBLIES

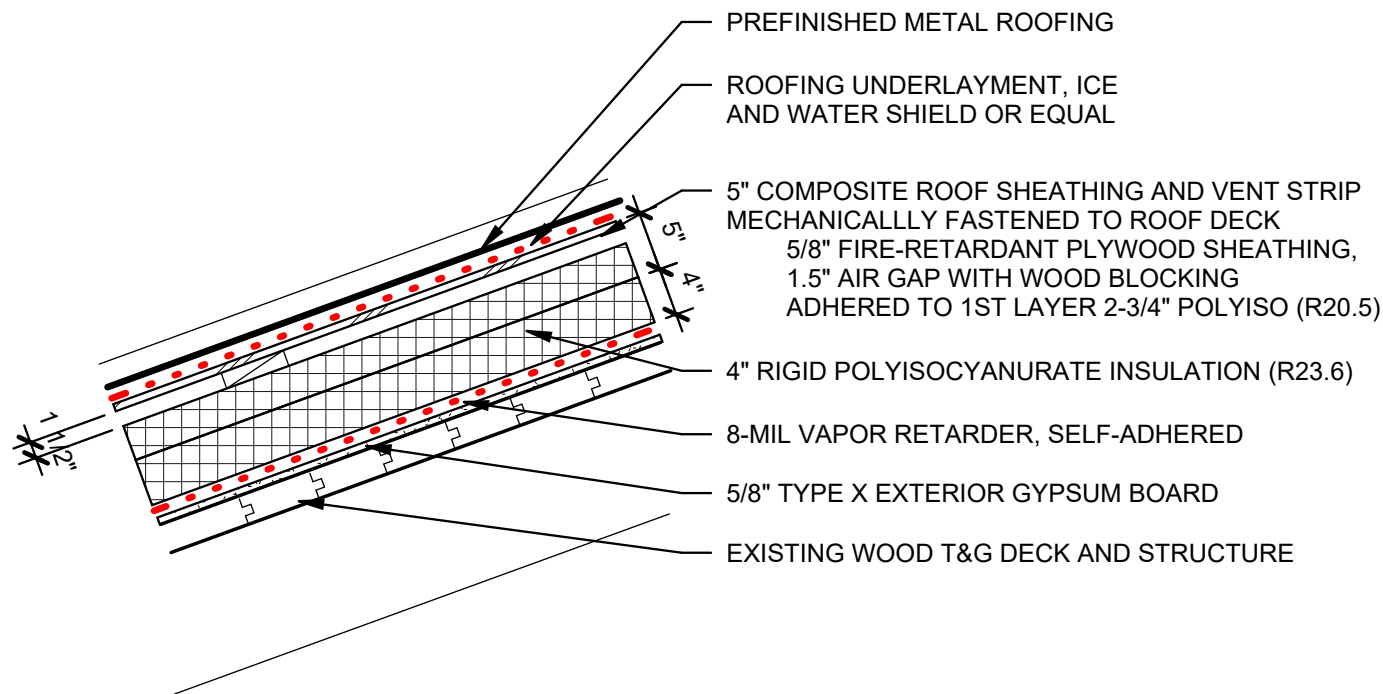
G-100

FULL SIZE DRAWING 22" x 34"

ROOF/CEILING ASSEMBLIES

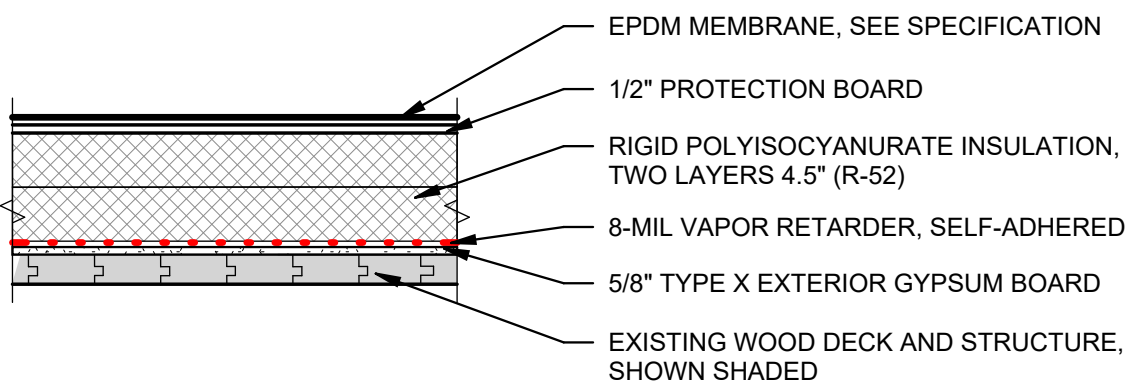


R1_ EXISTING ROOF ASSEMBLY



R2_ NEW ROOF ASSEMBLY

TOTAL R-VALUE OF POLYISOCYANURATE INSULATION = R46

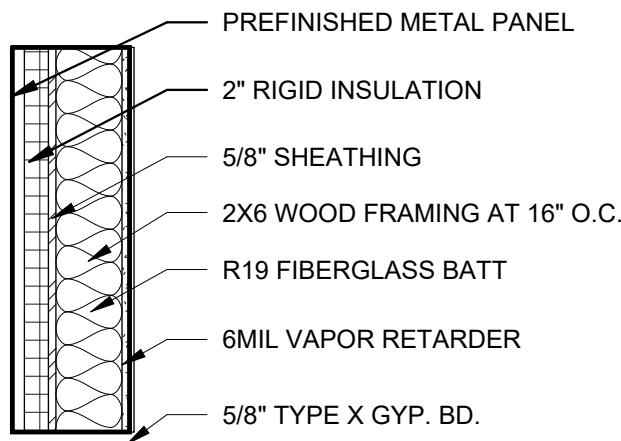


R3_ NEW ROOF ASSEMBLY
(ALTERNATE 2)

EXISTING WALL ASSEMBLIES (SHOWN ONLY FOR REFERENCE)

EXTERIOR

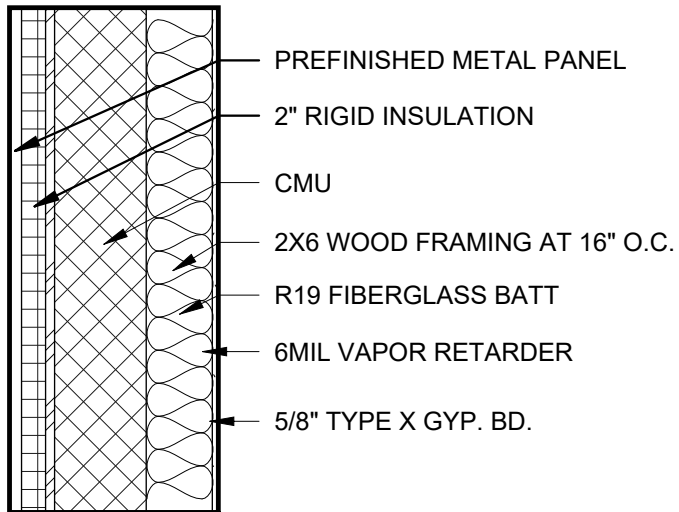
EXISTING



EX1

WOOD STUD WALL

EXISTING

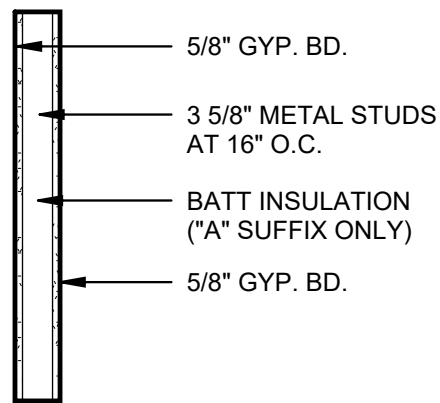


EX2

CMU WALL WITH WOOD FURRING

INTERIOR

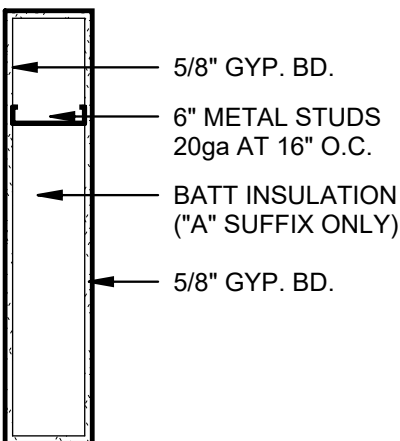
EXISTING



W1

3 5/8" STUD WALL
"A" INDICATES ACOUSTIC

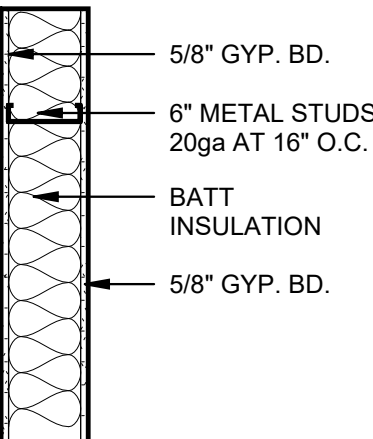
EXISTING



W2

6" STUD WALL
"A" INDICATES ACOUSTIC

EXISTING



W4

STC 45
AT PLUMBING WALLS
GA FILE NO. WP 1081

ASSEMBLY SHEET NOTES

1. WALL ASSEMBLY TAGS DESCRIBE MAJOR EXTENT OF EXTERIOR WALL ASSEMBLY, SEE ELEVATIONS AND DETAILS FOR TRANSITIONS IN, AND LOCATIONS OF, CHANGES IN EXTERIOR WALL ASSEMBLIES.



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DEMO SHEET NOTES

1. CONTRACTOR SHALL VISIT SITE TO FAMILIARIZE THEMSELVES WITH EXTENT OF REMOVAL/DEMOLITION.
2. LIMIT WORK TO SPACES INDICATED, PROTECT ALL ADJACENT ASSEMBLIES, FINISHES AND APPURTENANCES. DAMAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE BACK TO ORIGINAL CONDITION.
3. ALL ITEMS NOTED "SALVAGE" TO BE PROTECTED FOR REINSTALLATION OR PRESENTED TO OWNER AT A LOCATION OF THEIR CHOOSING.
4. ITEMS NOT NOTED AS "SALVAGE" BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM SITE.
5. DEMOLITION NOTES LISTED ARE INTENDED TO CONVEY A GENERAL DESCRIPTION OF THE DEMOLITION WORK THROUGH THE PROJECT. HOWEVER, THESE NOTES MAY NOT ADDRESS EVERY DEMOLITION CONDITION NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE TO REMOVE AND OR DEMOLISH ANY EXISTING CONDITIONS REQUIRED FOR THE SUCCESSFUL INSTALLATION OF ANY NEW CONSTRUCTION IDENTIFIED IN THESE DOCUMENTS.
6. DASHED LINES INDICATE LOCATIONS OF DEMOLITION.
7. SEE STRUCTURAL, MECHANICAL, AND ELECTRICAL FOR SUB-TRADES EXTENT OF DEMOLITION (WHERE OCCURS).
9. INFILL DISTURBED AREAS TO MATCH FINISH, LEVEL, AND APPEARANCE OF ADJACENT EXISTING SURFACES, UNLESS NOTED OTHERWISE.
11. OBTAIN DEMO PERMIT PRIOR TO BEGINNING WORK.

DEMO PLAN LEGEND

- DEMO ITEM (WALL, DOOR, WINDOW, ETC.)
- DEMO ROOF ASSEMBLY

KEYNOTE LEGEND

KEYNOTE	KEYNOTE TEXT
1	DEMO SHADED AREA OF ROOF DOWN TO EXISTING WOOD T&G ROOF DECK. ENTIRE ROOF ASSEMBLY INCLUDING BLOCKING, FURRING AND ATTACHMENTS. FILL ANY HOLES LARGER THAN 1/4". SALVAGE SNOW GUARDS AND PROVIDE TO AVPH O&M.
2	DEMO EXISTING GUTTERS, DOWNSPOUTS, AND ACCESSORIES. MAINTAIN AND PROTECT DOWNSPOUT CONNECTIONS AT GRADE FOR NEW CONNECTION. DEMO HEAT TRACE. SEE ELECTRICAL.
3	DEMO EXISTING FLASHING.
4	DEMO EXISTING PLUMBING VENT PIPE PENETRATION. MAINTAIN AND PROTECT MAIN PIPE FOR CONNECTION AT NEW WORK. SEE MECH.
5	DEMO EXISTING EXHAUST VENT HOOD AND PENETRATION. MAINTAIN AND PROTECT MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
6	EXISTING MECH HOOD AND CURB. MAINTAIN AND PROTECT FOR CONNECTION AT NEW WORK. SEE MECH.
7	EXISTING BEAM DEMO AND REPLACEMENT, SEE STRUCTURAL.
8	DEMO EXISTING MECH HOOD AND CURB. INFILL ROOFING TO MATCH ADJACENT NEW ROOFING. AT EXPOSED CEILING BELOW, MATCH ADJACENT CEILING (GYP. OR T&G) SEE MECH.
9	PROTECT EXISTING CABLES, CONDUITS, AND FIXTURES DURING REROOFING. IF NECESSARY FOR ACCESS, REMOVE AND REINSTALL AFTER NEW ROOFING IS COMPLETE.
10	EXISTING ELECTRICAL CONDUIT MAY BE LOCATED BELOW ROOF RIGID INSULATION. LOCATE DURING DEMOLITION. CONFIRM WITH O&M IF CIRCUIT IS LIVE AND STILL IN USE. IF CIRCUITS ARE STILL IN USE, THEY WILL NEED TO BE MAINTAINED WITH NEW CONSTRUCTION. COORDINATE WITH OTHER TRADES.
23	REMOVE ANTENNA AND CABLE DURING REROOFING. PROTECT AND REINSTALL WITH NEW ROOFING COMPLETE.
24	REMOVE PHOTOCELL ANTENNA AND CABLE DURING REROOFING. PROTECT AND REINSTALL WITH NEW ROOFING COMPLETE.

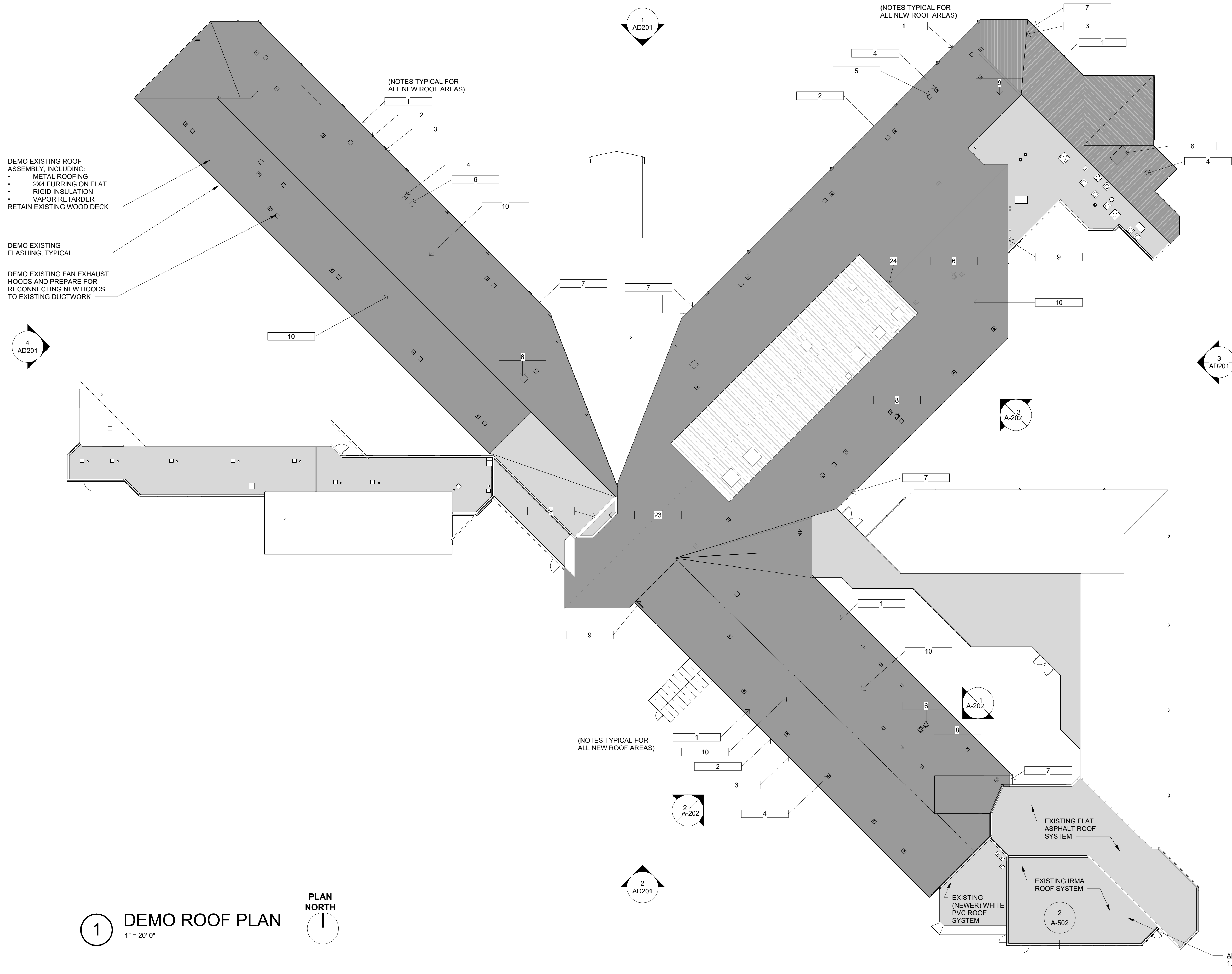
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

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REV.	

DEMO ROOF PLAN

AD130

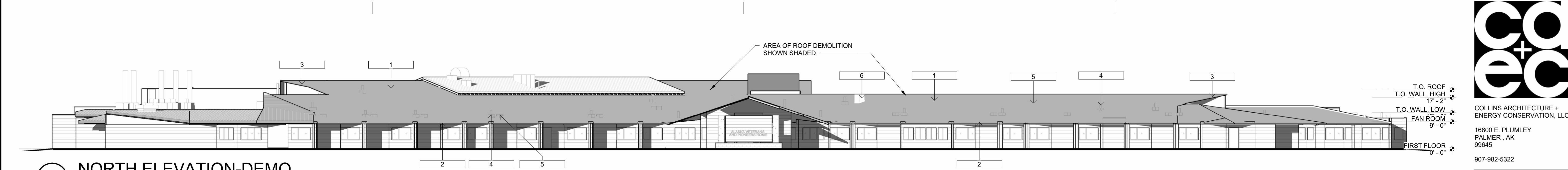
FULL SIZE DRAWING 22" x 34"



1 DEMO ROOF PLAN

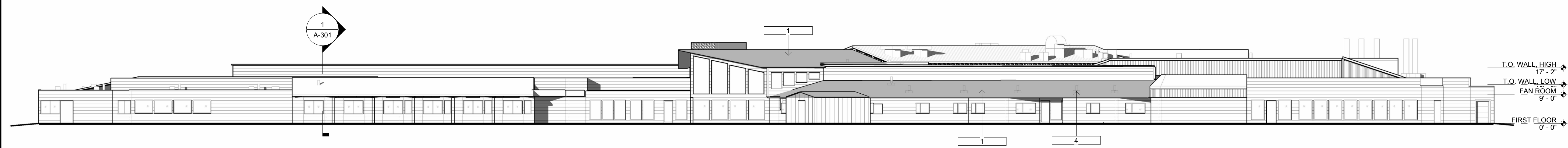
1" = 20'-0"

PLAN
NORTH
1

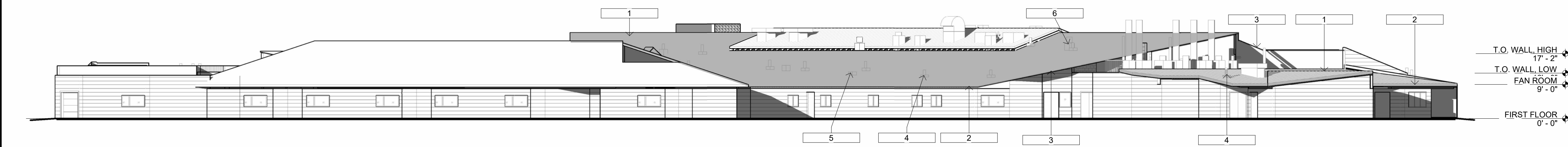


1 NORTH ELEVATION-DEMO
1/16" = 1'-0"

KEYNOTES ARE TYPICAL FOR ALL PENETRATIONS
GUTTERS, AND FLASHING FOR ALL AREAS OF ROOF DEMO.



2 SOUTH ELEVATION - DEMO
1/16" = 1'-0"



3 EAST ELEVATION-DEMO
1/16" = 1'-0"



4 WEST ELEVATION-DEMO
1/16" = 1'-0"

DEMO SHEET NOTES

- CONTRACTOR SHALL VISIT SITE TO FAMILIARIZE THEMSELVES WITH EXTENT OF REMOVAL/DEMOLITION.
- LIMIT WORK TO SPACES INDICATED. PROTECT ALL ADJACENT ASSEMBLIES, FINISHES AND APPURTENANCES. DAMAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE BACK TO ORIGINAL CONDITION.
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- DASHED LINES INDICATE LOCATIONS OF DEMOLITION.
- SEE STRUCTURAL, MECHANICAL, AND ELECTRICAL FOR SUB-TRADES EXTENT OF DEMOLITION (WHERE OCCURS).
- INFILL DISTURBED AREAS TO MATCH FINISH, LEVEL, AND APPEARANCE OF ADJACENT EXISTING SURFACES, UNLESS NOTED OTHERWISE.
- OBTAIN DEMO PERMIT PRIOR TO BEGINNING WORK.

DEMO PLAN LEGEND

- DEMO ITEM (WALL, DOOR, WINDOW, ETC.)
- DEMO ROOF ASSEMBLY

KEYNOTE LEGEND

KEYNOTE	KEYNOTE TEXT
1	DEMO SHADED AREA OF ROOF DOWN TO EXISTING WOOD T&G ROOF DECK-ENTIRE ROOF ASSEMBLY INCLUDING BLOCKING, FURRING AND ATTACHMENTS. FILL ANY HOLES LARGER THAN 1/4" SALVAGE SNOW GUARDS AND PROVIDE TO AVPH O&M.
2	DEMO EXISTING GUTTERS, DOWNSPOUTS, AND ACCESSORIES. MAINTAIN AND PROTECT DOWNSPOUT CONNECTIONS AT GRADE FOR NEW CONNECTION. DEMO HEAT TRACE, SEE ELECTRICAL.
3	DEMO EXISTING FLASHING.
4	DEMO EXISTING PLUMBING VENT PIPE. PENETRATION. MAINTAIN AND PROTECT MAIN PIPE FOR CONNECTION AT NEW WORK. SEE MECH.
5	DEMO EXISTING EXHAUST VENT HOOD AND PENETRATION. MAINTAIN AND PROTECT MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
6	EXISTING MECH HOOD AND CURB. MAINTAIN AND PROTECT FOR CONNECTION AT NEW WORK. SEE MECH.

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DEMO ELEVATIONS

AD201

FULL SIZE DRAWING 22" x 34"



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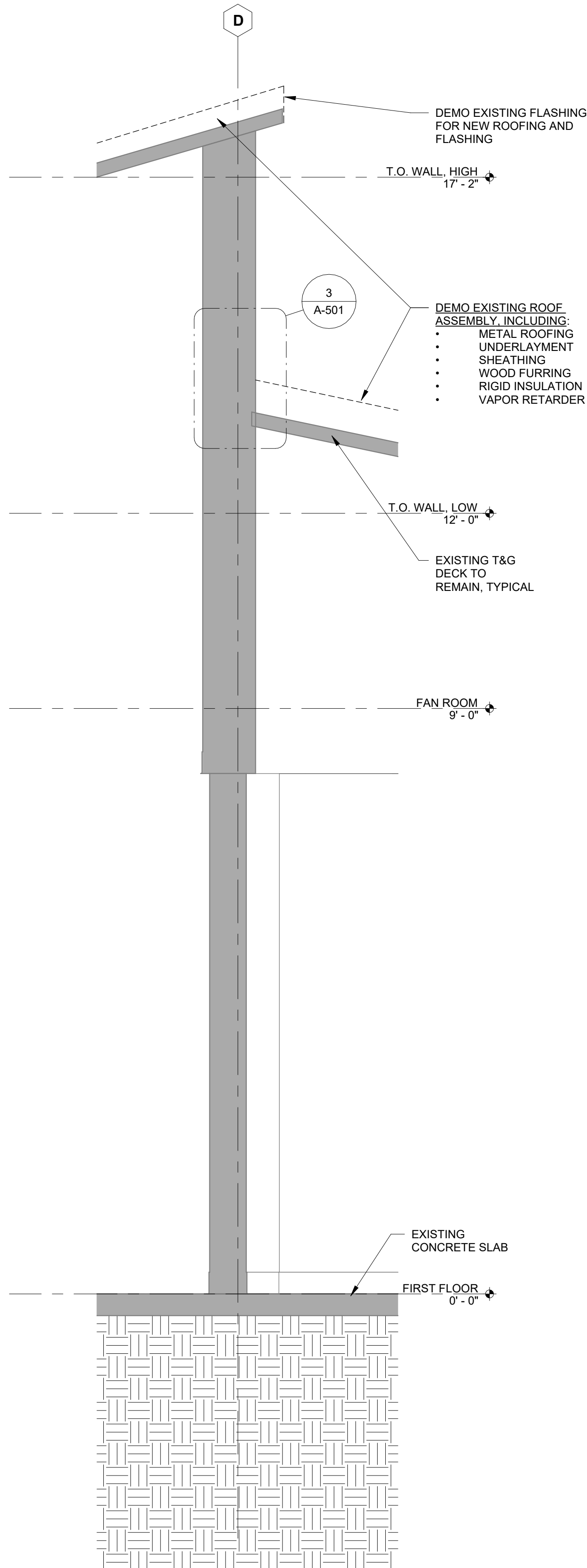
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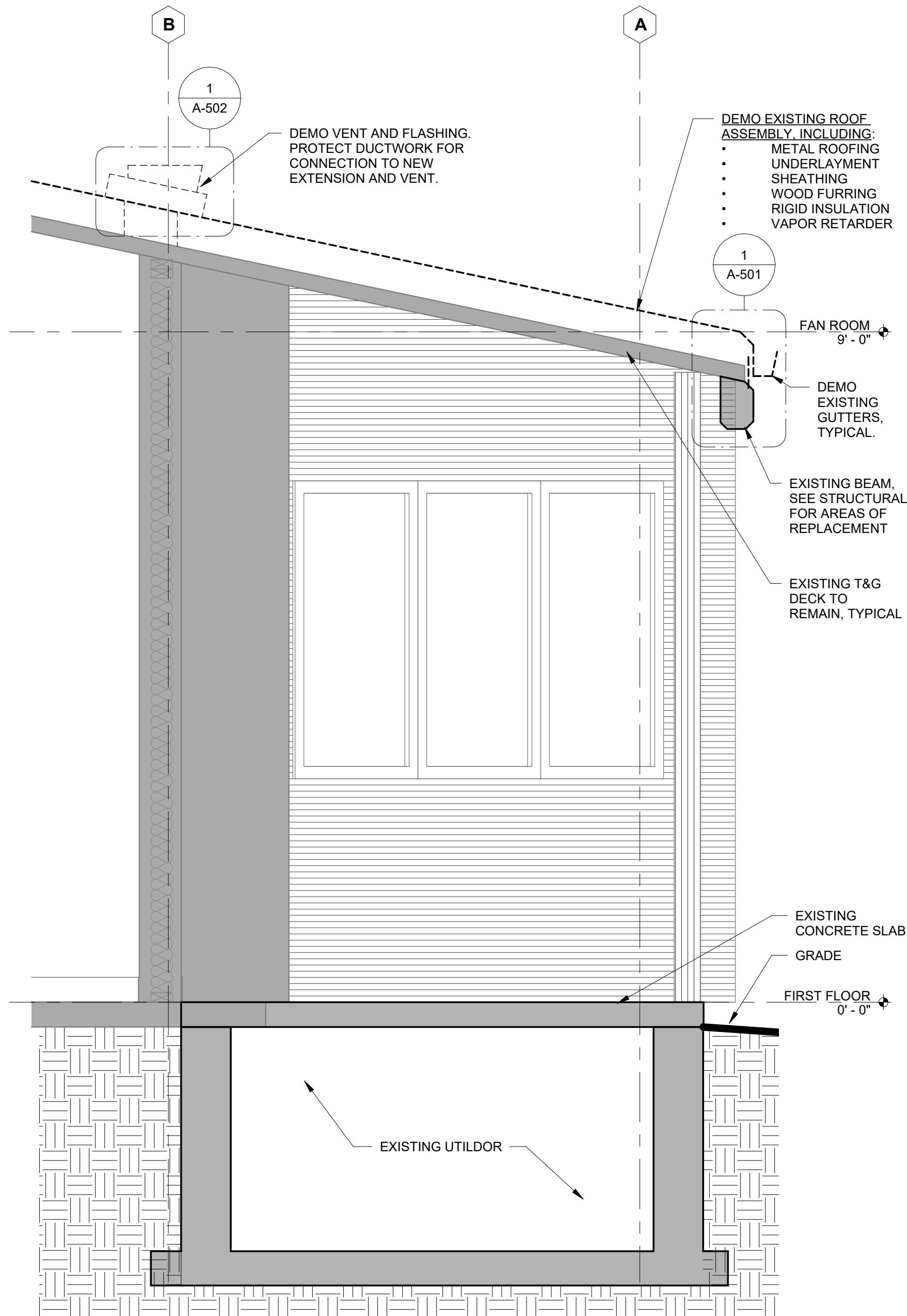
DEMO WALL
SECTION

AD310

FULL SIZE DRAWING 22" x 34"



1 TYPICAL DEMO WALL SECTION HIGH
3/4" = 1'-0"



2 TYPICAL DEMO WALL SECTION
3/4" = 1'-0"

STRUCTURAL DESIGN CRITERIA SCHEDULE			
CRITERIA	DESCRIPTION	VALUE	COMMENTS
CODE	IBC 2021		
SEISMIC	RISK CATEGORY SEISMIC IMPORTANCE FACTOR, IE 0.2S SPECTRAL RESPONSE ACCELERATION, Ss 1.0S SPECTRAL RESPONSE ACCELERATION, S1	III 1.25 1.50 0.726	
WIND	BASIC WIND SPEED (3 SECOND GUST) RISK CATEGORY EXPOSURE FACTOR INTERNAL PRESSURE COEFFICIENT, GCpi	127 MPH III B ±0.18	PER ASCE 7-16 BASIC WIND SPEED MAP SEE UPLIFT PLAN FOR PRESSURES ENCLOSED BUILDING
ROOF LIVE LOADS	GROUND SNOW LOAD SNOW LOAD EXPOSURE FACTOR THERMAL FACTOR Ct SNOW IMPORTANCE FACTOR FLAT ROOF SNOW LOAD SNOW DRIFT LOADS	50 PSF 1.0 1.0 1.0 40 PSF PER ASCE 7-16	

SCHEDULE OF CONSTRUCTION MATERIALS									
WOOD	APPLICATION		SPECIES			GRADE		COMMENTS	
	DIMENSION LUMBER	PLATES AND LEDGERS	HEM-FIR			NO. 2			
		BLOCKING, MISC FRAMING	HEM-FIR			STD & BETTER			
	GLUED-LAMINATED BEAMS		ALLOWABLE STRESSES - P.S.I.						
			SPECIES COMB	Fb TENSION ZONE	Fb COMP ZONE	Fv	Fc TENSION ZONE	Fc COMP ZONE	1.0 E 6
		SIMPLE SPANS	DF V4	2400	1850	190	650	650	1.8

DEFERRED SUBMITTALS
DEFERRED SUBMITTAL ITEMS SHALL BE REVIEWED BY THE EOR AND THEN SUBMITTED TO THE BUILDING OFFICIAL.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CALCULATION AND DRAWINGS STAMPED BY AN ALASKA REGISTERED PROFESSIONAL ENGINEER FOR THE FOLLOWING CONTRACTOR DESIGNED ITEMS: - SEISMIC RESTRAINT OF ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS - ROOFING ATTACHMENT

STRUCTURAL NOTES
ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS, THE SPECIFICATIONS AND NOTES LISTED BELOW. MINIMUM PROVISIONS OF THE INTERNATIONAL BUILDING CODE (IBC 2021), AND LOCAL AMENDMENTS SHALL APPLY WHERE DETAILS ARE NOT SHOWN OR DESCRIBED.
AS-BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS ON SITE, MODIFIED TO REFLECT ALL DESIGN CHANGES TO THE ORIGINAL DRAWING SET.

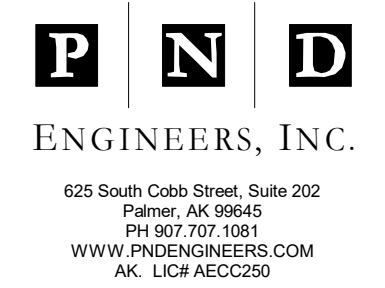
PND ENGINEERS INC IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS, OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. DRAWINGS ARE FOR USE ON THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.



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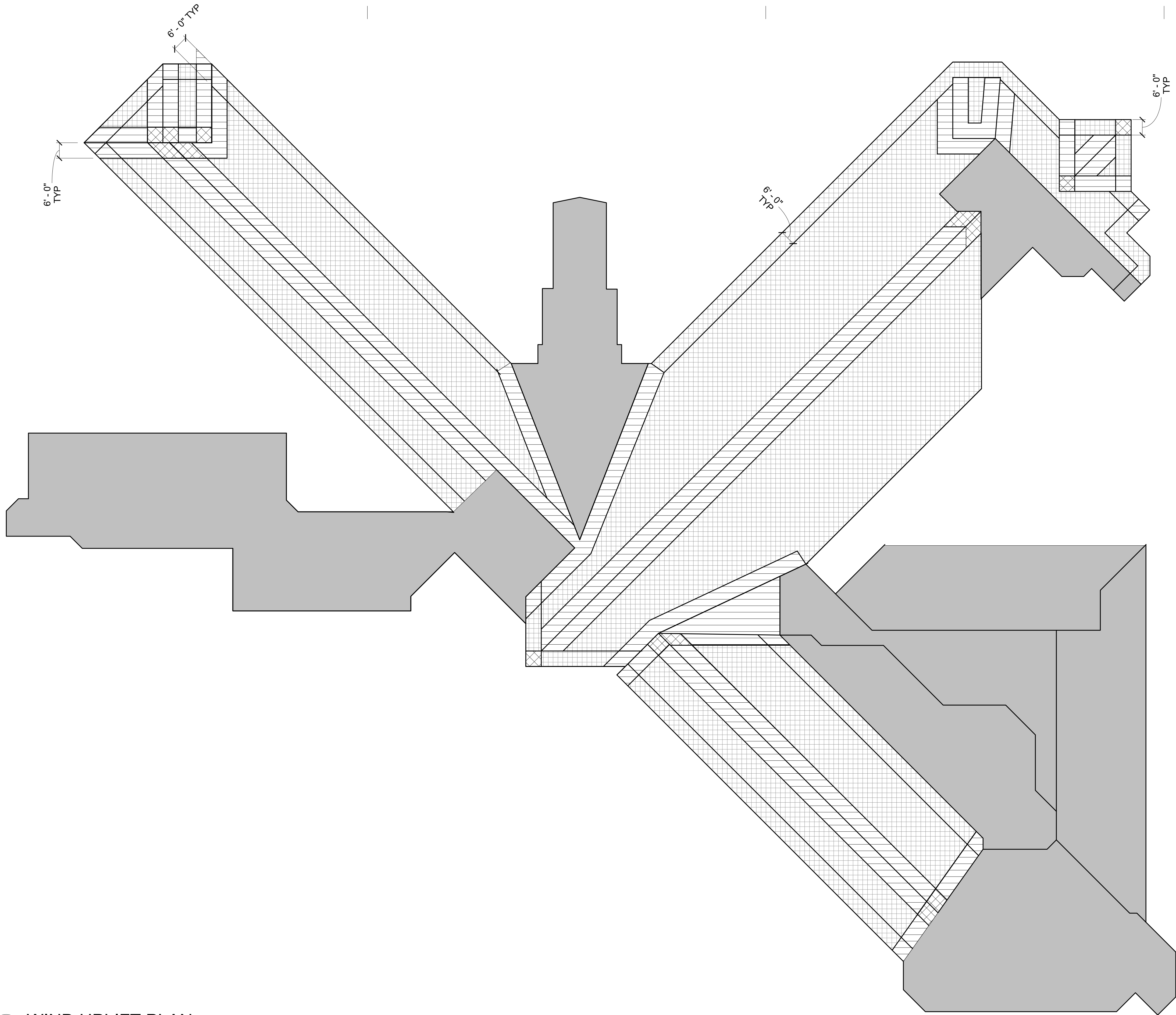
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	241133
DRAWN	Author
DATE	3/4/2025
REV.	

DESIGN CRITERIA AND MATERIALS

S-100

FULL SIZE DRAWING 22" x 34"



ULTIMATE WIND UPLIFT PRESSURES			
ROOF DECK ZONE		C&C WIND UPLIFT ZONE PRESSURE* (PSF)	
EFFECTIVE AREA	ZONE	10 SQ FT	100 SQ FT
	(E) ROOF TO REMAIN	NA	NA
	1, 2e	54	17
	2n, 2r, 3e	79	43
	3r	93	49

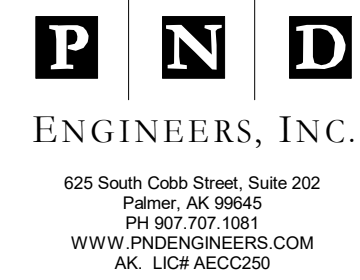
NOTE: VALUES MAY BE INTERPOLATED BETWEEN 10 SQ FT AND 100 SQ FT
*WIND VALUES SHOWN ARE ULTIMATE LOADS MULTIPLY BY 0.6 FOR ALLOWABLE LOADS



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625 South Cobb Street, Suite 202
Palmer, AK 99645
PH 907.707.1081
WWW.PNDENGINEERS.COM
AK LIC# AECC250



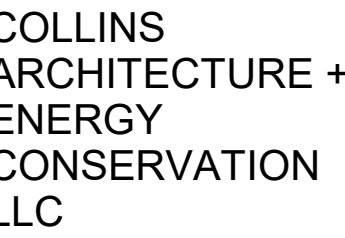
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	241133
DRAWN	EJM
DATE	3/4/2025
REV.	

WIND UPLIFT PLAN

S-101

FULL SIZE DRAWING 22" x 34"



907-982-5322



Diagram illustrating two options for installing a new GLB (Glass Laminated Board) in a wall, showing the connection to the existing structure and the (E) POST.

OPTION 1

NEW GLB

SIMPSON LCE4 WHERE ACCESS PERMITS INSTALLATION

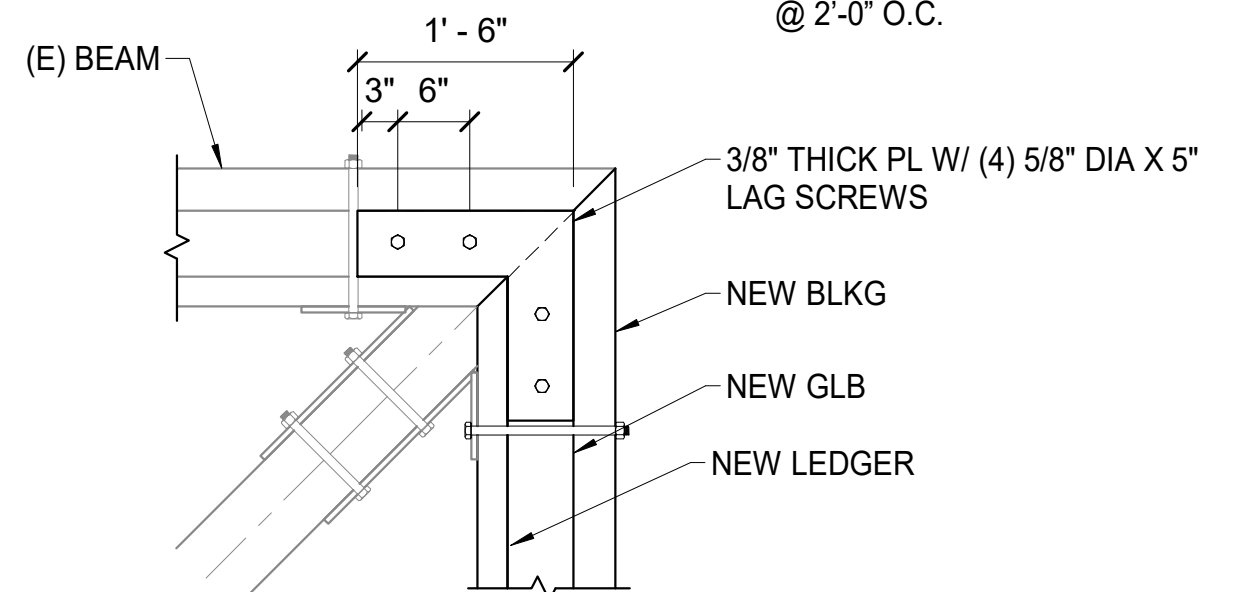
(E) POST

OPTION 2

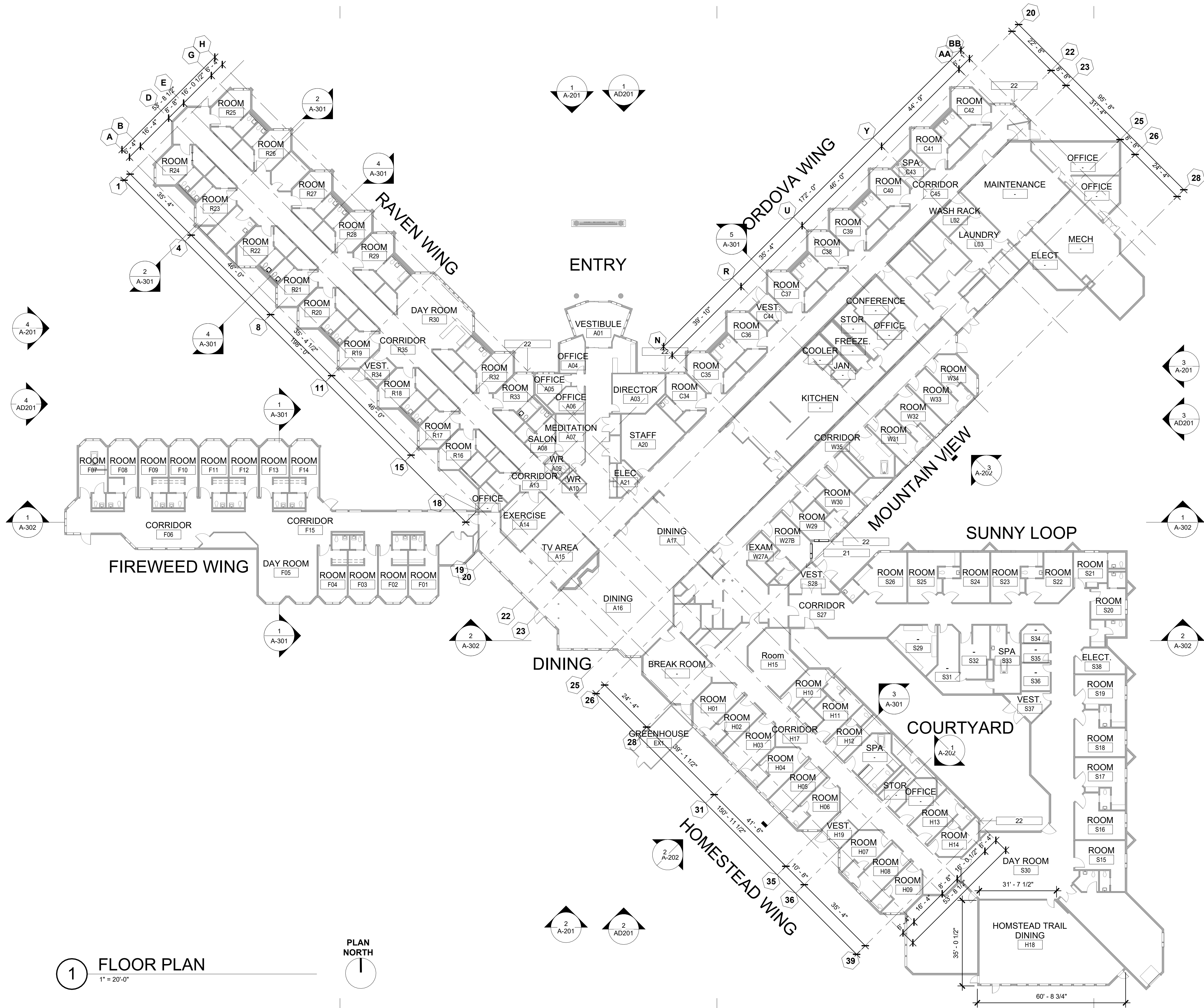
NEW GLB

SIMPSON HL43 OR APPROVED EQ WHERE ACCESS DOES NOT PERMIT LCE4 INSTALLATION

(E) POST

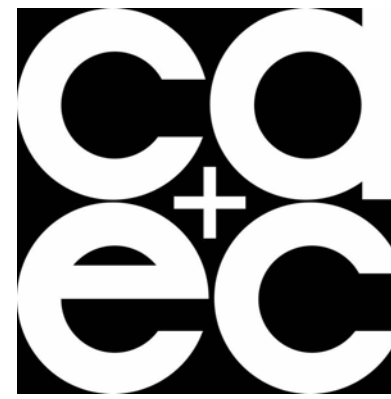
$$\frac{3}{4}'' = 1'-0''$$

$$\frac{3}{4}'' = 1'-0''$$
$$1'' = 20'-0''$$
BEAM
REPLACEMENT
PLAN

FULL SIZE DRAWING 22" x 34"



KEYNOTE LEGEND

KEYNOTE	KEYNOTE TEXT
21	WHERE BEAM REPLACEMENT IS REQUIRED AT INTERIOR, DEMO AND REPLACE INTERIOR FINISHES TO MATCH ADJACENT FINISHES.
22	BEAM REPLACEMENT, SEE STRUCTURAL.



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

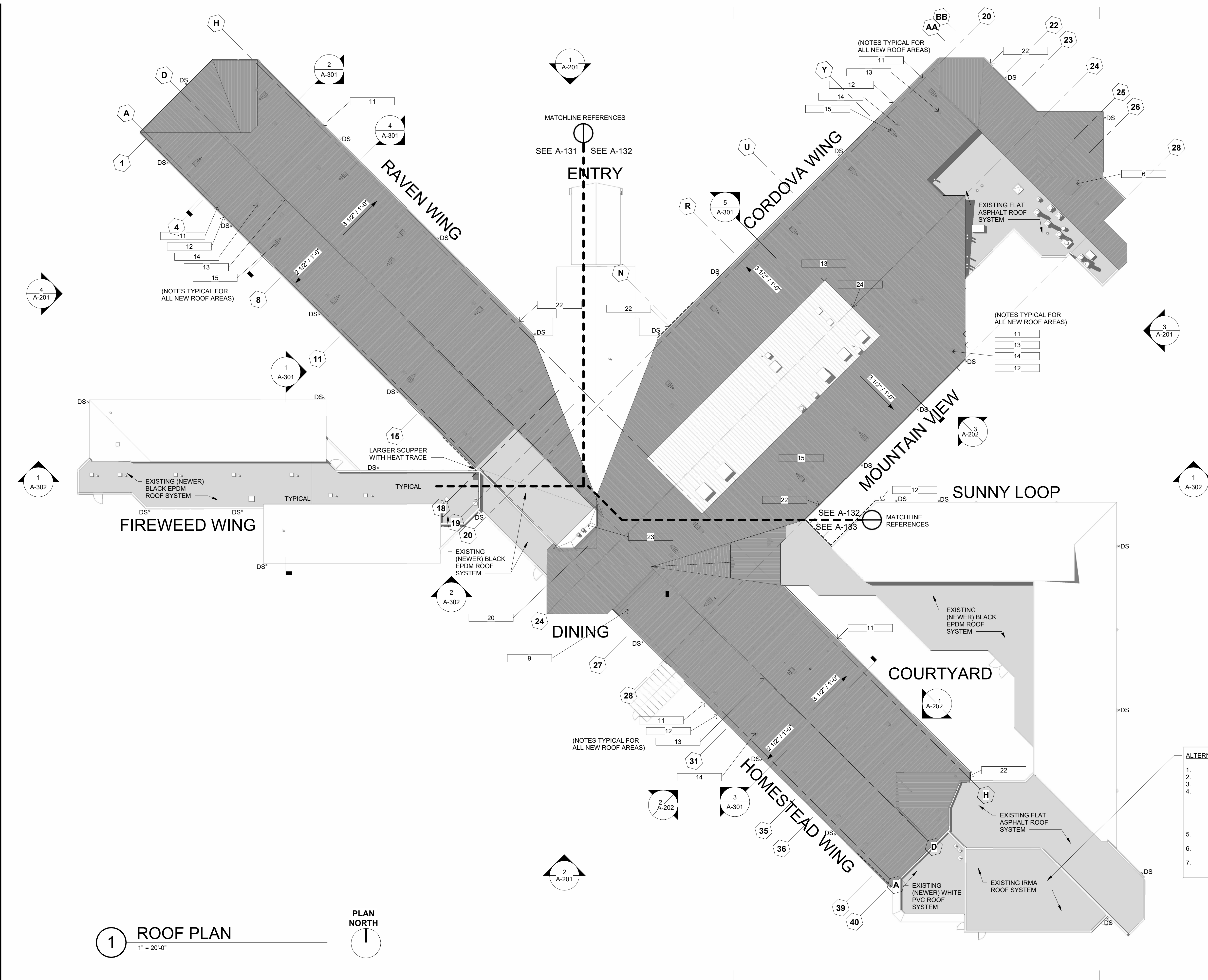
FIRST FLOOR PLAN

A-101

FULL SIZE DRAWING 22" x 34"

1 FLOOR PLAN
1" = 20'-0"

PLAN
NORTH



- GENERAL ROOF NOTES**
- SEE DETAILS FOR TYPICAL ROOF CONSTRUCTION
 - VENTS, EXHAUST, CURBS & COWLS ARE MECHANICAL ROOF PENETRATION ITEMS. REFERENCE MECHANICAL FOR LOCATIONS, TYPES, SIZES AND QUANTITY OF ALL PENETRATIONS. PENETRATIONS SHALL BE MIN 18" FROM ANY RIDGE VALLEY, HIP, OR EDGE OF ROOF. SEE ARCHITECTURAL DETAILS FOR CURBS AND FLASHINGS.
 - ALL FLASHING & ROOFING TIE-INS TO PLUMBING & HVAC PENETRATIONS ARE BY ROOFING CONTRACTOR.

- LEGEND**
- DIRECTION OF SLOPE TO DRAIN
- DS O DOWNSPOUT, SHOWN OFFSET FROM GUTTER FOR CLARITY

KEYNOTE LEGEND	
KEYNOTE	KEYNOTE TEXT
6	EXISTING MECH HOOD AND CURB. MAINTAIN AND PROTECT FOR CONNECTION AT NEW WORK. SEE MECH.
9	PROTECT EXISTING CABLES, CONDUITS, AND FIXTURES DURING REROOFING. IF NECESSARY FOR ACCESS, REMOVE AND REINSTALL AFTER NEW ROOFING IS COMPLETE.
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE, SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
20	NEW CRICKET AT BACK OF CHIMNEY.
22	BEAM REPLACEMENT. SEE STRUCTURAL.
23	REMOVE ANTENNA AND CABLE DURING REROOFING. PROTECT AND REINSTALL WITH NEW ROOFING COMPLETE.
24	REMOVE PHOTOCELL ANTENNA AND CABLE DURING REROOFING. PROTECT AND REINSTALL WITH NEW ROOFING COMPLETE.

- ALTERNATE 2: REPLACE IRMA ROOF SYSTEM**
- SQUARE FEET: APPROXIMATELY 1,634 SF
 - DEMO EXISTING IRMA ROOF SYSTEM
 - PROTECT EXISTING ROOF SHEATHING
 - INSTALL NEW ROOF SYSTEM CONSISTING OF:
 - A. 60M BLACK EPDM ROOF MEMBRANE
 - B. PROTECTION BOARD
 - C. 6" POLYISO RIGID INSULATION (R44)
 - D. 8M VAPOR RETARDER
 - E. 5/8" TYPE X EXTERIOR GYP SHEATHING
 - PROVIDE NEW PREFINISHED METAL FLASHING AT PARPAPET.
 - PROVIDE NEW ROOF / OVERFLOW DRAINS CONNECTED TO EXISTING PIPING, SEE MECH.
 - PROVIDE HEAT TRACE AT ROOF DRAINS, SEE ELECTRICAL.

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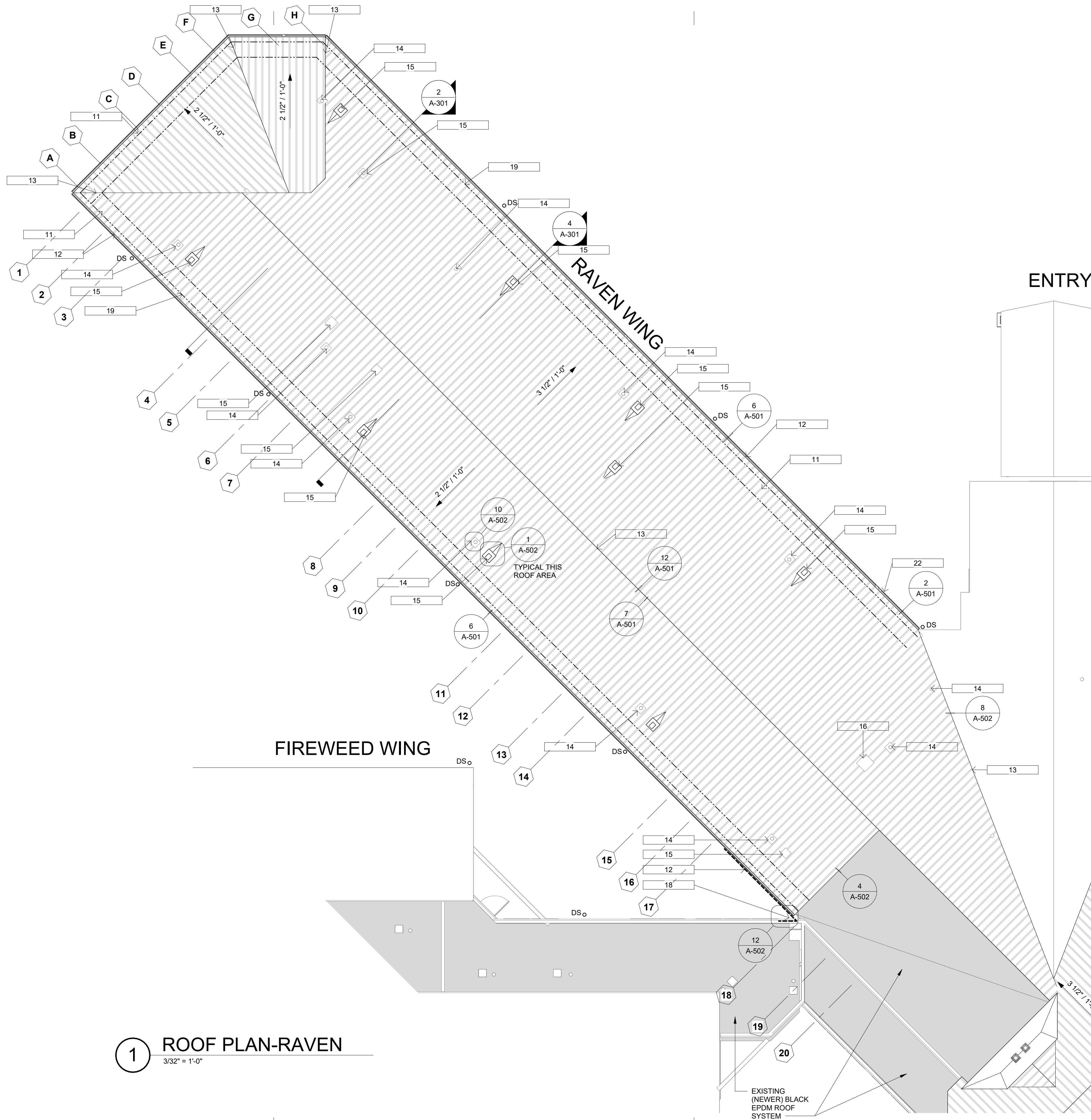
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

ROOF PLAN

A-130

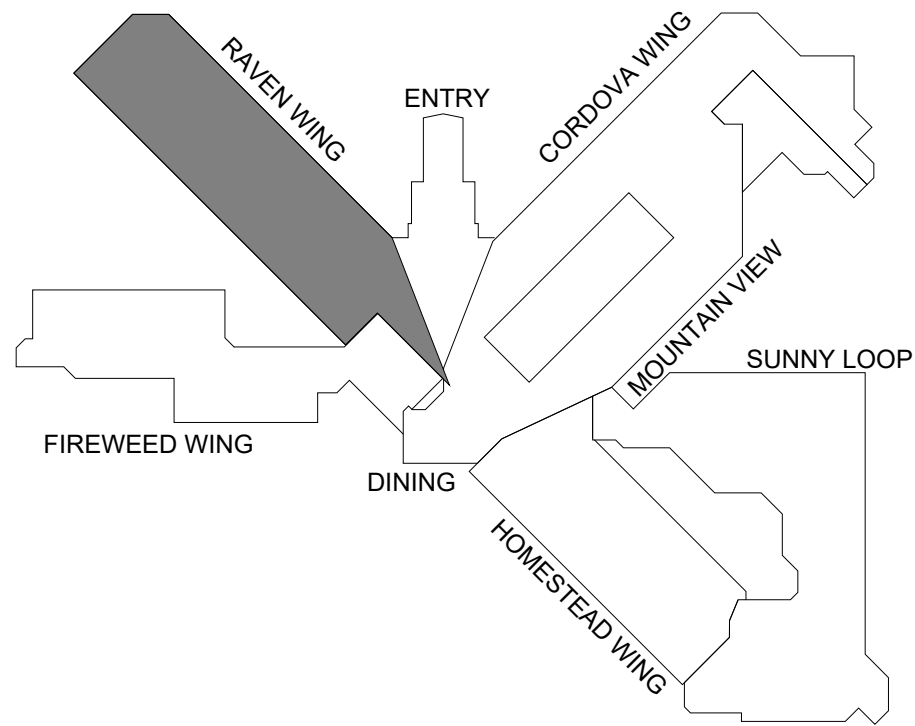
FULL SIZE DRAWING 22" x 34"



1 ROOF PLAN-RAVEN
3/32" = 1'-0"

- GENERAL ROOF NOTES
- SEE DETAILS FOR TYPICAL ROOF CONSTRUCTION
 - VENTS, EXHAUST, CURBS & COWLS ARE MECHANICAL ROOF PENETRATION ITEMS. REFERENCE MECHANICAL FOR LOCATIONS, TYPES, SIZES AND QUANTITY OF ALL PENETRATIONS. PENETRATIONS SHALL BE MIN 18" FROM ANY RIDGE VALLEY, HIP, OR EDGE OF ROOF. SEE ARCHITECTURAL DETAILS FOR CURBS AND FLASHINGS.
 - ALL FLASHING & ROOFING TIE-INS TO PLUMBING & HVAC PENETRATIONS ARE BY ROOFING CONTRACTOR.
- LEGEND
- DIRECTION OF SLOPE TO DRAIN
- DS ○ DOWNSPOUT, SHOWN OFFSET FROM GUTTER FOR CLARITY

KEYNOTE LEGEND	
KEYNOTE	KEYNOTE TEXT
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE. SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
16	EXISTING MECH HOOD AND CURB. CONNECT AT NEW WORK. SEE MECH.
18	NEW GUTTER COLLECTOR BOX, OVERFLOW, DOWNSPOUT, AND SPLASH BLOCK.
19	NEW SNOW GUARDS. TWO ROWS MINIMUM AT EACH NEW ROOF AREA, OFFSET 3'-0". MATCH COLOR TO ROOF COLOR.
22	BEAM REPLACEMENT, SEE STRUCTURAL.



KEYPLAN-AVPH A

cc+ec

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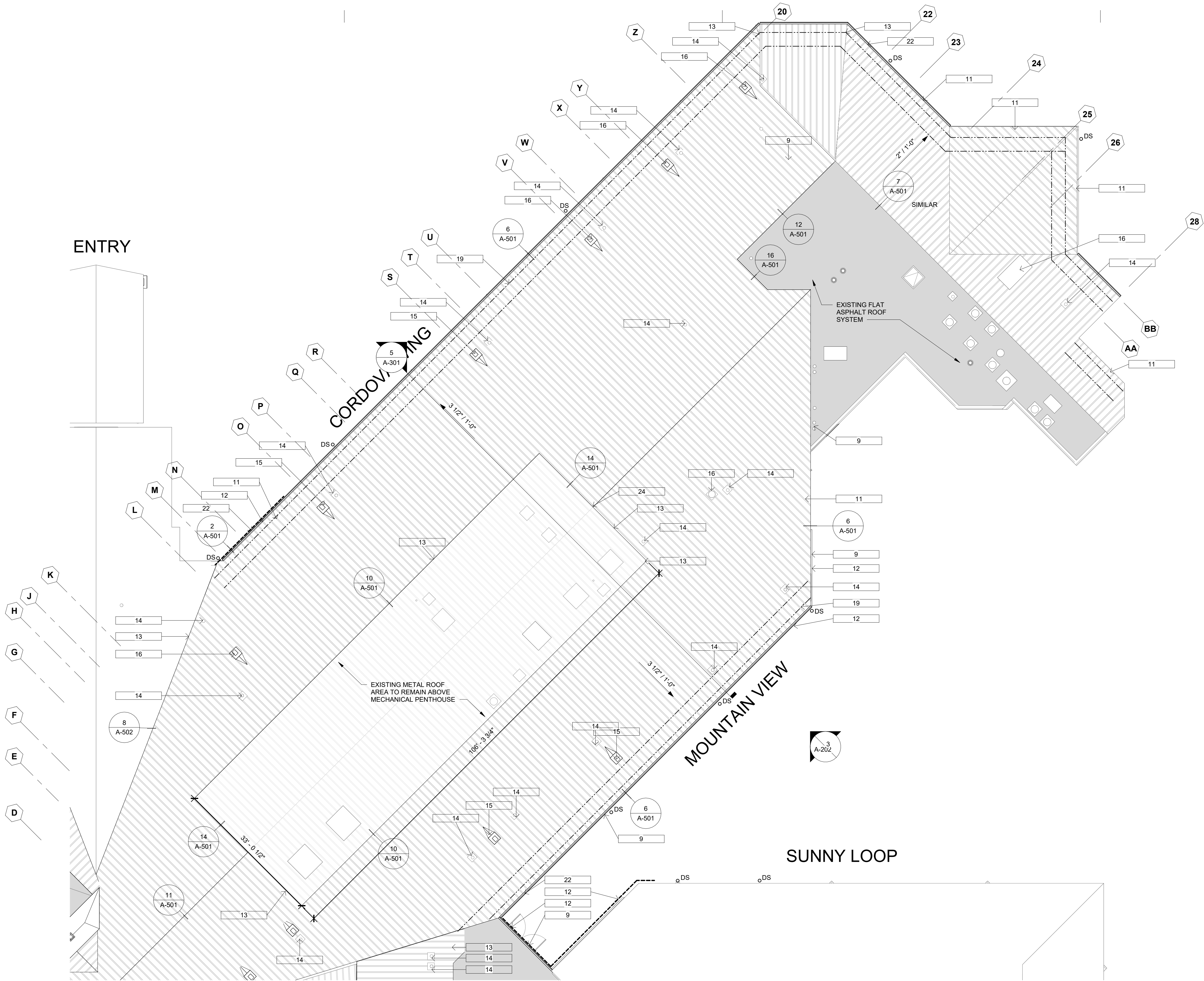
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

ROOF PLAN - RAVEN

A-131

FULL SIZE DRAWING 22" x 34"

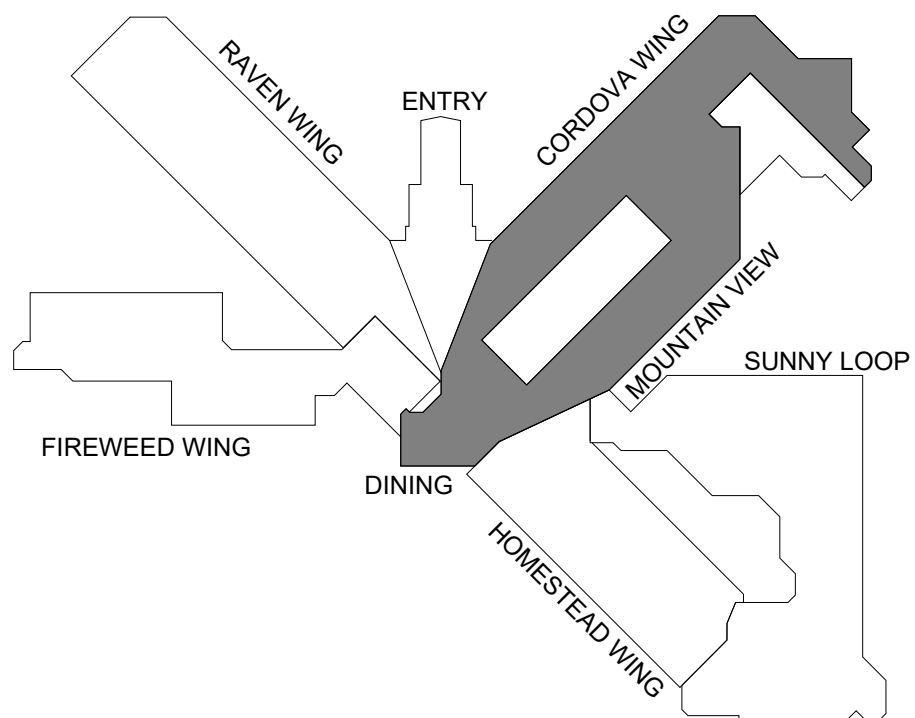


1 ROOF PLAN-RAVEN
3/32" = 1'-0"

- GENERAL ROOF NOTES
- SEE DETAILS FOR TYPICAL ROOF CONSTRUCTION
 - VENTS, EXHAUST, CURBS & COWLS ARE MECHANICAL ROOF PENETRATION ITEMS. REFERENCE MECHANICAL FOR LOCATIONS, TYPES, SIZES AND QUANTITY OF ALL PENETRATIONS. PENETRATIONS SHALL BE MIN 18" FROM ANY RIDGE VALLEY, HIP, OR EDGE OF ROOF. SEE ARCHITECTURAL DETAILS FOR CURBS AND FLASHINGS.
 - ALL FLASHING & ROOFING TIE-INS TO PLUMBING & HVAC PENETRATIONS ARE BY ROOFING CONTRACTOR.

- LEGEND
- DIRECTION OF SLOPE TO DRAIN
- DS ○ DOWNSPOUT, SHOWN OFFSET FROM GUTTER FOR CLARITY

KEYNOTE LEGEND	
KEYNOTE	KEYNOTE TEXT
9	PROTECT EXISTING CABLES, CONDUITS, AND FIXTURES DURING REROOFING. IF NECESSARY FOR ACCESS, REMOVE AND REINSTALL AFTER NEW ROOFING IS COMPLETE.
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE, SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
16	EXISTING MECH HOOD AND CURB. CONNECT AT NEW WORK. SEE MECH.
19	NEW SNOW GUARDS. TWO ROWS MINIMUM AT EACH NEW ROOF AREA, OFFSET 3'-0". MATCH COLOR TO ROOF COLOR.
22	BEAM REPLACEMENT, SEE STRUCTURAL.
24	REMOVE PHOTOCELL ANTENNA AND CABLE DURING REROOFING. PROTECT AND REINSTALL WITH NEW ROOFING COMPLETE.



KEYPLAN-AVPH B
1" = 100'-0"



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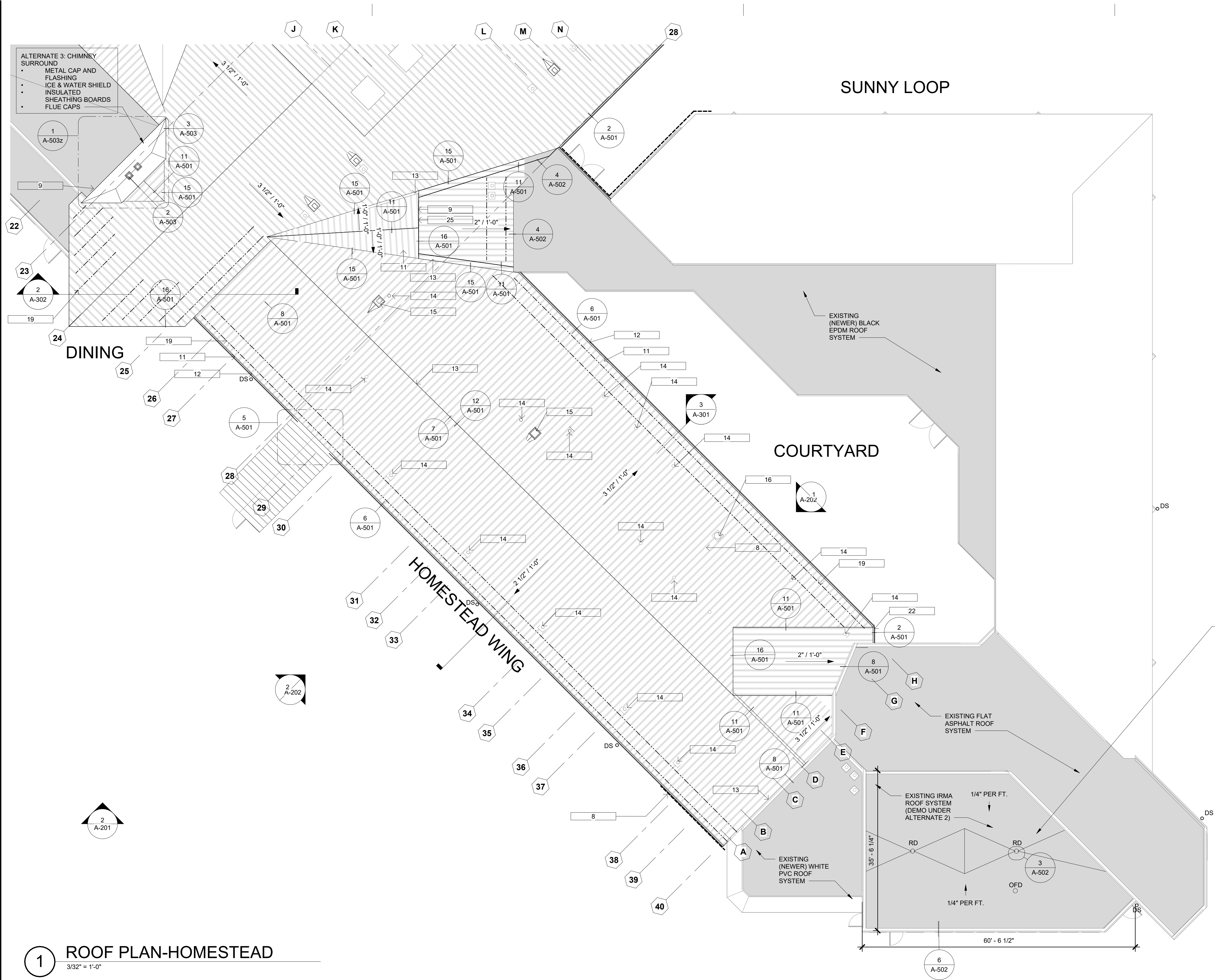


ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

ROOF PLAN
-CORDOVA

A-132
FULL SIZE DRAWING 22" x 34"



GENERAL ROOF NOTES

- SEE DETAILS FOR TYPICAL ROOF CONSTRUCTION
- VENTS, EXHAUST, CURBS & COWLS ARE MECHANICAL ROOF PENETRATION ITEMS. REFERENCE MECHANICAL FOR LOCATIONS, TYPES, SIZES AND QUANTITY OF ALL PENETRATIONS. PENETRATIONS SHALL BE MIN 18" FROM ANY RIDGE VALLEY, HIP, OR EDGE OF ROOF. SEE ARCHITECTURAL DETAILS FOR CURBS AND FLASHINGS.
- ALL FLASHING & ROOFING TIE-INS TO PLUMBING & HVAC PENETRATIONS ARE BY ROOFING CONTRACTOR.

LEGEND

DIRECTION OF SLOPE TO DRAIN

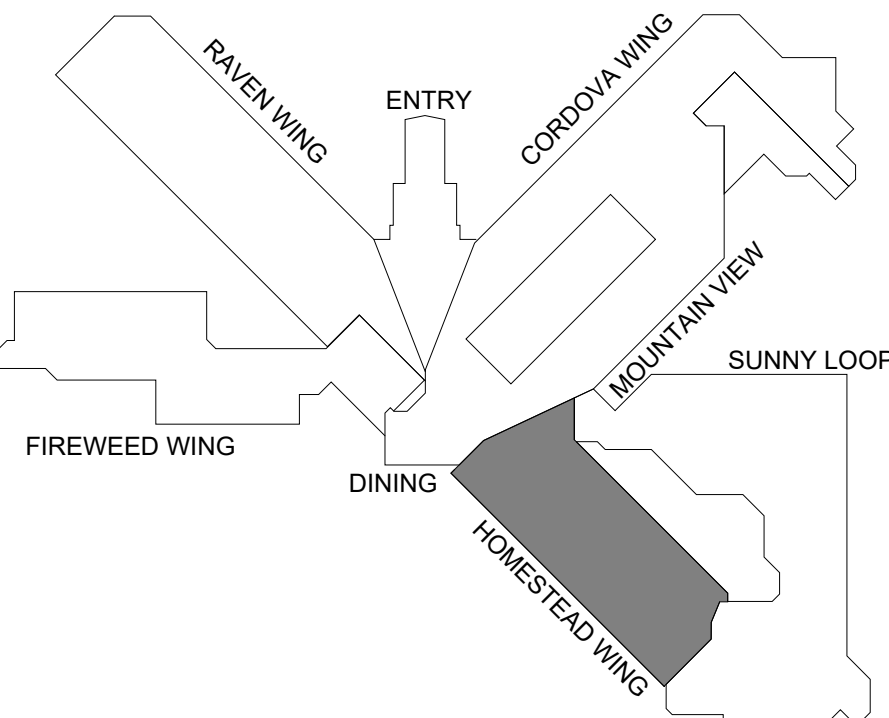
DS O DOWNSPOUT, SHOWN OFFSET FROM GUTTER FOR CLARITY

KEYNOTE LEGEND

KEYNOTE	KEYNOTE TEXT
8	DEMO EXISTING MECH HOOD AND CURB. INFILL ROOFING TO MATCH ADJACENT NEW ROOFING. AT EXPOSED CEILING BELOW, MATCH ADJACENT CEILING (GYP. OR T&G) SEE MECH.
9	PROTECT EXISTING CABLES, CONDUITS, AND FIXTURES DURING REROOFING. IF NECESSARY FOR ACCESS, REMOVE AND REINSTALL AFTER NEW ROOFING IS COMPLETE.
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE, SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
16	EXISTING MECH HOOD AND CURB. CONNECT AT NEW WORK. SEE MECH.
19	NEW SNOW GUARDS. TWO ROWS MINIMUM AT EACH NEW ROOF AREA, OFFSET 3'-0". MATCH COLOR TO ROOF COLOR.
22	BEAM REPLACEMENT, SEE STRUCTURAL.
25	PROVIDE NEW METAL SIDING TO MATCH ROOFING.

ALTERNATE 2: REPLACE IRMA ROOF SYSTEM

- SQUARE FEET: APPROXIMATELY 1,634 SF
- DEMO EXISTING IRMA ROOF SYSTEM
- PROTECT EXISTING ROOF SHEATHING
- INSTALL NEW ROOF SYSTEM CONSISTING OF:
 - 60M BLACK EPDM ROOF MEMBRANE
 - PROTECTION BOARD
 - 6" POLYISO RIGID INSULATION (R44)
 - 8M VAPOR RETARDER
 - 5/8" TYPE X EXTERIOR GYP SHEATHING
- PROVIDE NEW PREFINISHED METAL FLASHING AT PARPAPE.
- PROVIDE NEW ROOF / OVERFLOW DRAINS CONNECTED TO EXISTING PIPING. SEE MECH.
- PROVIDE HEAT TRACE AT ROOF DRAINS, SEE ELECTRICAL.



KEYPLAN-AVPH C

1" = 100'-0"



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

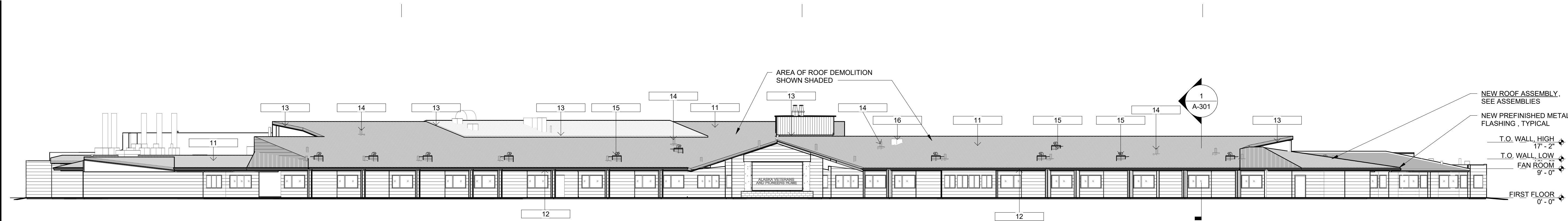
ROOF PLAN -
HOMESTEAD

A-133

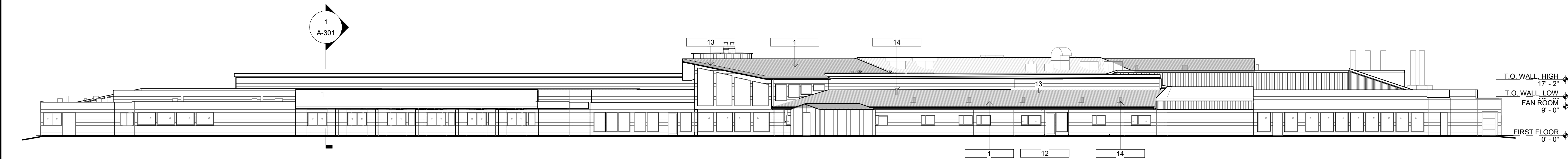
FULL SIZE DRAWING 22" x 34"

1 ROOF PLAN-HOMESTEAD

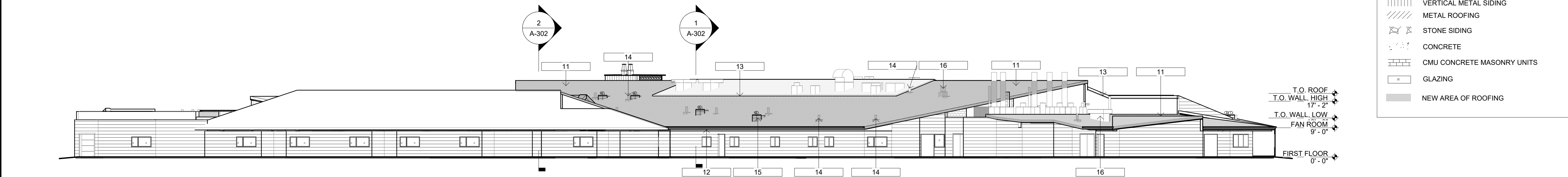
3/32" = 1'-0"



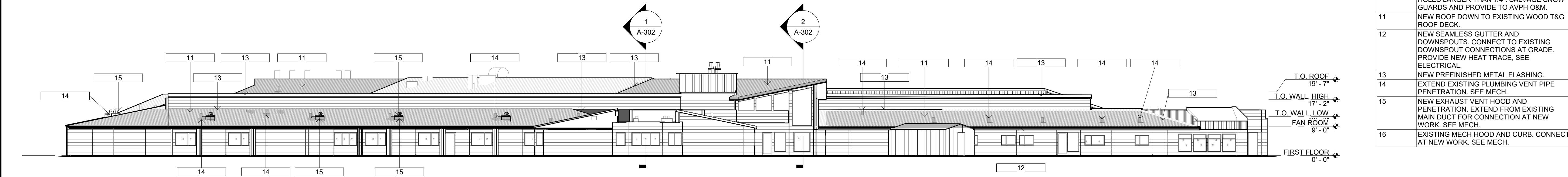
1 NORTH ELEVATION
1/16" = 1'-0"



2 SOUTH ELEVATION
1/16" = 1'-0"



3 EAST ELEVATION
1/16" = 1'-0"



4 WEST ELEVATION
1/16" = 1'-0"

ELEVATION LEGEND

- HORIZONTAL METAL SIDING
- VERTICAL METAL SIDING
- METAL ROOFING
- STONE SIDING
- CONCRETE
- CMU CONCRETE MASONRY UNITS
- GLAZING
- NEW AREA OF ROOFING

KEYNOTE LEGEND

KEYNOTE	KEYNOTE TEXT
1	DEMO SHADED AREA OF ROOF DOWN TO EXISTING WOOD T&G ROOF DECK ENTIRE ROOF ASSEMBLY INCLUDING BLOCKING, FURRING AND ATTACHMENTS. FILL ANY HOLES LARGER THAN 1/4". SALVAGE SNOW GUARDS AND PROVIDE TO AVPH O&M.
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE, SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
16	EXISTING MECH HOOD AND CURB. CONNECT AT NEW WORK. SEE MECH.



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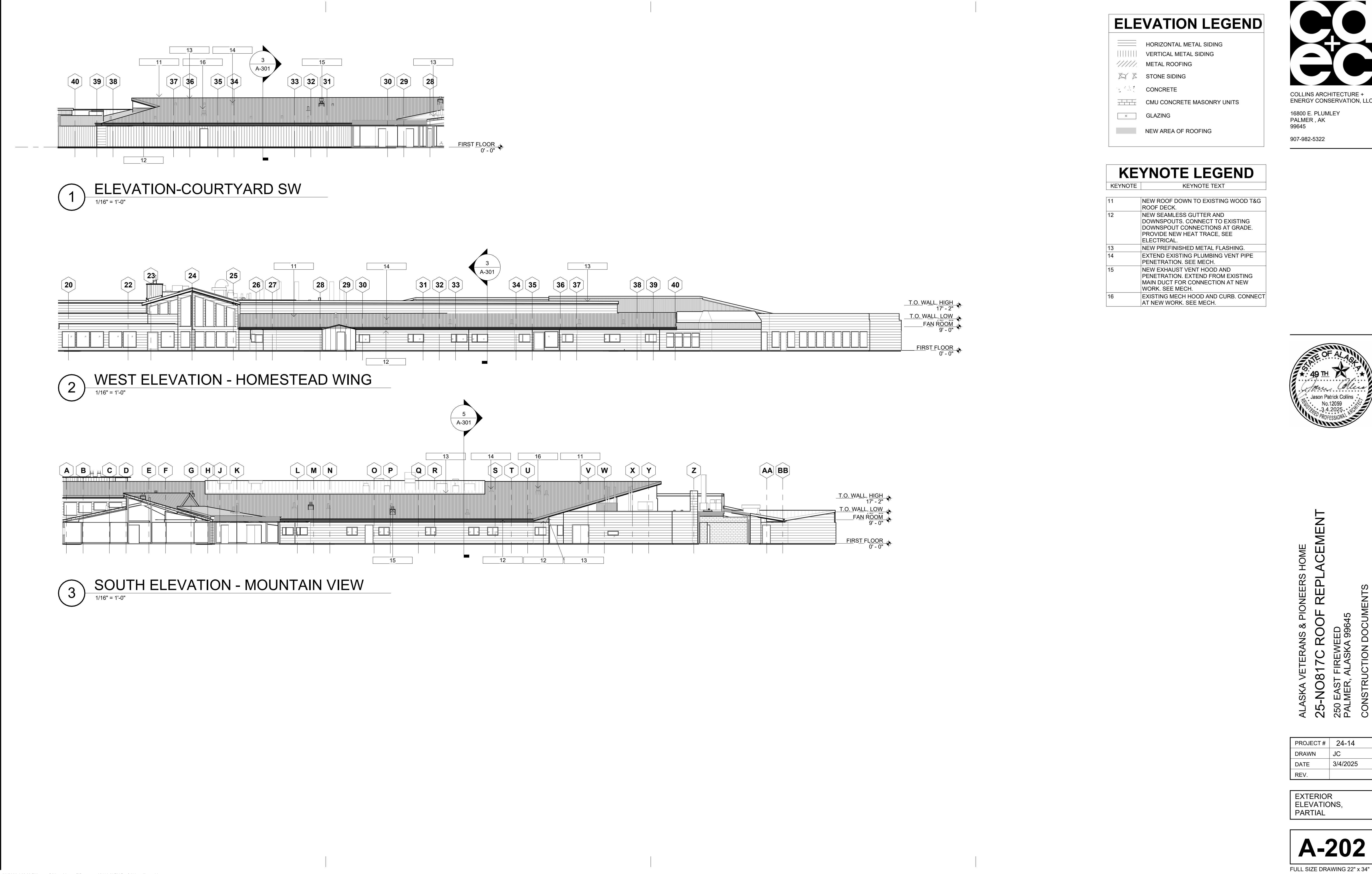
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF RELACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

EXTERIOR
ELEVATIONS

A-201

FULL SIZE DRAWING 22" x 34"

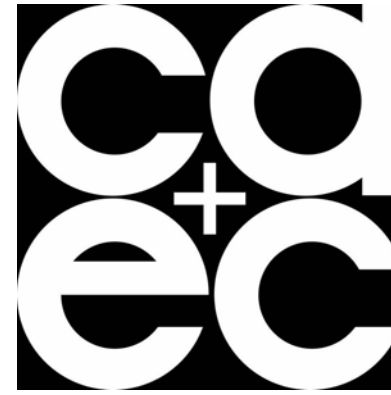


ELEVATION LEGEND

	HORIZONTAL METAL SIDING
	VERTICAL METAL SIDING
	METAL ROOFING
	STONE SIDING
	CONCRETE
	CMU CONCRETE MASONRY UNITS
	GLAZING
	NEW AREA OF ROOFING

KEYNOTE LEGEND

KEYNOTE	KEYNOTE TEXT
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE, SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.
16	EXISTING MECH HOOD AND CURB. CONNECT AT NEW WORK. SEE MECH.



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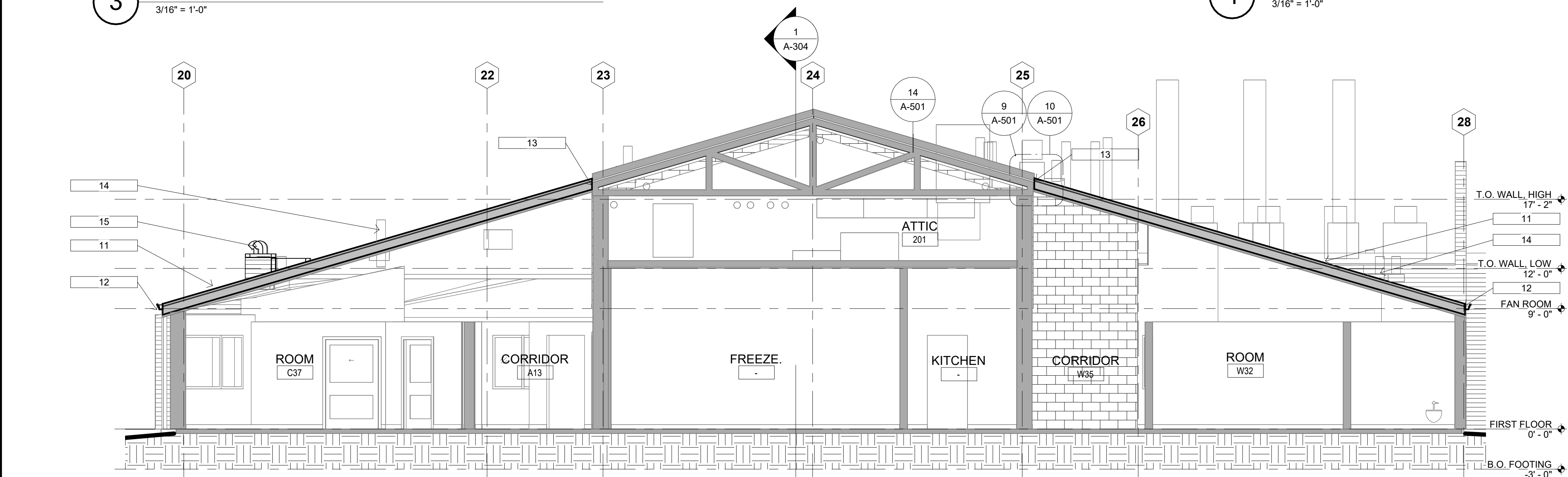
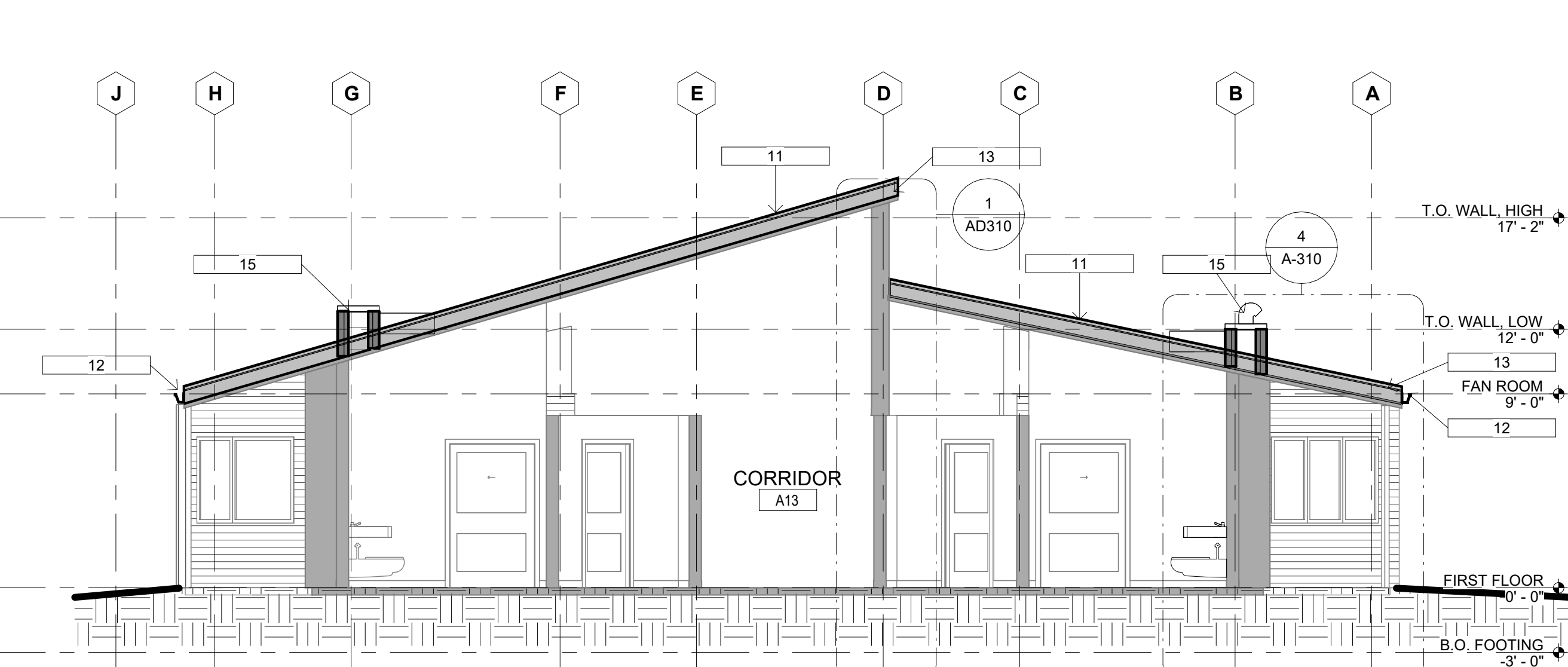
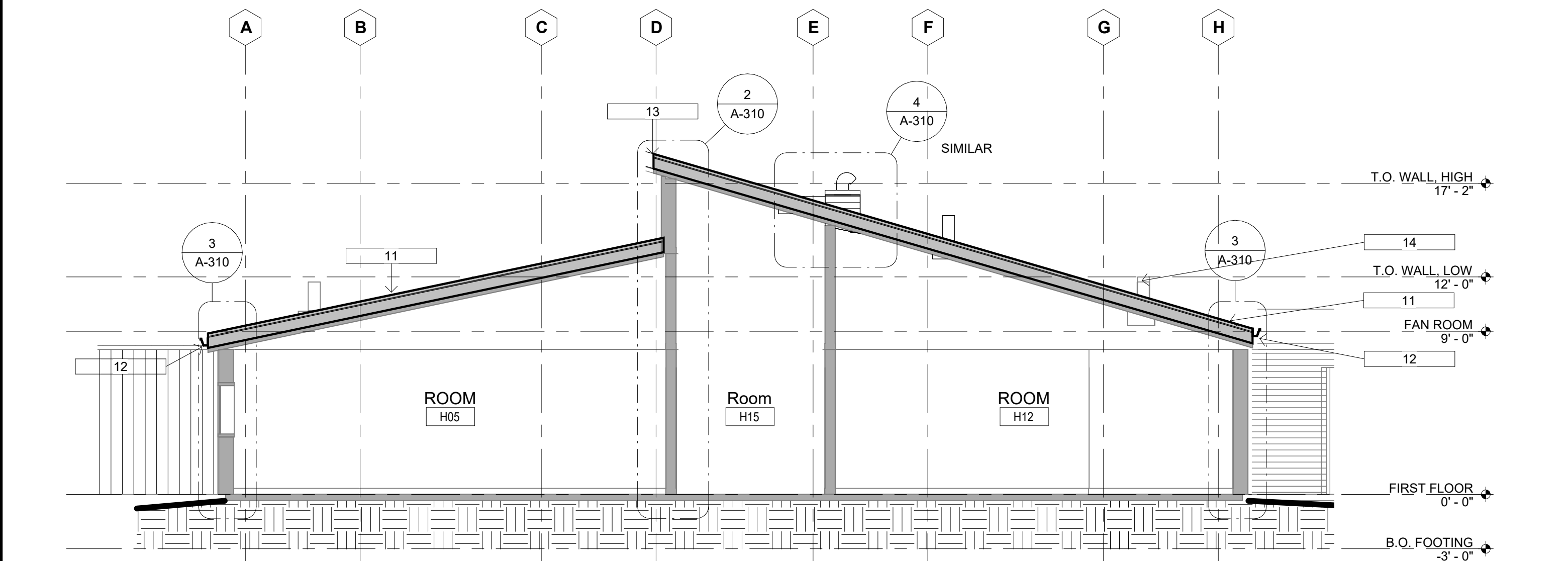
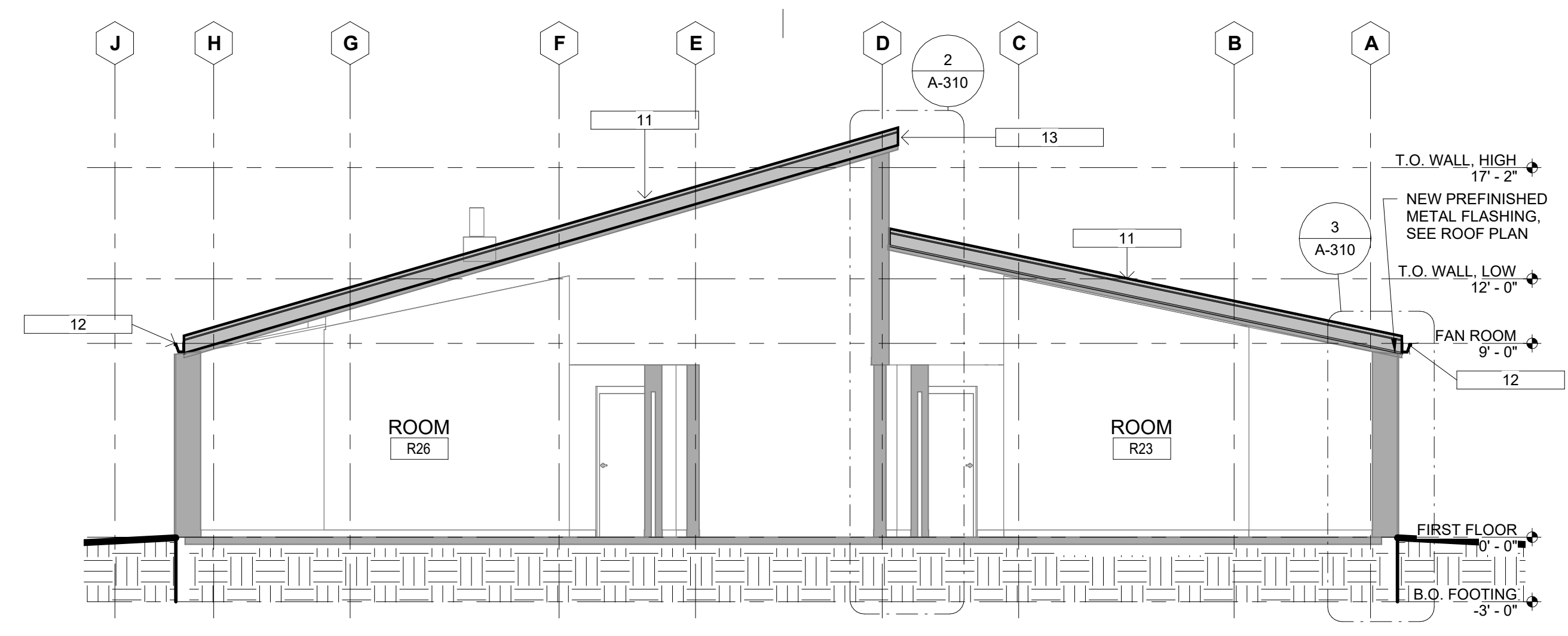
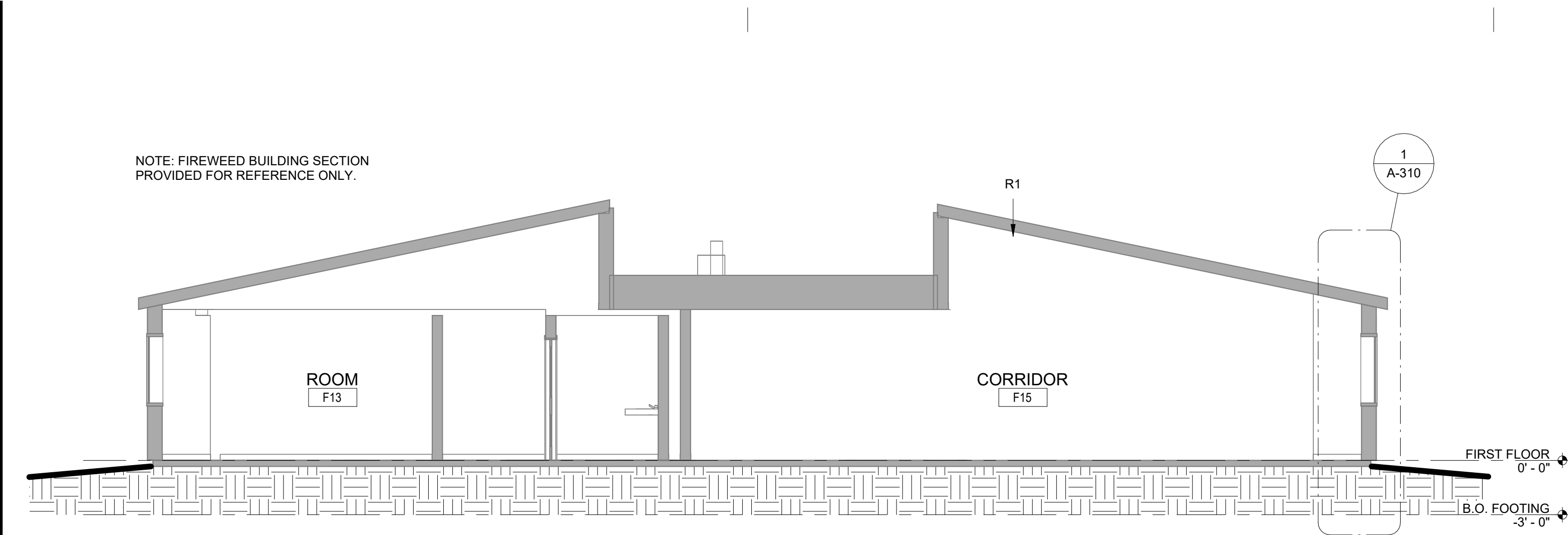
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

EXTERIOR
ELEVATIONS,
PARTIAL

A-202

FULL SIZE DRAWING 22" x 34"



KEYNOTE LEGEND	
KEYNOT E	KEYNOTE TEXT
11	NEW ROOF DOWN TO EXISTING WOOD T&G ROOF DECK.
12	NEW SEAMLESS GUTTER AND DOWNSPOUTS. CONNECT TO EXISTING DOWNSPOUT CONNECTIONS AT GRADE. PROVIDE NEW HEAT TRACE, SEE ELECTRICAL.
13	NEW PREFINISHED METAL FLASHING.
14	EXTEND EXISTING PLUMBING VENT PIPE PENETRATION. SEE MECH.
15	NEW EXHAUST VENT HOOD AND PENETRATION. EXTEND FROM EXISTING MAIN DUCT FOR CONNECTION AT NEW WORK. SEE MECH.



PROJECT #	24-14
DRAWN	JC
DATE	3/4/2025
REV.	

BUILDING CROSS
SECTION

A-301
FULL SIZE DRAWING 22" x 34"



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ENERGY CONSERVATION, LLC
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PALMER, AK
99645
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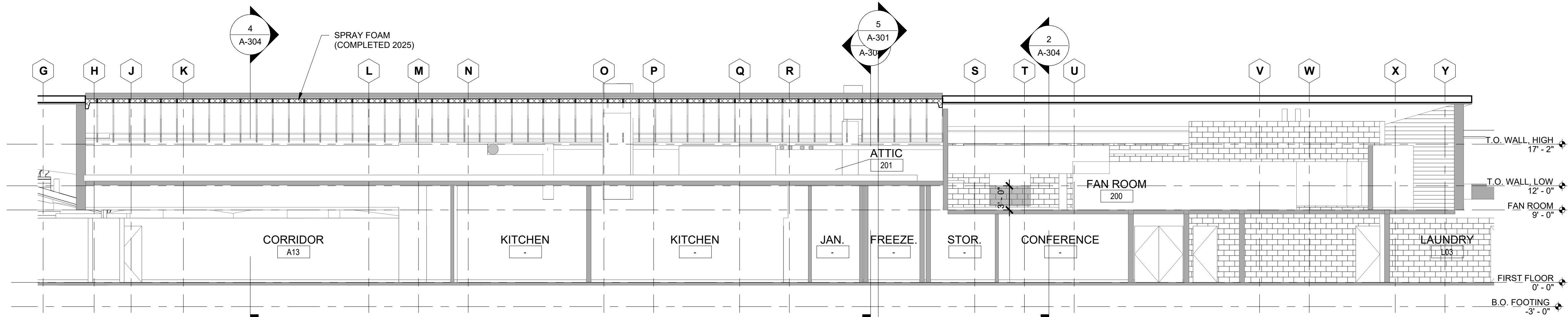
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

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DRAWN	Author
DATE	3/4/2025
REV.	

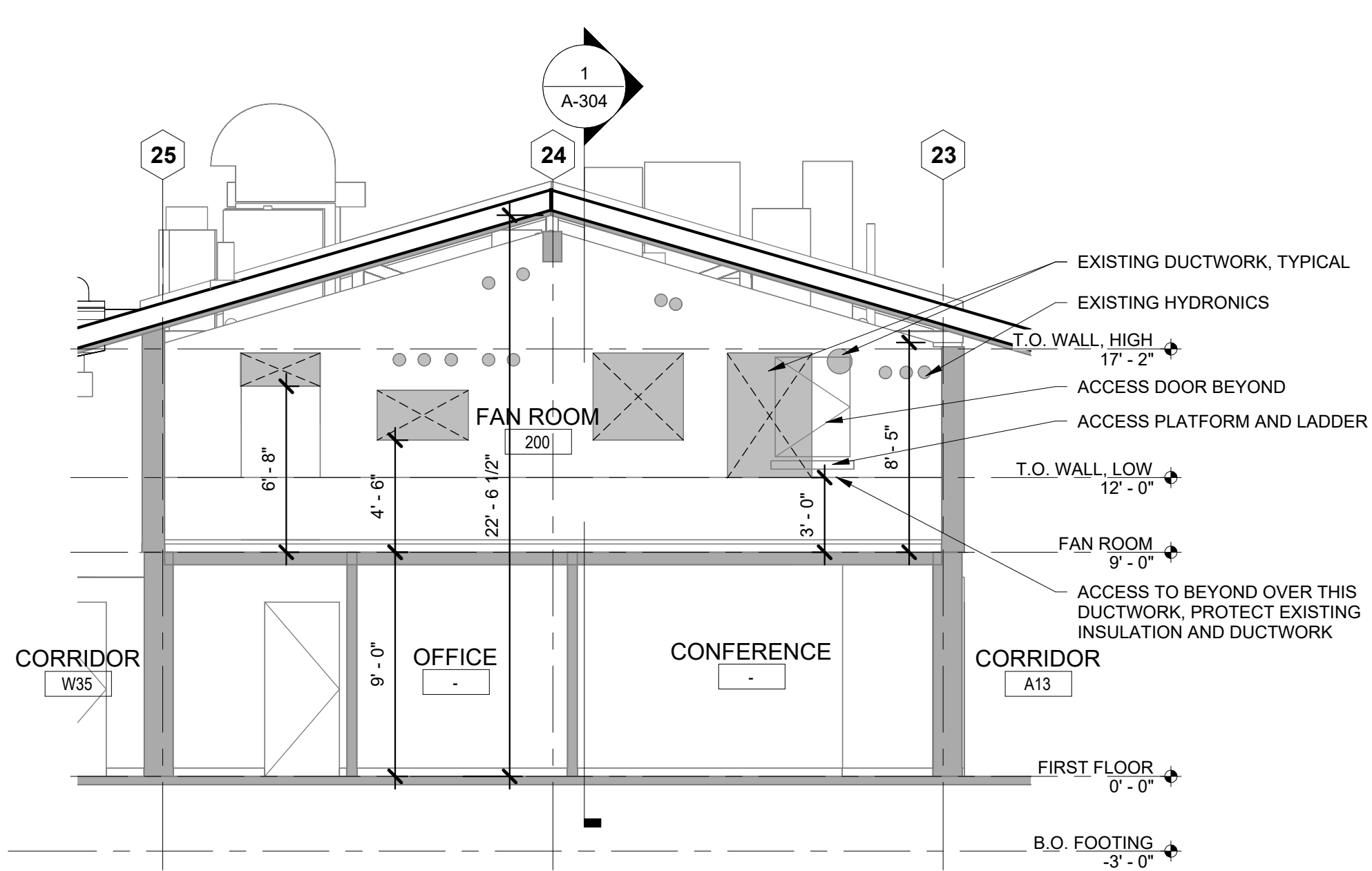
FAN ROOM
SECTIONS

A-304

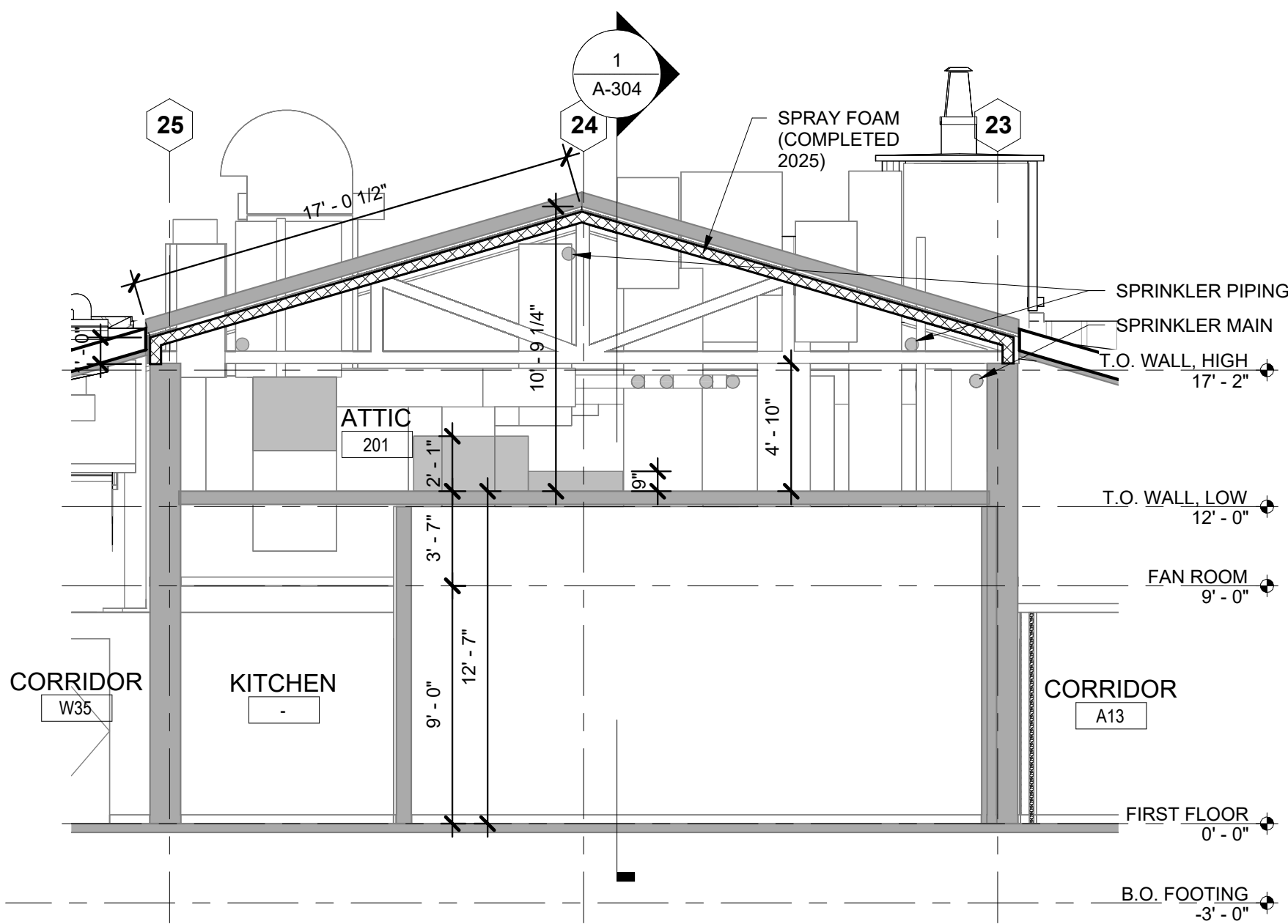
FULL SIZE DRAWING 22" x 34"



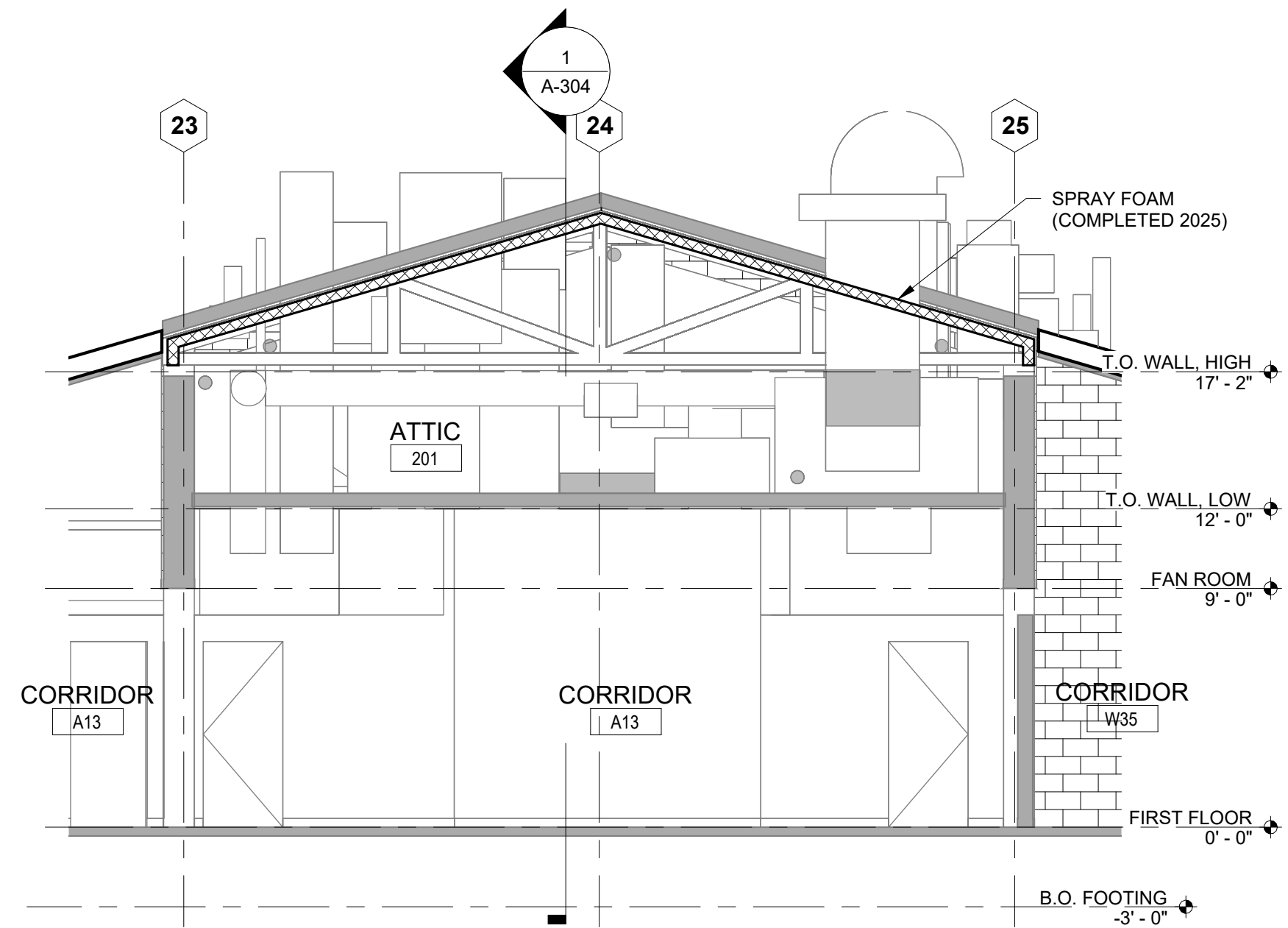
1 LONGITUDINAL SECTION AT FAN ROOM
1/8" = 1'-0"



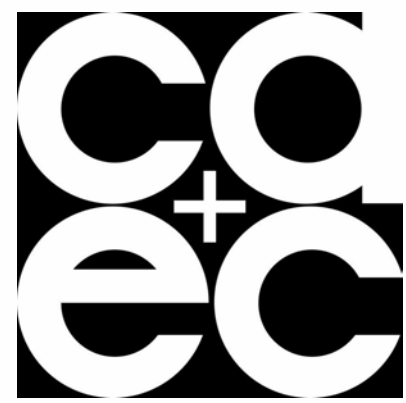
2 CROSS SECTION AT FAN ROOM
3/16" = 1'-0"



3 CROSS SECTION AT ATTIC - EAST
3/16" = 1'-0"



4 CROSS SECTION AT ATTIC - WEST
3/16" = 1'-0"



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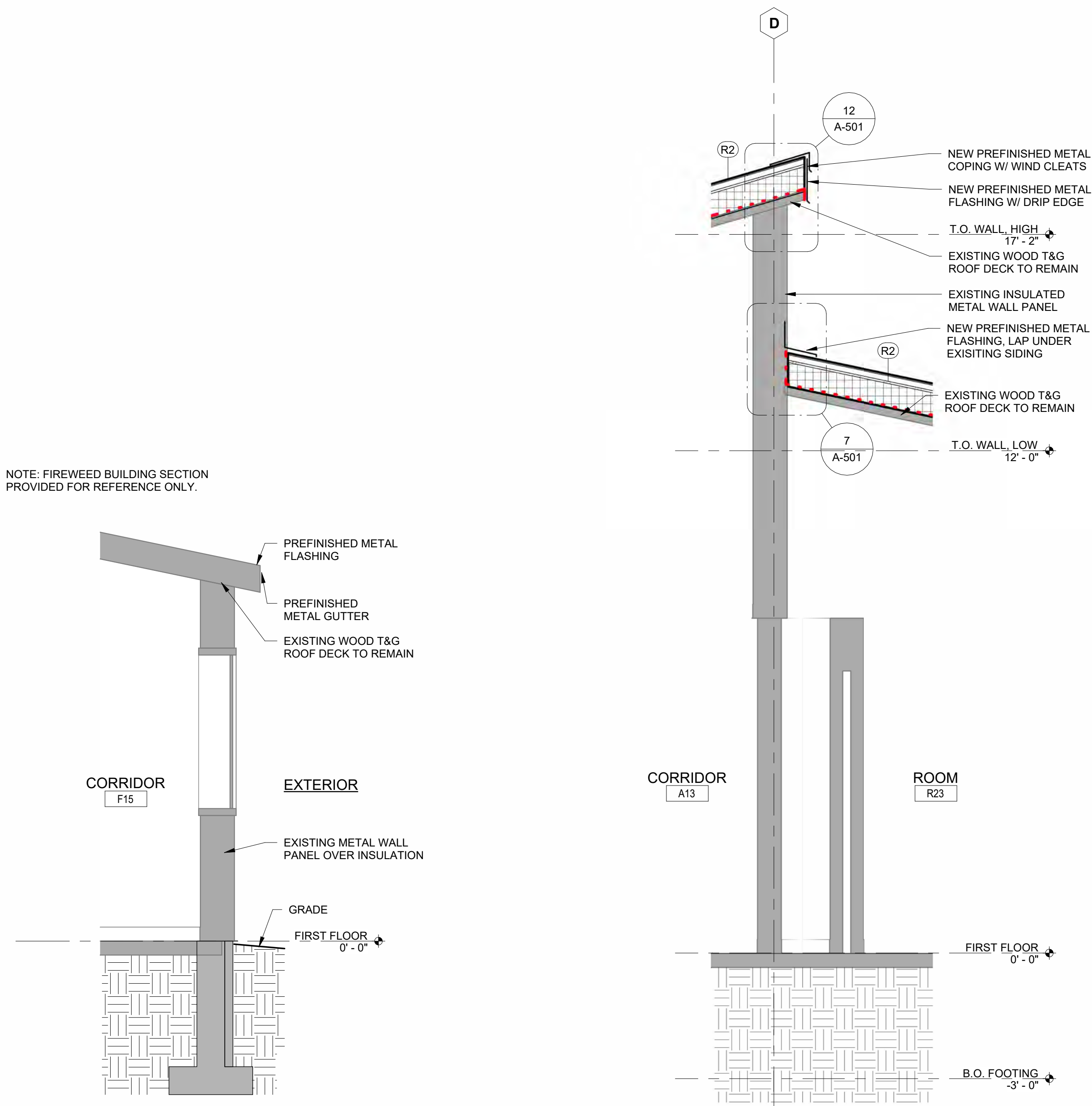
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

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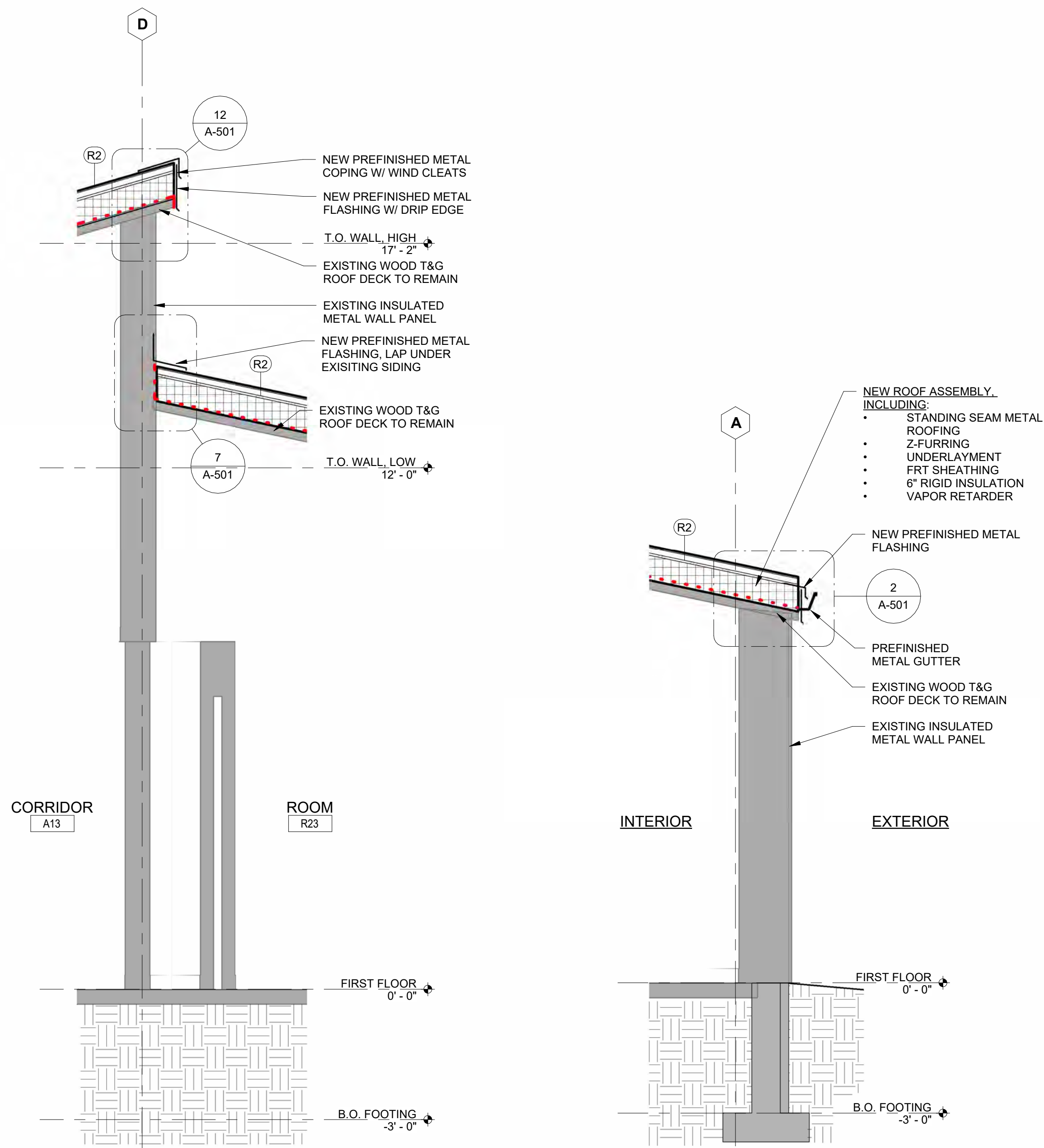
WALL SECTIONS

A-310

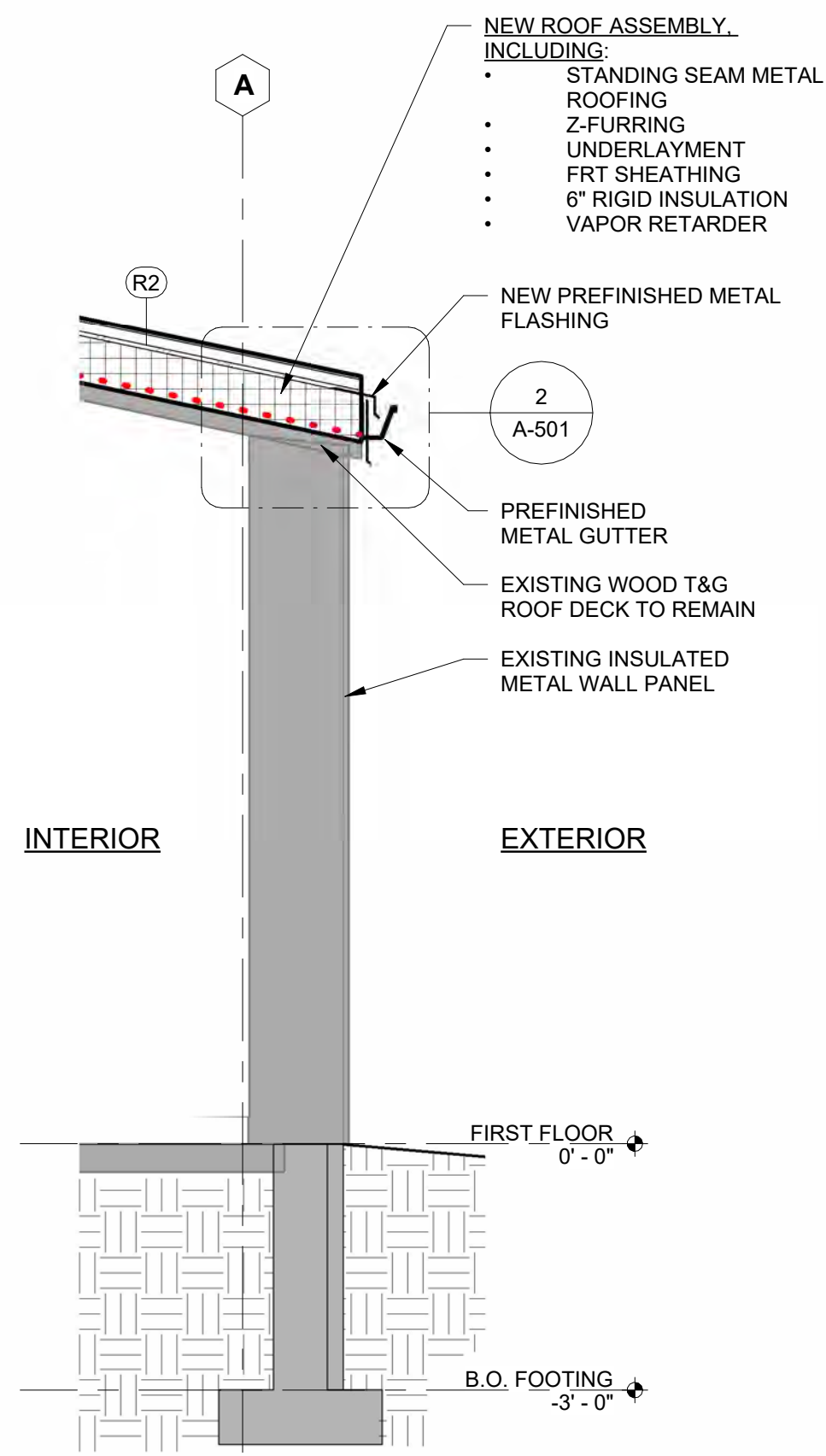
FULL SIZE DRAWING 22" x 34"



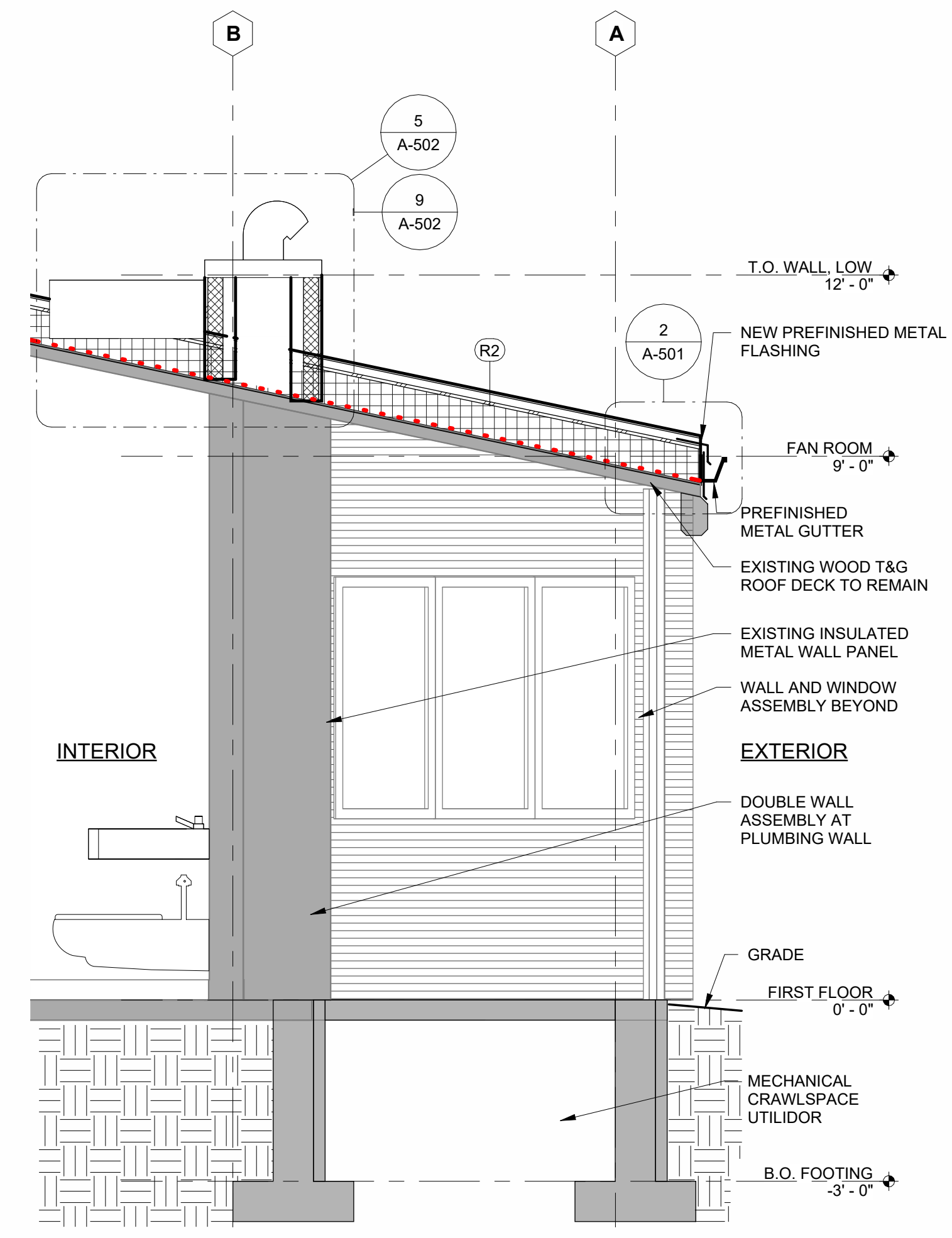
1 WALL SECTION AT FIREWEED
1/2" = 1'-0"



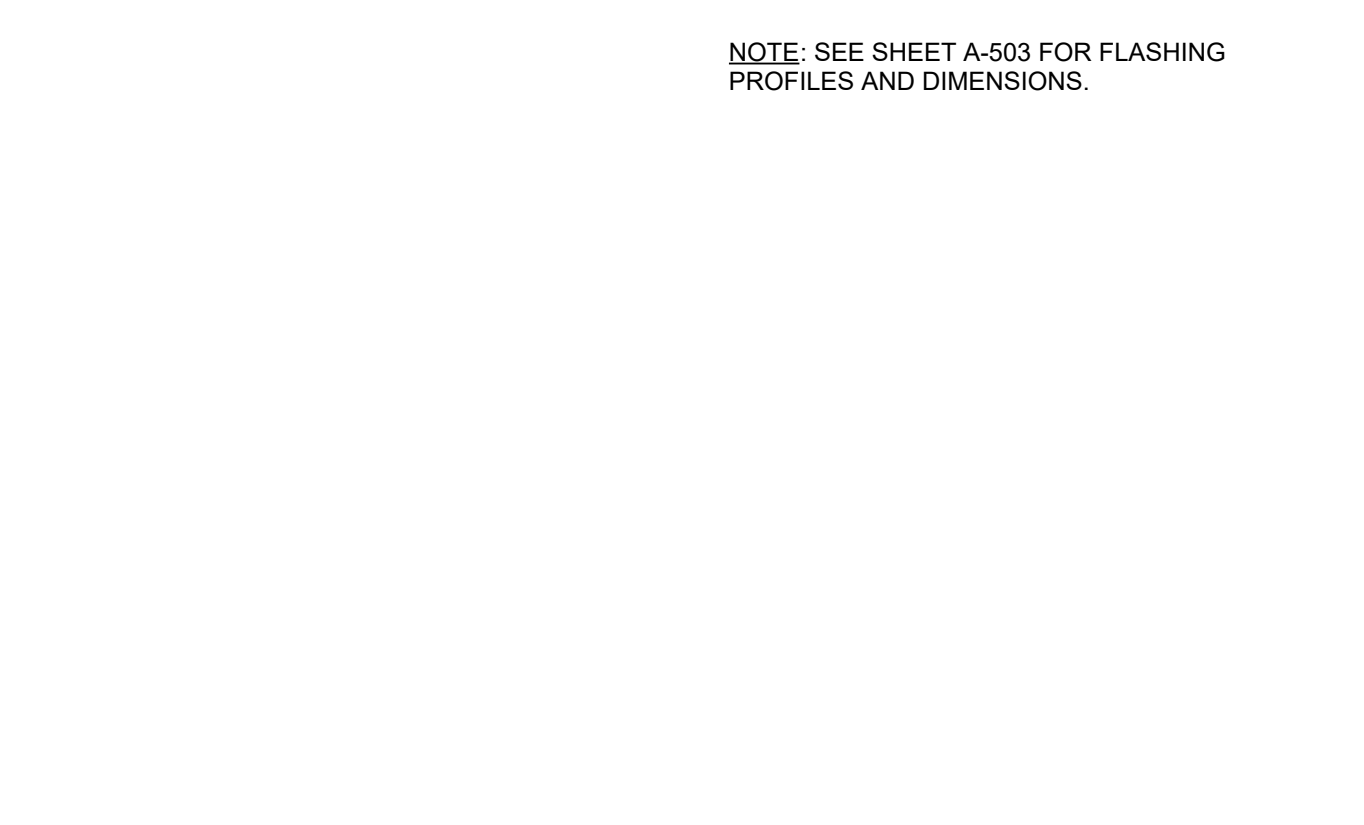
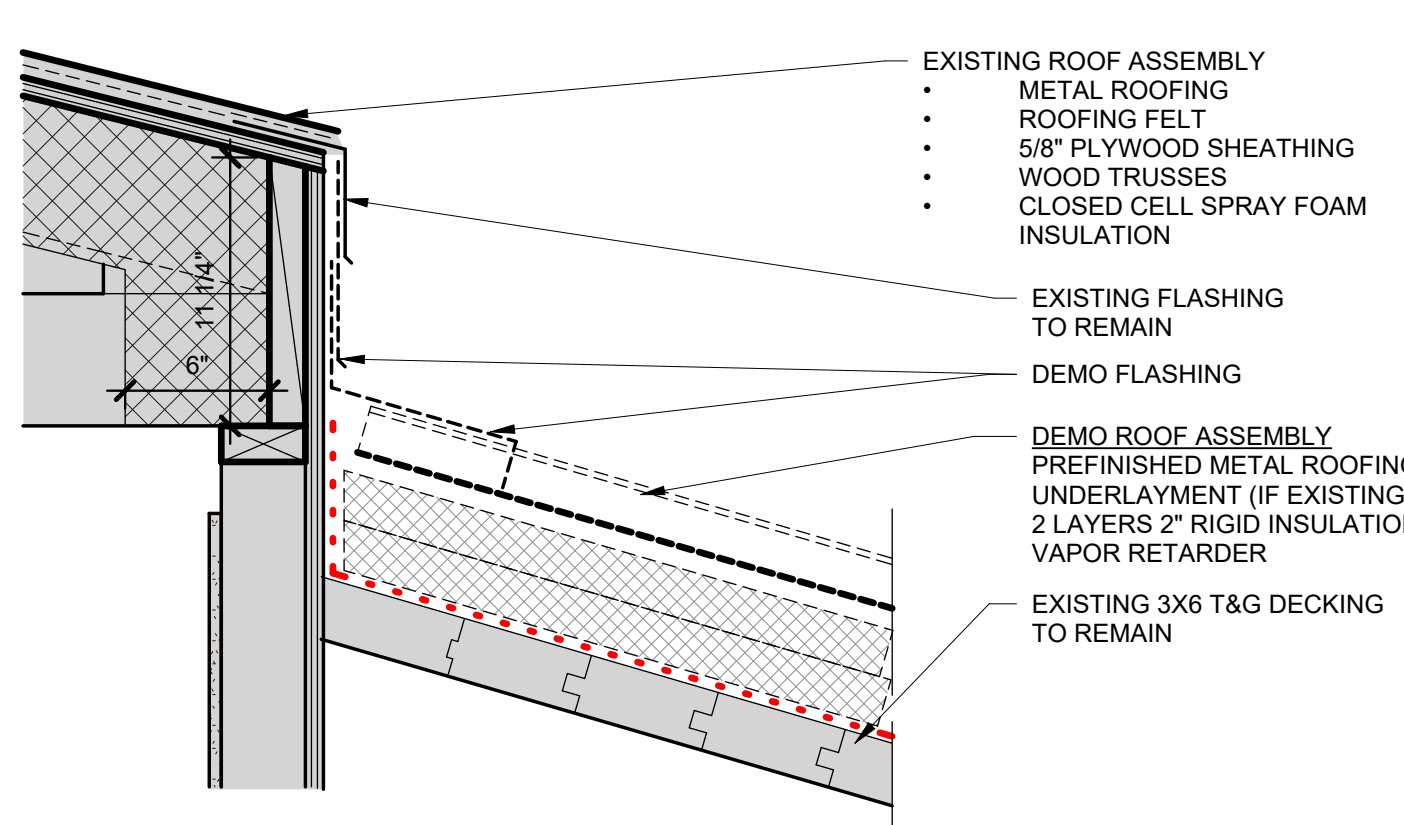
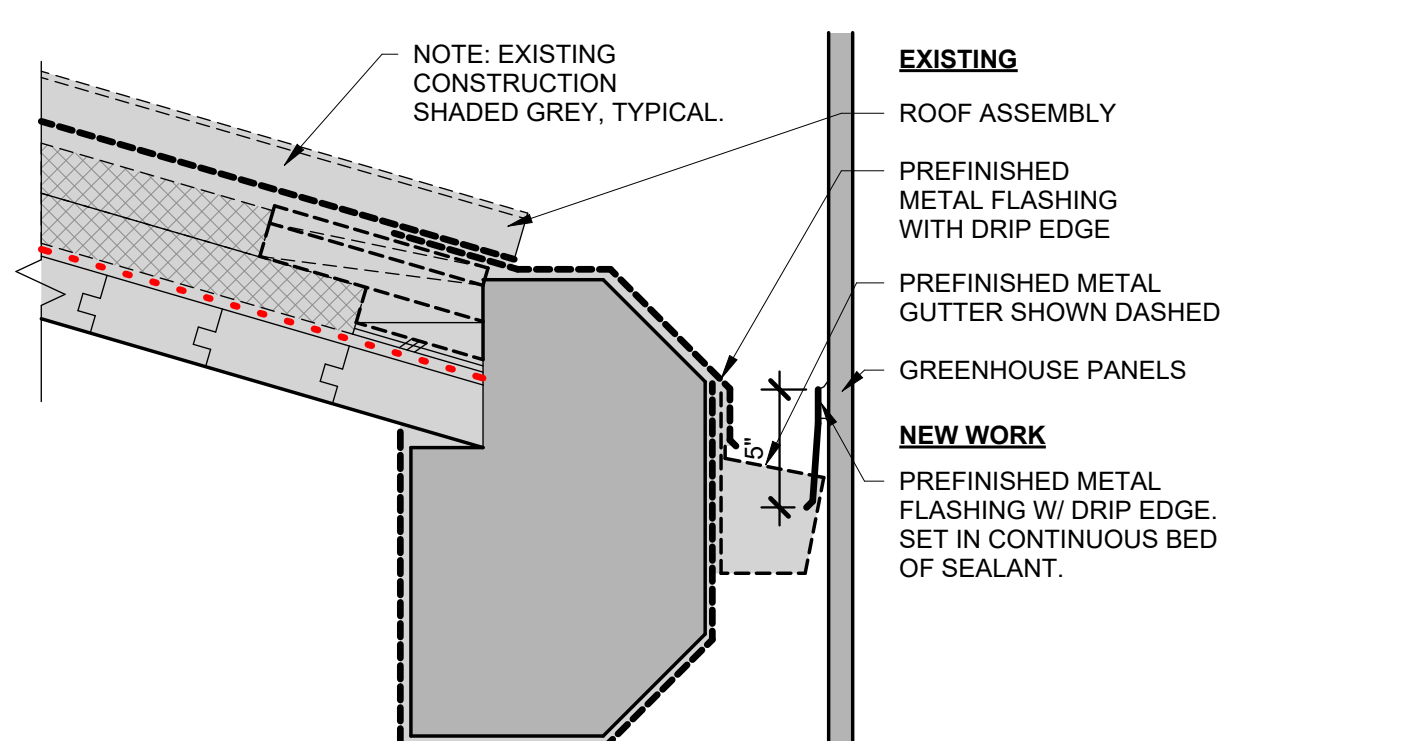
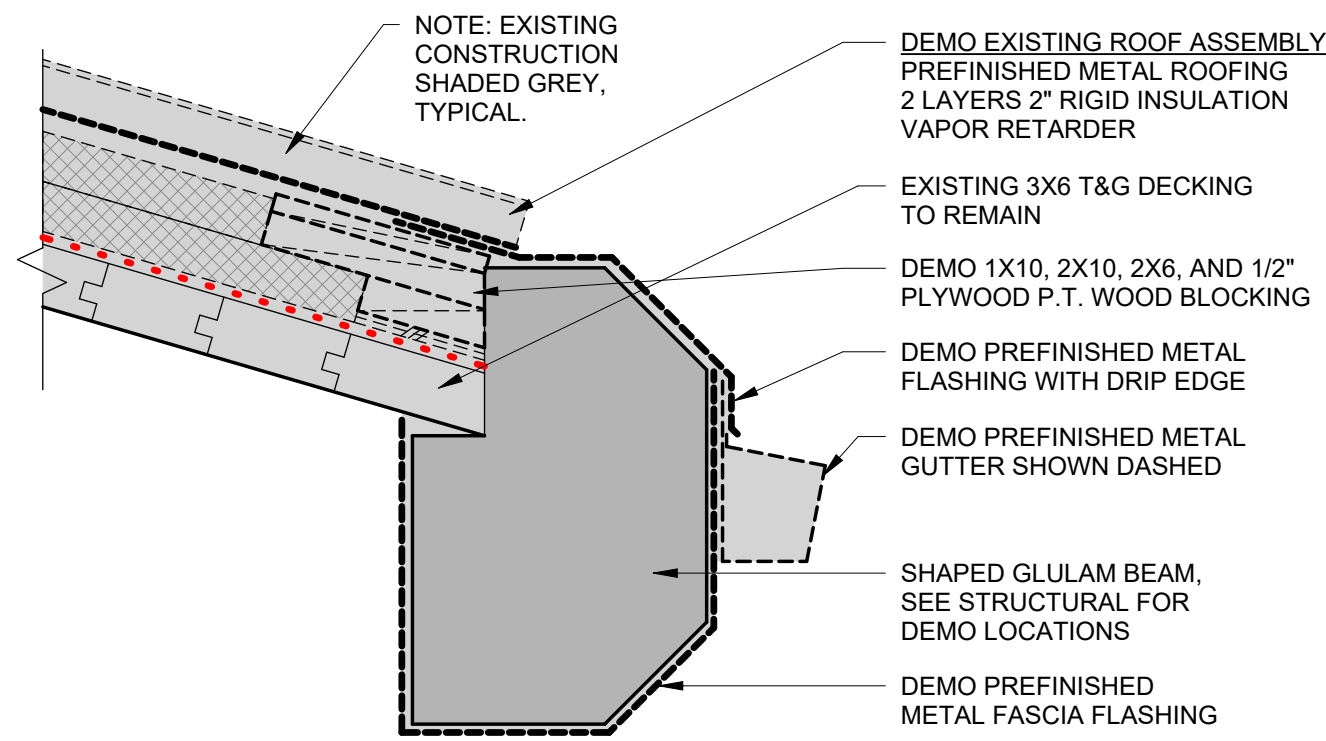
2 WALL SECTION AT HIGH ROOF
1/2" = 1'-0"



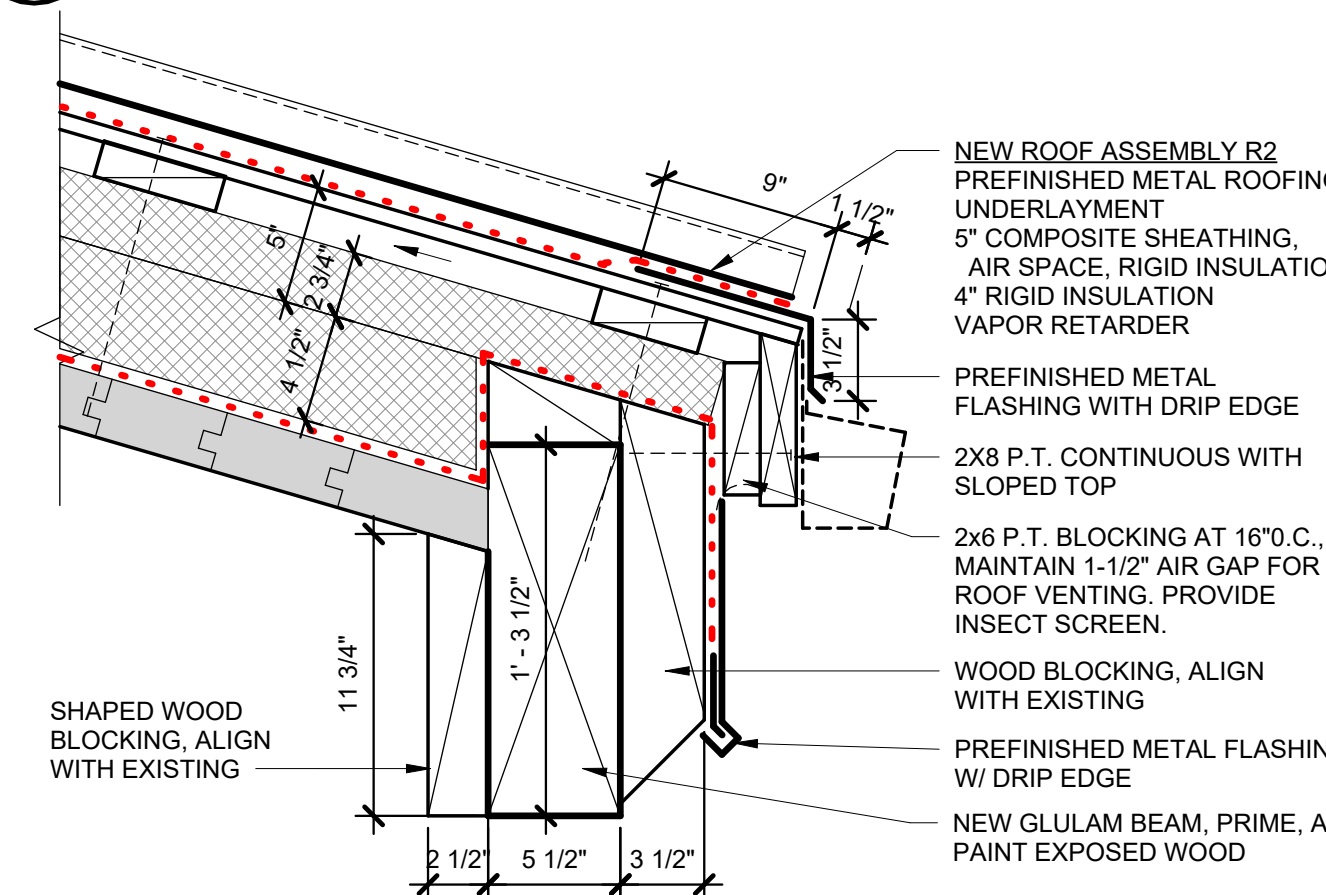
3 WALL SECTION AT EAVE
1/2" = 1'-0"



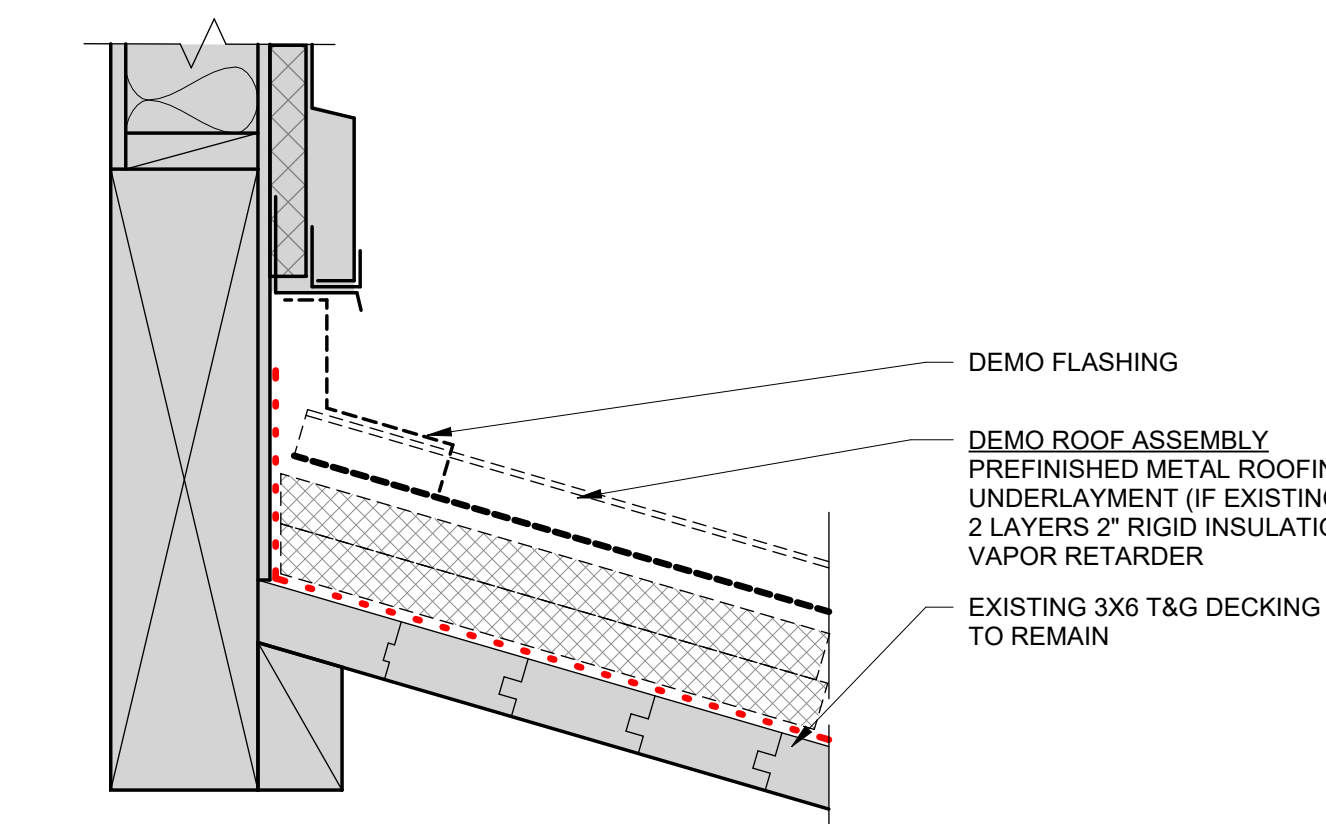
4 SECTION AT MECHANICAL SHROUD
1/2" = 1'-0"



1 1 1/2" = 1'-0"

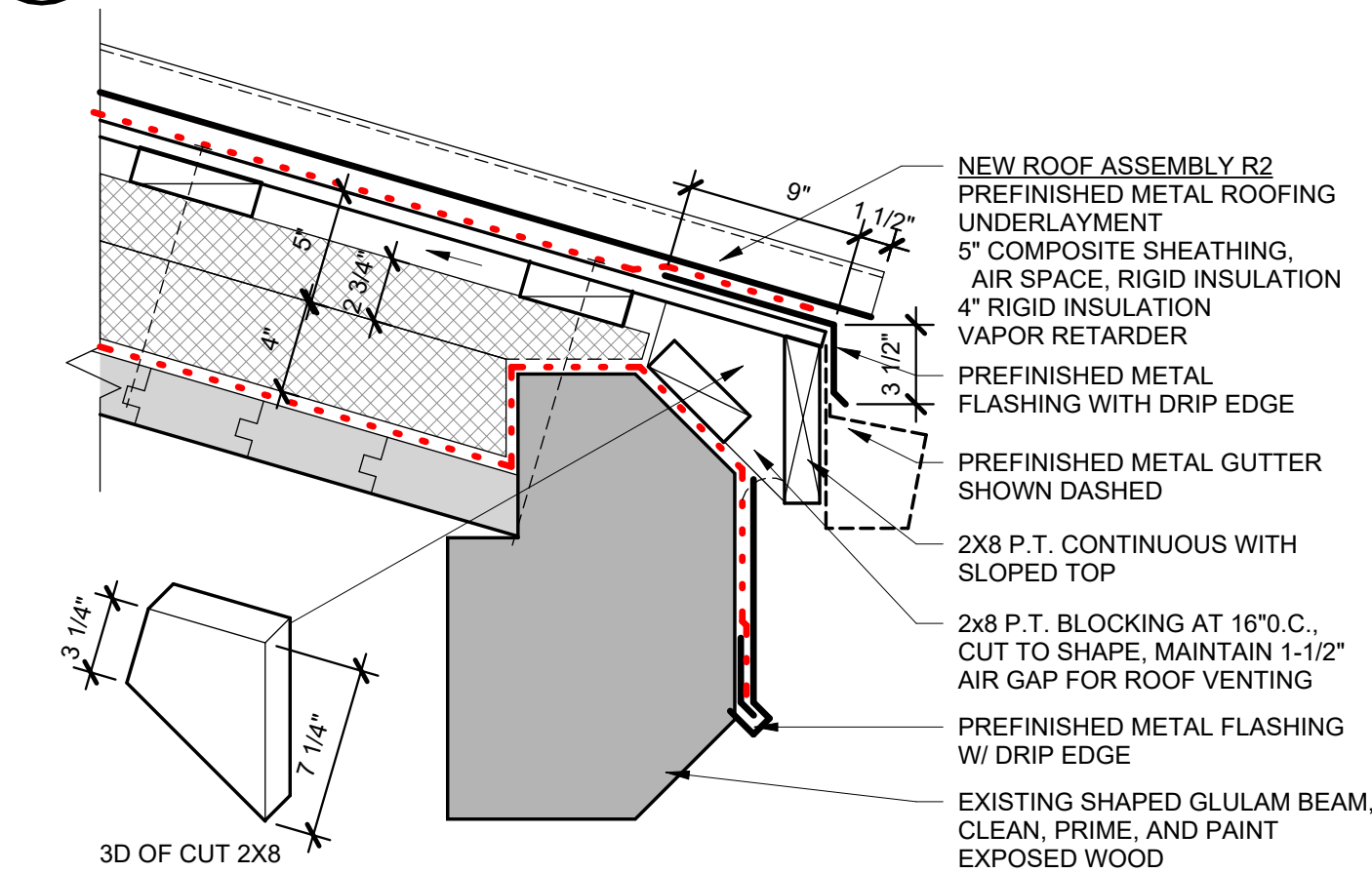


2 1 1/2" = 1'-0"

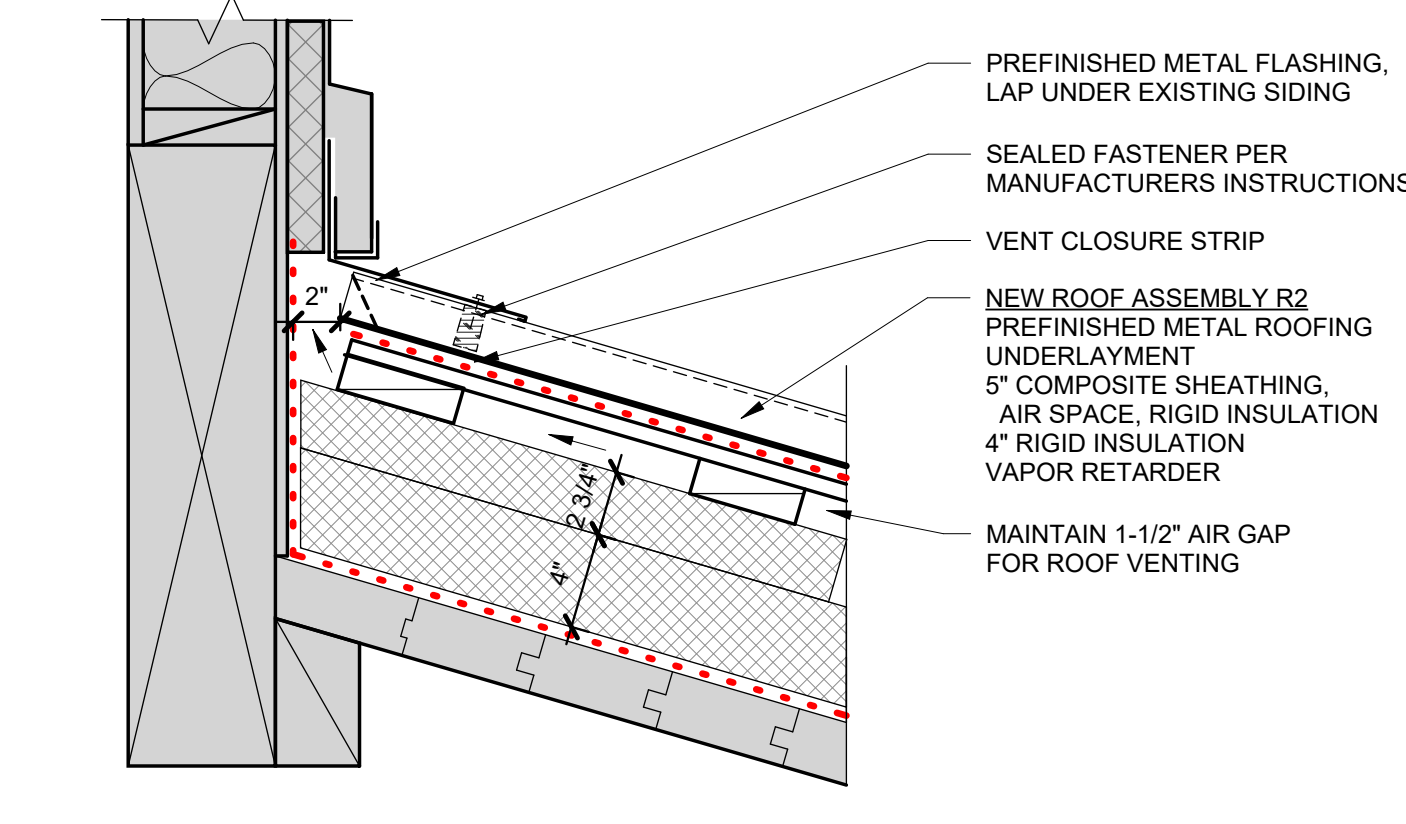


3 1 1/2" = 1'-0"

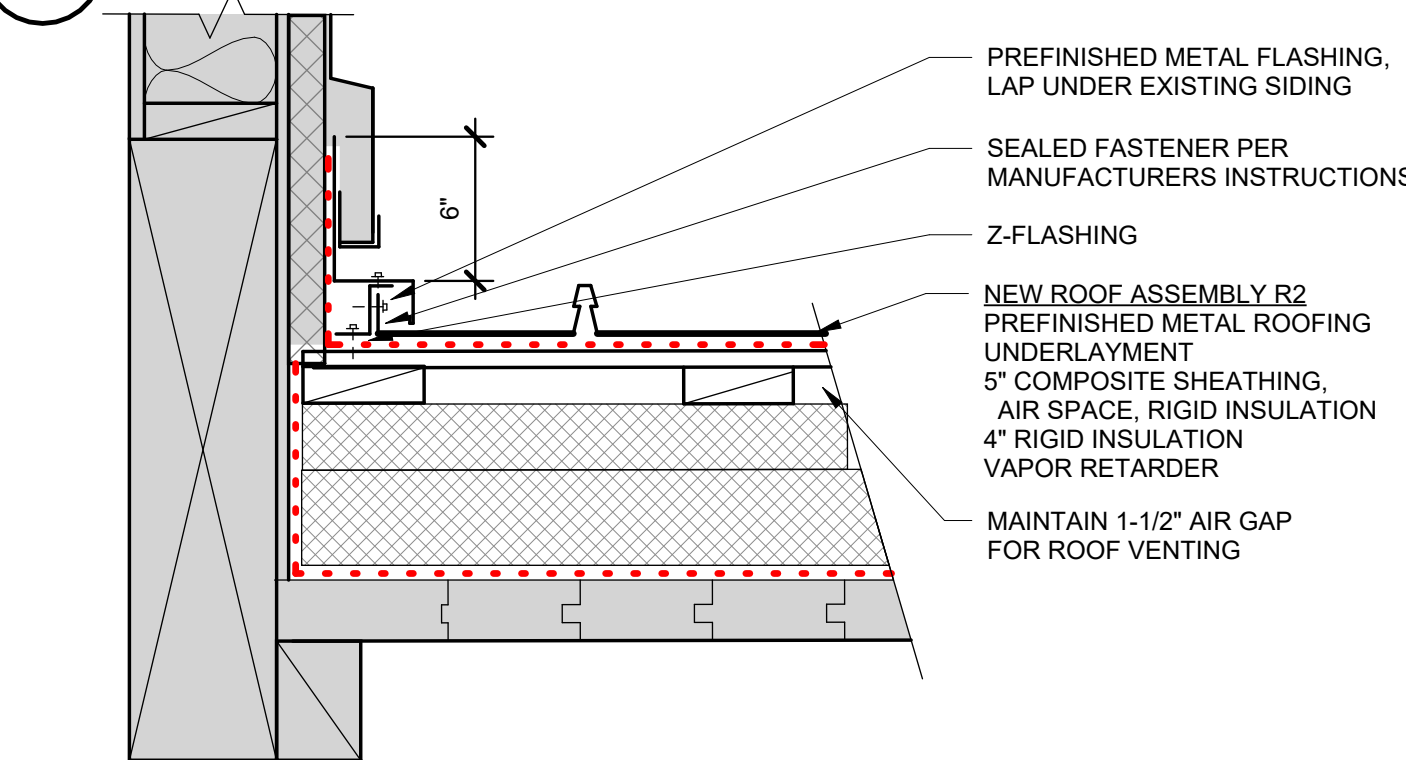
5 1 1/2" = 1'-0"



6 1 1/2" = 1'-0"

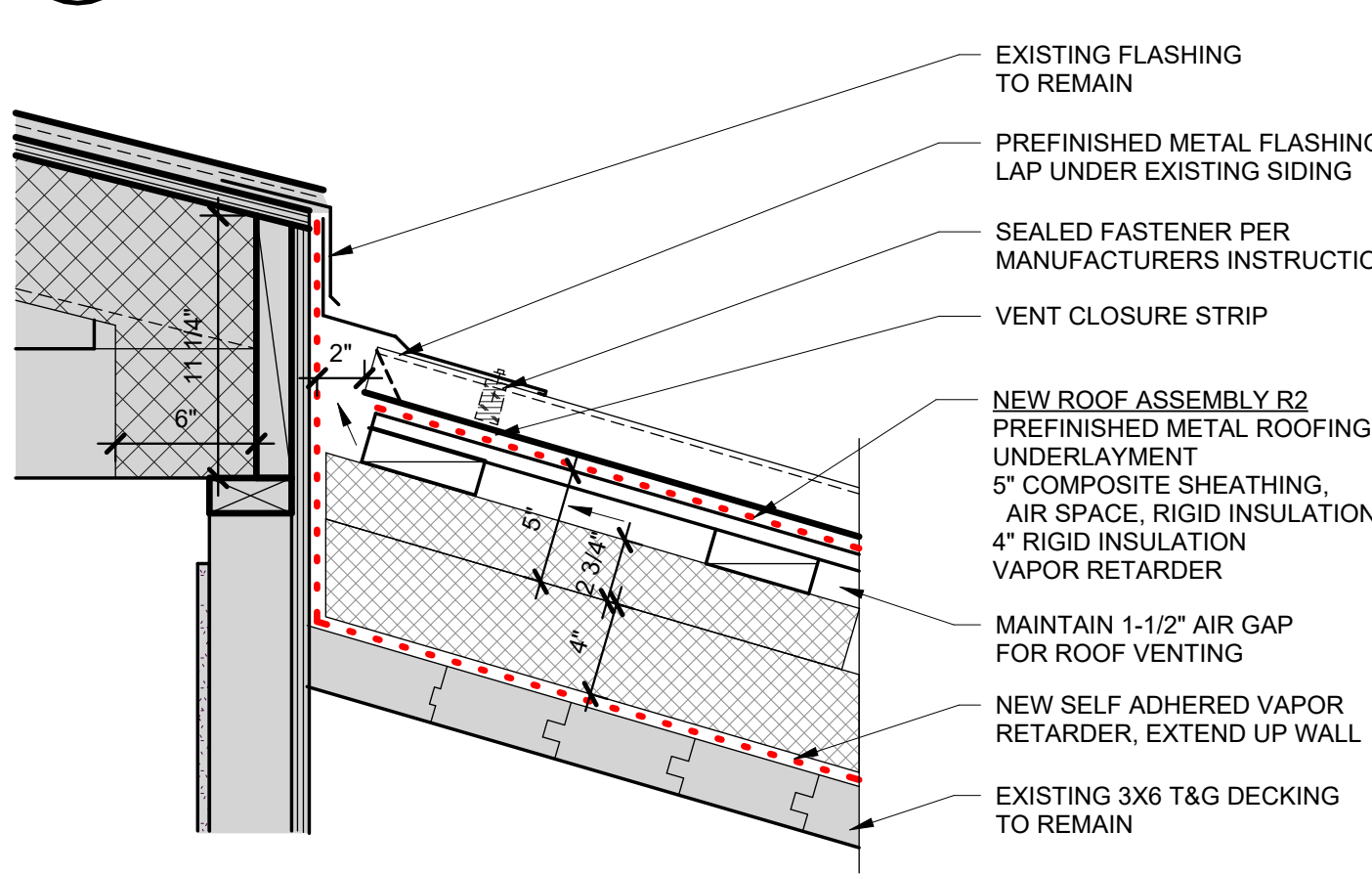


7 1 1/2" = 1'-0"

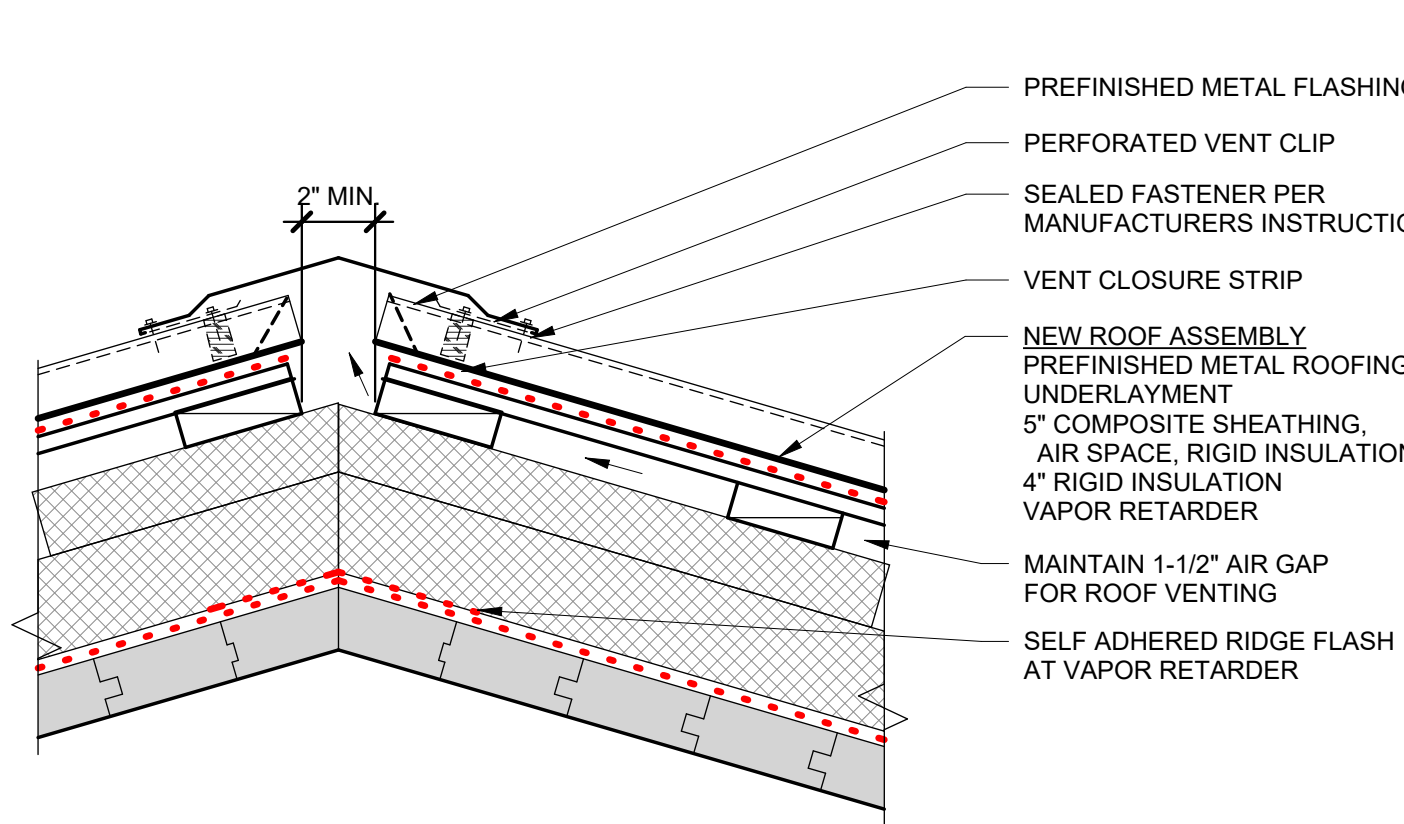


8 1 1/2" = 1'-0"

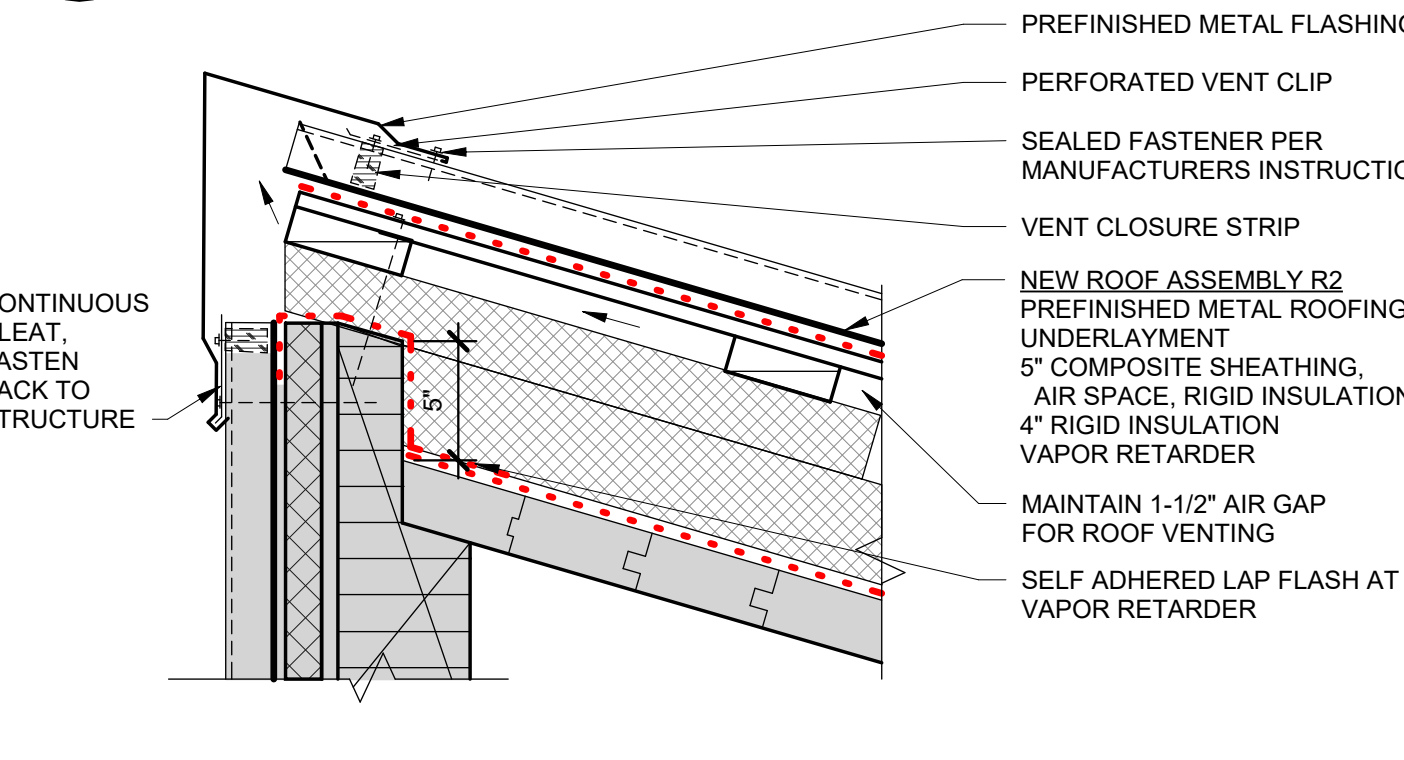
9 1 1/2" = 1'-0"



10 1 1/2" = 1'-0"

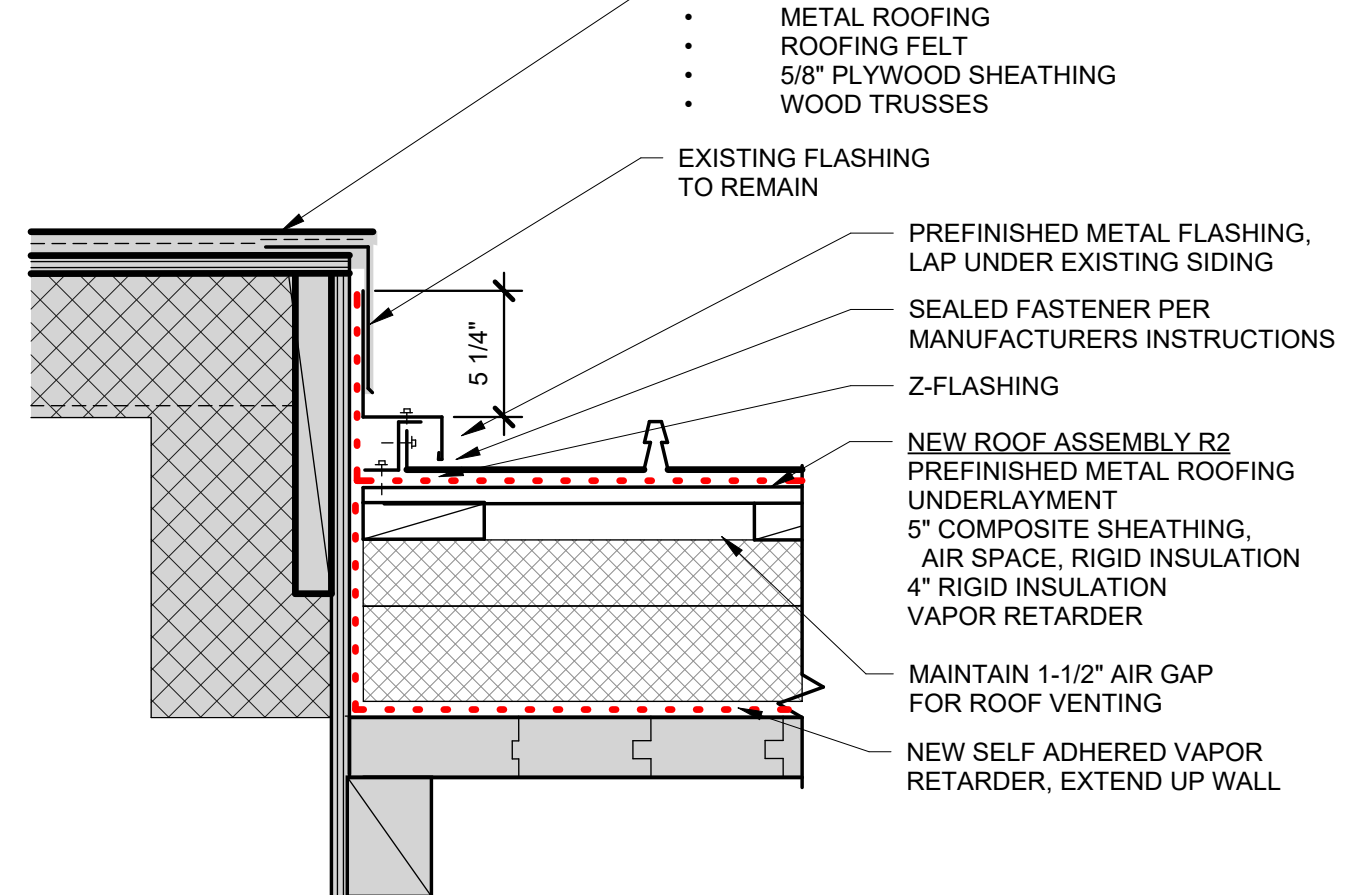


11 1 1/2" = 1'-0"

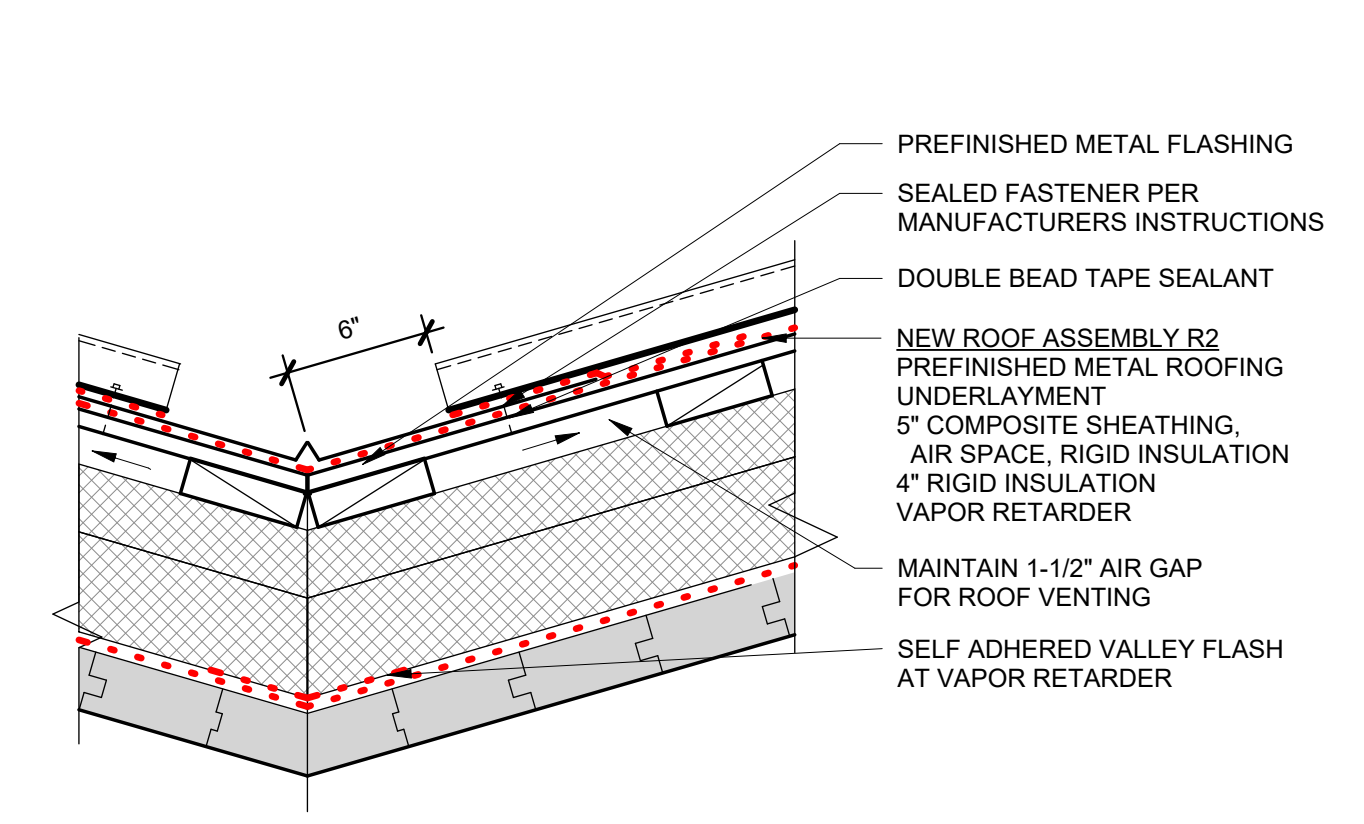


12 1 1/2" = 1'-0"

14 1 1/2" = 1'-0"



15 1 1/2" = 1'-0"



16 1 1/2" = 1'-0"



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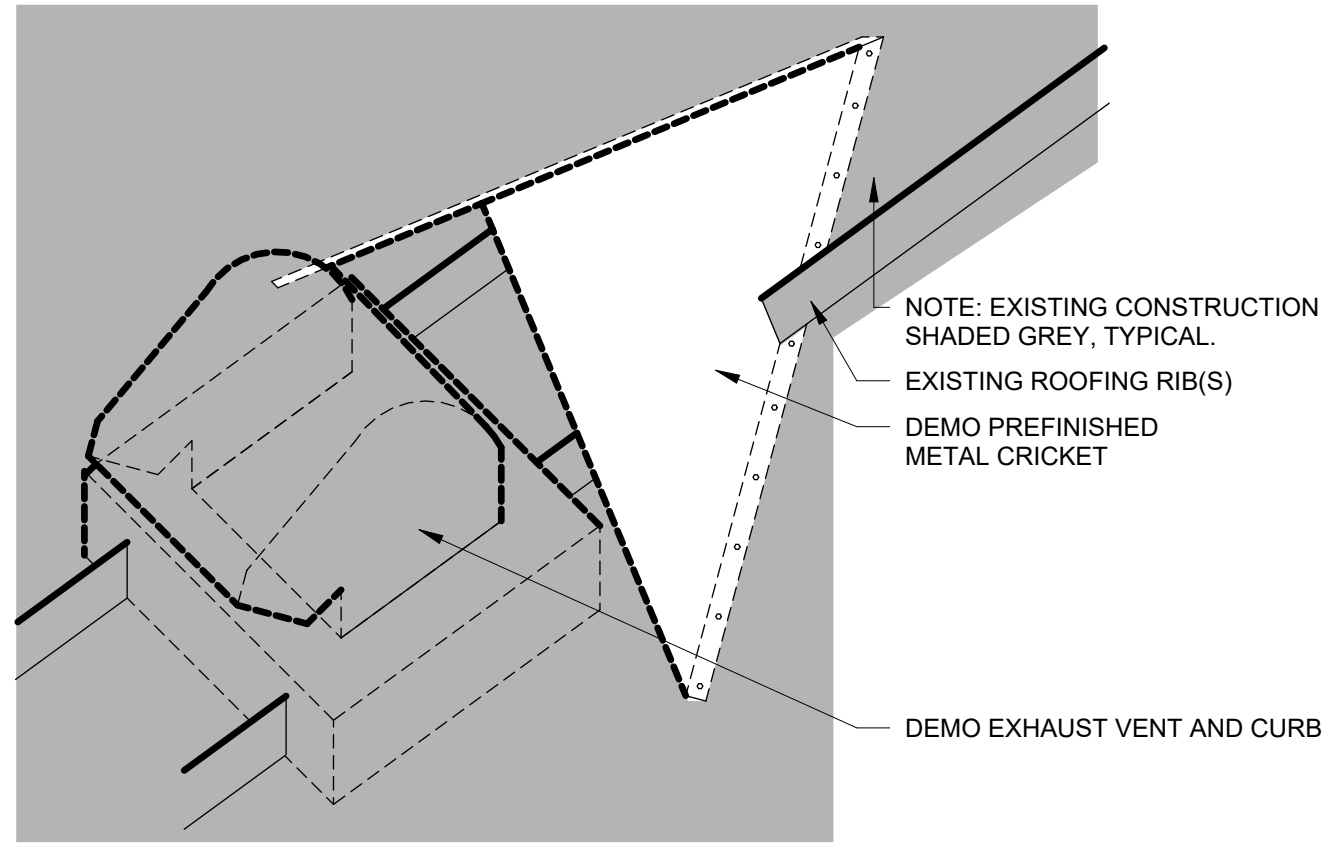
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
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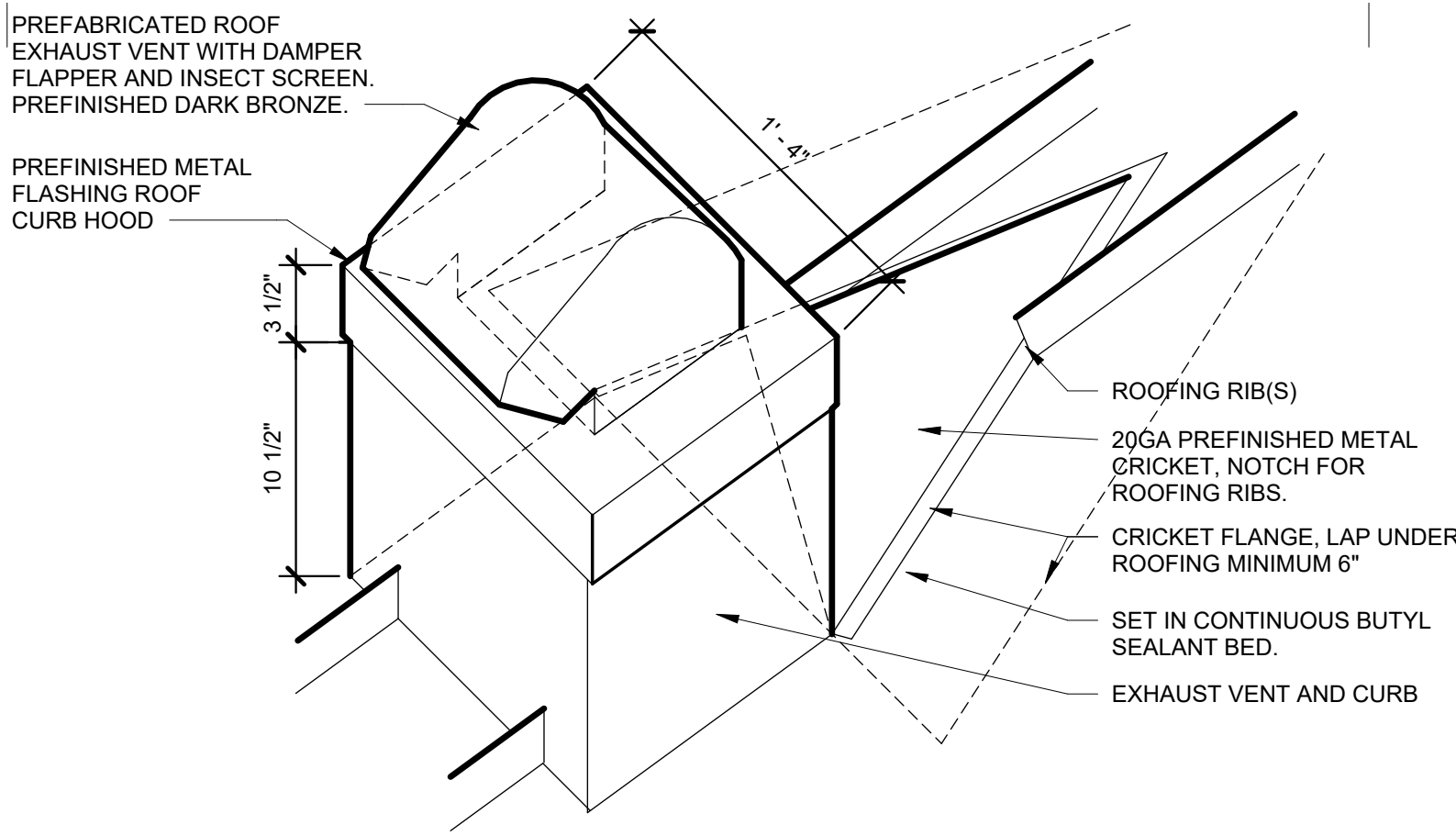
EXTERIOR DETAILS

A-501

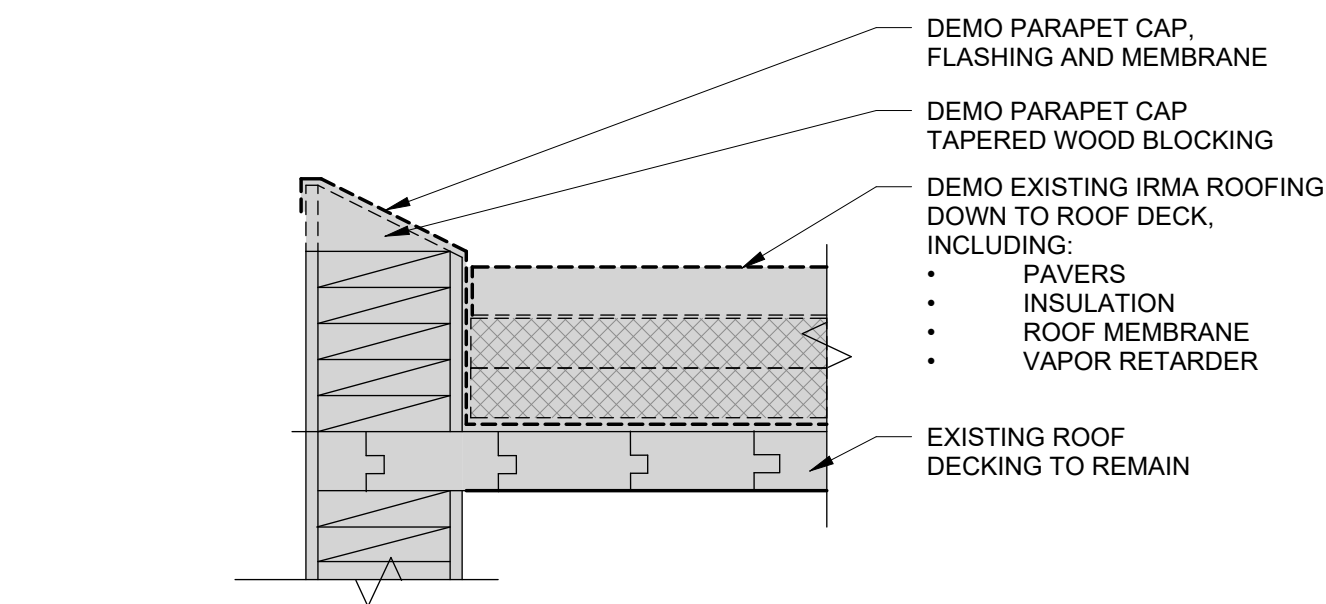
FULL SIZE DRAWING 22" x 34"



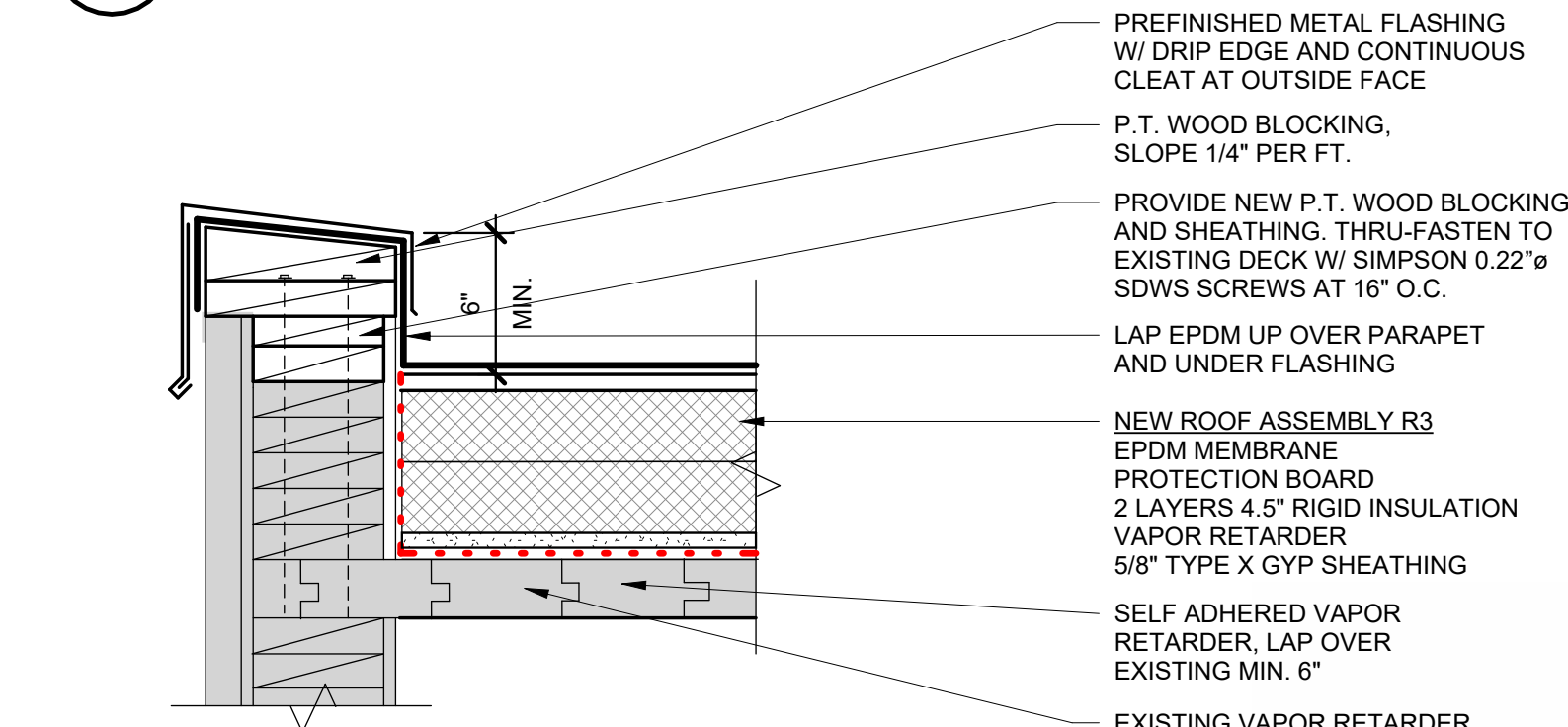
1 VENT FLASHING - ISOMETRIC DEMO
1 1/2" = 1'-0"



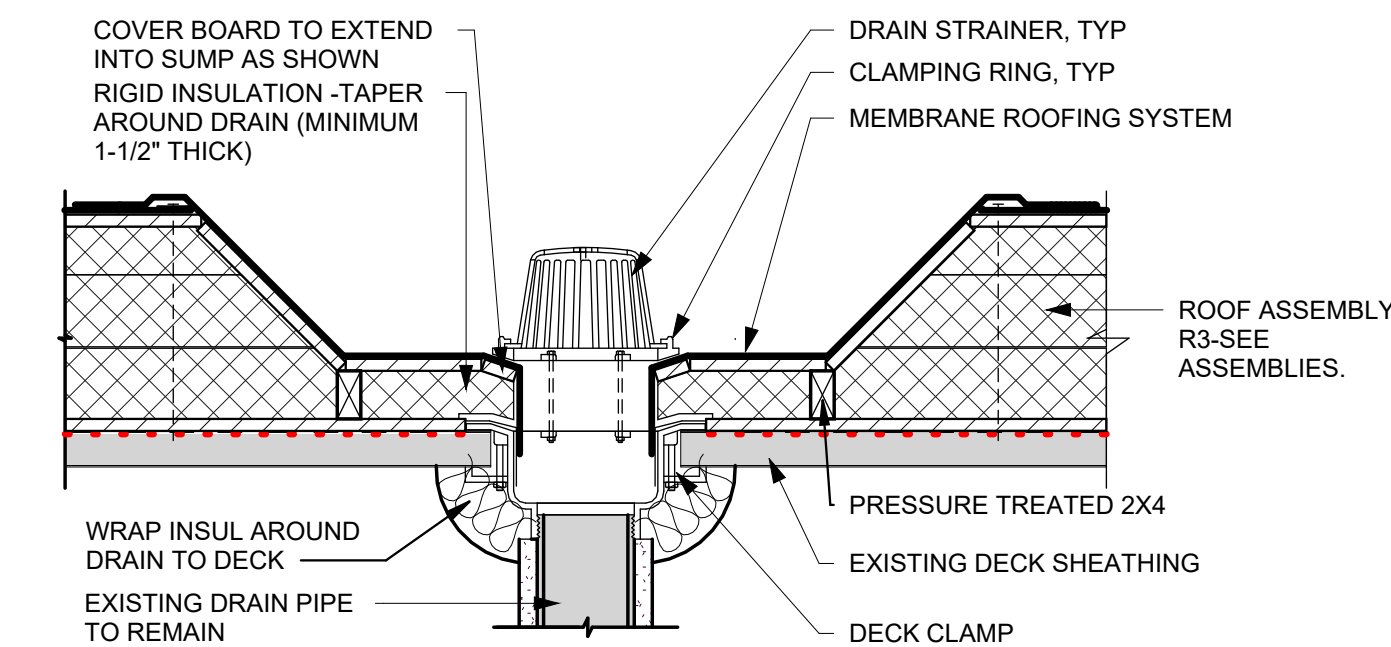
5 VENT FLASHING - ISOMETRIC
1 1/2" = 1'-0"



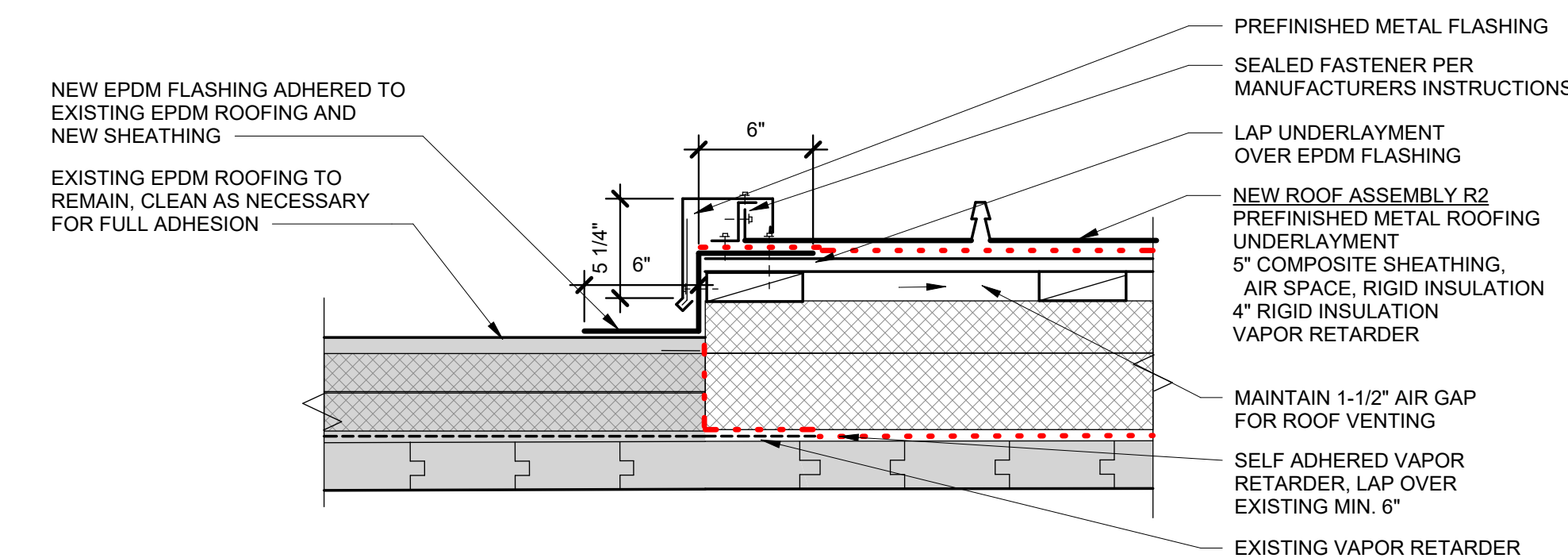
2 EXISTING IRMA ROOF
1 1/2" = 1'-0"



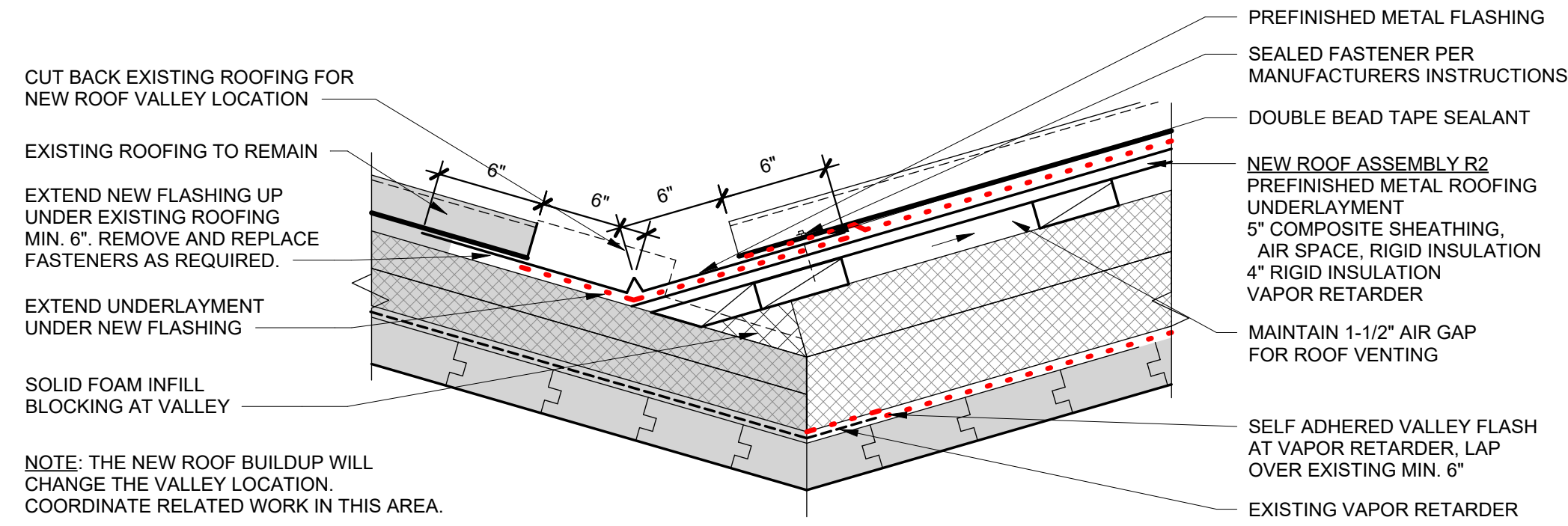
6 EPDM ROOF REPLACEMENT
1 1/2" = 1'-0"



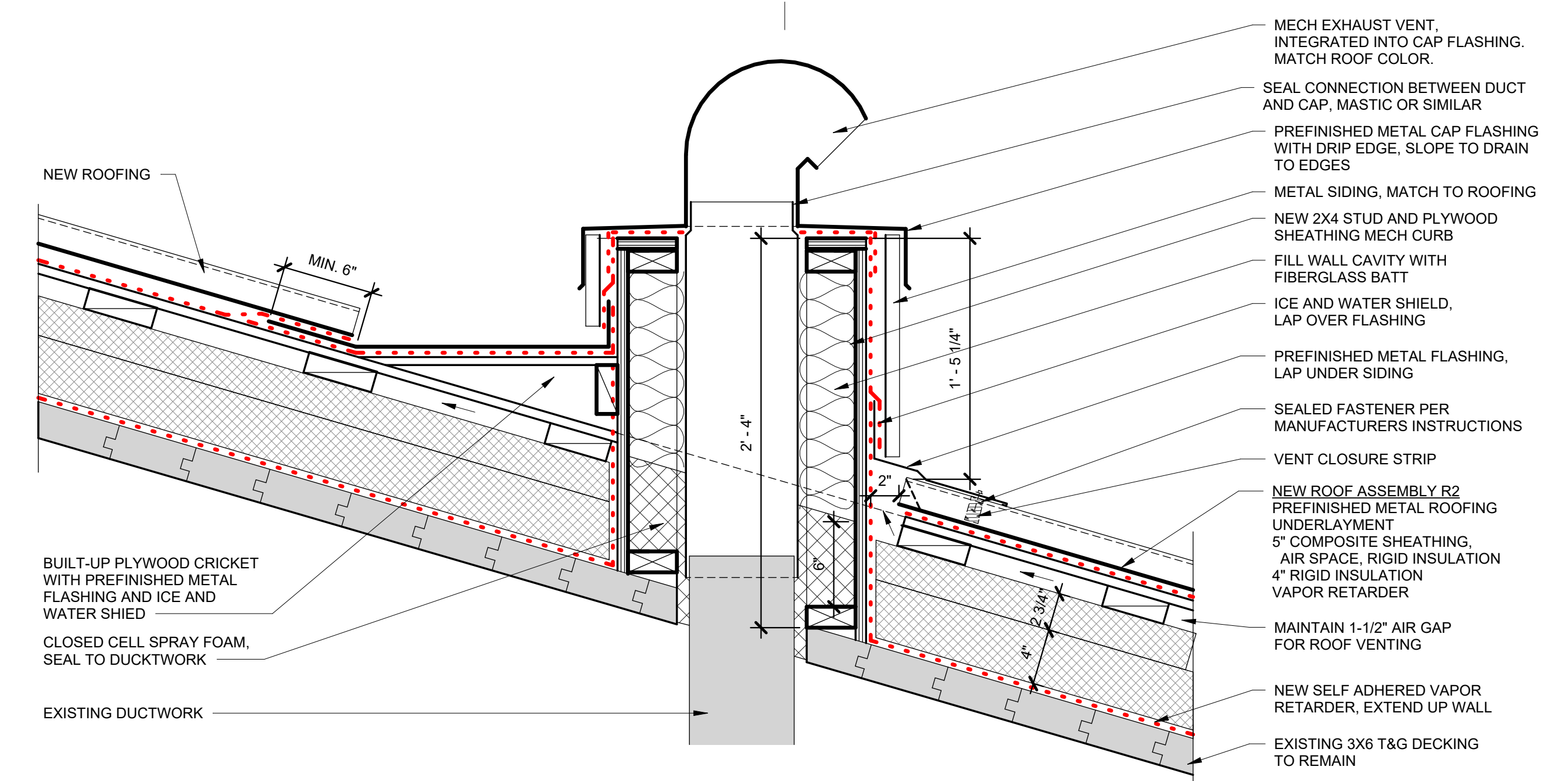
3 ROOF DRAIN
1 1/2" = 1'-0"



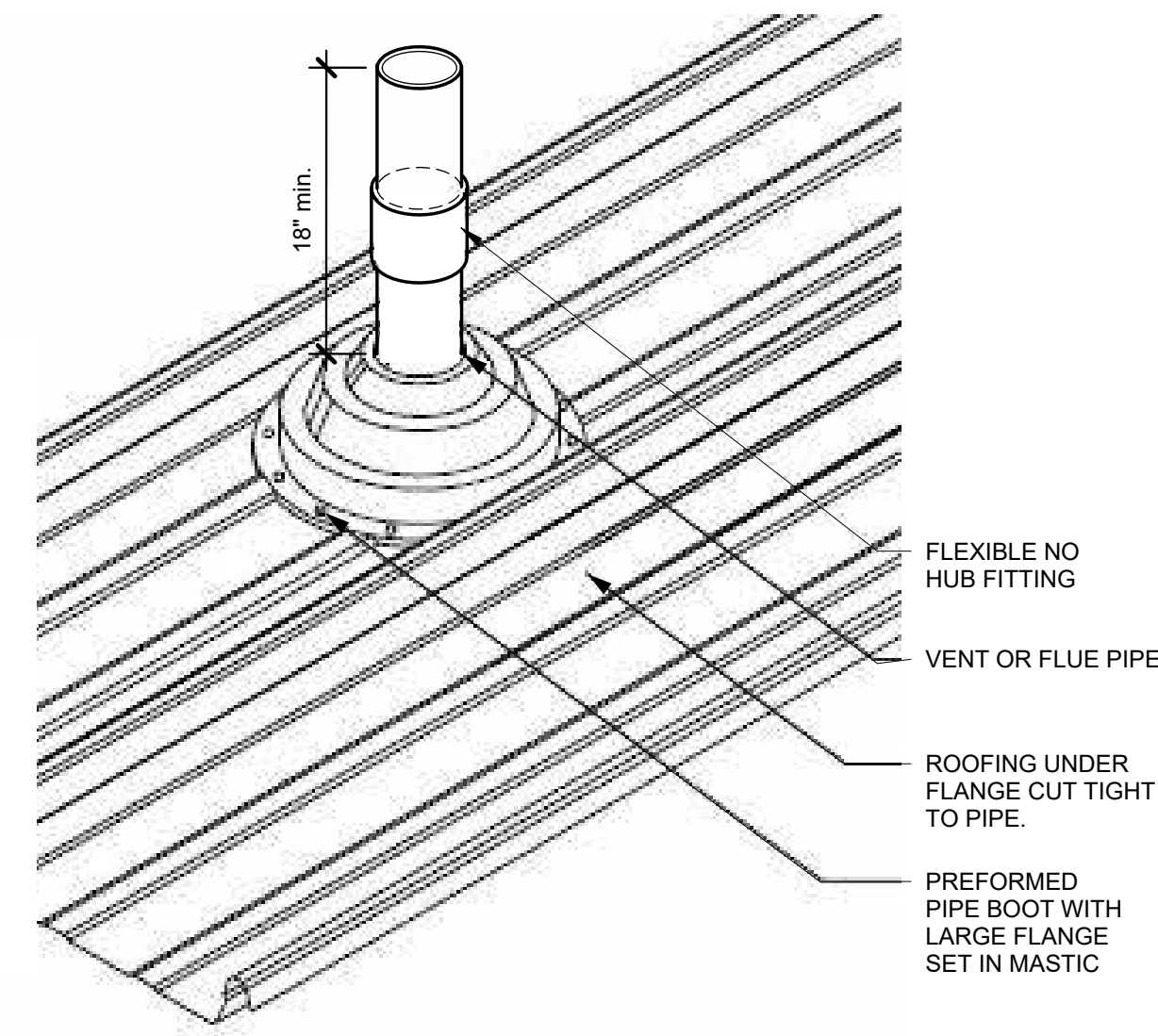
4 ROOF TRANSITION AT EXISTING EPDM
1 1/2" = 1'-0"



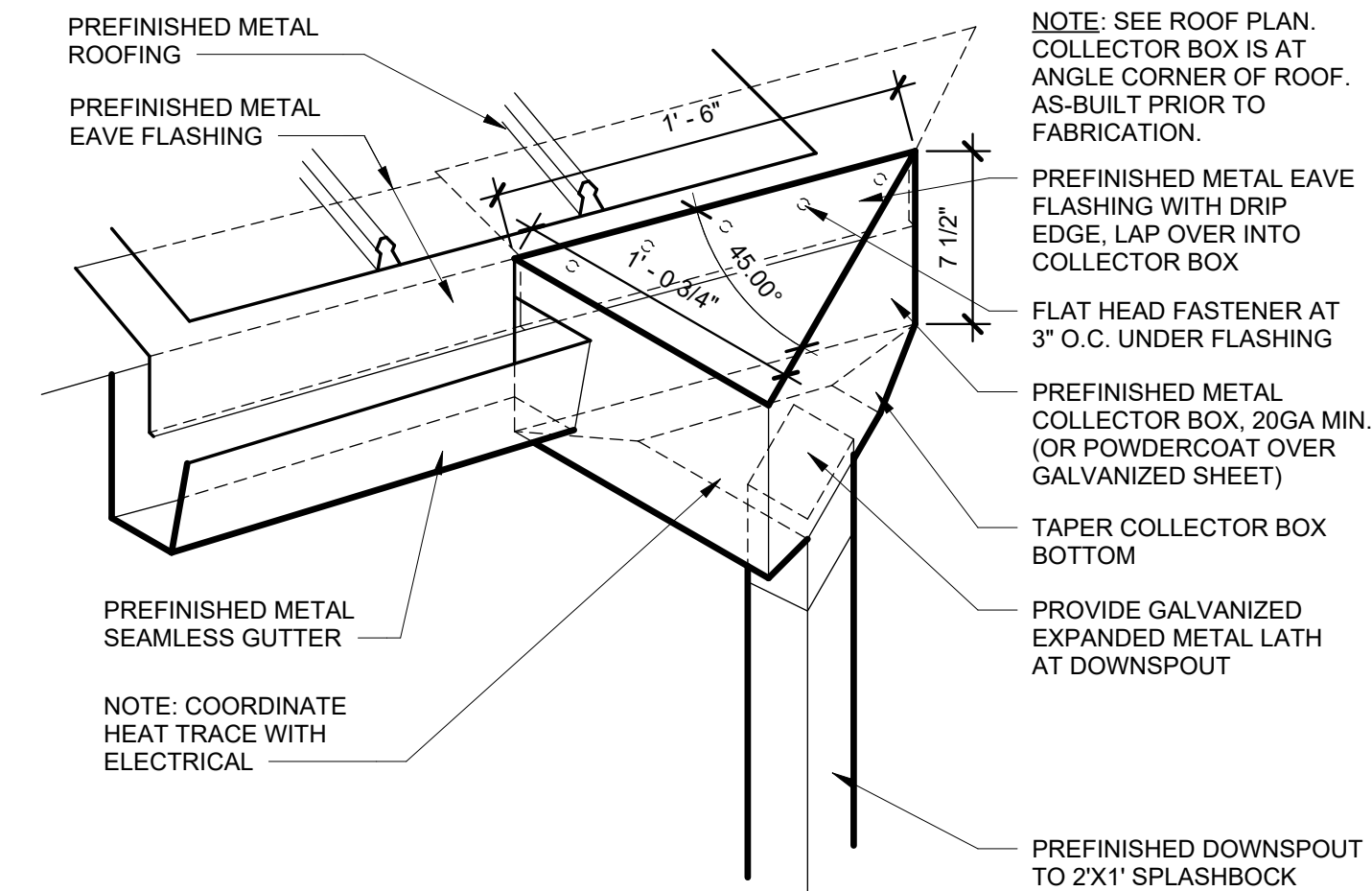
8 ROOF VALLEY - NEW
1 1/2" = 1'-0"



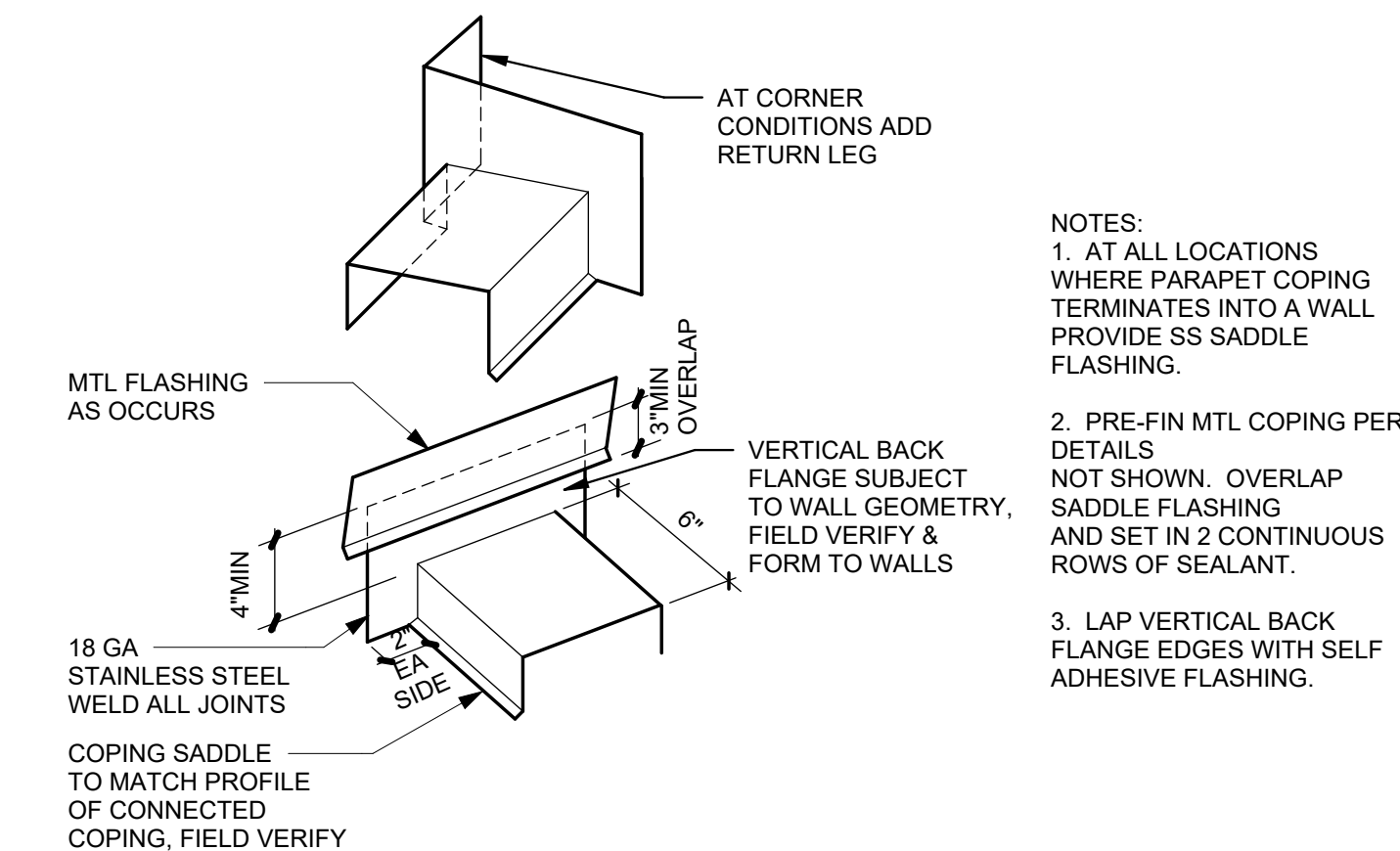
9 ROOF AT MECH VENT
1 1/2" = 1'-0"



10 ROOF PIPE PENETRATION
3/8" = 1'-0"



12 GUTTER COLLECTOR BOX
1 1/2" = 1'-0"



13 PARAPET SADDLE FLASHING @ WALL TYP
Scale: 1 1/2" = 1'-0"



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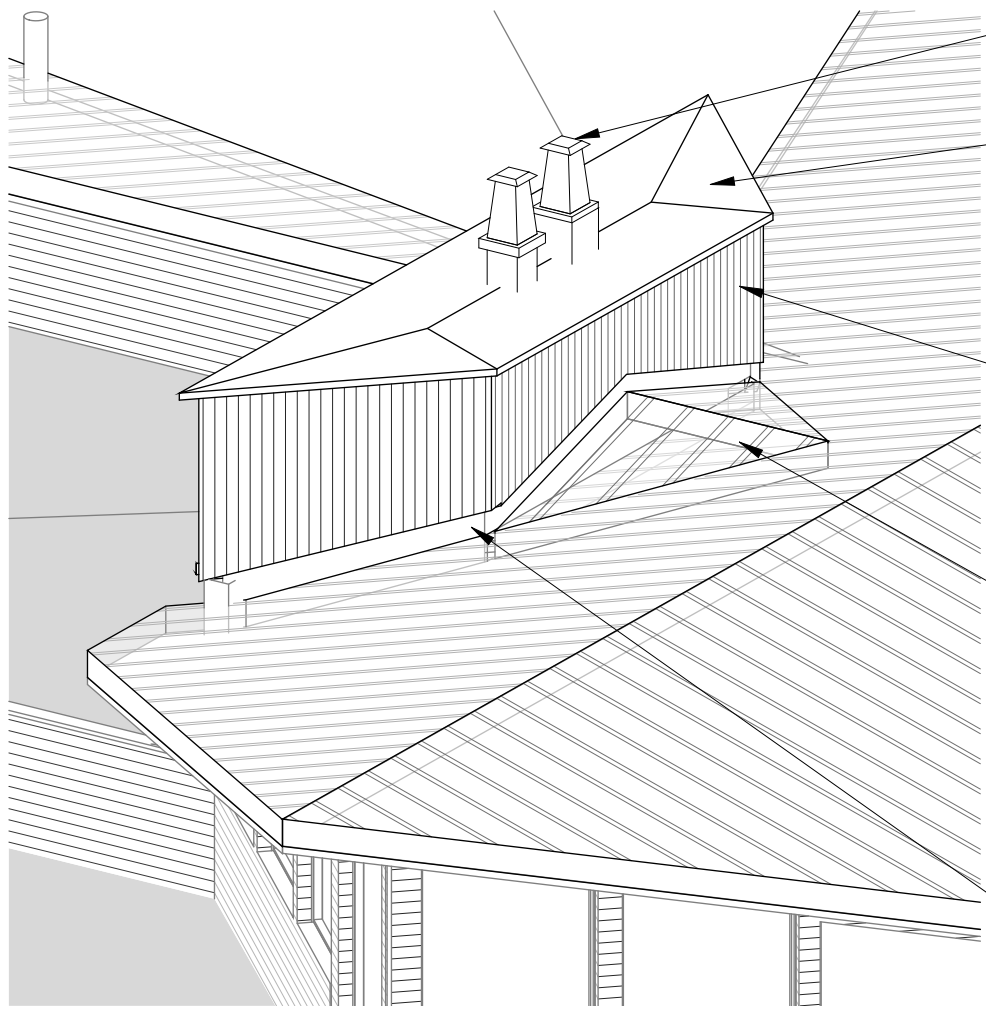
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
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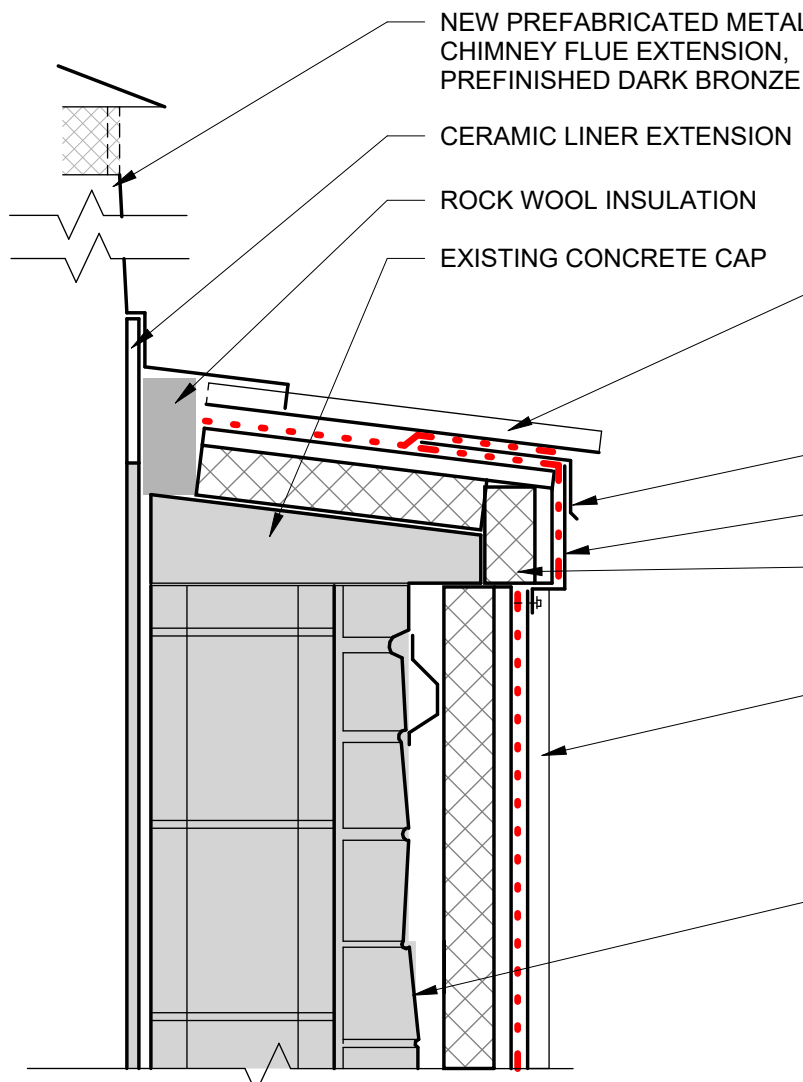
ROOF DETAILS

A-502

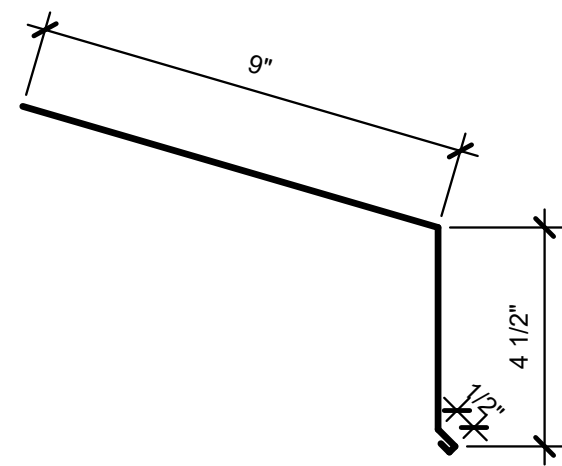
FULL SIZE DRAWING 22" x 34"



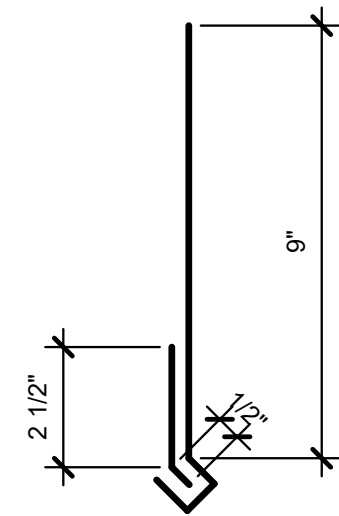
- NEW PREFABRICATED METAL CHIMNEY FLUE EXTENSION, PREFINISHED DARK BRONZE
- ROOF CHIMNEY CAP**
- PREFINISHED METAL ROOFING CAP
 - PREFINISHED METAL FLASHING
 - ICE&WATER SHIELD
 - FIRE RETARDENT PLYWOOD SHEATHING
 - 2" POLYISOCYANURATE INSULATION
 - EXISTING CONCRETE CAP
- CHIMNEY WALL ASSEMBLY**
- PREFINISHED METAL SIDING
 - ICE&WATER SHIELD
 - FIRE RETARDENT PLYWOOD SHEATHING
 - 2" POLYISOCYANURATE INSULATION
 - METAL FURRING AS REQUIRED
 - EXISTING STONE CHIMNEY SURROUND
- NEW ROOF CRICKET ASSEMBLY**
- PREFINISHED METAL ROOFING
 - PREFINISHED METAL FLASHING
 - ICE&WATER SHIELD
 - FIRE RETARDENT PLYWOOD SHEATHING
 - 2" POLYISOCYANURATE INSULATION
 - VAPOR RETARDER, SELF-ADHERED
 - WOOD BLOCKING AND SHEATHING FOR BUILT-UP CRICKET
 - EXISTING WOOD DECKING
- PREFINISHED METAL TRANSITION FLASHING BETWEEN WALL AND ROOF



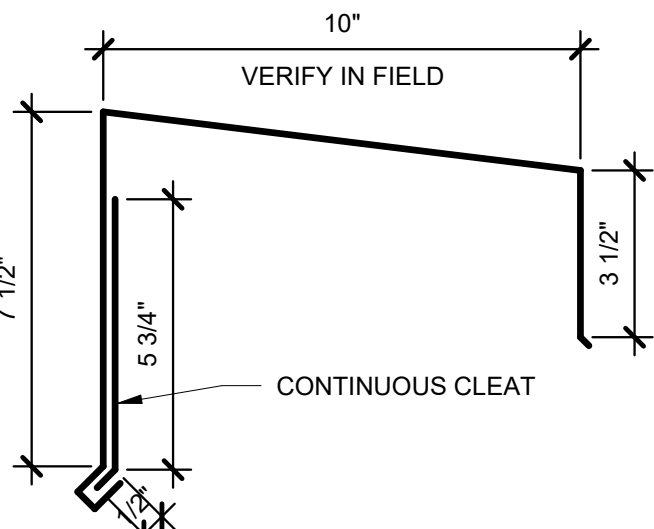
- ROOF CHIMNEY CAP**
- PREFINISHED METAL ROOFING CAP
 - PREFINISHED METAL FLASHING
 - ICE&WATER SHIELD
 - FIRE RETARDENT PLYWOOD SHEATHING
 - 2" POLYISOCYANURATE INSULATION
- PREFINISHED METAL FLASHING W/ DRIP EDGE
- PREFINISHED METAL FASCIA/SOFFIT
- COMPOSITE SHEATHING/INSULATION BOARD OR P.T. WOOD BLOCKING AT EDGE
- CHIMNEY WALL ASSEMBLY**
- PREFINISHED METAL SIDING
 - ICE&WATER SHIELD
 - FIRE RETARDENT PLYWOOD SHEATHING
 - 2" POLYISOCYANURATE INSULATION
 - METAL FURRING AS REQUIRED
- EXISTING STONE SIDING CHIMNEY SURROUND



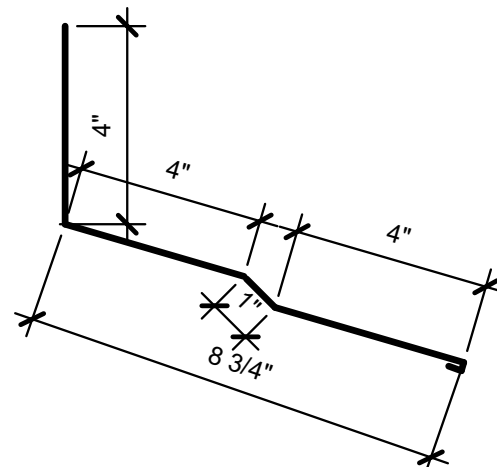
EAVE FLASHING
(ANGLE TO MATCH ROOF SLOPE)



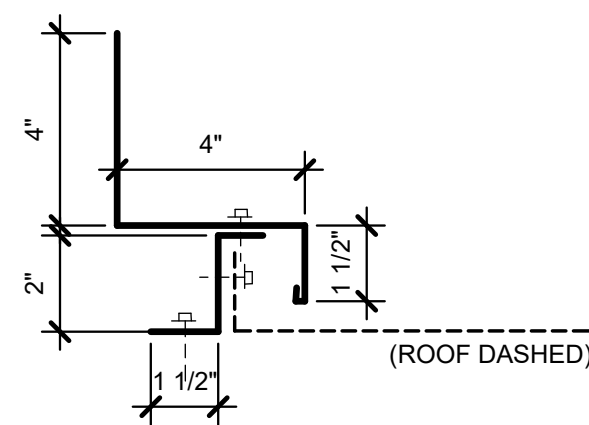
FASCIA WITH CLEAT



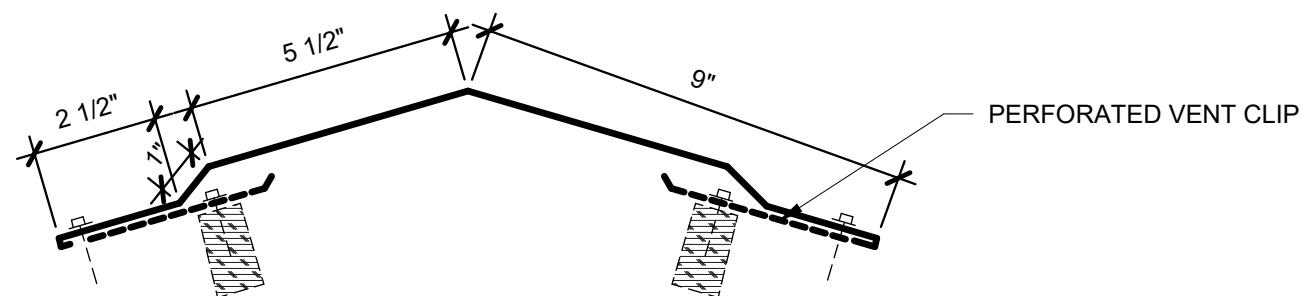
PARAPET CAP AT EPDM ROOF



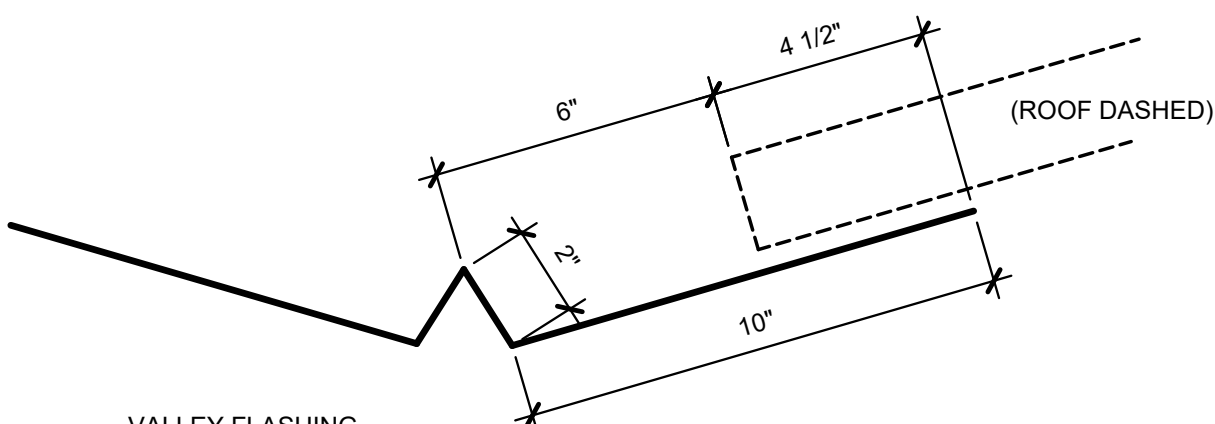
ROOF TO WALL TRANSITION
(ANGLE TO MATCH ROOF SLOPE)



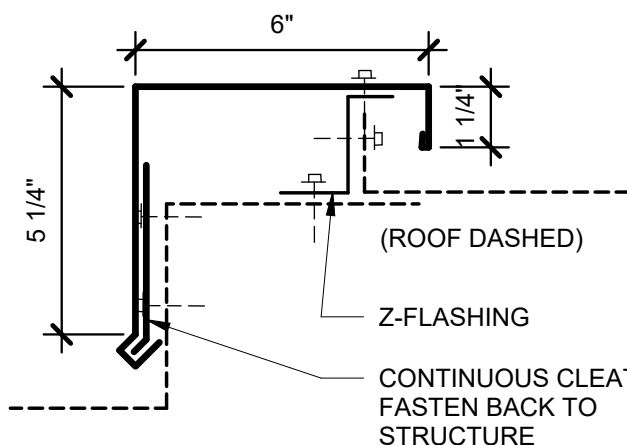
ROOF TO SIDEWALL TRANSITION
(ROOF DASHED)



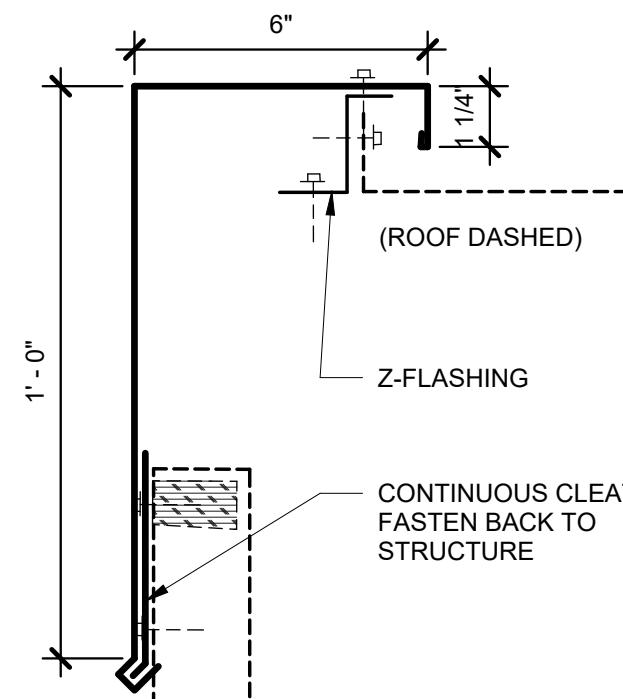
RIDGE FLASHING
(ANGLE TO MATCH ROOF SLOPE)



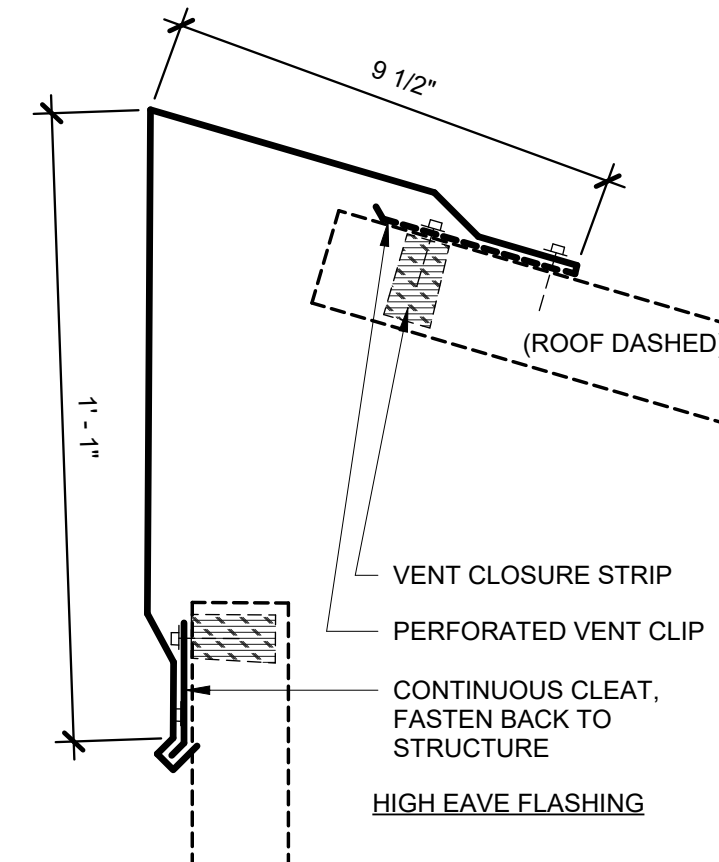
VALLEY FLASHING
(ANGLE TO MATCH ROOF SLOPE)



EPDM ROOF TRANSITION FLASHING



HIGH SIDEWALL FLASHING



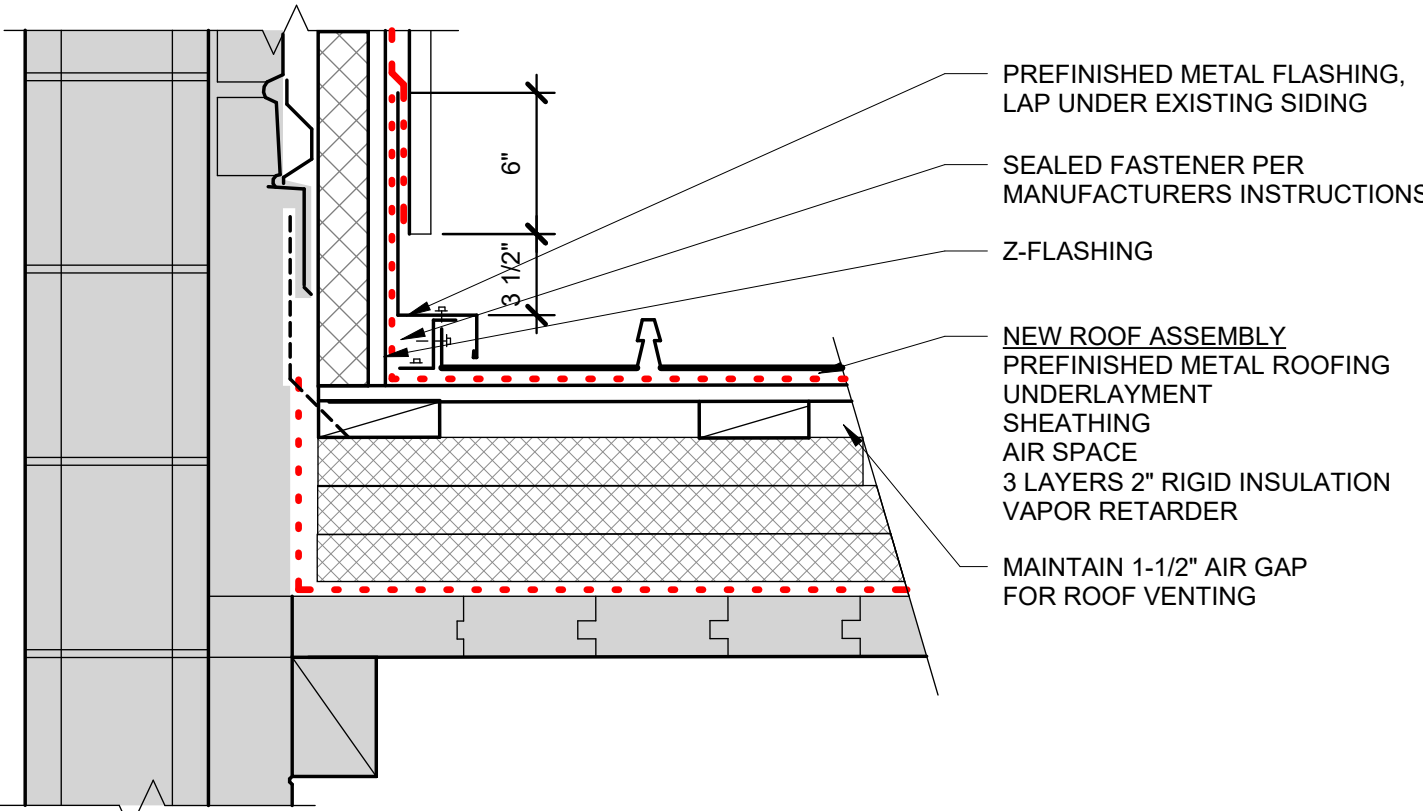
HIGH EAVE FLASHING

- FLASHING NOTES:**
1. FLASHING PROFILES ARE FOR GENERAL REFERENCE.
 2. FLASHING PROFILES AND FASTENING TO BE PROVIDED IN SHOP DRAWINGS. FLASHING PROFILES MAY VARY BASED ON MANUFACTURER'S WARRANTY REQUIREMENTS.
 3. FASTENER SIZES, LENGTH, AND SPACING TO BE PROVIDED BASED ON MANUFACTURER'S REQUIREMENTS FOR THE DESIGN WIND SPEED AND FLASHING TYPE.
 4. AT LAP JOINTS PROVIDE 2 CONTINUOUS BEADS OF SEALANT.

1 3D VIEW-CHIMNEY SURROUND

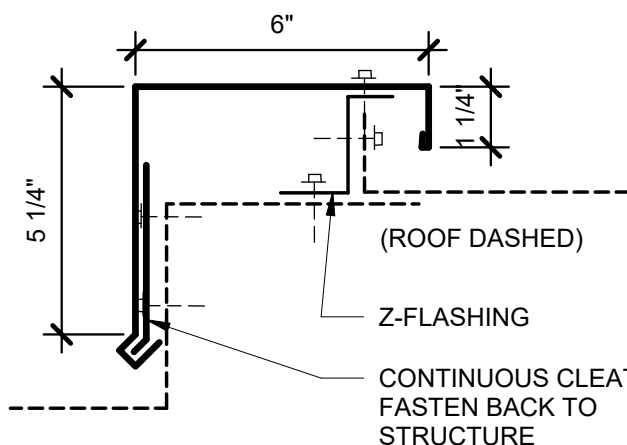
2 ROOF TO CHIMNEY SIDEWALL

1 1/2" = 1'-0"

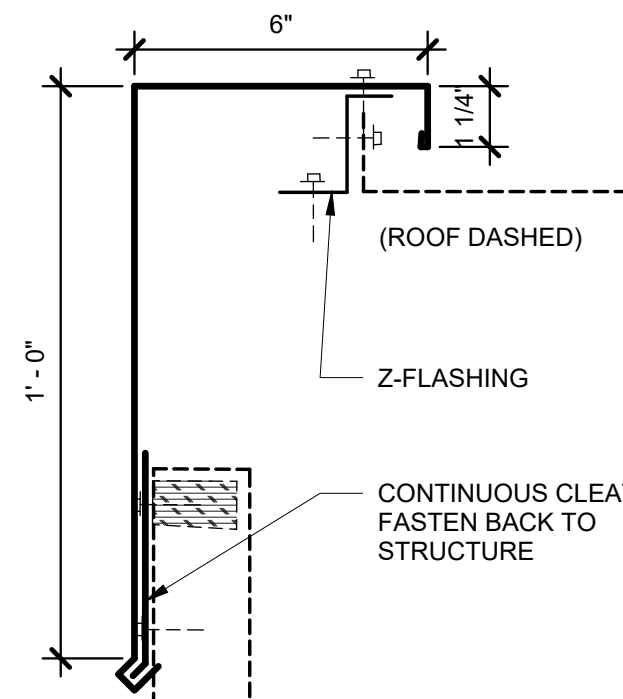


3 ROOF TO CHIMNEY SIDEWALL

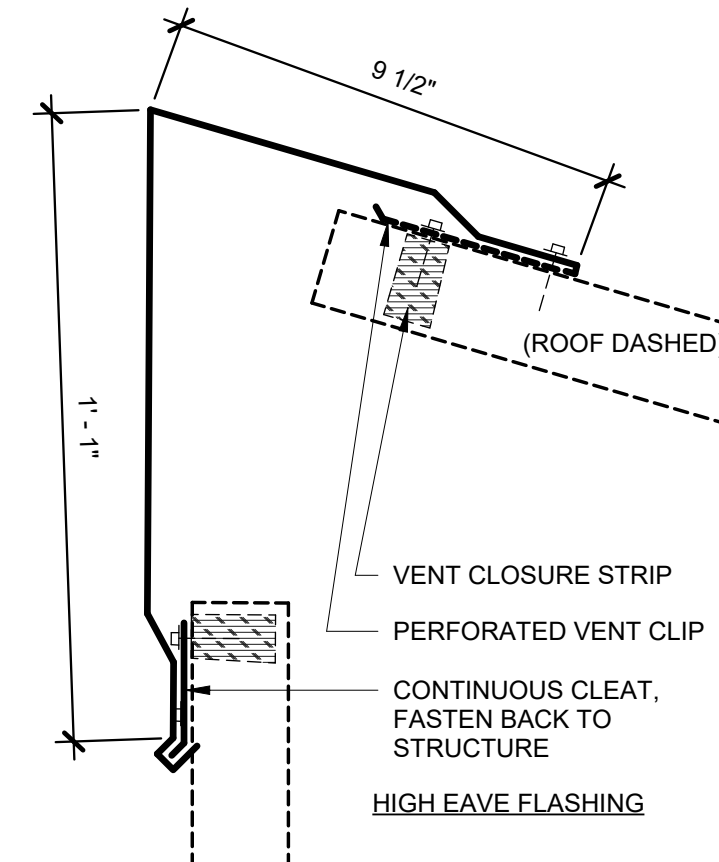
1 1/2" = 1'-0"



EPDM ROOF TRANSITION FLASHING



HIGH SIDEWALL FLASHING



HIGH EAVE FLASHING

4 FLASHING PROFILES AVPH

3" = 1'-0"



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ALTERNATE 3
CHIMNEY
SURROUND

A-503

FULL SIZE DRAWING 22" x 34"



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ALASKA VETERANS & PIONEERS HOME
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PENETRATION
DETAILS

A-504
FULL SIZE DRAWING 22" x 34"

CODE NOTES:(SEE CODE PLANS FOR WALL RATINGS)

DETAILS ARE PROVIDED FOR INFORMATION ONLY. CONTRACTOR MUST COMPLY WITH PRODUCT MANUFACTURER'S INSTALLATION REQUIREMENTS FOR A COMPLETE TESTED AND RATED SYSTEM.

WALLS, THROUGH PENETRATION FIRESTOP SYSTEM:

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED FIRESTOP SYSTEM AND SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE WALL PENETRATED.

WALLS, MEMBRANE PENETRATIONS:

WALLS AND APARTITIONS REQUIRED TO BE 1 HOUR FIRE RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE FIRE RESISTANCE WILL NOT BE REDUCED.

HORIZONTAL ASSEMBLIES, THROUGH PENETRATION FIRESTOP SYSTEM:

PENETRATING ITEMS WITH A MAXIMUM 6" DIAMETER SHALL NOT BE LIMITED TO THE PENETRATION OF A SINGLE FIRE-RATED FLOOR ASSEMBLY PROVIDED THAT THE AREA OF THE PENETRATION DOES NOT EXCEED 144 SQ. IN. IN ANY 100 SQ. FT. OF FLOOR AREA.

THE SYSTEM SHALL HAVE AN F RATING AND A T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. FLOOR PENETRATIONS CONTAINED AND LOCATED WITHIN THE CAVITY OF A WALL DO NOT REQUIRE A T RATING.

HORIZONTAL ASSEMBLIES, MEMBRANE PENETRATIONS:

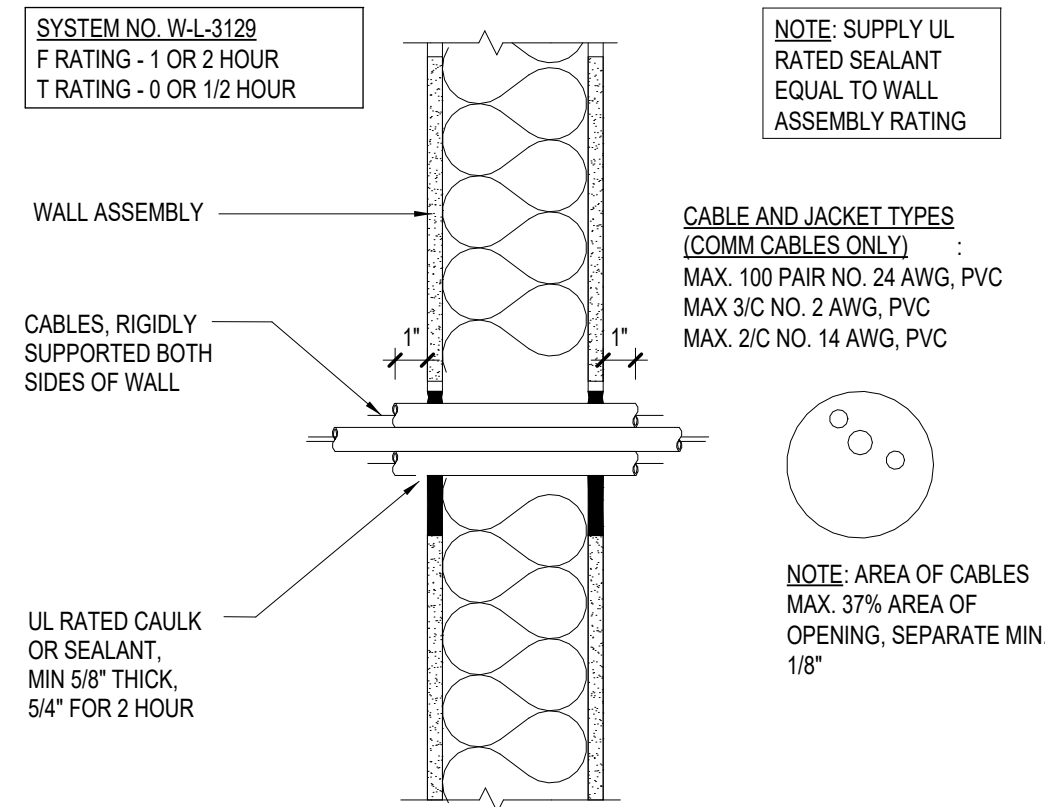
FLOOR AND CEILING ASSEMBLIES REQUIRED TO HAVE A MINIMUM 1 HOUR FIRE RESISTANCE RATING. RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE FIRE RESISTANCE WILL NOT BE REDUCED.

SHAFT ENCLOSURES:

1 HOUR OR EQUAL TO ASSEMBLY PENETRATED

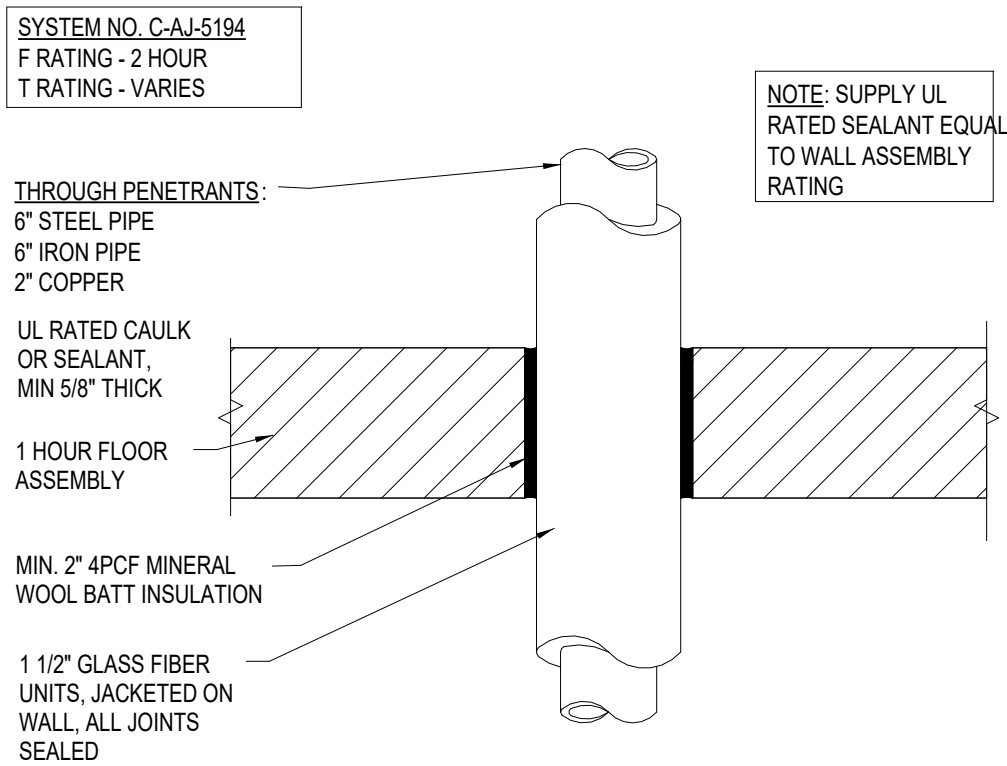
ELECTRICAL BOXES

ALL ELECTRICAL BOXES LOCATED IN FIRE BARRIERS SHALL BE FIRE-STOPPED BY WRAPPING THE BOXES WITH UL LISTED MATERIAL. FACE PLACE FIRE-STOPPING OR FIRE-STOPPING PADS IN THE BACK OF THE ELECTRICAL BOXES IS NOT PERMITTED. ALL NEW FIRE-STOPPING MATERIALS SHALL BE FROM THE SAME MANUFACTURER.



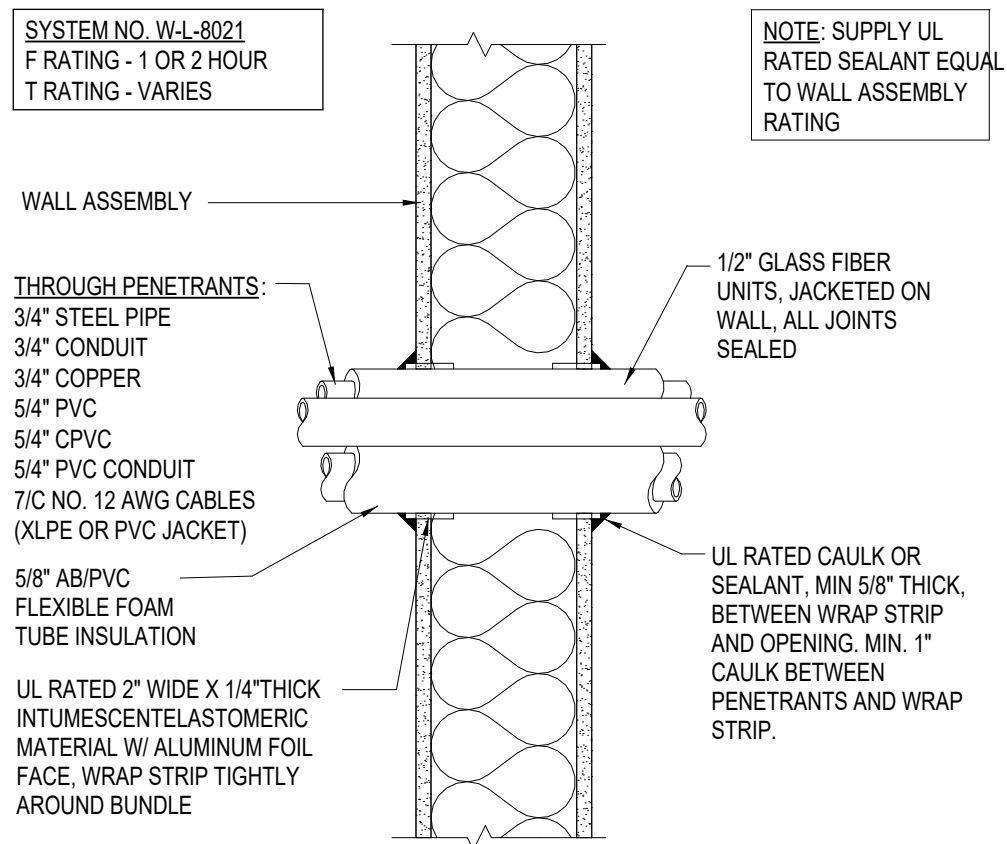
1 CABLE THRU PENETRATION

Scale: 1 1/2" = 1'-0"



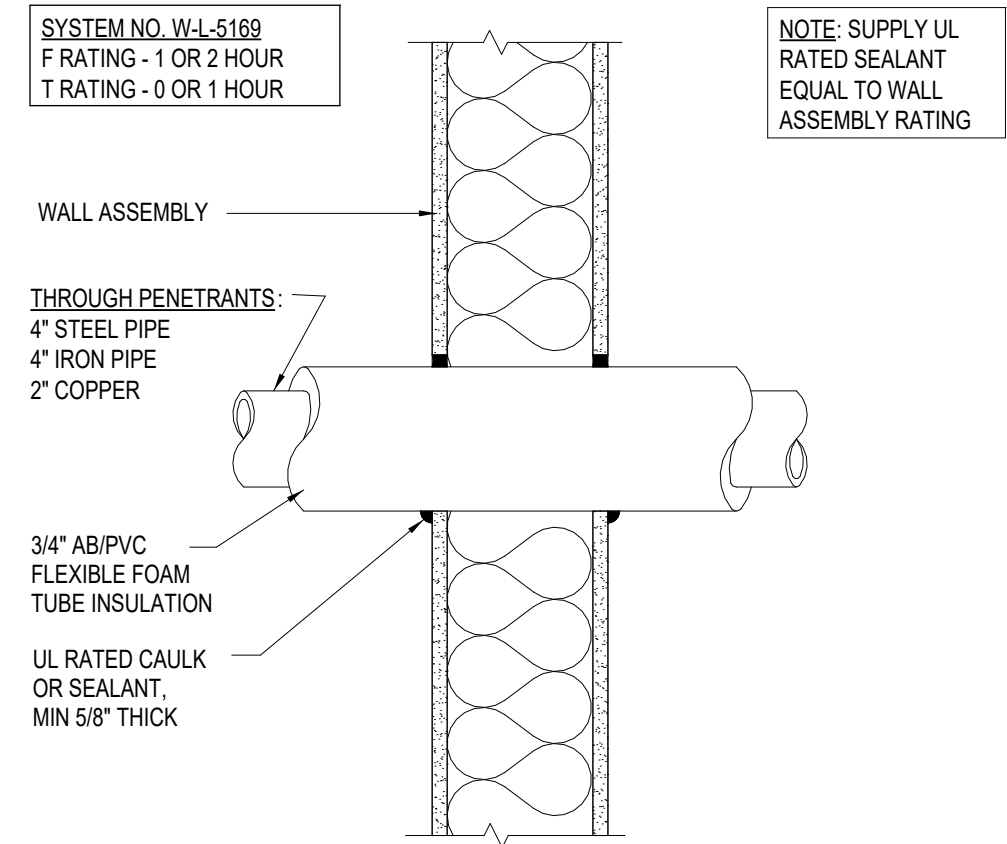
8 PLUMBING THRU PENETRATION AT FLOOR

Scale: 1 1/2" = 1'-0"



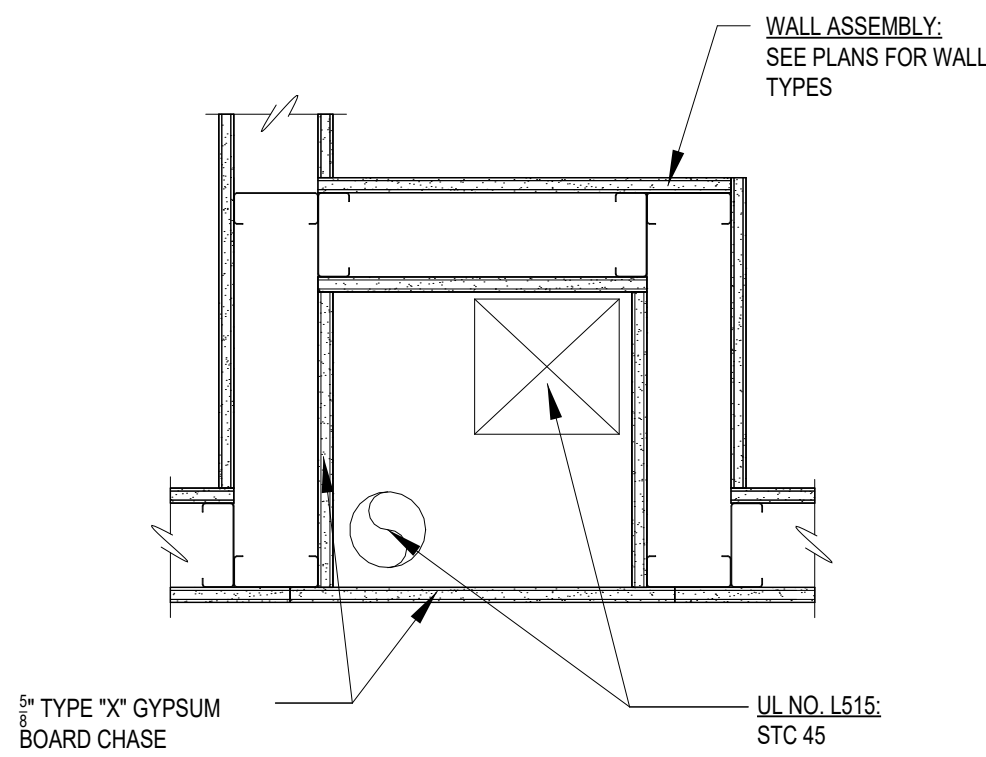
5 PLUMBING THRU PENETRATION

Scale: 1 1/2" = 1'-0"



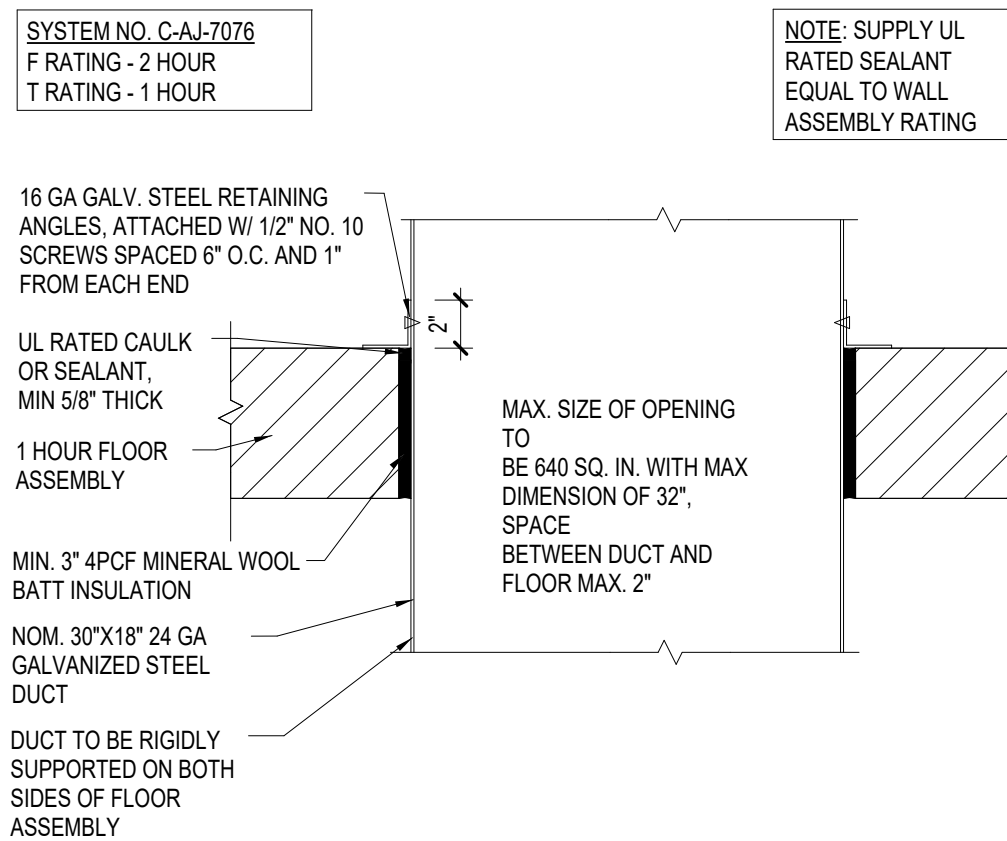
2 PLUMBING THRU PENETRATION

Scale: 1 1/2" = 1'-0"



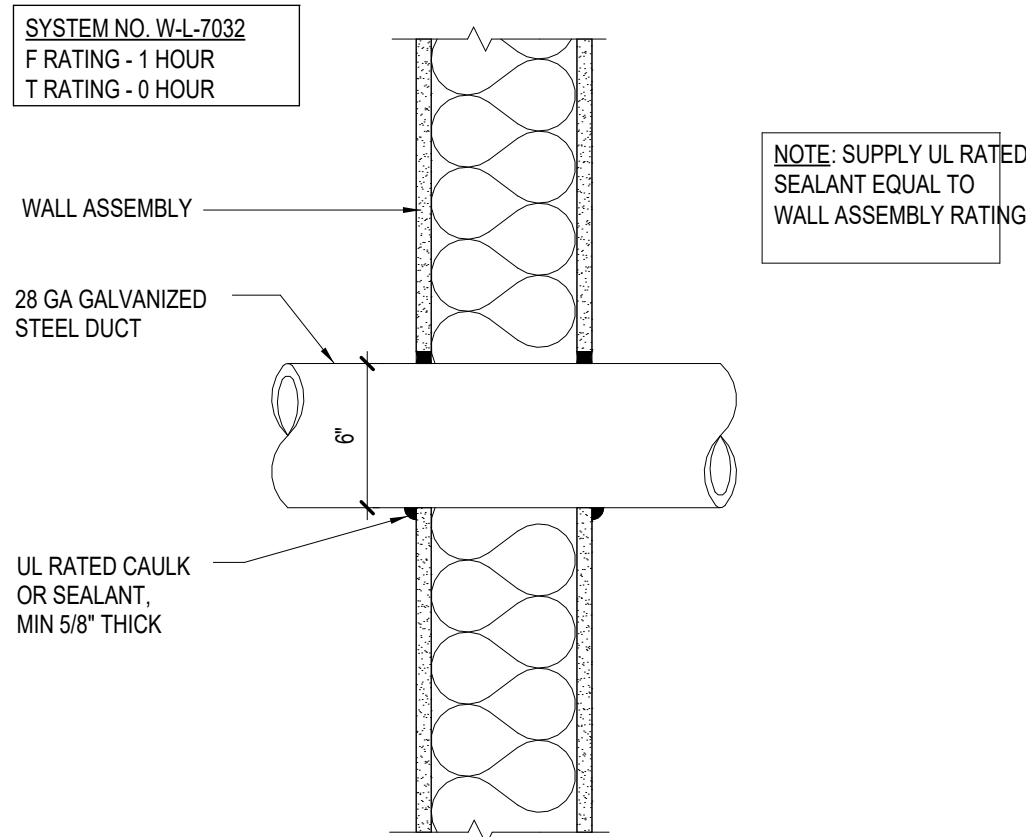
11 MECHANICAL CHASE

Scale: 1 1/2" = 1'-0"



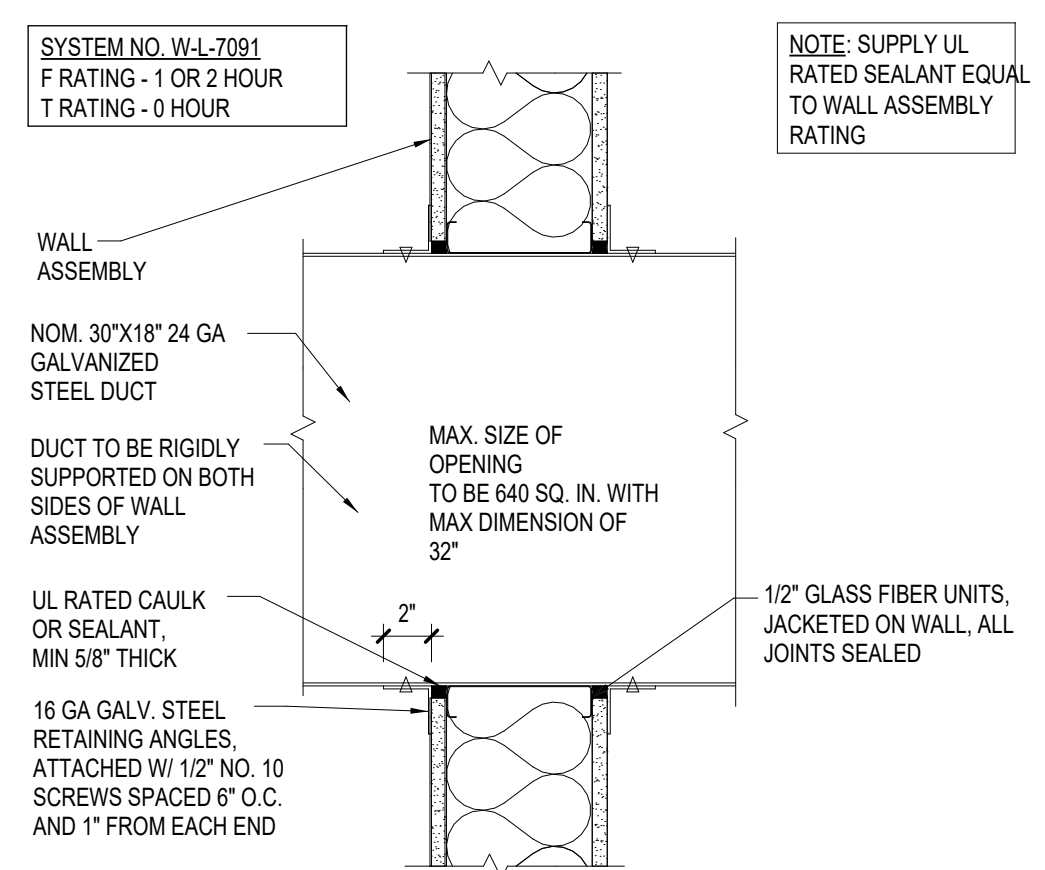
9 HVAC THRU PENETRATION AT FLOOR

Scale: 1 1/2" = 1'-0"



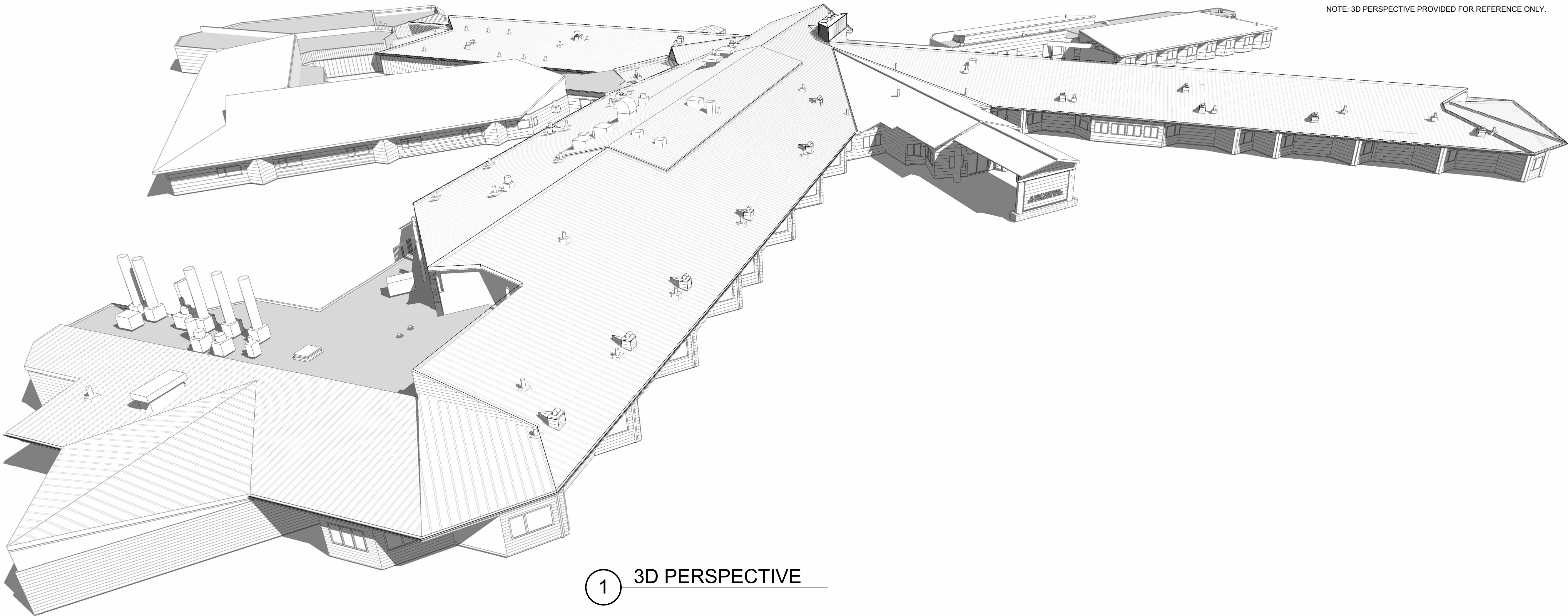
6 PENETRATION DETAILS

Scale: 1 1/2" = 1'-0"



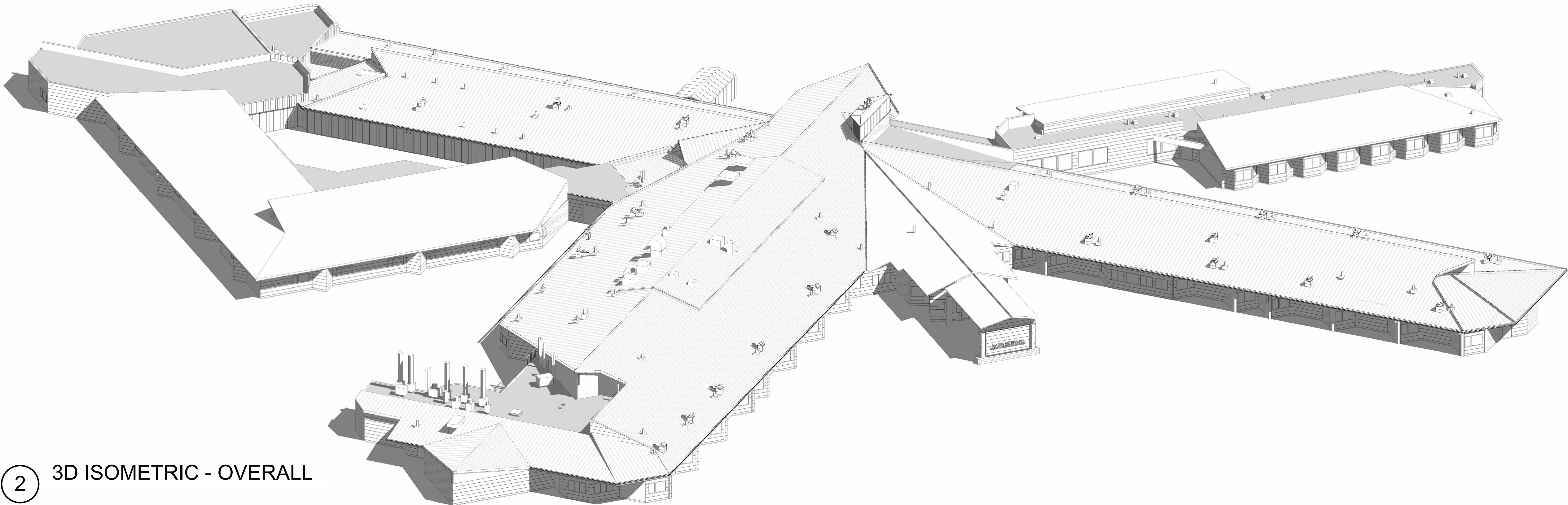
3 HVAC THRU PENETRATION

Scale: 1 1/2" = 1'-0"



NOTE: 3D PERSPECTIVE PROVIDED FOR REFERENCE ONLY.

1 3D PERSPECTIVE



2 3D ISOMETRIC - OVERALL



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

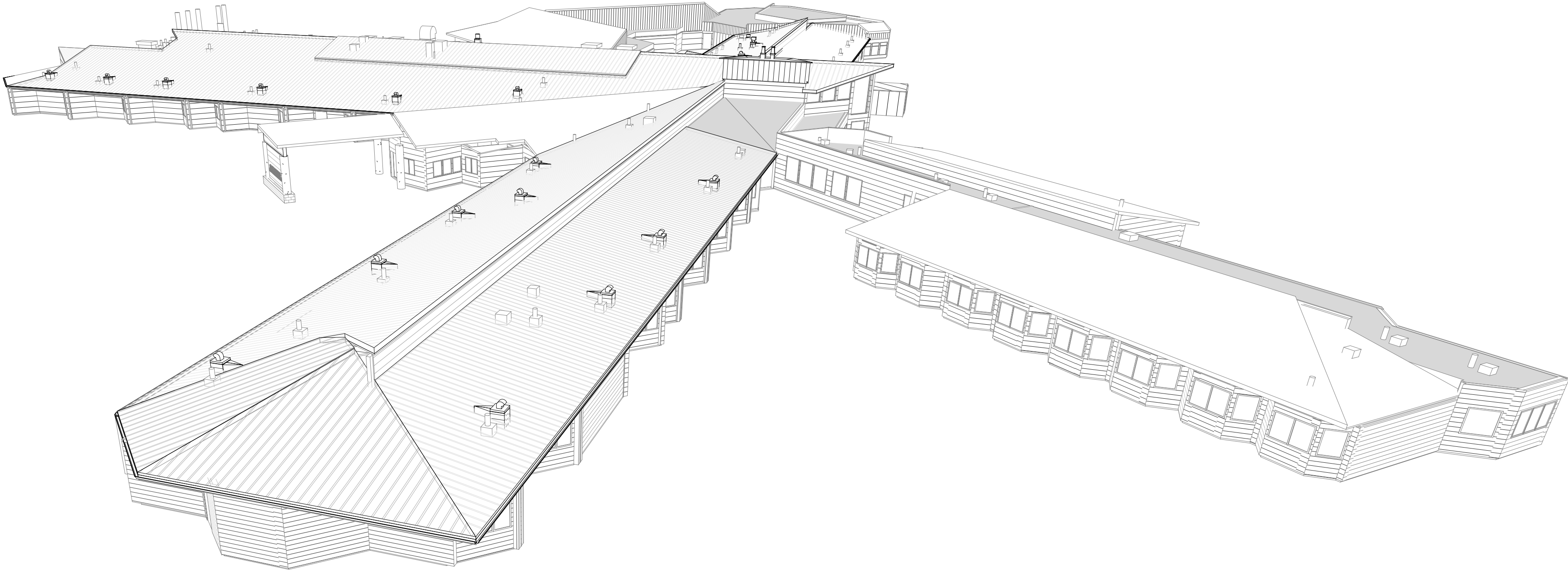
PROJECT #	24-14
DRAWN	Author
DATE	3/4/2025
REV.	

REFERENCE VIEWS-
3D PERSPECTIVE

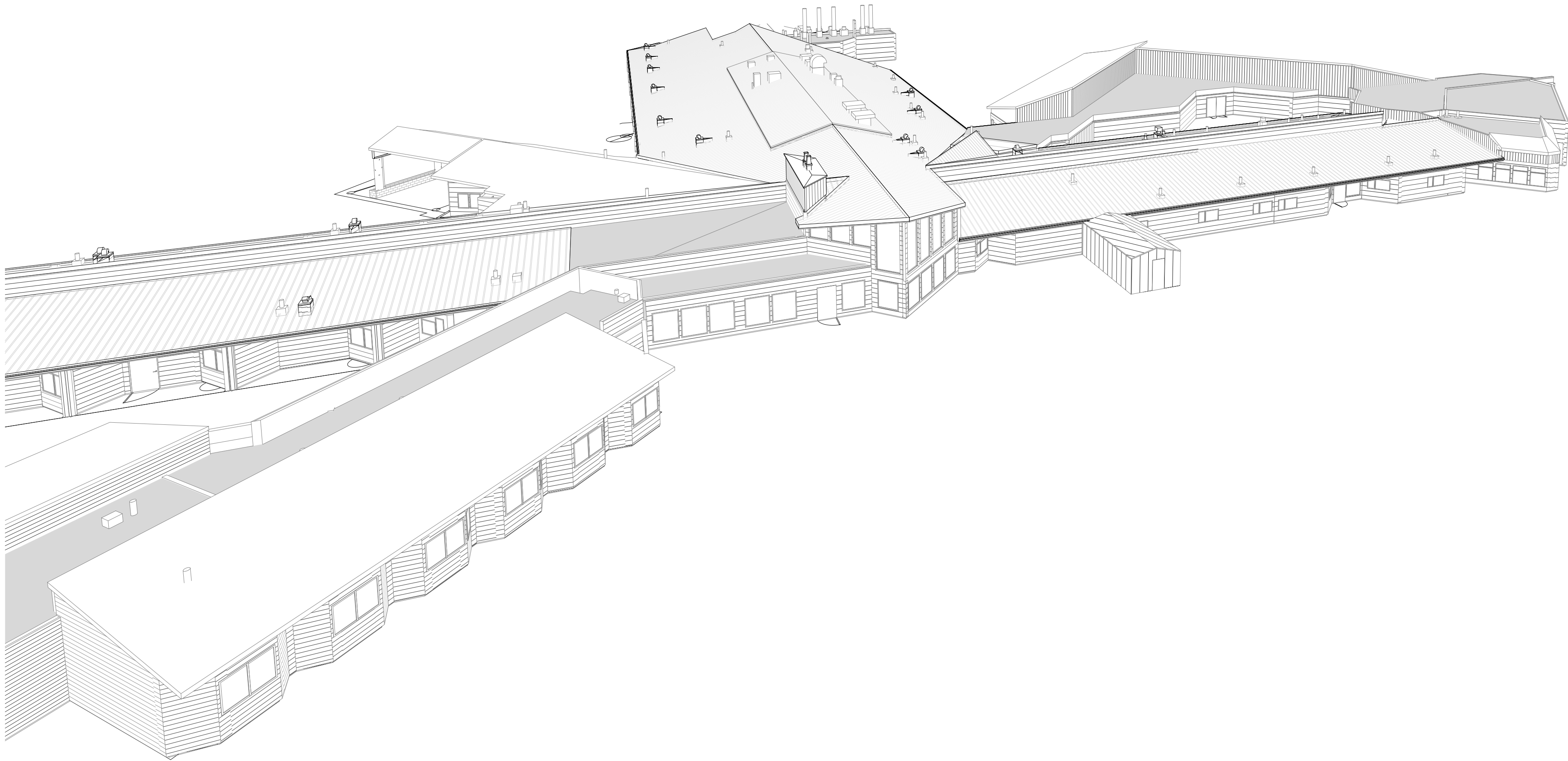
A-800

FULL SIZE DRAWING 22" x 34"

NOTE: 3D PERSPECTIVE PROVIDED FOR REFERENCE ONLY.



1 3D View 10-NW Raven



2 3D View 9 - WEST



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250 EAST FIREWEEED
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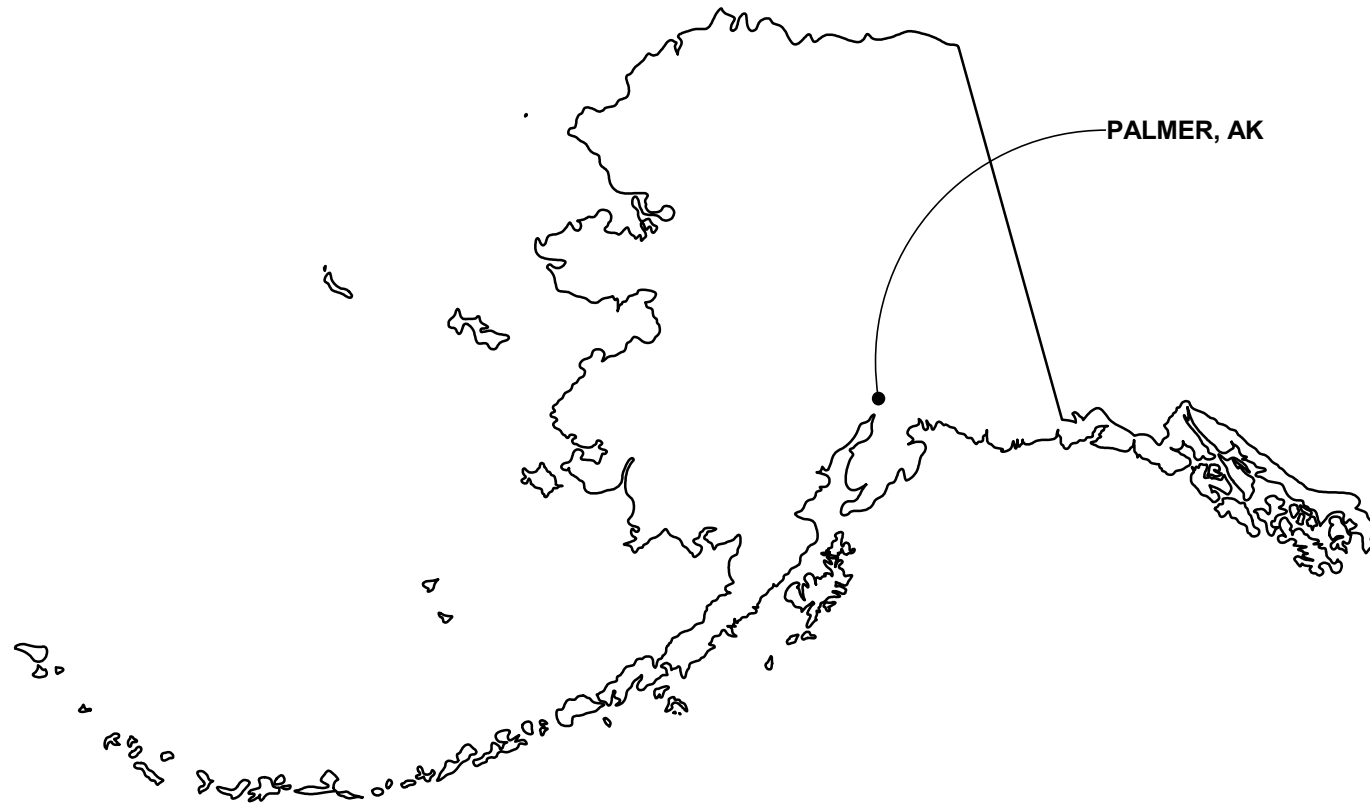
REFERENCE VIEWS
-AERIAL
PERSPECTIVES

A-801

FULL SIZE DRAWING 22" x 34"

ANNUAL DESIGN CONDITIONS

HEATING DRY BULB TEMPERATURE:	-22.0°F
COOLING DRY BULB TEMPERATURE:	68.36°F
MEAN COINCIDENT WET BULB TEMPERATURE:	57.92°F



PIPING SYSTEMS

V VENT

DUCT SYSTEMS

E/A EXHAUST AIR

GENERAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
BAS	BUILDING AUTOMATION SYSTEM
BD	BALANCING DAMPER
BDD	BACKDRAFT DAMPER
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CL	CENTER LINE
CO	CARBON MONOXIDE
CO	CLEANOUT
CO2	CARBON DIOXIDE
CONN	CONNECTION
DB	DRY BULB
dB	DECIBEL
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DPS	DIFFERENTIAL PRESSURE SENSOR
DWV	DRAIN, WASTE, AND VENT
E	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EGT	ENTERING GLYCOL TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER
FDC	FIRE DEPARTMENT CONNECTION
FLA	FULL LOAD AMPS
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FSD	COMBINATION FIRE-SMOKE DAMPER
GAL	GALLON
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HZ	HERTZ
IN. WC	INCHES OF WATER COLUMN
INV	INVERT ELEVATION

GENERAL ABBREVIATIONS

KW	KILOWATT (1,000 WATTS)
KWH	KILOWATT-HOUR
LAT	LEAVING AIR TEMPERATURE
LGT	LEAVING GLYCOL TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAT	MIXED AIR TEMPERATURE
MAV	MANUAL AIR VENT
MBH	1,000 BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MFR	MANUFACTURER
MOC	MAXIMUM OVERCURRENT PROTECTION RATING
MOD	MOTOR OPERATED DAMPER
MOV	MOTOR OPERATED VALVE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OAT	OUTDOOR AIR TEMPERATURE
OB	OPPOSED BLADE DAMPER
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
PD	PRESSURE DROP
PG	PROPYLENE GLYCOL
PH	PHASE (ELECTRIC POWER)
POC	POINT OF CONNECTION
PRV	PRESSURE RELIEF VALVE
PSI	POUNDS PER SQUARE INCH
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
RPM	REVOLUTIONS PER MINUTE
RV	RELIEF VALVE
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SMOKE DAMPER
SIM	SIMILAR
SL	SOUND / ACOUSTIC LINING
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TP	TRAP PRIMER
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WATTS
WB	WET BULB
WCO	WALL CLEANOUT
YCO	YARD CLEANOUT

PIPING COMPONENTS

	PIPE ELBOW, UP AND DOWN
	PIPE TEE, UP AND DOWN
	PIPE COUPLING
	P-TRAP
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GATE VALVE
	MOTOR OPERATED VALVE, TWO-WAY
	MOTOR OPERATED VALVE, THREE-WAY
	BALANCE VALVE
	FLOOR DRAIN
	CLEANOUT

DUCTWORK COMPONENTS

	SUPPLY AIR DUCT, UP AND DOWN
	RETURN AIR DUCT, UP AND DOWN
	EXHAUST AIR DUCT, UP AND DOWN
	ACOUSTICALLY LINED DUCTWORK
	THERMALLY INSULATED DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	LINEAR SLOT DIFFUSER
	BALANCE DAMPER
	MOTOR OPERATED DAMPER
	FIRE DAMPER, SMOKE DAMPER, OR COMBINATION FIRE/SMOKE DAMPER

GENERAL ANNOTATIONS

ROOM TAG	
	ROOM NAME
	ROOM NUMBER
MAY INCLUDE ADDITIONAL INFORMATION AS APPLICABLE	
VIEW REFERENCE	
	VIEW NUMBER
	SHEET NUMBER
REVISION TAG	
	REVISION NUMBER, SEE TITLE BLOCK
MAY INCLUDE ADDITIONAL INFORMATION AS APPLICABLE	
	BREAK LINE
	POINT OF CONNECTION
	THERMOSTAT

EQUIPMENT TAGS

GRILLE AND DIFFUSER TAG, RECTANGULAR AND ROUND	
	CONNECTION SIZE
	DESIGN AIRFLOW OR SYSTEM ABBREVIATION
	TYPE MARK, SEE SCHEDULE
LINEAR SLOT DIFFUSER TAG	
	CONNECTION SIZE - SLOT LENGTH (FT), NUMBER OF SLOTS, THROW
	DESIGN AIRFLOW OR SYSTEM ABBREVIATION
	TYPE MARK, SEE SCHEDULE
DUCT SIZE TAG	
	SYSTEM ABBREVIATION
	INDICATES ROUND DUCT FREE DIMENSIONS
	INDICATES RECTANGULAR DUCT FREE DIMENSIONS
	INDICATES FLAT OVAL DUCT FREE DIMENSIONS
MAY INCLUDE ADDITIONAL INFORMATION AS APPLICABLE	
PIPE SIZE TAG	
	SYSTEM ABBREVIATION
	NOMINAL PIPE SIZE
	MAY INCLUDE ADDITIONAL INFORMATION AS APPLICABLE
PLUMBING FIXTURE TAG	
	SUB-TYPE OR INSTANCE IDENTIFIER, SEE SCHEDULE
	TYPE MARK, SEE SCHEDULE
GENERIC EQUIPMENT TAG	
	SUB-TYPE OR INSTANCE IDENTIFIER, SEE SCHEDULE
	TYPE MARK, SEE SCHEDULE
	MAY INCLUDE ADDITIONAL INFORMATION AS APPLICABLE



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AECI 1146 PROJECT NO. 2024-077W



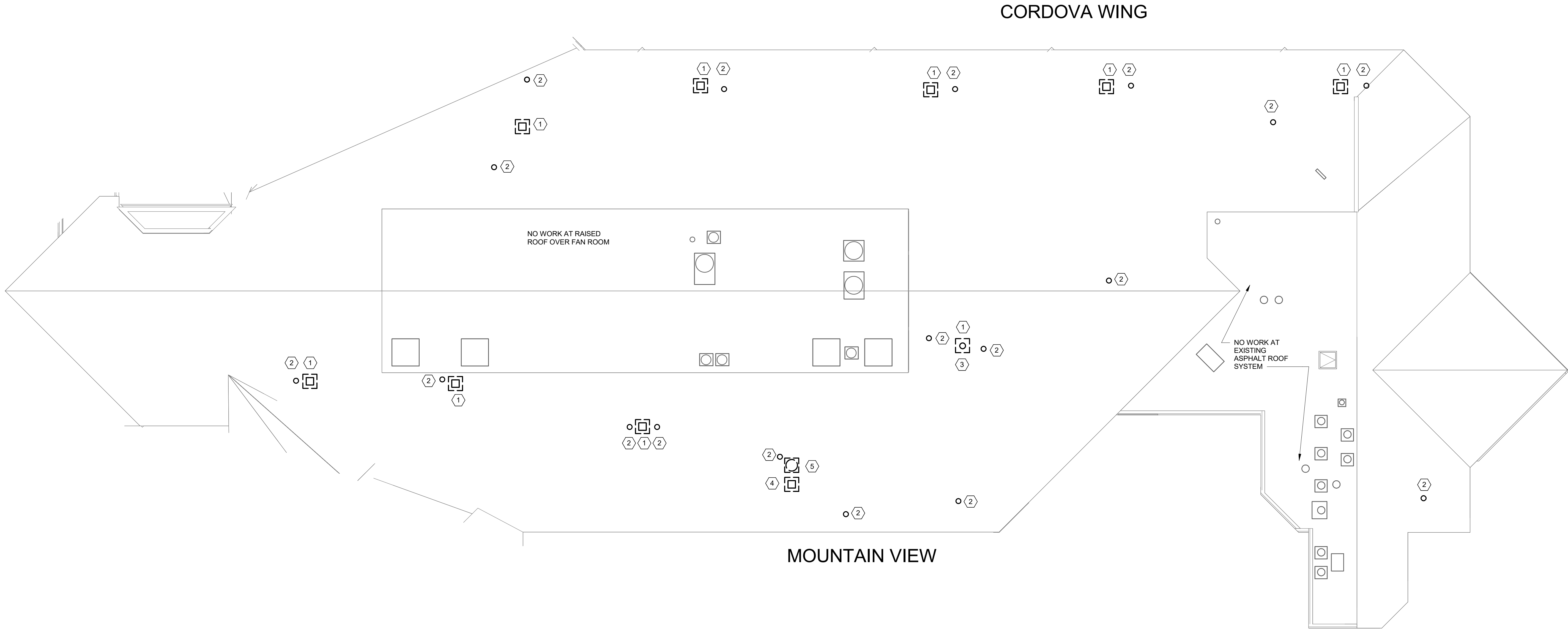
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	SEO
DATE	02-21-2025
REV.	

LEGEND &
ABBREVIATIONS

M001

FULL SIZE DRAWING 22" x 34"



1

CORDOVA WING MECHANICAL ROOF DEMOLITION PLAN

3/32" = 1'-0"

- MECHANICAL DEMOLITION NOTES:**
- DEMOLISH EXHAUST DUCT TERMINATION AND FLASHING BACK TO ROOF LINE. SALVAGE DUCT PENETRATION TO THE EXTENT NECESSARY FOR NEW EXHAUST DUCT TERMINATION. SEE REMODEL PLANS.
 - DEMOLISH WASTE PIPING VENT THROUGH ROOF AND FLASHING TO THE EXTENT NECESSARY FOR A NEW VENT THROUGH ROOF. SEE REMODEL PLANS.
 - FIELD VERIFY EXACT SIZES OF PLUMBING VENTS AND EXHAUST TERMINATION DUCTS PRIOR TO DEMOLITION, RECORD INFORMATION FOR REMODEL.
 - DEMOLISH EXHAUST VENT, FLASHING AND ALL ASSOCIATED DUCTWORK AND APPURTENANCES BELOW ROOF. PATCH ROOF PENETRATIONS TO MATCH ADJACENT CONSTRUCTION MATERIALS.
 - DEMOLISH EXHAUST VENT TERMINATION ABOVE ROOF, SALVAGE DUCT FOR FUTURE CONNECTION, SEE REMODEL DRAWINGS.

PLUMBING FIXTURE SCHEDULE

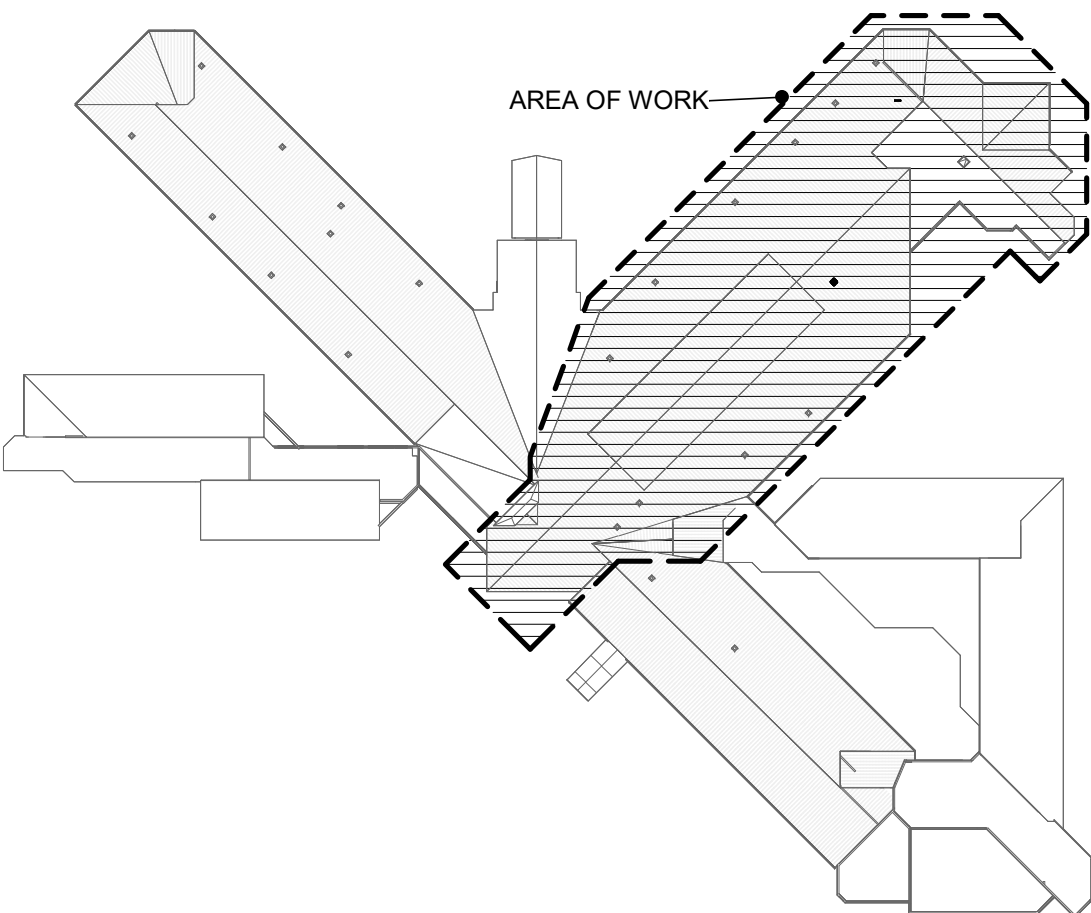
COMMENTS:

1. PROVIDE ASSE 1070 COMPLIANT POINT OF USE MIXING VALVE.

NOTE:

PIPE SIZES LISTED ARE THE REQUIRED SERVICE SIZE. THE ACTUAL CONNECTION SIZE SHALL BE AS REQUIRED BY THE MANUFACTURER OF THE ITEM SUPPLIED.

FIXTURE ID	DESCRIPTION	CW	HW	W	V	G	COMMENTS / BASIS OF DESIGN
RD-1	ROOF DRAIN	-	-	*	-		PROVIDE WITH UNDERDECK CLAMP AND CAST IRON DOME. VERIFY SIZE PRIOR TO ORDERING. (ALTERNATE #2)



KEY PLAN



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	Author
DATE	02-21-2025
REV.	

CORDOVA WING
ROOF DEMOLITION
PLAN

M101

FULL SIZE DRAWING 22" x 34"



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	SEO
DATE	02-21-2025
REV.	

RAVEN WING ROOF
DEMOLITION PLAN

M102

FULL SIZE DRAWING 22" x 34"

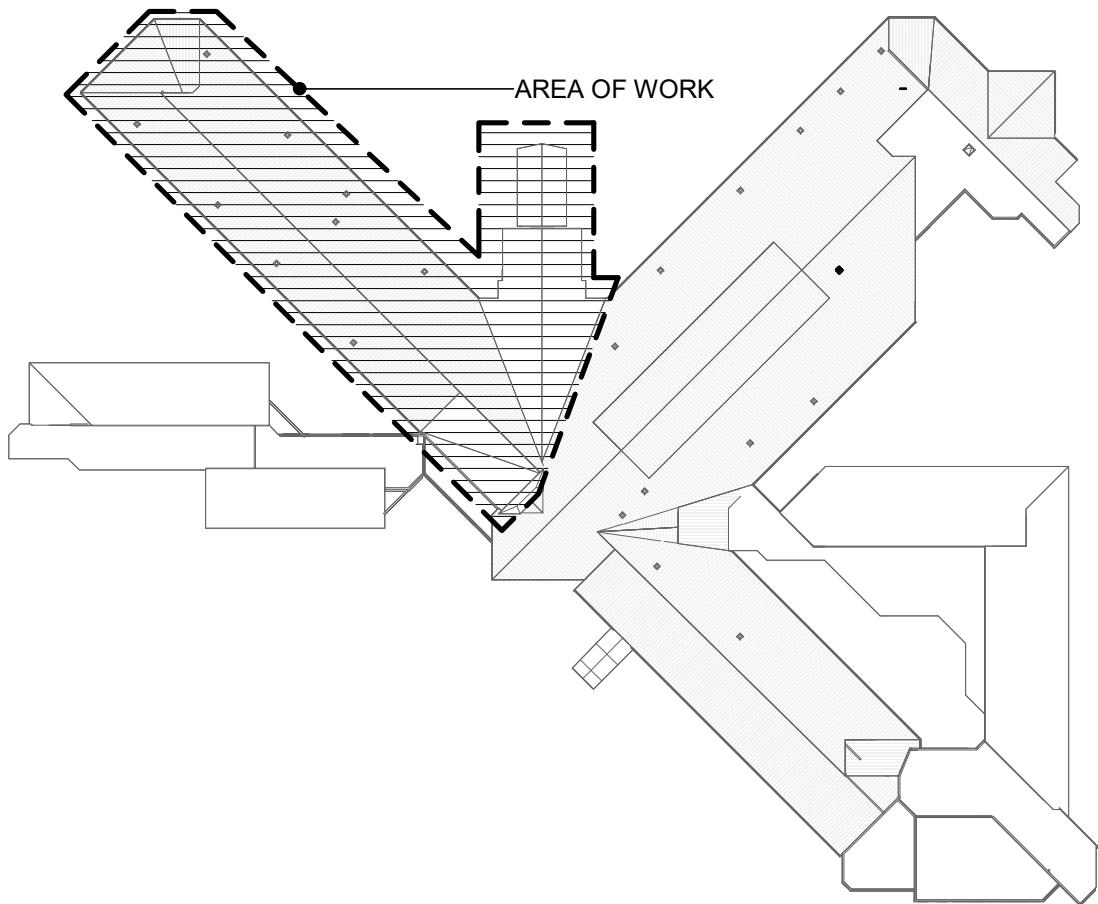


1 RAVEN WING MECHANICAL ROOF DEMOLITION PLAN

3/32" = 1'-0"

MECHANICAL DEMOLITION NOTES:

- DEMOLISH EXHAUST DUCT TERMINATION AND FLASHING BACK TO ROOF LINE. SALVAGE DUCT PENETRATION TO THE EXTENT NECESSARY FOR NEW EXHAUST DUCT TERMINATION. SEE REMODEL PLANS.
- DEMOLISH WASTE PIPING VENT THROUGH ROOF AND FLASHING TO THE EXTENT NECESSARY FOR A NEW VENT THROUGH ROOF. SEE REMODEL PLANS.
- FIELD VERIFY EXACT SIZES OF PLUMBING VENTS AND EXHAUST TERMINATION DUCTS PRIOR TO DEMOLITION, RECORD INFORMATION FOR REMODEL.
- REMOVE AND SALVAGE AHU RELIEF DUCT TERMINATION FOR FOR FUTURE INSTALLATION, SEE REMODEL PLANS.



KEY PLAN



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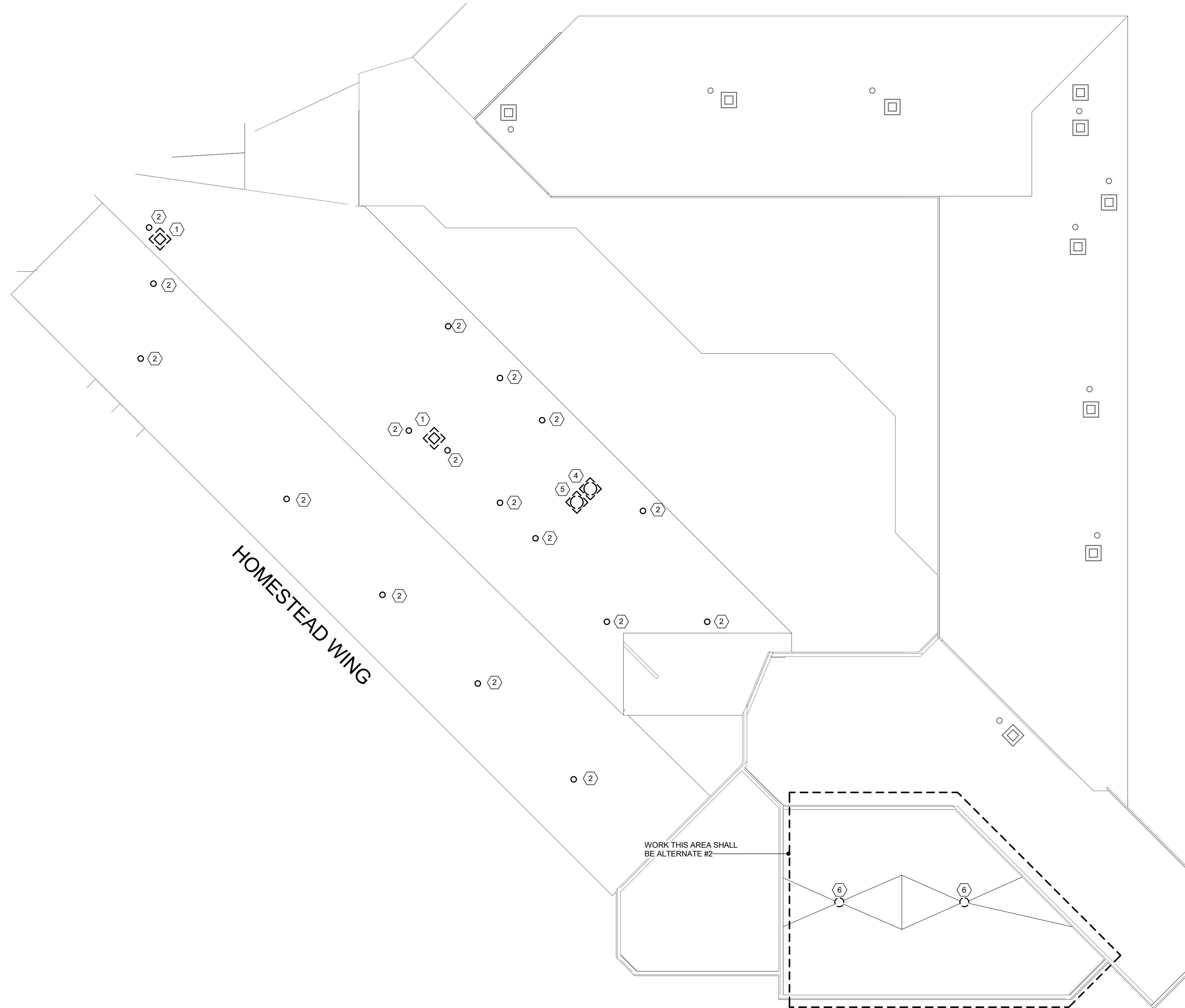
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	SEO
DATE	02-21-2025
REV.	

HOMESTEAD WING
ROOF DEMOLITION
PLAN

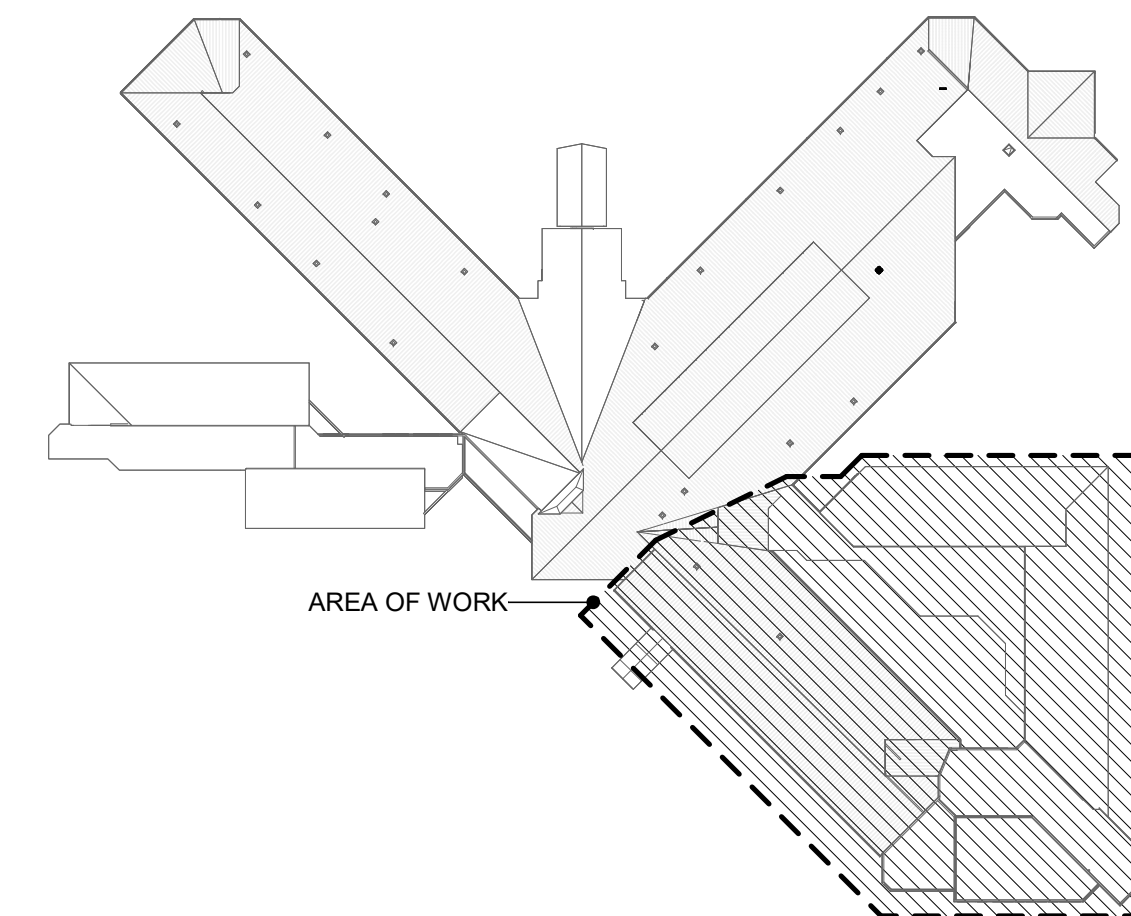
M103
FULL SIZE DRAWING 22" x 34"

SUNNY LOOP

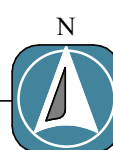


MECHANICAL DEMOLITION NOTES:

- DEMOLISH EXHAUST DUCT TERMINATION AND FLASHING BACK TO ROOF LINE, SALVAGE DUCT PENETRATION TO THE EXTENT NECESSARY FOR NEW EXHAUST DUCT TERMINATION. SEE REMODEL PLANS.
- DEMOLISH WASTE PIPING VENT THROUGH ROOF AND FLASHING TO THE EXTENT NECESSARY FOR A NEW VENT THROUGH ROOF. SEE REMODEL PLANS.
- FIELD VERIFY EXACT SIZES OF PLUMBING VENTS AND EXHAUST TERMINATION DUCTS PRIOR TO DEMOLITION, RECORD INFORMATION FOR REMODEL.
- DEMOLISH EXHAUST VENT ABOVE ROOF LINE, SALVAGE DUCT BELOW ROOF FOR FUTURE CONNECTION, SEE REMODEL PLANS.
- DEMOLISH EXHAUST VENT, AND ALL ASSOCIATED DUCTWORK ABOVE AND BELOW ROOFLINE, PATCH ROOF PENETRATION TO MATCH ADJACENT CONSTRUCTION MATERIALS.
- DEMOLISH ROOF DRAIN FOR REPLACEMENT, SALVAGE PIPING TO THE EXTENT REQUIRED FOR THE INSTALLATION OF A NEW ROOF DRAIN, VERIFY SIZE OF EXISTING DRAIN PRIOR TO ORDERING, VERIFY PRESENCE OF ELECTRIC HEAT TRACE PRIOR TO DEMOLITION, COORDINATE WITH ELECTRICAL.
- NO WORK AT SUNNY LOOP.

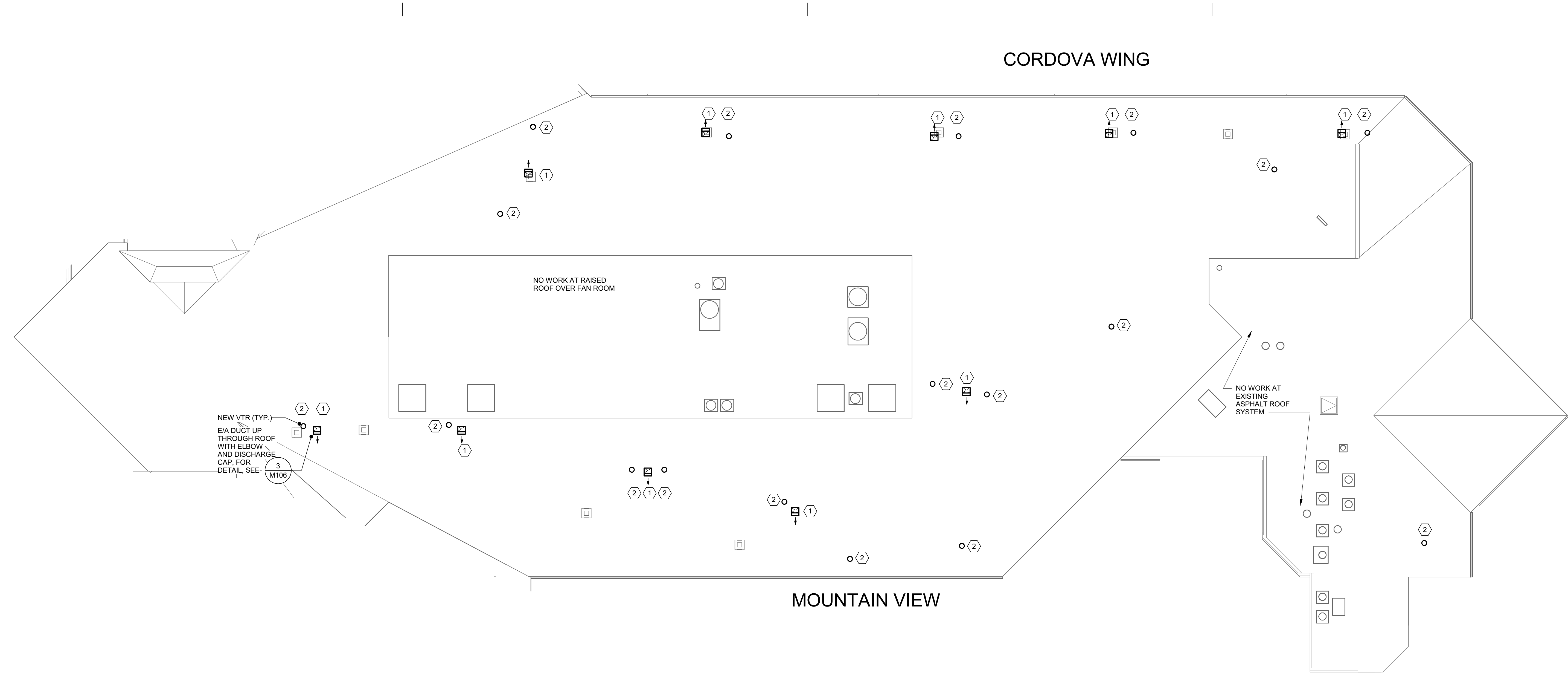


KEY PLAN



1 SUNNY LOOP/HOMESTEAD WING MECHANICAL ROOF DEMOLITION PLAN

3/32" = 1'-0"

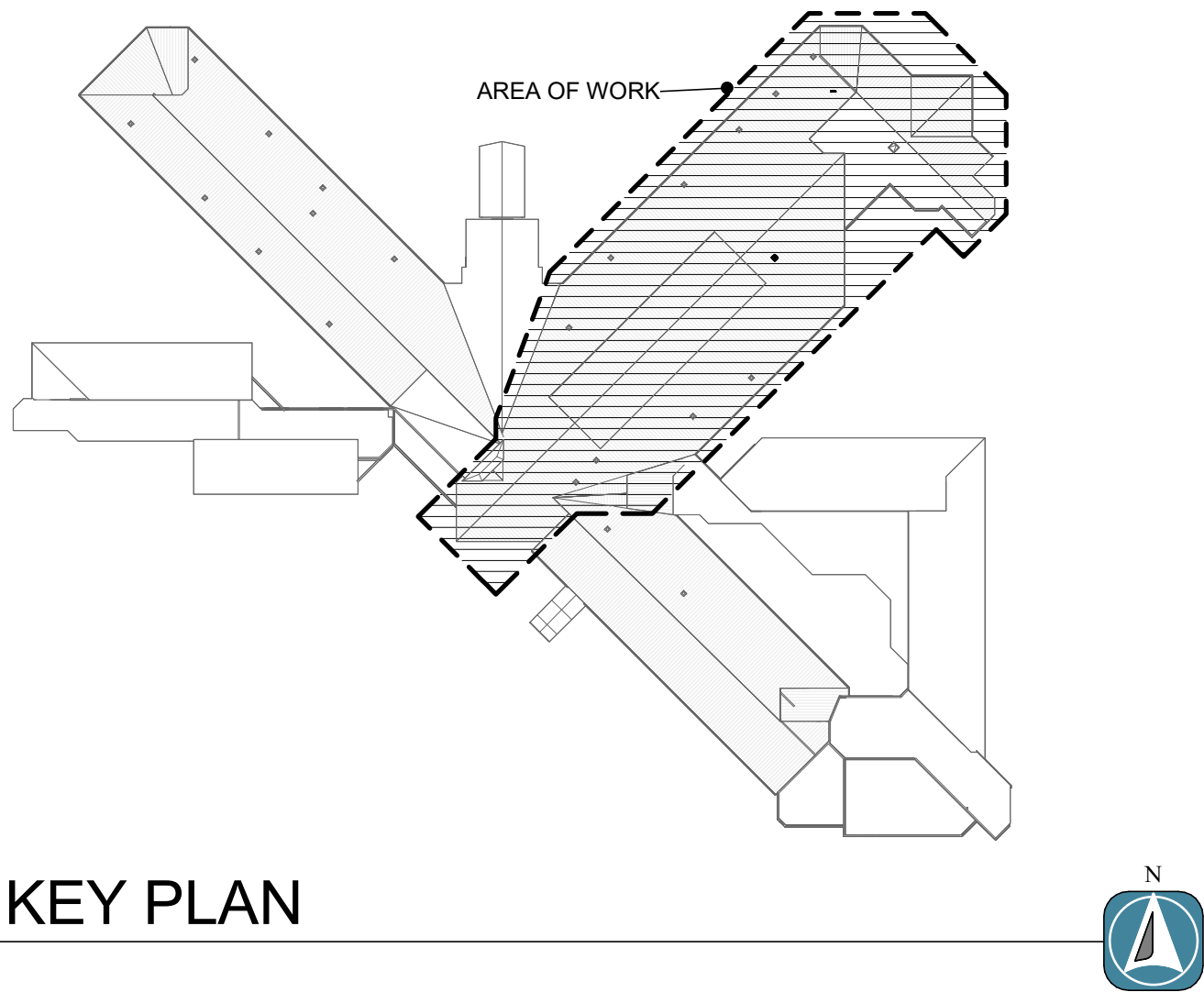


1

CORDOVA WING MECHANICAL ROOF REMODEL PLAN

3/32" = 1'-0"

- MECHANICAL REMODEL NOTES:
1. EXTEND EXISTING EXHAUST DUCT UP THROUGH NEW ROOF, ELBOW TO EXHAUST GRILLE ON FACE OF SNOW CRICKET, FOR DETAIL, SEE- 3/M106
 2. EXTEND PLUMBING VENT UP THROUGH NEW ROOF AS REQUIRED. PROVIDE NEW FLASHING.
 3. VERIFY PLUMBING VENT SIZE AND MECHANICAL DUCT SIZE PRIOR TO INSTALLATION.



KEY PLAN



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	SEO
DATE	02-21-2025
REV.	

CORDOVA WING
ROOF REMODEL
PLAN

M104

FULL SIZE DRAWING 22" x 34"



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
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CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	SEO
DATE	02-21-2025
REV.	

RAVEN WING ROOF
REMODEL PLAN

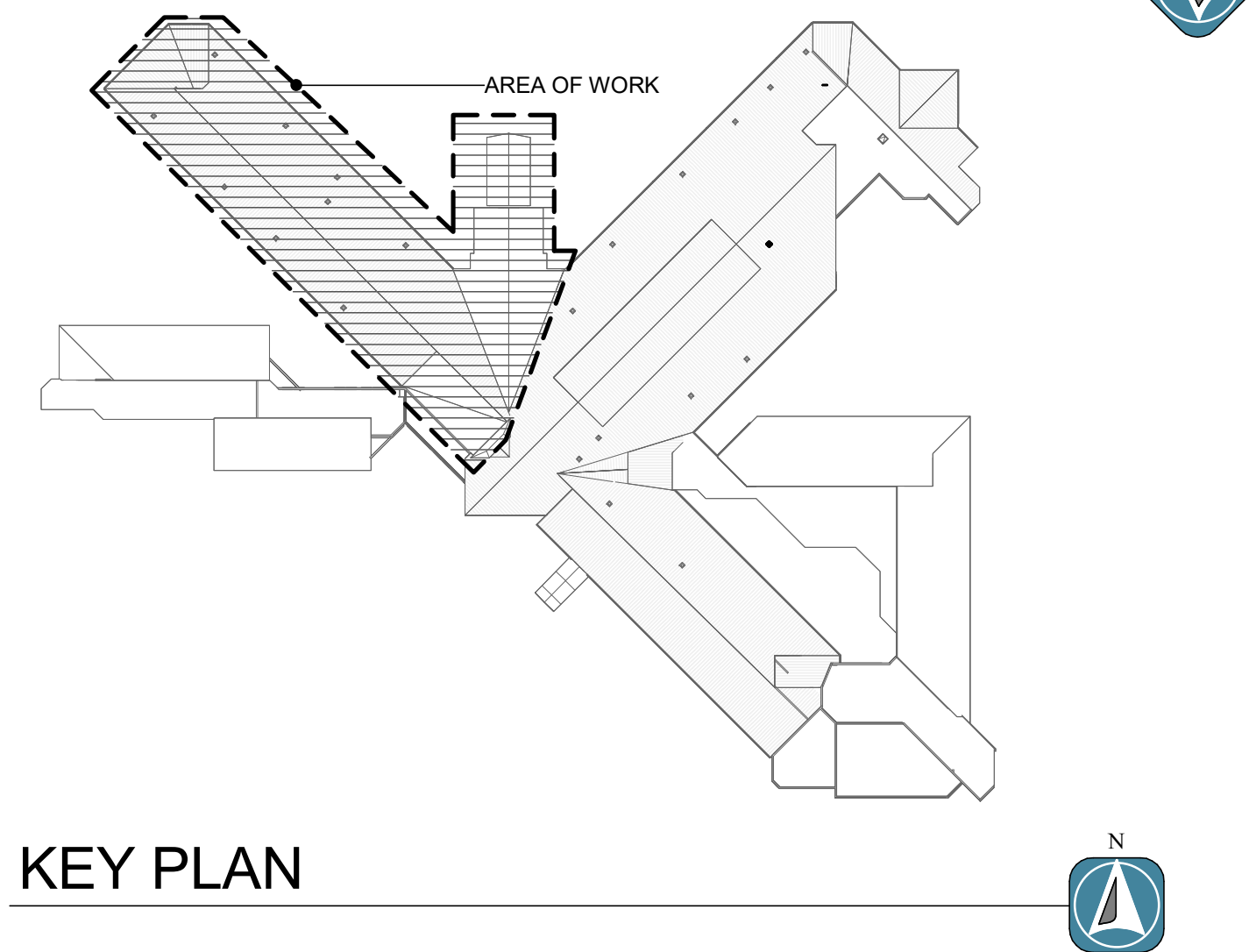
M105
FULL SIZE DRAWING 22" x 34"



1 RAVEN WING MECHANICAL ROOF REMODEL PLAN
3/32" = 1'-0"

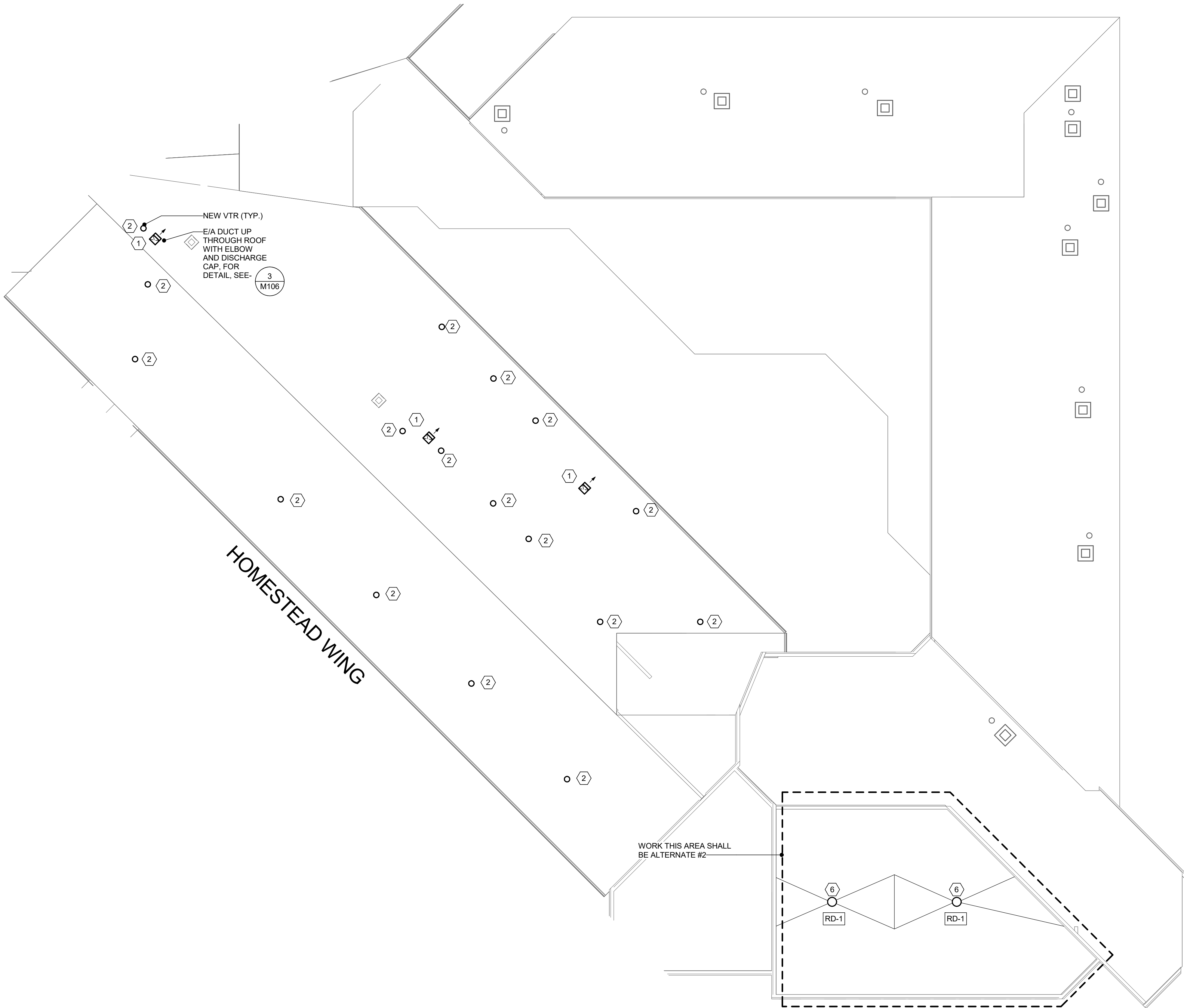
MECHANICAL REMODEL NOTES:

1. EXTEND EXISTING EXHAUST DUCT UP THROUGH NEW ROOF, ELBOW TO EXHAUST GRILLE ON FACE OF SNOW CRICKET, FOR DETAIL, SEE- 3/M106
2. EXTEND PLUMBING VENT UP THROUGH NEW ROOF AS REQUIRED. PROVIDE NEW FLASHING.
3. VERIFY PLUMBING VENT SIZE AND MECHANICAL DUCT SIZE PRIOR TO INSTALLATION.
4. REINSTALL AHU RELIEF DUCT TERMINATION.

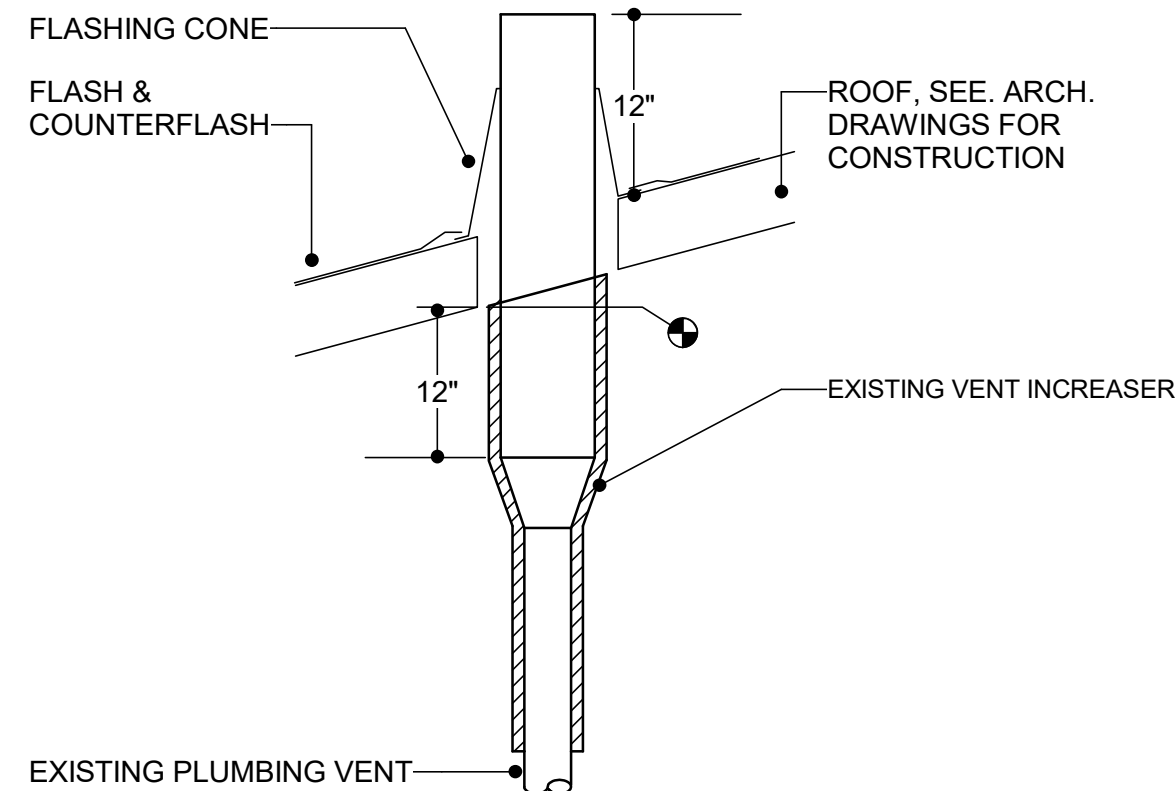


KEY PLAN

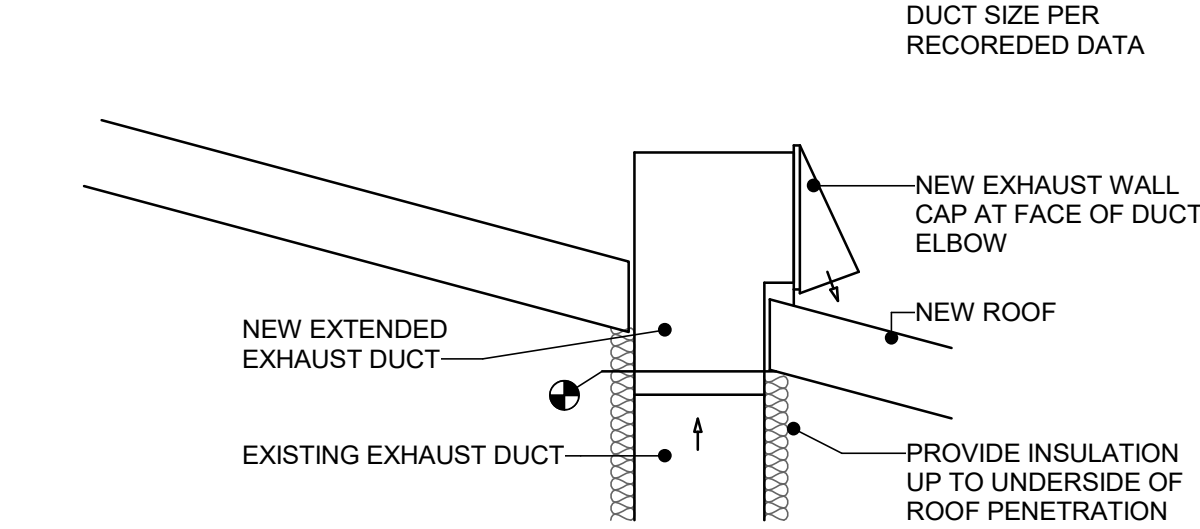
SUNNY LOOP



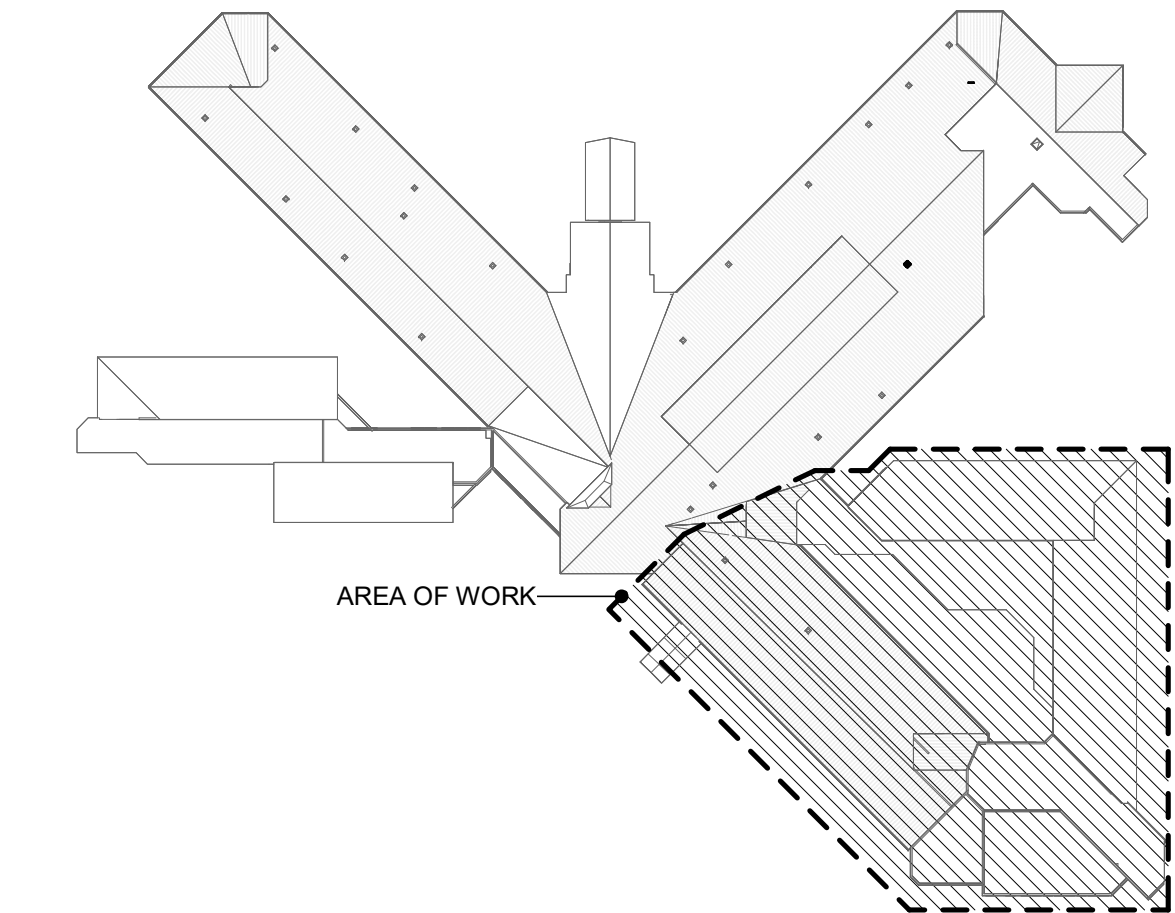
- MECHANICAL REMODEL NOTES:**
1. EXTEND EXISTING EXHAUST DUCT UP THROUGH NEW ROOF, ELBOW TO EXHAUST GRILLE ON FACE OF SNOW CRICKET, FOR DETAIL, SEE- 3/M106
 2. EXTEND PLUMBING VENT UP THROUGH NEW ROOF AS REQUIRED. PROVIDE NEW FLASHING.
 3. VERIFY PLUMBING VENT SIZE AND MECHANICAL DUCT SIZE PRIOR TO INSTALLATION.
 4. NO WORK AT SUNNY LOOP.
 5. ALL ROOF PENETRATIONS SHALL BE FULLY SEALED WITH CLOSED CELL SPRAY FOAM AROUND VENT AND DUCT PERIMETER OF THE T&G DECKING FOR THE FULL 3" OF DEPTH.
 6. PROVIDE AND INSTALL NEW ROOF DRAIN. CONNECT TO EXISTING RAINLEADER PIPING BELOW ROOF. INSULATE AS REQUIRED.



2 VENT THRU ROOF DETAIL
NTS



3 EXHAUST TERMINATION DETAIL
NTS



KEY PLAN



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ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	2024-077W
DRAWN	SEO
DATE	02-21-2025
REV.	

HOMESTEAD WING
ROOF REMODEL
PLAN

M106
FULL SIZE DRAWING 22" x 34"

1 SUNNY LOOP/HOMESTEAD WING MECHANICAL ROOF REMODEL PLAN
3/32" = 1'-0"

GENERAL NOTES

- A. EXISTING ELECTRICAL CONDUIT MAY BE LOCATED BELOW ROOF RIGID INSULATION. LOCATE DURING DEMOLITION. CONFIRM WITH O&M IF CIRCUIT IS LIVE AND STILL IN USE. IF CIRCUITS ARE STILL IN USE, THEY WILL NEED TO BE MAINTAINED WITH NEW CONSTRUCTION. COORDINATE WITH OTHER TRADES.
- B. ALL PRODUCTS MUST COMPLY WITH BABAA BUILD AMERICA BUY AMERICAN ACT.
- C. ALL BRANCH CIRCUITING IS MINIMUM 2#10, 1#10 GND.
- D. PROVIDE 30mA GROUND FAULT PROTECTION FOR ALL HEAT TRACE CIRCUITS; REPLACE 25 EXISTING NON-GROUND FAULT BREAKERS WITH 20 NEW 30A/2P CIRCUIT BREAKERS WITH 30mA GFPE. EXISTING BREAKERS ARE GE MANUFACTURER.
- E. HEAT TRACE CABLE TO GO DOWN DOWNSPOUT AND TO DRYWELL APPROXIMATELY 4' BELOW END OF DOWNSPOUT THEN TURN AND GO BACK UP TO GUTTER, APPROXIMATELY 30' OF HEAT TRACE PER DOWNSPOUT. USE WITH DOWNSPOUT HANGER CLIPS TO KEEP HEAT TRACE IN LOOP. INSTALL PER HEAT TRACE MANUFACTURER'S INSTRUCTIONS IN DOWNSPOUT.
- F. HEAT TRACE TO BE ATTACHED SECURELY TO GUTTER AND/OR ROOF WITH STAINLESS STEEL CLIPS ATTACHED TO ROOF/GUTTER WITH ADHESIVE.
- G. ALTERNATE NO. 1: HEAT TRACE AT FIREWEED AND SUNNY LOOP WINGS:
G.A. BASE BID: NO WORK IN THIS AREA.
G.B. ALTERNATE: PROVIDE HEAT TRACE AT FIREWEED AND SUNNY LOOP WINGS AS INDICATED ON DRAWINGS E-103, E-104, E-203, E-204 AND AS SPECIFIED.
- H. ALTERNATE NO. 2: PROVIDE ROOF DRAIN HEAT TRACE ON IRMA ROOF SYSTEM, SEE E-203.

SYMBOL LEGEND

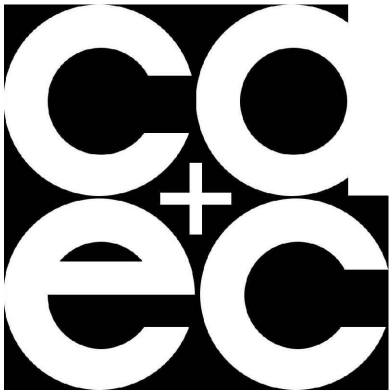
- Ⓜ JUNCTION BOX
- Ⓢ EXISTING GUTTER DOWNSPOUT
- Ⓦ EXISTING WALL MOUNTED LIGHTING

ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
- C CONDUIT
- GFCI GROUND-FAULT CIRCUIT INTERRUPTER
- GFPE GROUND-FAULT PROTECTION EQUIPMENT
- GND GROUND
- LTG LIGHTING
- MTD MOUNTED
- NEC NATIONAL ELECTRICAL CODE
- TYP TYPICAL
- UON UNLESS OTHERWISE NOTED
- WP WEATHERPROOF

LINE TYPES

- DEMOLITION WORK
- EXISTING TO REMAIN
- NEW WORK



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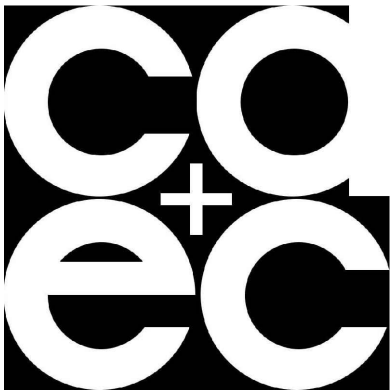
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

LEGEND AND
GENERAL NOTES

E-001

FULL SIZE DRAWING 22" x 34"



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LLC

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AK LLC Authorization #136403



ALASKA VETERANS & PIONEERS HOME

25-NO817C ROOF REPLACEMENT

250 EAST FIREWEED
PALMER, ALASKA 99645

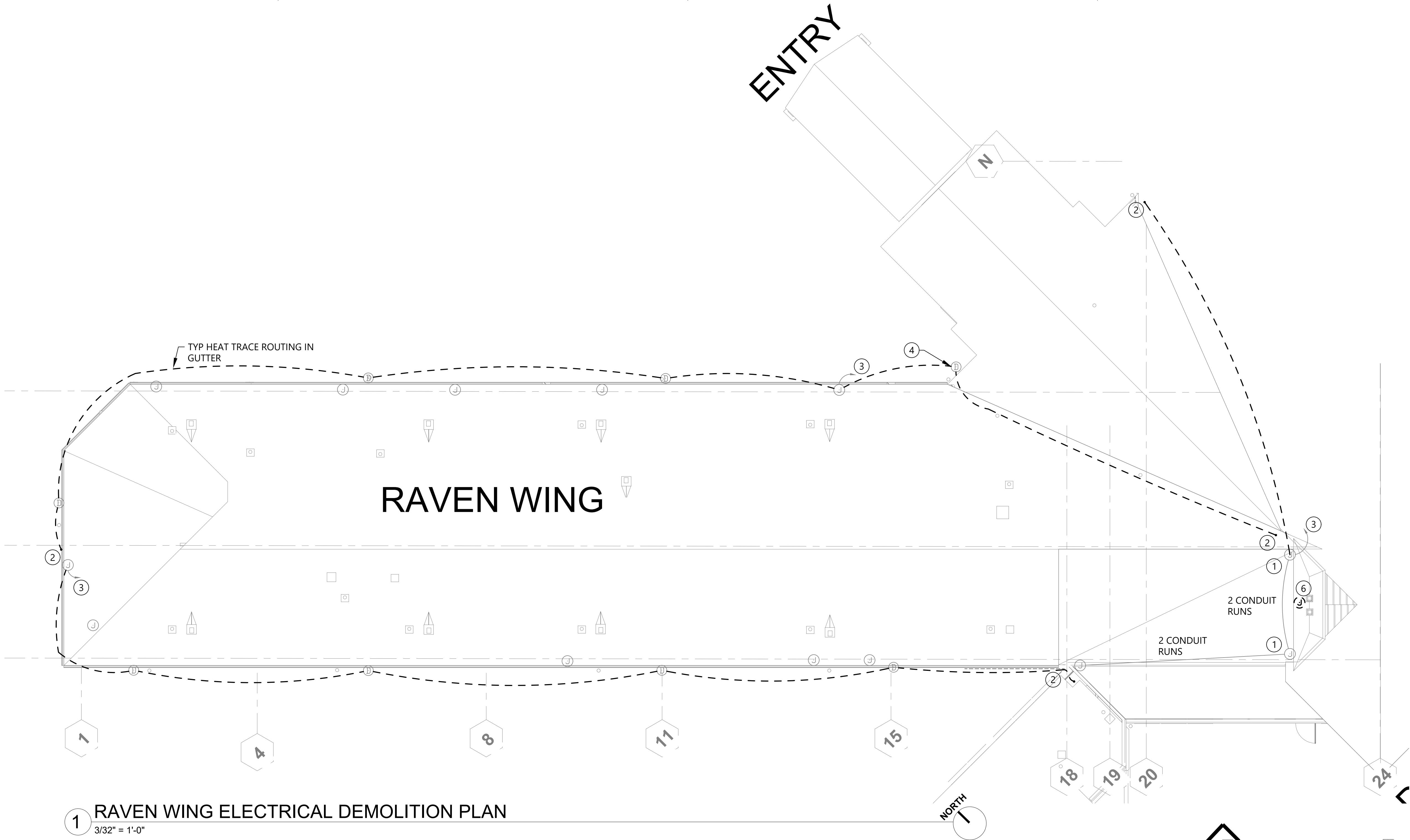
CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

RAVEN WING ELECTRICAL DEMOLITION PLAN

E-101

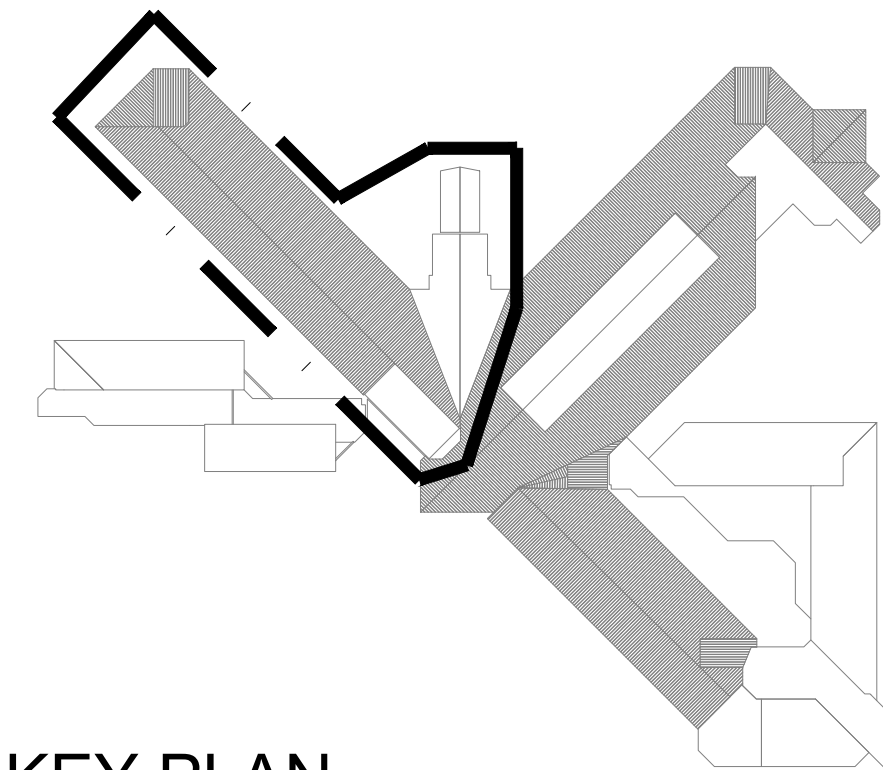
FULL SIZE DRAWING 22" x 34"



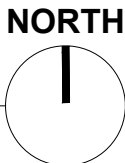
1 RAVEN WING ELECTRICAL DEMOLITION PLAN
3/32" = 1'-0"

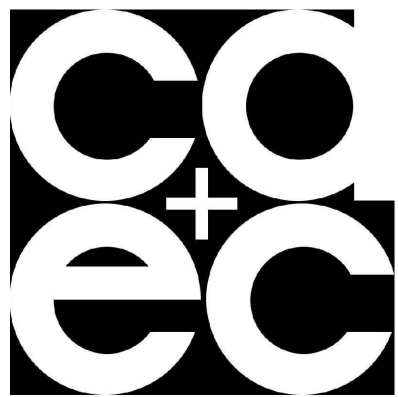
KEYED NOTES - #

- EXISTING POWER CONDUITS ON ROOF TO REMAIN.
- END OF HEAT TRACE RUN.
- HEAT TRACE POWER FEED TO REMAIN.
- TYPICAL DOWNSPOUT HEAT TRACE.
- HEAT TRACE END IS AFTER HEAT TRACE GOES INTO DOWNSPOUT AND BACK TO ROOF.
- ROOF MOUNTED ANTENNA TO BE DEMOLISHED. PATCH ROOFING AND ASSOCIATED OPENINGS.



KEY PLAN





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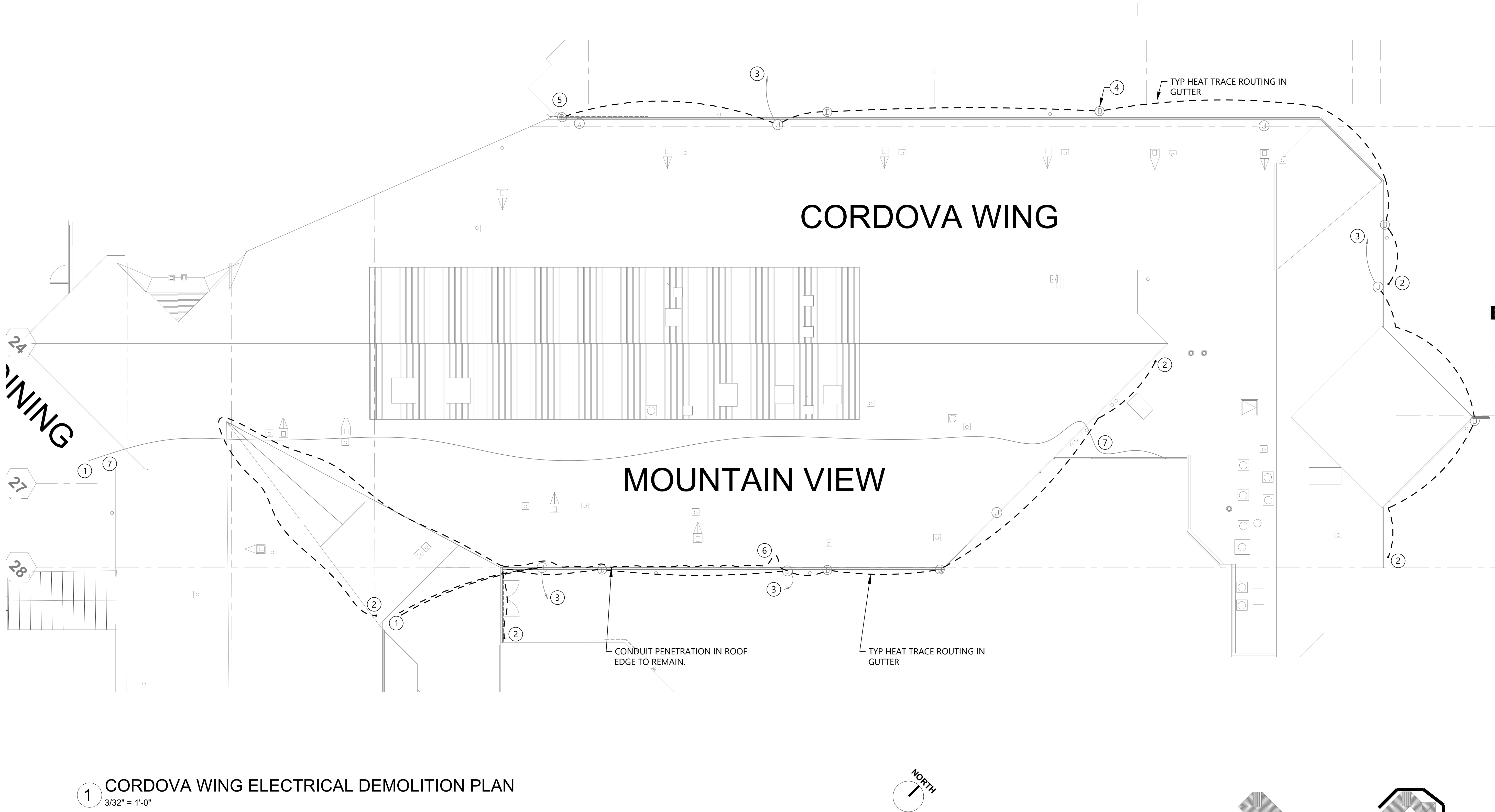
CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

CORDOVA WING ELECTRICAL DEMOLITION PLAN

E-102

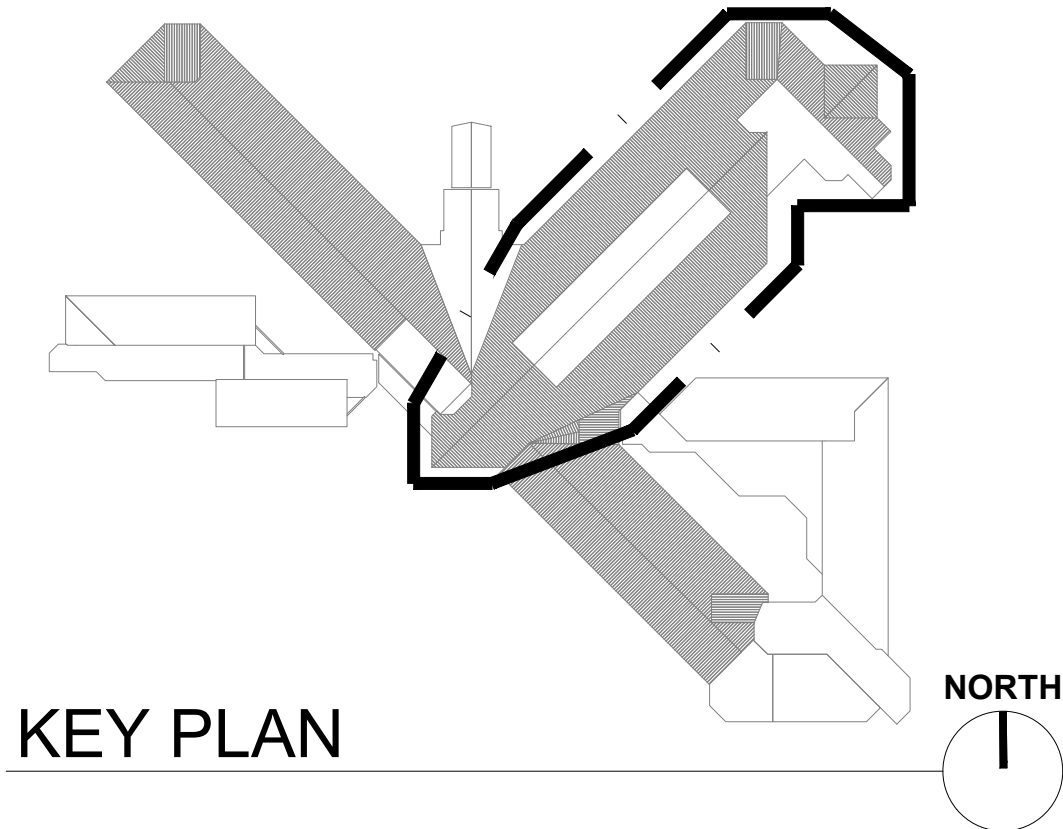
FULL SIZE DRAWING 22" x 34"



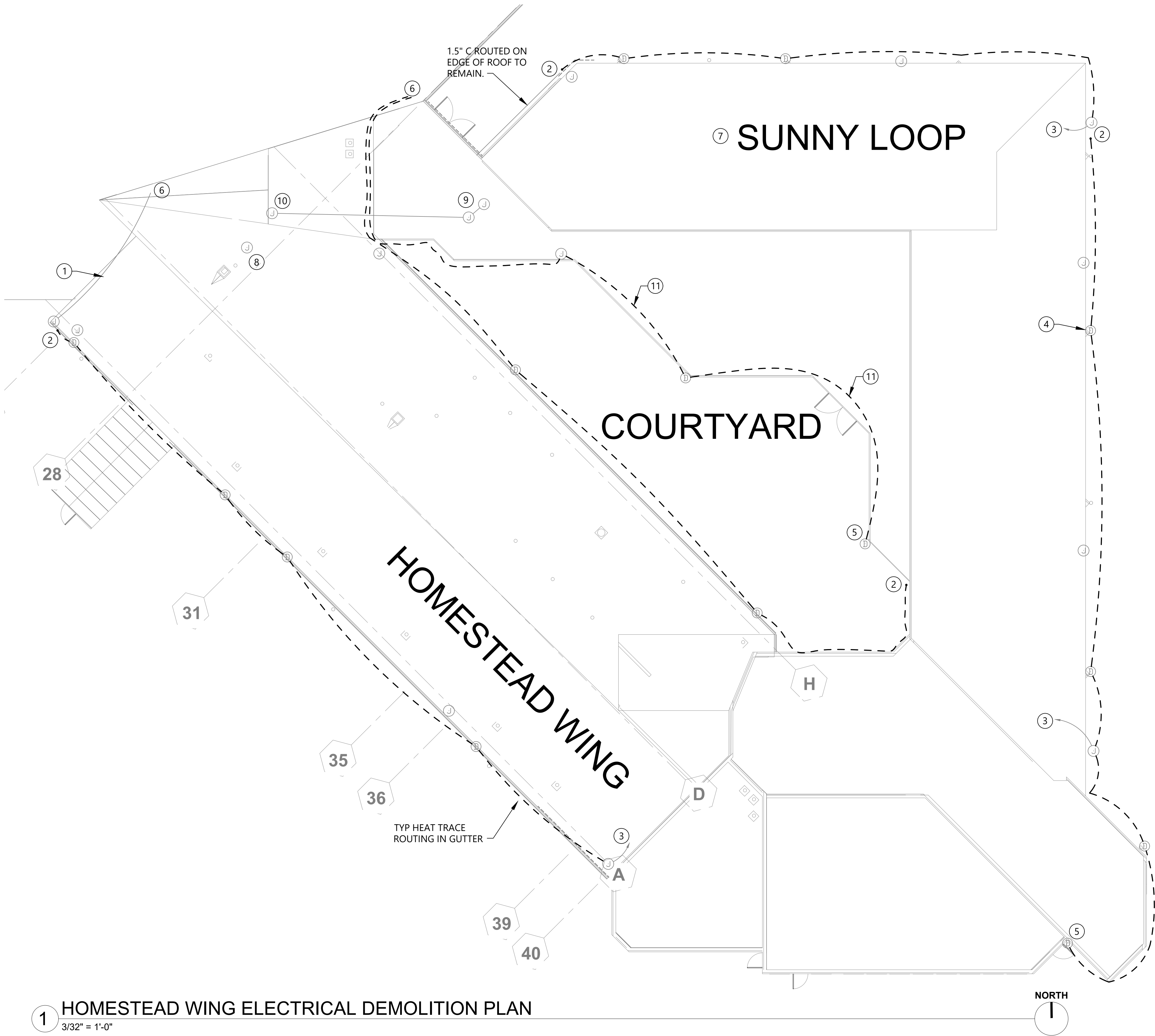
1 CORDOVA WING ELECTRICAL DEMOLITION PLAN
3/32" = 1'-0"

KEYED NOTES - #

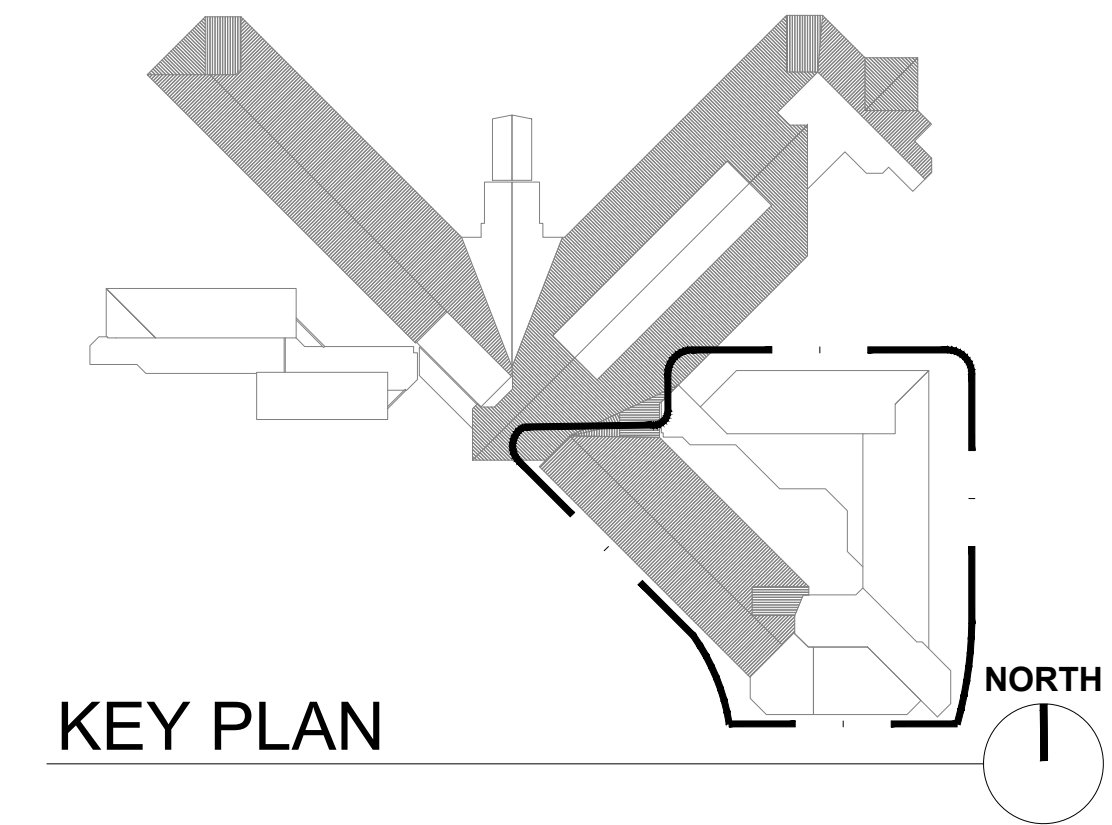
- SEE E-103 FOR CONTINUATION.
- END OF HEAT TRACE RUN.
- HEAT TRACE POWER FEED TO REMAIN.
- TYPICAL DOWNSPOUT HEAT TRACE.
- HEAT TRACE END IS AFTER HEAT TRACE GOES INTO DOWNSPOUT AND BACK TO ROOF.
- HEAT TRACE ROUTED ON ROOF TO BE DEMOLISHED.
- EXISTING GCI TELECOM CABLE ROUTED ON ROOF, MAINTAIN IN OPERATION DURING REROOF.



KEY PLAN



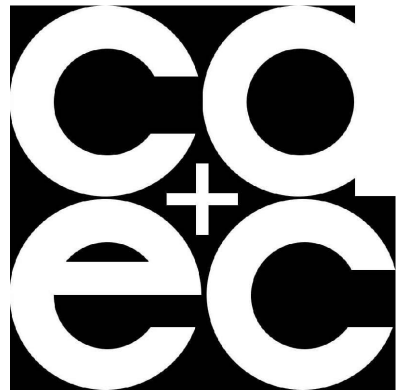
1 HOMESTEAD WING ELECTRICAL DEMOLITION PLAN
3/32" = 1'-0"



KEY PLAN

KEYED NOTES - #

- EXISTING GCI TELECOM CABLE ROUTED ON ROOF, MAINTAIN IN OPERATION DURING REROOF. FED FROM WALL MOUNTED ELECTRICAL BOX.
- END OF HEAT TRACE RUN.
- HEAT TRACE POWER FEED TO REMAIN.
- TYPICAL DOWNSPOUT HEAT TRACE.
- HEAT TRACE END IS AFTER HEAT TRACE GOES INTO DOWNSPOUT AND BACK TO ROOF.
- SEE E-102 FOR CONTINUATION.
- SUNNY LOOP IS ALTERNATE #1 WORK.
- ROOF MOUNTED PHOTOCELL TO REMAIN.
- ROOF MOUNTED ANTENNAS TO REMAIN.
- CONDUIT ON VERTICAL SURFACE FEEDING TO ANTENNAS TO REMAIN. CONDUIT AND/OR CABLING APPEARS TO GO UNDER ROOFING SURFACE, TO REMAIN IN SERVICE. CONDUIT ROUTE SHOWN IS ASSUMED.
- CONDUIT ON THE ROOF TO REMAIN WITH POWER FOR HEAT TRACE TO DOWNSPOUT. DEMOLISH HEAT TRACE IN DOWNSPOUT AND IF IN CONDUIT.



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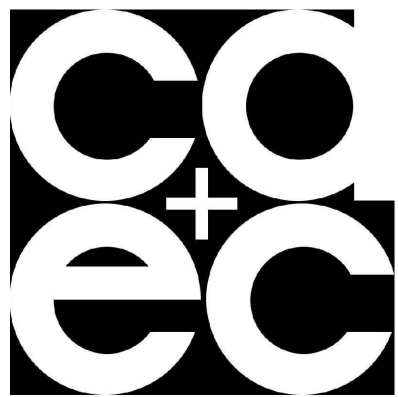
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
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HOMESTEAD WING
ELECTRICAL
DEMOLITION PLAN

E-103

FULL SIZE DRAWING 22" x 34"



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CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

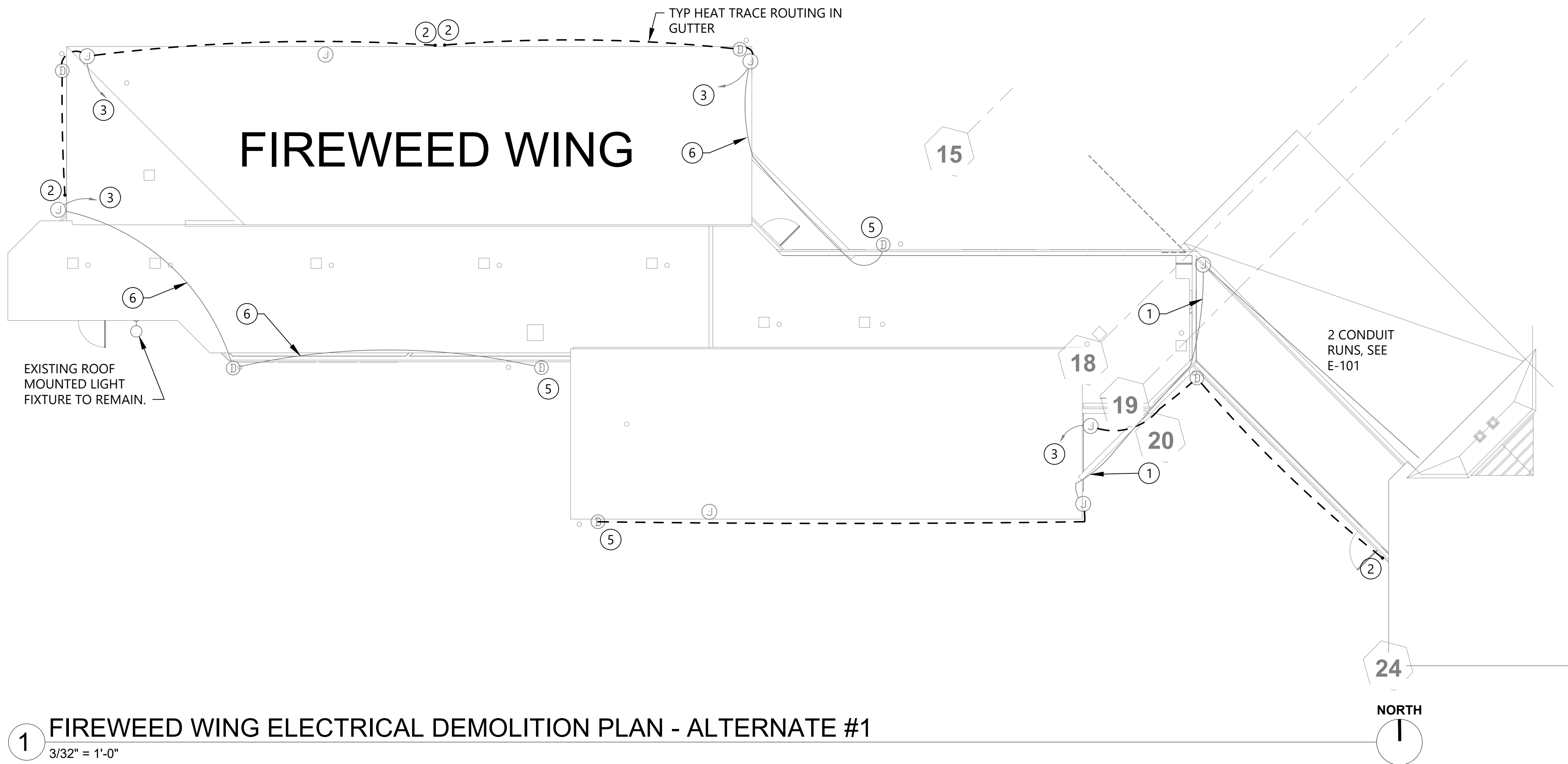
FIREWEED WING
ELECTRICAL
DEMOLITION PLAN

E-104

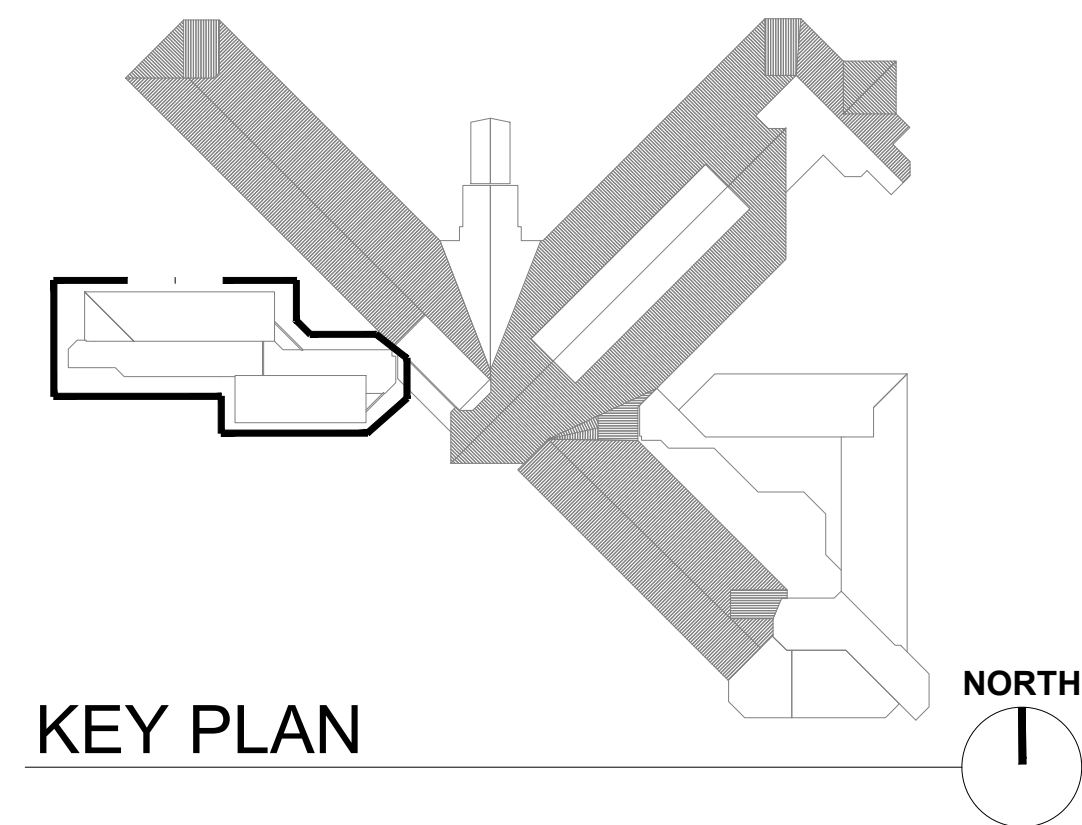
FULL SIZE DRAWING 22" x 34"

KEYED NOTES -

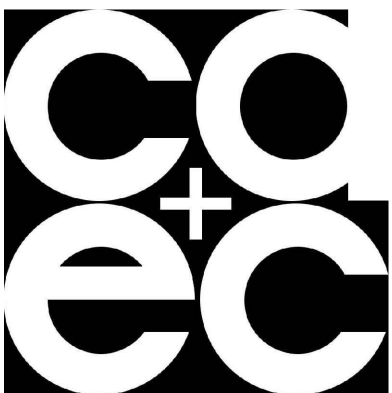
- EXISTING POWER CONDUITS ON ROOF TO REMAIN.
- END OF HEAT TRACE RUN.
- HEAT TRACE POWER FEED TO REMAIN.
- TYPICAL DOWNSPOUT HEAT TRACE.
- HEAT TRACE END IS AFTER HEAT TRACE GOES INTO DOWNSPOUT AND BACK TO ROOF.
- CONDUIT ON THE ROOF TO REMAIN WITH POWER FOR HEAT TRACE TO DOWNSPOUT. DEMOLISH HEAT TRACE IN DOWNSPOUT AND IF IN CONDUIT.



1 FIREWEED WING ELECTRICAL DEMOLITION PLAN - ALTERNATE #1
3/32" = 1'-0"



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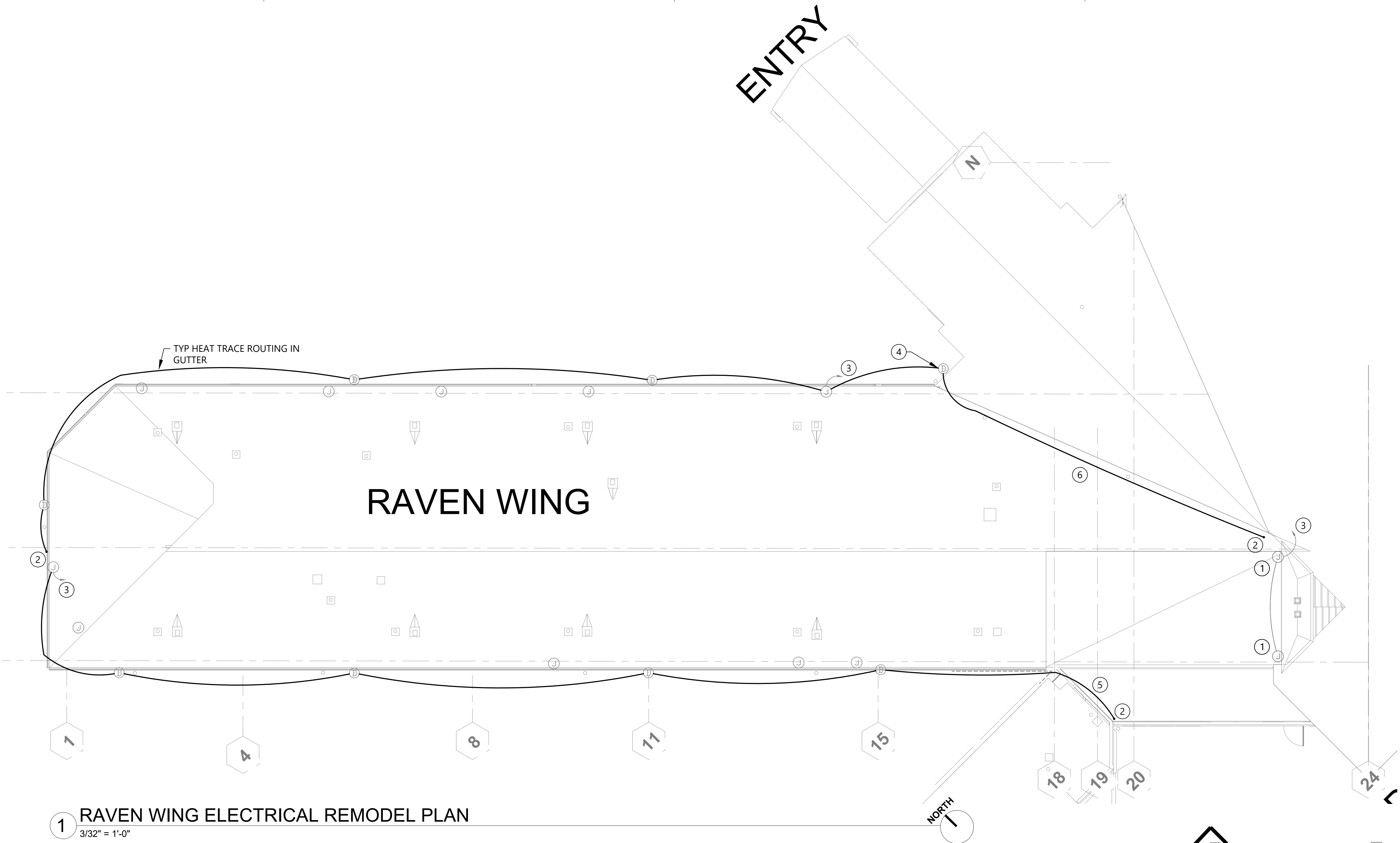
ALASKA VETERANS & PIONEERS HOME
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250 EAST FIREWEED
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CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

RAVEN WING
ELECTRICAL
REMODEL PLAN

E-201

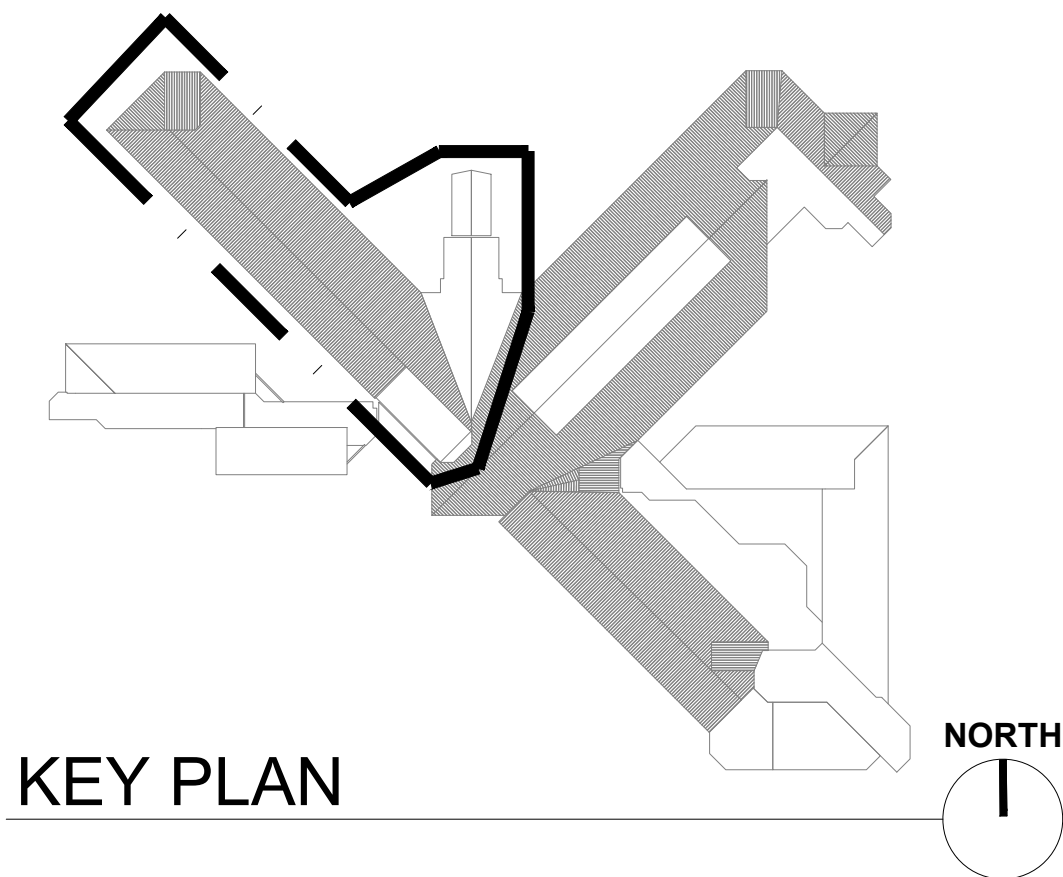
FULL SIZE DRAWING 22" x 34"



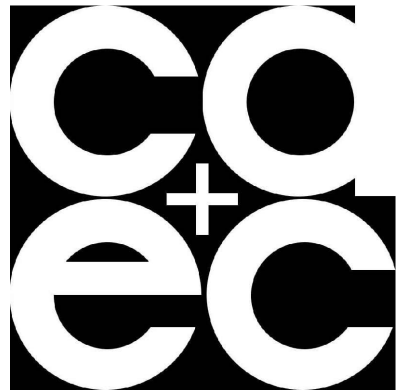
1 RAVEN WING ELECTRICAL REMODEL PLAN
3/32" = 1'-0"

KEYED NOTES - (#)

- EXISTING POWER CONDUITS ON ROOF TO REMAIN.
- END OF HEAT TRACE RUN.
- EXISTING HEAT TRACE POWER FEED(S) TO BE RE-USED FOR NEW HEAT TRACE. TRACE OUT CIRCUIT AND UPDATE BREAKER SCHEDULE.
- TYPICAL DOWNSPOUT HEAT TRACE, APPROXIMATELY 30' LOOP DOWN AND BACK UP TO GUTTER. SEE GENERAL NOTES ON E-001.
- EXTEND HEAT TRACE OUT OF GUTTER AND ON THE ROOF AROUND THE BASE OF PARAPET WALL.
- HEAT TRACE ROUTED ON ROOF IN VALLEY SPACE.



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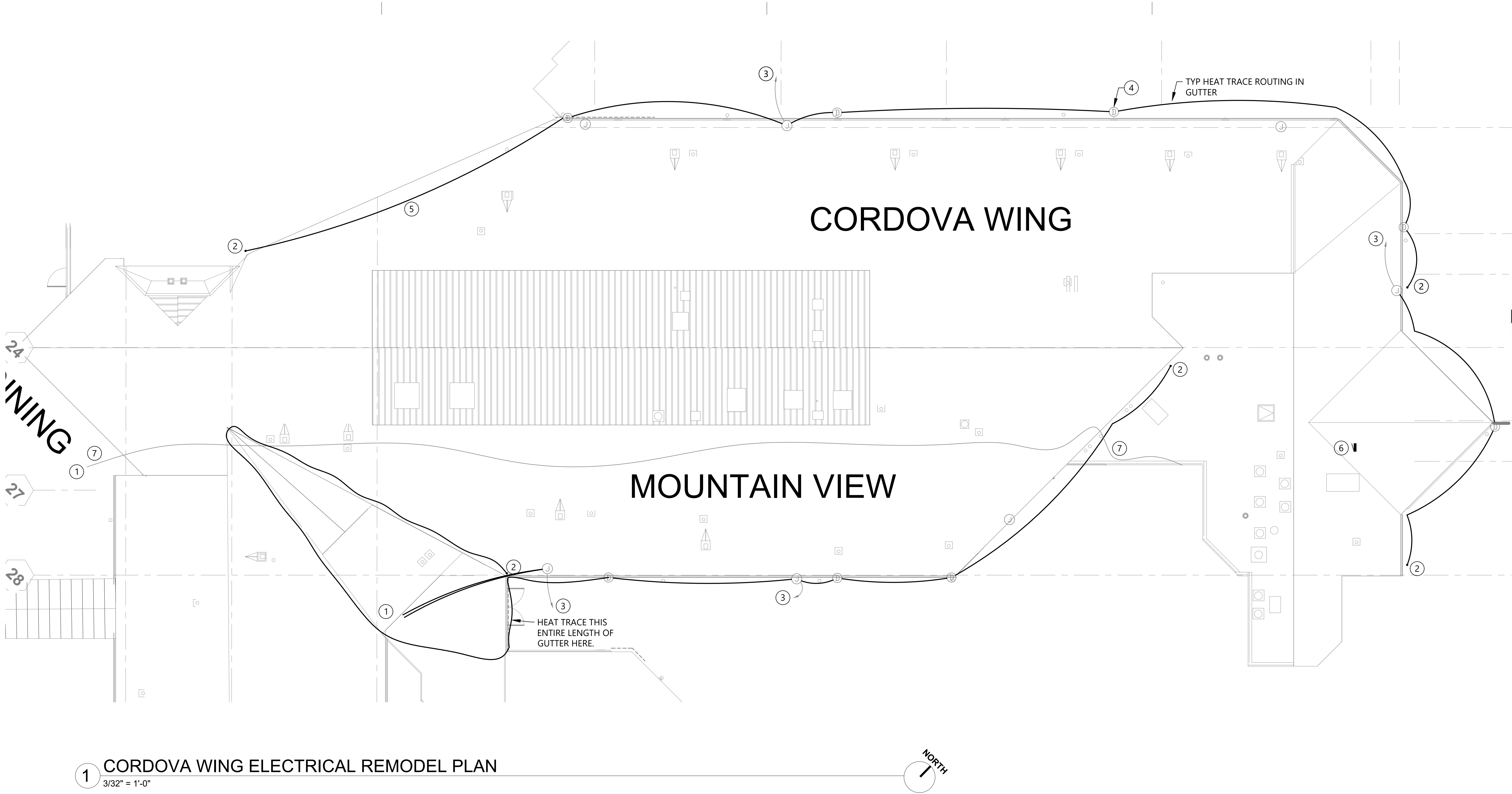
CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

CORDOVA WING ELECTRICAL REMODEL PLAN

E-202

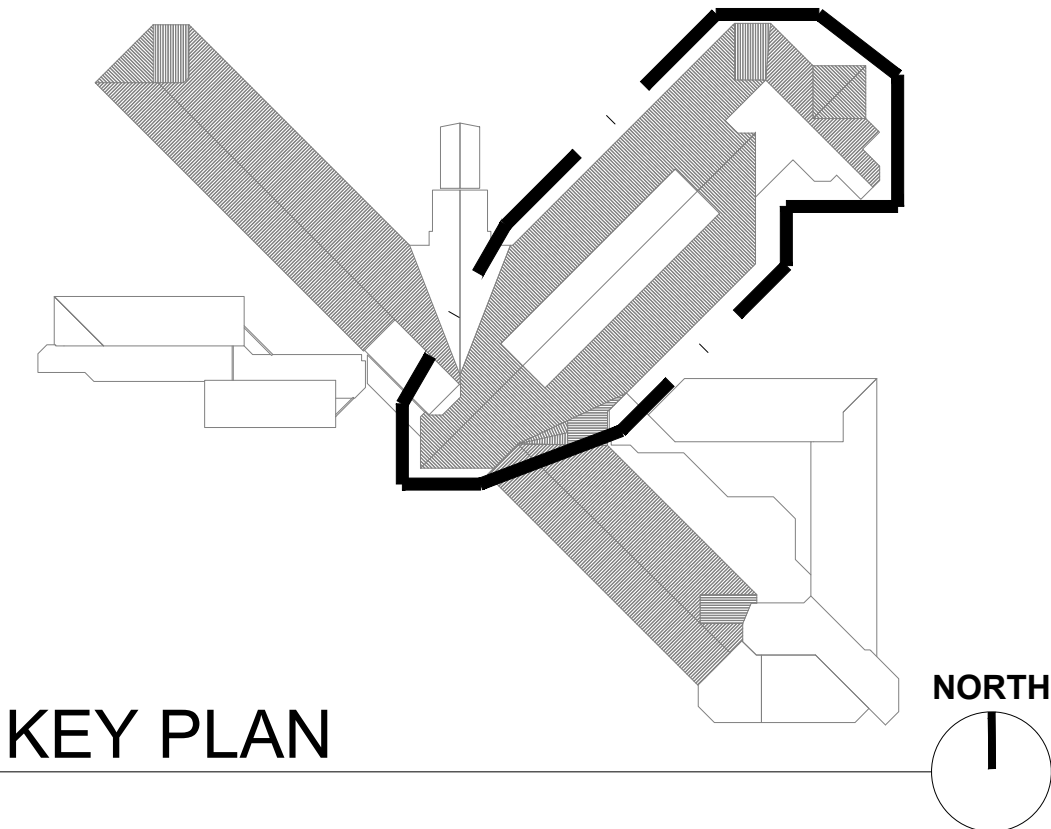
FULL SIZE DRAWING 22" x 34"



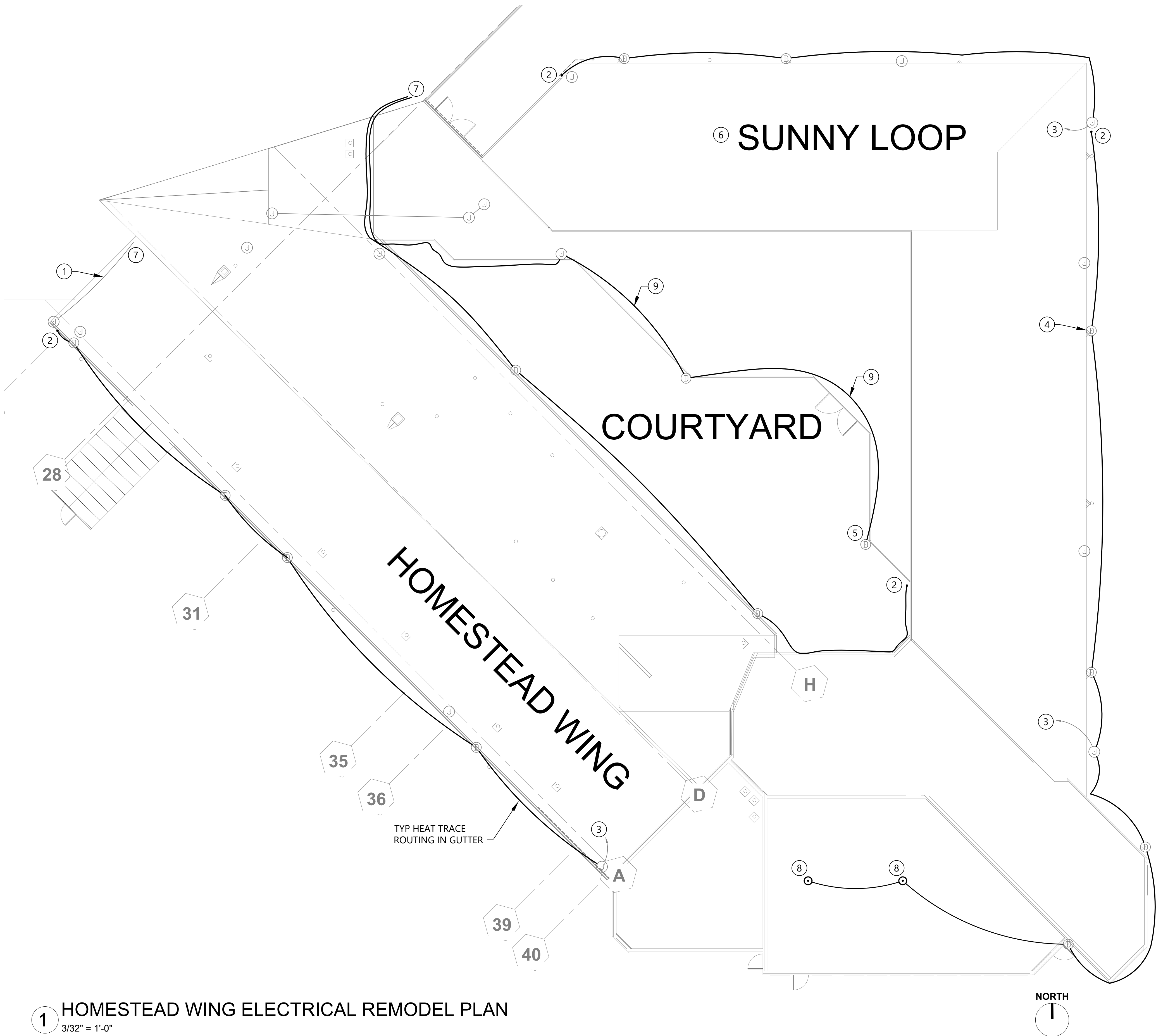
1 CORDOVA WING ELECTRICAL REMODEL PLAN 3/32" = 1'-0"

KEYED NOTES -

- SEE E-203 FOR CONTINUATION.
- END OF HEAT TRACE RUN.
- EXISTING HEAT TRACE POWER FEED(S) TO BE RE-USED FOR NEW HEAT TRACE. TRACE OUT CIRCUIT AND UPDATE BREAKER SCHEDULE.
- TYPICAL DOWNSPOUT HEAT TRACE, APPROXIMATELY 30' LOOP DOWN AND BACK UP TO GUTTER. SEE GENERAL NOTES ON E-001.
- HEAT TRACE ROUTED ON ROOF IN VALLEY SPACE.
- EXISTING PANEL 'SM-2' FOR ALL HEAT TRACE CIRCUITS, LOCATED INSIDE AT THIS LOCATION. REPLACE 25 EXISTING 30A/2P BREAKERS WITH NEW SAME SIZE BREAKERS WITH 30mA GFPE PROTECTION. TRACE OUT ALL CIRCUITS AND UPDATE BREAKER SCHEDULE.
- EXISTING GCI TELECOM CABLE ROUTED ON ROOF, MAINTAIN IN OPERATION DURING REROOF.



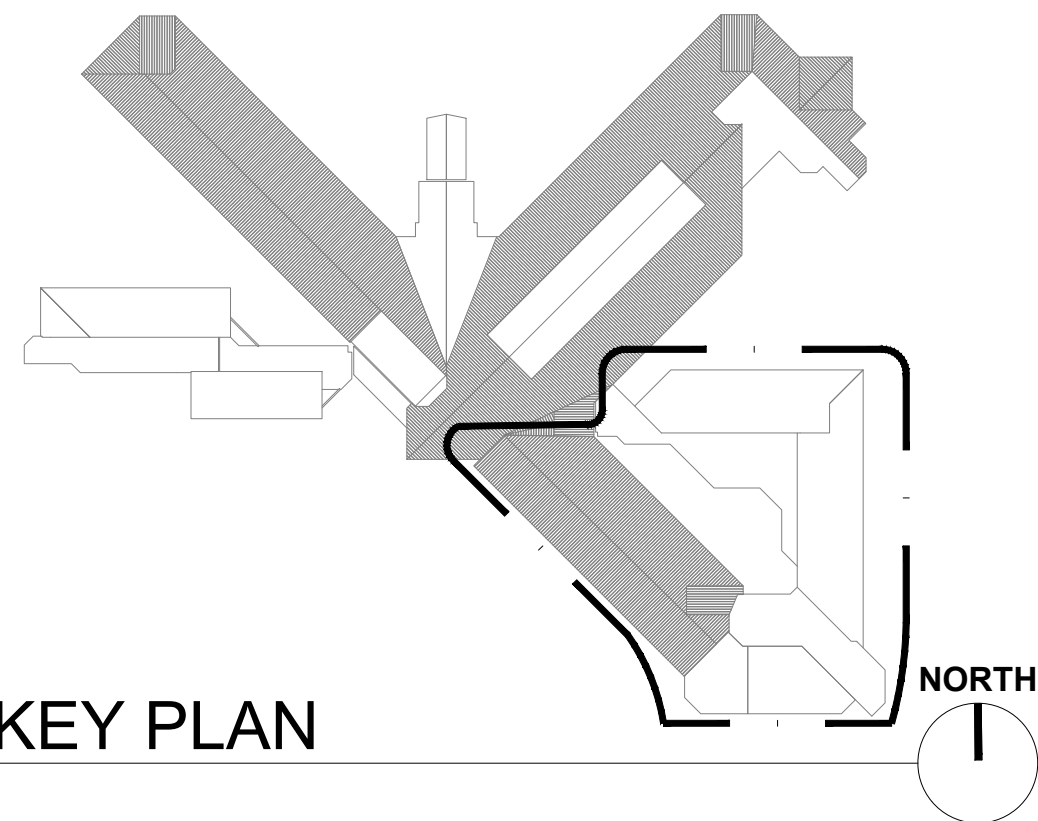
KEY PLAN



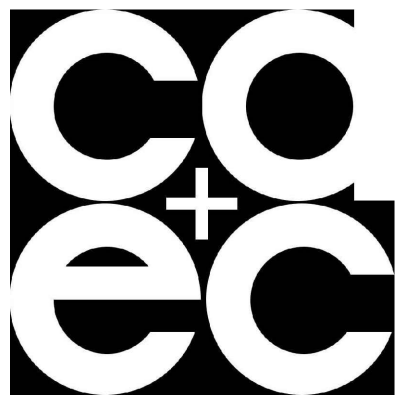
1 HOMESTEAD WING ELECTRICAL REMODEL PLAN
3/32" = 1'-0"

KEYED NOTES - #

- EXISTING GCI TELECOM CABLE ROUTED ON ROOF, MAINTAIN IN OPERATION DURING REROOF. FED FROM WALL MOUNTED ELECTRICAL BOX.
- END OF HEAT TRACE RUN.
- EXISTING HEAT TRACE POWER FEED(S) TO BE RE-USED FOR NEW HEAT TRACE. TRACE OUT CIRCUIT AND UPDATE BREAKER SCHEDULE.
- TYPICAL DOWNSPOUT HEAT TRACE, APPROXIMATELY 30' LOOP DOWN AND BACK UP TO GUTTER. SEE GENERAL NOTES ON E-001.
- HEAT TRACE END IS AFTER HEAT TRACE GOES INTO DOWNSPOUT AND BACK TO ROOF.
- SUNNY LOOP IS ALTERNATE #1 WORK.
- SEE E-202 FOR CONTINUATION.
- ALTERNATE #2: PROVIDE HEAT TRACE FOR ROOF DRAIN OPENINGS ON ROOF. WRAP HEAT TRACE AROUND ROOF DRAIN AND EXTEND 5' INTO HEATED BUILDING ENVELOPE.
- CONDUIT ON THE ROOF TO REMAIN WITH POWER FOR HEAT TRACE TO DOWNSPOUT, NO GUTTER HEAT TRACE. PROVIDE NEW HEAT TRACE IN DOWNSPOUT AND POWER CONDUCTORS.



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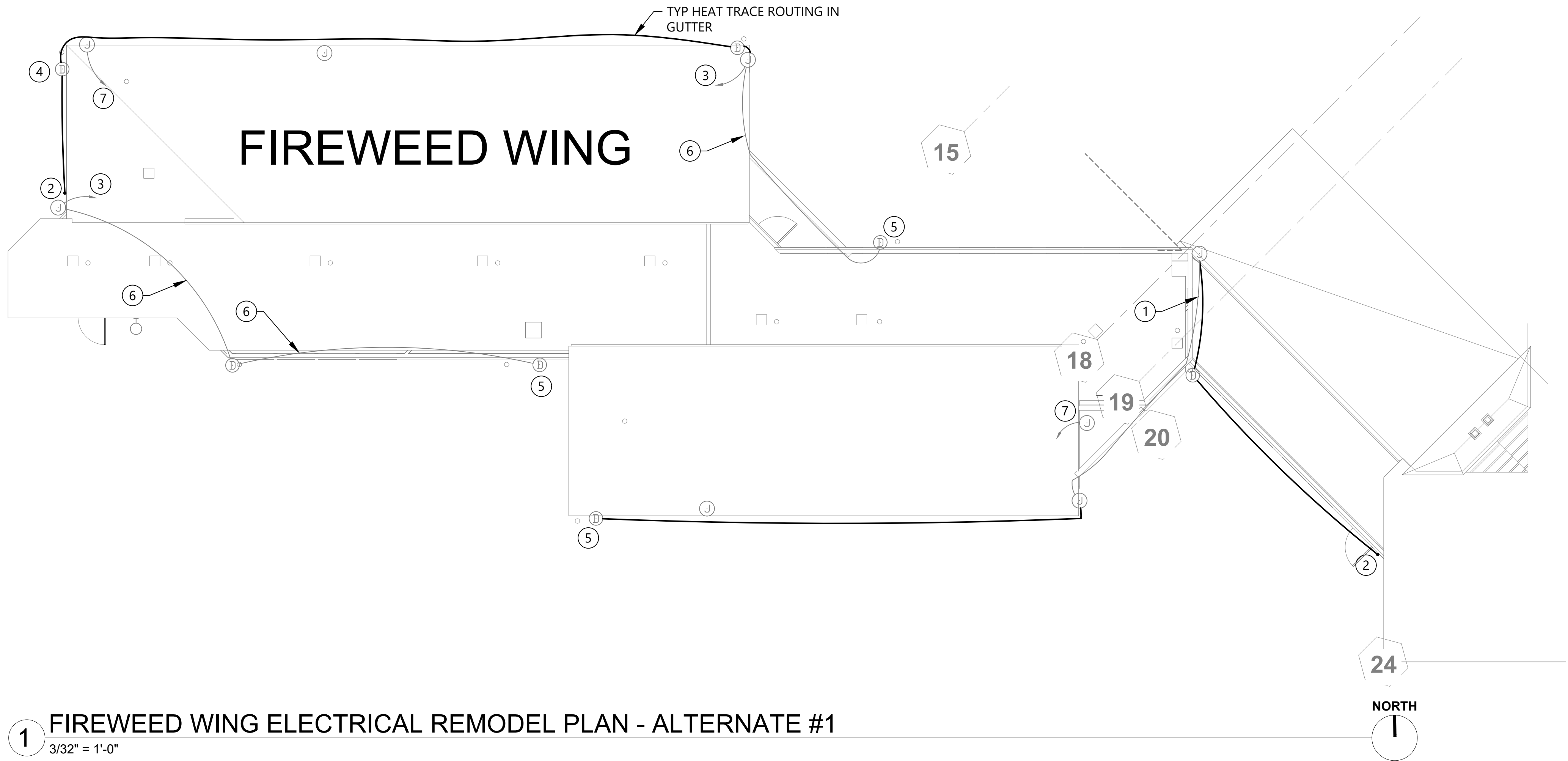
ALASKA VETERANS & PIONEERS HOME
25-NO817C ROOF REPLACEMENT
250 EAST FIREWEED
PALMER, ALASKA 99645
CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

HOMESTEAD WING ELECTRICAL REMODEL PLAN

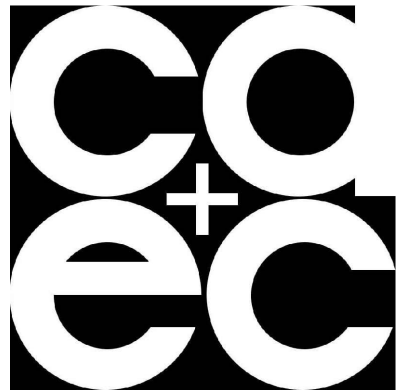
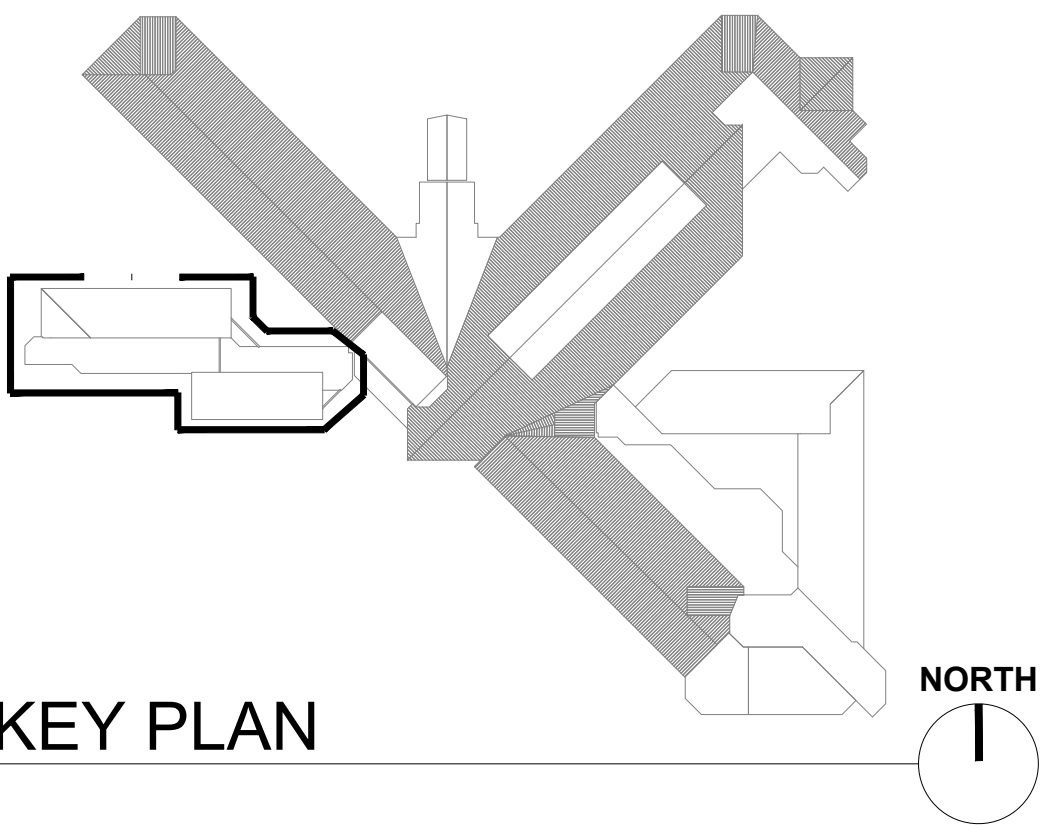
E-203

FULL SIZE DRAWING 22" x 34"



KEYED NOTES - #

1. EXISTING POWER CONDUITS ON ROOF TO REMAIN.
2. END OF HEAT TRACE RUN.
3. EXISTING HEAT TRACE POWER FEED(S) TO BE RE-USED FOR NEW HEAT TRACE. TRACE OUT CIRCUIT AND UPDATE BREAKER SCHEDULE.
4. TYPICAL DOWNSPOUT HEAT TRACE, APPROXIMATELY 30' LOOP DOWN AND BACK UP TO GUTTER. SEE GENERAL NOTES ON E-001.
5. HEAT TRACE END IS AFTER HEAT TRACE GOES INTO DOWNSPOUT AND BACK TO ROOF.
6. CONDUIT ON THE ROOF TO REMAIN WITH POWER FOR HEAT TRACE TO DOWNSPOUT, NO GUTTER HEAT TRACE. PROVIDE NEW HEAT TRACE IN DOWNSPOUT AND POWER CONDUCTORS.
7. EXISTING POWER FEED TO REMAIN AS SPARE. PROVIDE WP BLANK OFF COVER.



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250 EAST FIREWEED
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CONSTRUCTION DOCUMENTS

PROJECT #	24BR-50
DRAWN	BJR
DATE	3/4/2025
REV.	

FIREWEED WING
ELECTRICAL
REMODEL PLAN

E-204

FULL SIZE DRAWING 22" x 34"