Project Manual for:

Gilham Elementary School Roof Replacement 2023

Gilham Elementary School
3307 Honeywood Street
Eugene, Oregon 97408

Eugene School District 4J
CIP No. 460-960-P0003

22 February 2023

DOCUMENT 00 01 01
TITLE PAGE

PROJECT MANUAL:
Gilham Elementary School Roof Replacement Project
Eugene Public School District 4J
Eugene, Oregon
C.I.P. Project No. **460-960-P0003**

OWNER:
Eugene School District 4J
715 West 4th Ave.
Eugene, Oregon 97402
CONTACT:
Project Manager, Glen Macdonald
(541) 790-7417 Office

ROOF CONSULTANT:
Professional Roof Consultants
606 SE 9th Avenue
Portland, OR 97214
Project Designer/Manager: Thomas Bertrand
(503) 505-3198 Office

STRUCTURAL ENGINEER:
T.M. Rippey Consulting Engineers
7650 SW Beveland, Suite 100
Tigard, OR 97223
Project Engineer: Ralph Turnbaugh

DATE: 02/22/23

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Gilham Elementary School Roof Replacement Project
CIP No. 460-960-P0003
February 22, 2023

The following is a list of all Divisions, Sections, and Drawings which are included in the Project Manual

DOCUMENT 00 11 13
INVITATION TO BID

Electronic bids will be received by Diana McElhinney, Facilities Management Assistant, for the Gilham Elementary School Roof Replacement project on Tuesday, March 7, 2023 until the Deadline for Bid Submission at 2:00 p.m. local time. Email electronic Bid to: CIP@4j.lane.edu. There will not be a public opening, however, Bid results will be posted on the 4j hyperlink listed below, following the deadline for submission of Bids. Late Bids will not be considered. Bidders are encouraged to send a test email to the email address above to ensure that the School District received it accordingly. For receipt time, the sent timestamp from the bidder's email account will be used.

Briefly, the work is described as roof replacement of the original 1965 portion of the building with a new 4-ply and a cap BUR roof membrane (2-ply SBS roof membrane is Alternate No. 1), and roof overlay of the 1993 addition with a new PVC roof membrane assembly (Alternate No. 2). No work is scheduled at the 2021 building addition.

Beginning February 21, 2023 Prime Bidders, Sub-bidders and Suppliers may obtain bidding documents at the following hyperlink: **http://www.4j.lane.edu./bids/.** Hard copies are not provided by the School District. It is the responsibility of all Prime Bidders, Sub-bidders, and Suppliers to obtain Bidding Documents and all Addenda from the hyperlink.

A non-mandatory pre-bid conference and walk-through has been scheduled for February 27, 2023 at 3pm. The location of the conference will be 3307 Honeywood Street in Eugene, Oregon 97408. Statements made by the District's representatives at the conference are not binding upon the District unless confirmed by Written Addendum. Pre-qualification of bidders is not required.

Each Bid must be submitted on the prescribed form and accompanied by a Surety Bond, Cashiers Check, or Certified Check, executed in favor of Eugene School District 4J, in the amount not less than ten percent (10%) of the total bid, based upon the total bid amount for those items bid upon. Bidders are required to mail by USPS the original Surety Bonds, Cashier's Check or Certified Check and post marked within 3 hours after Bid Due Date of March 7, 2023 at 2:00 p.m. Mail to Facilities Management, Attention CIP, 715 West 4th Avenue, Eugene, Oregon 97402.

Either with the Bid or within two working hours of the Deadline for Submission of Bids, bidders shall electronically submit, on the form provided, information regarding first-tier subcontractors furnishing labor or labor and materials, as provided in ORS 279C.370. Bids for which disclosure forms are required, but not submitted, will be rejected.

No bid for a construction contract will be received or considered unless the Bidder is registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board at the time the Bid is made, as required by OAR 137-049-0230. [A license to work with asbestos-containing materials under ORS 468A.720 is not required for this project.]

For every bid $100,000 or greater, all Contractors and Subcontractors shall have a public works bond, in the amount of $30,000, filed with the Construction Contractors' Board (CCB), before starting work on the project, unless exempt. A copy of the Contractors' BOLI Public Works Bond shall be provided with the executed contract documents.

Each Bid shall contain a statement indicating whether the Bidder is a "resident bidder", as defined in ORS 279A.120.

Each Bid shall contain a statement that the "Contractor agrees to be bound by and will comply with the provisions of ORS 279C.800 through 279C.870 regarding payment of Prevailing Wages".

Contractor shall certify nondiscrimination in obtaining required subcontractors, in accordance with ORS 279A.110(4).

School District 4J reserves the right to (1) reject any or all Bids not in compliance with all public bidding procedures and requirements, (2) postpone award of the Contract for a period not to exceed sixty (60) days from the date of bid opening, (3) waive informalities in the Bids, (4) select the Bid which appears to be in the best interest of the District, or (5) reject any or all bids.

Date:	February 21, 2023
By:	Diana McElhinney, Facilities Management Assistant
Published:	Register Guard, Daily Journal of Commerce, OREGON BUYS
Posted:	School District 4J Hyperlink: http://www.4j.lane.edu/bids/

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

Multi Site Roofing 2021
Various Locations
Eugene, OR

THE OWNER:
(Name, legal status, address, and other information)

Lane County School District 4J
715 West 4th Avenue
Eugene, OR 97402
541-790-7417

THE ARCHITECT:
(Name, legal status, address, and other information)

Professional Roof Consultants, Inc.
1108 SE Grand Avenue, Suite 300
Portland, OR 97214
503-280-8759

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:
(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.
(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds
§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS
§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

.5 Drawings

Number	Title	Date	

.6 Specifications

Section	Title	Date	Pages

.7 Addenda:

Number	Date	Pages

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[ ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

[ ] The Sustainability Plan:

Title	Date	Pages

[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

Additions and Deletions Report for
AIA® Document A701™ – 2018

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 18:45:15 ET on 03/11/2021.

PAGE 1

Multi Site Roofing 2021
Various Locations
Eugene, OR

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Lane County School District 4J
715 West 4th Avenue
Eugene, OR 97402
541-790-7417

...

Professional Roof Consultants, Inc.
1108 SE Grand Avenue, Suite 300
Portland, OR 97214
503-280-8759

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 18:45:15 ET on 03/11/2021 under Order No. 9214558541 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ – 2018, Instructions to Bidders, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

DOCUMENT 00 22 13
SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

The following Supplementary Instructions to Bidders modify, change from or add to AIA Document A701 Instruction to Bidders, 2018 Edition. Where any Article of the Instructions to Bidders is modified or any paragraph, subparagraph, or clause thereof is modified or deleted by these Supplementary Instructions to Bidders, the unaltered provisions of that Article, paragraph, subparagraph, or clause shall remain in effect.

1.1 ARTICLE 2 BIDDER'S REPRESENTATIONS

A. Add the following subparagraphs to 2.1.3:

2.1.3.1 Bidders are required to attend any mandatory pre-bid conferences or tours as stated in the Advertisement for Bids. Bidders not attending this pre-bid conference and tour shall be disqualified from bidding. Bidders will be required to sign in at the project site prior to the conference or tour.

2.1.3.2 Bidders are encouraged to visit the site(s) to become familiar with existing conditions. The Owner is not responsible and shall not bear financial burden for oversights made by the Bidder for failure to inspect sites prior to submitting a bid.

2.1.3.3 In all cases, persons wishing to examine the area of work must sign in at the school office prior to visiting the work area. Prior to leaving the school, sign-out at the office is required.

2.1.3.4 If access is required at times when the school office is not staffed, contact the Facilities Office, 541-790-7417, for assistance.

B. Add the following paragraph 2.1.5:

2.1.5 The Bidder certifies by signing the Bid that the Bidder has a drug-testing program in place for its employees that includes, at a minimum, the following:

.1 A written employee drug-testing program,

.2 Required drug testing for all new Subject Employees, or alternatively, requiring testing of Subject Employees every six months on a random selection basis,

.3 Required testing of a Subject Employee when the Contractor has reasonable cause to believe the Subject Employee is under the influence of drugs, and

.4 Required testing of a Subject Employee when the Subject Employee is involved in: (I) an incident causing an injury requiring treatment by a physician, or (ii) an incident resulting in damage to property or equipment.

A drug-testing program that meets the above requirements will be deemed a "Qualifying Employee Drug-testing Program". For purposes of this rule an employee is a "Subject Employee" only if that employee will be working on the Project job site; and

That if awarded the Public Improvement Contract, the Bidder will execute a contract in which the Contractor shall represent and warrant to the District that the Qualifying Employee Drug-testing Program is in place at the time of contract execution and will continue in full force and effect for the duration of the Public Improvement Contract; and that the Contract will condition the Agency's performance obligation upon the Contractor's compliance with this representation and warranty; and

That the Public Improvement Contract shall contain Contractor's covenant requiring each subcontractor providing labor for the Project to:

.1 Demonstrate to the Contractor that it has a Qualifying Employee Drug-testing Program for the subcontractor's Subject Employees, and represent and warrant to the Contractor that the Qualifying Employee Drug-testing Program is in place at the time of subcontract execution and will continue in full force and effect for the duration of the subcontract; or

.2 Require the subcontractor's Subject Employees to participate in the Contractor's Qualifying Employee Drug-testing Program for the duration of the subcontract.

1.2 ARTICLE 3 BIDDING DOCUMENTS

A. 3.3 SUBSTITUTIONS

1. Add the following:

3.3.2.1 All requests for approval must be submitted in duplicate on "Substitution Request Form". Include a self-addressed stamped envelope. Requests received by Architect less than ten (10) days prior to bid will not be considered.

B. 3.4 ADDENDA

1. Delete paragraph 3.4.1 and substitute the following:

3.4.1 Addenda will be posted on the following hyperlink: http://www.4j.lane.edu/bids/

1.3 ARTICLE 4 BIDDING PROCEDURES

A. 4.1 PREPARATION OF BIDS

1. Add the following Paragraphs:

4.1.8 Bidders shall certify to non-collusion practices on the form included as part of the Bid Form, to be submitted with the Bid Form.

.1 A Non-Collusion Affidavit is required for any contract awarded pursuant to the bid. According to the Oregon Public Contracts and Purchasing Laws, a public contracting agency may reject any or all bids upon a finding of the agency that it is in the public interest to do so (ORS 279C.395). This agency finds that it is in the public interest to require the completion of this affidavit by potential contractors.

.2 The Non-Collusion Affidavit must be executed by the member, officer or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.

.3 Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation approval or submission of the bid.

.4 In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an Affidavit must be submitted separately on behalf of each party.

.5 The term "complementary bid" as used in the Affidavit has the meaning commonly associated with the term in the bidding process, and includes the knowing submission of bids higher than the bid of another firm, any intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.

.6 Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.

4.1.9 Bidders shall certify to non-discrimination in employment practices on the form, included as part of the Bid Form, to be submitted with the Bid Form. By submitting its bid, the Bidder certifies conformance to the applicable federal acts, executive orders, and Oregon statutes and regulations concerning affirmative action toward equal employment opportunities. All information and reports required by the federal or Oregon state governments having responsibility for the enforcement of such laws shall be supplied to the Owner in compliance with such acts, regulation, and orders.

.1 Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.

4.1.10 Bidder shall indicate, on the Bid Form where provided, the bidder's status as a "resident" or "non-resident" in accordance with ORS 279C.365 and ORS 279A.120.

4.1.11 First-Tier Subcontractor Disclosure:

.1 Within two working hours after the date and time of the deadline when the bids are due, a Bidder shall submit to the District a disclosure of the first-tier subcontractors that will be furnishing labor or will be furnishing labor and materials in connection with the public improvement; and will have a contract value that is equal to or greater than 5% of the project bid or $15,000, whichever is greater, or $350,000, regardless of the percentage of the total project bid.

.2 The disclosure of first–tier subcontractors shall include the name of each subcontractor, the category of work that the subcontractor would be performing, and the dollar value of each subcontract.

.3 The first-tier subcontractor disclosure applies only to public improvements with a contract value of more than $100,000.

.4 The District will consider the bid of any contractor that does not submit a required subcontractor disclosure to the District to be a non-responsive bid. A non-responsive Bid will not be considered for Award.

.5 Contractor shall certify that all subcontractors performing Work are registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board in accordance with ORS 701.035 to 701.055 before the subcontractors commence work under the Contract.

B. 4.2 BID SECURITY

1. Delete paragraphs 4.2.2 and 4.2.3 and substitute the following:

4.2.2 Each Bid shall be accompanied by a surety bond, cashiers check, or certified check, executed in favor of Eugene School District 4J, in the amount not less than ten percent (10%) of the total bid, based upon the total bid amount for those items bid upon. Should the Bidder refuse to enter into such Contract or fail to furnish Performance and Labor and Materials Payment Bonds and Certificates of Insurance as required by the Supplementary Conditions within ten (10) working days after contract forms are provided to the Bidder, the amount of the Bid Security may be forfeited to the Owner as liquidated damages, not as a penalty.

.1 The Surety Bond shall be written by a Bonding Company authorized and licensed by the Oregon Insurance Commissioner. The bonding company must be listed on the most current US Government Treasury List, Department Circular 570, or approved PRIOR TO BID SUBMISSION by the Eugene School District 4J's Risk Manager. The Bond shall be on an AIA Document A310, most current edition. The Attorney-in-Fact who executes the Bond on behalf of the Surety shall affix to the Bond, a certified copy of a power of attorney.

.2 The Owner will have the right to retain the Bid Security of Bidders until either; a) the Contract has been executed and Bonds have been furnished, or b) the specified time has elapsed so that Bids may be withdrawn, or c) all Bids have been rejected.

C. 4.4 MODIFICATION OR WITHDRAWAL OF BID

1. Delete paragraph 4.4.1 and substitute the following:

4.4.1 A Bid may not be withdrawn or canceled by the Bidder following the time and date designated for the receipt of bids to the expiration of a 60 day period. The Bid for that sixty days is irrevocable and each Bidder so agrees in submitting a Bid.

1.4 ARTICLE 6 POST-BID INFORMATION

A. Delete Paragraph 6.1.

B. Modify paragraph 6.3.1 as follows:

In the first sentence delete the phase "as soon as practicable" and add "within 48 hours."

C. Add the following:

6.3.1.4 Where asbestos abatement is required, Contractor or appropriate subcontractor shall be licensed by the Department of Environmental Quality to perform "asbestos abatement work", per OAR 340-248-0120, Adopted 1/25/90, and meet requirements of AHERA as specified in the Federal Register, 40 CFR part 763. Bidder shall submit evidence of licensing to Owner.

1.5 ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

A. 7.1 BOND REQUIREMENTS

1. Delete paragraphs 7.1.1, 7.1.2 and 7.1.3 and add the following:

7.1.1 Unless otherwise stated in the solicitation document, prior to execution of the Agreement, the successful Bidder shall furnish a separate Performance Bond and a Labor Bond and Materials Payment Bond that in all respects conform to the requirements of ORS 279C.380 covering faithful performance of the Contract, and the payment of all obligations arising thereunder, each in an amount equal to one hundred percent (100%) of the Contract sum. The duration of the performance bond shall match the length of the project warranty.

7.1.2 Bonds shall be submitted on AIA Document A312, latest edition.

7.1.3 The surety issuing such bonds shall be duly authorized and licensed to issue bonds in the State of Oregon. The bonds shall be executed by an attorney-in-fact, principal or other authorized representative for the surety company, showing the Oregon agent for service, and bears the seal of the surety company. Where the bond is executed by a person outside the state of Oregon, his authority to execute bonds shall be shown. The Bonds shall be fully executed, payable to the Owner.

7.1.4 The cost of furnishing such bonds shall be included in the Bid.

B. BOLI Public Works Bond:

1. Add the following:

Pursuant to ORS 279C.836, for any contract awarded where the contract price is $100,000.00 or greater, the Contractor and every subcontractor shall have a Public Works bond filed with the Construction Contractors Board before starting work on the project. This bond is in addition to performance bond and payment bond requirements. A copy of the Contractor's BOLI Public Works Bond shall be provided with the executed contract.

1.2 TIME OF DELIVERY AND FORM OF BONDS

A. Delete paragraph 7.2.1 and substitute the following:

7.2.1 The successful Bidder will be provided with contract forms through the Architect. These forms shall be executed and delivered to the Owner, along with Performance Bond and Labor and Material Payment Bond, within ten (10) days after receiving forms.

B. Add the following article:

ARTICLE 9 MISCELLANEOUS PROVISIONS

9.1 ADMINISTRATIVE RULES

All bidders are required to comply with the provisions of Oregon Revised Statutes and 4J Board Policy. Attention is directed to ORS 244, Government Ethics; ORS 279A and 279C, Pubic Contracting Code; Oregon Administrative Rules, Chapter 137, Divisions 46, 48 and 49; and 4J Board Policy DJC.

9.2 PROTEST OF BID

Protests of bid specifications or contract terms shall be presented to the Owner in writing five (5) calendar days prior to bid opening. Such protest or request for change shall include the reason for protest or request, and any proposed changes to specifications or terms. No protest against award because of the content of bid specifications or contract terms shall be considered after the deadline established for submitting such protest.

9.3 PROTEST OF AWARD

Any actual bidder or proposer who is adversely affected by the Owner's notice of award of the contract to another bidder or proposer on the same solicitation shall have seventy two (72) hours from the notice of award to submit to the Owner, a written protest of the notice of award. In order to be an adversely affected or aggrieved bidder or proposer with a right to submit a written protest, a bidder or proposer must itself claim to be eligible for award of the contract as the lowest responsible bidder or best proposer and must be next in line for award.

9.4 FINAL AWARD

The written notice of award of the contract shall constitute a final decision of the Owner to award the contract if no written protest of the notice of award is filed with the Owner within the designated time.

END OF DOCUMENT 00 22 13

DOCUMENT 00 41 13
BID FORM

BID FOR: Gilham Elementary School Roof Replacement CIP Number _____

Submitted to: Facilities Management
Eugene School District 4J
715 West Fourth Avenue
Eugene, Oregon 97402

Bid Deadline: 2:00PM
03/07/23

Submitted by: _____
(Company Name)

BASE BIDS AND ALTERNATES

The undersigned proposes to furnish all material, equipment, and labor required for the complete project, and to perform all work in strict accordance with the Contract Documents for the lump sum prices indicated below with completion occurring on or prior to the dates indicated:

BASE BID: Roof Replacement at Sectors A & B Utilizing a 4-ply and a Cap BUR Membrane Assembly

Bid: _____ $ _____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all Base Bid work on or before the dates specified in Section 01 11 00.

ALTERNATE NO. 1: Modifies Roof Replacement Scope at Sectors A & B to Install a 2-ply SBS Modified Bitumen Roof Membrane Assembly

Bid: _____ $ _____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all Alternate No. 1 work on or before the dates specified in Section 01 11 00.

ALTERNATE NO. 2: Expands Scope to Include Roof Overlay at Sectors C & D Utilizing an 80-mil PVC Roof Membrane Assembly

Bid: _____ $ _____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all Alternate No. 2 work on or before the dates specified in Section 01 11 00.

BID SECURITY

Accompanying herewith is the electronic copy of Bid Security, which is not less than ten percent (10%) of the total amount of the Base Bid plus additive alternates.

STIPULATIONS

The undersigned acknowledges the liquidated damages provision included in the A101-2017 Section 4.5

The undersigned agrees, if awarded the contract, to comply with the provisions of Oregon Revised Statutes 279C.800 through 279C.870 pertaining to the payment of prevailing rates of wage.

The undersigned agrees if awarded the contract to comply with Oregon Revised Statutes 326.603 giving the Owner authority to obtain fingerprints and criminal records check of Contractors, their employees, and subcontractors providing labor for the Project.

The undersigned agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) working days after receiving contract forms, a signed Agreement and a satisfactory Performance Bond and Payment Bond each in an amount equal to 100 percent (100%) of the Contract Sum.

For every Agreement of $100,000 or greater in value, all Contractors and Subcontractors shall have a public works bond in the amount of $30,000, filed with the Construction Contractors' Board (CCB), in compliance with ORS 279C.836, before starting work on the project unless exempt. Contractor agrees to provide a copy of the Contractor's BOLI Public Works bond with the signed Agreement as Specified in the Supplementary Conditions.

The undersigned agrees that the Bid Security accompanying this proposal is the measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver the above named agreement and bonds; and that if the undersigned defaults in executing that agreement within ten (10) days after forms are provided or providing the bonds, then the Bid Security shall become the property of the Owner; but if this proposal is not accepted within sixty (60) days of the time set for the opening of bids, or if the undersigned executes and delivers said agreement and bonds, the Bid Security shall be returned.

By submitting this Bid, the Bidder certifies that the Bidder:
a) has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities;
b) has a satisfactory record of past performance;
c) has a satisfactory record of integrity, and is not disqualified under ORS 279C.440;
d) is qualified legally to contract with the Owner; and
e) will promptly supply all necessary information in connection with any inquiry the Owner may make concerning the responsibility of the Bidder.
Prior to award of a Contract, the Bidder shall submit appropriate documentation to allow the Owner to determine whether or not the Bidder is "responsible" according to the above criteria.

The contractor agrees with the provisions of Oregon Revised Statutes 279C.505, which requires that the contractor shall demonstrate it has established a drug-testing program for employees and will require each subcontractor providing labor for the Project to do the same.

The undersigned has received addenda numbers_____to_____inclusive and has included their provisions in the above Bid amounts.

The undersigned has visited the site to become familiar with conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

The undersigned certifies that the Bidder is a_____Bidder under ORS. ("Resident" or "Non-resident", to be filled in by Bidder)

Names of Firm: _____

Street Address: _____
(City) (State) (Zip)

Telephone Number:_____ FAX Number: _____

Email Address: _____

Signed By:_____Printed Name:_____
(Signature of Authorized Official. If bid is from a partnership, one of the partners must sign bid).

Date Signed: _____

Official Capacity: _____

If corporation, attest:_____Date: _____
(Secretary of Corporation)

SEAL (If Corporate)

_____Corporation
_____Partnership
_____Individual

Enclosed: Bid Security

NON-DISCRIMINATION REQUIREMENT

Contractor certifies that the Contractor has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontracts.

The Contractor agrees not to discriminate against any client, employee, or applicant for employment or for services, because of race, color, religion, sex, national origin, physical or mental handicap, sexual orientation or age, unless based upon bona fide occupational qualifications, and that they are otherwise in compliance with all federal, state and local laws prohibiting discrimination, with regard to, but not limited to, the following: Employment upgrading, demotion or transfer; Recruitment or recruitment advertising; Layoffs or termination; Rates of pay or other forms of compensation; Selection for training; Rendition of services. It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase order from the School District, unless a satisfactory showing is made that discriminatory practices have terminated and that a recurrence of such acts is unlikely.

FIRM NAME: _____

ADDRESS: _____

TELEPHONE: _____

BY: _____
(Company or Firm Officer)

BY: _____
(Type or Print Name)

NON-COLLUSION AFFIDAVIT

STATE OF_____)

County of_____)

I state that I am_____ of _____
(Title) (Name of Firm)
and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

(1) The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder, except as disclosed on the attached appendix.

(2) That neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.

(3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.

(4) The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or noncompetitive bid.

(5) _____, its affiliates, subsidiaries, officers, directors and
(Name of my Firm)
employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as described on the attached appendix.

I state that_____ understands and acknowledges that the above representations
(Name of my Firm)
are material and important, and will be relied on by School District 4J in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from School District 4J of the true facts relating to the submission of bids for this contract.

_____
(Authorized Signature)

Sworn to and subscribed before me this_____day of_____, 20

_____
(Notary Public for Oregon)

My Commission Expires: _____

END OF BID FORM

Updated 2/21/23

DOCUMENT 00 45 22

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

PROJECT: Gilham Elementary School Roof Replacement 2023 CIP NO: 460-960-P0003

TO: Diana McElhinney, Facilities Management Assistant
Eugene School District 4J
715 West Fourth Avenue Eugene,
Oregon 97402

BID SUBMISSION DEADLINE: Date: 3/7/2023 Time: 2 :00PM

SUBMITTAL REQUIREMENTS
Subcontractor disclosure is required on all public improvement contracts greater than $100,000.

This form must be electronically submitted via CIP@4j.lane.edu within two working hours after the advertised bid closing time.

List below the name of each subcontractor that will be furnishing labor or labor and materials, and that is required to be disclosed, the category of work that the subcontractor will be performing, and the dollar value of the subcontract. Enter "NONE" if there are no subcontractors that need to be disclosed. (ATTACH ADDITIONAL SHEETS IF NEEDED.)

SUBCONTRACTOR	DOLLAR VALUE	CATEGORY OF WORK

The above listed first- tier subcontractor(s) are providing labor, or labor and material, with a Dollar Value equal to or greater than:

a) 5% of the total Contract Price, but at least $15,000. [If the Dollar Value is less than $15,000 do not list the subcontractor above.]
b) $350,000 regardless of the percentage of the total Contract Price

Failure to submit this form by the disclosure deadline will result in a non-responsive bid. A non-responsive bid will not be considered for award.

Form submitted by (Bidder Name): _____

Contact Name: _____ **Phone:** _____

Signature: _____

END OF DOCUMENT 00 45 22

DRAFT

AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Lane County School District 4J
715 West 4th Avenue
Eugene, OR 97402
541-790-7409

and the Contractor:
(Name, legal status, address and other information)

« »
« »
« »

for the following Project:
(Name, location and detailed description)

Gilham Elementary School Roof Replacement
« »
« »
»

The Architect:
(Name, legal status, address and other information)

« »
« »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« »] The date of this Agreement.

[« »] A date set forth in a notice to proceed issued by the Owner.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« »] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be s ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

«$1,000.00 per day »

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « First » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « Thirtieth » day of the « same » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « thirty » (« 30 ») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work;

.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« 5% »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« » % « »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

« »
« »
« »
« »

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

« »

polston_j@4j.lane.edu

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

« »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

« For all phases of the Project, the Contractor and the Owner shall purchase and maintain insurance, and the Contractor shall provide bonds as set forth in Article 11 of AIA Document A201–2007.
(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

General Insurance: The CONTRACTOR shall maintain in force for the duration of this agreement a Umbrella Insurance Policy with the limits not less than $5,000,000, a Commercial General Liability, Automobile Liability (owned, non-owned and hired) Insurance policy(s) written on an occurrence basis with limits not less than $1,000,000 per occurrence and $2,000,000 in the aggregated naming the DISTRICT, its employees, officials and agents as an additional insured as respects to work or services performed under this agreement. This insurance will be primary to any insurance the DISTRICT may carry on its own. If the DISTRICT requires Professional Liability coverage, the terms, conditions, and limits must be approved by the DISTRICT's Risk Manager.

Workers' Compensation: The CONTRACTOR shall provide and maintain workers' compensation coverage for its employees, officers, agents, or partners as required by applicable workers' compensation laws.
Equipment and Material: The CONTRACTOR shall be responsible for any loss, damage, or destruction of its own property, equipment, and materials used in connection with the work.

Course of Construction: The CONTRACTOR shall maintain an all-risk policy covering the replacement cost of the Work during the course of construction. The policy shall include the interests of the DISTRICT and the Architect. The amount of insurance shall equal the completed value of the contract.

Property Insurance: The CONTRACTOR shall purchase from and maintain in a company or companies authorized to do business in the jurisdiction in which the Project is located, property insurance on an "all risk" policy form, including builder's risk/installation floater, whichever is appropriate, in the amount of the initial Contract Sum, plus the value of subsequent modifications and the cost of materials supplied by others, comprising the total value of the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in The Contract Documents or until no person or entity other than the DISTRICT has an insurable interest in the property required by this paragraph to be covered, whichever is later. The insurance shall include interests of the DISTRICT, Architect and CONTRACTOR, Subcontractors, and sub-Subcontractors in the Project.

Evidence of Coverage: Evidence of the above coverages issued by a company satisfactory to the DISTRICT shall be provided to the DISTRICT by way of a certificate of insurance before any work or services commence. A 30-day notice of cancellation or material change in coverage clause shall be included. It is the CONTRACTOR's obligation to provide the 30 days' notice if not done so by the CONTRACTOR's insurance company(s). Failure to maintain the proper insurance shall be grounds for immediate termination of this Agreement.

Subcontractors: The CONTRACTOR shall require all Subcontractors to provide and maintain general liability, auto liability, professional liability (as applicable), and workers' compensation insurance with coverage equivalent to those required of the general CONTRACTOR in this contract. The CONTRACTOR shall require certificates of insurance from all Subcontractors as evidence of coverage.

Exception or Waivers: Any exception or waiver of these requirements shall be subject to review and approval from the DISTRICT's Risk Manager.

PERFORMANCE BOND AND PAYMENT BOND: The CONTRACTOR shall furnish a Performance bond and a Labor and Materials Payment bond covering faithful performance of the Contract and payment of obligations arising there under. Bonds are to be obtained through a company that is on the US Government Treasury list for approved sureties and/or approved by School DISTRICT 4J's Risk Manager. The cost of the Bond shall be included in the Contract Sum. The amount of each bond shall be equal to 100 percent of the Contract Sum. Submit on AIA Document A312, latest edition. The CONTRACTOR shall deliver the required bonds to the DISTRICT with the executed Agreement. The CONTRACTOR shall require the Attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of their power of attorney.

»

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2007, General Conditions of the Contract for Construction
(Insert the date of the E203-2013 incorporated into this Agreement.)

« »

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
«Ryan Spain, Facilities Director »« »	« »« »
(Printed name and title)	*(Printed name and title)*

DOCUMENT 00 72 13

GENERAL CONDITIONS

PART 1 GENERAL

STANDARD FORM

General Conditions of the Contract for Construction AIA Document A201, 2007 edition, immediately following, are part of these specifications.

The Contractor and all Subcontractors shall read and be governed by them.

CONFLICTS

In the case of conflicts between the General Conditions and these Specifications, the Specifications govern.

END OF DOCUMENT 00 72 13

DOCUMENT 00 73 43

PREVAILING WAGE RATES

PART 1 GENERAL

The Prevailing Wage Rates dated January 1, 2023, including any subsequent corrections or amendments issued by the Oregon Bureau of Labor and Industries, are included as a portion of the Contract Documents by reference. Copies are available for review at the office of Facilities Management, School District 4J, and can be viewed on line at www.boli.state.or.us. Click on Prevailing Wages, then PWR Rate Publications, and then Prevailing Wage Rates for Public Works Contracts in Oregon (subject only to state law).

END OF DOCUMENT 00 73 43

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Project consists of roof replacement of the original 1965 portion of the building with a new 4-ply and a cap BUR roof membrane (2-ply SBS roof membrane is Alternate No. 1), and roof overlay of the 1993 addition with a new PVC roof membrane assembly (Alternate No. 2). No work is scheduled at the 2021 building addition.

1. Project Location: Gilham Elementary School, 3307 Honeywood St., Eugene, OR 97408.
2. Owner: Eugene School District 4J, 715 West Fourth Avenue, Eugene, OR 97402.

B. Consultant Identification: The Contract Documents, dated February 21, 2023, were prepared for Project by Thomas Bertrand of Professional Roof Consultants.

C. Project Manager: Glen Macdonald has been appointed by Owner to serve as Project Coordinator.

1.3 CONTRACT

A. Project will be constructed under a general construction contract.

1. AIA A101-2017 Standard Form of Agreement between Owner and Contractor

1.4 WORK SEQUENCE

A. Do not commence Work until after execution of Agreement. Work to begin June 19, 2023.

B. Perform work in order to achieve Substantial Completion by August 18, 2023.

C. Achieve Final Completion within seven (7) days following the date of Substantial Completion.

1.5 USE OF PREMISES

A. Work Area Access: Buildings be partially occupied during work. Access to the work area will be available on a week day basis from approximately 7:00 am to 4:00 pm. Coordinate all other work hour schedules with Owner so as not to interfere with Owner's use of the building.

B. Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public, subject to approval by a District Safety Specialist.

C. Site Access: Maintain drives and building entrances and exits clear and protected at all times to Owner's, employees, and public access and for use by emergency personnel. Do not use these areas for parking or storage. Schedule deliveries to minimize space and time requirements for storage of materials at site.

D. Parking: Contractor parking will be made available on site.

E. Contractor Staging Areas: Limit staging to locations selected by the Owner.

F. Construction Operations: Limited to areas indicated on Drawings.

1.6 MISCELLANEOUS PROVISIONS

A. BACKGROUND/FINGERPRINTING

~~1.~~ Individuals with whom the District contracts with, or any employee, agent, subcontractor or provider who will have direct, unsupervised contact with students, shall be required to submit a 4J Volunteer Background check ~~and undergo a state nationwide fingerprinting and criminal history records check, in accordance with the provisions of ORS 326.603 and ORS 326.607. Individuals or Proposer, and not the District, shall be responsible for the fees associated with fingerprinting and the criminal history records check, not to exceed the actual costs (ODE $66.00 and outside fingerprinting vendor $12.50). Individuals contracting with the District will be required to fill out and submit a background check by logging on the following site: https://www.4j.lane.edu/hr/icbackgroundprocess/ and follow the process.~~

~~Note: If an employee, agent or subcontractor of a contractor has been previously fingerprinted at another school district, there are forms (provided by the District) to replace part of this process and no fees are incurred.~~

B. SEXUAL CONDUCT, SEXUAL HARASSMENT & CHILD ABUSE OF STUDENTS IS STRICTLY PROHIBITED

1. Contractors, their employees, and sub-contractors must report suspected sexual conduct, harassment or abuse immediately to the District. Suspected sexual conduct or harassment – report to: 4J Human Resources, 541-790-7670 or hr@4j.lane.edu.

C. DRUG AND ALCOHOL POLICY

1. The possession, use, or distribution of illicit drugs and alcohol on school premises is prohibited. Prescription medications brought to the project site shall be in the original container bearing the name of the drug, the name of the physician and the prescribed dosage.

D. USE OF TOBACCO PRODUCTS

1. Smoking and the other use of tobacco products is prohibited on all school district property pursuant to OAR 581-021-0110.

E. SAFETY REQUIREMENTS

1. Safety must not be sacrificed for the sake of productivity or expedience. Safety of students, staff, and the public is critical. Take all reasonable precautions to prevent endangerment or injury. Advise and coordinate operations with the school office.
2. All contractors who perform work on District property, and their employees, are expected to know the District's expectations for safe work and to adhere to those expectations.
3. Contractors are to adhere to the regulations of Oregon OSHA for all projects within the School District.

F. GENERAL SAFE WORK PRACTICES

1. Students, public and school staff shall not be put at risk by the activities of contractors or their employees.

2. Safe vehicle operation rules are to be followed at all times. These include positioning vehicles to minimize the necessity of backing and providing a "spotter", someone who will make sure that people do not run into the path of a vehicle when driving on a playground or field that is occupied by students.
3. Tools shall never be left out when an unsecured work area is vacated.
4. Ladders and scaffolding will be taken down when an unsecured work area is vacated.
5. Open holes and other tripping hazards shall be fenced or barricaded when an unsecured work area is vacated.
6. Operations resulting in vapors, emissions or flying objects shall be conducted in such a way as to prevent exposure to any unprotected parties or property.
7. "Secured Work Area" is defined as an area having a perimeter cyclone fence at least 6 feet in height, with gates which close and lock so that no casual entrance is possible by unauthorized adults or children.
8. Contractor to follow all OR-OSHA rules for Confined Spaces, where applicable.

G. COMMUNICATIONS REGARDING UNSAFE PRACTICES
1. Upon perceiving a problem, the District will immediately communicate the concern to the Contractor or Contractor's representative on the work site.
2. If agreement on correction of unsafe conditions cannot be reached, the concerns of the District shall prevail and safety concerns shall be addressed in accordance with the District requirements.

H. ELECTRICAL PANELS - LOCKOUT/TAGOUT
1. Contractor shall implement a Lockout/Tag-out program for his employees who take equipment out of service or place equipment back into service. Contractor shall review the District's Energy Control Program prior to commencing work. Rules applying to this procedure are Oregon Occupational Safety and Health Code OAR 437, Division 2, Subdivision J, General Environmental Controls Lockout/Tag-out (1919.147), or latest edition.

I. ARC FLASH – ELECTRICAL SAFETY
1. Contractor shall comply with NFPA 70E (Electrical Safety in the Workplace), current edition. Contractor shall comply with Oregon OSHA 1910.137 (Personal Protective Equipment). The Contractor shall review with the School District Project Manager the 'Eugene School District Electrical Safety Program' before any work commences. The Contractor shall comply with all 'Arc Flash' and 'Electrical Safety' protocols referenced in any and all NFPA, OSHA, OROSHA, NEC, NESC, UL, IBC, IFC and ANSI documents (current editions).

J. POTENTIALLY HAZARDOUS PRODUCTS
1. The District attempts to maintain a safe and healthy environment for students and staff. The Contractor is therefore required to follow District guidelines controlling the use of potentially hazardous products and to use these products in a safe manner. Guidelines include the use of materials (adhesives, coatings, carpeting, etc.) which are known to emit little or no airborne pollutants.
2. MSDS information is required for all potentially hazardous products. The Project Manager and a District Safety Specialist will review these and determine what, if any, mitigation procedures will be required.
3. Contractor is to maintain and post copies of all MSDS information at the project site and adhere to the required controls.

4. Contractor is to ensure that work area by students and teachers is restricted. The District will provide signage appropriate for this purpose. The Contractor is to construct and maintain appropriate barriers. This shall include provision of physical separation barriers between “construction” and “occupied” spaces.
5. Contractor to adopt means of maintaining the construction space in negative air pressure in relation to occupied spaces.
6. Where there is a new or existing ventilation system in an affected space, the system shall be adjusted to provide the maximum amount of outside air possible with the system.
7. Efforts shall be made to install and operate new ventilation systems as soon in the construction process as practical.

K. ASBESTOS CONTAINING MATERIALS WARNING

1. Asbestos containing materials are known to exist in areas of the Work. The Contractor shall not, in any way, disturb materials which are known to contain asbestos, assumed to contain asbestos, or otherwise have not been tested and confirmed to be asbestos free.
2. Where access to concealed spaces is required, or it is necessary to disturb building materials such as for drilling of holes, cutting, etc., notify the Owner so that proper investigation and/or removal procedures are followed.
3. Prior to commencing Work, the Contractor shall meet with the District Safety Specialist and review the Owner’s Asbestos Management Plan for the locations of asbestos-containing materials and/or materials assumed to contain asbestos. After reviewing the Owner’s Asbestos Management Plan, the Contractor is required to sign Form 01 11 00A, Asbestos-containing Materials Notification Statement, provided at the end of this Section.
4. Contractor must not install any asbestos-containing materials when performing the Work of this project. At the completion of the Work, Contractor will be required to furnish a statement stating that no asbestos-containing materials were installed during the course of the Work. Refer to Sample Form 01 11 00B at the end of this Section.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - SCHEDULE OF PRODUCTS ORDERED IN ADVANCE

PART 5 - ASBESTOS FORMS

Updated 1/4/18

Form 01 11 00A

ASBESTOS-CONTAINING MATERIALS NOTIFICATION STATEMENT FOR CONTRACTORS

This form must be completed and signed by the Contractor prior to beginning work in any Eugene School District 4J building.

The presence of known and assumed asbestos containing materials is documented in the AHERA Management Plan for each building. Copies of the AHERA Management Plan are available in the main office of each building and in the Facilities Management Office at 715 West Fourth Avenue, Eugene, Oregon. The District Asbestos Specialist must be informed of the Contractor's activities in each building prior to the start of work so that the Contractor can be informed on how to use the AHERA Management Plan and to determine if any asbestos-containing materials are likely to be impacted by the work of the Contractor.

The Contractor is responsible for notifying all employees and subcontractors of the presence of asbestos in the building. The Contractor shall not disturb known or assumed asbestos-containing materials. If the Contractor discovers suspected asbestos-containing materials that have not been identified, the Contractor must stop any work impacting the suspected materials and notify the District Asbestos Specialist so that the material can be sampled. Any asbestos-containing materials that must be removed to allow the Contractor to complete the Contractor's work will be removed by the District under separate contract. If the Contractor disturbs asbestos-containing materials, the Contractor will be responsible for the cost of the cleanup and decontamination..

I _____, Representing _____,
(Print Name of Representative) (Business Name)

have been notified of the location of the AHERA Management Plan and agree to avoid impacting all known or assumed asbestos-containing materials in the performance of the Work.

_____ _____
Signature of Representative Date

_____ _____
Work Site CIP #

Form 01 11 00B

The Environmental Protection Agency (AHERA) rules require the School District obtain a signed statement from the Site Superintendent that, to the best of his/her knowledge, no asbestos-containing building materials were installed during the Work. Therefore, the following statement must be submitted on the Contractors letterhead prior to Project Closeout.

SAMPLE FORM

(To be submitted on the Contractor's letterhead)

ASBESTOS-CONTAINING MATERIALS STATEMENT

EUGENE SCHOOL DISTRICT 4J

_____

(Name of Project and CIP Number)

We the undersigned, (Name of Company), hereby warrant that to the best of our knowledge all materials furnished for the above referenced project contain 0% asbestos.

_____

(Name of Construction Company)

_____

(Signature and Date)

_____

Printed Name

_____

Job Title

END OF SECTION 01 11 00

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Unit-cost allowances.
3. Quantity allowances.
4. Contingency allowances.
5. Testing and inspecting allowances.

C. Related Sections include the following:

1. Division 1 Section 01 25 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
2. Division 1 Section 01 22 00 "Unit Prices" for procedures for using unit prices.
3. Division 1 Section 01 40 00 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.
4. Divisions 2 through 49 Sections for items of Work covered by allowances.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise the Owner and Consultant of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Consultant's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by the Consultant from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site.

B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.7 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Consultant for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.

C. Costs of services not required by the Contract Documents are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.9 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Consultant, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Consultant, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Include allowance for replacement of eighteen (18) 4’ x 8’ panels of deteriorated 3/4" plywood deck sheathing with new 3/4" plywood sheathing as specified in Section 061053 “Miscellaneous Rough Carpentry,” and as shown on the structural Drawings.

END OF SECTION 01 21 00

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This 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 Owner decides to accept a corresponding change either in the amount of construction to be completed, the time to complete, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify 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. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates 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: Duplicates the base bid for Sectors A & B, but changes the roof membrane assembly from a 4-ply and a cap BUR to a 2-ply SBS Modified Bitumen roof.

B. Alternate No. 2: Expands the extent of work to include roof recovery at Sectors C & D. Roof recovery includes, but is not limited to overlaying the existing JP Stevens Hypalon roof membrane with a PVC single-ply roof membrane.

END OF SECTION 01 23 00

SECTION 01 25 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

1. Division 0 Document 00 52 13 " Form of Agreement" for monetary values of established Unit Prices and Alternates.
2. Division 0 Document 00 72 13 "General Conditions" for additional requirements for Changes in the Work, Contract Sum, and Contract Time.
3. Division 1 Section 00 73 00 "Supplementary Conditions" for allowable percentages for Contractors' Overhead and Profit.
4. Division 1 Section 01 22 00 "Unit Prices" for administrative requirements for using unit prices.
5. Division 1 Section 01 33 00" Submittal Procedures" for Schedule of Values requirements.
6. Division 1 Section 01 60 00 "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.
7. Division 1 Section 01 78 39 "Project Record Documents" documentation requirements.

1.3 MINOR CHANGES IN THE WORK

A. Architect, with the concurrence of the Owner, will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 CHANGE REQUEST/PROCEED ORDER (CONSTRUCTION CHANGE DIRECTIVE)

A. Architect or Owner may issue a Change Request/Proceed Order on form included at end of Part 3.

1. Change Request contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
2. Proceed Order, when signed by the Owner, instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Proceed Order.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

C. Authorization Required: When a Change Request is approved and signed by the Owner, it becomes a Proceed Order authorizing the change requested. Do not proceed with any change without the Owner's signature on the Change Request/Proceed Order.

D. Owner-Initiated Change Requests: Architect will issue a Change Request, which will include a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Change Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Change Request after receipt of Change Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a complete cost breakdown including a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor, supervision, overhead, and profit directly attributable to the change.
    d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

E. Contractor-Initiated Requests: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to the Architect.

1. Changes requested by the Contractor will be authorized only by signature of the Owner on the prescribed. Do not proceed with any changes without this authorization.
2. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
3. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
4. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
5. Include costs of labor, supervision, overhead, and profit directly attributable to the change.
6. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

7. Comply with requirements in Division 1 Section 01 60 00 "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

F. Change Request Form: Use forms provided by Owner. Sample copies are included at end of Section 3.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Change Request, and at intervals to be determined, Architect will collect Change Requests and issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

CHANGE REQUEST/PROCEED ORDER

2019-2023 Capital Improvement Program
Eugene School District 4J

CHANGE REQUEST NOTICE

Change Request No.: _____

Project No.:_____ Contract No.:_____ Date:_____

Project Title:_____

Contractor:_____

1. **REQUEST INFORMATION**
   Estimated $_____ Time_____ Days_____ Initiated by _____
   Reason for change: _____
   _____

2. **DESCRIPTION**
   Describe changes: _____
   _____
   Describe affected work: _____
   List plan and spec sections: _____
   Describe impacted activities: _____
   Comment: _____

3. **DATES**
   Need for change first known _____ By whom _____
   Contractor first notified _____ How _____
   Owner first notified _____
   Date approved or rejected _____ By whom _____

4. **RECOMMENDATION (cost and time)** _____

PROCEED ORDER

PROCEED ORDER NO.: _____ Date: _____

1. **PAYMENT/COST**
   Actual amount of change $_____ The contract time will be:
   Contractor amount $_____ ( ) increased ( ) decreased by _____ days
   Subcontractor amount $_____ ( ) will remain unchanged
   Type of payment (LS/T&M) _____

2. **MISCELLANEOUS**
   Subcontractors involved: _____
   Major materials: _____
   The cost is not to exceed $_____ Date: _____

3 **CHANGE REQUEST ACCEPTED BY:**
   Contractor: _____ Date: _____
   Architect: _____ Date: _____
   4J CIP Project Manager: _____ Date: _____
   4J CIP Program Manager: _____ Date: _____
   4J Facilities Director: _____ Date: _____

Without the signature of Facilities Director, or the acting Director, this Proceed Order is neither accepted or authorized, except by written authorization of other specific delegation.

END OF SECTION 01250

SECTION 01 22 00

UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for unit prices.

B. Related Sections include the following:

1. Division 1 Section 01 25 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
2. Division 1 Section 01 04 00 "Quality Requirements" for general testing and inspecting requirements.
3. Division 1 Section 01 21 00 “Allowances” for schedule of allowances.

1.3 DEFINITIONS

A. Unit price is an amount proposed by bidders, stated on the Bid Form, **as** a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if 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, applicable taxes, overhead, and profit.

B. Measurement and Payment: Refer to 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 list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price No. 1 – 3/4" Plywood Sheathing Replacement:

1. Description: Replacement of 3/4” x 4’ x 8’ panels of plywood deck sheathing in excess of the eighteen panels covered by allowance.
2. Unit of Measurement: One (1) 4’ x 8’ panel.

END OF SECTION 01 22 00

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:

1. Division 1 Section 01 25 00 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Division 1 Section 01 27 00 "Unit Prices" for administrative requirements governing use of unit prices.
3. Division 1 Section 01 32 00 "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.
4. Division 1 Section 01 77 00 “Closeout Procedures” for final Application for Payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with Continuation Sheets.
b. Submittals Schedule.
c. Contractor's Construction Schedule.

2. Submit the Schedule of Values to Architect and Owner at earliest possible date but no later than seven days before the date scheduled for submittal of initial Application for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

    a. Project name and location.
    b. Name of Architect.
    c. Architect's project number.
    d. Contractor's name and address.
    e. Date of submittal.

2. Submit draft of AIA Document G703 Continuation Sheets.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

    a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

    1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

C. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders issued before last day of construction period covered by application.
3. Transmittal: Submit 2 signed and notarized original copy of each Application for Payment to Architect by a method ensuring receipt within 24 hours.

D. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values (draft submitted previously).
3. Contractor's Construction Schedule (preliminary if not final).
4. Products list.
5. Schedule of unit prices.
6. Submittals Schedule (based Architect’s list or required submittals).
7. List of Contractor's staff assignments.
8. Initial progress report.
9. Report of preconstruction conference.

E. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

F. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout procedures (See itemized list in Section 01 77 00 “Closeout Procedures”).
2. Updated final statement, accounting for final changes to the Contract Sum.
3. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
4. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
5. AIA Document G707, "Consent of Surety to Final Payment."
6. Evidence that claims have been settled.
7. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 10 29 00

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. Administrative and supervisory personnel.
   2. Project meetings.

B. Related Sections include the following:
   1. Division 1 Section 01 32 00 "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
   2. Division 1 Section 01 73 00 "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   3. Division 1 Section 01 77 00 "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.

   1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.
   4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.4 SUBMITTALS

A. Key Personnel Names: Within 15 days of Notice-to-Proceed, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including pager, cell, and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1.5 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Schedule meeting dates and times with Owner and Architect.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Architect will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, within three days of receiving them from the Architect.

B. Preconstruction Conference: Owner’s Project Manager will schedule a preconstruction conference before starting construction, no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Owner’s Project Manager, Architect, and their consultants, as required; Contractor and its superintendent; major subcontractors; suppliers; and other concerned

parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following (see sample agenda at the end of Part 3):

    a. Introduction of persons present.
    b. Tentative construction schedule.
    c. Phasing.
    d. Critical work sequencing and long-lead items.
    e. Designation of key personnel and their duties.
    f. Procedures for processing field decisions and Change Orders.
    g. Procedures for requests for interpretations (RFIs).
    h. Procedures for testing and inspecting.
    i. Procedures for processing Applications for Payment.
    j. Distribution of the Contract Documents.
    k. Communications.
    l. Role of District's Project Manager.
    m. Submittal procedures, including MSDS information.
    n. Energy design requirements.
    o. Preparation of Record Documents.
    p. Use of the premises and existing building.
    q. Work hours and restrictions.
    r. Owner's occupancy requirements.
    s. Responsibility for temporary facilities and controls.
    t. Construction waste management and recycling.
    u. Parking availability.
    v. Office, work, and storage areas.
    w. Equipment deliveries and priorities.
    x. Safety and first aid.
    y. Security.
    z. Progress cleaning.

3. Minutes: Architect will record and distribute meeting minutes.
4. Statements made by the Contracting Agency's representative at the pre-construction conference are not binding upon the Contracting Agency unless confirmed by Written Addendum.

C. Preinstallation Conferences: When required by individual specification sections, conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner's Project Manager a minimum of four days prior to scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. Contract documents.
    b. Related requests for interpretations (RFIs).
    c. Related Change Orders.

d. Purchases.
e. Deliveries.
f. Submittals.
g. Possible conflicts.
h. Compatibility problems.
i. Time schedules.
j. Weather limitations.
k. Manufacturer's written recommendations.
l. Warranty requirements.
m. Compatibility of materials.
n. Acceptability of substrates.
o. Space and access limitations.
p. Regulations of authorities having jurisdiction.
q. Testing and inspecting requirements.
r. Installation procedures.
s. Coordination with other work.
t. Required performance results.
u. Protection of adjacent work.

3. Contractor to record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Distribute minutes of the meeting to each party present and to parties who should have been present, within three working days.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to the Owner's Project Manager and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Provide in a format no larger than 11x17" and discuss a 3 week look-ahead schedule. The look-ahead schedule is required to be directly from the Project Master Schedule and to only show 3 weeks of work. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) Requests for interpretations (RFIs).
16) Status of proposal requests.
17) Pending changes.
18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.

3. Minutes: Architect will record and distribute to Contractor the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PRECONSTRUCTION CONFERENCE AGENDA (SAMPLE)

Eugene School District 4J
[Enter Project Name]

[Date]

AGENDA

1. ( ) Introduction of Persons Present
   - ( ) District 4J
   - ( ) Consultants
   - ( ) Contractor (including job foreman)
   - ( ) Subcontractors

2. ( ) Availability of Contract Documents

3. ( ) Building Permit Status
   - ( ) Plan check and Building Permit paid by District
   - ( ) Pick up Permit at City of Eugene by Contractor
   - ( ) Location of site stored approved contract documents
   - ( ) Utility permits
   - ( ) LRAPA Permit

4. ( ) Prevailing Wage Requirements
   - ( ) Submittal schedule
   - ( ) Conformance with requirements

5. ( ) Communications
   - ( ) Notification of problems

6. ( ) Role of District's representative
   - ( ) Limits of authority
   - ( ) Visitation schedules

7. ( ) Work Description and Schedule
   - ( ) General work description
   - ( ) Proposed start date: _____
   - ( ) Proposed completion date: _____
   - ( ) Proposed project schedule and phasing
   - ( ) Progress schedule updates
   - ( ) Methods to be employed to maintain schedule
   - ( ) Work requiring Shop Drawings or submittals shall not commence until review is complete.

8. ( ) Submittals Required per Contract Documents
   - ( ) MSDS Information
   - ( ) Written proof of Asbestos Worker Certification
   - ( ) Name, Experience and Qualifications of Asbestos Supervisor
   - ( ) Copy of Contractor's Asbestos Abatement License
   - ( ) Other information as required by Section 01 31 00.

( ) Schedule of values
( ) List of subcontractors including name of contact person, telephone number, and address

9. ( ) Construction
    ( ) Working hours
    ( ) Use of premises/set up locations
    ( ) Protection of existing facilities
    ( ) Traffic and protection
    ( ) Excavation and clean-up
    ( ) Weather restrictions
    ( ) Deviation from details and/or specifications

10. ( ) Correction of Defects
    ( ) Daily and/or as observed

11. ( ) Weekly On-Site Progress Meetings
    ( ) Establish day and time: Day _____Time _____
    ( ) Provide updated project schedules
    ( ) Discuss project progress, problems, etc.
    ( ) Review applications for payment
    ( ) Required attendance
    ( ) Observation report distribution

12. ( ) Change Order Requests and Change Order Procedures
    ( ) Written Change Order requests required
    ( ) Supporting back-up will be required for all Change Orders
    ( ) Mark-up limitations on Change Orders
        ( ) Contractor - 15 percent
        ( ) Subcontractors - 10 percent
    ( ) Progressive requests and Change Orders
    ( ) Processing time required

13. ( ) Applications for Payment
    ( ) Use AIA documents G702 and G703 latest edition
    ( ) Owner accepts electronic copy; plus provide one hard copy original signed and notarized.
    ( ) Wage certifications to be attached

14. ( ) Safety and Emergency Procedures

15. ( ) Clean-up Daily
    ( ) Project completion

16. ( ) Project Closeout
    ( ) Inspections for
        ( ) Air Clearance
        ( ) AHERA Close Out Requirements
        ( ) Substantial completion
            ( ) Contractor provided list of items to be completed
            ( ) Inspection with job foreman
        ( ) Final Acceptance
            ( ) Written notice from Contractor that all work is done and ready for inspection

    ( ) Inspection with job foreman
( ) Responsibility for cost of additional inspections
( ) Submittals for Closeout
    ( ) Final application for payment
    ( ) Final set of wage certifications
    ( ) Release of liens from all Subcontractors and General Contractor

17. ( ) Tour of Project Sites to Examine and Document Existing Conditions

18. ( ) Additional Comments

The undersigned acknowledges that the items listed above were discussed during this preconstruction conference and are fully understood.

Date:

A/E Firm:

Contractor:

Subcontractors:

END OF SECTION 01 31 00

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
3. Submittals Schedule.

B. Related Sections include the following:

1. Division 1 Section 01 29 00 "Payment Procedures" for submitting the Schedule of Values.
2. Division 1 Section 01 31 00 "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 1 Section 01 33 00 "Submittal Procedures" for submitting schedules and reports.
4. Division 1 Section 01 40 00 "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 SUBMITTALS

A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format.

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's final release or approval.

B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Initial Submittal: List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.

B. Activities: Treat each floor or separate area as a separately numbered activity for each principal element of the Work

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

D. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section 01 11 00 "Summary of Work." Delivery dates indicated stipulate the earliest possible delivery date.

E. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 1 Section 01 11 00 "Summary of Work." Delivery dates indicated stipulate the earliest possible delivery date.

F. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion**.**

G. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE [SMALL PROJECTS]

A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within 10 days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

OR ---------- 0 ----------

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE [GANTT CHART]

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart Contractor's Construction Schedule within 10 days of date established for the Notice to Proceed. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project. This schedule will be considered the Baseline Project Master Schedule for use throughout the project.

B. Preparation:

1. Each task to include the following minimum, data field/columns information:
   a. line/task ID or unique number, task name/description, task duration, start date, finish date, predecessor, successor, % complete.
   b. additional data field/columns may be included upon approval of Owner's Project Manager.
2. All tasks and milestones are to have a text description next to the Gantt bar and are required to show the logic bar ties to predecessor and successor tasks.
3. Any task with a duration longer than 10 working days and more than one trade working on the task, needs to be separated into tasks by individual trades.
4. Split the schedule up, at a minimum, by floor and sector, unless approved by Owner's Project Manager. Further separation of the schedule for sequencing needs the parent/blanket task description to indicate gridlines and level(s) included. No parent/blanket tasks for multiple levels or sectors unless they have no impact to the critical patch and the task description indicates the extent of work included.
5. Show any materials, equipment, contractors and submittals that have the potential to delay construction activities and indicate what work they have potential to impact by logic ties (predecessor and successor relationships).
6. Schedule is to be based on working days with the allotted hours necessary. If overtime is necessary to complete a task then it must be indicated.
7. Schedule must identify which items are on the critical path.
8. Hard copies for distribution are to be no larger than 11x17 format.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE [SMALL PROJECTS]

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner's Project Manager, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

OR ---------- 0 ----------

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE [GANTT CHART]

A. Contractor's Construction Schedule Updating: The schedule produced in section 2.3 is to be used for updating the Project Master Gantt schedule throughout the entire project. At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. The baseline is to be indicated for all tasks tied to the critical path. Any tasks that subsequently become part of the critical path need to indicate the baseline activities also. Any change in critical path needs to be identified and discussed during the weekly project meeting.
2. Update each task to indicate the actual completion percentage at the time of schedule update, in 5% increments.
3. Hard copies are to be no larger than 11x17 format.
4. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
5. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

B. Distribution: Distribute copies of approved schedule to Architect, Owner's Project Manager, testing and inspection agencies and other parties identified by the Contractor and owner with a need-to-know schedule responsibility.
1. Post copies in Project meeting room at the temporary field offices in a large enough format to be able to read the text and see the entire schedule without flipping sheets.

END OF SECTION 01 32 00

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, Information Submittals, Delegated Design and other submittals.

B. Related Sections include the following:

1. Division 1 Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 1 Section 01 31 00 "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 1 Section 01 32 00 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 1 Section 01 40 00 "Quality Requirements" for submitting test and inspection reports and for mockup requirements, if any.
5. Division 1 Section 01 77 00 "Closeout Procedures" for submitting warranties.
6. Division 1 Section 01 78 23 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
7. Division 1 Section 01 78 39 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
8. Divisions 2 through 49 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

B. Submittals Schedule: Comply with requirements in Division 1 Section 01 32 00 "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 14 calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.

E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, if received from sources other than Contractor without prior consent.

1. Transmittal Form: Provide locations on form for the following information:

a. Project name.
b. Date.
c. Destination (To:).
d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Specification Section number and title.
i. Drawing number and detail references, as appropriate.
j. Submittal and transmittal distribution record.
k. Remarks.
l. Signature of transmitter.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.

3. Resubmit submittals until they are marked "<**Insert approval notation from Architect's action stamp**>."

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Use only final submittals with mark indicating "<**Insert approval notation from Architect's action stamp**>" taken by Architect.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Standard color charts.
    e. Manufacturer's catalog cuts.
    f. Wiring diagrams showing factory-installed wiring.
    g. Printed performance curves.
    h. Operational range diagrams.
    i. Compliance with specified referenced standards.
    j. Testing by recognized testing agency.
    k. Application of testing agency labels and seals.
    l. Notation of coordination requirements.
    m. MSDS information, where applicable.

4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit the number required by the Contractor plus four (4) copies of Product Data, unless otherwise indicated. Architect will return two copies to Contractor and one to Owner. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Dimensions.
    b. Identification of products.

c. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
d. Schedules.
e. Design calculations.
f. Compliance with specified standards.
g. Notation of coordination requirements.
h. Notation of dimensions established by field measurement.
i. Relationship to adjoining construction clearly indicated.
j. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
3. Number of Copies: Submit four opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit five copies where copies are required for operation and maintenance manuals. Architect will retain two **c**opies, including one for the Owner's Project Manager; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor..

c. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section 01 40 00 "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section 01 31 00 "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section 01 32 00 "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section 01 40 00 "Quality Requirements."

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section 01 78 23 "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

T. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.

2.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. <**Insert description of each action indicated on Architect's stamp.**>

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 1 Section 01 32 00 "Construction Progress Documentation" for developing a schedule of required tests and inspections.
2. Divisions 2 through 49 Sections for specific test and inspection requirements.

1.3 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made by Owner.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor**,** and the Contract Sum will be adjusted by Change Order.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section 01 33 00 "Submittal Procedures."

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.6 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of the Owner, described as follows:

<List Special Inspections Here>

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections include the following:

1. Division 1 Section 01 11 00 "Summary of Work" for limitations on utility interruptions and other work restrictions.
2. Division 1 Section 01 33 00 "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
3. Division 1 Section 01 73 00 "Execution Requirements" for progress cleaning requirements.
4. Divisions 2 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts**,** with 1-5/8-inch- (42-mm-) OD top rails.

B. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete bases for supporting posts.

C. Lumber and Plywood: Comply with requirements in Division 6

D. Gypsum Board: Minimum 1/2 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack board.
3. Drinking water and private toilet.
4. Coffee machine and supplies.
5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
6. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

OR

D. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

F. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low

temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

H. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

I. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

OR

J. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Connect temporary service to Owner's existing power source, as directed by Owner.

K. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Install lighting for Project identification sign.

L. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install two telephone line(s) for each field office.

1. At each telephone, post a list of important telephone numbers.

   a. Police and fire departments.
   b. Ambulance service.
   c. Contractor's home office.
   d. Architect's office.
   e. Engineers' offices.
   f. Owner's office.
   g. Principal subcontractors' field and home offices.

2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas **as** indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Arrange for temporary parking areas for construction personnel.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

F. Project Identification and Temporary Signs: Provide Project identification and other signs as indicated on Drawings. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.

G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section 01 77 00 "Execution Requirements" for progress cleaning requirements.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Division 1 Section 01 11 00 "Summary of Work."

B. Temporary Erosion and Sedimentation Control: Comply with requirements specified in Division 2 Section "Site Clearing", and requirements of authority having jurisdiction.

C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Comply with requirements specified in Division 2 Section "Tree Protection and Trimming."

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys.

G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

J. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
2. Insulate partitions to provide noise protection to occupied areas.
3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
4. Protect air-handling equipment.
5. Weather strip openings.
6. Provide walk-off mats at each entrance through temporary partition.

K. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01 50 00

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:

1. Division 1 Section 01 23 00 "Alternates" for products selected under an alternate.
2. Division 1 Section 01 77 00 "Closeout Procedures" for submitting warranties for Contract closeout.
3. Divisions 2 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Substitution Requests: Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period, in compliance with this Section.

B. After execution of Agreement, the Owner may, at the Owner’s option, consider formal requests from the Contractor for substitution of products for those specified. One or more of the following conditions must be documented:

1. Compliance with final interpretation of code requirements or insurance regulations which require that the use of a substituted Product.
2. Unavailability of a specified Product through no fault of the Contractor.

3. Inability of specified Product to perform properly of fit in designated place.
4. Manufacturer's or Fabricator's refusal or inability of certify or guarantee performance of a specified Product in the application intended.

C. A Substitution Request constitutes a representation that the Bidder/Contractor:

1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified Product.
2. Will provide the same warranty for the Substituted Product as for the specified Product.
3. Will coordinate installation and make changes to the Work which may be required for the Work to be completed with no additional cost to the Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse the Owner for review or redesign services associated with re-approval by authorities.

D. Substitutions will not be considered when they are indicated or implied on Shop Drawings or Product Data Submittals, without separate request on the form provided, or when acceptance will require revision to the Contract Documents.

E. Submit three copies of each request for consideration. Limit each request to one proposed Substitution. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at end of Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

    a. Statement indicating why specified material or product cannot be provided.
    b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
    d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    e. Provide MSDS information to confirm that the product is no more harmful that he products specified.
    f. Samples, where applicable or requested.
    g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    i. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    j. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided

within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

k. Cost information, including a proposal of change, if any, in the Contract Sum.

l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance: Change Order.

b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.
9. Provide bonded and insured off-site storage and protection when site does not permit on-site storage and protection.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Submittal Time: Comply with requirements in Division 1 Section 01 77 00 "Closeout Procedures."

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

SUBSTITUTION REQUEST FORM

TO: Name of Architect
Street Address
City and State

DEADLINE: Date

PROJECT: Name of Project
CIP # ___.___.___
Eugene School District 4J

SPECIFIED ITEM: _____ _____ _____
Section No. Paragraph Description

The Undersigned requests consideration of the following substitution:

_____

The Undersigned states that the following paragraphs are true, except where noted otherwise:

1. The function, appearance and quality of the proposed substitution are equivalent or superior to the specified item;
2. The proposed substitution does not affect dimensions shown on the Drawings;
3. The Undersigned will pay for changes to the building design, including engineering and design services, detailing and construction costs caused by the requested substitution;
4. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements;
5. Maintenance and service parts will be locally available for the proposed substitution;
6. The Undersigned has attached data concerning the proposed substitution, including: Manufacturers product description, specifications, drawings, photographs, performance and test data, adequate for evaluation of the request, with applicable portions of the data clearly indicated. Attachments also include description of changes to Contract Documents which the proposed substitution will require for its proper installation.

Submitted by: _____ Signature: _____ Firm: _____ Address:_____ _____ Date: _____ Tel: _____ Fax: _____ Attachments: _____	For use by Architect: ☐ Approved ☐ Approved as noted. ☐ Not Approved ☐ Received too late By: _____ Date: _____ _____ For use by 4J Project Manager: ☐ Approved ☐ Approved as noted. ☐ Not Approved ☐ Received too late By: _____ Date: _____

END OF SECTION 01 60 00

SECTION 01 73 00
EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Sections include the following:

1. Division 1 Section 01 31 00 "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section 01 33 00 "Submittal Procedures" for submitting surveys.
3. Division 1 Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

B. Final Property Survey: Submit 2 copies showing the Work performed and record survey data.

1.4 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. PROCEEDING WITH THE WORK INDICATES ACCEPTANCE OF SURFACES AND CONDITIONS.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility

appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Owner's Project Manager promptly.
   1. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Owner's Project Manager.

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

   1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of seven feet in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated. Bring any conflicts to the Architect for review.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints where possible. Obtain Architect and Owner’s Project Manager approval for all questionable conditions.

H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to applicable regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for safety and proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section 01 40 00 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

CUTTING AND PATCHING

SECTION 01 73 29

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

B. Related Sections include the following:

1. Division 1 Section 01 31 00 – "Project Management and Coordination" for pre-construction and pre-installation conferences.
2. Division 2 Section "Selective Demolition" for demolition of selected portions of the building.
3. Divisions 2 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a written request describing procedures prior to the time cutting and patching will be performed, requesting approval to proceed, for 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 site-exposed elements.
5. Work of Owner or separate contractor.

B. Include the following information:
1. Identification of Project and CIP number
2. Location and description of the 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 Owner or separate contractor.
7. Written permission of affected separate contractor, if any.

8. date and time work will be executed.

1.5 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
   1. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
   2. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety**.**

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

1.6 WARRANTY

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

B. Related Sections include the following:

1. Division 1 Section 01 29 00 "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
2. Division 1 Section 01 73 00 "Execution Requirements" for progress cleaning of Project site.
3. Division 1 Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.
4. Division 1 Section 01 78 39 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
5. Divisions 2 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect and Owner’s Project Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit the following completed forms, items and documents:
    a. AIA Document G706 Contractor’s Affidavit of Payment of Debts and Claims.
    b. AIA Document G706A Contractor’s Affidavit of Release of Liens.
    c. AIA Document G707 Consent of Surety Company to Final Payment.
    d. Operation and Maintenance Manuals
    e. Warranties and Bonds. Submit original documents, including Contractor’s General Warranty,
    f. Record Documents.
    g. Keys.
    h. Testing and Start-Up records.
    i. Affidavit of Prevailing Wages paid.
    j. Complete list of Contractor and all Subcontractors with address, phone numbers, and work

k. Asbestos-Containing Materials Statement (Form 01100B).
l. Proof of final acceptance and compliance from governing authorities having jurisdiction.
m. Certificate of insurance evidencing continuation of liability coverage including coverage for completed operations until the expiration of the specified warranty periods.

5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect and Owner's Project Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Cost of additional re-inspections by Architect and Owner's Project manager will be deducted from Final Payment to the Contractor.

1.5 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Partial Occupancy: Submit properly executed warranties within 10 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

    a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    e. Remove snow and ice to provide safe access to building.
    f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    h. Sweep concrete floors broom clean in unoccupied spaces.
    i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
    j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    k. Remove labels that are not permanent.
    l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
q. Clean ducts, blowers, and coils if units were operated without filters during construction.
r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
s. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Maintenance manuals for the care and maintenance of products, material, finishes, systems, and equipment.

B. Related Sections include the following:

1. Division 1 Section 01 33 00 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
2. Division 1 Section 01 77 00 "Closeout Procedures" for submitting operation and maintenance manuals.
3. Division 1 Section 01 78 39 "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
4. Divisions 2 through 49 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

A. Initial Submittal: Submit 2 draft copies of each manual at least 15 working days before requesting inspection for Final Completion. Include a complete operation and maintenance directory. Architect will return one copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Architect's comments. Submit 2 hard copies and one electronic copy of each corrected manual within 15 days of receipt of Architect's comments.

1.5 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. List of all subcontractors and material suppliers, including names, addresses and phone numbers.
5. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.

3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include a Table of Contents for each volume with a list of products and major components of equipment included in the section on the face of each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.
6. Contact information.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training videotape, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.

2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
3. Electronic Copy: Provide a single PDF file with bookmarks matching tabbed sections in Binders.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared Record Drawings in Division 1 Section 01 78 39 "Project Record Documents."

G. Comply with Division 1 Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. Related Sections include the following:
1. Division 1 Section 01 77 00 "Closeout Procedures" for general closeout procedures.
2. Division 1 Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Divisions 2 through 49 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of Record Drawings as follows:
   a. Final Submittal: Submit one set of marked-up Record Prints (not “Job Shack” set).

B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one copy of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an understandable drawing technique.
    c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations below first floor.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order.
    k. Changes made following Architect's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
3. Identification: As follows:

    a. Project name.

b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Architect and Owner's Project Manager.
e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Owner's Project Manager's reference during normal working hours.

END OF SECTION 10 78 39

MISCELLANEOUS ROUGH CARPENTRY

SECTION 061053

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. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking and nailers.
4. Plywood backing panels.

1.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal or greater size but less than 5 inches nominal size in least dimension.

1.4 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.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber 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, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded 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.

B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC3b.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not 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 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.

D. Application: Treat items indicated on Drawings.

2.3 DIMENSION LUMBER FRAMING

A. Framing: Construction, Stud, or No. 3, any of the following species:

1. Hem-fir (north); NLGA.
2. Mixed southern pine or southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
6. Northern species; NLGA.

2.4 MISCELLANEOUS LUMBER

A. General: 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.

B. Dimension Lumber Items: Standard, Stud, or No. 3 grade lumber of any of the following species:

1. Hem-fir (north); NLGA.
2. Mixed southern pine or southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
6. Northern species; NLGA.

C. 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.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

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 PLYWOOD SHEATHING

A. Plywood Sheathing: Plywood, DOC PS 1, Exterior, A-C in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness. Provide fire-rated materials where indicated on the drawings.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where 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 A 153/A 153M or Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate 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. Do not splice structural members between supports unless otherwise indicated.

E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

F. Provide fire blocking in stud spaces, and other concealed cavities as indicated and as follows:
   1. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
   2. Fire block concealed spaces behind exterior trim at not more than 20 feet 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. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

   1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

J. 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 WOOD BLOCKING AND NAILER INSTALLATION

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 items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.3 PROTECTION

A. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

PREPARATION FOR REROOFING

SECTION 070150

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. Full tear-off of roof areas indicated.
2. Re-cover/overlay preparation of roof area indicated.

B. Related Requirements:

1. Section 011000 "Summary" for use of the premises and phasing requirements.
2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

B. Roof Re-Cover/Overlay Preparation: Existing roofing system is to remain and be prepared for new roof installed over it.

C. Full Roof Tear-Off: Removal of existing roofing system from deck.

1.4 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include plans, sections, and details.

C. Qualification Data: For Installer.

1. Include certificate that Installer is approved by warrantor of existing roofing system.
2. Include certificate that Installer is licensed to perform asbestos abatement.

D. Roof re-cover adhesive pull test report.

E. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Licensed to perform asbestos abatement in the state or jurisdiction where Project is located.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

A. Reroofing (Preinstallation) Conference: Conduct conference at Project site.

1. Meet with Owner; Roof Consultant; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; roofing Installer, including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing, including installers of roof deck, roof accessories, and roof-mounted equipment.
2. Review methods and procedures related to roofing system tear-off and replacement, 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. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
    d. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
    e. Existing roof deck conditions requiring notification of the Owner.
    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. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
    k. Asbestos removal and discovery of asbestos-containing materials.
    l. Governing regulations and requirements for insurance and certificates if applicable.
    m. Existing conditions that may require notification of the Owner before proceeding.
    n. Review temporary protection requirements for roofing during and after installation.
    o. Review roof observation and repair procedures after roofing installation.

1.6 FIELD CONDITIONS

A. Existing Roofing Systems:
   1. Sectors A & B: Built-up asphalt roofing.
   2. Sectors C & D: JP Stevens Hypalon single-ply membrane.

B. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations are not disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

   1. Coordinate work activities daily with Owner so Owner can 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.

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 are maintained by Owner as far as practical.

   1. The results of an analysis of test cores from existing roofing system are available for Contractor's reference.
   2. Construction Drawings for existing roofing system are provided for Contractor's convenience and information, but 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. Limit construction loads on roof where specific restrictions are described in the Structural Drawings.

G. 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.

H. Hazardous Materials: A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

   1. Hazardous material remediation is specified elsewhere in the Contract Documents.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials except according to procedures specified elsewhere in the Contract Documents.
   3. Coordinate reroofing preparation with hazardous material remediation to prevent water from entering existing roofing system or building.

PART 2 - PRODUCTS

2.1 TEMPORARY PROTECTION MATERIALS

A. Expanded Polystyrene (EPS) Insulation: ASTM C 578.

B. Plywood: DOC PS1, Grade CD Exposure 1.

C. OSB: DOC PS2, Exposure 1.

2.2 TEMPORARY ROOFING MATERIALS

A. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft.

B. Nailed Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet.

C. Glass-Fiber Felts: ASTM D 2178, Type IV, asphalt-impregnated, glass-fiber felt.

D. Roofing Asphalt: ASTM D 312, Type III or IV.

E. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Global's "Approval Guide."

2.3 RE-COVER BOARDS

A. Cover Board – Type 2: Reference Section 075400 “Thermoplastic Membrane Roofing.”

PART 3 - EXECUTION

3.1 PREPARATION

A. Shut off rooftop utilities and service piping before beginning the Work.

B. Test existing roof drains to verify that they are not blocked or restricted. Immediately notify Architect of any blockages or restrictions.

C. Protect existing roofing system that is not to be reroofed.

D. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.

E. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

F. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.
2. Do not permit water to enter into or under existing roofing system components that are to remain.

3.2 ROOF TEAR-OFF

A. General: Notify Owner each day of extent of roof tear-off proposed for that day.

B. Full Roof Tear-Off: Where indicated, remove existing roofing and other roofing system components down to the deck.

1. Remove vapor retarder, roof insulation and cover board.
2. Remove wood blocking, curbs, and nailers.
3. Bitumen and felts that are firmly bonded to concrete decks are permitted to remain if felts are dry. Remove unadhered bitumen, unadhered felts, and wet felts.
4. Remove fasteners from deck or cut fasteners off slightly above deck surface.

3.3 ROOF RE-COVER PREPARATION

A. Remove ridges, buckles, mechanically attached roofing fastener buttons projecting above roofing, and other substrate irregularities from existing roofing that inhibit new re-cover boards from conforming to substrate.

1. Remove all water from the membrane surface.
2. Broom clean existing substrate.
3. Verify that existing substrate is dry before proceeding with installation of re-cover boards. Spot check substrates with an electrical capacitance moisture-detection meter. Moisture content of the existing roof insulation in excess of 19% is considered wet and is to be removed and replaced.
4. Remove materials that are wet or damp.

3.4 RE-COVER BOARD INSTALLATION

A. Install re-cover boards over roofing with long joints in continuous straight lines and end joints staggered between rows. Loosely butt re-cover boards together and mechanically fasten.

3.5 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. 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 070150

ROOF SYSTEM REPAIRS

SECTION 070152

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. This Section includes the following:

1. Repairs to asphalt BUR roof systems (systems are currently under warranty). Typical repair types include, but are not limited to, membrane patching and membrane coating.

2. Repairs to TPO roof systems (systems are currently under warranty). Typical repair types include membrane patching.

1.3 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 ABBREVIATIONS

A. ASTM ASTM International (formerly American Society for Testing and Materials).

B. NRCA National Roofing Contractors Association.

C. UL Underwriters Laboratories.

D. TIMA Thermal Insulation Manufacturers Association.

E. LTTR Long Term Thermal Resistance

1.5 REFERENCED STANDARDS

A. NRCA / ARMA Sheet Metal and Air Conditioning National Association (SMACNA) Architectural Sheet Metal Manual, Repair Manual for Low-Slope Roof Systems

B. National Roofing Contractors Association (NRCA) – Membrane Roof Systems – 2019

1.6 SUBMITTALS

A. Product data for each type of product specified. Include data substantiating that materials comply with requirements.

B. Installation instructions for installing products and systems.

C. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications and Requirements:

1. A qualified firm that is approved, authorized, or licensed by manufacturer of the roof repair materials outlined in this Section.
2. In continuous business under same name for past five (5) years.
3. Completed at least three (3) successful installations of specified materials and systems on projects of similar scope.
4. Contractor shall provide all personnel trained in application of materials and systems and shall maintain supervision as specified elsewhere.

B. Source Limitations: For each separate roof system, obtain primary products, including each type of roofing ply sheet, bitumen, and adhesive, membrane flashings from a single manufacturer, or with primary manufacturer's endorsement. Provide secondary products as recommended and approved by the primary manufacturer for the specified roof systems.

C. Fire-Test-Response Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading:

1. 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.
2. Handle and store materials and equipment in a manner to avoid significant or permanent damage and deflection of the roof deck.
3. Do not leave unused rigid insulation and sheet materials on the roof overnight or when roofing work is not in progress unless protected from weather or other moisture sources.

B. Storage and Protection:

1. Store roll goods on ends only; do no lay flat. Flattened rolls shall be rejected, and shall not be used in the construction of the roof system.

2. Store and handle roofing sheets in a dry, well-ventilated, weathertight place to ensure no possibility of significant moisture pickup.
3. Control temperature of storage areas in accordance with the manufacturer's instructions.
4. Store materials on pallets, blocking, or other means to keep materials from coming into contact with moisture, dirt, debris, and other contaminates.
5. 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.
6. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
7. Protect roof level rigid insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with rigid insulation manufacturer's written instructions for handling, storing, and protecting during installation.
8. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.9 PROJECT CONDITIONS

A. Provide tarps or plastic sheeting required to protect opened roofs and flashings and to prevent the entrance of moisture or rain water into the existing structure until new materials have been applied and roof is in a watertight condition.

B. Roofing materials shall not be applied when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present on the deck.

C. Adhesive applied roofing materials shall not be applied when dirt, dust, debris, oil, etc.is present on the deck.

D. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed in accordance with manufacturer's written recommendations and warranty requirements.

1.10 WARRANTY

A. Warranty Repairs – Authorized Contractor: Repairs outlined in this Section will be executed on roof areas currently under warranty. Repairs must be executed by a contractor certified by the roof membrane manufacturer. Existing warranted roof assembly type/manufacturer are as follows:
   1. Area G – BUR Roofing: by Malarkey Roofing
   2. Areas I & L – TPO Roofing: by Carlisle SynTec

B. Special Manufacturer's Warranty: The Manufacturer shall provide a written warranty for the coating system, guarding against failures related to material defects.

   1. Warranty Period: Five (5) years from date of Substantial Completion.

C. Special Installer's Warranty: The Installer shall provide a written warranty guaranteeing all roof repairs against defects of quality of Work and materials. Warranty shall be delivered to the Owner prior to final acceptance of the Work.

1. Warranty Period: Two (2) years from date of Substantial Completion except where stated below.

PART 2 - PRODUCTS

2.1 GENERAL:

1. Repair Scopes: Refer to Part 3 of this Section for detailed explanations of each individual repair scope
2. Provide materials compatible with roofing membrane.
3. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2.2 ASPHALT BUILT UP ROOF (BUR) MEMBRANE REPAIRS

A. Membrane Repair Patch Material: Cold adhesive applied, granule surfaced, SBS modified bitumen top sheet (114-mils thick minimum at selvage edge, ASTM 6163, Type I, Grade G).

B. Adhesive: ASTM D 4479-93 (brush or spray coatings) Type I; Roofing system Manufacturer's standard asphalt-based, one-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with roofing membrane.

C. Asphalt Primer: To comply with ASTM D 41.

D. Roofing Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained on No. 40 sieve, color to match color of top ply (cap) sheet.

E. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM 4470; designed for fastening roofing membrane components to substrate; tested by manufacturer for required pullout strength; and acceptable to roofing system manufacturer.

F. Aluminum Coating: Asphalt based, fibered aluminum coating complying with the requirements of ASTM D 2824, Type III.

G. Reinforced Fluid Applied Flashing Membrane: Liquid applied, layered membrane, fully reinforced and seamless flashing system; Polymethyl Methacrylate (PMMA).

2.3 Thermoplastic-Polyolefin (TPO) MEMBRANE REPAIRS

A. Membrane Repair Patch Material: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils thick, minimum, of same color as TPO sheet.

PART 3 - EXECUTION

3.1 QUALITY OF WORK

A. Experienced personnel in the type of roofing work specified shall perform the work.

B. Contractor shall be fully aware of work involved and the requirements under this contract, and shall direct workers in the proper application of materials and work specified.

C. Supervision shall be maintained by the same person throughout the entire course of the installation of new materials.

D. Finished work shall be free from wrinkles, creases, bubbles, fish mouths, and similar defects. Laps shall be fully sealed per manufacturer's installation instructions, and entire surface shall be watertight.

E. Use proper installation practices. An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project, and shall be subject to approval by the Port.

F. Make necessary preparations, utilize recommended application techniques, apply specified materials, and exercise care in ensuring that the finished application is acceptable to the Port.

G. Cooperate with inspection and test agencies engaged or required to perform services in connection with installing elastic sheet membrane roofing system.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

1. Moisture includes rain, dew, ice, frost, snow, and the like.
2. Dust and debris includes dirt, oil, and other materials not inherent in the substrate.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove temporary roof-drain plugs when no work is taking place or when rain is forecast.

C. Inspect all substrates for irregularities and defects that prohibit the proper installation of roofing repair materials. Notify Roof Consultant of all defects for proper correction, prior to installation of new materials.

D. Substrates shall be clean and dry, smooth, free of fins, raised edges, sharp edges, protruding or loose nails, and free of foreign material.

E. Prepare all surfaces and details in accordance with manufacturer's printed instructions and these contract documents.

F. Protect building surfaces and equipment from damage and contamination from roofing work.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. All cuts in existing membrane are to be smooth and free of fins and over cuts or jagged edges.

B. Coordinate installing membrane roofing system components, so roof level insulation is not exposed to precipitation or left exposed at the end of the workday.

C. Where the existing roof is cut open, install and maintain suitable temporary felt and fabric flashing as required to keep water out from under the existing roofing during the construction period, as well as to prevent any water leaking into existing occupied spaces within.

3.4 INSTALLATION – BUR MEMBRANE ROOFING REPAIRS

A. Refer to the Drawings for individual locations.

B. BUR Membrane Repair – Aluminum Coating Application:

1. Prepare indicated membrane base flashings for coating application. Remove debris and contaminants from the surface of the membrane and base flashings to be coated.
2. Power wash surfaces to receive coating in accordance with the manufacturer's written instructions. Take necessary precautions to avoid damaging the roof system.
3. Fill cracks or holes within the area designated for repair with sealant or caulking materials approved by both the coating and membrane manufacturers.
4. Prime entire surface at repair area as marked on drawings. Primer should extend a minimum of 3-inches on adjoining surfaces where coating is intact.
5. Allow primer to dry and apply aluminum coating with brush, roller, or spray equipment, at specified location to receive repair. Install at a rate of 1 1/2 - 2 gallons per 100 square feet of repair area.
6. Protect surrounding areas from over spray or splatter.

C. BUR Membrane Repair – Reinforced Fluid-Applied Membrane Application:

1. Ensure that substrates are free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, bituminous products, release agents, laitance, paint, loose particles/friable matter, rust or any other material that would be detrimental to adhesion of the catalyzed primer and/or resin to the substrate. Some surfaces may require scarification, shotblasting, or grinding to achieve a suitable substrate.
2. Preparation/Mixing/Catalyzing Resin Products: Pour the desired quantity of resin into a clean container and using a spiral mixer or mixing paddle, stir the liquid for the time period specified by the resin manufacturer. Calculate the amount of catalyst powder needed using the manufacturer's guidelines and add the pre-measured catalyst to the resin component. Mix again for the time period specified by the resin manufacturer, ensuring that the product is free from swirls and bubbles. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before pot life expires.
3. Primer Application: Apply primer resin using a roller or brush at the rate specified by the primer manufacturer over qualified and prepared substrates. Apply primer resin at the increased rate specified by the primer manufacturer over porous substrates. Do not let

resin pool or pond. Do not under-apply or over-apply primers as this may interfere with proper primer catalyzation. Make allowances for waste, including saturation of roller covers and application equipment.

4. Paste Application: Apply catalyzed preparation paste using a trowel over prepared and primed substrates. Before application of any resin product over cured paste, wipe the surface of the paste using the specified cleaner/solvent and allow to dry. Treat the surface again if not followed up by resin application within 60 minutes.
5. Coating Application:

    a. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to cure.
    b. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
    c. Apply an even, generous base coat of flashing resin to prepared surfaces using a roller at the rate specified by the resin manufacturer. Work the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch (5 cm) and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin immediately following embedment of the fleece at the rate specified by the resin manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece (maximum ¼-inch (6 mm)). Remove the tape before the catalyzed resin cures. Make allowances for waste, including saturation of roller covers and application equipment.
    d. Should work be interrupted for more than 12 hours or the surface of the cured resin becomes dirty or contaminated by the elements, wipe the surface to be lapped with new flashing resin using the specified cleaner/solvent. Allow the surface to dry for a minimum 20 minutes and a maximum 60 minutes before continuing work.

D. BUR Membrane Repair - Membrane Patch:

1. Prepare the area extending a minimum of 6-inches in all directions beyond the edge of the membrane defect. Remove debris and contaminants from the surface of the membrane within the area to be repaired.
2. Clean and prime the surface of the prepared membrane. Allow primer to dry before proceeding.
3. Install 1/8-inch uniform layer of cold adhesive over the surface of the existing cap sheet or granule surfaced base flashing a minimum of 6-inches in all directions.
4. Embed top ply sheet into cold adhesive, fully covering the adhesive application. Roll sheet into position so as to prevent air pockets, bridging and voids.
5. Re-roll the perimeter of the membrane installation to eliminate voids, fishmouths, and blisters.
6. Apply granules into adhesive bleedout.

3.5 INSTALLATION – TPO MEMBRANE ROOFING REPAIRS

A. Refer to the Drawings for individual locations.

B. Single-Ply Membrane Repair – Membrane Patch:

1. Prepare the area extending a minimum of 6-inches in all directions beyond the edge of the membrane defect. Remove debris and contaminants from the surface of the membrane within the area to be repaired.
2. Hot air weld an unreinforced membrane repair patch over the membrane defect.

3.6 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to 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 according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

D. Remove trash, nails, debris, and equipment from site and leave the site clean.

END OF SECTION 070152

WEATHER BARRIERS

SECTION 072500

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. Water-Resistive Barrier (WRB)

B. Related Requirements:

1. Section 076200 "Sheet Metal flashing and Trim" for additional underlayment materials.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1. For building wrap, include data on air and water-vapor permeance based on testing according to referenced standards.

B. Shop Drawings: Show details of building wrap at terminations, openings, and penetrations. Show details of flexible flashing applications.

PART 2 - PRODUCTS

2.1 WATER-RESISTIVE BARRIER

A. Water-Resistive Barrier: Self-adhered, ASTM E 1677, Type I air barrier; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.

1. Water-Vapor Permeance: Provide product with a perm rating of 15 or higher per ASTM E 96/E 96M, Desiccant Method (Procedure A).
2. Allowable UV Exposure Time: Not less than three months.

PART 3 - EXECUTION

3.1 WATER-RESISTIVE BARRIER INSTALLATION

A. Cover exposed exterior surface of sheathing with water-resistive barrier securely adhered to framing immediately after sheathing is installed.

B. Cover sheathing with water-resistive barrier as follows:

1. Cut back barrier 1/2 inch on each side of the break in supporting members at expansion- or control-joint locations.
2. Apply barrier to cover vertical flashing with a minimum 4-inch overlap unless otherwise indicated.

C. Comply with manufacturer's written instructions and warranty requirements.

1. Seal seams, edges, fasteners, and penetrations with tape.
2. Extend into jambs of openings and seal corners with tape.

END OF SECTION 072500

BUILT-UP ASPHALT ROOFING

SECTION 075113

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. Five-ply asphalt built-up roofing system (4 fiberglass plies + cap).
2. Vapor retarder.
3. Rigid roof insulation.

B. Related Requirements:

1. Section 061000 "Miscellaneous Rough Carpentry" for wood nailer, blocking, and replacement of selected exterior wood siding.
2. Section 070150 "Preparation for Re-Roofing" for methods of existing roof tear-off procedures and requirements.
3. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counter flashings.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to Work of this Section.

B. Hot Asphalt: Roofing asphalt heated to its equiviscous temperature, the temperature at which its viscosity is 125 centipoise for mopping application and 75 centipoise for mechanical application, within a range of plus or minus 25 deg. F, measured at the mop cart or mechanical spreader immediately before application.

1.4 REROOFING (PREINSTALLATION) CONFERENCE

A. Reroofing (Preinstallation) Conference: Reference Section 070150 “Preparation for Reroofing.”

1.5 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For built-up roofing. Include plans, elevations, sections, details, and attachments to other work, including:

1. Base flashings and built-up terminations.
2. Tapered insulation, including slopes.
3. Crickets, saddles, and tapered edge strips, including slopes.

C. Qualification Data: For Installer and manufacturer.

D. Manufacturer Certificates: Signed by roofing manufacturer certifying that built-up roofing complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of compliance with performance requirements.

E. Sample Warranties: For contractor’s and manufacturer's special warranties.

F. Maintenance Data: For built-up roofing to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for built-up roofing identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by built-up roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
1. In continuous business under same name for a minimum of the past 5 years.

1.7 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 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.

1.8 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.

B. Provide tarps or plastic sheeting required to protect opened roofs and flashings and to prevent the entrance of moisture or rain water into the existing structure until new materials have been applied and roof is in a watertight condition.

C. Have necessary waterproof canvas or plastic sheeting readily available in case of emergency. The Contractor will be held liable for any damage to building interior due to Contractor’s negligence.

D. Roofing materials shall not be applied when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present on the deck.

E. Adhesive and / or asphalt applied roofing materials shall not be applied when dirt, dust, debris, oil, etc. is present on the deck.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of built-up roofing that fail in materials or workmanship within specified warranty period.

1. Special warranty includes built-up roofing membrane, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of built-up roofing.
2. Warranty Period: 20 years from date of Substantial Completion.

B. Installer’s Special Project Warranty: Submit roofing Installer's warranty, signed by Installer, covering the Work of this Section, including all components of built-up roofing such as built-up roofing membrane, base flashing, roof insulation, fasteners, cover boards, and vapor retarders, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed built-up roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Built-up roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by built-up roofing manufacturer based on testing and field experience.

C. Roofing System Design: The completed membrane roof system shall meet or exceed the uplift criteria as shown on the structural drawings.

D. UL Listing:
1. Provide built-up bituminous roofing systems and components that have been tested for application and slopes indicated and are listed by Underwriter's Laboratories (UL) for Class A external fire exposure.
2. Provide built-up bituminous roofing system materials bearing UL Classification marking on bundle, package, or container, indicating that materials have been produced under UL's Classification and follow-up service.
3. Provide built-up bituminous roofing systems that can be installed to comply with UL requirements for Fire Classified and Class 90 wind-uplift requirements.

E. Insulation Fire Performance Characteristics:
1. Provide insulation materials that are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.
2. Surface Burning Characteristics: ASTM E84.
3. Fire Resistance Ratings: ASTM E119.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products and systems by one of the following:
1. Built-up Asphalt Roofing:
   a. Johns Manville International, Inc.; 5GIC.
   b. Malarkey Roofing Company; M5-XIA-H.
   c. Garland Company; SBS cap sheet over four fiberglass plies.
   d. Or pre-bid approved equal.

2.3 ROOFING MEMBRANE SHEET MATERIALS

A. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft..

B. Nailed Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.

C. Ply Sheet: ASTM D 2178, Type VI, asphalt-impregnated, glass-fiber felt.

A. Cap Sheet: ASTM D 3909, non-woven fiberglass mat cap sheet, coated on both sides with oxidized bitumen, and surfaced with ceramic granules, fire rated:

1. Minimum thickness 105-mils nominal at selvage edge, minimum weight 72-pounds per 100 square feet.
2. Granule Color: White.
    a. Products
        1) GlasKap, by Johns Manville.
        2) 502 Cap, by Malarkey.
        3) StressPly FR Mineral, by Garland.
        4) Or pre-bid approved equal.

D. Reinforcing Sheet: ASTM D 4601, Type I, asphalt-impregnated and -coated, glass-fiber base sheet, dusted with fine mineral surfacing on both sides.

E. Flashing Sheet: ASTM D 6163, Grade G, Type I, Random Glass mat or scrim reinforced SBS modified bitumen cap sheet, mineral granule surfaced, fire rated:
1. Granule Color: White.
    a. Products
        1) GlasKap Plus, by Johns Manville.
        2) 601 Paragon, by Malarkey.
        3) StressPly FR Mineral, by Garland.
        4) Or pre-bid approved equal.

2.4 ASPHALT MATERIALS

A. Asphalt Primer: ASTM D 41/D 41M.

B. Roofing Asphalt: ASTM D 312, Type IV.
1. Each container or bulk shipping ticket shall include Equiviscous Temperature (EVT), finished blowing temperature (FBT), and flash point (FP).
2. Asphalt must be manufactured by roofing materials manufacturer, or, considered approved by manufacturer, in writing, prior to installation of membrane.

2.5 AUXILIARY BUILT-UP ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing manufacturer for intended use and compatible with built-up roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing manufacturer for application.

C. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.

D. Lead Pipe Flashings: Two-piece 4 pound desilverized lead flashing.

E. Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained on No. 40 sieve, color to match color of cap sheet.

F. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.6 VAPOR RETARDER

A. Vapor Retarder: Polyethylene film laminated to layer of butyl rubber adhesive, minimum 30-mil total thickness; maximum permeance rating of 0.1 perm; self-adhered, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor-retarder manufacturer.

2.7 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

B. Insulation Performance Requirements:
1. Thermal Resistance: 5.7 per inch minimum R-value per manufacturer’s data.
2. Required assembly R-Value: As indicated on Sheet GI-2

C. Flat Stock Rigid Insulation – Type 1: ASTM C 1289, Type II, rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.
2. Compressive strength: Nominal 20 psi per ASTM D 1621.
3. Flame spread: 35 or less per ASTM E 84.
4. Panel Thickness: 2.6-inch.
5. Board size: 4-foot by 4-foot.
6. Attachment method: Adhesive Ribbons and Mechanically Attached – Reference Sheet GI-2.

D. Flat Stock Rigid Insulation – Type 2: ASTM C 1289, Type II, rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.
2. Compressive strength: Nominal 20 psi per ASTM D 1621.
3. Flame spread: 35 or less per ASTM E 84.
4. Panel Thickness: 2-inch
5. Board size: 4-foot by 8-foot.
6. Attachment method: Mechanically Attached.

E. Tapered Rigid Insulation: ASTM C 1289, Type II, tapered rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.
2. Compressive strength: Nominal 20 psi per ASTM D 1621.
3. Flame spread: 35 or less per ASTM E 84.
4. Slope: 1/4-inch per foot.

5. Board size: 4-foot by 4-foot.
6. Attachment method: Adhesive Ribbons

F. Insulation Crickets: ASTM C 1289, Type II; Rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Units shall be 4-foot by 4-foot, 1/2-inch minimum thickness at the start-point of the tapered insulation system.
2. Slope: As indicated on the Drawings.
3. Attachment method: Hot Asphalt or Adhesive Ribbons.

2.8 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with built-up roofing.

B. Asphalt: Certified for full compliance with the requirements for Type IV asphalt listed in Table 1, ASTM D 312. Each container, or bulk shipping ticket, shall indicate equiviscous temperature, finished blowing temperature, and flash point.

C. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

D. Insulation and cover board 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.
2. Adhesive material shall meet FM I-90 (Class 4450) with approved insulation boards.
3. Approved Manufacturers:
   a. OMG Roofing Products; OlyBond 500.
   b. Or pre-bid approved equal.

B. Cant Strips: ASTM C 728, perlite insulation board with 3-inch vertical (3 7/8-inch face) minimum, and as shown on the drawings.

E. Tapered Edge Strip: Rigid polyisocyanurate board of both 12-inch and 24-inches wide, 4-foot long tapering from 0-inch to 2-inch in thickness. Stack units to achieve required thickness where indicated on Drawings.
1. Products:
   a. Atlas Roofing Corporation; Gemini Tapered Edge Strip.
   b. Or pre-bid approved equal.

F. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for slope to drain. Fabricate to slopes indicated.

2.9 COVER BOARD

A. General: Provide preformed roof cover boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

B. Cover Board – Type 1: Multi-ply, semi-rigid asphaltic panel composed of mineral-fortified asphaltic core, formed between two asphalt-saturated fiberglass liners and a plastic separator sheet.
   1. Dimensions
      a. Minimum thickness: 1/4-inch
      b. Maximum dimensions: 4-feet by 4-feet
      c. Minimum dimension: 12-inches by 24-inches
   2. Manufacturers
      a. Sopra-board by Soprema.
      b. Sturdy-Dek by Blue Ridge.
      c. Or pre-bid approved equal.

2.10 WALKWAYS

A. Walkway Pads: Manufacturer's standard walkway pad for use on BUR roofs, or a walkway pad consisting of same product as the cap sheet.

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 cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
   3. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane relative to adjoining deck.

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 installation according to roofing 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, GENERAL

A. Comply with built-up roofing manufacturer's written instructions.

1. NOTE: This building includes steep-sloped roof areas that may require supplemental installation methods to meet the manufacturer’s requirements. Adhere to all required supplemental installation requirements.

B. Asphalt Heating: Heat asphalt to its equiviscous temperature, measured at the mop cart or mechanical spreader immediately before application. Circulate asphalt during heating. Do not raise asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed asphalt manufacturer's recommended temperature limits during asphalt heating. Do not heat asphalt within 25 deg F of flash point. Discard asphalt maintained at a temperature exceeding finished blowing temperature for more than 4 hours.

1. Apply hot roofing asphalt within plus or minus 25 deg F of equiviscous temperature.

C. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging built-up roofing components or adjacent building construction.

3.4 VAPOR-RETARDER INSTALLATION

A. 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 inches and 6 inches, respectively. Seal laps by rolling.

B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.5 INSULATION INSTALLATION

A. Install where indicated on drawings.

B. Coordinate installing membrane roofing system components, so roof level insulation is not exposed to precipitation or left exposed at the end of the workday.

C. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

D. Comply with membrane roofing system and rigid insulation manufacturer’s written instructions for installing roof insulation and the Contract Documents.

E. Roof insulation assembly units that become wet or damaged after installation must be removed and replaced.

F. Provide pressure treated wood along gutter edges and as otherwise shown on the drawings. Provide additional stops as recommended by the manufacturer of the roofing materials.

G. Mechanically Fastened and Adhered Insulation: Secure insulation utilizing the attachment method outlined on Sheet GI-2.

1. Where mechanical attachment is indicated, utilize the manufacturer specified fastener pattern as required to resist uplift pressure at corners, perimeter, and field of roof.
2. Where adhesive ribbons are indicated, utilize the manufacturer specified ribbon spacing/pattern as required to resist uplift pressures at corners, perimeter, and field of roof.
    a. Firmly press and compress insulation until the adhesive has fully bonded the insulation in place.

H. Joints of insulation units shall be butted tight; leave no more than 1/4-inch gap between abutting boards, maximum. Joints exceeding 1/4 inch shall be filled with insulation.

I. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 with insulation.
1. Offset the joints of the insulation board stock a minimum of 1-foot from the joints of the underlying rigid insulation units.
2. Offset the joints of the insulation board stock a minimum of 1-foot from the joints of the preceding row of rigid insulation units.

J. Cut and fit insulation within 1/4-inch of nailers, projections, and penetrations.

K. Install tapered insulation under area of roofing to conform to slopes indicated.

L. Install crickets formed out of tapered edge strips at all curbed penetrations.

M. Tapered Edge Strip Assembly Installation at Roof Drain Sumps:
1. Lay-out insulation assembly and tapered edge strip products to result in sump configuration shown in the Drawings.
2. Install perlite tapered edge strip at the full perimeter of each sump to conform to the configurations, as shown in the Drawings. Adhere to vapor retarder with hot asphalt.
3. Bevel-cut corners of flat stock insulation and/or cover board as necessary to create a smooth and continuous transition for membrane installation without creating a bridging membrane condition.

N. Coordinate installing roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.

O. Comply with roofing system manufacturer's written instructions for installing roof insulation.

P. Install cover board in a continuous straight line and with end joints staggered between rows. Cut and fit insulation within 1/4-inch of nailers, projections, and penetrations. Fill gaps exceeding 1/4-inch with asphalt.
1. Adhere cover board in adhesive ribbons to resist uplift pressure at corners, perimeter, and at field of roof.

Q. Cant Strips: Install and secure preformed 45-degree insulation cant strips at junctures of built-up roofing membrane system with vertical surfaces or angle changes greater than 45 degrees.

3.6 BUILT-UP ROOFING INSTALLATION, GENERAL

A. Install roofing according to roofing manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."

B. Coordinate installation of roofing so insulation and other components of built-up roofing not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work to cover exposed built-up roofing sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt with joints and edges sealed.
2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
3. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Asphalt Heating:
1. Heat roofing asphalt and apply within plus or minus 25 deg. F of equiviscous temperature unless otherwise required by roofing system manufacturer.
2. Do not raise roofing asphalt temperature above equiviscous temperature range more than one hour before time of application.
3. Do not exceed roofing asphalt manufacturer's recommended temperature limits during roofing asphalt heating.
4. Do not heat roofing asphalt within 25 deg. F of flash point.
5. Discard roofing asphalt maintained at a temperature exceeding finished blowing temperature for more than 4 hours.

3.7 ROOFING MEMBRANE INSTALLATION

A. Install built-up bituminous roofing membrane according to roofing manufacturer’s written instructions, starting at the low point of the roof.

B. Adhere to roof system manufacturer’s supplemental requirements for steep-slope roof installation where applicable.

C. Ply Sheets Installation:
1. Apply four (4) ply sheets over installed cover board using a felt laying machine or mop in by hand.
2. Ply sheets shall be installed into Type IV hot asphalt.
3. All layers of roofing shall be laid free of wrinkles, creases, or fish mouths.
4. Sheets shall be laid directly behind the asphalt applicator. Sufficient pressure shall be exerted during application, using an aluminum rake or broom, to ensure prevention of air pockets.
5. Sheets shall be fully bonded to the prepared substrate and each other.
6. Install ply sheets to result in full 4-ply construction, with 8-1/2-inches ply sheet exposure.
7. Install ply sheets with end laps no less than 6-inches, minimum.
8. Install roofing membrane sheets so side and end laps shed water.
9. Accurately align roofing membrane sheets, without stretching, and maintaining uniform side and end laps.

10. All mopping of asphalt shall be a nominal 25 pounds per 100 square feet and shall be total in coverage leaving no breaks or voids.
11. Prime metal flanges into uniform layer of plastic cement, and provide reinforcing sheets, installed into hot asphalt, over all sheet metal flanges.

D. Cap Sheet Installation:
1. Cut cap sheet into manageable lengths between 12 feet and 16 feet long. Lay cut sections flat and allow to relax and flatten per manufacturer's recommendations.
2. Install cap sheet sections "flopped" into hot asphalt, maintaining a rolling motion toward outside edge. Broom in cap sheet to eliminate voids and entrapment of air pockets.
3. Install cap sheet parallel with slope, unless otherwise approved by the manufacturer.
4. Install cap sheet with all ends lapped minimum 12-inches, and side laps minimum 2-inches.
5. Install cap sheet with end laps staggered minimum 3 feet from adjacent sections of cap sheet.
6. Set each sheet in a solid uniform coating of asphalt. Laps shall not buck water and shall be totally sealed.
7. All mopping of asphalt shall be nominal 25 pounds per 100 square feet and shall be total in coverage leaving no breaks or voids.
8. 45 degree cut underlying cap sheet corners at all T-joint locations and step in all T-joints. T-joints shall be fully sealed without voids.
9. The cap sheet shall be carefully installed so as to not track asphalt onto finished surface. All spills and tracks shall be treated with embedded granules.
10. Apply roofing granules to cover exuded bead at laps while bead is hot (carry a granule bag during application of top ply sheet).
11. At the end of the day's work or when precipitation is imminent, a water cut-off shall be built at all open edges. Cut-offs can be built using adhesive or plastic cement and non-porous roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the installation of resumption of roofing.

3.8 FLASHING AND STRIPPING INSTALLATION

A. Bridge junctures of vertical and horizontal surfaces with 45-degree cant strips.

B. Install reinforcing sheets at horizontal to vertical transitions, including curbed penetrations and flange type penetrations.

C. Install reinforcing sheet over cant strips and other sloping and vertical surfaces, at roof edges, and over flange at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions and as follows:
1. Prime substrates with asphalt primer if required by roofing system manufacturer.
2. Adhere reinforcing sheet over roofing membrane at cants in a solid mopping of hot roofing asphalt.
3. Install reinforcing sheet and adhere to substrate in a solid mopping of hot roofing asphalt.

D. Flashing sheet:
1. Adhere flashing sheet to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg. F. Apply hot roofing asphalt to back of flashing sheet if recommended by roofing system manufacturer.

2. Extend flashing sheet up walls or parapets a minimum of 8-inches above roofing membrane and 6-inches onto field of roofing membrane.
3. Install lengths not greater than 6-foot long.
4. Install in a manner to avoid bridging / voids. Verify all end laps overlap a minimum of 4-inches and are totally sealed.
5. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing at 8-inches on center.
6. Seal top termination of base flashing with a strip of glass-fiber fabric set in asphalt roofing cement.
7. Provide corner patches or folded corners at base flashing corners. Blind cut corners are not acceptable. Folded corner tabs shall be cut so that tabs do not exceed 4".

3.9 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Roof Consultant.
   1. Notify Roof Consultant or Owner 48 hours in advance of date and time of inspection.

B. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

3.10 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Roof Consultant 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 according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075113

THERMOPLASTIC MEMBRANE ROOFING

SECTION 075400

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Adhered Single-ply roof system:

2. Membrane:

a. 80 mil PVC membrane overlay roofing system.

3. Cover board mechanically fastened over existing roof assembly.

4. Substrate Board for replacement at base flashing walls.

1.2 REFERENCE STANDARDS

A. ANSI/SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

B. ANSI/SPRI FX-1 - American National Standard - Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.

C. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

D. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

F. ASTM D4434/D4434M - Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.

G. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

H. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association.

I. SMACNA (ASMM) - Architectural Sheet Metal Manual.

J. UL (RMSD) - Roofing Materials and Systems Directory; Underwriters Laboratories Inc.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Consultant, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing.

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. Review structural loading limitations of roof deck during and after roofing.

5. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.

6. Review governing regulations and requirements for insurance and certificates if applicable.

7. Review temporary protection requirements for roofing system during and after installation.

8. Review roof observation and repair procedures after roofing installation

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings:

C. Samples for Verification: For the following products:

1. Sheet roofing, of color required.

2. Walkway pads or rolls, of color required.

D. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and manufacturer.

B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of compliance with performance requirements.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.

D. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.

E. Field quality-control reports.

F. Warranties: Sample of special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer’s Qualifications and Requirements:

1. A qualified manufacturer that has UL listing and FM Approval for roofing system identical to that used for this Project.

2. Technical representative of materials manufacturer shall periodically observe provide written documentation of the work in progress.

3. The technical representative, as a minimum, shall be present to observe deck preparation, general installation procedures, and final completion; submit documentation of manufacturer’s final acceptance.

4. Work shall not proceed until such observations have been made and conditions have been approved in writing by the manufacturer.

5. Technical representative shall perform a punch list inspection upon substantial completion of the project indicating all items in need of attention, including conformance to manufacturer’s published installation instructions and these contract documents; provide documentation.

B. Installer Qualifications and Requirements:

1. 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 warranty.

2. In continuous business under same name for past ten (10) years.

3. Completed at least five (5) successful installations of specified materials and systems on projects of similar scope.

4. Contractor shall provide all personnel trained in application of materials and systems and shall maintain supervision as specified elsewhere.

5. Installer Field Supervision: Require Installer to maintain a full-time supervisor / foreman on the job site during times that roofing system installation is in progress, and who is experienced in installation of the specified roofing systems.

C. Source Limitations: Obtain components including roof insulation fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

D. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

E. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading:

B. 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.

1. Do not leave unused rigid insulation and other sheet materials on the roof overnight or when roofing work is not in progress unless protected and elevated from weather or other moisture sources.

C. Storage and Protection:

1. Store and handle roofing sheets in a dry, well-ventilated, weathertight place to ensure no possibility of significant moisture pickup.

D. Control temperature of storage areas in accordance with the manufacturer’s instructions.

E. Store materials on pallets, blocking, or other means to keep materials from coming into contact with moisture, dirt, debris, and other contaminates.

F. 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.

G. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

H. Protect roof level rigid insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with rigid

insulation manufacturer's written instructions for handling, storing, and protecting during installation.

I. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.10 PROJECT CONDITIONS

A. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed in accordance with manufacturer's written recommendations and warranty requirements.

B. Have necessary waterproof canvas or plastic sheeting readily available in case of emergency. The Contractor will be held liable for any damage to building interior due to Contractor's negligence.

C. Protect open roofs and flashings to prevent the entrance of moisture or rain water into the existing structure until new materials have been applied and roof is in a watertight condition.

D. Roofing materials shall not be applied when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present on the deck.

E. Adhesive applied roofing materials shall not be applied when dirt, dust, debris, oil, etc.is present on the deck.

1.11 WARRANTY

A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of the new membrane roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, substrate board, roofing accessories, and other components of the new membrane roofing system.

2. Warranty Period: Twenty (20) years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:

1. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Source Limitations: Obtain components including roof insulation, fasteners, cover board, and adhesive for roofing system from same manufacturer as membrane roofing.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall 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 base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.

2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. IBC Basic Wind Speed Design Criteria: The completed membrane roof system shall meet or exceed IBC Basic Wind Speed Design Criteria as shown on the Structural Drawings.

D. FM Global Listing: Roofing, base flashings, and component materials shall comply with requirements in FM Global 4450 or FM Global 4470 as part of a single-ply roofing system and shall be listed in FM Global's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

E. Solar Reflectance Index: Not less than 47 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

F. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

G. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 SUBSTRATE BOARD (for replacement at base flashing walls)

A. Substrate Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 5/8-inch-thick, factory primed.

1. Products: Subject to compliance with requirements, provide the following:

a. Georgia Pacific, Dens Deck Prime.

b. USG; SECUROCK, UltraLight Coated Glass-Mat Roof Board.

c. Dexcell, FA Glass Mat Roof Board.

d. Or approved.

2.4 ROOFING MEMBRANE

A. PVC Sheet: ASTM 4434/ 4434D fiberglass reinforced Type II.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Carlisle – Syntec: Sure-Flex FRS.

b. Sarnafil: G 410-80

c. Or pre-bid approved.

2. Thickness: 80 mils, minimum.

3. Exposed Face Color: Tan or Gray

2.5 AUXILIARY MEMBRANE ROOFING MATERIALS

A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

B. Flashing Sheet: Manufacturer's standard sheet flashing of same material, type, reinforcement, and color as sheet membrane.

1. Thickness: 60 mils, minimum.

2. Exposed Face Color: Match field membrane.

C. Membrane Bonding Adhesive: Manufacturer's standard.

D. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

E. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1-inch-wide by 0.05 inch thick, pre-punched.

F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to wood substrate, and acceptable to membrane roofing system manufacturer.

G. Membrane Clad Metallic Coated Steel Sheet: Manufacturer's standard membrane coated, heat weldable sheet metal capable of being formed into a variety of shapes and profiles; 24-gauge core steel, G90 galvanized steel with PVC coating laminated to one side.

H. Miscellaneous Accessories: Provide pourable sealers, preformed cone, and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

I. Sealant: Provide manufacturer's standard butyl sealant or tape for compression type terminations to membrane. Polyurethanes are not permitted.

J. Backer Rod: Closed cell, polyethylene, flexible, rope-like foam joint backing material complying with ASTM C1330 and ASTM D5249. Sized for application of seismic joint.

PART 3 - 2.6 RIGID INSULATION (for replacement of damaged existing insulation)

A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thickness indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 2, Grade 2, closed-cell, coated polymer-bonded, glass-fiber mat facer on both major surfaces.

1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.

2. Thermal Resistance: Tested for Long Term Thermal Resistance (LTTR) in accordance with CAN/ULC-S770. R-5.7 per inch of thickness.

3. Compressive Strength: Nominal 20 psi per ASTM D 1621.

4. Flame Spread: 35 or less per ASTM E 84.

5. Thickness: 2.1-inches maximum per layer. Stack to meet elevation of existing insulation assembly.

C. Tapered Insulation: ASTM C 1289, Type II, Class 2, Grade 2, closed-cell, coated polymer-bonded, glass-fiber mat facer on both major surfaces.

1. Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.

2. Compressive Strength: Nominal 20 psi per ASTM D 1621.

3. Flame Spread: 35 or less per ASTM E 84.

4. Unit Size: 4 feet by 4 feet.

5. Maximum thickness of insulation fill units shall not exceed 2 1/2 inches.

D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to ½-inch per 12-inches unless otherwise indicated.

E. Insulation Unit Fasteners: Fasteners shall be utilized to secure the insulation units to the substrate.

1. Meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing membrane components to substrate, tested by Manufacturer for required pullout strength, and acceptable to roofing system Manufacturer.

2. Provide fastener lengths as required to penetrate wood sheathing a minimum of 3/4-inch, and maximum 1-1/4-inch. Fasteners shall not protrude through deck materials where deck is exposed to interiors.

3.2 COVER BOARD

A. General: Provide preformed roof insulation cover boards that comply with the requirements and referenced standards and selected from manufacturer's standard size and of thickness indicated.

B. Cover Board: 1/2-inch thick, closed-cell polyisocyanurate foam core bonded to high performance coated glass fiber facers on both sides; conforming to ASTM C 1289, Type II, Class 4, (80 psi minimum) with square edges.

1. Products: Subject to compliance with requirements, provide the following:

a. Atlas: AC Foam. HS Cover Board.

b. Hunter Panel: H-Shield. HD Cover Board.

c. Or pre-bid approved equal.

3.3 WALKPADS

A. Flexible Walkpads: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, manufactured by roofing system manufacturer.

PART 4 - EXECUTION

4.1 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.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

4.2 PREPARATION

A. Prepare existing roof system in accordance with requirements of 07 01 50 Preparation for Reroofing.

B. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections and protrusions.

C. 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.

D. Verify that the existing drainage system is free flowing prior to beginning work.

E. Prepare all surfaces and details in accordance with the manufacturer’s written installation instructions and these Contract Documents. Refer to Specifications Section 070150.

4.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, provided they do not conflict with the requirements herein.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of each workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roofing and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.

D. Remove existing roof membrane base flashing and wall flashings as shown. Remove only as much of the existing roof in one day as can be made watertight in the same day.

E. Vent (cut membrane in grid pattern) existing membrane in the field of the roof as recommended by manufacturer and as specified in Section 07 01 50 “Preparation for Reroofing”.

4.4 SUBSTRATE BOARD INSTALLATION AT BASE FLASHINGS

A. Install substrate board with long joints in continuous straight lines, perpendicular to roof with end joints tightly butted substrate boards together.

1. Secure substrate board according to current code requirements.

2. Gaps in joints shall not exceed 3/16”. All gaps must be filled flush with the surface of the board with membrane manufacturer approved all-purpose sealant.

B. Thoroughly clean the substrate board in compliance with the membrane manufacturer’s recommendations prior to membrane installation.

4.5 INFILL INSULATION INSTALLATION

A. Coordinate installing roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Install insulation under area of roofing where indicated on Drawings to achieve required thickness to match elevation of existing insulation assembly. Install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.

4.6 COVER BOARD INSTALLATION

A. Install cover board over prepared existing roof membrane.

B. Install cover board under area of roofing to be completed by end of each work day.

C. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.

D. Install cover boards over prepared substrate with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 12-inches in each direction. Loosely butt cover boards together adhere to insulation assembly.

1. Mechanically attach cover boards to resist uplift pressure at corners, perimeter, and field of roof as shown on the Structural Drawings.

4.7 TAPERED INSULATION CRICKET INSTALLATION

A. Install tapered insulation at select roof areas as indicated on the Drawings to provide positive slope to drain.

B. Fasten tapered insulation board under area of roofing to conform to slopes indicated.

C. Align tapered edge of board parallel with angle of slope.

D. Verify that cricket boards slope to drain a minimum ¼-inch per foot in the direction of drainage way or drain, and that ponding water will not occur.

E. Install cricket materials behind curbed penetrations exceeding 2-feet in width to aid in roof drainage.

F. Joints shall be butted tight; leave no more than 1/8-inch gap between abutting boards, maximum. Joints exceeding 1/8-inch shall be filled in with rigid board insulation.

G. Install cover board over tapered insulation prior to covering with roof membrane.

4.8 ADHERED ROOFING INSTALLATION

A. Adhere roofing over cover board or substrate board at areas to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before retaining.

1. Install sheet according to manufacturer’s written installation instructions for the specified warranty term limits.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

C. Accurately align roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer.

D. Bonding Adhesive: Apply to substrate and underside of roofing at rate required by manufacturer and follow the roofing manufacturer’s adhesive installation recommendation. Do not apply to splice area of roofing membrane.

E. In addition to adhering, mechanically fasten roofing membrane securely at terminations, penetrations over 18-inches wide, and perimeter of roof.

F. Apply roofing with side laps shingled with slope of roof deck where possible.

G. Seams: Overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions, to ensure a watertight seam installation. Clean seam areas prior to welding when soiled or contaminated.

1. Test lap edges with probe to verify seam weld continuity. Apply cut-edge sealant to seal cut edges of sheet when required or recommended by the manufacturer’s written installation instructions.

2. Verify field strength of seams a minimum of twice daily, take samples from membrane overages to be trimmed for fit and finish.

    a. Submit tests to Owner / Consultant daily with time and location of test clearly identified upon request.

    b. Do not tack weld test samples to finished product.

3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roofing in place with clamping ring.

I. Spread sealant over field membrane at roof edges to receive integrated membrane clad metal flashing. Embed and mechanically attach membrane clad metal flashing and strip into roofing for watertight performance in accordance with the manufacturer's installation recommendations.

4.9 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates in a fashion acceptable to the manufacturer.

1. Apply bonding adhesive to substrate and underside of sheet flashing at required rate. Do not apply to seam area of flashing.

2. Overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

3. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

4. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

4.10 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

1. Locate walkway directly adjacent to and full length of curbed mechanical equipment on serviceable sides of equipment.

2. At low sides of walkways allow weeps in continuous weld 4-inches long every four feet minimum one per walkway.

4.11 SPLASH PADS:

A. Splash Pads: Install 16-inch by 24-inch walkway products at locations of downspout outlets where drainage evacuates to roof level. Heat weld to adhere walkway products to roof membrane according to roofing system manufacturer's written instructions.

4.12 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Consultant.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

4.13 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, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Consultant 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 according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075416

SHEET METAL FLASHING AND TRIM

SECTION 076200

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. Formed roof-drainage sheet metal fabrications.
2. Formed low-slope roof sheet metal fabrications.
3. Formed wall sheet metal fabrications.
4. Formed equipment support flashing.

B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 075113 “Built-Up Asphalt Roofing" for installation of sheet metal flashing and trim integral with BUR roofing.
3. Section 075323 “Ethylene-Propylene-Diene-Monomer (EPDM) Roofing” for installation of sheet metal flashing and trim integral with elastic sheet membrane roofing.

1.3 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.

1.4 REROOFING (PREINSTALLATION) CONFERENCE

A. Reroofing (Preinstallation) Conference: Reference Section 070150 “Preparation for Reroofing.”

1.5 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Detail fabrication and installation layouts, and keyed details. Distinguish between shop- and field-assembled work.
2. Include identification of material, thickness, weight, and finish for each item and location in Project.
3. Include details for forming, including profiles, shapes, seams, and dimensions.
4. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
5. Include details of termination points and assemblies.
6. Include details of roof-penetration flashing.
7. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counter flashings as applicable.
8. Include details of special conditions.
9. Include details of connections to adjoining work.
10. Detail formed flashing and trim at scale of not less than 3 inches per 12 inches.

C. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.

D. Qualification Data: For fabricator.

E. Sample Warranty: For special warranty.

F. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.6 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. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

1.7 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. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

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.

1.8 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 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
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: Sheet metal flashing and trim assemblies shall 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 shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" 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 according to SPRI 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. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Stainless-Steel Sheet: ASTM A167, Grade 2D, Type 304, soft temper, smooth finish No 2B bright; cold rolled finish.
   1. Gauge: As indicated in the Sheet Metal Fabrications Schedule.

C. Pre-painted, Metallic-Coated Steel Sheet (exposed flashing & coping): ASTM A6531 A653M G90 coating designation. Restricted flatness steel sheet, metallic coated by the hot-dip process and pre-coated by the coil-coating process to comply with ASTM A 755/A 755M.

   1. High-Performance Organic Finish: Two-coat thermocured system containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements of AAMA 2604, except as modified for 1000 hours of humidity and salt spray resistance.
   2. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5-mil.
   3. Gauge: As indicated in the Sheet Metal Fabrications Schedule.
   4. Color: To vary by location and be selected by the Owner from manufacturer’s full range of standard colors.

2.3 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation, and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Self-Adhered High Temperature Sheet: High temperature, minimum 30-mil- thick, SBS or butyl-based rubberized sheet; maximum permanence rating of 0.05 perm, self-adhering sheet with thermoplastic film on exterior face and release-paper backing.

   1. Henry Blueskin PE 200 HT.
   2. Grace Ultra.
   3. Carlisle WIP 300 HT.
   4. Or pre-bid approved equal.

C. Fasteners: Wood screws, ring shank nails, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

   1. General:

      a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM sealing washers under heads of exposed fasteners bearing on weather side of metal.
      b. Blind Fasteners: Galvanized self-drilling screws gasketed with hex washer head.
      c. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
      d. Pop Rivet: Westward Steel with Button head, 1/8-inch diameter blind rivet, in color to match color of sheet metal.

D. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.

1. Products:

a. Pecora Corporation; BC-158.
b. Tremco Incorporated; Butyl Sealant.
c. Or pre-bid approved equal.

2. Location of Use: As indicated on the Drawings and in locations protected from UV degradation.

F. Elastomeric Sealant: Single component, Nonsag, Fast Curing, Silyl-Terminated Polyether or Polyurethane Sealant: ASTM C920, Type S, Grade NS, Class 50 for Use NT, M, A, G and O.

1. Products:

a. BASF Building Systems; Masterseal NP 150.
b. Tremco Incorporated; Dymonic FC.
c. Or pre-bid approved equal.

2. Location of Use: Exposed joints in sheet metal flashing and trim, and other metal-to-metal applications.

G. 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.

H. Clamping Bands: Stainless steel, sizes as dictated by conditions, screw type tightening system.

I. Lead Sheet: 4 lbs. desilverized lead sheet.

J. Plastic Cement: ASTM D4856, asbestos free, of consistency required for application.

K. Solder:

1. For Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
2. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn60, 60 percent tin and 40 percent lead.

2.4 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. 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.

2. Obtain field measurements for accurate fit before shop fabrication.
3. 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.
4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances: 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. Use lapped expansion joints where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

E. Seams (where indicated for soldering): Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

1. Soldering: Completely penetrate or sweat the joint. Pre-tin surfaces with the use of non-corrosive resin flux. Remove flux residue after soldering or tinning.

F. Seams (for non-solderable metal): Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

2.5 SHEET METAL FABRICATIONS SCHEDULE

A. Beauty Ring: Fabricate with profile as shown on the drawings.

1. Joint Style: Sealed and riveted.
2. Pre-painted, Metallic-Coated Steel Sheet: 24 gauge.
3. Color: To be selected by the Owner.

B. Cleat: Fabricate with profiles as shown on the Drawings.

1. Joint Style: 1/4" gap between butted ends.
2. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal. Size cleats a minimum of one gauge thicker than component to be cleated.

C. Coping: Fabricate with profile as shown on the drawings.

1. Joint Style: Standing seam.
2. Pre-painted, Metallic-Coated Steel Sheet: 24 gauge.
3. Color: To be selected by the Owner.

D. Counter Flashing: Fabricate with profile as shown on the drawings.

1. Joint Style: Lapped and sealed.
2. Pre-painted, Metallic-Coated Steel Sheet: 24 gauge.
3. Color: To be selected by the Owner.

E. Curb Cap Flashing: Fabricate with profile as shown on the drawings.

1. Joint Style: Seamed and soldered.
2. Stainless Steel: 24 gauge.

F. Drip Edge Flashing: Fabricate with profiles as shown on the Drawings.

1. Joint Style: Lapped and sealed, with interlocked hem.
2. Pre-painted, metallic-coated steel sheet: 24 gauge.
3. Color: To be selected by the Owner.

G. Fascia Cap: Fabricate with profile as shown on the drawings.

1. Joint Style: Seamed, riveted and sealed, with interlocking hem.
2. Pre-painted, metallic-coated steel sheet, 24 gauge.
3. Color: To be selected by the Owner.

H. Fascia Panel: Fabricate with profile as shown on the drawings.

1. Joint Style: S-locks at 48-inches on center.
2. Pre-painted, metallic-coated steel sheet, 22 gauge.
3. Provide vertically oriented breaks at 24" on center in sheet metal panels to control oil-canning (flat fascia panels only).
4. Color: To be selected by the Owner.

I. Multi-Pipe Flashing (Cap, Shroud, Boot): Fabricate with profile as shown on the drawings.

1. Joint Style: Seamed and soldered.
2. Stainless Steel: 24 gauge.

J. Saddle Flashing: Fabricate with profiles as shown on the Drawings.

1. Joint Style: Seamed, riveted and sealed, with interlocking hem.
2. Pre-painted, metallic-coated steel sheet, 24 gauge.
3. Color: To be selected by the Owner.

K. Storm Collars:

1. Joint Style: Interlocking, seamed, and soldered. Pop-rivet for extra strength where required.
2. Stainless Steel: 24 gauge.
3. Products – Type as indicated on the drawings:

    a. SBC Industries, Clamp Umbrella
    b. SBC Industries, Bell
    c. Or pre-bid approved equal.

L. Wall Joint Flashing: Fabricate with profiles as shown on the Drawings.

1. Joint Style: Seamed, riveted and sealed, with interlocking hem.
2. Pre-painted, metallic-coated steel sheet, 24 gauge.
3. Color: To be selected by the Owner.

M. Wall Panel: Fabricate with profile as shown on the drawings.

1. Joint Style: S-locks at 48-inches on center.
2. Pre-painted, metallic-coated steel sheet, 24 gauge.
3. Provide vertically oriented breaks at 24" on center in sheet metal panels to control oil-canning.
4. Color: To be selected by the Owner.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter brackets and flat-stock 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. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.

1. Gutter Profile: As indicated in the drawings and according to cited sheet metal standard.
2. Color: To be selected by the Owner.
3. Gutters with Girth up to 15 Inches: Fabricate from the following materials:

    a. Pre-painted, Metallic-Coated Steel Sheet: 0.022 inch thick.
4. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters.
5. Gutter Brackets: Form from 1/8-inch-thick by 1-1/2inch wide steel. Prime and paint to match or provide cover to match gutter.
6. Gutter Hangers: Hang Fast.

B. Collection Box: Fabricate as indicated on the Drawings.

1. Joint Style: Lapped and sealed.
2. Pre-painted, Metallic-Coated Steel Sheet: 24 gauge.
3. Color: To be selected by the Owner.

C. Downspouts: Fabricate rectangular downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.

1. Hanger Style: Straps.
2. Color: To be selected by the Owner.

D. Scupper Liner: Fabricate scuppers to dimensions as indicated on the Drawings.

a. Joint Style: Seamed and soldered.
b. Stainless Steel: 24 gauge.

E. Scupper Liner Receiver: Fabricate scuppers to dimensions as indicated on the Drawings.

a. Joint Style: Seamed and soldered.
b. Stainless Steel: 24 gauge.

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.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, 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 and edges with roller. Cover underlayment within 14 days.

3.3 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 1 inch apart. Attach each cleat at the rates indicated on the Drawings and with two fasteners minimum. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.
6. Do not use graphite pencils to mark metal surfaces.

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. Coat concealed side of stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

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.

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. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work.

1. Do not use torches for soldering.
2. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
3. Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

3.4 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections with riveted and soldered joints or joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Fasten gutter spacers to front and back of gutter.
2. Anchor and loosely lock back edge of gutter to continuous cleat.
3. Anchor gutter with gutter hangers spaced not more than 36 inches apart to roof deck, unless otherwise indicated, and loosely lock to front gutter bead.
4. Install gutter with expansion joints at locations indicated, but not exceeding 50 feet apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch telescoping joints.

1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 36 inches o.c.
2. Provide elbows at base of downspout to direct water away from building.

D. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.

1. Anchor scupper closure trim flange to exterior wall and seal with elastomeric sealant to scupper.

E. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches in direction of water flow.

3.5 ROOF FLASHING INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.

C. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.

1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 6-inch centers.
2. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.

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. Extend counterflashing 4 inches over base flashing unless noted otherwise. Lap counterflashing joints minimum of 4 inches. Secure in waterproof manner by means.

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 ERECTION 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.

3.7 CLEANING AND PROTECTION

A. Clean and neutralize flux materials. Clean off excess solder.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. 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.

END OF SECTION 076200

STORM DRAINAGE PIPING SPECIALTIES

SECTION 221423

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. Roof drains.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 METAL ROOF DRAINS

A. Cast-Iron, Large-Sump, General-Purpose Roof Drains:

1.	Standard:	ASME A112.6.4, for general-purpose roof drains.
2.	Body Material:	Cast iron.
3.	Dimension of Body:	14-inch diameter, minimum.
4.	Drain Line Outlet:	As indicated on the Drawings – field verify.
5.	Combination Flashing Ring and Gravel Stop:	Required.
6.	Flow-Control Weirs:	Not required.
7.	Outlet:	Bottom.
8.	Outlet Type:	As required to secure to existing drain piping
9.	Extension Collars:	Not required.
10.	Underdeck Clamp:	Required.
11.	Expansion Joint:	Not required.
12.	Sump Receiver Plate:	Required.
13.	Dome Material:	Cast iron.

14. Perforated Gravel Guard: Not required.
15. Vandal-Proof Dome: Not required.
16. Water Dam: Not required.

2.2 FLASHING MATERIALS

A. Lead Flashing Sheet: 4.0-lb/sq. ft.

B. Fasteners: Metal compatible with material and substrate being fastened.

C. Metal Accessories: Sheet metal strips, clamps, anchoring devices, and similar accessory units required for installation; matching or compatible with material being installed.

D. Solder: ASTM B 32, lead-free alloy.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install replacement roof drains where indicated on the Drawings.

1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.

3.2 FLASHING INSTALLATION

A. Fabricate flashing from single piece of metal unless large pans, sumps, or other drainage shapes are required. Join flashing according to the following if required:

1. Lead Sheets: Solder joints of 4.0-lb/sq. ft. lead sheets, 0.0625-inch thickness or thinner.

3.3 PROTECTION

A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.

B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221423

BASIC MECHANICAL MATERIALS AND METHODS

SECTION 230500

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section includes the following:

1. Temporary removal of existing rooftop HVAC equipment and associated exposed ductwork, as required for new roof Work.
2. Reinstallation of existing equipment.

1.2 QUALITY ASSURANCE

A. Use personnel with appropriate experience to perform work on HVAC equipment.

B. All materials shall be installed according to manufacturer’s published instructions and Contract Documents.

1.3 COORDINATION

A. Coordinate installation of required supporting devices and other structural components with reroofing operations.

PART 2 - PRODUCTS

2.1 SHEET METAL

A. Zinc-Coated (Galvanized) Steel Sheet ASTM A 653/A 653M, G90 (Z275) coating designation; structural quality, 22 gauge galvanized core steel.

2.2 RELATED MATERIALS

A. Provide misc. accessories, components, and materials required for a complete and proper installation.

PART 3 - EXECUTION

3.1 MATERIALS STORAGE AND HANDLING

A. Deliver materials to the Project site with Manufacturer's labels intact and legible. Handle materials with care to avoid damage. Store materials inside, protected from weather, dirt and construction dust.

3.2 DISCONNECTION AND RECONNECTION

A. Disconnect units as required for lifting.

B. Install supports under units where shown on the Drawings.

C. Reconnect units after completion of roof system installation.

3.3 PROTECTION

A. Protect all Work and materials against loss or damage. Close all pipe openings with caps or plugs. At final completion, thoroughly clean and deliver all Work and equipment in an unblemished new condition.

B. Protect existing wiring, circuits, piping, conduits, etc., from damage during course of Work.

C. Contractor shall be responsible for damage to adjacent and/or related components of Work, including control systems, due to improper disconnection/reconnection.

3.4 CLEANING

A. General: Clean all dirt and construction dust and debris from all mechanical facilities and equipment. Touch up paint where finish has been damaged by this Work.

3.5 OPERATION TEST

A. Prior to acceptance of completed project, operate all mechanical systems modified for a period of at least five days of eight hours each to demonstrate fulfillment of the requirements of the contract.

END OF SECTION 230500

BASIC ELECTRICAL MATERIALS AND METHODS

SECTION 260500

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section describes the following:

1. Disconnection, re-connection, repair, replacement, or relocation of existing electrical conditions at mechanical units, wall mounted conduit, and all areas requiring upgrades as a result of roof replacement activities.

1.2 QUALITY ASSURANCE

A. Meet requirements of the 2021 Oregon Electrical Specialty Code (OESC).

B. Qualifications:
1. Use personnel with appropriate experience to perform work on energized equipment and circuits.
2. All materials shall be installed according to manufacturer's published instructions and Contract Documents.

1.3 SUBMITTALS

A. Submit Shop Drawings and Product Data.

1.4 WIRING METHODS

A. Wiring methods shall match existing electrical installation method and be installed to local codes.

PART 2 - PRODUCTS

2.1 CONDUIT AND FITTINGS

A. Zinc coated steel EMT may be employed in all dry, protected locations. Rigid conduits shall be used at all through roof penetrations. Assemble conduits and secure to boxes, panels, etc., with appropriate fittings to maintain electrical continuity. Size conduit for the quantity of type THW conductors installed, per code requirements. All conduits shall be securely supported and fastened.

B. Galvanized steel conduits and like fittings utilized at exterior applications.

2.2 BOXES

A. Outlet and junction boxes shall be code gauge galvanized steel of code-required size to accommodate all wire, fittings and devices.

2.3 WIRE AND CONNECTORS

A. Feeder and branch circuit wire shall be soft drawn copper, number 12 minimum size, with 600-volt type THW, THWN or THHN insulation. Wire shall conform to the latest specifications. Wire shall be suitably protected from weather and damage during storage and handling and in first class condition when installed. Splices shall be made using wire nut connections.

2.4 DEVICES

A. Wiring devices shall match existing electrical installation or approved, prior to installation, unless existing devices do not comply with current code requirements. Notify the Owner in the event that non-compliant devices are present that require upgrade.

PART 3 - EXECUTION

3.1 PREPARATION

A. Inspect condition of existing fixtures, wiring, and conduit. Notify the Owner of any damaged or unsatisfactory materials. Upgrade materials to conform to local codes.

B. Locate all electrical services and disconnect prior to work performed in accordance with this section.

3.2 OUTAGES

A. Keep outages to occupied areas to a minimum and pre-arrange all outages with the Owner. Requests for outages shall state the specific dates and hours and the maximum duration, with the outages kept to these specific times. The Contractor will be liable for any damages resulting from unscheduled outages or for those not confined to the pre-approved times.

B. Temporary wiring and facilities, if used, shall be removed and the site left clean before final acceptance.

3.3 SUPPORT

A. Properly and adequately support all electrical equipment, fixtures, panels, outlets, etc. Each fastening device and support shall be capable of supporting not less than four times the ultimate weight of the object or objects fastened to our suspended from the building structure. Supports shall provide proper alignment and leveling of fixtures and equipment.

3.4 INSTALLATION

A. Disconnect existing power supply and extend conduits as required for appropriate height and proper flashing installation.

B. Mount all conduits and junction boxes to solid surfaces, using proper fasteners and clamping devices that have been approved. Junction boxes shall be in accessible locations.

C. Install materials per manufacturer's instructions. Connect to existing wring as required. All components exposed to weather shall be weatherproof.

3.5 CLEANING

A. General: Clean all dirt and construction dust and debris from all electrical facilities and equipment. Touch up paint where finish has been damaged by this work.

3.6 OPERATION TEST

A. Prior to acceptance of completed project, operate all electrical systems for a period of at least five days of eight hours each to demonstrate fulfillment of the requirements of the contract.

END OF SECTION 260500

GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

GENERAL NOTES

1. VERIFY ALL DIMENSIONS AND CONDITIONS OF THE PROJECT, INCLUDING EXISTING CLADDING SYSTEM CONSTRUCTION AND MATERIALS.
2. STAGING AND STORAGE AREAS SHALL BE AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT THE PRE-CONSTRUCTION MEETING. ASSUME A REASONABLE AMOUNT OF STORAGE AND STAGING SPACE WILL BE MADE AVAILABLE.
3. PROTECT BUILDING SURFACES, FINISHES, AND SYSTEMS FROM DAMAGE, DISCOLORATION, ETC. DURING THE COURSE OF ALL CONSTRUCTION ACTIVITIES. REPAIR / REPLACE PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK; RETURN DAMAGED PROPERTY TO PRE-CONSTRUCTION CONDITION.
4. PROVIDE NECESSARY MEASURES FOR PERSONAL FALL PROTECTION DURING THE COURSE OF CONSTRUCTION. PERSONAL FALL PROTECTION DEVICES ARE NOT, NOR WILL BE, PROVIDED BY THE OWNER ON ANY BUILDING AREA DESIGNATED TO RECEIVE WORK.
5. EXISTING MATERIALS AND CONSTRUCTION ARE NOTED ON THE DRAWINGS AS EXISTING OR EXIST. ALL OTHER NOTATIONS INDICATE NEW MATERIALS, PRODUCTS, AND CONSTRUCTION UNLESS OTHERWISE STATED OR INDICATED.
6. ALL CONSTRUCTION SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE, AND ALL LOCAL GOVERNING BUILDING CODES AND ORDINANCES.
7. LOCATE ALL EXISTING UTILITIES WITHIN OR SERVING AREAS OF WORK WHETHER SHOWN HEREIN OR NOT. PROTECT EXISTING UTILITIES FROM DAMAGE.
8. THE REQUIREMENTS FOR THE WORK OF THIS CONTRACT ARE DESCRIBED IN THIS DRAWING SET AND THE PROJECT MANUAL.
9. PROTECT BUILDING OCCUPANTS AND PASSERS-BY FROM FALLING DEBRIS OR EQUIPMENT. DO NOT THROW MATERIALS FROM THE BUILDING OR STAGING AREAS.
10. ROOF AND BUILDING ACCESS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. NO INTERIOR ACCESS IS PRESENT.
11. ALL ITEMS TRANSPORTED TO THE AREAS OF WORK SHALL BE TRANSPORTED USING APPROVED AND SAFE METHODS OF LOADING. DO NOT OVER-LOAD THE STRUCTURE.
12. EMPLOY MEANS OF PROTECTING THE BUILDING OCCUPANTS AND GENERAL PUBLIC AT ALL TIMES DURING THE COURSE OF CONSTRUCTION.
13. TEMPORARY STAGING, SCAFFOLDING, AND RUNWAYS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PLACED IN DESIGNATED LOCATIONS ONLY.
14. COORDINATE PERMITS REQUIRED FOR PERFORMANCE OF THE WORK, INCLUDING BUT NOT LIMITED TO ROAD CLOSURES, PARKING STALLS, SIDEWALK CLOSURES, AND SCAFFOLD ERECTION, WITH THE OWNER'S REPRESENTATIVE.
15. PROTECT BUILDING GROUNDS INCLUDING LANDSCAPE AREAS DURING CONSTRUCTION ACTIVITIES.
16. RESTORE SITE TO PRE-CONSTRUCTION CONDITION AT PROJECT COMPLETION.
17. ALL EXISTING ROOF SURFACES THAT WILL BE SUBJECTED TO FOOT AND/OR EQUIPMENT TRAFFIC IN ANY WAY SHALL BE PROTECTED.
18. ALL SCAFFOLDING, STAIR TOWERS, LADDERS, AND OTHER MEANS OF STAGING AND/OR ACCESS SHALL BE SECURED AT ALL TIMES TO PREVENT PEDESTRIAN ACCESS.
19. EXISTING ROOF SYSTEMS HAVE BEEN TESTED FOR ASBESTOS CONTAINING MATERIALS (ACM). NO ASBESTOS WAS IDENTIFIED WITHIN ROOFING SAMPLES TAKEN FROM ROOF AREAS TO BE REPLACED AS PART OF THIS SCOPE OF WORK.
20. WHILE NOT TESTED FOR ASBESTOS CONTAINING MATERIALS (ACM), ALL REPAIR MASTICS/SEALANTS ARE ASSUMED TO BE ACM. ADDITIONAL TESTING MAY BE REQUIRED BY THE CONTRACTOR TO ENSURE ALL MATERIALS TO BE DEMOLISHED ARE HANDLED APPROPRIATELY WITH REGARD TO OROSHA, DEQ AND OWNER.
21. THIS PROJECT INCLUDES A BASE BID AND TWO ALTERNATES. BID WORK DOES NOT INCLUDE ANY INCREASE IN AREA OR CHANGES TO OCCUPANCY.

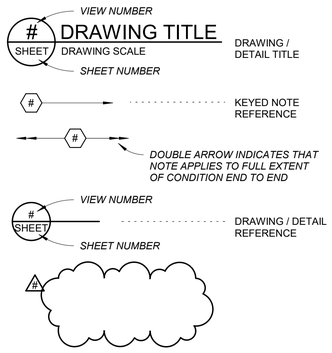
BASE BID: INCLUDES, BUT IS NOT LIMITED TO COMPLETE REMOVAL OF THE EXISTING BUILT-UP ROOF MEMBRANE ASSEMBLIES AT SECTORS A & B. REMOVAL OF EXISTING SHEET METAL FLASHINGS, CURBED EDGES, DRAINS WHERE INDICATED, AND ABANDONED EQUIPMENT. INSTALLATION OF NEW 4-PLY AND A CAP BUILT-UP ROOF MEMBRANE ASSEMBLIES, FLASHINGS, WALL PANELS, COPING, GUTTERS AND DRAINS. INSTALLATION OF PERMANENT FALL PROTECTION . INSTALLATION OF ROOF REPAIRS AT AREAS G, I & L.

ALTERNATE NO.1: DUPLICATES THE BASE BID ARTICLE ABOVE WITH THE REPLACEMENT MEMBRANE AT SECTORS A & B TO BE A TWO-PLY SBS MODIFIED BITUMEN MEMBRANE ASSEMBLY IN LIEU OF 4-PLY AND A CAP BUILT- UP ROOFING.

ALTERNATE NO. 2: INCLUDES, BUT IS NOT LIMITED TO ROOF OVERLAY OF THE EXISTING JP STEVENS HYPALON ROOF ASSEMBLIES AT SECTORS C & D WITH A NEW PVC SINGLE-PLY ROOF RE-COVER ASSEMBLY. DEMOLITION OF EXISTING AND INSTALLATION OF NEW FLASHINGS, WALL PANELS, COPING, SEISMIC JOINT COVERS AND SKYLIGHTS. INSTALLATION OF PERMANENT FALL PROTECTION.

SYMBOLS & ABBREVIATIONS

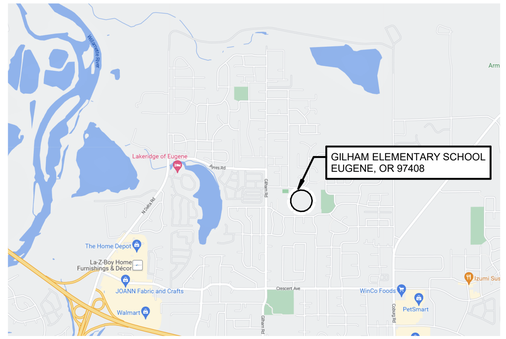
SYMBOLS



ABBREVIATIONS

@	AT (SPACING / FREQUENCY)
CONT.	CONTINUOUS
DIA. or Ø	DIAMETER
EXIST. or (E)	EXISTING
GA	GAGE (THICKNESS)
GALV.	METALLIC-COATED (FOR SHEET METAL) - or - HOT DIPPED GALVANIZED (FOR STRUCTURAL / MISCELLANEOUS METAL)
MAX.	MAXIMUM
MIN.	MINIMUM
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER (SPACING / FREQUENCY)
SIM.	SIMILAR
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
w/	WITH

SITE MAPS



1 GI-1 LOCATION MAP
NOT TO SCALE

N

2 GI-1 VICINITY MAP
NOT TO SCALE

N

3 GI-1 AERIAL VIEW
NOT TO SCALE

N

PROJECT TEAM

OWNER

Eugene School District 4J
200 N. Monroe St.
Eugene, OR 97402

(541) 790-7700

Contact: Glen Macdonald,
Capital Improvement Program

ROOF CONSULTANT

Professional Roof Consultants, Inc.
606 SE 9th Avenue
Portland, Oregon 97214

(503) 280-8759

Contact: Thomas Bertrand, RRO, AHERA

STRUCTURAL CONSULTANT

TM Rippey Consulting Engineers
7650 SW Beveland St. Suite 100
Tigard, Oregon 97223

(503) 443-3900

Contact: Ralph Turnbaugh, P.E.

DRAWING SHEET INDEX

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606 SE 9th Avenue
Portland, Oregon 97214
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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
GENERAL INFORMATION

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO SCALE INDICATED.

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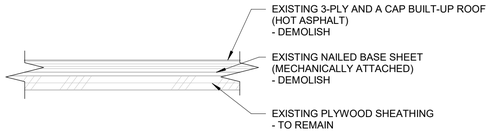
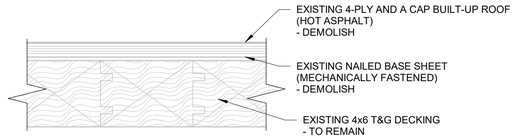
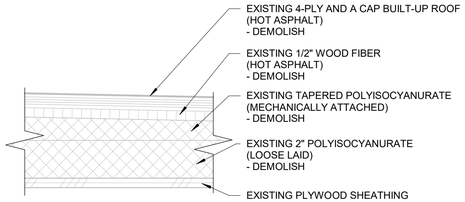
EXISTING ROOF SYSTEMS



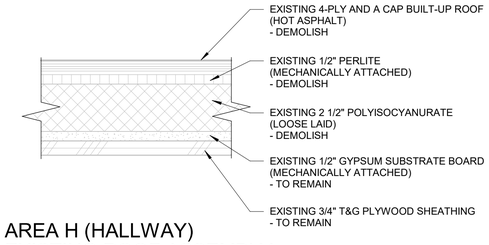
1 GI-2 — AREAS A, B, D, E & K
EXISTING ROOF ASSEMBLY
3" = 1'-0"



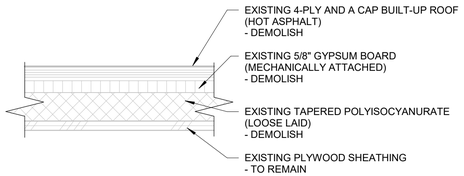
5 GI-2 — AREA H (BASE OF DOME)
EXISTING ROOF ASSEMBLY
3" = 1'-0"



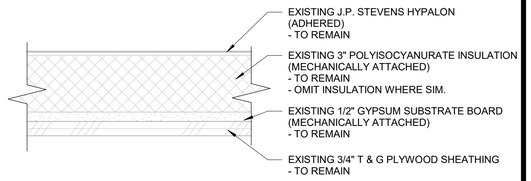
AREA C
2 GI-2 — EXISTING ROOF ASSEMBLY
3" = 1'-0"



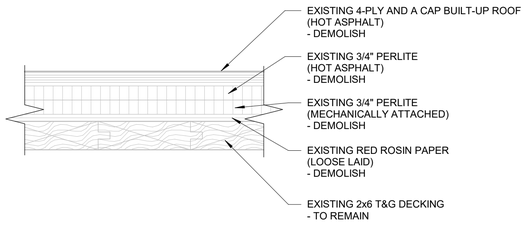
AREA H (HALLWAY)
6 GI-2 — EXISTING ROOF ASSEMBLY
3" = 1'-0"



AREA F
3 GI-2 — EXISTING ROOF ASSEMBLY
3" = 1'-0"

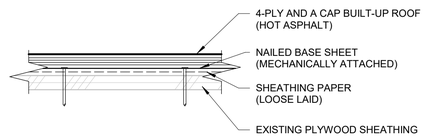


AREAS N,P,T,V & W
7 GI-2 — EXISTING ROOF ASSEMBLY
3" = 1'-0"

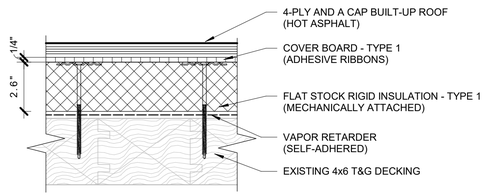


AREA H (DOME)
4 GI-2 — EXISTING ROOF ASSEMBLY
3" = 1'-0"

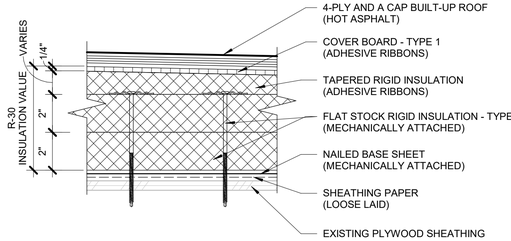
NEW BASE BID ROOF SYSTEMS



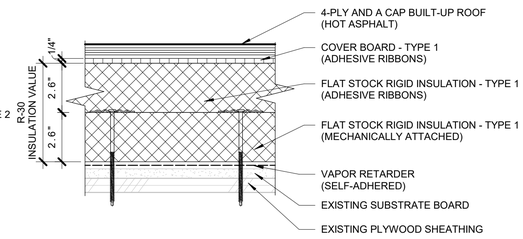
8 GI-2 — AREAS A, B, D, E, & K
ROOF ASSEMBLY 1
3" = 1'-0"



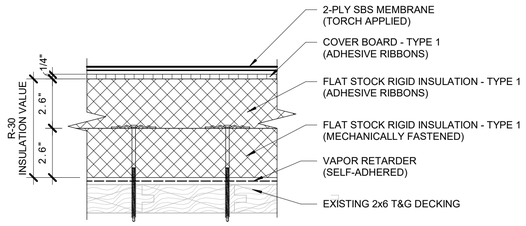
11 GI-2 — AREA H (BASE OF DOME)
ROOF ASSEMBLY 4
3" = 1'-0"



AREAS C & F
9 GI-2 — ROOF ASSEMBLY 2
3" = 1'-0"



AREA H (HALLWAY)
12 GI-2 — ROOF ASSEMBLY 5
3" = 1'-0"



AREA H (DOME)
10 GI-2 — ROOF ASSEMBLY 3
3" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J

GILHAM ELEMENTARY SCHOOL

ROOF REPLACEMENT

Sheet Title:
ROOF ASSEMBLIES

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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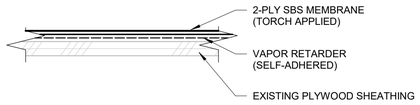
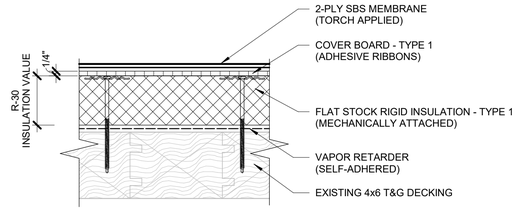
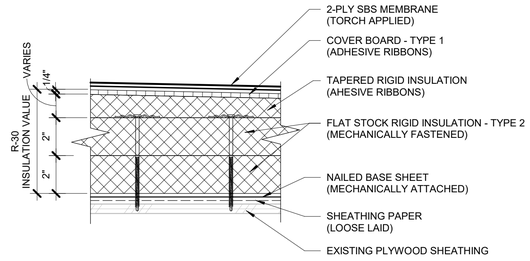
NEW ALTERNATE NO. 1 ROOF SYSTEMS



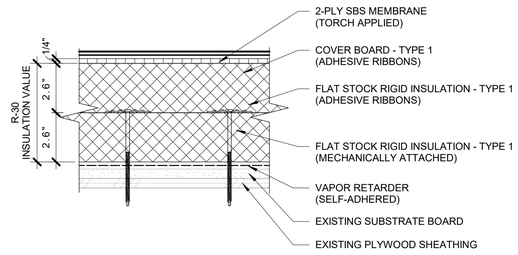
1 GI-3 — AREAS A, B, D, E, & K
ROOF ASSEMBLY 6
3" = 1'-0"



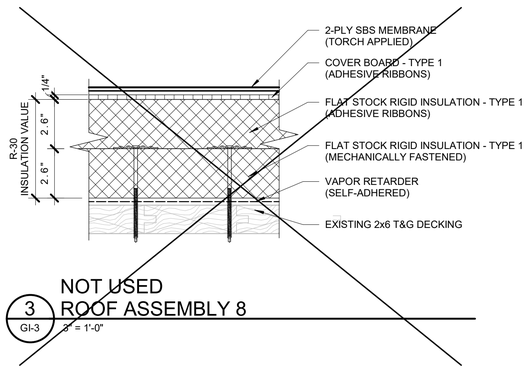
4 GI-3 — AREA H (BASE OF DOME)
ROOF ASSEMBLY 9
3" = 1'-0"



2 GI-3 — AREAS C & F
ROOF ASSEMBLY 7
3" = 1'-0"

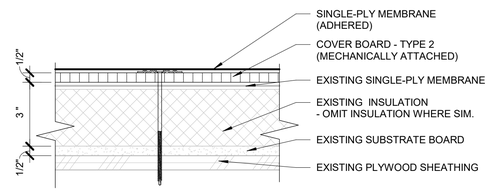


5 GI-3 — AREA H (HALLWAY)
ROOF ASSEMBLY 10
3" = 1'-0"



3 GI-3 — NOT USED
ROOF ASSEMBLY 8
3" = 1'-0"

NEW ALTERNATE NO. 2 ROOF SYSTEMS



6 GI-3 — AREAS N, P, T, V & W
ROOF ASSEMLY 11
3" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
ROOF ASSEMBLIES - ALTERNATES NO. 1 AND NO. 2

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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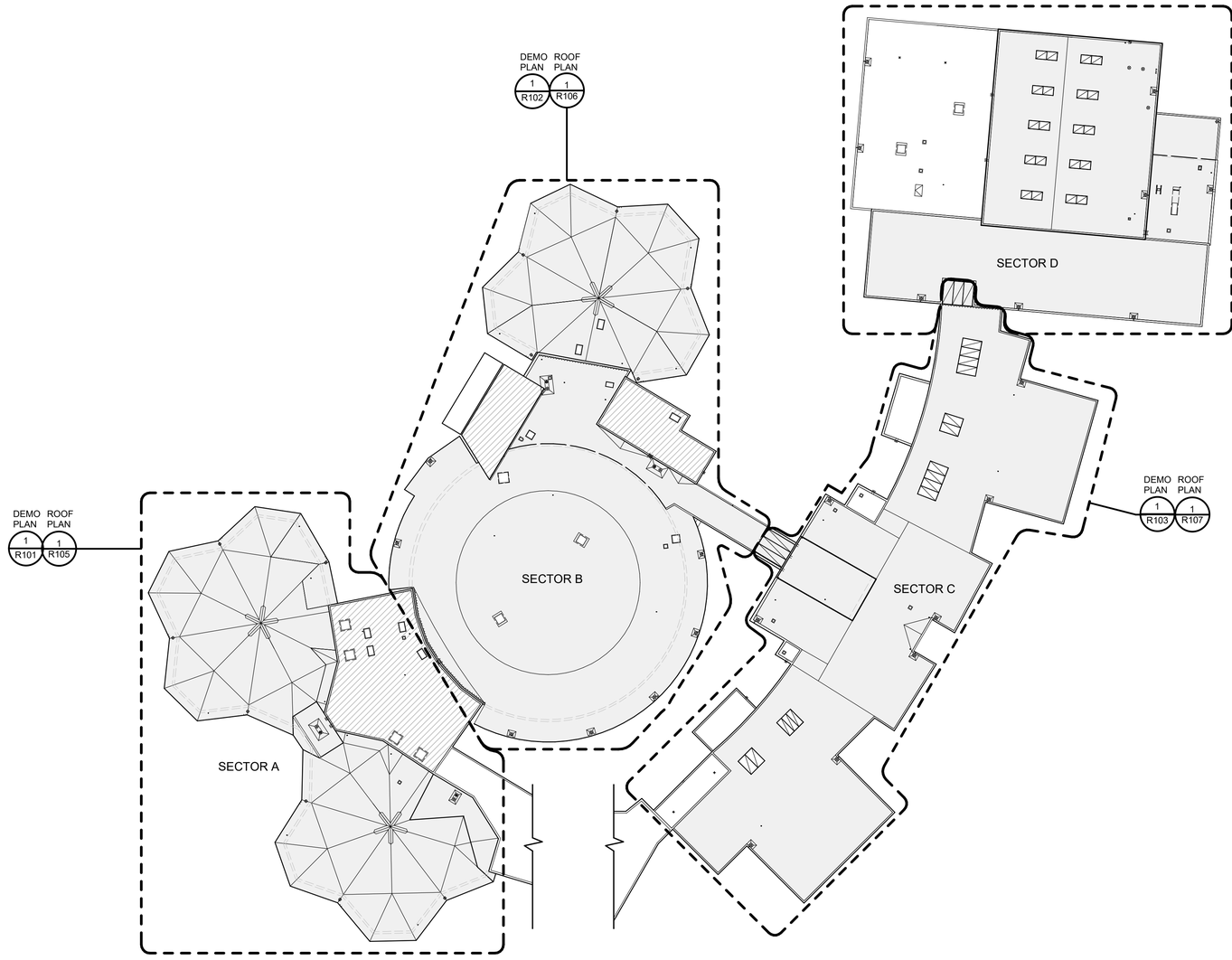
LEGEND

SHADE INDICATES ROOF AREAS WITH ROOF REPLACEMENT OR ROOF OVERLAY SCOPES OF WORK.

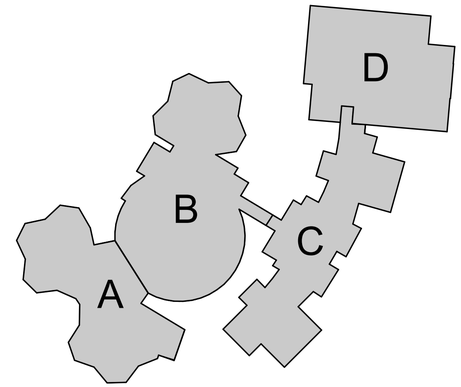
HATCH INDICATES AREAS TO BE REPAIRED



1 R100 OVERALL ROOF PLAN

1/32" = 1'-0"

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
OVERALL ROOF PLAN

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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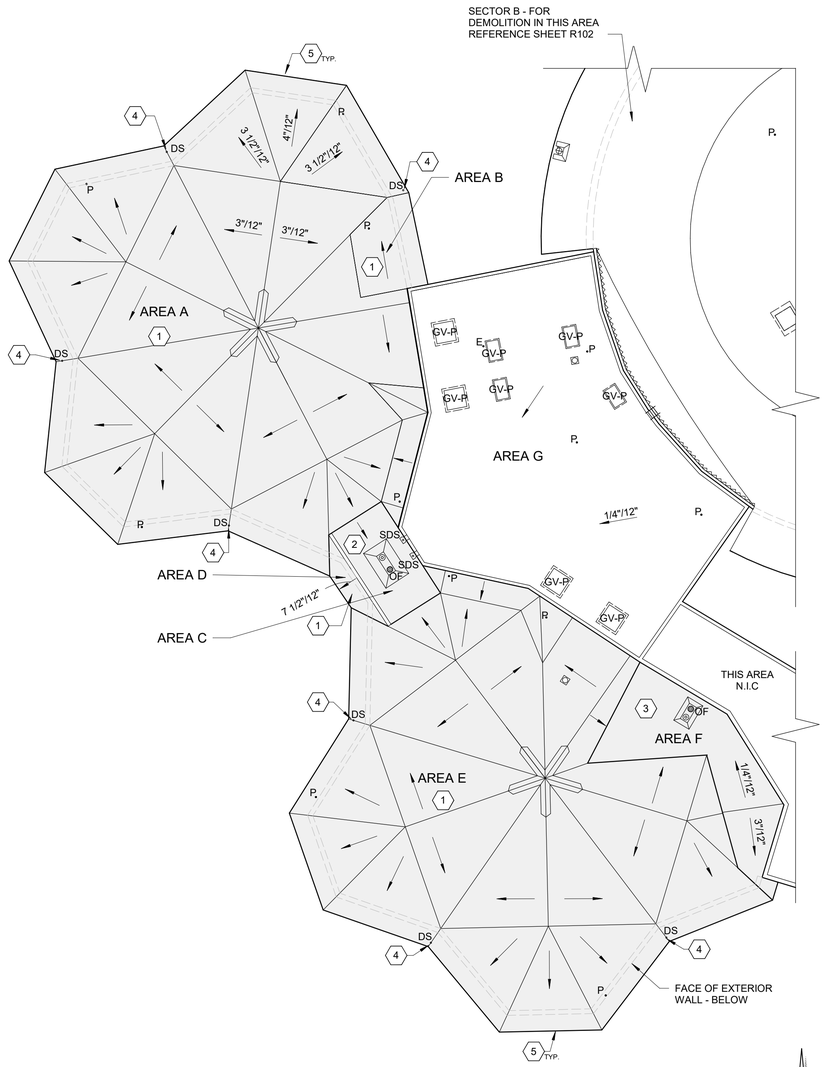


1 R101 SECTOR A - DEMOLITION ROOF PLAN

1/16" = 1'-0"

N

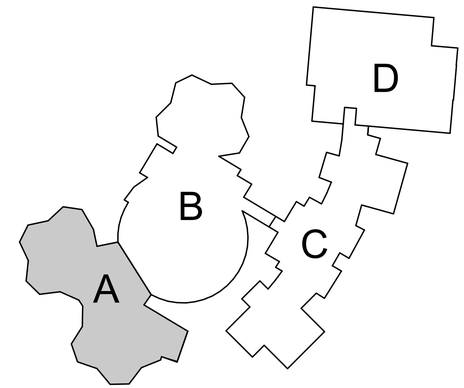
KEY NOTES

1. DEMOLISH EXISTING 3-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING DECK.
   -REFERENCE DETAIL 1/GI-2 FOR EXISTING ASSEMBLY
2. DEMOLISH EXISTING 4-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING DECK.
   -REFERENCE DETAIL 2/GI-2 FOR EXISTING ASSEMBLY
3. DEMOLISH EXISTING 4-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING DECK.
   -REFERENCE DETAIL 3/GI-2 FOR EXISTING ASSEMBLY
4. DEMOLISH EXISTING ROOF DOWNSPOUT DROP DRAIN
   -REFERENCE SHEET R105
5. DEMOLISH EXISTING CURBED EDGE BLOCKING AND SHEET METAL FLASHING.

LEGEND (SYMBOLS APPLY TO SHADED AREA ONLY)

- SHADED AREA INDICATES EXTENT OF ROOF DEMOLITION SCOPE OF WORK
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — EXISTING ROOF SLOPE
- OF — EXISTING SUMPED ROOF DRAIN AND OVERFLOW DRAIN
- SDS — EXISTING THROUGH WALL SCUPPER AND CONDUCTOR HEAD w/ DOWNSPOUT
- P. — EXISTING PLUMBING VENT PIPE PENETRATION
- EXISTING CURBED FAN
- EXISTING RIDGE VENT
- DS — EXISTING DOWNSPOUT DROP

KEY PLAN



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GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR A - DEMOLITION PLAN

1/4" 1/2" 1" 2"

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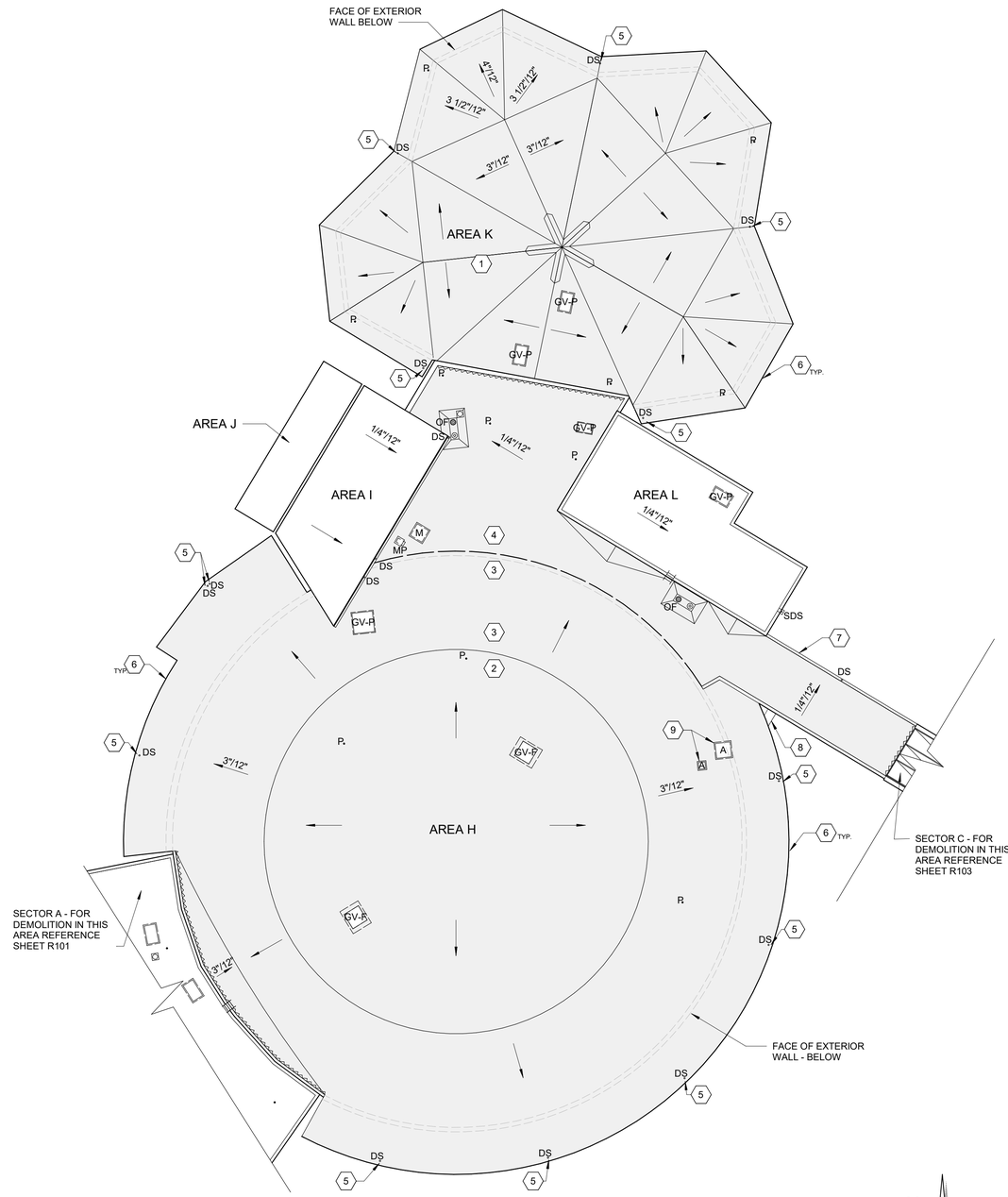


1 R102 SECTOR B - DEMOLITION ROOF PLAN

1/16" = 1'-0"

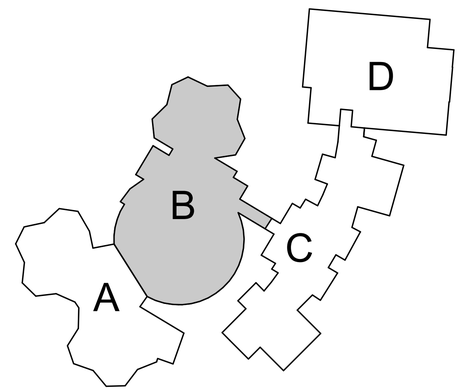
KEY NOTES

1. DEMOLISH EXISTING 3-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING DECK.
   -REFERENCE DETAIL 1/GI-2 FOR EXISTING ASSEMBLY
2. DEMOLISH EXISTING 4-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING DECK.
   -REFERENCE DETAIL 4/GI-2 FOR EXISTING ASSEMBLY
3. DEMOLISH EXISTING 4-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING DECK.
   -REFERENCE DETAIL 5/GI-2 FOR EXISTING ASSEMBLY
4. DEMOLISH EXISTING 4-PLY AND A CAP BUILT-UP ROOF DOWN TO THE EXISTING SUBSTRATE BOARD.
   -REFERENCE DETAIL 6/GI-2 FOR EXISTING ASSEMBLY
5. DEMOLISH EXISTING DOWNSPOUT DROP DRAIN
   -REFERENCE SHEET R106
6. DEMOLISH EXISTING CURBED EDGE BLOCKING AND SHEET METAL FLASHING.
7. DEMOLISH EXISTING GUTTER ASSEMBLY, DO NOT DAMAGE EXISTING DOWNSPOUT AND DOWNSPOUT CONNECTION THROUGH THE WALL.
8. DEMOLISH METAL ROOF PANEL.
9. DEMOLISH ABANDONED CURBS.

LEGEND (SYMBOLS APPLY TO SHADED AREA ONLY)

- SHADED AREA INDICATES EXTENT OF ROOF DEMOLITION SCOPE OF WORK
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — EXISTING ROOF SLOPE
- OF — EXISTING SUMPED ROOF DRAIN AND OVERFLOW DRAIN
- SDS — EXISTING THROUGH WALL SCUPPER AND CONDUCTOR HEAD w/ DOWNSPOUT
- P — EXISTING PLUMBING VENT PIPE PENETRATION
- MP — EXISTING CURBED MULTI-PIPE PENETRATION
- GV-F — EXISTING CURBED FABRA-SYLE GRAVITY VENT
- GV-P — EXISTING CURBED PENTHOUSE-STYLE GRAVITY VENT
- M — EXISTING CURBED MECHANICAL UNIT
- EXISTING CURBED FAN
- EXISTING WALL-MOUNTED ACCESS LADDER
- EXISTING SEISMIC JOINT
- A — ABANDONED CURB -REFERENCE ASSOCIATED KEY NOTE.
- DS — EXISTING GUTTER AND DOWNSPOUT
- EXISTING RIDGE VENT
- DS — EXISTING DOWNSPOUT DROP

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title: SECTOR B - DEMOLITION PLAN

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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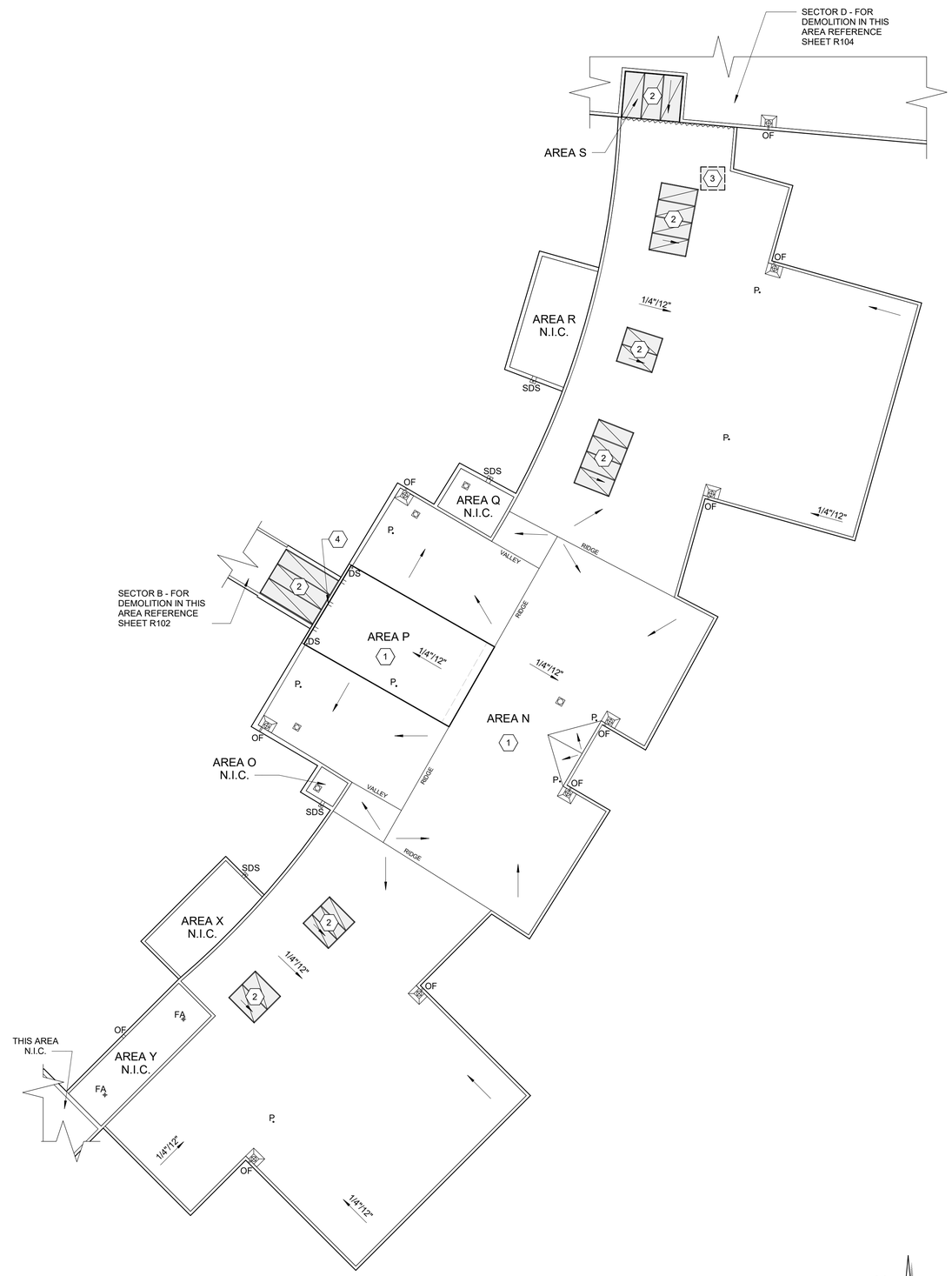


1 R103 SECTOR C - DEMOLITION ROOF PLAN - ALTERNATE NO. 2

1/16" = 1'-0"

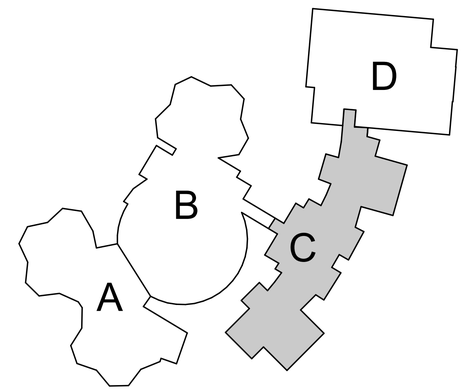
KEY NOTES

1. ALTERNATE NO. 2: EXISTING HYPALON ROOF TO REMAIN -REFERENCE DETAIL 7/GI-2 FOR EXISTING ASSEMBLY
2. ALTERNATE NO. 2: DEMOLISH EXISTING KALWALL SKYLIGHT ASSEMBLY DOWN TO THE EXISTING CURB.
3. ALTERNATE NO. 2: DEMOLISH EXISTING ROOF ASSEMBLY IN A 4'x4' AREA WHERE INDICATED. REMOVE ALL WATER FROM THE ROOF AND REPLACE SATURATED 3" POLYISOCYANURATE WITH DRY PRIOR TO ROOF OVERLAY INSTALLATION. -IF WATER EXTENDS BEYOND THE INITIAL AREA OF DEMOLITION, NOTIFY THE DISTRICT AND ROOF CONSULTANT, ADDITIONAL DEMOLITION MAY BE REQUIRED.
4. ALTERNATE NO. 2: DEMOLISH EXISTING GUTTER ASSEMBLY. DEMOLISH ROOF DRIP EDGE, TOP NAILER, AND RAISED SHEET METAL SCUPPER ALONG THE GUTTER EDGE TO RESULT IN A FLUSH CONDITION ALONG THE ENTIRE GUTTER EDGE.

LEGEND (SYMBOLS APPLY TO SHADED AREA ONLY)

- SHADED AREA INDICATES EXTENT OF ROOF DEMOLITION SCOPE OF WORK
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — EXISTING ROOF SLOPE
- EXISTING TRANSLUCENT SKYLIGHT

KEY PLAN



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606 SE 9th Avenue
Portland, Oregon 97214
P: (503) 280-8759 | F: (503) 280-8866

EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title: SECTOR C - DEMOLITION PLAN - ALTERNATE NO. 2

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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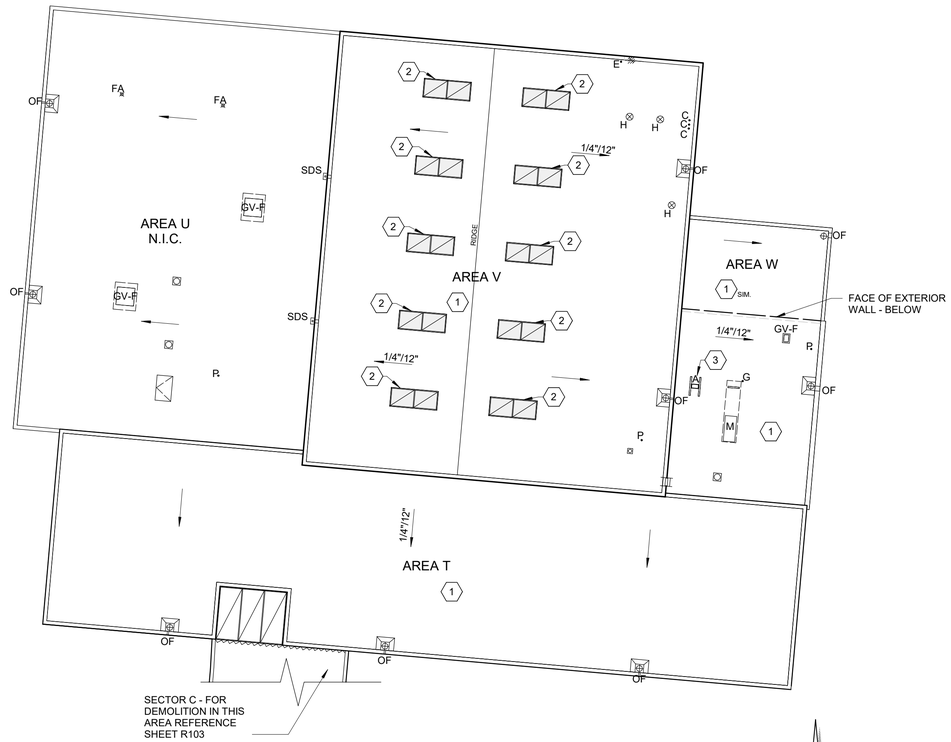
KEY NOTES

1. ALTERNATE NO. 2: EXISTING HYPALON ROOF TO REMAIN -REFERENCE DETAIL 7/GI-2 FOR EXISTING ASSEMBLY
2. ALTERNATE NO. 2: DEMOLISH EXISTING KALWALL SKYLIGHT ASSEMBLY. DOWN TO THE EXISTING CURB.
3. ALTERNATE NO. 2: DEMOLISH ABANDONED CURB, SLEEPERS AND ADJACENT ROOF ASSEMBLY WITHIN 4" IN ALL DIRECTIONS FROM THE ABANDONED COMPONENTS DOWN TO THE DECK.

LEGEND (SYMBOLS APPLY TO SHADED AREA ONLY)

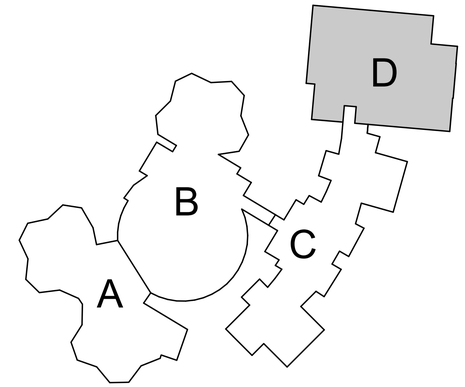
- SHADED AREA INDICATES EXTENT OF ROOF DEMOLITION SCOPE OF WORK
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — EXISTING ROOF SLOPE
- EXISTING TRANSLUCENT SKYLIGHT



1 / R104 SECTOR D - DEMOLITION ROOF PLAN - ALTERNATE NO. 2

1/16" = 1'-0"

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR D - DEMOLITION PLAN- ALTERNATE NO. 2

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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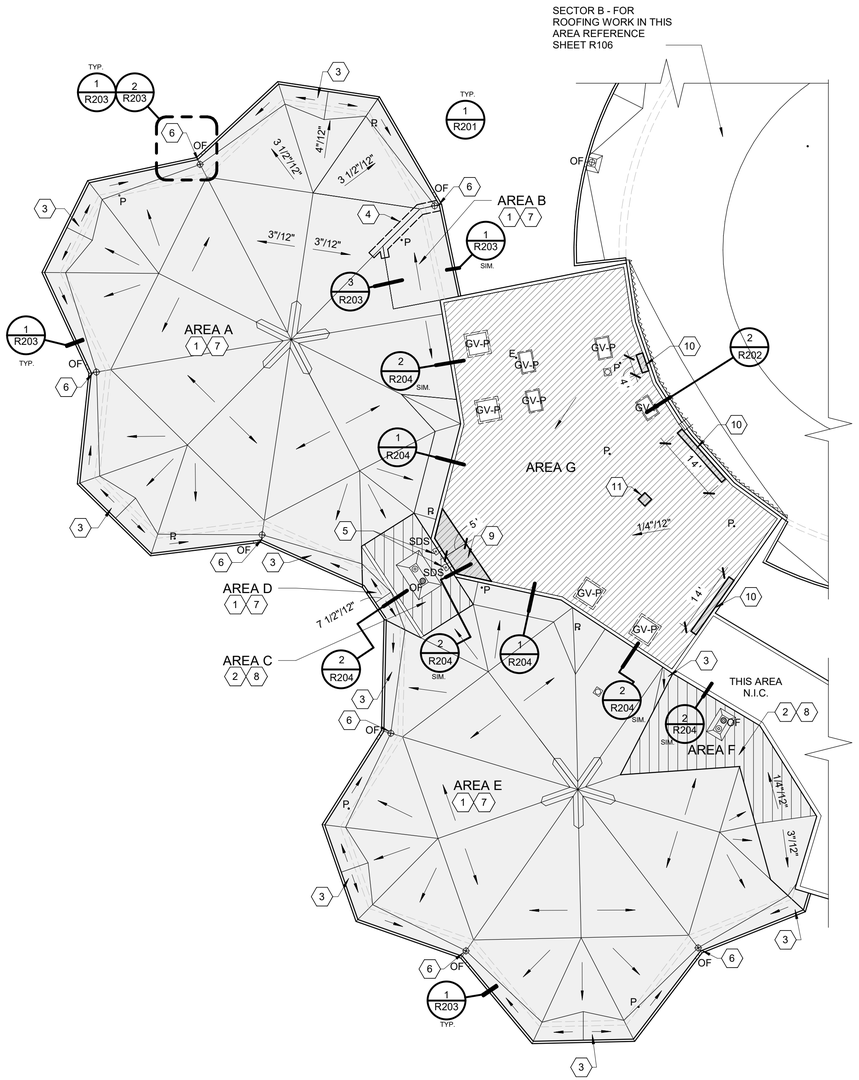


1 R105 SECTOR A - ROOF PLAN

1/16" = 1'-0"

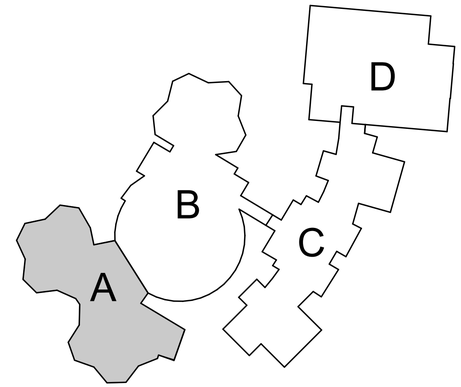
KEY NOTES

1. INSTALL 4-PLY AND A CAP BUILT-UP ROOF ASSEMBLY (ROOF ASSEMBLY 1) -REFERENCE 8/GI-2
2. INSTALL 4-PLY AND A CAP BUILT-UP ROOF ASSEMBLY (ROOF ASSEMBLY 2) -REFERENCE 9/GI-2
3. INSTALL CRICKETS PROVIDING A MINIMUM OF 1/4" FINISH SLOPE IN THE DIRECTION OF DRAINAGE.
4. INSTALL REINFORCED FLUID-APPLIED FLASHING OVER THE FINISHED ROOF MEMBRANE ASSEMBLY WITHIN 12" OF CENTERLINE OF VALLEY.
5. RAISE DOWNSPOUT OUTLETS TO ADJUST FOR NEW ROOF THICKNESS
6. REPAIR ROOF DECK AT DEMOLISHED DOWNSPOUT DROP DRAIN -REFERENCE STRUCTURAL
7. ALTERNATE NO.1: INSTALL 2-PLY SBS ROOF ASSEMBLY (ROOF ASSEMBLY 6). -REFERENCE 1/GI-3
8. ALTERNATE NO.1: INSTALL 2-PLY SBS ROOF ASSEMBLY (ROOF ASSEMBLY 7). -REFERENCE 2/GI-3
9. BUR MEMBRANE REPAIR - REINFORCED FLUID-APPLIED MEMBRANE APPLICATION: COAT AREA OF PONDING TO THE EXTENTS INDICATED.
10. BUR MEMBRANE REPAIR - ALUMINUM COATING APPLICATION.
11. BUR MEMBRANE REPAIR - MEMBRANE PATCH

LEGEND (SYMBOLS APPLY TO SHADED/HATCHED AREAS ONLY)

- SHADED AREA INDICATES EXTENT OF ROOF REPLACEMENT SCOPE OF WORK
- HATCH INDICATES AREAS TO BE REPAIRED
- SHADED HATCH INDICATES PORTION OF ROOF TO RECEIVE A TAPERED INSULATION ASSEMBLY
- INDICATES APPROXIMATE EXTENT / LOCATION OF REPAIR ACTIVITIES REFERENCE KEY NOTES AND SPECIFICATIONS.
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — INDICATES DIRECTION OF ROOF SLOPE- SLOPE IS STRUCTURAL EXCEPT WHERE CRICKETS OR TAPERED INSULATION IS SPECIFICALLY INDICATED.
- 1/R209 1A/R209 OF — SUMPED ROOF DRAIN AND OVERFLOW DRAIN
- SDS — EXISTING THROUGH WALL SCUPPER AND CONDUCTOR HEAD w/ DOWNSPOUT
- 7/R210 P — EXISTING PLUMBING VENT PIPE PENETRATION
- GV-P — EXISTING CURBED PENTHOUSE-STYLE GRAVITY VENT
- 1/R210 — EXISTING CURBED FAN
- EXISTING WALL-MOUNTED ACCESS LADDER
- 4/R203 — EXISTING RIDGE VENT
- OF — ROOF DRAIN & OVERFLOW SCUPPER
- FA — FALL PROTECTION TIE-OFF ANCHOR -REFERENCE STRUCTURAL

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR A - ROOF PLAN

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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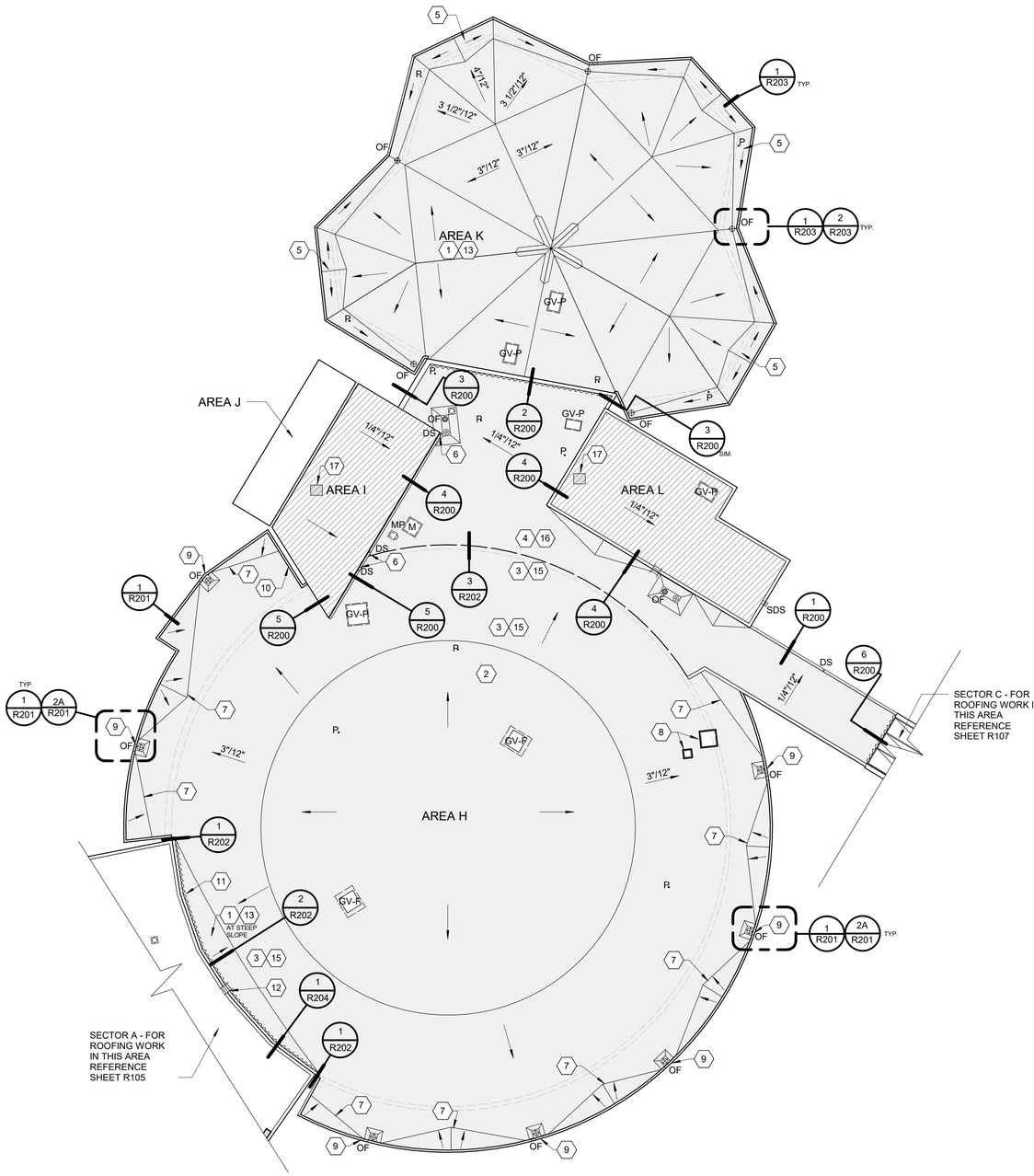


1 R106 SECTOR B - ROOF PLAN

1/16" = 1'-0"

N

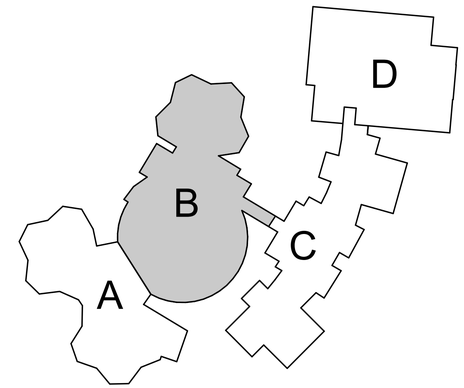
KEY NOTES

1. INSTALL 4-PLY AND A CAP BUILT-UP ROOF ASSEMBLY (ROOF ASSEMBLY 1) -REFERENCE 8/GI-2
2. INSTALL 2-PLY SBS MEMBRANE ROOF ASSEMBLY (ROOF ASSEMBLY 3) -REFERENCE 10/GI-2
3. INSTALL 4-PLY AND A CAP BUILT-UP ROOF ASSEMBLY (ROOF ASSEMBLY 4) -REFERENCE 11/GI-2
4. INSTALL 4-PLY AND A CAP BUILT-UP ROOF ASSEMBLY (ROOF ASSEMBLY 5) -REFERENCE 12/GI-2
5. INSTALL CRICKETS PROVIDING A MINIMUM OF 1/4" FINISH SLOPE IN THE DIRECTION OF DRAINAGE
6. RAISE DOWNSPOUT OUTLETS TO ADJUST TO NEW ROOF THICKNESS
7. INSTALL INSULATION CRICKET WITH 1/2" PANEL SLOPE UTILIZING A 3:1 LENGTH/WIDTH RATIO
8. INFILL DECK AT DEMOLISHED ABANDONED EQUIPMENT -REFERENCE STRUCTURAL
9. REPAIR ROOF DECK AT DEMOLISHED DOWNSPOUT DROP DRAIN -REFERENCE STRUCTURAL
10. TAPER PARAPET ALONG INDICATED EDGE OF ROOF TO PREVENT PARAPET FROM RAISING ABOVE AND BLOCKING THE ADJACENT WINDOWS. TAPER PARAPET TO A CURBED EDGE. -REFERENCE ADJACENT DETAILS.
11. REMOVE EXISTING FOIL FACED TAPE FROM ALONG THE EDGE OF THE SEISMIC JOINT COVER. INSTALL EPDM COVER TAPE STRIP ALONG ENTIRE EDGE OF SEISMIC JOINT.
12. LADDER REPAIR -REFERENCE STRUCTURAL
13. ALTERNATE NO. 1: INSTALL 2-PLY SBS MEMBRANE ROOF ASSEMBLY (ROOF ASSEMBLY 6) -REFERENCE 1/GI-3
14. ALTERNATE NO. 1: INSTALL 2-PLY SBS MEMBRANE ROOF ASSEMBLY (ROOF ASSEMBLY 8) -REFERENCE 3/GI-3
15. ALTERNATE NO. 1: INSTALL 2-PLY SBS MEMBRANE ROOF ASSEMBLY (ROOF ASSEMBLY 9) -REFERENCE 4/GI-3
16. ALTERNATE NO. 1: INSTALL 2-PLY SBS MEMBRANE ROOF ASSEMBLY (ROOF ASSEMBLY 10) -REFERENCE 5/GI-3
17. SINGLE-PLY MEMBRANE REPAIR - MEMBRANE PATCH

LEGEND (SYMBOLS APPLY TO SHADED/HATCHED AREA ONLY)

- SHADED AREA INDICATES EXTENT OF ROOF REPLACEMENT SCOPE OF WORK
- HATCH INDICATES AREAS TO BE REPAIRED
- INDICATES APPROXIMATE EXTENT / LOCATION OF REPAIR ACTIVITIES REFERENCE KEY NOTES AND SPECIFICATIONS.
- RISE / RUN: X" / 12" — DOWNWARD DIRECTION OF SLOPE — ROOF SLOPE; ROOF DECK IS STRUCTURALLY SLOPED TO THE RATIO INDICATED UNLESS OTHERWISE NOTED
- EXISTING SUMPED ROOF DRAIN AND OVERFLOW DRAIN
- EXISTING THROUGH WALL SCUPPER AND CONDUCTOR HEAD w/ DOWNSPOUT
- EXISTING PLUMBING VENT PIPE PENETRATION
- EXISTING CURBED MULTI-PIPE PENETRATION
- EXISTING CURBED FABRA-SYLE GRAVITY VENT
- EXISTING CURBED PENTHOUSE-STYLE GRAVITY VENT
- EXISTING CURBED MECHANICAL UNIT
- EXISTING CURBED FAN
- EXISTING WALL-MOUNTED ACCESS LADDER
- EXISTING SEISMIC JOINT
- EXISTING GUTTER AND DOWNSPOUT
- EXISTING RIDGE VENT
- ROOF DRAIN & OVERFLOW SCUPPER
- FA — FALL PROTECTION TIE-OFF ANCHOR -REFERENCE STRUCTURAL
- SUMPED DRAIN WITH SCUPPER OVERFLOW

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR B - ROOF PLAN

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: FEB 21, 2023

Revisions:

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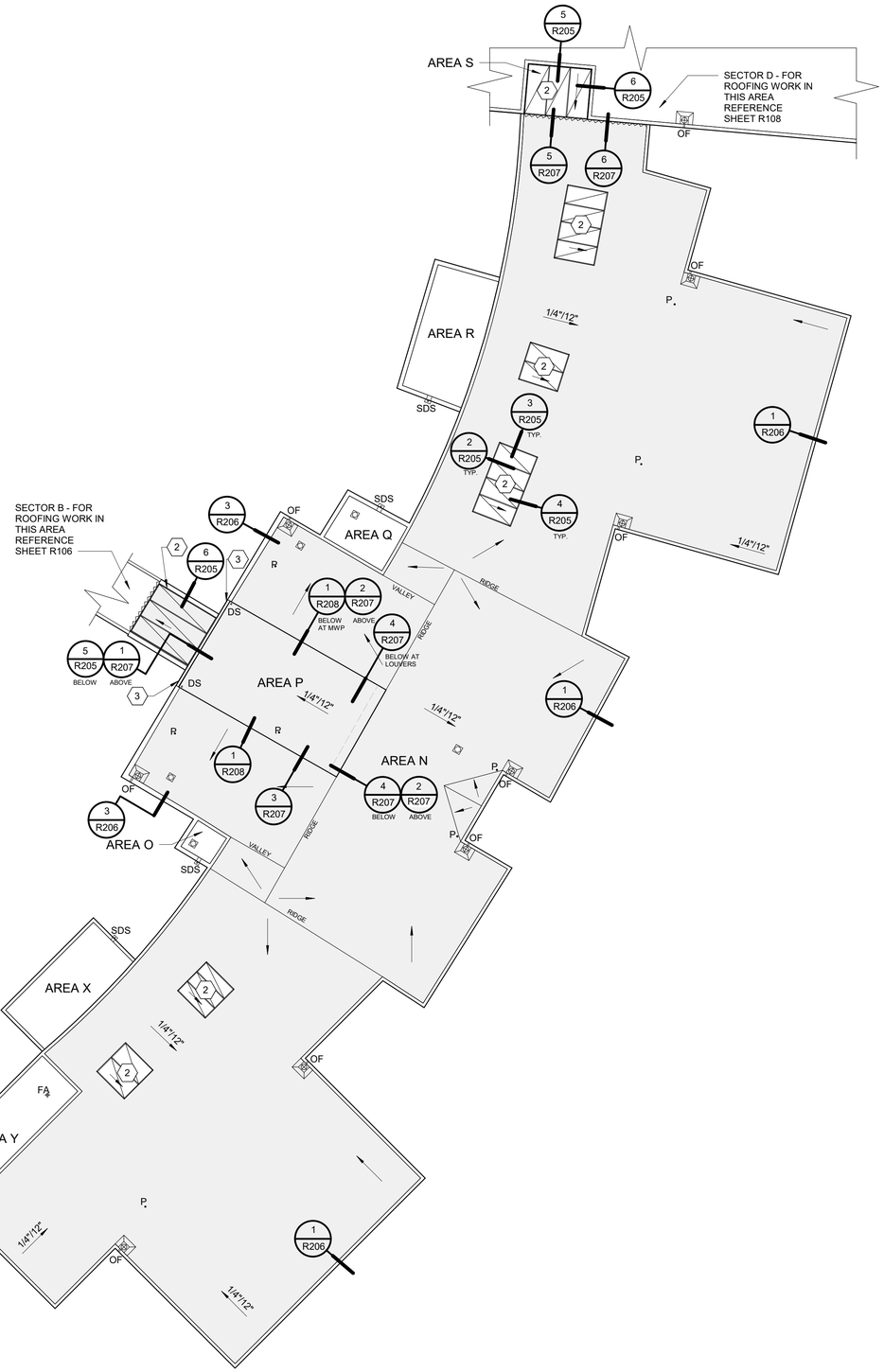


1 R107 SECTOR C - ROOF PLAN - ALTERNATE NO. 2
1/16" = 1'-0"

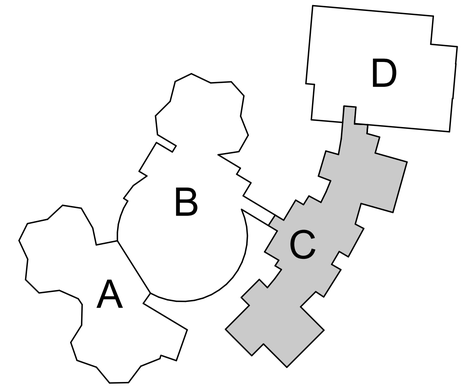
KEY NOTES

1. ALTERNATE NO. 2: INSTALL SINGLE-PLY MEMBRANE ASSEMBLY OVERLAY (ROOF ASSEMBLY 11) -REFERENCE 6/GI-3
2. ALTERNATE NO. 2: INSTALL TRANSLUCENT SKYLIGHT ASSEMBLY - TYPE 1
3. ALTERNATE NO. 2: DIRECT DOWNSPOUTS TO DRAIN ONTO AREA N, BELOW. PROVIDE WALKPAD TO PROTECT THE ROOF BELOW OUTLET

LEGEND (SYMBOLS APPLY TO SHADED AREA ONLY)

- SHADED AREA INDICATES EXTENT OF ROOF REPLACEMENT SCOPE OF WORK
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — EXISTING ROOF SLOPE; ROOF DECK IS STRUCTURALLY SLOPED TO THE RATIO INDICATED UNLESS OTHERWISE NOTED
- 4/R206, 2/R206 — OF — EXISTING SUMPED ROOF DRAIN & THROUGH WALL OVERFLOW (OF) SCUPPER
- 4/R211 — EXISTING CURBED FAN
- EXISTING SEISMIC JOINT
- CURBED TRANSLUCENT SKYLIGHT
- -/--- — FA — EXISTING FALL PROTECTION TIE-OFF ANCHOR -REFERENCE STRUCTURAL
- 5/R211 — P — EXISTING PLUMBING VENT PIPE PENETRATION

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR C - ROOF PLAN - ALTERNATE NO. 2

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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R107

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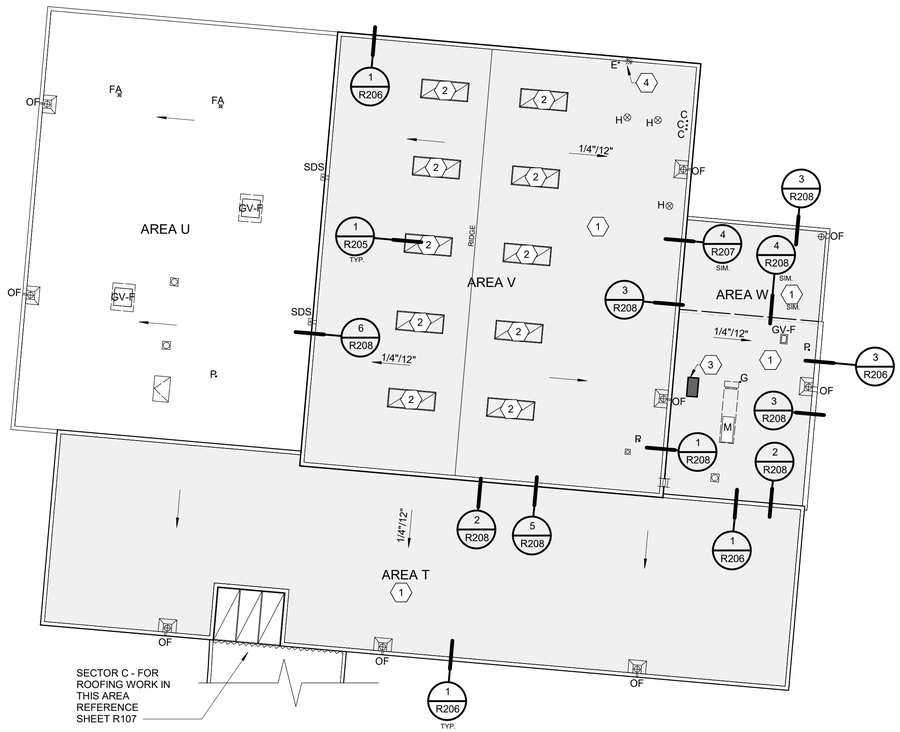
KEY NOTES

1. ALTERNATE NO.2: INSTALL SINGLE-PLY MEMBRANE ASSEMBLY OVERLAY (ROOF ASSEMBLY 11)
   -REFERENCE 6/GI-3
2. ALTERNATE NO.2: INSTALL TRANSLUCENT SKYLIGHT ASSEMBLY - TYPE 2
3. ALTERNATE NO.2: INFILL DECK AT DEMOLISHED ABANDONED EQUIPMENT
   -REFERENCE STRUCTURAL
4. ALTERNATE NO.2: DETACH AND SALVAGE COPING-MOUNTED ANTENNA AND UNISTRUT FOR REINSTALLATION ONTO THE ROOF SIDE VERTICAL FACE OF THE COPING

LEGEND (SYMBOLS APPLY TO SHADED AREA ONLY)

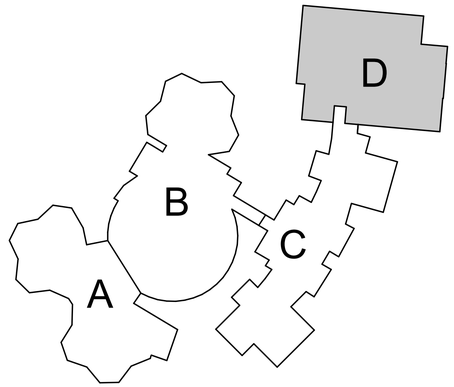
- SHADED AREA INDICATES EXTENT OF ROOF REPLACEMENT SCOPE OF WORK
- RISE / RUN — X" / 12" — DOWNWARD DIRECTION OF SLOPE — EXISTING ROOF SLOPE; ROOF DECK IS STRUCTURALLY SLOPED TO THE RATIO INDICATED UNLESS OTHERWISE NOTED
- 2 / R206 — OF — EXISTING SUMPED ROOF DRAIN & THROUGH WALL OVERFLOW SCUPPER
- 5 / R211 — P — EXISTING PLUMBING VENT PIPE PENETRATION
- 6 / R211 — G — EXISTING GAS PIPE PENETRATION
- - / --- — C — EXISTING CONDENSATION PIPE PENETRATION
- 6 / R211 — E — EXISTING ELECTRICAL CONDUIT PENETRATION
- - / --- — H — EXISTING FLANGED HOT STACK
- GV-F — EXISTING CURBED FABRA-SYLE GRAVITY VENT
- 6 / R208 — SDS — EXISTING THROUGH WALL SCUPPER DRAIN AND CONDUCTOR HEAD w/ DOWNSPOUT
- 4 / R211 — EXISTING CURBED FAN
- CURBED TRANSLUCENT SKYLIGHT
- - / --- — FA — FALL PROTECTION TIE-OFF ANCHOR - REFERENCE STRUCTURAL
- EXISTING WALL-MOUNTED ACCESS LADDER
- EXISTING ANTENNA w/ ELECTRICAL CONDUIT
- 6 / R210 — M — EXISTING HVAC UNIT ON SLEEPER AND CURB.
- 2 / R206 — OF — EXISTING ROOF DRAIN & THROUGH WALL OVERFLOW SCUPPER



1 R108 — SECTOR D - ROOF PLAN - ALTERNATE NO. 2
1/16" = 1'-0"

N

KEY PLAN



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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR D - ROOF PLAN - ALTERNATE NO. 2

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

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R108

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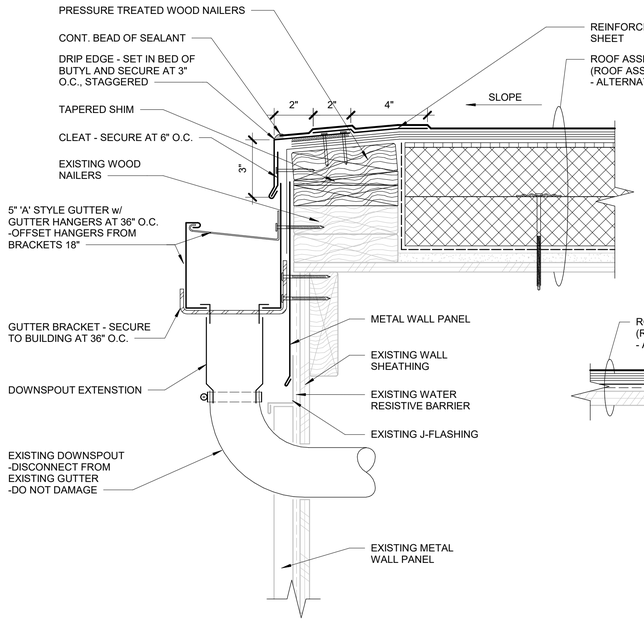
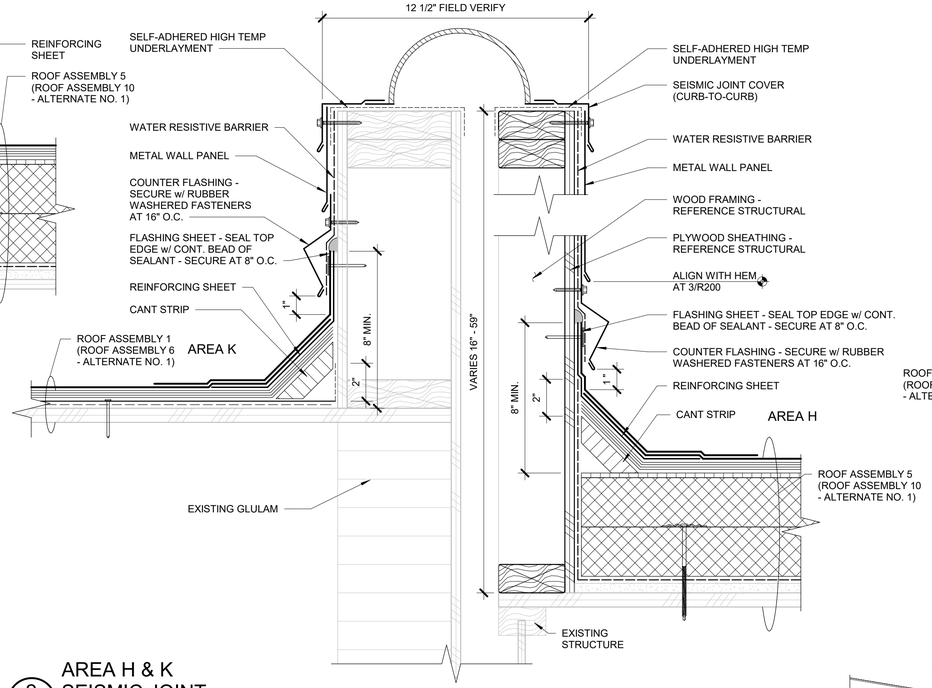
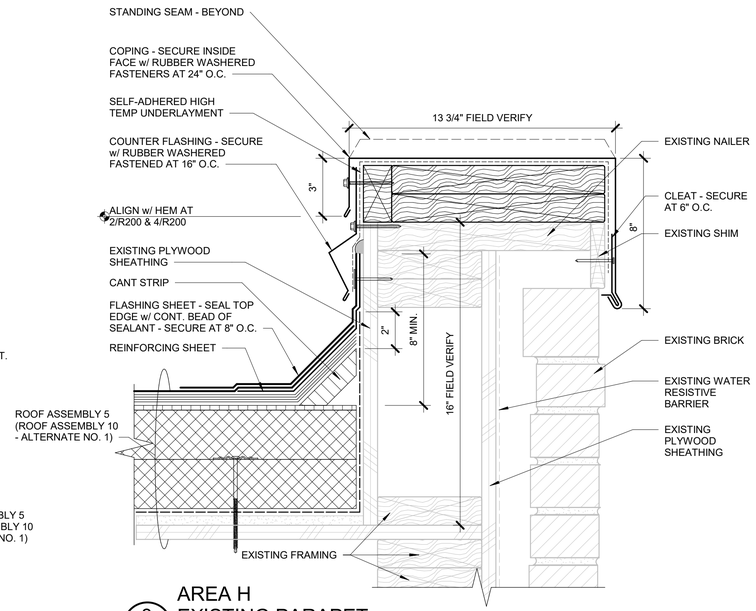


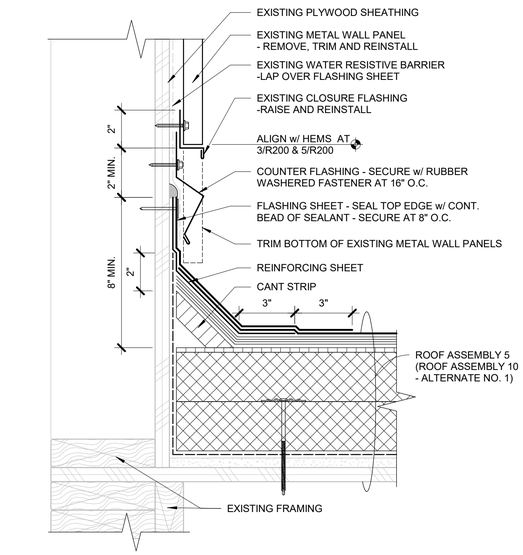
1 R200 AREA H GUTTER EDGE
3" = 1'-0"



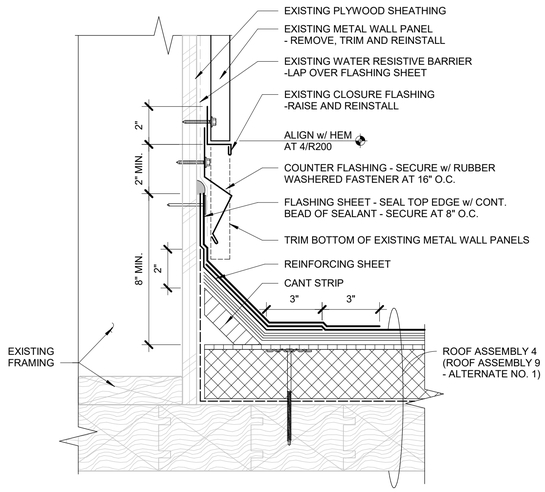
2 R200 AREA H & K SEISMIC JOINT
3" = 1'-0"



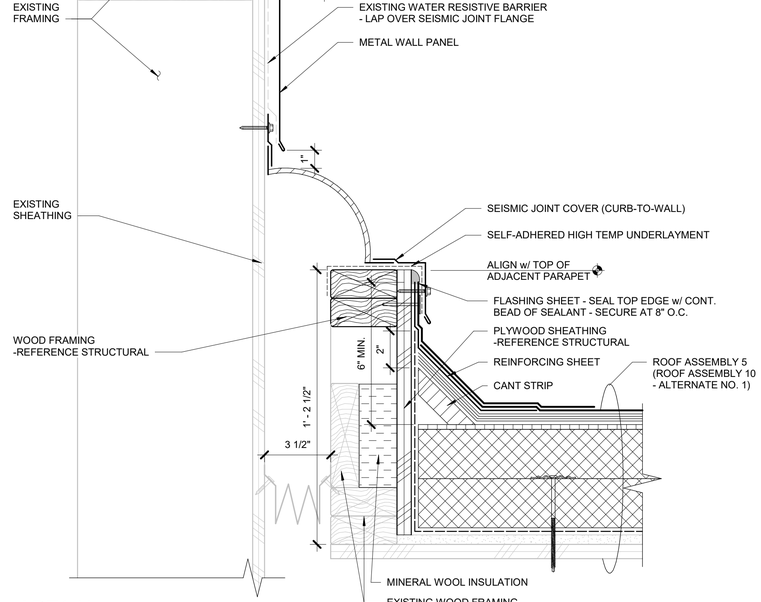
3 R200 AREA H EXISTING PARAPET
3" = 1'-0"



4 R200 AREA H BASE OF WALL AT AREAS I & L
3" = 1'-0"



5 R200 AREA H BASE OF WALL AT AREA I (SOUTH END)
3" = 1'-0"



6 R200 AREA H BASE OF WALL AT AREA M
3" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
ROOF DETAILS

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: FEB 21, 2023

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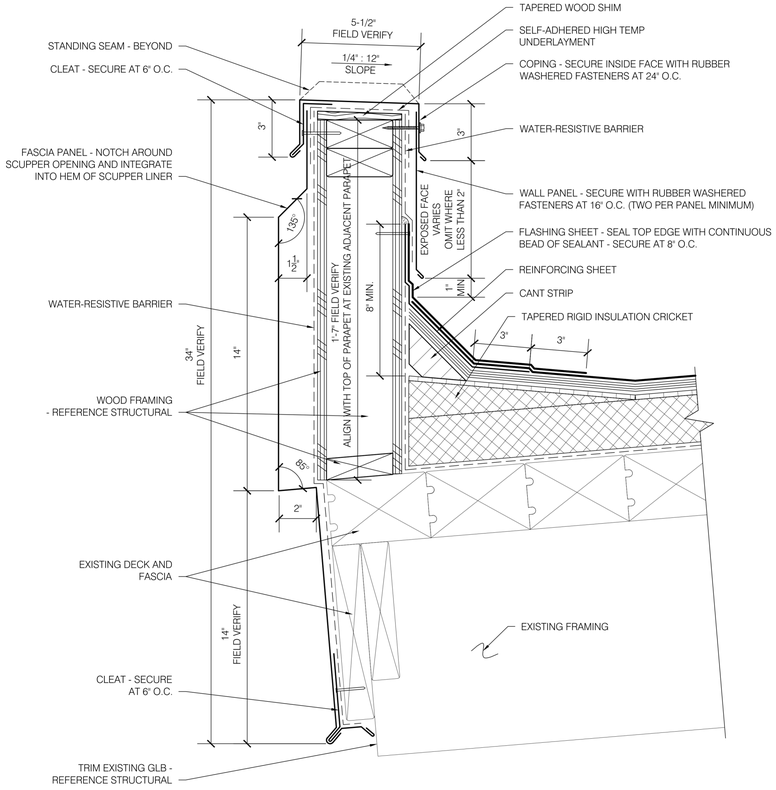
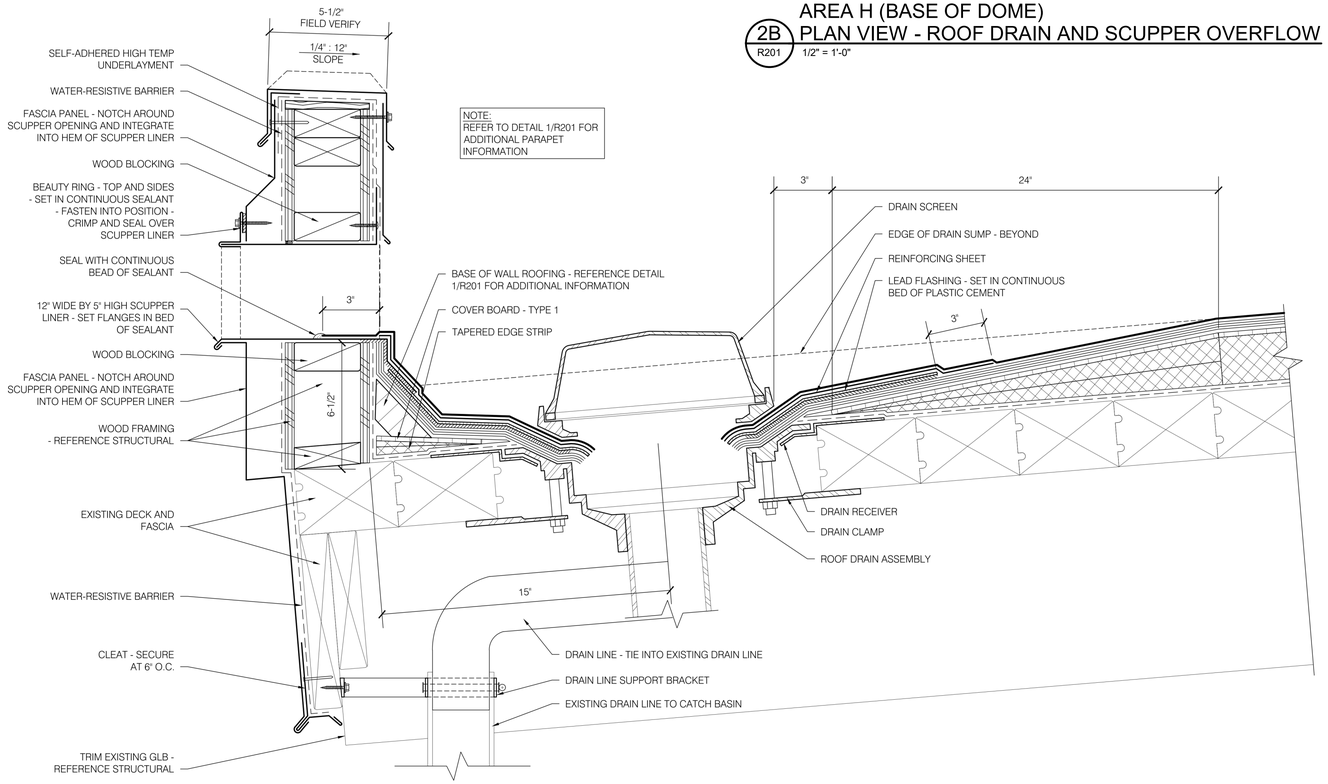
R200



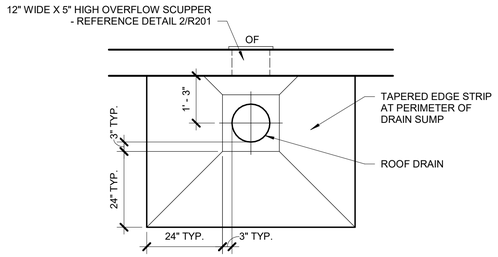
1 R201 AREA H (BASE OF DOME) PARAPET WALL

3" = 1'-0"



2A R201 AREA H (BASE OF DOME) ROOF DRAIN AND SCUPPER OVERFLOW

3" = 1'-0"



2B R201 AREA H (BASE OF DOME) PLAN VIEW - ROOF DRAIN AND SCUPPER OVERFLOW

1/2" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title: ROOF DETAILS

1/4" 1/2" 1" 2"

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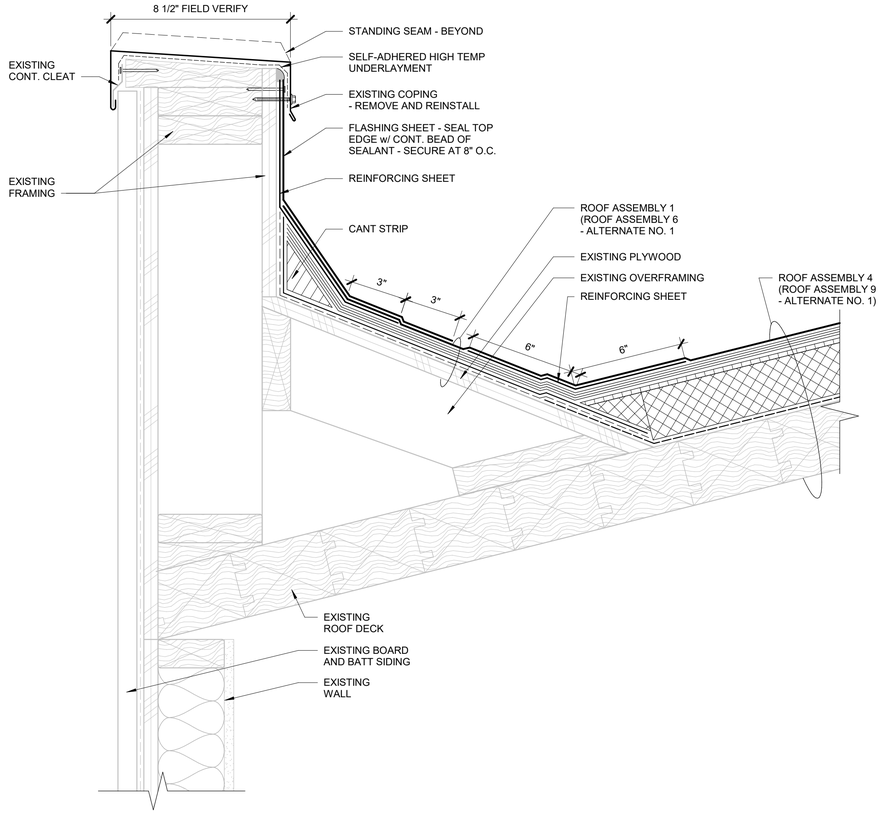
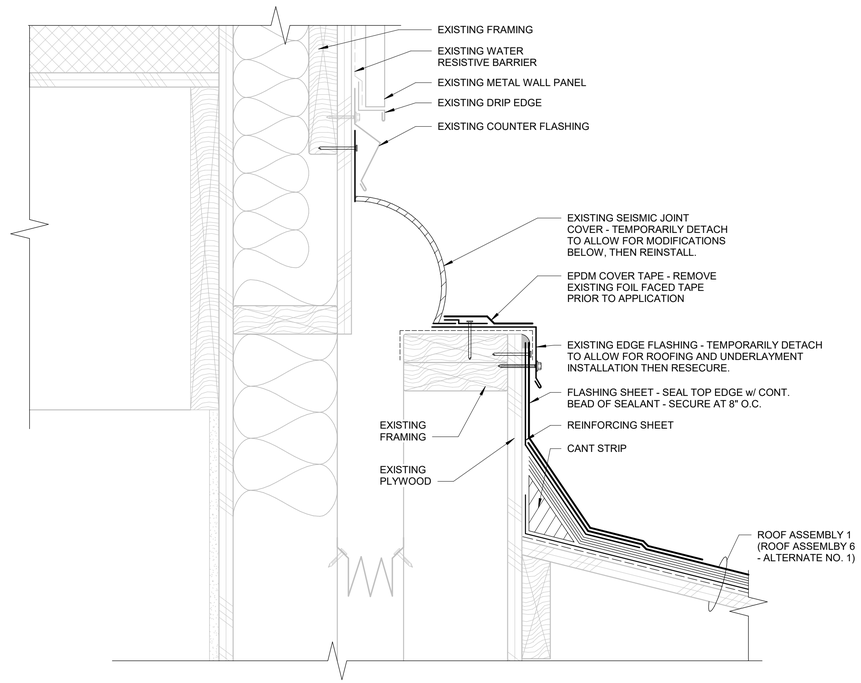
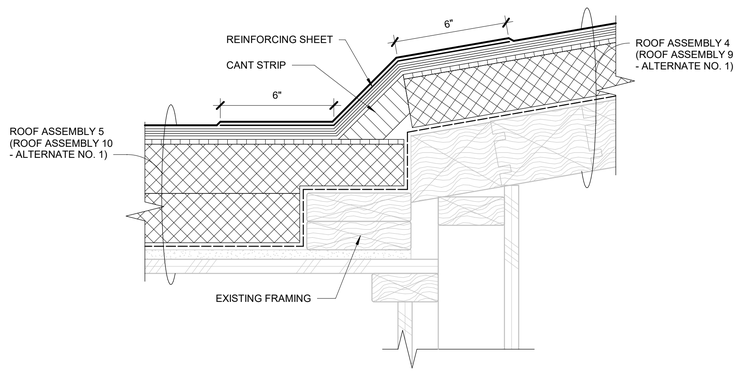


1 R202 AREA H
BASE OF WINGWALL AT AREA G
3" = 1'-0"



2 R202 AREA H
BASE OF WALL AT AREA G
3" = 1'-0"



3 R202 AREA H
TRANSITION FROM BASE OF DOME TO NORTH HALLWAY
3" = 1'-0"

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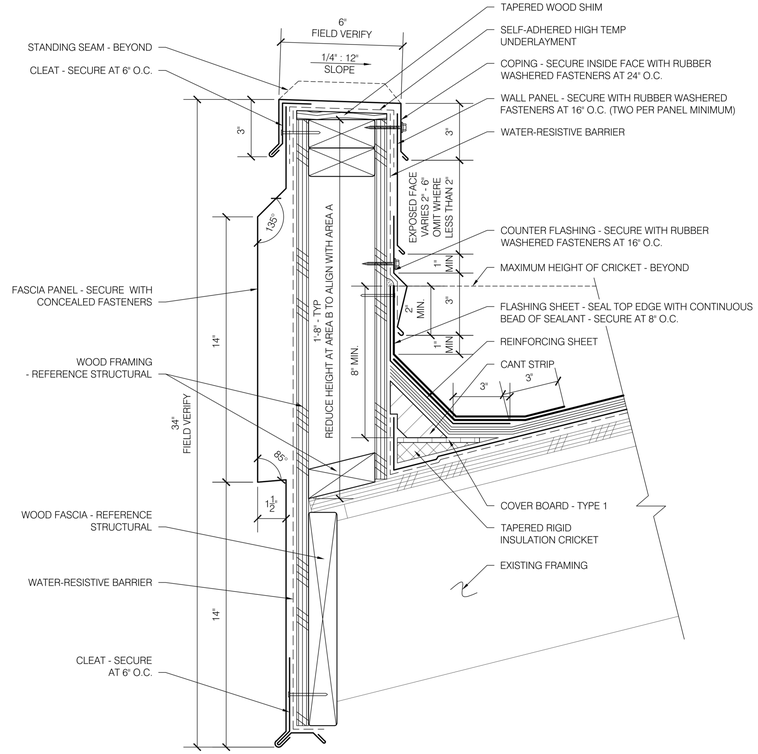
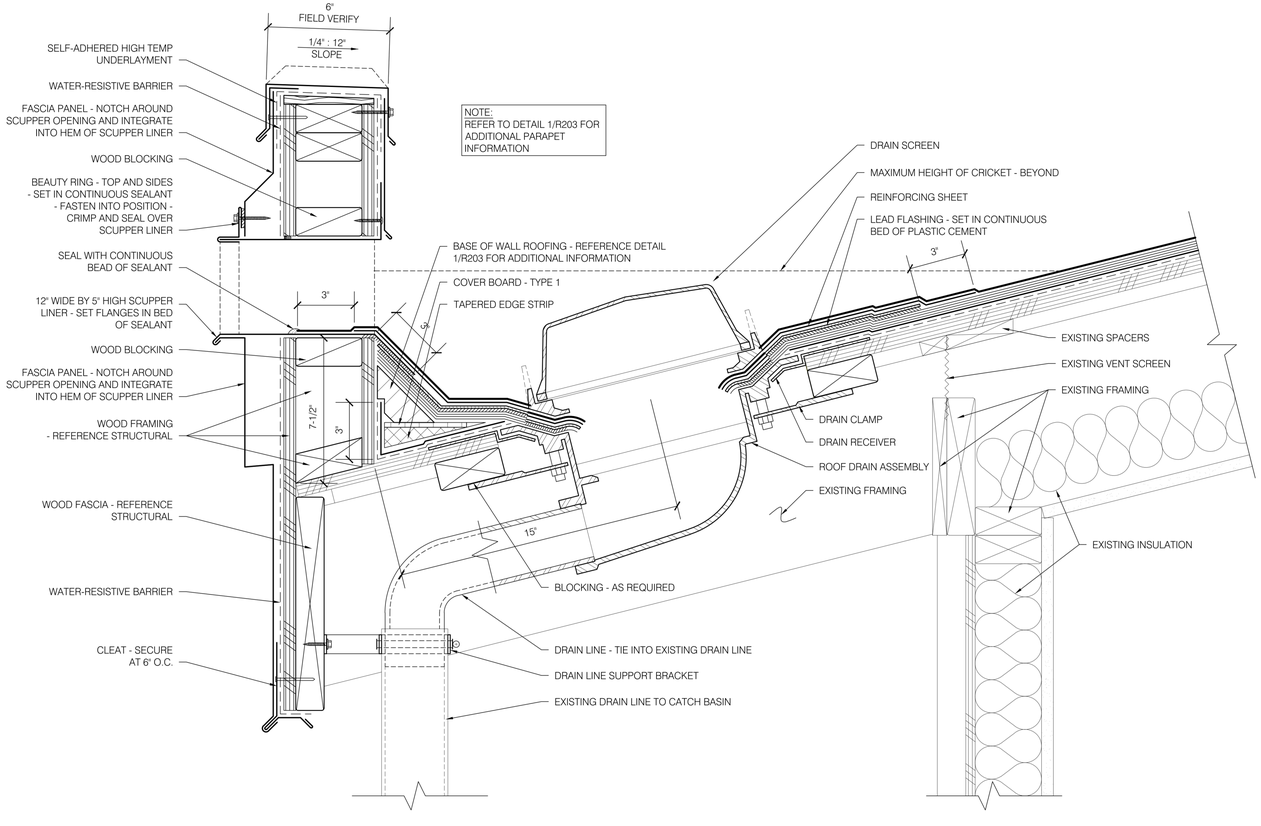
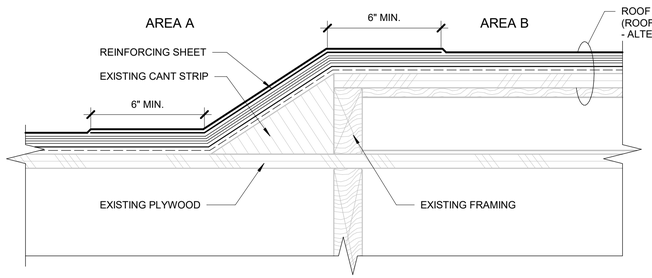


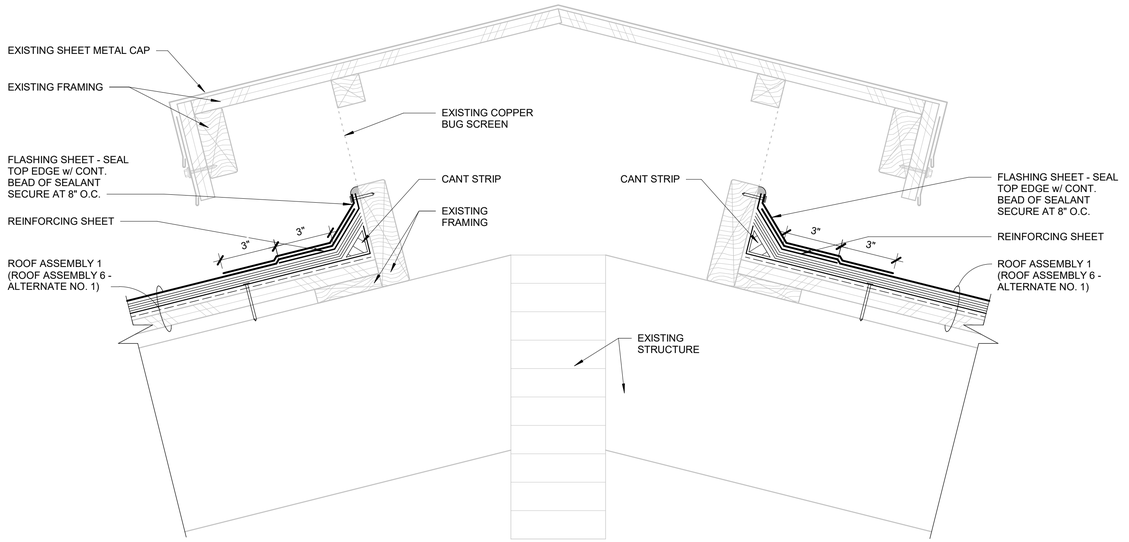
1 R203 AREAS A, B, D, E & K
PARAPET WALL
3" = 1'-0"



2 R203 AREAS A, B, D, E & K
ROOF DRAIN AND SCUPPER OVERFLOW
3" = 1'-0"



3 R203 AREAS A & B
ROOF TRANSITION
3" = 1'-0"



4 R203 AREAS A, E & K
RIDGE VENT
3" = 1'-0"

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ROOF REPLACEMENT

Sheet Title:
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1/4" 1/2" 1" 2"

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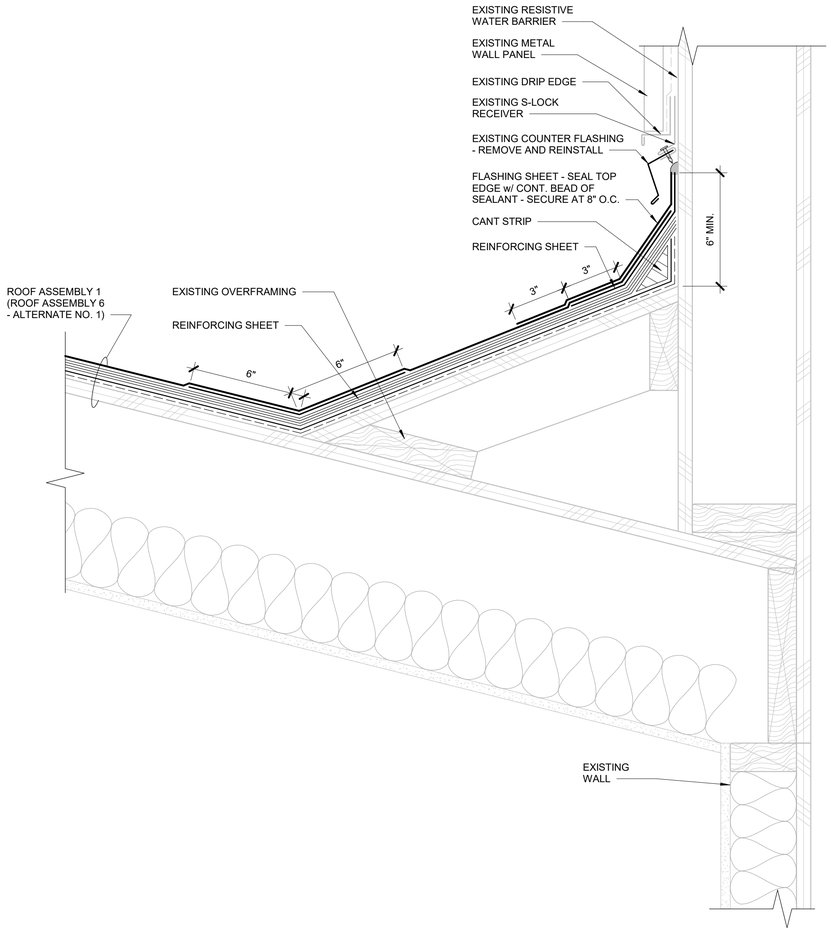
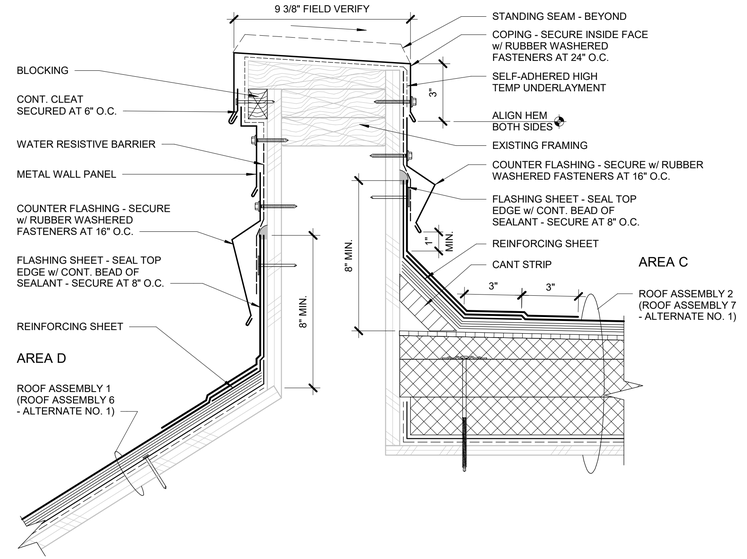


1 R204 AREAS A & E
BASE OF WALL AT AREA G
3" = 1'-0"



2 R204 AREAS C & D
SEPARATION WALL
3" = 1'-0"

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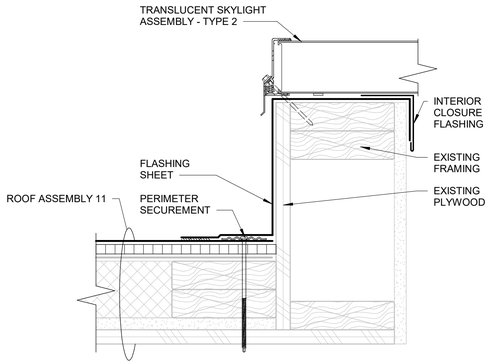
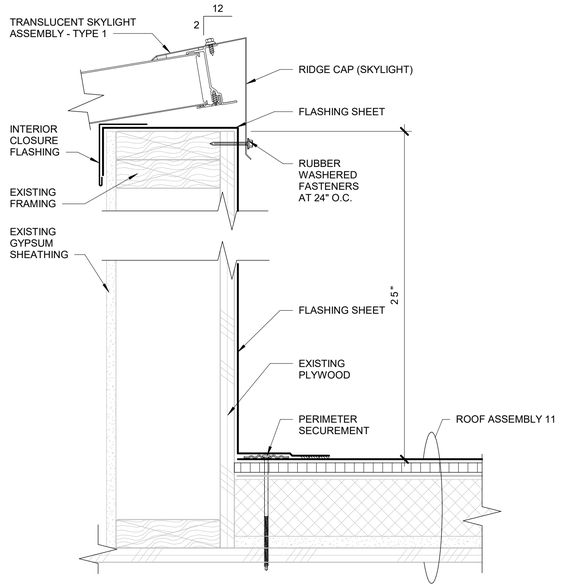
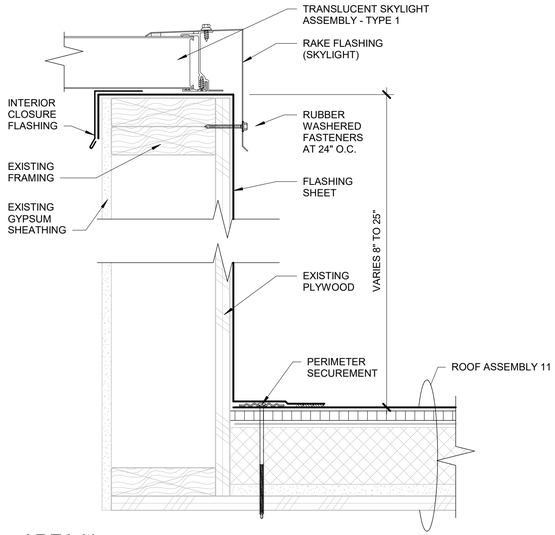


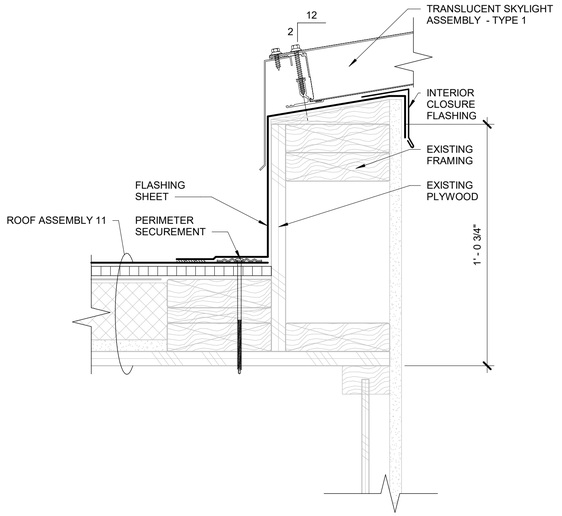
AREA V
1 / R205 — CURB AT FLAT SKYLIGHTS
3" = 1'-0"



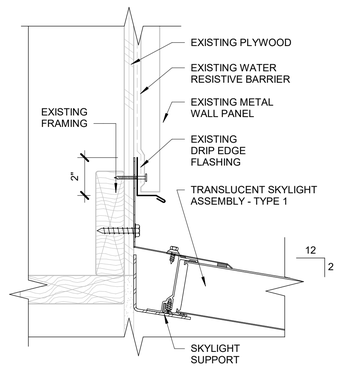
AREA N
2 / R205 — RIDGE AT SHED SKYLIGHTS
3" = 1'-0"



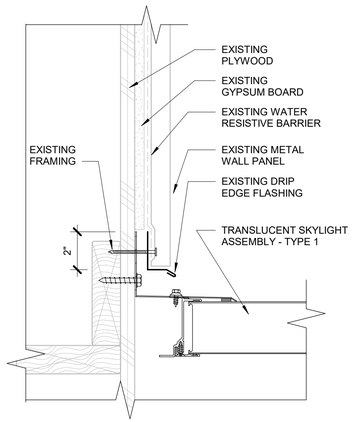
AREA N
3 / R205 — RAKE EDGE AT SHED SKYLIGHTS
3" = 1'-0"



AREA N
4 / R205 — DRIP EDGE AT SHED SKYLIGHT
3" = 1'-0"



AREAS M & S
5 / R205 — RIDGE AT POCKET SKYLIGHTS
3" = 1'-0"



AREAS M & S
6 / R205 — RAKE EDGE AT POCKET SKYLIGHTS
3" = 1'-0"

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ROOF REPLACEMENT

Sheet Title:
ROOF DETAILS - ALTERNATE NO.2

1/4" 1/2" 1" 2"

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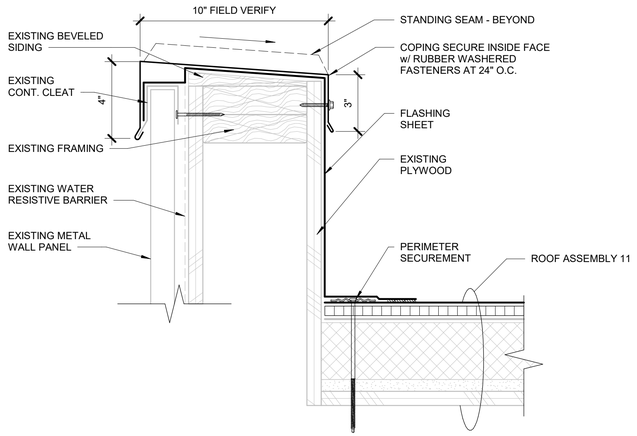
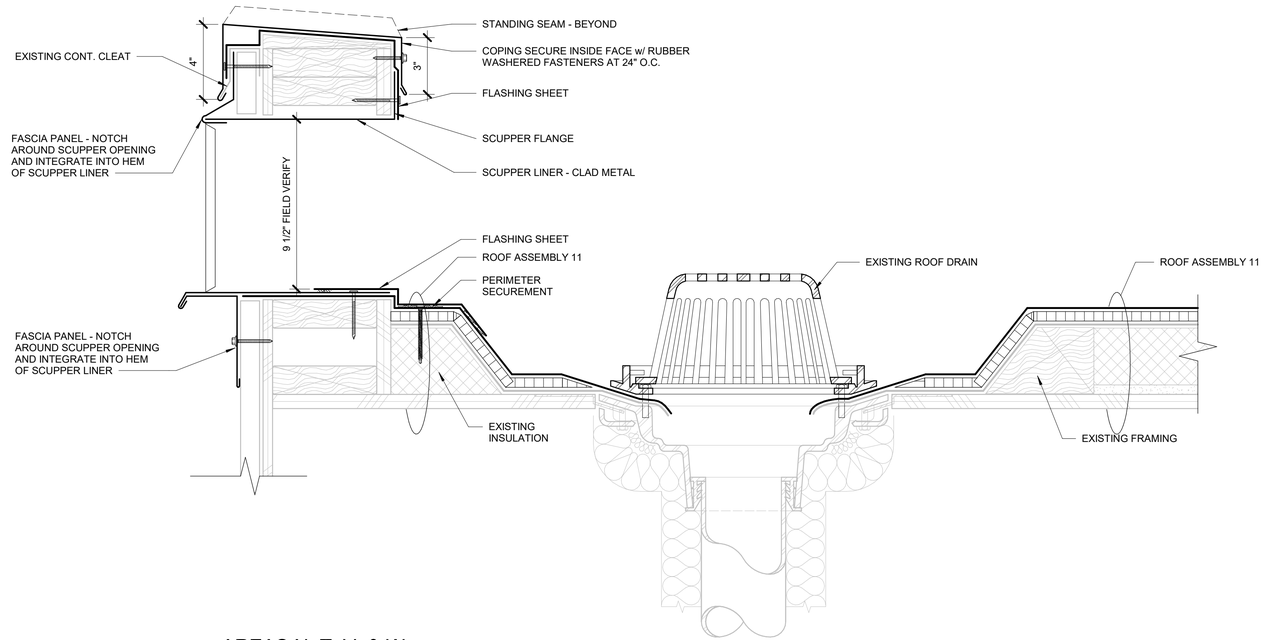
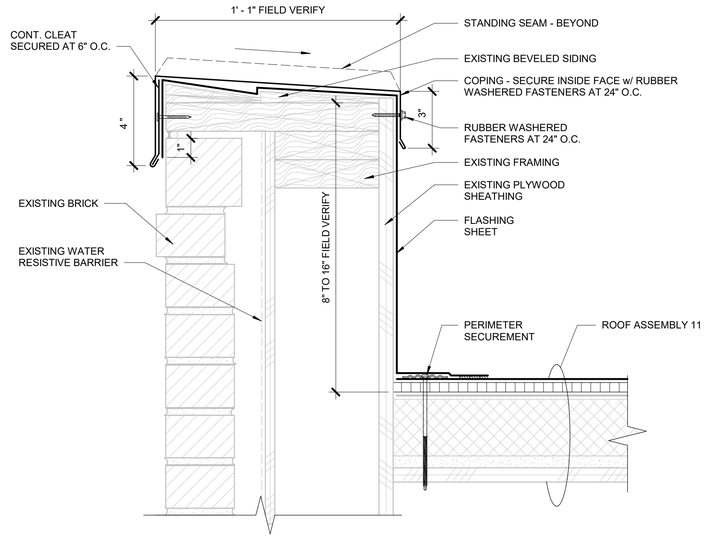


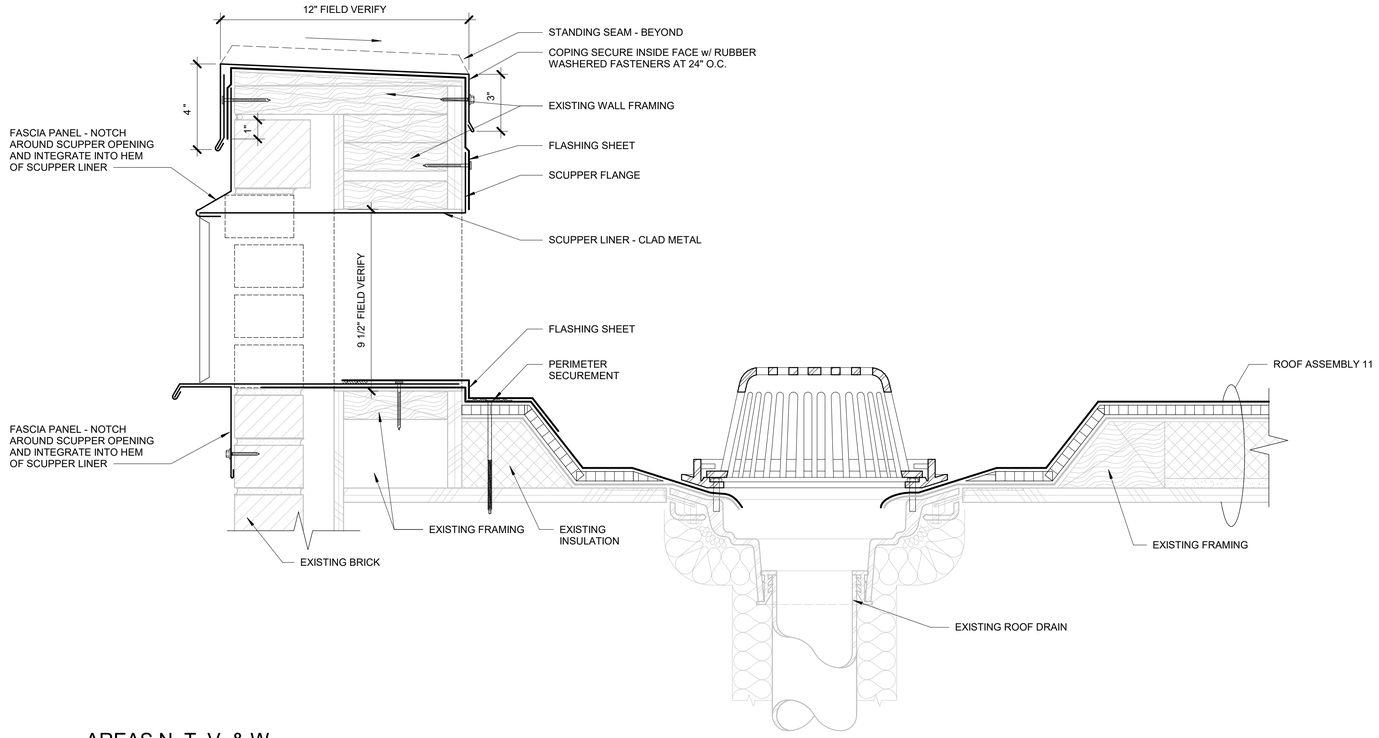
1 R206 AREAS N, T, V, & W
TYPICAL PARAPET AT METAL WALL PANELS
3" = 1'-0"



2 R206 AREAS N, T, V, & W
ROOF DRAIN & SCUPPER OVERFLOW AT METAL WALL PANELS
3" = 1'-0"



3 R206 AREAS N, T, V, & W
TYPICAL PARAPET AT BRICK
3" = 1'-0"



4 R206 AREAS N, T, V, & W
ROOF DRAIN & SCUPPER OVERFLOW AT BRICK
3" = 1'-0"

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Sheet Title:
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1/4" 1/2" 1" 2"

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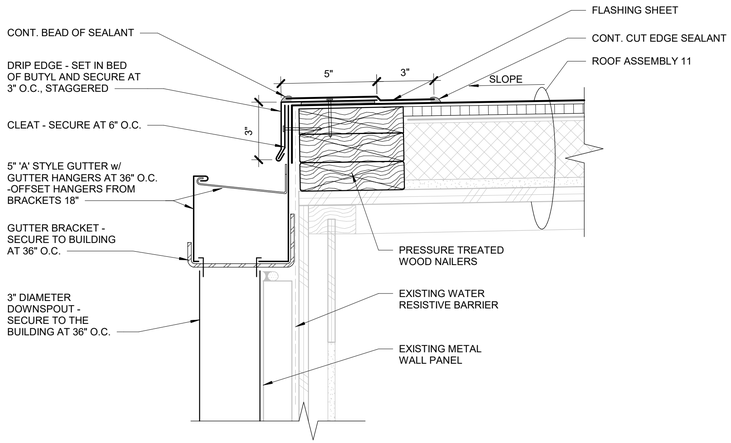
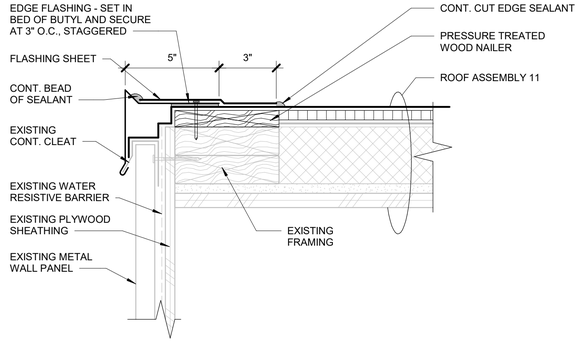
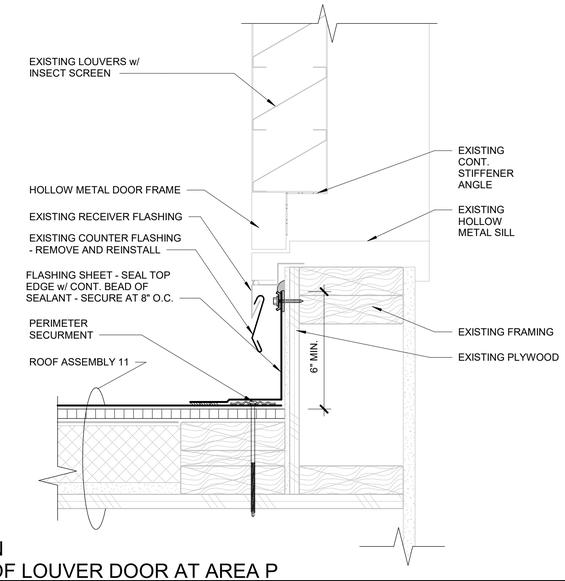


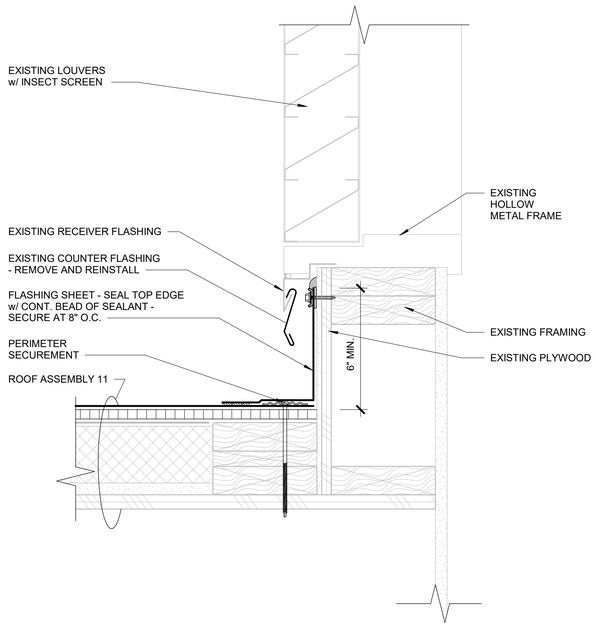
1 R207 AREA P
GUTTER EDGE
3" = 1'-0"



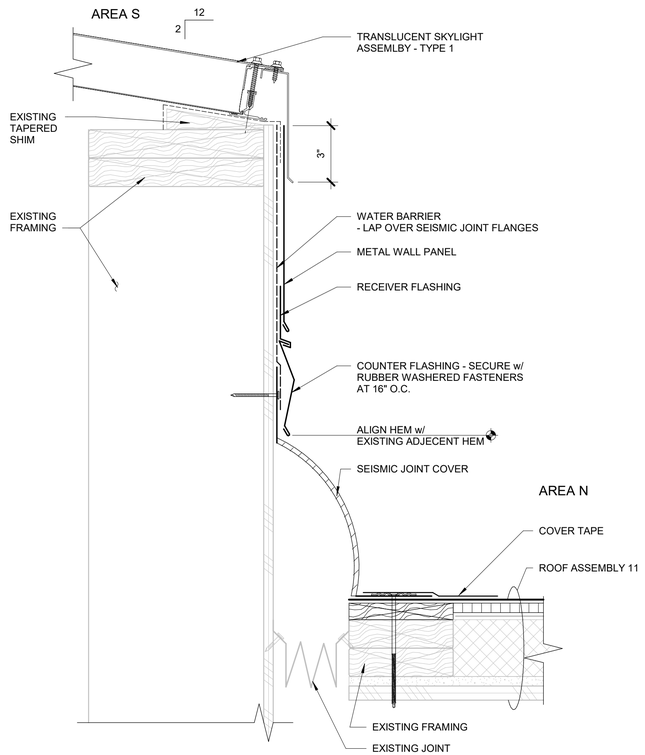
2 R207 AREA P
RAKE / RIDGE EDGE
3" = 1'-0"



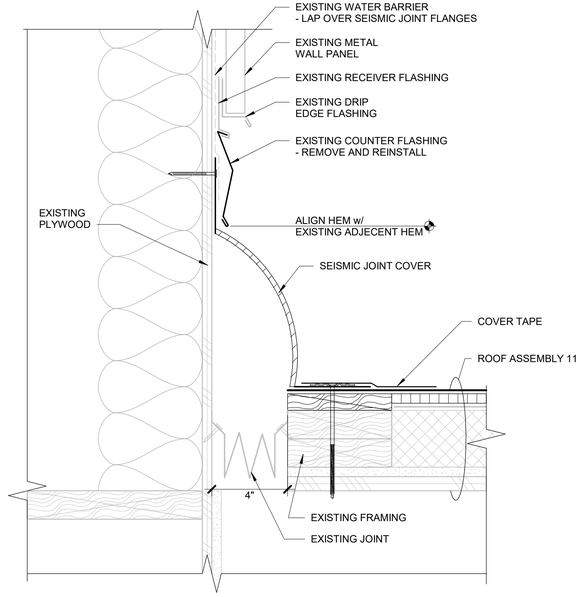
3 R207 AREA N
BASE OF LOUVER DOOR AT AREA P
3" = 1'-0"



4 R207 AREA N
BASE OF LOUVER AT AREA P
3" = 1'-0"



5 R207 AREA S
BASE OF WALL AT AREA N
3" = 1'-0"



6 R207 AREA N
SEISMIC JOINT AT AREA T
3" = 1'-0"

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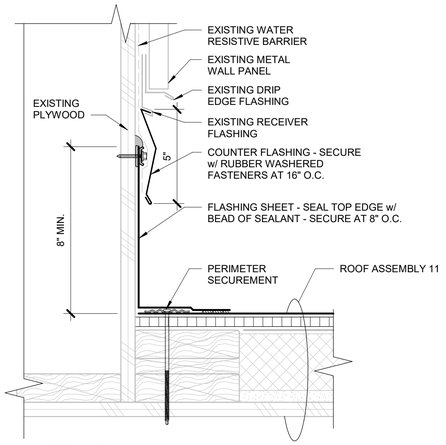
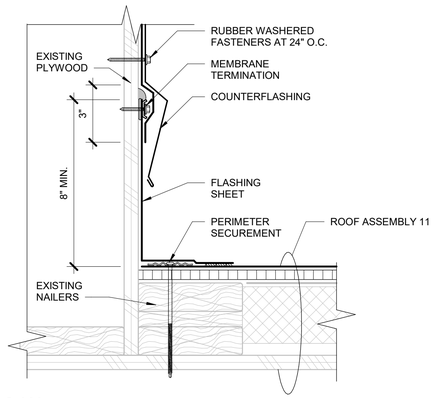
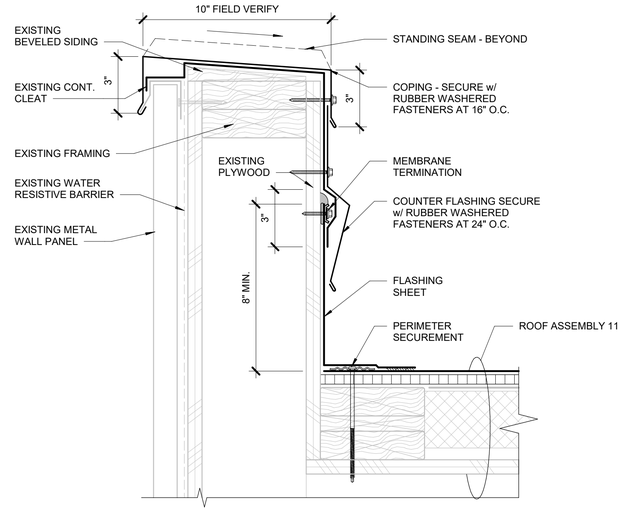


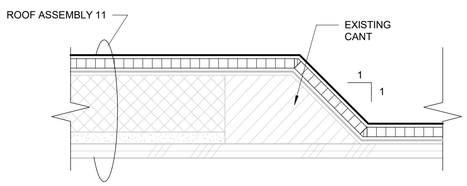
1 R208 AREA W
COUNTER FLASHING
3" = 1'-0"



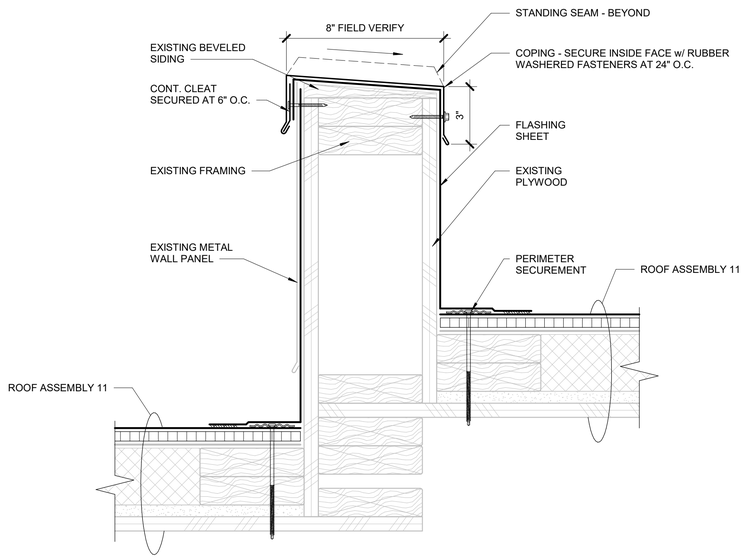
2 R208 AREA T & W
COUNTER FLASHING
3" = 1'-0"



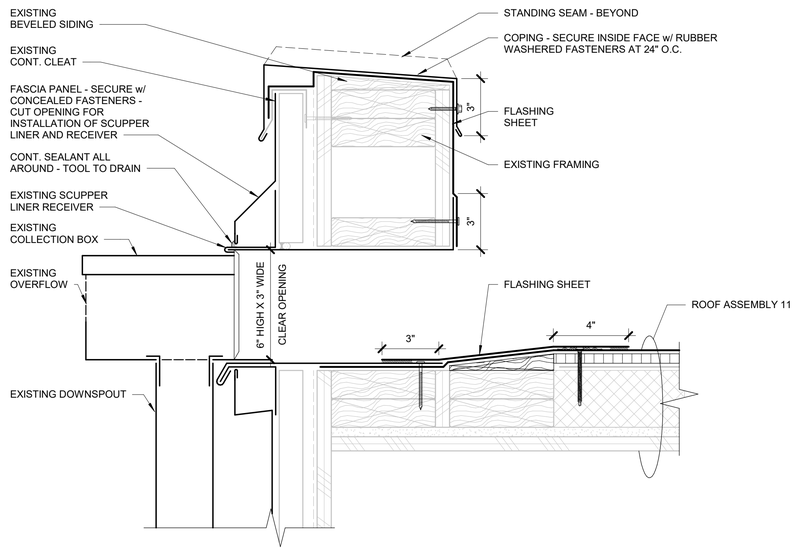
3 R208 AREA W
PARAPET WALL AT INSULATED ROOF
3" = 1'-0"



4 R208 AREA W
ROOFING TRANSITION
3" = 1'-0"



5 R208 AREAS T & V
SEPARATION WALL
3" = 1'-0"



6 R208 AREA V
SCUPPER DRAIN
3" = 1'-0"

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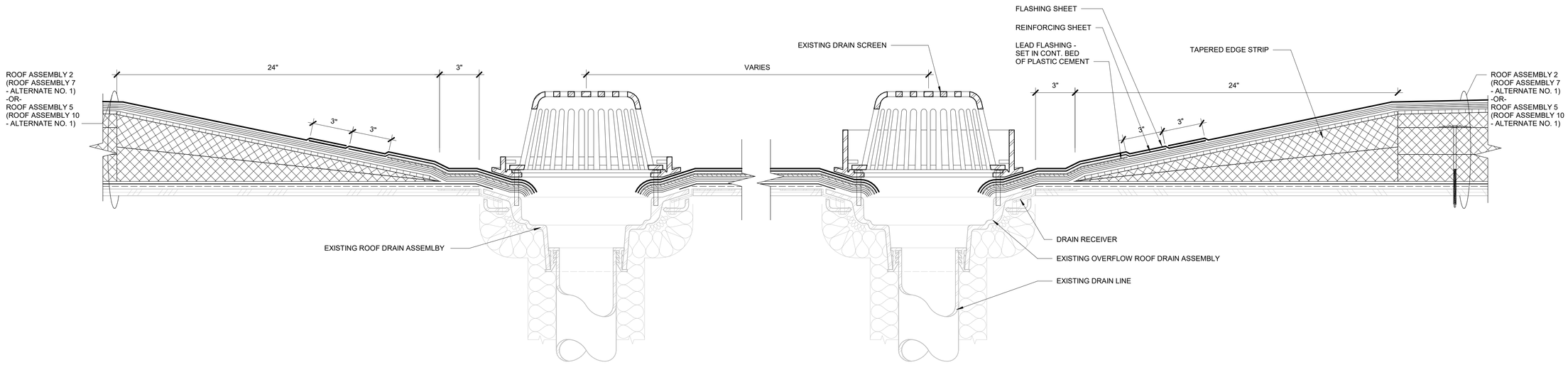
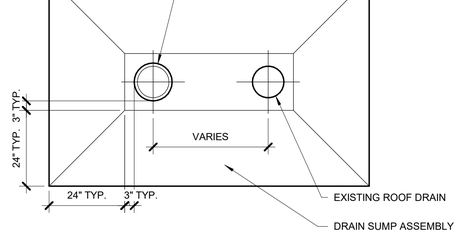


1 R209 AREAS C, F & H (HALLWAY)
DRAIN & OVERFLOW DRAIN
3" = 1'-0"



1A R209 AREAS C, F & H (HALLWAY)
PLAN VIEW - DRAIN SUMP ASSEMBLY
1/2" = 1'-0"

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P: (503) 280-8759 | F: (503) 280-8866

EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
ROOF DETAILS

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: FEB 21, 2023

Revisions:

Drawn: GC
Checked: TWB

PRC No.: R3282.11

Sheet No.:
R209

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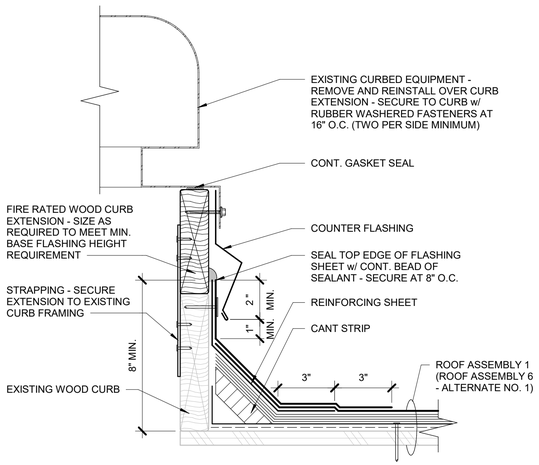
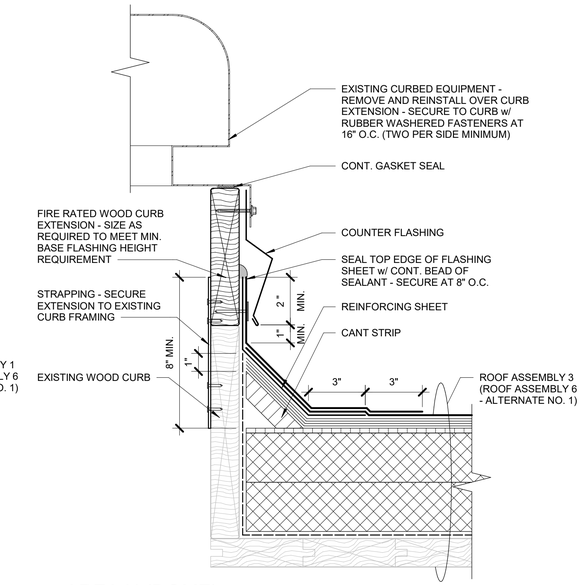


1 R210 AREAS A, B, D, E & K CURBED FAN FLASHING
3" = 1'-0"



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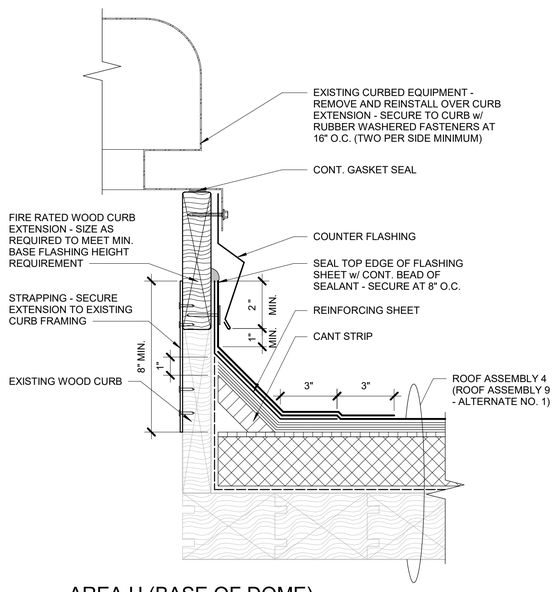
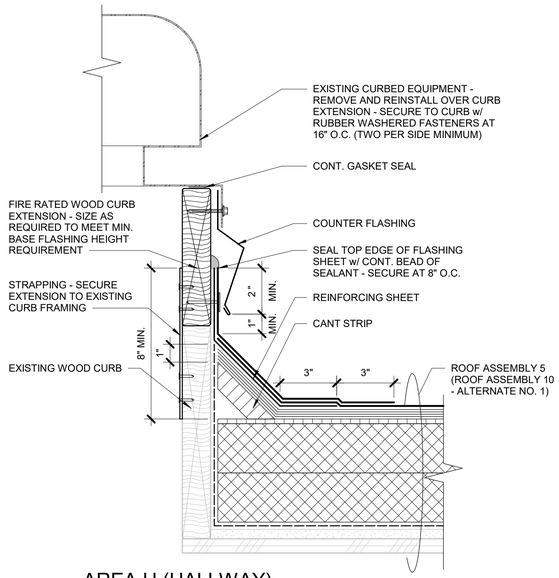
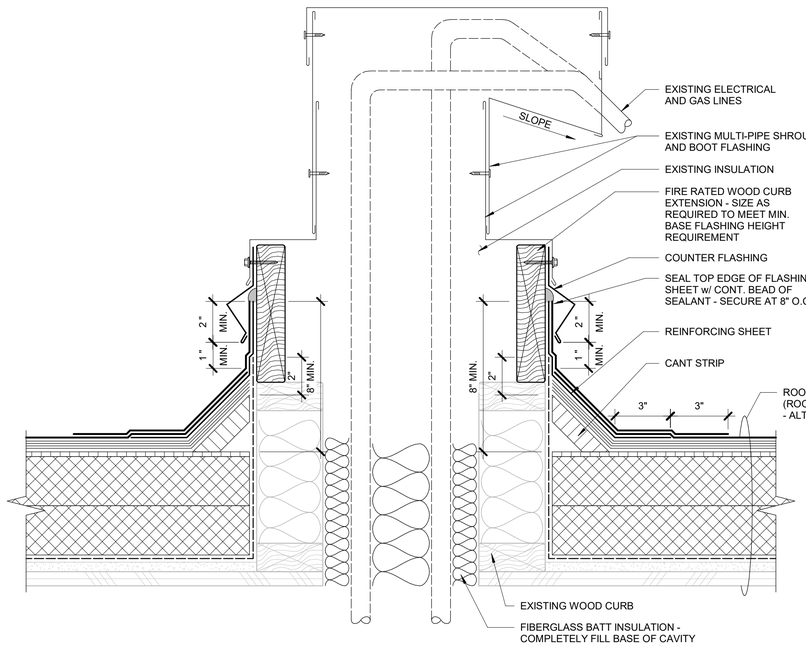
3" = 1'-0"



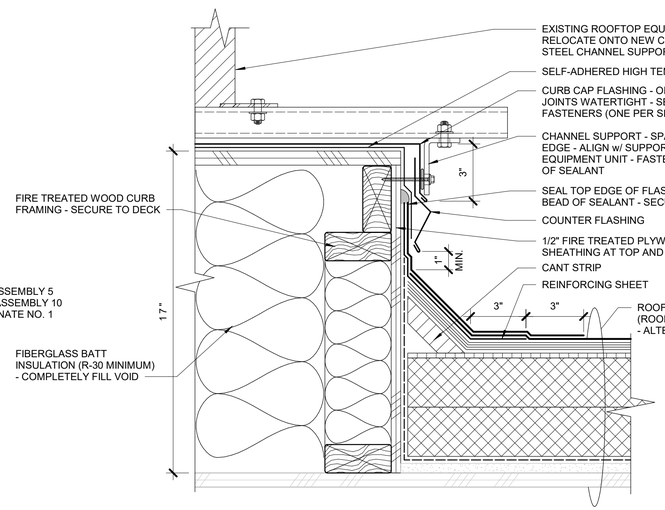
3 R210 AREA H (BASE OF DOME) CURBED FAN FLASHING
3" = 1'-0"



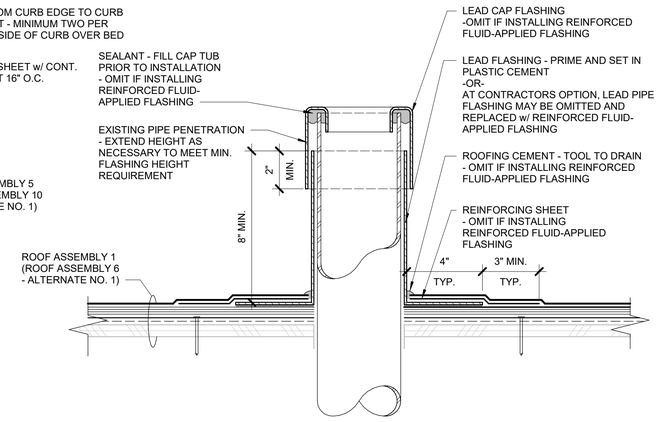
4 R210 AREA H (HALLWAY) CURBED FAN FLASHING
3" = 1'-0"



5 R210 AREA H MULTI-PIPE PENETRATION
3" = 1'-0"



6 R210 AREA H EQUIPMENT CURB
3" = 1'-0"



7 R210 AREAS A, B, D, E, & K PLUMBING VENT PIPE
3" = 1'-0"

BID SET

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606 SE 9th Avenue
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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
ROOF DETAILS

1/4" 1/2" 1" 2"

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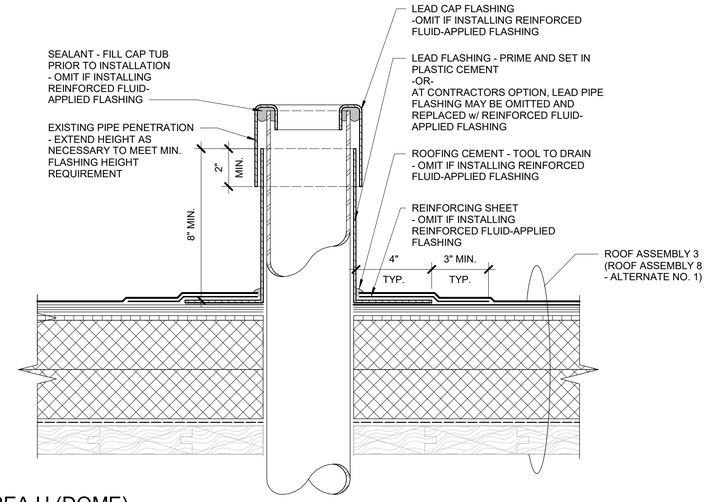
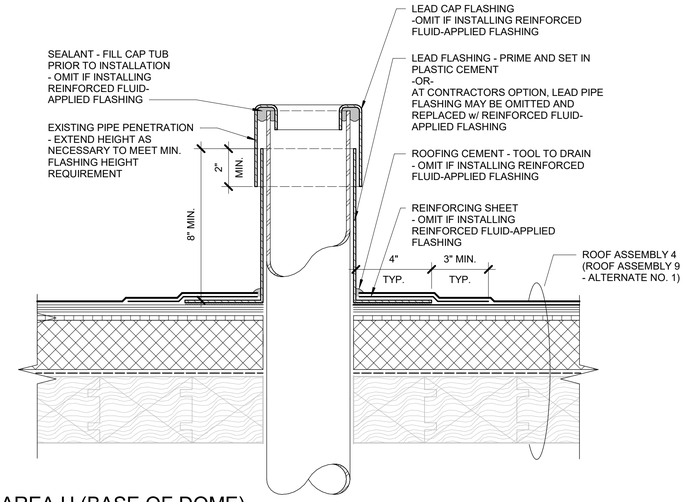
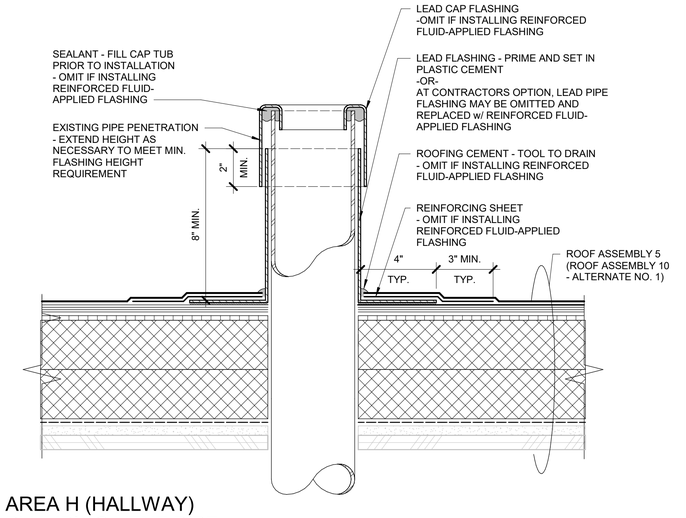


1 R211 AREA H (DOME) PLUMBING VENT PIPE
3" = 1'-0"



2 R211 AREA H (BASE OF DOME) PLUMBING VENT PIPE
3" = 1'-0"



3 R211 AREA H (HALLWAY) PLUMBING VENT PIPE
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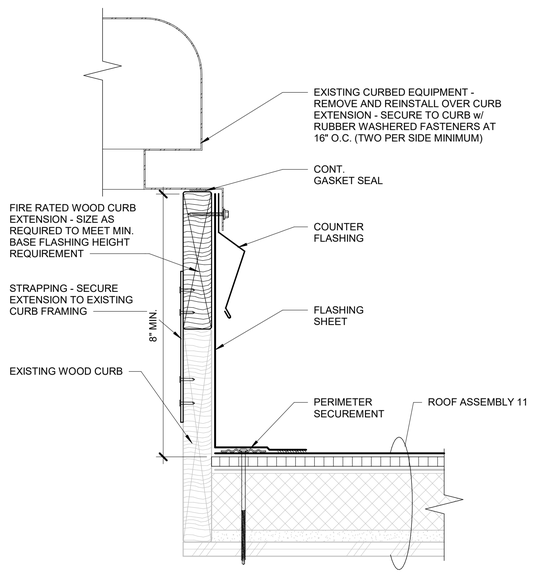
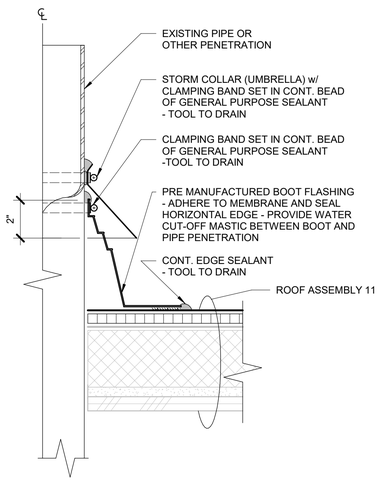
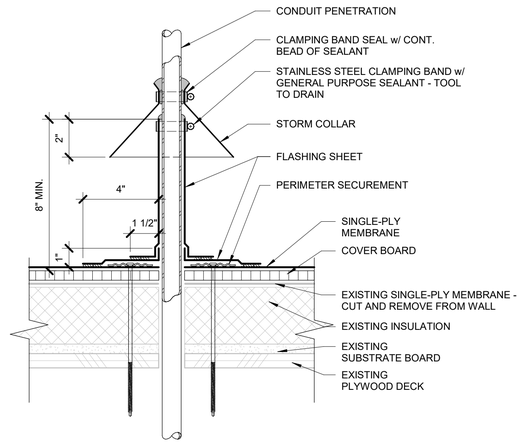


4 R211 AREAS N, P, T, V & W CURBED FAN FLASHING
3" = 1'-0"



5 R211 AREAS N, P, T, V & W PLUMBING VENT PIPE
3" = 1'-0"



6 R211 AREAS N, P, T, V & W CONDUIT PENETRATION - FIELD WRAP
3" = 1'-0"

BID SET

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GENERAL STRUCTURAL NOTES:

CODE REQUIREMENTS:
CONFORM TO THE 2021 INTERNATIONAL BUILDING CODE AS AMENDED BY THE 2022 OSSC, REFERENCED HEREAFTER AS IBC.

DESIGN CRITERIA:
DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE IBC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS WERE USED FOR DESIGN:

GROUND SNOW LOAD Pg: 25 PSF
FLAT-ROOF SNOW LOAD Pf: 25 PSF
SNOW EXPOSURE FACTOR Ce: 1.0
SNOW IMPORTANCE FACTOR Ic: 1.10
THERMAL FACTOR Ct: 1.0

BASIC WIND SPEED (3-SEC GUST, ULTIMATE): 102 MPH
BUILDING CATEGORY: III
WIND EXPOSURE: B

EXISTING CONDITIONS:
THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS PRIOR TO THE START OF THE WORK.

TEMPORARY CONDITIONS:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY OF THE NEW AND EXISTING STRUCTURES AND WALLS DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.

CARPENTRY:
SAWN LUMBER DESIGN IS BASED ON THE NATIONAL DESIGN SPECIFICATION, LATEST EDITION. SAWN LUMBER SHALL CONFORM TO WEST COAST LUMBER INSPECTION BUREAU OR WESTERN WOOD PRODUCTS ASSOCIATION GRADING RULES. UNLESS NOTED OTHERWISE ALL LUMBER SHALL BE 19% AT TIME OF FABRICATION AND DRIED TO A MAXIMUM OF 15% BEFORE INSTALLATION OF GYP. BOARD AND OF BRICK VENEER AND VERIFIED BY THE GENERAL CONTRACTOR. ALL WOOD IN PERMANENT CONTACT WITH CONCRETE OR CMU SHALL BE PRESSURE TREATED UNLESS AN APPROVED BARRIER IS PROVIDED. GRADES SHALL BE D.F. #2 UNLESS NOTED OTHERWISE ON THE PLANS.

FRAMING ACCESSORIES AND STRUCTURAL FASTENERS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY (OR ENGINEER APPROVED EQUAL) AND OF THE SIZE AND TYPE SHOWN ON THE DRAWINGS AND ATTACHED PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS UNLESS NOTED OTHERWISE. HANGERS NOT SHOWN SHALL BE SIMPSON HU OF SIZE RECOMMENDED FOR MEMBER. ALL FRAMING NAILS SHALL BE COMMON NAILS. NO BOX NAILS ALLOWED. FASTENERS AND ACCESSORIES IN CONTACT WITH PRESERVATIVE TREATED WOOD MUST BE HOT DIPPED GALVANIZED OR HAVE ZMAX COATING. ALL FASTENERS IN CONTACT WITH FIRE RETARDANT LUMBER MUST BE HOT-DIPPED GALVANIZED. DO NOT INSTALL 0.148" x 1 1/2" NAILS IN HANGERS UNLESS SPECIFICALLY NOTED ON THE PLANS & DETAILS. NAIL CALLOUTS SHALL BE INTERPRETED AS FOLLOWS:

NAIL CALLOUT	DIAMETER	LENGTH
8d COMMON	0.131"	2 1/2"
10d COMMON	0.148"	3"
16d COMMON	0.162"	3 1/2"
16d SINKER	0.148"	3 1/4"
ROOF SHEATHING NAILS	0.131"	2 1/2" (RING SHANK AT DECK ROOF)

SHEATHING PANELS SHALL CONFORM TO THE REQUIREMENTS OF VOLUNTARY PRODUCT STANDARD PS 1 OR PS 2, OR APA PRP-108 PERFORMANCE STANDARDS. UNLESS NOTED, PANELS SHALL BE APA RATED SHEATHING, EXPOSURE 1, OF THE THICKNESS AND SPAN RATING SHOWN ON THE DRAWINGS. INSTALLATION SHALL BE IN CONFORMANCE WITH APA RECOMMENDATIONS. ALLOW 1/8" SPACING AT PANEL ENDS AND EDGES, UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER.

ALL ROOF SHEATHING SHALL BE INSTALLED WITH FACE GRAIN PERPENDICULAR TO SUPPORTS, EXCEPT AS INDICATED ON THE DRAWINGS. ROOF SHEATHING SHALL EITHER BE BLOCKED, TONGUE-AND-GROOVE, OR HAVE EDGES SUPPORTED BY PLYCLIPS. NAILING NOT SPECIFICALLY IDENTIFIED ON THE DRAWINGS SHALL CONFORM TO IBC TABLE 2304.9.1.

METALS:
ALL MISCELLANEOUS STEEL: ASTM A36 (Fy=36,000 PSI), OR AS NOTED ASTM A572 (Fy=50 KSI).
ALL BOLTS: ASTM A307 UNLESS NOTED OTHERWISE.
WELDING: PER AWS STANDARDS. E70XX ELECTRODE AND BY CERTIFIED WELDERS.
DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS". WELDING SHALL CONFORM TO THE AWS CODES FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION AND SHALL BE 3/16" MINIMUM UNLESS OTHERWISE NOTED. WELDING SHALL BE BY AWS CERTIFIED WELDERS. PRE-QUALIFIED WELDING PROCEDURES ARE TO BE USED, UNLESS AWS QUALIFICATION IS SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO FABRICATION.
ALL STEEL TO HAVE SHOP COAT.
ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED PER ASTM 123 FOR STRUCTURAL STEEL AND ASTM 153 FOR BOLTS AND HARDWARE. FABRICATION OF STEEL THAT IS TO BE HOT DIP GALVANIZED SHALL ALSO MEET ASTM A385. REPAIR OF DAMAGED GALVANIZED COATING SHALL BE MADE WITH PRODUCTS MEETING ASTM A780 AND AS A MINIMUM SHALL BE 50% GREATER IN THICKNESS THAN THE SURROUNDING GALVANIZING.

MECHANICAL:
THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF ELECTRICAL EQUIPMENT, MECHANICAL, PLUMBING, FIRE SPRINKLER, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. ANY CONNECTIONS TO STRUCTURE NOT CONFORMING TO SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA), OR SPECIFICALLY DETAILED ON THE MECHANICAL ENGINEER'S DRAWINGS, SHALL BE DESIGNED IN ACCORDANCE OF THESE GENERAL NOTES, BY AN ENGINEER REGISTERED IN THE STATE OF WASHINGTON, AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.

FLASHING AND WATERPROOFING:
ALL FLASHING AND WATERPROOFING SHALL BE PER PROFESSIONAL ROOF CONSULTANTS UNLESS NOTED OTHERWISE ON THE PLANS.

WIND LOAD DIAGRAM:
THIS WIND LOAD DIAGRAM IS BEING PROVIDED FOR USE BY THE ROOFING CONTRACTOR TO DETERMINE APPROPRIATE MEANS OF SECURING ROOFING COMPONENTS. ATTACHMENT METHOD, ANCHOR SELECTION, SPACING OF FASTENERS, AND VERIFICATION OF THE EXISTING SUBSTRATE AS SUITABLE FOR THE ATTACHMENT METHOD IS BEYOND THE SCOPE OF TM RIPPEY CONSULTING ENGINEERS WORK AND IS THE SOLE RESPONSIBILITY OF THE INSTALLER.

FALL PROTECTION GENERAL STRUCTURAL NOTES:

CODE REQUIREMENTS:
1. CONFORM TO THE 2021 INTERNATIONAL BUILDING CODE AS AMENDED BY THE 2022 OREGON STRUCTURAL SPECIALTY CODE, REFERENCED HEREAFTER AS IBC.
2. CONFORM TO OREGON OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY SUBPART M (FALL PROTECTION) AND ALL APPLICABLE STATE ADMINISTRATIVE CODE SAFETY STANDARDS.
3. CONFORM TO ANSI/ASSE Z359 AMERICAN NATIONAL STANDARD, CURRENT EDITION.

SYSTEM REQUIREMENTS:
1. INDIVIDUAL ANCHORS SHALL BE USED FOR A MAXIMUM OF ONE PERSON IN FALL ARREST OR FALL RESTRAINT.
2. PERSONAL FALL ARREST SYSTEMS (PFAS) SHALL BE LIMITED TO FULL BODY HARNESSES THAT LIMIT THE MAXIMUM FALL ARREST LOAD TO 900 LBS.
3. ANCHORS ARE TO BE USED ONLY BY PERSONS TRAINED IN THEIR USE. LANYARDS, SAFETY HARNESSES, ATTACHMENTS, AND ALL OTHER PERSONAL SAFETY DEVICES ATTACHED TO THE ANCHOR ARE THE SOLE RESPONSIBILITY OF THE USER AND NOT TM RIPPEY CONSULTING ENGINEERS.
4. ANCHORS ARE TO BE VISUALLY INSPECTED BY THE USER PRIOR TO EACH USE.
5. ANCHORS ARE TO BE INSPECTED ANNUALLY BY A 'COMPETENT PERSON'.
6. ANCHORS SHALL BE RE-CERTIFIED BY A 'QUALIFIED COMPETENT PERSON' WHEN RE-ROOFING OR RENOVATION OR AT PERIODS NOT TO EXCEED 10 YEARS.
7. THE SYSTEM USER IS TO MAINTAIN A LOG BOOK OF USE AND INSPECTION.
8. FALL PROTECTION SYSTEMS SERVING ROOF EDGES WITH INSUFFICIENT HEIGHT FOR FALL ARREST CLEARANCE SHALL BE CLEARLY IDENTIFIED AS 'FALL RESTRAINT' ONLY.

ANCHOR LOADS:
ULTIMATE ANCHOR LOAD: 5000 LB
ALLOWABLE LOAD: 310 LB (PER PERSON, COMBINED BODY WEIGHT AND TOOLS).

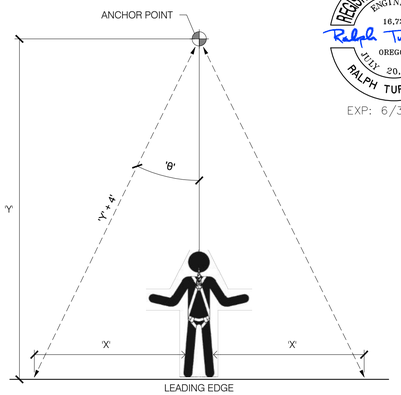
PRODUCTS:
1. SINGLE POINT FALL ARREST ANCHORS - 'GUARDIAN CB18', OR EQUIVALENT APPROVED BY THE ENGINEER.

INSTALLATION:
1. INSTALL IN ACCORDANCE WITH APPROVED DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE SPECIAL INSPECTION OF INSTALLATION BY A CERTIFIED INDEPENDENT TESTING LABORATORY EMPLOYED BY THE OWNER.

THIS CHART DETAILS ALLOWABLE WORKING ZONES REQUIRED TO REDUCE RISK OF SWING FALLS AND IMPROPER SIDE LOADING. **ALWAYS** ADHERE TO INFORMATION SPECIFIED BY CHART.

ANCHOR DISTANCE FROM LEADING EDGE (Y)	WORKING DISTANCE ALONG ROOF EDGE (EITHER DIRECTION) (X)	WORKING ANGLE FROM PERPENDICULAR (θ)
6'	8'	53°
10'	9'-9"	45°
15'	11'-7"	38°
20'	13'-3"	33°
25'	14'-6"	30°
30'	16'	28°
35'	17'-2"	26°
40'	18'-3"	24°
45'	19'-4"	23°
50'	19'-10"	21°
55'	21'-4"	21°
60'	22'-3"	21°
70'	24'-1"	19°
80'	25'-6"	18°

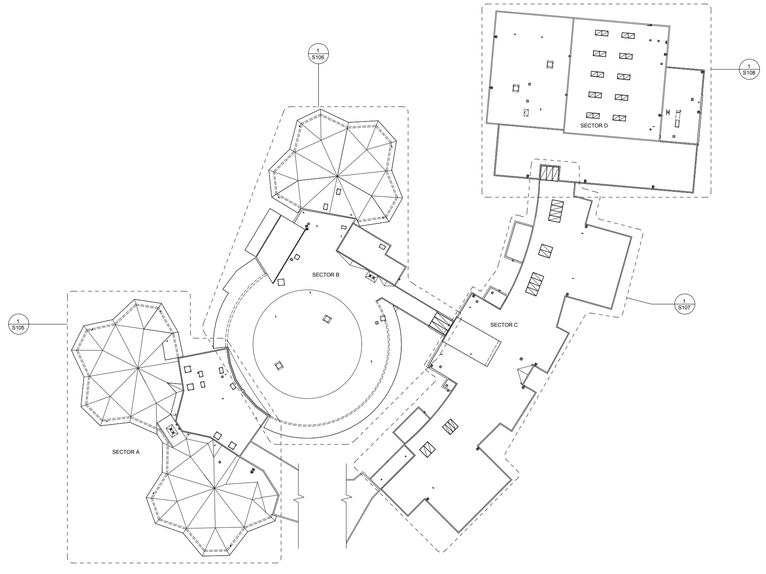
FOR EXAMPLE, IF THE ANCHORAGE CONNECTOR IS 6' FROM THE LEADING EDGE (Y), THE WORKING DISTANCE (X) IS 8' IN EACH DIRECTION FROM THE PERPENDICULAR, WHICH TRANSLATES TO A 53° WORKING ANGLE.



θ: TOTAL WORKING ANGLE.

X: WORKING DISTANCE ALONG LEADING EDGE.

Y: DISTANCE FROM LEADING EDGE.



KEYPLAN
X_KEYPLAN
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
Ralph Turnbaugh
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/24

TMR
T.M. RIPPEY
CONSULTING ENGINEERS
7650 SW Beveland, Suite 100
Tigard, Oregon 97223
Phone: (503) 443-3900
Fax: (503) 443-3909

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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
GENERAL STRUCTURAL NOTES AND FALL PROTECTION STRUCTURAL NOTES

1/4" 1/2" 1" 2"

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Date: 02-21-2023

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PRC No.: 23002.02

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S100

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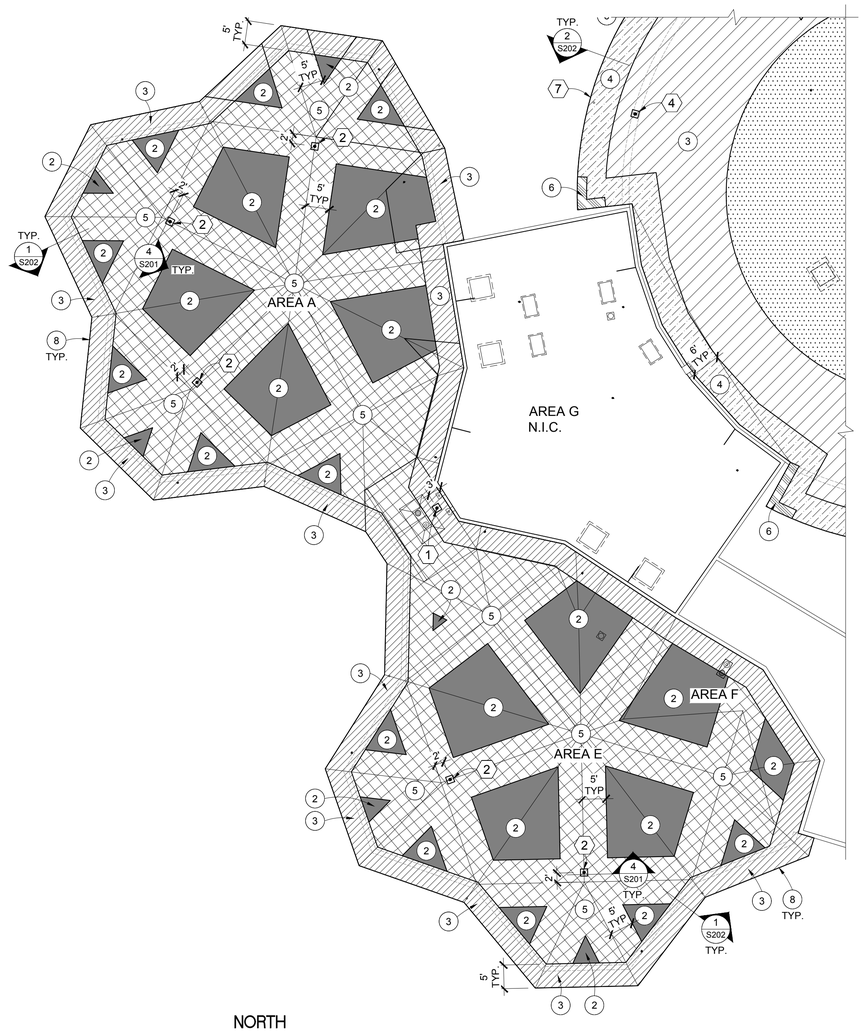

1 S105 ROOF PLAN - SECTOR A

SCALE: 1/16" = 1'-0"

0 4' 8' 16'

ROOF WIND UPLIFT LOADS

ROOF WIND UPLIFT (psf)						
ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7
11.6	21.9	25.4	29.7	34.4	41.3	47.8

NOTES:
- CODE: ASCE 7-16 CH. 30.
- BASIC WIND SPEED (3-SEC. GUST) = 102 MPH
- RISK CATEGORY: III
- WIND EXPOSURE: B
- LOADS ARE AT ULTIMATE (LRFD) LEVEL. MULTIPLY VALUES BY 0.6 TO OBTAIN ALLOWABLE STRESS (ASD) LEVEL LOADS.
- UPLIFT VALUES BASED ON TRIBUTARY AREA OF 10 SQ. FT.

KEYNOTES:

1. FALL PROTECTION ANCHOR PER DETAIL 2/S201.
2. FALL PROTECTION ANCHOR PER DETAIL 4/S201.
3. FALL PROTECTION ANCHOR PER DETAIL 5/S201.
4. FALL PROTECTION ANCHOR PER DETAIL 1/S201.
5. COVER EXISTING ABANDONED MECHANICAL CURB PER DETAIL 4/S202.
6. FALL PROTECTION ANCHOR PER DETAIL 7/S201.
7. REPAIR ALL DAMAGED GL TAILS PER DETAIL 3/S202.
8. REPLACED DAMAGED SHEATHING WITH SAME TYPE AND THICKNESS. FASTEN TO FRAMING WITH 10d NAILS @ 6" O/C AT ALL EDGES AND 1'-0" O/C IN THE FIELD. NOTIFY E.O.R. IF DECKING DAMAGE IS DISCOVERED AT OTHER AREAS BESIDES A, E, AND K OR IF DAMAGE EXTENDS TO FRAMING.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
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Sheet Title:
SECTOR A - ROOF PLAN AREAS - A, B, C, D, E, F, G

1/4" 1/2" 1" 2"

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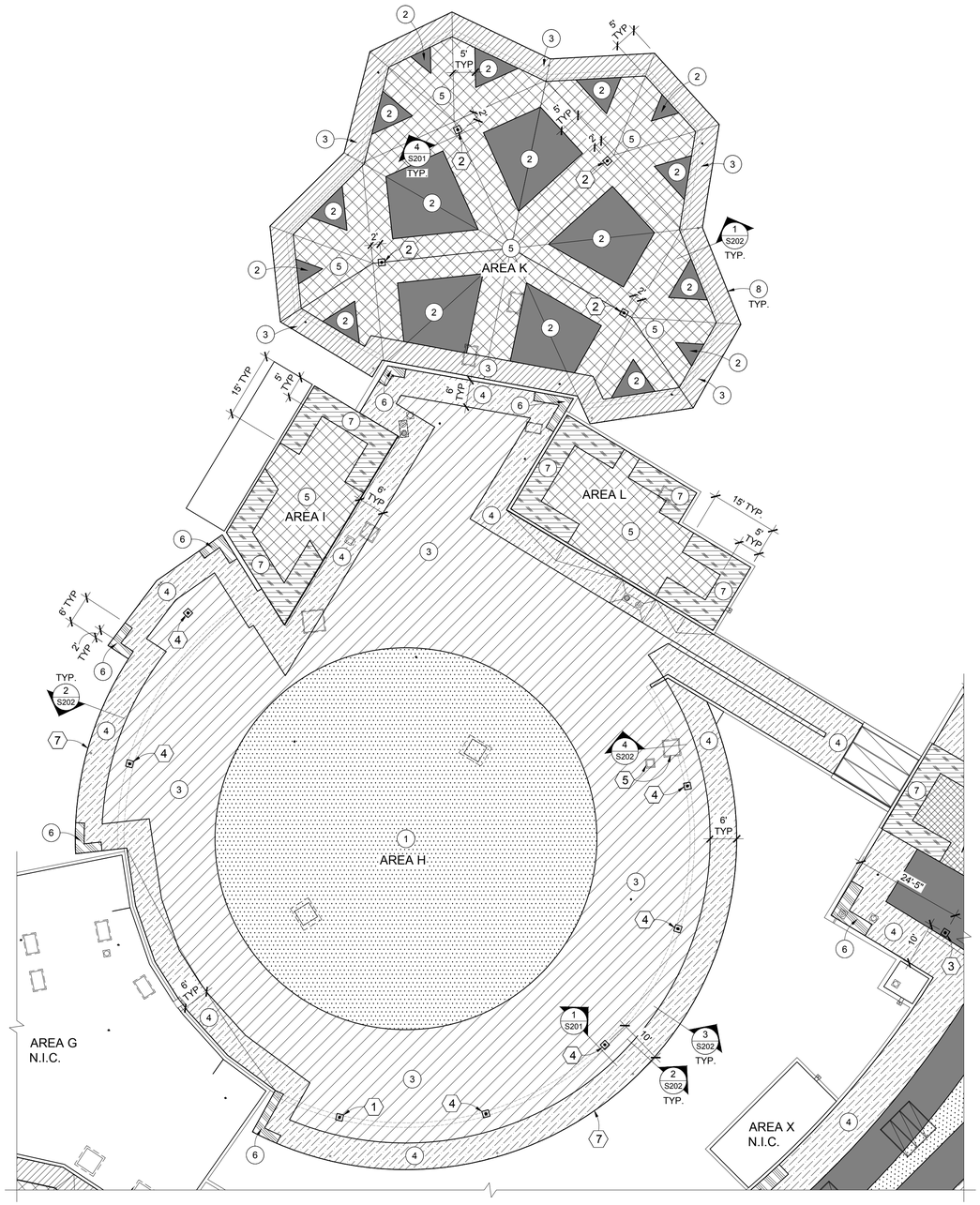

1 S106 ROOF PLAN - SECTOR B

SCALE: 1/16" = 1'-0"

ROOF WIND UPLIFT LOADS

ROOF WIND UPLIFT (psf)						
ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7
11.6	21.9	25.4	29.7	34.4	41.3	47.8

NOTES:
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- WIND EXPOSURE: B
- LOADS ARE AT ULTIMATE (LRFD) LEVEL. MULTIPLY VALUES BY 0.6 TO OBTAIN ALLOWABLE STRESS (ASD) LEVEL LOADS.
- UPLIFT VALUES BASED ON TRIBUTARY AREA OF 10 SQ. FT.

KEYNOTES:

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2. FALL PROTECTION ANCHOR PER DETAIL 4/S201.
3. FALL PROTECTION ANCHOR PER DETAIL 5/S201.
4. FALL PROTECTION ANCHOR PER DETAIL 1/S201.
5. COVER EXISTING ABANDONED MECHANICAL CURB PER DETAIL 4/S202.
6. FALL PROTECTION ANCHOR PER DETAIL 7/S201.
7. REPAIR ALL DAMAGED GL TAILS PER DETAIL 3/S202.
8. REPLACED DAMAGED SHEATHING WITH SAME TYPE AND THICKNESS. FASTEN TO FRAMING WITH 10d NAILS @ 6" O/C AT ALL EDGES AND 1'-0" O/C IN THE FIELD. NOTIFY E.O.R. IF DECKING DAMAGE IS DISCOVERED AT OTHER AREAS BESIDES A, E, AND K OR IF DAMAGE EXTENDS TO FRAMING.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/24

TMR T.M. RIPPEY CONSULTING ENGINEERS
7650 SW Beveland, Suite 100
Tigard, Oregon 97223
Phone: (503) 443-3900
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PROFESSIONAL ROOF CONSULTANTS INC
606 SE 9th Avenue
Portland, Oregon 97214
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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR B - ROOF PLAN AREAS - H, I, J, K, L, M

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: 02-21-2023

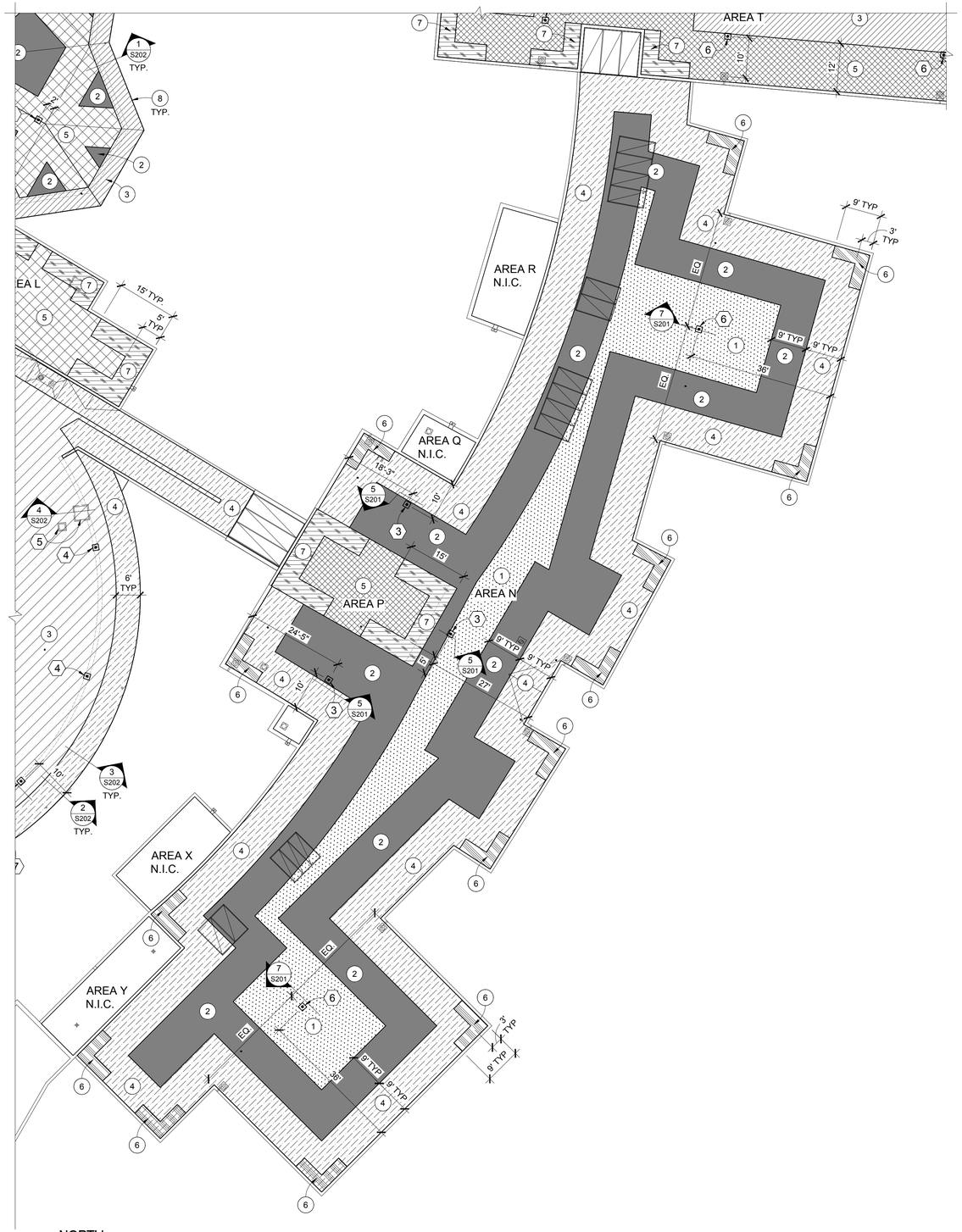
Revisions:

Drawn: JSC
Checked: JH

PRC No.: 23002.02

Sheet No.:
S106

BID SET



ROOF WIND UPLIFT LOADS

ROOF WIND UPLIFT (psf)						
ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7
11.6	21.9	25.4	29.7	34.4	41.3	47.8

NOTES:
- CODE: ASCE 7-16 CH. 30.
- BASIC WIND SPEED (3-SEC. GUST) = 102 MPH
- RISK CATEGORY: III
- WIND EXPOSURE: B
- LOADS ARE AT ULTIMATE (LRFD) LEVEL. MULTIPLY VALUES BY 0.6 TO OBTAIN ALLOWABLE STRESS (ASD) LEVEL LOADS.
- UPLIFT VALUES BASED ON TRIBUTARY AREA OF 10 SQ. FT.

KEYNOTES:

1. FALL PROTECTION ANCHOR PER DETAIL 2/S201.
2. FALL PROTECTION ANCHOR PER DETAIL 4/S201.
3. FALL PROTECTION ANCHOR PER DETAIL 5/S201.
4. FALL PROTECTION ANCHOR PER DETAIL 1/S201.
5. COVER EXISTING ABANDONED MECHANICAL CURB PER DETAIL 4/S202.
6. FALL PROTECTION ANCHOR PER DETAIL 7/S201.
7. REPAIR ALL DAMAGED GL TAILS PER DETAIL 3/S202.
8. REPLACED DAMAGED SHEATHING WITH SAME TYPE AND THICKNESS. FASTEN TO FRAMING WITH 10d NAILS @ 6" O/C AT ALL EDGES AND 1'-0" O/C IN THE FIELD. NOTIFY E.O.R. IF DECKING DAMAGE IS DISCOVERED AT OTHER AREAS BESIDES A, E, AND K OR IF DAMAGE EXTENDS TO FRAMING.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/24

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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR C - ROOF PLAN AREAS N, O, P, R, S, X, Y

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: 02-21-2023

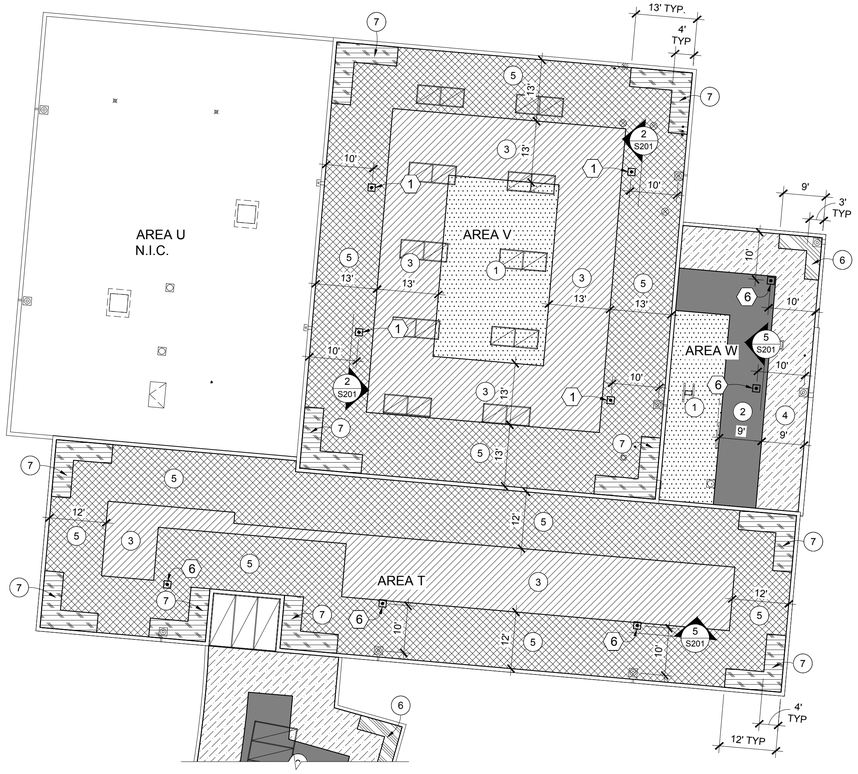
Revisions:

Drawn: JSC
Checked: JH

PRC No.: 23002.02

Sheet No.:
S107

BID SET



NORTH

1 / S108 ROOF PLAN - SECTOR D

SCALE: 1/16" = 1'-0"

0 4' 8' 16'

ROOF WIND UPLIFT LOADS

ROOF WIND UPLIFT (psf)						
ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7
11.6	21.9	25.4	29.7	34.4	41.3	47.8

NOTES:
- CODE: ASCE 7-16 CH. 30.
- BASIC WIND SPEED (3-SEC. GUST) = 102 MPH
- RISK CATEGORY: III
- WIND EXPOSURE: B
- LOADS ARE AT ULTIMATE (LRFD) LEVEL. MULTIPLY VALUES BY 0.6 TO OBTAIN ALLOWABLE STRESS (ASD) LEVEL LOADS.
- UPLIFT VALUES BASED ON TRIBUTARY AREA OF 10 SQ. FT.

KEYNOTES:

1. FALL PROTECTION ANCHOR PER DETAIL 2/S201.
2. FALL PROTECTION ANCHOR PER DETAIL 4/S201.
3. FALL PROTECTION ANCHOR PER DETAIL 5/S201.
4. FALL PROTECTION ANCHOR PER DETAIL 1/S201.
5. COVER EXISTING ABANDONED MECHANICAL CURB PER DETAIL 4/S202.
6. FALL PROTECTION ANCHOR PER DETAIL 7/S201.
7. REPAIR ALL DAMAGED GL TAILS PER DETAIL 3/S202.
8. REPLACED DAMAGED SHEATHING WITH SAME TYPE AND THICKNESS. FASTEN TO FRAMING WITH 10d NAILS @ 6" O/C AT ALL EDGES AND 1'-0" O/C IN THE FIELD. NOTIFY E.O.R. IF DECKING DAMAGE IS DISCOVERED AT OTHER AREAS BESIDES A, E, AND K OR IF DAMAGE EXTENDS TO FRAMING.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/24

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EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
SECTOR D - ROOF PLAN AREAS T, U, V, W

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: 02-21-2023

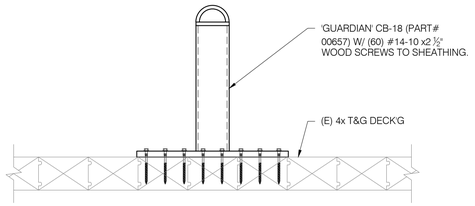
Revisions:

Drawn: JSC
Checked: JH

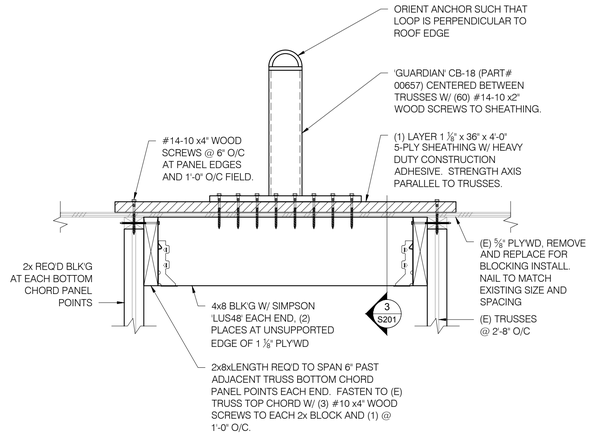
PRC No.: 23002.02

Sheet No.:
S108

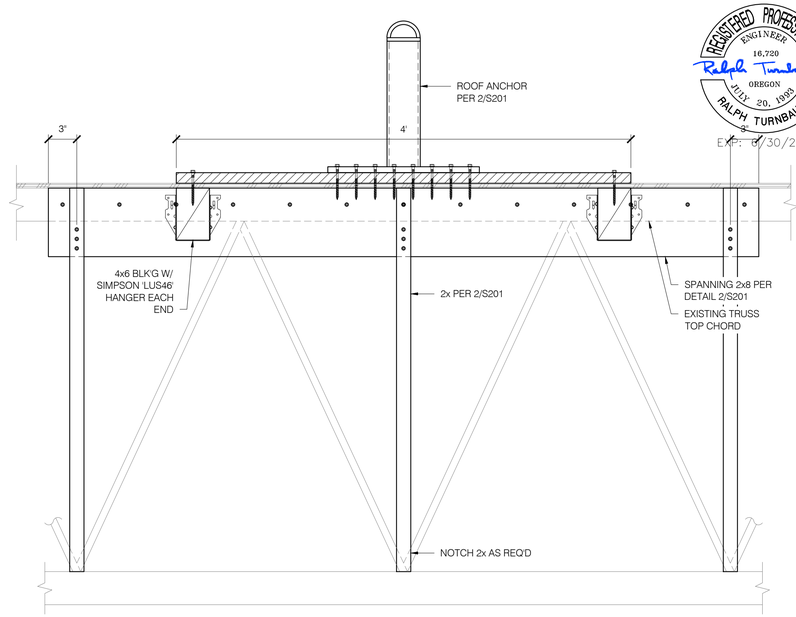
BID SET



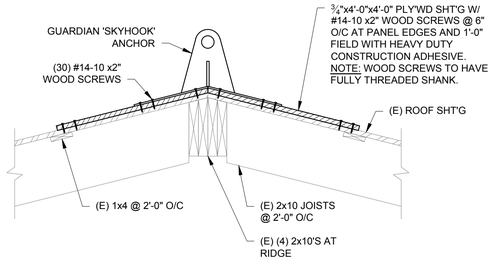
1 S201 FALL PROTECTION ANCHOR AT AREA 'H'
23002.02-09
SCALE: 1 1/2" = 1'-0"



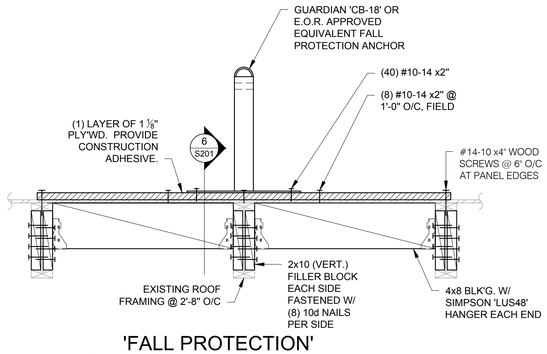
2 S201 FALL PROTECTION ANCHOR
23002.02-02
SCALE: 1 1/2" = 1'-0"



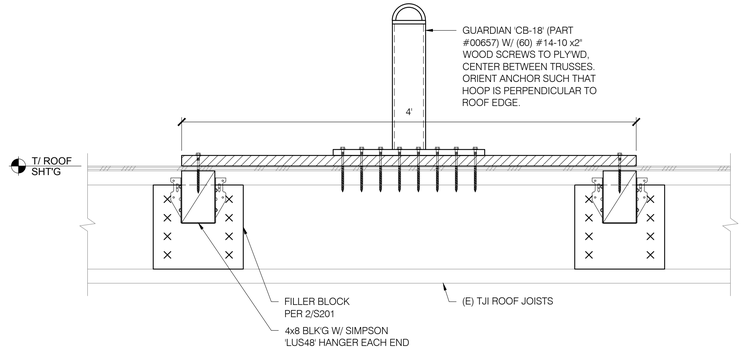
3 S201 FALL PROTECTION ANCHOR
23002.02-03
SCALE: 1 1/2" = 1'-0"



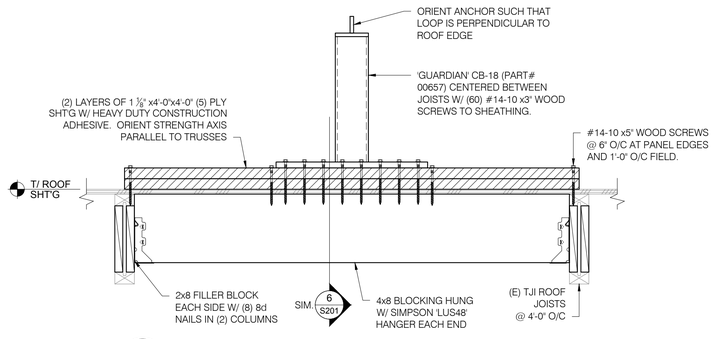
4 S201 FALL PROTECTION AT AREA 'A', 'B', ANF 'K'
23002.02-04
SCALE: 1" = 1'-0"



5 S201 'FALL PROTECTION' ANCHOR AT AREA 'G'
SCALE: 1" = 1'-0"



6 S201 FALL PROTECTION ANCHOR
23002.02-06
SCALE: 1 1/2" = 1'-0"



7 S201 FALL PROTECTION ANCHOR
23002.02-08
SCALE: 1 1/2" = 1'-0"

BID SET

PROFESSIONAL ROOF CONSULTANTS INC
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REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/24

EUGENE SCHOOL DISTRICT 4J
GILHAM ELEMENTARY SCHOOL
ROOF REPLACEMENT

Sheet Title:
ROOF FRAMING DETAILS

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

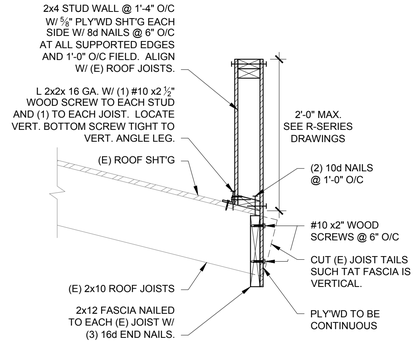
Date: 02-21-2023

Revisions:

Drawn: JSC
Checked: JH

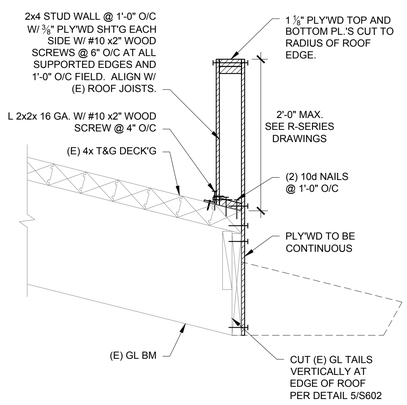
PRC No.: 23002.02

Sheet No.:
S201



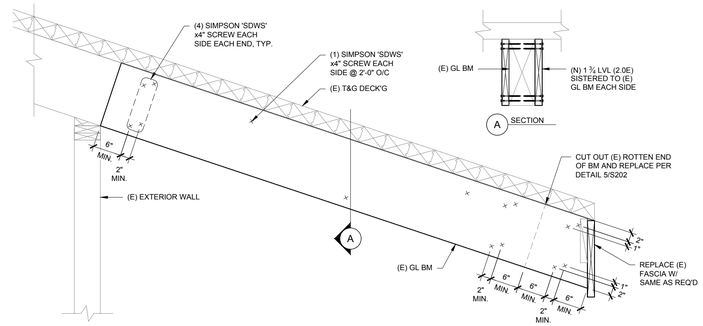
1 S202 **SECTION AT PARAPET EXTENSION**

23002.02–10 SCALE: 1" = 1'-0"



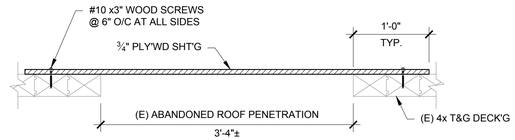
2 S202 **SECTION AT PARAPET EXTENSION**

23002.02–11 SCALE: 1" = 1'-0"



3 S202 **GL BEAM REPAIR**

23002.02–12 SCALE: 3/4" = 1'-0"



4 S202 **(E) ROOF OPENING COVER**

23002.02–13 SCALE: 1" = 1'-0"

5 S202 **GL BEAM REPAIR**

23002.02–15 SCALE: 1" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/24

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EUGENE SCHOOL DISTRICT 4J

GILHAM ELEMENTARY SCHOOL

ROOF REPLACEMENT

Sheet Title:
ROOF FRAMING DETAILS

1/4" 1/2" 1" 2"

THIS BAR SCALE MEASURES 2 INCHES IN LENGTH WHEN THE SHEET IS PRINTED FULL-SIZE. IF THIS BAR IS NOT 2 INCHES LONG, THE VIEWS ON THIS SHEET ARE NOT TO THE SCALE INDICATED.

Date: 02-21-2023

Revisions:

Drawn: JSC
Checked: JH

PRC No.: 23002.02

Sheet No.:
S202

BID SET

TM RIPPEY
CONSULTING ENGINEERS

7650 S. W. Beveland St.
Tigard, Oregon 97223
Phone: (503) 443-3900
Fax: (503) 443-3700

STRUCTURAL CALCULATIONS

EXP: 6/30/24

PROJECT: GILHAM ELEMENTARY

LOCATION: EUGENE, OR

CLIENT: PROFESSIONAL ROOF CONSULTANTS INC.

DATE: FEBRUARY 20, 2023

PROJECT NUMBER: 23002.02

DESCRIPTION: WIND UPLIFT CHART FOR ROOFING ATTACHMENT, PARAPET EXTENSIONS FOR INCREASED INSULATION, BEAM REPAIRS, AND FALL-PROTECTION ACHORAGE SUPPORTS.

TABLE OF CONTENTS:

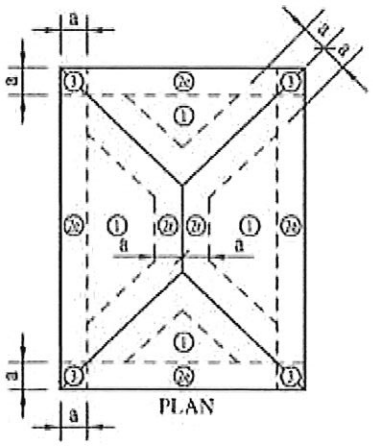
Wind Loads - Components and Cladding - Hip Roof 7°-20°

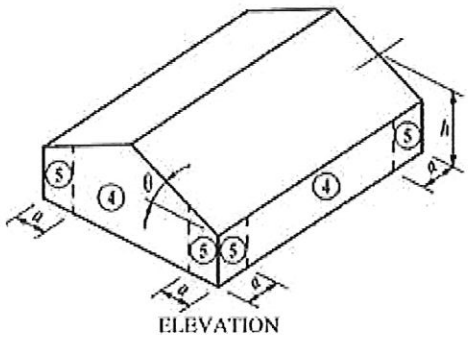
Based on ASCE 7-16 CH 30.3 Part 1

Areas A, E, and K

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	12	ft	Mean Roof Ht
	B		Exposure Category
B =	85	ft	Building Width
L =	85	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT *(1.0 W)*	**Wall** *(psf)*		**Roof** *(psf)*			
Area	**Zone 5**	**Zone 4**	**3**	**2r**	**2e**	**1**
10	-	-	23.2	31.0	23.2	16.8
10	18.1	14.2	-	-	-	-
10	18.1	14.2	23.2	31.0	23.2	16.8
20	16.7	13.5	21.1	27.7	21.1	16.8
50	14.9	12.6	18.4	23.3	18.4	14.6
100	13.5	11.9	16.3	20.1	16.3	12.9
200	12.1	11.2	14.2	16.8	14.2	12.9
500	10.3	10.3	14.2	16.8	14.2	12.9
1000	10.3	10.3	14.2	16.8	14.2	12.9





a = 4.8ft

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CONSULTING ENGINEERS

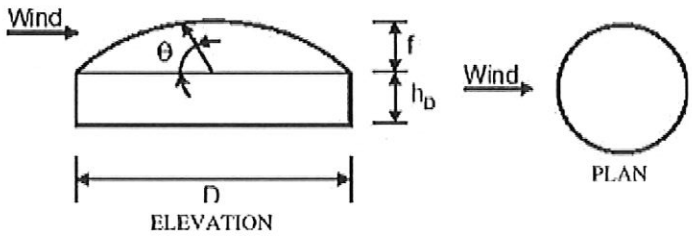
Wind Loads - Components and Cladding - Domed Roof

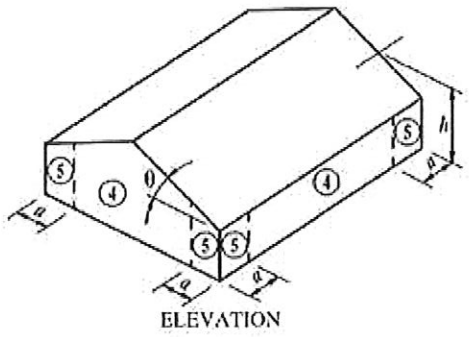
Area H

Based on ASCE 7-16 CH 30.3 Part 1

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	16.25	ft	Mean Roof Ht
	B		Exposure Category
B =	145	ft	Building Width
L =	145	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT *(1.0 W)*	Wall *(psf)*		Roof *(psf)*
Area	Zone 5	Zone 4	All
All	-	-	10.5
10	15.2	12.3	-





a = 6.5ft

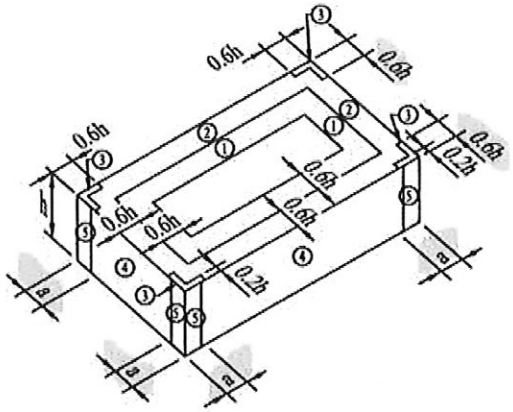
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area G

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	20	ft	Mean Roof Ht
	B		Exposure Category
B =	50	ft	Building Width
L =	80	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	44.9	32.3	23.9	12.6
10	19.7	15.4	-	-	-	-
10	19.7	15.4	44.9	32.3	23.9	12.6
20	18.2	14.7	40.4	30.0	22.1	12.6
50	16.2	13.7	34.5	27.1	19.8	12.6
100	14.7	13.0	30.0	24.8	18.1	12.6
200	13.2	12.2	25.6	22.6	16.3	10.5
500	11.2	11.2	19.6	19.7	14.0	7.7
1000	11.2	11.2	19.7	19.7	14.0	5.6



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 5ft | **0.2h = 4ft** | **0.6h = 12ft**

TM RIPPEY
CONSULTING ENGINEERS

W3

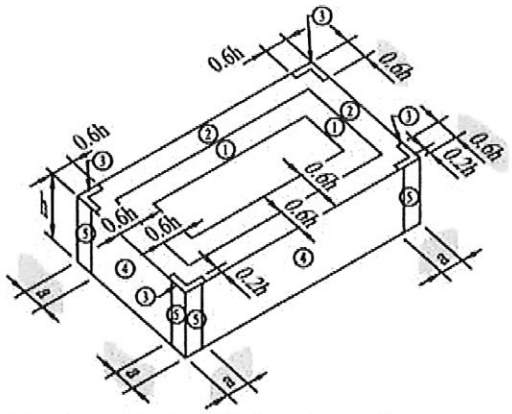
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area N

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	14	ft	Mean Roof Ht
	B		Exposure Category
B =	75	ft	Building Width
L =	250	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	41.3	29.7	21.9	11.6
10	18.1	14.2	-	-	-	-
10	18.1	14.2	41.3	29.7	21.9	11.6
20	16.7	13.5	37.2	27.6	20.3	11.6
50	14.9	12.6	31.7	24.9	18.2	11.6
100	13.5	11.9	27.6	22.8	16.6	11.6
200	12.1	11.2	23.5	20.8	15.0	9.7
500	10.3	10.3	18.1	18.1	12.9	7.1
1000	10.3	10.3	18.1	18.1	12.9	5.2



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 5.6ft	0.2h = 2.8ft	0.6h = 8.4ft

TM RIPPEY
CONSULTING ENGINEERS

W4

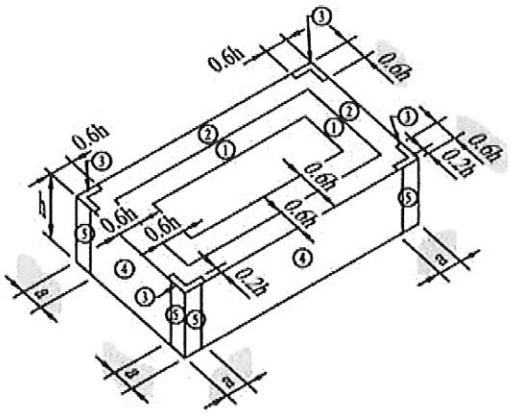
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area H

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	10	ft	Mean Roof Ht
	B		Exposure Category
B =	150	ft	Building Width
L =	150	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	41.3	29.7	21.9	11.6
10	18.1	14.2	-	-	-	-
10	18.1	14.2	41.3	29.7	21.9	11.6
20	16.7	13.5	37.2	27.6	20.3	11.6
50	14.9	12.6	31.7	24.9	18.2	11.6
100	13.5	11.9	27.6	22.8	16.6	11.6
200	12.1	11.2	23.5	20.8	15.0	9.7
500	10.3	10.3	18.1	18.1	12.9	7.1
1000	10.3	10.3	18.1	18.1	12.9	5.2



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 6ft	0.2h = 2ft	0.6h = 6ft

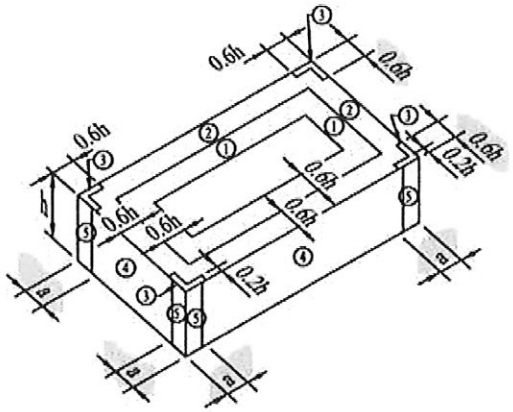
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area P

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	25	ft	Mean Roof Ht
	B		Exposure Category
B =	20	ft	Building Width
L =	40	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	47.8	34.4	25.4	13.4
10	20.9	16.4	-	-	-	-
10	20.9	16.4	47.8	34.4	25.4	13.4
20	19.3	15.6	43.0	32.0	23.5	13.4
50	17.2	14.6	36.7	28.8	21.1	13.4
100	15.6	13.8	32.0	26.5	19.2	13.4
200	14.1	13.0	27.2	24.1	17.4	11.2
500	12.0	12.0	20.9	20.9	14.9	8.2
1000	12.0	12.0	20.9	20.9	14.9	6.0



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 3ft	0.2h = 5ft	0.6h = 15ft

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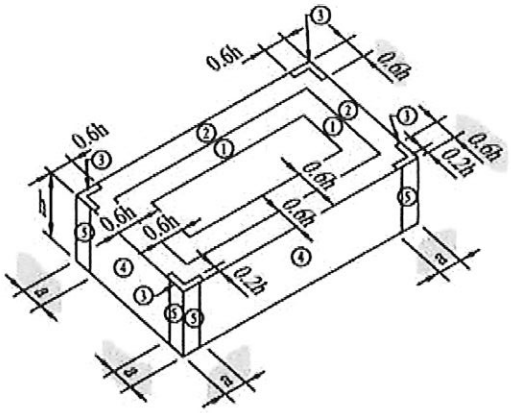
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area T

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	20	ft	Mean Roof Ht
	B		Exposure Category
B =	40	ft	Building Width
L =	150	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	44.9	32.3	23.9	12.6
10	19.7	15.4	-	-	-	-
10	19.7	15.4	44.9	32.3	23.9	12.6
20	18.2	14.7	40.4	30.0	22.1	12.6
50	16.2	13.7	34.5	27.1	19.8	12.6
100	14.7	13.0	30.0	24.8	18.1	12.6
200	13.2	12.2	25.6	22.6	16.3	10.5
500	11.2	11.2	19.6	19.7	14.0	7.7
1000	11.2	11.2	19.7	19.7	14.0	5.6



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 4ft	0.2h = 4ft	0.6h = 12ft

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W7

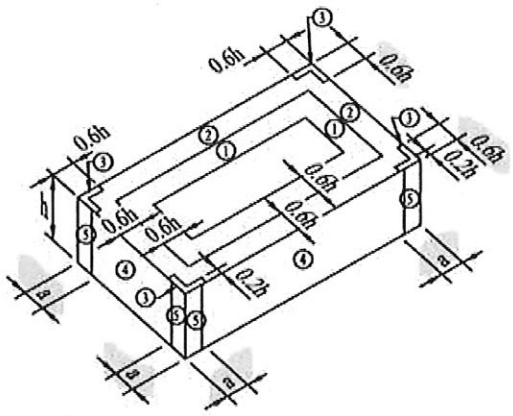
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area V

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	20.25	ft	Mean Roof Ht
	B		Exposure Category
B =	70	ft	Building Width
L =	90	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	45.1	32.4	23.9	12.7
10	19.7	15.5	-	-	-	-
10	19.7	15.5	45.1	32.4	23.9	12.7
20	18.2	14.7	40.6	30.1	22.2	12.7
50	16.2	13.8	34.6	27.2	19.9	12.7
100	14.7	13.0	30.1	24.9	18.1	12.7
200	13.2	12.3	25.7	22.7	16.4	10.6
500	11.3	11.3	19.7	19.7	14.1	7.8
1000	11.3	11.3	19.7	19.7	14.1	5.6



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 7ft	0.2h = 4.1ft	0.6h = 12.2ft

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W8

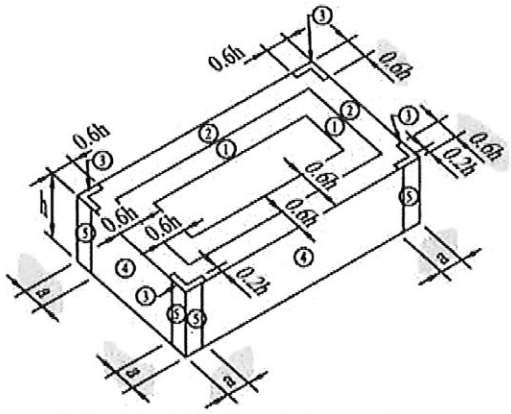
Wind Loads - Components and Cladding - Flat Roof

Based on ASCE 7-16 CH 30.3 Part 1

Area W

V =	102	mph	Ultimate Wind Speed 3-Second Gust
Roof A_e =	10	ft^2	Roof Effective Area
Wall A_e =	10	ft^2	Wall Effective Area
h_n =	14	ft	Mean Roof Ht
	B		Exposure Category
B =	25	ft	Building Width
L =	90	ft	Building Length
K_{zt} =	1.00		Topographic Factor
K_d =	0.85		Wind Directionality Factor
K_e =	1.00		Ground Elevation Factor
GC_{pi} =	0.00		Internal Pressure Coefficient

ULT (1.0 W)	Wall (psf)		Roof (psf)			
Area	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1	Zone 1'
10	-	-	41.3	29.7	21.9	11.6
10	18.1	14.2	-	-	-	-
10	18.1	14.2	41.3	29.7	21.9	11.6
20	16.7	13.5	37.2	27.6	20.3	11.6
50	14.9	12.6	31.7	24.9	18.2	11.6
100	13.5	11.9	27.6	22.8	16.6	11.6
200	12.1	11.2	23.5	20.8	15.0	9.7
500	10.3	10.3	18.1	18.1	12.9	7.1
1000	10.3	10.3	18.1	18.1	12.9	5.2



Flat/Hip/Gable (0° ≤ Θ ≤ 7°)

a = 3ft	0.2h = 2.8ft	0.6h = 8.4ft

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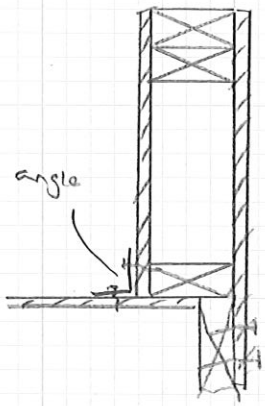
W9

Parapet Extension @ Areas A, E, K

Positive roof pressure = 9.0psf LRFD
Positive wall pressure = 12.9psf LRFD

Load case A = 9.0psf + 18.1psf = 27.1psf LRFD
Load case B = 23.2psf + 12.9psf = 36.1psf LRFD



for 2'-6" max parapet
V = 36.1psf (2 ft) = 72.2plf LRFD = 43.3plf ASD
mom = 43.3 lb-ft/ft ASD

Using 2x4 parapet walls T/C = 43.3 lb-ft/ft / 3.5in = 148.5 lbs/ft ASD

for angle, use L 2×2× 33 mil w/ #10 SMS

Screw cap = 265 lbs pull over (steel
= 345 lbs / FOS=5.0 (CD=1.6) = 110 lbs

Shear = 177 lbs

USE #10 screws @ 0'-4" O/C

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JOB NO 23002.02
SHEET P1 OF

Rotten beam repair

$W = (15\,psf\,DL + 25\,psf\,SL)\,16\,ft$

$= 640\ plf$

$mom = 640\,plf\,(1.5\,ft)(0.75\,ft)$

$= 720\,lb\text{-}ft$

$T/C = 720\,lb\text{-}ft / 7\,ft$

$= 103\,lbs$

Fasten w/ (4) Simpson SDWS screws x 4"

$Cap = 405\,lbs\,(4) = 1620\,lbs > 103\,lbs$ ✓

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SHEET B1 OF

Fall Protection

P = 3,100 lbs ASD

mom = 3,100 lbs (18") = 55.8 K-in

T/C = 55.8 K-in / 32" = 1.74 K

using #14 x 3½" screws @ 6" o/c

ten cap = 172 lbs (C_D=1.6)(1⅝" pen)

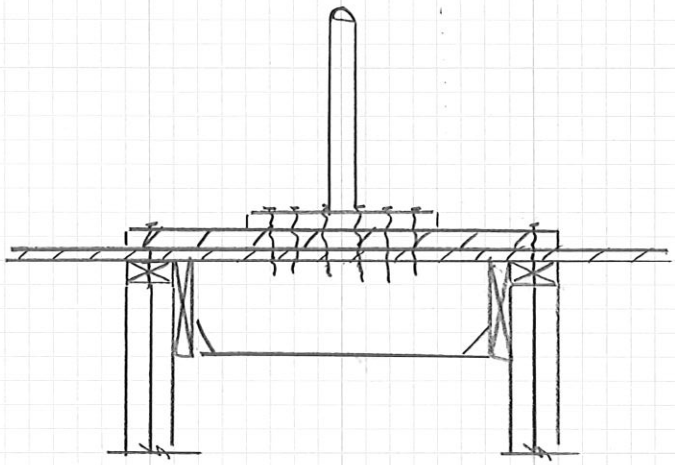
= 447 lbs/screw

447 (48 in / 6" o/c) = 3.6 K > 1.74K ✓

shear cap = (590 lbs / F_{OS}=5.0) (C_D=1.6)

= 189 lbs/screw (28 screws)

= 5.3 K > 3.1 K ✓



other direction

T/C = 55.8 / 48 = 1.16K

447 (32in / 6" o/c) = 2.24 K > 1.16K ✓

USE [4x6 DF #2]

hang w/ Simpson 'LUS46'

Cap = 1.06 K > 1.16K / 2 hangers = 0.58 ✓

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SHEET F1 OF

Fall Protection

Area T

36" TJL @ 32" o/c

Load combo = D + 0.75 L + 0.75 S

$W = [15psf\ DL + 25psf\ SL(0.75)]\ 2.5\ ft$

$= 84.4\ plf$

anchor mom = 3100 lbs A_{SD} (18") = 4.65 K-ft (0.75 for load combo) = 3.49 K-ft /2 joists

LL mom = 19.5 K-ft

(E) mom w/ 100% D+L = 21.0 K-ft > 19.1 K-ft ✓

Area U

16" TJI/55G @ 48" o/c

$W = [15psf\ DL + 25psf\ SL(0.75)]\ 4\ ft$

$= 135\ plf$

anchor load = 3.49 K-ft / 4 ft = 0.873 K /2 joists = 437 lbs

LL mom = 7.46 K-ft

Cap = 9.50 K-ft > 7.46 K-ft ✓

Area V

33" TJM @ 32" o/c span = 57'-0"

$W = [15psf\ DL + 25psf\ SL(0.75)]\ 2.5\ ft$

$= 84.4\ plf$

anchor mom = 4.65 K-ft (0.75) = 3.49 K-ft /2 joists

LL mom = 36.0 K-ft

(E) mom w/ 100% D+L = 40.6 K-ft > 36.0 K-ft ✓

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SHEET F2 OF

Fall Protection Cont.

Area W

18" TJI/55C @ 32" o/c Span = 29'-0"

Lc mom = 9.77 k-ft

(E) mom w/ 100% D+L = 10.51 k-ft > 9.77 k-ft ✓

Area N-1

20" TJI/60C @ 48" o/c span = 30'-0"

Lc mom = 16.98 k-ft

(E) mom w/ 100% D+L = 18.0 k-ft > 16.98 k-ft ✓

Area N-2

11 7/8" TJI/35C @ 32" o/c Span = 13 ft

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CHK BY DATE

JOB NO 23002.02

SHEET F3 OF