

**SECTION 00 2113
INSTRUCTIONS TO BIDDERS**

SUMMARY

1.01 THE PROJECT

- A. In accordance with these instructions, the bidder is requested to submit a Bid for project and contract work indicated in the Roof Replacement Specifications and Drawings.
- B. Each bidder is referred to the Advertisement for Bids and Supplemental Instructions To All Bidders for this project, which includes instructions and requirements for bidders in addition to those included in this section.

1.02 CONTRACTS

- A. The Owner will enter into a single lump sum contract with the selected bidder.

1.03 SUBMISSION OF BIDS

- A. Place for Receiving Bids
 - 1. The Wayne RESA will receive bids for Roof Replacements by the date and time provided on the cover page of this RPF. Bids must be emailed to the attention of the Purchasing Consultant, Wayne RESA Purchasing Office, Attention: Stacey Shaw – purchasing@resa.net
 - 2. The Bid Form and any other documents required to be submitted with the Bid, shall be attached as one PDF and sent to the Purchasing Consultant.
 - 3. The PDF file must be clearly labeled as Wayne RESA Bid Form and the subject line on the email salutation must clearly identify the project name and the project description for which the Bid is submitted.
- B. Date for Receiving Bids
 - 1. Bids shall be emailed on time to reach the designated location on or before the time and date of receipt of Bids indicated, unless extension is made by Addendum. Bids received after time and date for receipt of Bids will remain unopened.
 - 2. Bidders shall assume full responsibility for timely delivery of bids.
 - 3. Oral, telephone, or facsimile Bids are invalid and will not receive consideration.

1.04 BIDDERS REPRESENTATIONS

- A. Each bidder by making his Bid represents that:
 - 1. He has read, understands, and makes his Bid in accordance with the Bidding Documents.
 - 2. He has visited the site, has familiarized himself with the local conditions under which the Work is to be performed and has correlated his observations with the requirements of the proposed Contract Documents.
 - 3. His Bid is based upon the materials, systems, and equipment required by the Bidding Documents without exception.

1.05 INSPECTION OF SITE

- A. Before submitting his Bid, each bidder shall personally inspect the site of the proposed work to arrive at a clear understanding of the conditions under which the work is to be done.
- B. Each bidder shall be held to have compared the premises and the site with the Specifications and Drawings, and to have satisfied himself as to the conditions of the premises, the existing obstructions, and any other conditions affecting the completion of his work, all before the delivery of his proposal.
- C. No allowances or extra considerations on behalf of any bidder will be permitted subsequently by reason or error or oversight on the part of the Contractor, or on account of interferences by the activities of the Owner.

1.06 CONTRACT DOCUMENTS

- A. It is understood and agreed that the Advertisement, Instructions to Bidders, Proposal Agreement, Bonds, Specifications, Drawings, Addenda and Change Orders issued by the

Owner, and specifications and/or technical data furnished by the Contractor and approved by the Owner, are each included in this Contract and the work shall be done in accordance therewith.

1.07 BIDDING DOCUMENTS

- A. Bidding Documents which will be issued for the use of bidders and upon which all proposals are to be based, consist of those listed in these specifications.
 - 1. Documents consist of: Plans and specifications prepared by Roofing Technology Associates, Ltd.
- B. Proposals are solicited on the basis of unit prices for certain items of work and lump sum prices for certain items of work, all as provided in the Bid Form.
- C. The preliminary estimates of quantities indicated, although given with as much accuracy as is practicable, are to be regarded as approximate only, being given for the general guidance of the bidders as a basis upon which the different proposals may be compared. The Owner reserves the right to increase or diminish any or all of these quantities within reasonable limits and the Contractor shall be paid for the actual amount of work completed by him and accepted by the Owner at the prices stated in his proposal.
- D. In the event that additional documents are required to explain revisions which are made during the bidding period or to give additional information to the bidders, the Roof Consultant will prepare such documents in the form of an Addendum with accompanying drawings, if required, and will send copies of the same to all bidders, prior to the date for receipt of proposals. All proposals are to include the work described and indicated on such additional documents.
- E. Interpretation or Correction of Bidding Documents
 - 1. Bidders shall promptly notify the Roof Consultant of any ambiguity, inconsistency or error which they may discover upon examination of the bidding documents or of the site and local conditions of the work.
 - 2. Any interpretation, correction or change of the documents will be made by the Roof Consultant by Addendum. Interpretations, corrections or changes of the bidding documents made in any other manner will not be binding and bidders shall not rely upon such interpretations, corrections and changes.
 - 3. All questions or inquiry relative to the reroofing project shall be directed to: Ron Kinne, Project Manager, Roofing Technology Associates, Ltd. at (734)591-4444.

1.08 BIDDER'S OPTIONS

- A. For products specified only by reference standard, select product meeting that standard by any manufacturer.
- B. For products specified by naming several products or manufacturers, select any one of the products and manufacturers named which comply with the technical specifications.
- C. For products specified by naming several products or manufacturers and stating "or approved equal" or similar wording, submit a request for approval for review and approval by the appropriate Design Team member.
- D. For products specified by naming only product and manufacturer, there is no option and no substitutions will be allowed.
- E. Once a roofing material manufacturer is selected by the bidder, materials shall be as supplied by the selected roofing material manufacturer to satisfy the specified warranty requirements.

1.09 SUBSTITUTIONS

- A. Base Bid shall be in accordance with these Bidding Documents.
- B. No substitution of products or roofing systems will be allowed on this project, unless a product or roofing system specified is no longer manufactured.
- C. In the event that a product or roofing system is no longer manufactured, contact the Architect. An Addendum will be issued with additional documents for acceptable alternate products or roofing systems.

1.10 BIDDING PROCEDURES

A. Contractor Qualification Statement

1. It is the intention of the Owner to award this contract to a bidder competent to perform and complete all work in a satisfactory manner. It is required by the Owner that each bidder under consideration shall submit a statement of his experience and financial status with this bid. Each bidder shall submit to the Owner the following notarized statements pertaining to his financial resources, adequacy of plant and equipment, organization, prior experience and other facts, as his qualification to enter into contract with and to perform construction work for the Owner. All financial information submitted shall be confidential.
2. The Bidder must submit a completed copy of AIA A305 - Contractor's Qualification Statement at least 7 days prior to the Bid Due Date. See attached copy in Section 00 5000 Contracting Forms and Supplements.

B. Form of Bids

1. Bid forms are furnished within the Project Specifications. Each bidder shall submit his bid and retain one copy for his files.
2. Bids must be filled out fully and correctly and submitted only on Bid Forms provided. Bids in any other form will be rejected.
3. All information required to be provided on the Bid Form shall be typewritten or printed manually in ink with a handwritten signature where noted.

C. Bid Security

1. Bid Security is required on this project. A copy of AIA A310 - Bid Bond is attached in Section 00 5000 Contracting Forms and Supplements..
2. This is a guarantee on the part of the bidder that he will, if called upon to do so, enter into a contract, in the attached form, to do the work covered by such Proposal at the prices stated therein and to furnish acceptable surety for its faithful and entire fulfillment. Such certified check or bidder's bond shall be made out to the Owner and shall be subject to the conditions specified in the Proposal. If a certified check is submitted, it shall be accompanied by a letter for a surety company, guaranteeing the issuance of a Performance Bond upon award of the contract.
3. The bid deposits of all except the two lowest bidders will be returned within three days after the opening of bids. The bid deposits of the two lowest bidders will be returned within 48 hours after the executed Contract and the required bonds have been fully approved by the owner or after rejection of all bids.

D. Modification or Withdrawal of Bid

1. A Bid may not be modified, withdrawn or canceled by the bidder during the stipulated time period following the time and date designated for the receipt of Bids, and bidder so agrees in submitting his bid.
2. Bidder may withdraw his proposal at any time prior to the time set for opening of proposals.

1.11 ADDENDA

- A. The bidder may, during the bidding period, be advised by Addenda of additions or alterations to the Specifications and Drawings. All such changes shall be included in the work and shall become part of the Contract Documents.

1.12 VOLUNTARY ALTERNATES

- A. Base bids are requested in accordance with the detailed specifications.
- B. Voluntary alternates, which in the bidder's judgment will result in a better job or an equally satisfactory job at a lower cost, are allowed.
- C. Such alternates are to be described in detail, together with any addition or deduction to the base price, to permit proper evaluation.

1.13 PRE-BID MEETING AND EXAMINATION OF SITE

- A. There will be a mandatory Pre-Bid Meeting at the location, date and time indicated on the cover page of this RFP.
- B. The bidder shall visit the site of the work to fully inform himself of the existing conditions and the materials and labor required to complete the project. No additional compensation will be allowed to complete the work due to the bidder's failure to acquaint himself with the existing conditions.
- C. Arrangements to visit the site shall be made through Mr. Rob McCoy, Manager of Facilities and Operations, WAYNE RESA, (734) 334-1613.

1.14 NAME, ADDRESS AND LEGAL STATUS OF BIDDER

- A. The name and legal status of the bidder, that is, as a corporation, partnership, or an individual, shall be stated in the Proposal. A corporation bidder shall name the state in which its Articles of Incorporation are held and must give the title of the official having authority, under the by-laws, to sign contracts. A partnership bidder shall give the full names and address of all partners.
- B. Anyone signing a Proposal as an agent of another or others must submit with his Proposal legal evidence of his authority to do so. The place of residence of the bidder, or the office address in the case of a firm or company, with county and state, must be given after his signature.
- C. Bids which are not signed by the individual making them should have attached thereto a power of attorney evidencing authority to sign the bid in the name of the person for whom it is signed.
- D. Bids which are signed for a partnership should be signed by all of the partners or by an attorney in fact. If signed by an attorney in fact, there should be attached to the bid a power of attorney evidencing authority to sign the bid, executed by the partners.
- E. Bids which are signed for a corporation should have the correct corporate name thereto and the signature of the president or other authorized officer of the corporation below the corporate name following the word "By".

1.15 TAXES

- A. The Contractor shall pay all use and other taxes that are lawfully assessed against the Contractor in connection with the work included in this Contract.

1.16 CONSIDERATION OF BIDS

- A. Opening of Bids
 - 1. The properly identified bids received on time will be opened and read publicly beginning at 12:01 p.m. local time on the Proposal Due Date at the project site.
- B. Bid Evaluation and Selection Process
 - 1. A bid evaluation team will be assembled to include, but not be limited to Owner's Representative(s), Purchasing Consultant and Roof Consultant. The evaluation team will take into consideration bidder's qualifications, past performance, relevant experience, the ability of the bidder to provide the high-level quality projects. A short list of bidders may be asked to attend a post-bid interview with the evaluation team to review their bid and answer questions about their bid.
 - 2. The bid evaluation team will provide a recommendation to the WRESA Board of Education for final approval or rejection.
- C. Right To Reject
 - 1. In submitting this bid, it is understood that the right is reserved by the Owner to reject any or all Bid Proposals, either in whole or in part, to accept other than the low bid or to waive any defect, irregularity or informalities in any bid. The Owner reserves the right to assign all or part of the subject contract to one or more of the qualified Bidders, should it be deemed in the best interest of the Owner.

- D. Acceptance of Bid (Award)
1. The Contract shall be deemed as having been awarded when formal notice of acceptance of his Proposal has been duly served upon the intended awardee by an officer or agent of the Owner duly authorized to give such notice. The Contract Date shall be the date of this notice of acceptance. Notice of acceptance is expected to be made within 30 days from the opening of the bids.
 2. The bidder to whom the Contract is awarded by the Owner shall, within seven (7) days after notice of acceptance and/or receipt of Agreement forms from the Owner, sign and deliver to the Owner all required copies.
 3. The Owner shall have the right to accept Alternates in any order or combination, and to determine the low bidder on the basis of the sum of the Base Bid and the Alternates accepted.
 4. The Owner will determine the Contract Sum and issue a Purchase Order to the successful bidder.
- E. Time of Starting and Completion
1. The successful bidder shall furnish insurance and commence active work on the Project within ten (10) days after receipt of notice of award and shall complete the work within the time stated in the Contract.
 2. Roof Replacement Work on the Wayne RESA is to be started after the earliest date in 2023. The completion date is to be negotiated with the Owners Representative.
- F. Work Week
1. The bidder, if awarded a Contract, shall be required to establish the work week and hours of work as required to properly man the project, maintain the progress schedule and complete the work within the time stated in the Contract. The Contractor shall provide and pay for any overtime necessary to complete his work within the agreed time, with no change in the Contract Sum or additional costs to the Owner.
 2. Work may be done Monday through Saturday from the hours of 7:00 a.m. to 6:00 p.m. If the Contractor wishes to work at other times, he shall submit a request in writing to the Owner.

1.17 FORM OF CONTRACT BETWEEN OWNER AND CONTRACTOR

- A. A Contract for the Work will be written on the Wayne RESA Master Service Agreement.

1.18 BONDS AND CERTIFICATES

- A. Subject to the approval of the Owner, within 10 calendar days after being notified of the acceptance of the proposal, the bidder to whom the award is made will be required to enter into a written agreement with the Owner and furnish requested bonds with an approved indemnity company.
- B. PERFORMANCE AND PAYMENT BOND: A Surety Bond in the full amount of the Contract insuring faithful performance of all provisions of the Contract and the satisfactory completion of the work within the time stipulated in the Contract and insuring the payment for all labor, materials and equipment to Subcontractors. A copy of the Performance And Payment Bond Form is attached in Section 00 5000 - Contracting Forms and Supplements for the bidders review.
- C. The Worker's Compensation Insurance, Public Liability and Property Damage Insurance and Owner's Protective Public Liability Insurance in the amounts specified in the Agreement must be carried by the Contractor.
- D. Each Proposal shall include the premium and all other charges, if any, for the Bonds and insurance herein described.
- E. The required Bonds and Insurance Certificates shall be submitted to Wayne RESA Purchasing Office within 10 days from the Notice of Acceptance.

1.19 PERMITS

- A. Accepted Bidder or Bidders will be required to obtain a General Building Permit from the State of Michigan for the work of this project. The cost of the Permit(s) is to be included in the Base Bid.

1.20 PAYMENT

- A. The Contractor shall submit monthly invoices for work completed. These will be paid on a regular basis, less an appropriate retention. Final payment will be made upon successful completion of all punch list items.
- B. The Owner will pay for two final punch list inspections. The cost of any subsequent visits required to clear items from the punch list will be deducted from the retainage.

1.21 LIQUIDATED DAMAGES

- A. It is expressly covenanted and agreed that time is and shall be considered of the essence of the Contract. In the event that the Contractor shall fail to perform the entire work agreed to by or at the times herein mentioned, or within some other certain date subsequent to this to which the time limit for the completion of the work may have been changed, the Contractor shall pay unto the Wayne RESA as and for liquidated damages and not as a penalty, the sum of Five Hundred Dollars (\$500) for each and every calendar day that the Contractor shall be in default. Said sum of Five Hundred Dollars (\$500) per day, in view of the difficulty of estimating such damages with exactness, is hereby expressly fixed and agreed upon as the damages which will be suffered by the Wayne RESA for reason of such defaults. It is also understood and agreed that the liquidated damages herein before mentioned are in lieu of the actual damages arising from such breaches of this Contract, which said sums the Wayne RESA shall have the right to deduct from any monies in his hand otherwise due or to become due to the Contractor or to sue for and recover compensation for damages for nonperformance of this Contract at the time stipulated herein and provided.

1.22 CONDUCT OF WORK

- A. The entirety of the work shall be so conducted as to cause as little inconvenience as possible to the Owner, who will continue to occupy the existing building during the progress of the work. Contractor shall not interfere with the continuous operations and shall safely work around all operations.

END OF SECTION

SECTION 00 4100

BID FORM

THE PROJECT AND THE PARTIES

1.01 TO:

- A. Owner
Wayne RESA
33500 Van Born Road
Wayne Michigan 48184

1.02 FOR:

- A. Project: Wayne RESA - 2023 Roof Replacement - Areas 5, 8 and 9.
B. 33500 Van Born Road
C. Wayne, Michigan 48184

1.03 DATE: _____ (BIDDER TO ENTER DATE)

1.04 SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)

- A. Bidder's Full Name _____
1. Address _____
2. City, State, Zip _____

1.05 GENERAL CONDITIONS

- A. The undersigned in submitting this proposal agrees as follows:
1. The entire work shall be subject to the requirements of the General Conditions of the Contract contained in and forming a part of the Agreement.
B. Prior to execution of the Agreement for this work, the Contractor shall furnish the Owner with copies of Certificates of Insurance.

1.08 OFFER

- A. TO:
Purchasing Consultant
Wayne RESA
Attention: Stacey Shaw – purchasing@resa.net
- B. PROPOSAL FOR:
1. Wayne RESA - B Wing - Area 5 Roof Replacement, A Wing - Area 8 Roof Replacement and Main Entrance Vestibule - Area 9 Roof Replacement.
- C. The undersigned having examined the Bidding Documents, including the Advertisement for Bids, Instructions to Bidders, General Requirements, Insurance Requirements, General Conditions, Technical Specifications and Plans, and being familiar with all conditions affecting this proposed project, hereby proposes to furnish all labor, materials, tools, equipment, utilities, transportation or other facilities and services necessary to perform and complete in a workmanlike manner the construction of the proposed project, all in accordance with the Bidding Documents, for the sums and under the conditions as follows:
- D. BASE BID FOR THE ROOF REPLACEMENT OF AREAS 5, 8 and 9 - The undersigned agrees to the performance of the Work as Stated for the Base Bid Sum of (the amounts shall be in both words and figures with the amount in words governing in the event of discrepancy):
1. _____ Dollars
2. (\$ _____), in lawful money of the United States of America.
3. Total Base Bid plus 40% contingency: _____.
- E. We have included the required security deposit as required by the Instruction to Bidders.
- F. All applicable federal taxes are included and State of Michigan taxes are included in the Bid Sum.

1.09 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
 - 1. Execute the Agreement within 10 days of receipt of Notice of Acceptance.
 - 2. Furnish the required bonds within ten days of receipt of Notice of Acceptance.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.10 CONTRACT TIME

- A. If this Bid is accepted, we will:
- B. Complete the Work by _____ (Bidder to enter completion date or time frame.)

1.11 UNIT PRICES

- A. The undersigned agrees that at the Owner's discretion, the Base Bid Sums may be altered as follows if the Unit Prices indicated and defined in the Unit Prices Section and elsewhere in the Bidding Documents need to be executed (Failure to bid upon requested Unit Prices shall indicate no change in the Base Bid Sum).
- B. UNIT PRICE NO. 1 - WOOD NAILER INSTALLATION
 - 1. 2X4 _____ Dollars (\$ _____)
per lineal foot
 - 2. 2X6 _____ Dollars (\$ _____)
per lineal foot
 - 3. 2X8 _____ Dollars (\$ _____)
per lineal foot
 - 4. 2X10 _____ Dollars (\$ _____)
per lineal foot
 - 5. 2X12 _____ Dollars (\$ _____)
per lineal foot
 - 6. 3/4-INCH CDX PLYWOOD
 - 7. _____ Dollars (\$ _____)
per square foot
- C. UNIT PRICE NO. 2 - 18-GAUGE GALVANIZED PLATE AND INSTALLATION
 - 1. _____ Dollars (\$ _____)
per square foot
- D. UNIT PRICE NO. 3 - 3/16-INCH STEEL PLATE AND INSTALLATION
 - 1. _____ Dollars (\$ _____)
per square foot
- E. UNIT PRICE NO. 4 - ROOF DRAIN REPLACEMENT AT CONCRETE DECK
 - 1. _____ Dollars (\$ _____)
per drain

1.12 ALTERNATES

- A. The undersigned agrees that at the Owner's discretion, the Base Bid Sums may be altered as follows if the Alternate Prices indicated and defined in the Alternates Section and elsewhere in

the Bidding Documents need to be executed (Failure to bid upon requested Alternate Prices shall indicate no change in the Base Bid Sum).

- B. ALTERNATE PRICE NO. 1 - 4-Year Extended Service & Maintenance Agreement not required by Contract Documents.
1. Include a proposal amount which shall apply to all work included in the 4-Year Extended Service & Maintenance agreement as described in Section 01 2300 and related sections in the Project Manual.
 2. _____ Dollars (\$ _____)
4-year lump sum
 3. Non-Covered Repair Costs Time and Material Basis of Payment
 - a. Per Man-Hour \$ _____ per hour
 - b. Material Mark-Up _____ %

1.13 ADDENDA

- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
1. Addendum # _____ Dated _____.
 2. Addendum # _____ Dated _____.

1.14 BID FORM SIGNATURE(S)

- A. The Corporate Seal of
- B. _____
- C. (Bidder - print the full name of your firm)
- D. was hereunto affixed in the presence of:
- E. _____
- F. (Authorized signing officer, Title)
- G. (Seal)
- H. _____
- I. (Authorized signing officer, Title)

END OF SECTION

SECTION 00 5000
CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

**1.01 CONTRACTOR IS RESPONSIBLE FOR OBTAINING A VALID LICENSE TO USE ALL
COPYRIGHTED DOCUMENTS SPECIFIED BUT NOT INCLUDED IN THE PROJECT MANUAL.**

1.02 FORMS

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.
- B. Bid Form: Section 00 4100 - Bid Form.
- C. Procurement Form Supplements:
 - 1. Bid Security Form: Document A310. See attached.
- D. Representations and Certifications:
 - 1. Bidder's Qualifications: Document A305. Cover and Exhibits A through D. See attached.
- E. Performance Bond and Payment Bond: Document A312. See attached.

1.03 REFERENCE STANDARDS

- A. Document A305- Contractor's Qualification Statement; 2020.
- B. Document A310 - Bid Bond; 2010.
- C. Document A312 – Performance Bond and Payment Bond; 2010.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

INSERT AIA A305, A310 AND A312 HERE

SECTION 01 0000
GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 GENERAL DESCRIPTION OF REQUIREMENTS

- A. All bidders shall be held to have thoroughly examined all of the drawings and specifications and to have visited the site to determine the extent of reroofing and alteration work required. All measurements are the responsibility of the bidder.
- B. It is the declared and acknowledged intention and meaning of these specifications to repair, reroof and to alter the existing premises as required to provide a watertight roofing system.
- C. The work will include the furnishing of all materials and equipment and the performing of all labor required, whether or not specifically indicated by the plans and specifications, to provide a watertight roofing system.

1.03 PROJECT DESCRIPTION

- A. Project Name: Roof Replacement Specifications - B Wing, Area 5 and A Wing, Area 8 and Main Entrance Vestibule, Area 9.
- B. Owner's Representative Name: Mr. Rob McCoy.
- C. Owner's Name: Wayne Regional Educational Service Agency.
- D. Roof Consultant's Name: Roofing Technology Associates, Ltd., Contact: Mr. Ron Kinne, (734)591-4444.
- E. The Project consists of reroofing B Wing, Area 5, A Wing, Area 8 and Main Entrance Vestibule, Area 9 located at the Wayne Regional Educational Service Agency, 33500 Van Born Road, Wayne, Michigan.
- F. Bidders are responsible for verifying the roof replacement square footage.

1.04 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on the WRESA Master Service Agreement.

1.05 SEQUENCE OF OPERATIONS

- A. The various parts of the work shall be carried on in a manner which will best serve in providing for the continuous operations of all necessary functions of the existing buildings and to cause as little inconvenience to the public as practicable in their occupancy and use of the facilities.

1.06 WORKMANSHIP AND MATERIALS

- A. All materials and equipment shall be furnished, installed and completed in a first class, workmanlike manner as indicated in the Conditions of the Contract, on the accompanying drawings and in the technical specifications.

1.07 FIELD CONDITIONS AND DIMENSIONS

- A. The dimensions, details and other information provided relative to the existing work are furnished subject to verification by the Contractor. The Contractor shall verify all existing conditions and dimensions. No additional compensation will be granted for the Contractor's failure to comply with the above requirements.

1.08 MATERIALS AND SUBSTITUTIONS

- A. Whenever an article, material or item of equipment is defined by describing a proprietary product, or by using the name of the manufacturer or vendor, the term "or equivalent," if not inserted, shall be implied. The specific article, material or item of equipment mentioned shall be understood as indicating the minimum requirements of fulfilling contract obligations in regard to type, function, standard of design and efficiency.

- B. Materials of manufacturers, other than those which may be named, will be given equal consideration, provided that written approval for the substitution is obtained from the Roof Consultant, and further provided that the Contractor shall be totally responsible for all costs incurred by dimension changes and weight changes occasioned by this substitution. No approvals concerning any phase of the Contract shall be valid unless given in writing by the Roof Consultant.

1.09 SHOP DRAWINGS AND PRODUCT DATA

- A. Prior to the delivery of any material or equipment to the job site, the Contractor shall check and verify all field measurements and existing conditions. Thereafter, the Contractor shall submit to the Roof Consultant, with such promptness as to cause no delay in the work, a minimum of three copies of shop drawings, product data catalogs, material schedules, etc. Following examination by the Roof Consultant, two copies will be retained for the Owner's use and remaining copies will be returned to the Contractor with indication of approval or with notations for correction.

1.10 TIME OF COMPLETION

- A. All work specified in the Contract Documents shall be completed within the specified time period. If, at any time during the life of this Contract, the Contractor finds that for reasons beyond his control it is impossible to complete the work within the specified time period fixed by the Contract, a written request for a change to the Contract extending the time of completion shall be submitted. Such a request shall set forth in precise detail the reasons believed to justify an extension and shall be in such format as the Owner may require.

1.11 MIOSHA SAFETY STANDARDS

- A. All work must be accomplished in accordance with all applicable Construction Safety Standards rules and regulations for Construction Operations, as set forth by the Michigan Department of Labor (MIOSHA).

1.12 SAFETY

- A. The Contractor shall furnish, install and maintain as long as necessary and remove when no longer required, adequate barriers, warning signs and lights at all dangerous points throughout the work for protection of staff, workmen, and the public. The Contractor shall hold the Owner harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the work under the Contract. The Contractor shall hold the Owner harmless from fines resulting from the Contractor's failure to provide all required safety protection required by the Michigan Department of Labor (MIOSHA).

1.13 STRUCTURAL PROTECTION

- A. The Contractor shall furnish, install, and maintain adequate protection of existing building elements and finishes and adjacent structures from damage caused by his operations. The Contractor shall repair or replace any damaged building element or finish to match its condition prior to the start of the work and remove all protections when the work is complete.

1.14 TEMPORARY UTILITIES

- A. Water and electricity will be available in the area where work will be performed. The Contractor will not be charged for reasonable use of these services for construction operation. The Contractor shall pay costs for installation and removal of any temporary connections including necessary safety devices and controls.

1.15 REPAIRS AND FINISHES

- A. Existing disturbed materials and equipment resulting from the construction operations shall be repaired and finished to match existing or adjacent finishes.
- B. The Contractor shall replace any glass that may be broken in the existing structure, resulting from and/or related to construction operations. All new glass shall match the existing construction.

1.16 REMOVAL OF DEBRIS AND CLEANING

- A. The Contractor shall continuously remove from the site all material and debris. No storage of removed items or debris will be permitted on the site unless so directed by the Owner.
- B. The premises shall be kept as clean as practical, consistent with the neatness required for the Owner's normal operations.

1.17 EXISTING MATERIAL AND EQUIPMENT REMOVED

- A. Contractor shall remove all fixed equipment designated to be removed.
- B. Items of existing equipment which are to be reused, shall be carefully removed, stored and protected, and later reinstalled in original or new locations as required.
- C. Certain materials, particularly specified, shall be reused in the work, such material shall be in good usable condition and shall be cleaned and conditioned as required for reuse.
- D. Contractor shall be responsible for all disconnecting, connecting, cutting, patching, finishing, moving and removing, and repairing, of both new and existing material and equipment as may be required to do all reroofing and alteration work.
- E. All existing material and equipment which is to remain in place or to be reused and has been damaged or defaced during the progress of the work, shall be restored to a condition equal to that which existed prior to the start of the work, or shall be replaced with new materials and equipment equal in all respects, and finished so as to be uniform in appearance to adjacent existing work.

1.18 SALVAGED MATERIALS

- A. Salvaged materials which are not to be reused will, unless otherwise specified, or verbally requested by the Owner's Representative, become the property of the Contractor and will be removed from the premises by him and legally disposed of off-site by him.

1.19 PROGRESS MEETINGS

- A. The Owner will schedule meetings to be held on the job site whenever needed supply information necessary to prevent job interruptions, to observe the work, or to inspect completed work. The Contractor shall be represented at each progress meeting by persons with full authority to act for the Contractor in regard to all portions of the work.

1.20 APPLICABLE CODES

- A. The Contractor shall comply with all applicable state and local rules and regulations relating to buildings, employment, the preservation of public health and safety, use of streets, and the performance of the work of this Contract.
- B. Should the Contractor perform any work knowing it to be contrary to existing laws, rules and regulations, and fail to give notice of such fact to the Owner, he shall bear all costs arising there from and hold the Owner harmless for such violation.
- C. Where the Contract Documents require the work or parts of the work to be done in accordance with a particular standard or code recognized in the building industry, and that cited code includes requirements above the standards required by state or local law, such work shall be completed in accordance with the requirements of the Contract.

1.21 CONSTRUCTION SIGNS

- A. No signs regarding advertisement of any kind may be erected or displayed on the site. The Roofing Contractor shall provide all signs, barricades, etc. to alert, warn and/or protect the general public, building employees and their own personnel against the on-going reroofing operations in accordance with all applicable Construction Safety Standards (MIOSHA).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Correlation of Contractor submittals based on changes.
- D. Procedures for preparation and submittal of application for final payment.

1.03 RELATED REQUIREMENTS

- A. Section 00 5000 - Contracting Forms and Supplements: Forms to be used.
- B. Section 01 2200 - Unit Prices: Monetary values of unit prices; Payment and modification procedures relating to unit prices.

1.04 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Roof Consultant for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- D. Revise schedule to list approved Change Orders, with each Application For Payment.

1.05 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Roof Consultant for approval.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Authorized Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
 - 10. Retainage amount indicated in the Contract.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- H. Submit one electronic and three hard-copies of each Application for Payment.
- I. Include the following with the application:
 - 1. Transmittal letter.

2. Partial release of liens from major subcontractors and vendors.
- J. When Roof Consultant requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.06 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Roof Consultant will issue instructions directly to Contractor.
- B. Roof Consultant will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing documents containing supplemental instructions.
- C. For other required changes, Roof Consultant will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Roof Consultant will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within seven days.
- E. Contractor may propose a change by submitting a request for change to Roof Consultant, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 1. For change requested by Roof Consultant for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Roof Consultant.
 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
 4. For change ordered by Roof Consultant without a quotation from Contractor, the amount will be determined by Roof Consultant based on the Contractor's substantiation of costs as specified for Time and Material work.
- G. Substantiation of Costs: Provide full information required for evaluation.
 1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- H. Execution of Change Orders: Roof Consultant will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

1.07 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All punchlist items have been satisfactorily completed as determined by the Roof Consultant.
 - 2. Applications for warranties have been issued.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2200
UNIT PRICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

1.03 RELATED REQUIREMENTS

- A. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

1.04 COSTS INCLUDED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.06 MEASUREMENT OF QUANTITIES

- A. Take all measurements and compute quantities. Measurements and quantities will be verified by Roof Consultant.

1.07 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Roof Consultant, multiplied by the unit price.
- B. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products remaining on hand after completion of the Work.
 - 4. Loading, hauling, and disposing of rejected Products.

1.08 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not complying with specified requirements.
- B. If, in the opinion of Roof Consultant, it is not practical to remove and replace the Work, Roof Consultant will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Roof Consultant.
 - 2. The defective Work will be partially repaired to the instructions of the Roof Consultant, and the unit price will be adjusted to a new unit price at the discretion of Roof Consultant.
- C. The authority of Roof Consultant to assess the defect and identify payment adjustment is final.

1.09 SCHEDULE OF UNIT PRICES

- A. State in the Bid Form, in the space provided therefore, the amount to be added to the Base Bid for each requested price.

- B. UNIT PRICE NO. 1 - Replace, as necessary and designated by the Owner's Representative, deteriorated wood nailers. The price quoted shall be per lineal foot or per square foot as installed including replacement labor. Quote a price for the following sizes:
1. 2" x 4"
 2. 2" x 6"
 3. 2" x 8"
 4. 2" x 10"
 5. 2" x 12"
 6. 3/4-inch plywood
- C. UNIT PRICE NO. 2 - Repair isolated concrete deck damage or openings not exceeding 6 inches x 6 inches with galvanized 18-gauge flat stock extending a minimum of 6-inches beyond the damaged area in all directions. Secure the plate with Tapcon screws spaced 12-inches on-center around the perimeter of the plate. The price quoted shall be per square foot of plate installed.
- D. UNIT PRICE NO. 3 - Repair isolated concrete deck holes and damage not exceeding 12-inches by 12-inches with 3/16-inch thick steel plate extending a minimum of 6-inches beyond the damaged area in each direction. Secure the plate with the specified fasteners spaced 12-inches on-center around the perimeter of the plate. The price quoted shall be per square foot of plate installed.
- E. UNIT PRICE NO. 4 - Replace deteriorated drain bowls, if necessary and as directed by the Owner's Representative, to provide watertight drain assemblies. Install in accordance with state and local building codes. Quote a price per roof drain bowl removed and replaced in the concrete roof deck, including labor.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2300
ALTERNATES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Description of Alternates.
- B. Documentation of changes to Contract Price and Contract Time.

1.03 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 LIST OF ALTERNATES

- A. Alternate Price No. 1 - 4-Year Extended Service & Maintenance Agreement
 - 1. Provide the Owner with pricing to provide standard service and maintenance of the newly installed roofing systems on B Wing Area 5 and A Wing Area 8. Price to include comprehensive bi-annual roof inspections by qualified individuals as part of the preventative maintenance contract. Quote a lump sum price for four years in the space provided on the Bid Form.
 - 2. Maintenance program involves the following services:
 - a. Clean all roof drains
 - b. Repair all membrane damage from punctures
 - c. Clean roof areas where ponding water accumulates
 - d. Inspection of all flashings at penetrations, curbs, doors and walls
 - e. Inspection of all seams in the field of the roof
 - f. Resecure loose sheet metal edging and counterflashing
 - g. Apply caulk to roof areas as needed
 - h. Priority service for roof emergencies within 24 hours
 - i. Provide the Owner with inspection reports for each bi-annual inspection
 - j. Provide the Owner with photographic documentation of conditions before and after repair
 - 3. Include time and material prices for repairs not covered by this agreement in the space provided on the Bid Form.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SITE USE BY THE CONTRACTOR

- A. The Contractor shall have designated for his use by the Owner, an area or room on the premises where he will confine his equipment and store all of his materials. New materials delivered to and stored outdoors on the job site shall be fully protected from weather by placement on raised platforms and shall have secure waterproof coverings of plastic or tarpaulins.
- B. No field offices or storage buildings will be allowed at the subject site.

1.03 ROADWAYS, DRIVES, PARKING AREAS AND SIDEWALKS

- A. The Contractor is responsible for the condition of all existing roadways, sidewalks, site (grass/sod, grading) etc., used during construction operations and shall repair same as required and leave same in good condition at the completion of the job.

1.04 BARRICADES AND PROTECTION

- A. The property on which work is to be done is in use. This means that employees and other general public may be adjacent to and below the construction operations.
- B. The Contractor will provide and maintain in good repair all barricades, guard railings and temporary protection as required by law and/or to suit job conditions.
- C. The Contractor shall do everything possible to protect the public, the workmen, the premises and adjoining property from injury or damage.
- D. Properly protect all sidewalks, pavements, existing building areas, building facades, windows and skylights. Replace or repair all parts of same which become damaged or defaced during or as a result of construction operations. Repairing of damaged parts shall be done in strict accordance with all local codes and ordinances and the Owner as conditions require.

1.05 VANDALISM

- A. The Contractor shall pay for all damage by vandalism to material or equipment that occurs to items finished or installed under this Contract. The Contractor shall be responsible for the work under this Contract during the construction period from the start until the final acceptance of the entire project by the Owner.

1.06 PROTECTION

- A. Provide and erect all required barricades and safety precautions in accordance with local, State and Federal Codes and other legal requirements.
- B. Provide secure, weatherproof protection for existing buildings, finishes, walks, drives, landscaping, lawns, etc., to remain. Repair any damage to the satisfaction of the Owner.
- C. Remove all protection and guards when work is completed and restore disturbed areas.
- D. Whenever lifting materials or equipment over or near existing or occupied buildings, give advance notice and arrange to have any potentially endangered spaces vacated.
- E. Maintain clear, unobstructed and clearly marked building emergency egress routes as required by Owner.

1.07 TEMPORARY WEATHER PROTECTION

- A. The Contractor shall provide, maintain and pay for all temporary weather protection as required to properly protect all parts of the work from damage. This shall include temporary protective coverings.

1.08 RUBBISH DISPOSAL, FIRE SAFETY

- A. During non-construction hours, trash containers shall be covered and sealed to prevent wind blown debris and access into trash containers.
- B. The location of the trash containers shall be subject to the approval of the Owner.
- C. All rubbish and debris shall be removed from the site daily or more often if directed by the Owner's Representative. Burning of trash on-site shall not be allowed.
- D. No open fire shall be permitted on the building site at any time.
- E. The Roofing Contractor must use an Owner approved hauler and landfill. Provide the Owner with copies of the dumpster receipts for each dumpster.

1.09 REMOVAL OF TEMPORARY WORK

- A. All temporary structures, barricades, protection and similar work shall be removed by the Contractor at completion of the project or when directed. Any repairs or alterations necessitated by such removal shall be made by the Contractor, and at the Contractor's expense.

1.10 WORK ACTIVITIES

- A. Contractors and subcontractors shall direct their employees to conduct themselves so as not to interfere with or disrupt the building activities. The Contractor shall schedule construction operations to minimize interference with operations, and cooperate with Owner's Representative in maintaining public access to existing building facilities.
- B. All construction operations, delivery and storage of material and movement of equipment shall be governed by applicable local building codes, traffic regulation and safety and fire regulation of local authorities.
- C. Contractors, subcontractors, and their employees or suppliers shall not use or interfere with existing public access, drives, roads or parking lot, except as specifically indicated or by prior arrangement with the Owner's Representative.
- D. Contractor's employees parking, delivery trucks and other construction vehicle parking shall only be at areas designated by the Owner's Representative.
- E. Proper personal ID will be required by contractors, subs and their employees each time they enter Owner's site.

1.11 TEMPORARY RESTROOM FACILITIES

- A. The Roofing Contractor will provide and maintain temporary restroom facilities for the Roofing Contractor's employees during the course of the project. The restrooms in the interior of the building will not be accessible to the Contractor's employees.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 07 2100
THERMAL INSULATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Rigid board type roof insulation for thermal protection as part of roofing assemblies.
- B. Flat and tapered polyisocyanurate roof insulation.
- C. High density polyisocyanurate cover board.
- D. Self-adhering vapor retarder.

1.03 RELATED REQUIREMENTS

- A. Section 07 5300 - Elastomeric Membrane Roofing.

1.04 REFERENCE STANDARDS

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2021.

1.05 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- B. Tapered Insulation Layout Plan: Roof plan showing the layout of the tapered insulation system by the approved tapered insulation manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver insulation in manufacturer's original unbroken wrappers labeled with material name, thermal value, and product code.
- B. When stored outdoors, stack insulation on pallets above ground or roof deck and cover with tarpaulin or other suitable waterproof coverings. Secure the waterproof coverings against wind damage.
- C. Protect the rigid roof insulation from the weather and standing moisture at all times. Manufacturer's wrappers shall not relieve the Contractor from the responsibility to protect insulation from moisture. Insulation that becomes wet or damp shall be removed from the site. Installation of once wet or damp materials will not be permitted.

1.07 FIELD CONDITIONS

- A. Do not install insulation on roof deck when water of any type is present.
- B. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements:
 - 1. Carlisle SynTec Incorporated, SecurShield CD Polyiso, SecurShield CD Polyiso Tapered, and SecurShield HD Plus Polyiso.
 - 2. Firestone Building Products Company, Resista Polyisocyanurate Insulation, Resista Tapered Polyisocyanurate Insulation, and ISOGARD HD Cover Board.
 - 3. Hunter Panels, H-Shield CG Polyisocyanurate Insulation, H-Shield CG Tapered Polyisocyanurate Insulation, and H-Shield HD Cover Board.
 - 4. Johns Manville, ENRGY 3 CGF Polyisocyanurate Insulation, ENRGY 3 CGF Tapered Polyisocyanurate Insulation, and Invinsa Roof Board.

- B. Provide all roof board insulation from a single manufacturer.
- C. Insulation must be acceptable by the selected membrane manufacturer.

2.02 MATERIALS

- A. Flat Stock Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 3, Class 2.
 - 1. Thermal Resistivity (R-value): 5.6 at 75 degrees F per 1.0-inch thick insulation board.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Area 5: Two layers of 2.6-inch thick.
 - 5. Provide fill insulation thicknesses as required.
- B. Tapered Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 3, Class 2.
 - 1. Slope: 1/8-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 2-1/2-inches in Area 8.
 - 5. Minimum thickness: 1-1/2-inches in Area 9.
- C. Tapered Roof Insulation at Roof Drains (8-feet by 8-feet) in Area 5: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 3, Class 2.
 - 1. Slope: 1/2-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 3-inches.
- D. Tapered Roof Insulation at Roof Drain (8-feet by 8-feet) in Area 8: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 3, Class 2.
 - 1. Slope: 1/4-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 1-1/2-inches.
- E. Tapered Roof Insulation for Saddles: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 3, Class 2.
 - 1. Slope: 1/2-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 1/2-inch.
- F. Cover Board: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Class 4, Grade 1.
 - 1. Thermal Resistivity (R-value): 2.5 at 75 degrees F for 0.5-inch thick insulation board.
 - 2. Compressive Strength: 80 psi minimum.
 - 3. Maximum size: 4-feet by 4-feet.
- G. Vapor Retarder: Self-adhering, 40 mil, SBS modified sheet with a polyethylene or polyolefin surfacing and a plastic release film. ASTM D1970. Roll width: 3.3-feet. Approved manufacturers:
 - 1. Carlisle SynTec Incorporated: 725 Air and Vapor Barrier
 - 2. Firestone Building Products Company: V-Force Vapor Barrier Membrane
 - 3. Johns Manville: JM Vapor Barrier SA

- H. Self-Adhering Sheet Primer: Solvent based substrate primer designed for use prior to the application of self-adhering vapor retarder membrane. Approved manufacturers:
1. Carlisle SynTec Incorporated: CAV GRIP Primer
 2. Firestone Building Products Company: V-Force SB Primer
 3. Johns Manville: SA Primer

2.03 RELATED MATERIALS

- A. Insulation Adhesive For Use On the Roof Insulation: One or two-component, construction grade, insulating polyurethane low-rise adhesive. Approved manufacturers and products:
1. Carlisle SynTec Incorporated, FAST Bag in a Box Adhesive.
 2. Firestone Building Products Company, I.S.O. Stick Adhesive.
 3. Johns Manville, Two-Part Urethane Insulation Adhesive.
 4. OMG Roofing Products, OlyBond 500 Insulation Adhesive.
- B. Toggle Bolts For Use On The Gypsum Board Deck (Area 9): Zinc-plated 1/4-in diameter x length required. To be used with 1/4-in x 1-1/4-in Zinc-plated standard fender washer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine roof deck for suitability to receive insulation. Verify that substrate is dry, clean, and free of foreign material that will damage vapor retarder, insulation, hamper vapor retarder or insulation adhesion or impede installation.
- B. Verify that roof curbs, wood nailers, equipment supports, vents, and other roof accessories are secured properly.

3.02 INSTALLATION - VAPOR RETARDER

- A. Areas 5 and 8: Apply self-adhering primer on the concrete deck, roof curbs and walls at the rates indicated by the primer manufacturer's application instructions. Allow the primer to flash off.
- B. Areas 5 and 8: Install self-adhering vapor retarder with sidelaps and endlaps as recommended by the vapor retarder manufacturer's application instructions. Shingle lap joints on sloped substrates in the direction of drainage. Extend the vapor retarder membrane into the roof drains. Extend the vapor retarder membrane up the roof curbs and walls 12-inches minimum where possible. Extend the vapor retarder to the outside edge of parapets which are less than 12-inches tall. Seal the penetrations and edges as required by the vapor retarder manufacturer's application instructions. Roll the vapor retarder to promote adhesion.
- C. Insulation and roof membrane are to be installed the same day. The vapor retarder is not to be used as a temporary membrane.

3.03 INSTALLATION - AREA 5 INSULATION

- A. Install 1/2-inch per foot tapered insulation to form the 8-feet by 8-feet roof sump areas at the roof drains as shown on the Roof Plan. Start the roof sump insulation system at 3-inches. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
1. Adhere the tapered insulation on the prepared vapor retarder surface in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- B. Install two layers of 2.6-inch thick flat stock insulation on the prepared vapor retarder. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
1. Adhere the tapered insulation and fill material on the prepared vapor retarder surface in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center within 8-feet of perimeter edges and corners. Bead spacing in the field of the roof: 12-inches on center. Weigh down each board immediately until the adhesive sets up.
- C. Install tapered insulation to form the saddles as shown on the Roof Plan. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.

1. Adhere the tapered insulation saddles on the layers of roof insulation in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- D. Install high density isocyanurate cover board over the tapered insulation. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Adhere the cover board on the layers of roof insulation in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.

3.04 INSTALLATION - AREA 8 INSULATION

- A. Install 1/4-inch per foot tapered insulation to form the 8-feet by 8-feet roof sump areas at the roof drains as shown on the Roof Plan. Start the roof sump insulation system at 1-1/2-inches. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Adhere the tapered insulation on the prepared vapor retarder surface in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- B. Install 1/8-inch per foot tapered insulation to form the 4-way tapered system as shown on the Roof Plan. Start the tapered insulation system at 2-1/2-inches. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Adhere the tapered insulation and fill boards on the prepared vapor retarder surface in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- C. Install tapered insulation to form the saddles as shown on the Roof Plan. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Adhere the tapered insulation saddles on the layers of roof insulation in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- D. Install high density isocyanurate cover board over the tapered insulation. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Adhere the cover board on the layers of roof insulation in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.

3.05 INSTALLATION - AREA 9 INSULATION

- A. Install 1/8-inch per foot tapered insulation to form the 4-way tapered system as shown on the Roof Plan. Start the tapered insulation system at 1-1/2-inches. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Predrill holes and secure the insulation to the gypsum board roof deck with toggle bolts and washers spaced: 1 fastener per 2 square feet of insulation board.
- B. Install high density isocyanurate cover board over the tapered insulation. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 1. Adhere the cover board on the layers of roof insulation in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- C. Install high density isocyanurate cover board over the roof surfaces where the roof panel system was removed.
 1. Predrill holes and secure the insulation to the gypsum board roof deck with toggle bolts and washers spaced: 1 fastener per 2 square feet of insulation board.

3.06 CLEANING/PROTECTION

- A. Remove trash and construction debris from insulation before application of roofing membrane.
- B. Do not leave installed insulation exposed to weather. Lay out only the insulation that can be completely covered with roofing membrane on the same day.

1. Temporarily seal exposed insulation edges at the end of each day by lapping roofing membrane over edge to form an overnight tie-in.
 2. Remove overnight tie-in when work resumes.
 3. Remove installed insulation that has become wet or damaged and replace with new solid and dry insulation material.
- C. The use of ATVs on installed insulation or roof membrane is not permitted.

END OF SECTION

SECTION 07 5300
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Demolition and substrate preparation for the designated roof areas.
- B. Elastomeric roofing membrane, adhered conventional application.
- C. Prefabricated pipe flashing, walkway pads, other accessories and miscellaneous components.
- D. Wood nailers.

1.03 RELATED REQUIREMENTS

- A. Section 07 2100 - Thermal Insulation.
- B. Section 07 6200 - Sheet Metal Flashing and Trim.

1.04 REFERENCE STANDARDS

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).
- B. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015.
- C. UL (DIR) - Online Certifications Directory; Current Edition.
- D. UL (FRD) - Fire Resistance Directory; Current Edition.

1.05 SUBMITTALS

- A. Materials List
 - 1. Before any materials of this Section are delivered to the jobsite, submit to the Roof Consultant a complete list of all materials, including manufacturer's names to be furnished and installed under this portion of the work.
 - 2. Provide Material Safety Data Sheets (MSDS) to the Roof Consultant for any materials prior to delivery to the site.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, and fasteners.
- C. Shop Drawings: Before any materials of this Section are delivered to the jobsite, submit complete shop drawings of roofing system installation details to the Roof Consultant for review.
- D. Safety and Work Schedule
 - 1. Submit copies of your written Safety Plan to the Owner.
 - 2. Submit a written work schedule to the Owner with a detailed time line from Contract Award to project completion.
- E. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
- F. Manufacturer's Field Reports: Indicate procedures followed and supplementary instructions given.
- G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 PRE-CONSTRUCTION MEETING

- A. Prior to scheduled commencement of roofing work, the Roofing Contractor and representatives of other entities directly concerned with performance of roofing and fascia systems shall have a pre-construction meeting. Review requirements (Contract Documents), submittals, status of

coordinating work, availability of materials and installation facilities and establish preliminary installation schedule. Review requirements for inspections, testing, certifications, forecasted weather conditions, governing regulations, insurance requirements, and proposed installation procedures. The Roofing Contractor shall record the items discussed including agreement or disagreement on matters of significance; furnish copy of recorded discussions to each participant. Review foreseeable methods and procedures related to roofing work, including but not necessarily limited to the following:

1. Tour representative areas of roofing substrates, inspect and discuss conditions of substrate.
2. Review roofing system requirements (drawings, specifications and other Contract Documents).
3. Review required submittals.
4. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
5. Review required inspection, testing, certifying and material usage accounting procedures.
6. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Store materials in weather protected environment, clear of ground and moisture.
- C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

1.08 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane when ambient temperature is outside the range of acceptability by the manufacturer.
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- E. Schedule applications so that no partially completed sections of roof are left exposed at the end of the work day.

1.09 WARRANTY

- A. Contractors Warranty: Furnish the Owner with a Contractor's written warranty covering all materials and workmanship for a two-year period after Date of Substantial Completion.
- B. Manufacturer's Warranty: Furnish Owner with the selected roof system manufacturer's 30-year total system warranty covering all materials and labor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. EPDM Membrane Materials (Areas 5 and 8):
 1. The roofing system to be utilized for this project shall be a fully-adhered EPDM system manufactured by one of the following:
 - a. Carlisle SynTec Incorporated, www.carlisle-syntec.com, Sure-Seal Kleen Non-Reinforced EPDM membrane - Fully Adhered.
 - b. Firestone Building Products Co, www.firestonebpco.com, RubberGard Platinum EPDM membrane - Fully Adhered.
 - c. Johns Manville, www.jm.com, EPDM NR 90 MIL.
- B. EPDM Membrane Materials (Area 9):

1. The roofing system to be utilized for this project shall be a fully-adhered EPDM system manufactured by one of the following:
 - a. Carlisle SynTec Incorporated, www.carlisle-syntec.com, Sure-Seal Kleen Non-Reinforced EPDM membrane - Fully Adhered.
 - b. Firestone Building Products Co, www.firestonebpco.com, RubberGard EPDM Membrane, Low Slope Fire Retardant (LSFR) - Fully Adhered.
 - c. Johns Manville, www.jm.com, EPDM NR 60 MIL.
- C. All details relating to the installation of the roof system shall be approved by the roofing manufacturer and installed in such a manner that the manufacturer will furnish its 30-year total system warranty for the installation.
- D. Areas 5 and 8: Membrane shall be .090-inch thick, EPDM (Ethylene Propylene Diene Monomer) compounded elastomer. Membrane sheet size shall be the largest sheet possible as determined by the job conditions.
- E. Area 9: Membrane shall be .060-inch thick, non-reinforced, EPDM (Ethylene Propylene Diene Monomer) compounded elastomer. Membrane sheet size shall be the largest sheet possible as determined by the job conditions.
- F. All materials used in the roofing system shall be as furnished by the approved manufacturer. Seam tape, self-adhering flashing, adhesives, primers, sealant, water cut-off mastic and other required items shall be as furnished or recommended by the selected manufacturer.
- G. Base Flashing shall be a .090-inch thick cured EPDM flashing sheet as furnished by the approved manufacturer.
- H. Accessories: Prefabricated pipe flashings, termination bars, corner flashing, joint covers, reinforced perimeter attachment strips and perimeter edge termination plates and fasteners as required by the selected membrane manufacturer for use in their roof system assemblies.
- I. Walk Pads shall be manufactured of heavy duty solid recycled rubber with a diamond textured as manufactured by:
 1. Humane Manufacturing Company, Roof-Gard Treadsafe, 36" x 48" x 3/4-inch thick, Part No. MAZ8272.

2.02 INSULATION

- A. See Section 07 2100 Thermal Insulation.

2.03 SHEET METAL FLASHING AND TRIM

- A. See Section 07 6200 Sheet Metal Flashing and Trim.

2.04 WOOD NAILERS

- A. Wood Nailers and Blocking: PS 20, construction grade lumber.
 1. Sizes: Nominal sizes as indicated on drawings, S4S.
 2. Moisture Content: S-dry or MC19.
 3. Species: SPF.
 4. Grade: No. 2.
- B. Plywood Sheathing: PS 1, Grade C-D, Exposure I. Thickness: 1/2-inch and 3/4-inch. APA Rated.
- C. Fasteners in contact with wood blocking and nailers shall be hot dipped galvanized nails in conformance with ASTM A153 unless otherwise specified.

2.05 OSHA COMPLIANT SAFETY RAILING

- A. Areas 5 and 8: Safety Guard Rail System: OSHA Compliant parapet mounted safety guard rail to extend 42-inches above the new roof system. Entire perimeter edge protection. Powder coated steel; color: yellow. As manufactured by or approved equal:
 1. SAFEPRO Fall Protection, Perimeter Safety Rail.
- B. Area 5: Roof Hatch Rail System: OSHA Compliant roof hatch mounted safety rail system. Powder coated steel; color: yellow. As manufactured by or approved equal:

1. SAFEPRO Fall Protection, Roof Hatch Safety Rail.

2.06 MISCELLANEOUS

- A. Plates to cover small holes in the concrete deck and/or isolated areas of deterioration shall be 18-gauge galvanized steel.
- B. Plates to cover small holes in the concrete deck and/or isolated areas of deterioration shall be 3/16-inch thick steel plate.
- C. Replacement roof drains and accessories shall be cast iron as manufactured by J. R. Smith Manufacturing Co., 1000 Series, Size: to match the existing diameter. Bottom outlet to match the existing outlet. Acceptable connection: Speedi-Set Gasket. Utilize the drain manufacturer's specified cast iron underdeck clamp, clamping ring and drain strainer.
- D. Replacement roof drain strainers and clamping rings shall be cast iron, sized to fit the existing roof drain bowl.
- E. Foam backer rod: Closed-cell polyethylene foam, 1-1/2 times the diameter of intended opening.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- C. Verify deck surfaces are dry and free of water, snow or ice.
- D. Maintain a daily watertight condition in the new and existing roof areas. At no time shall the new or existing roof remain vulnerable to moisture intrusion.

3.02 DEMOLITION AND SURFACE PREPARATION

- A. Remove and discard the existing built-up roof membrane, base flashings, cant strips, tapered edge strips and miscellaneous debris.
- B. Remove and discard roof curb flashing and counterflashing.
- C. Remove and discard the existing sheet metal coping and counterflashing. Remove remaining sealant from surfaces.
- D. Remove and discard the termination bar, fasteners and sealant from the walls, roof curbs and perimeter edges.
- E. Remove and discard existing plumbing vent pipe flashings. Clean off repair materials from the pipes.
- F. Remove and discard the two piece expansion joint covers.
- G. Remove and discard the bevel cut wood nailer at the expansion joint curbs.
- H. Temporarily displace mechanical ventilator unit covers to facilitate the removal and replacement of the base flashing. Temporarily displace roof curb adapters for reuse. Remove and discard existing counterflashing from the roof curbs if present.
- I. Temporarily displace the roof hatch and smoke hatches to facilitate the removal and replacement of the base flashing. Remove and discard existing counterflashing from the roof curbs if present.
- J. Remove and save for reinstallation the properly fitted existing cast iron roof drain strainers. Remove and discard improperly fitted or broken roof drain strainers. Remove and discard plastic roof drain strainers.
- K. Remove and save for reinstallation the existing cast iron roof drain clamping rings. Broken or damaged roof drain clamping rings shall be removed and replaced. Thoroughly clean the drain bowls. Utilize caution to prevent plugging the existing drains during cleaning and reroofing operations.

- L. Closely inspect the existing roof drain bowls for cracks, broken flanges or deteriorated conditions. Remove and replace any damaged drain bowl with a matching drain bowl. The installation shall be in accordance with local plumbing codes.
 - 1. Roof drain replacement shall be bid as a Unit Price extra.
- M. Deteriorated wood nailers and plywood shall be removed and discarded. Install new wood nailers and plywood as necessary to match the existing nailers in size and shape, or as directed by the Roof Consultant.
 - 1. NOTE: Wood nailer replacement shall be bid as a Unit Price extra.
- N. Closely inspect the existing concrete roof deck for deteriorated conditions or holes. Repair isolated deck damage not exceeding 12-inches x 12-inches with 3/16-inch steel plate.
 - 1. NOTE: Concrete deck repairs shall be bid as a Unit Price Extra.
 - 2. Significant damage that would require removal and replacement of the concrete roof deck shall be negotiated with the Owner prior to removal and replacement.
- O. Repair isolated deck damage not exceeding 6-inches x 6-inches with 18-gauge galvanized flat stock.
 - 1. NOTE: Deck repairs accomplished with 18-gauge galvanized flat stock shall be bid as a Unit Price extra.
- P. Remove debris, scrap and rubbish from the roof areas and building grounds daily.
- Q. AREA 9:
 - 1. Remove and discard the skylight and skylight frame. Prepare to cover the resultant opening with plywood.
 - 2. Remove and discard the roof panels, drip edge, hip caps, closure flashing and apron flashing. Remove and discard intermittent cleats securing the roof panel system.
 - 3. Neatly cut, remove and discard the roof coating, EIFS and one-inch thick expanded polystyrene along the top horizontal surface of the parapet. Prepare to install new plywood and wood shim.

3.03 INSTALLATION PROCEDURES

- A. General: Comply with manufacturer's instructions, except where more stringent requirements are indicated herein.
- B. Details relating to the installation of the new roof system shall be approved by the selected roofing material manufacturer and the Roof Consultant and installed in such a manner that the manufacturer will furnish the specified warranty for the installation.
- C. Do not begin roofing work until all decks, walls, curbs, nailers, accessories, and underlying substrates are ready and acceptable to have roofing materials installed. Deck surfaces must be clean, smooth, dry and free of moisture prior to beginning roof application.
- D. Schedule and supervise work crews so that the area of roofing begun one day is completely finished before leaving the job site that day. Included are all flashings within each day's work area and adjoining the membrane.
- E. Do not install any roofing materials during rain or other inclement weather. One exception is that temporary work may be installed during such weather to protect the building interior and new materials that are already installed. Remove all temporary work and materials that have been exposed to such weather, then install permanent materials as specified during acceptable weather conditions.
- F. At the end of each day's roofing installation, protect edge of incomplete work, including membrane and insulation. Provide temporary water cut-offs to provide a weather tight seal to both the roof deck and existing roof membrane. Remove temporary water cut-off materials at the beginning of next day's work.
- G. Materials must be stored dry and protected with tarps and on pallets at all times. Wet or damaged materials will be removed from the job site.

3.04 CONCRETE DECK

- A. Install 18-gauge galvanized plates at small holes (less than 6-inches by 6-inches) and/or at isolated areas of deterioration of the concrete roof deck. The plates shall extend 6-inches past the deficient area in each direction. Secure the steel plate to sound concrete with Tapcon fasteners installed 6-inches on-center along the perimeter edge of the steel plate.
- B. Install 3/16-inch thick steel plate over holes and deterioration (less than 12-inches by 12-inches) in the concrete roof deck. The plate shall extend 6-inches past the deficient area in each direction. Secure the steel plate to sound concrete with Tapcon fasteners installed 12-inches on-center along the perimeter edge of the steel plate.

3.05 WOOD NAILERS

- A. Install new wood nailers and plywood as designated on the attached Details. Secure the wood nailers to concrete with heavy duty screws spaced 12-inches on center. Secure the wood nailers to existing wood nailers with galvanized 16d nails in two staggered rows spaced 12-inches on center. Secure plywood to wood nailers with galvanized 8d nails spaced 6-inches on center along plywood edges. Secure plywood to steel framing with heavy duty screws spaced 12-inches on center. NOTE: Fastener placement in Area 9 must penetrate the top plates of the light gauge steel framing.
- B. Install new plywood to cover the resultant skylight opening in Area 9. Install new plywood along the perimeter edge of the raised area where the roof panel system was removed in Area 9. Install two layers of 3/4-inch plywood along the perimeter edge parapet.
- C. Resecure all loose existing wood nailers to provide solid securement for the new roof system and perimeter edge sheet metal. Secure the existing wood nailers with appropriate fasteners.
- D. Install new wood nailers at roof curbs which are not 8-inches above the new finished roof. The wood nailers shall be installed to match the existing opening or inside dimension of the curb. The wood nailers shall be a minimum of 1.5-inches thick and shall be of sufficient width to provide a minimum curb height of 8-inches above the completed roof surface. Secure the new wood nailers with appropriate fasteners.
- E. Install new wood nailers where the existing wood nailers were removed due to deterioration. The new wood nailers shall be secured using the same methods that the originally installed wood nailers were secured and/or in a manner to provide solid securement.

3.06 ROOF DRAIN INSTALLATION

- A. The Roofing Contractor shall hire a licensed plumbing subcontractor to install replacement roof drains as necessary. The Roofing Contractor shall coordinate the roof drain installation with the plumber. Temporary roofing work needed at the roof drain location shall be provided by the Roofing Contractor at no additional cost to the Owner.
 - 1. Install new roof drain assemblies at the deteriorated roof drain locations. Utilize the manufacturer's recommended underdeck clamp to secure the drain bowl to the sump pan.
 - 2. The new roof drain shall be connected to the existing drain pipes in accordance with state and local plumbing codes and the drain manufacturers requirements. Insulate the new roof drain and drain pipe to prevent condensation. Water test the new roof drain to verify that the new roof drain functions properly.
 - 3. Install new cast iron clamping rings and cast iron roof drain strainers at the new replacement roof drain locations.
 - 4. NOTE: Roof drain inserts are not allowed on this project.

3.07 INSULATION

- A. Verify that vapor retarder, flat stock, tapered insulation and cover board are properly installed and ready to receive new roofing membrane in accordance with Section 07 2100 - Thermal Insulation.

3.08 MEMBRANE INSTALLATION

- A. Roofing membrane system shall be installed following the application requirements of the selected roof membrane material manufacturer 30-year warranty details in Areas 5 and 8. The latest printed instructions will govern the application procedure.
- B. Evenly apply adhesives at rate recommended by manufacturer to both the underside of the membrane and the insulation. Apply bonding adhesive uniformly, stopping short of the splice areas along the seams and base tie-ins. Allow the adhesive to flash off until tacky.
- C. Reposition the membrane, free of air pockets and wrinkles. Firmly press the sheet into place without stretching. Broom the surface to improve adhesion immediately after installation.
- D. Overlap edges and ends and seal by manufacturer's recommended dimensions.
- E. Shingle lap joints on sloped substrates in the direction of drainage.
- F. Complete the roof membrane seams with the roof membrane manufacturer's seam tape. Apply the seam tape in accordance with the roof membrane manufacturer's instructions, including seam preparation work, proper seam tape alignment and exposure. Roll the completed seam with a hand roller across and along the seam.
- G. Secure the roof membrane with the roof membrane manufacturer's reinforced perimeter attachment strips. Adhere the reinforced perimeter attachment strips to the insulation and/or wall with bonding adhesive. Fasten the securement strips with the roof membrane manufacturer's approved fasteners. Use toggle bolts if necessary. After adhering the roof membrane to the reinforced perimeter attachment strip, roll the splice area with a hand roller across the strip over the length of the splice.
- H. Extend the roof membrane down the vertical face of the perimeter edges to a point 1-inch below the bottom of the wood nailer(s). Secure the membrane with roofing nails spaced 12-inches on center.
- I. Apply T-joint covers, stripping and appropriate sealant where specified by the selected roof membrane manufacturer on a daily basis.

3.09 FLASHING INSTALLATION

- A. Perimeter edge flashing, wall flashing, round pipes and roof curbs shall be installed in accordance with the selected material manufacturer's flashing details using the longest pieces practicable. The installed flashing shall be fastened along the top edge 12-inches on-center (maximum). The latest printed flashing instructions must be followed as issued by the material manufacturer.
 - 1. NOTE: ALL FLASHINGS SHALL BE COMPLETED DAILY AS THE PROJECT PROGRESSES WITH THE INSTALLATION OF THE NEW ROOF SYSTEM.
- B. Install termination bars at the horizontal and vertical ends of the base flashing. Apply a continuous bead of water cut off mastic between the substrate and the flashing at the termination bar locations. The termination bar shall be mechanically fastened (12-inches on-center, maximum) into slotted holes.
- C. Seal roof drains per the manufacturer's recommended details. Install existing or new clamping rings and cast iron drain strainers immediately after placing the membrane. Drain strainers and clamping rings must be securely fastened to the roof drain bowl. Provide new clamping ring and drain strainer where missing at the drain(s) in Area 2.
- D. Install foam backer rod into the roof curb's integral curb caps to retain the top edge of the curb flashing.

3.10 PENETRATION FLASHING INSTALLATION

- A. Flash all round penetrations passing through the membrane. Factory prefabricated pipe flashing shall be used to flash all pipes where installation is possible. Where factory prefabricated pipe flashing cannot be installed, field fabricated pipe flashing may be used. All flashings and terminations shall be completed in accordance with the membrane manufacturer's printed requirements.

1. Install storm collars to protect the prefabricated pipe flashing as required by the manufacturer for the 30-year warranty requirement.

3.11 SHEET METAL INSTALLATION

- A. See Section 07 6200 - Sheet Metal Flashing and Trim for installation of the fascia cap, gravel stop/ fascia and counterflashing.

3.12 SAFETY RAILING INSTALLATION

- A. Install perimeter edge, parapet mounted safety railing in accordance with manufacturer's installation instructions in Areas 5 and 8 as shown on the Roof Plan. Mount the railing to the inside parapet face as shown on the Safety Rail Connection detail on the Roof Plan. See the B size drawing by Skyline Fall Protection, labeled Sheet No. Area 1.
- B. Install curb mounted roof hatch safety railing in accordance with the manufacturer's installation instructions in Area 5 as shown on the Roof Plan. Mount the railing using appropriate fasteners as instructed and verify proper working order.

3.13 MISCELLANEOUS INSTALLATION

- A. Return the existing curb adapters and mechanical units to their original positions and secure to the existing roof curb with EPDM-gasketed screws, a minimum of two on each side of the roof curb.
- B. Install new walk pads at the locations shown on the Roof Plan. Secure the walk pads to the membrane in accordance with the walk pad manufacturer's instructions.

3.14 PRECAUTIONS

- A. Do not use oil base or plastic roof cement in conjunction with EPDM materials.
- B. Waste products (petroleum, grease, oil and solvents - vegetable or mineral oil and animal fat - direct contact with steam venting) should not be allowed to come in contact with the EPDM roof membrane system.
- C. Splicing and bonding surface must be dry.
- D. Daily Seal: Care should be exercised to ensure that water does not flow beneath any completed sections of roof by temporarily sealing the loose edge of the membrane on a daily basis regardless of the weather forecast. The manufacturer's requirements should be followed closely.
- E. An open flame may not be used to dry the roof membrane or to heat the flashing materials.

3.15 FIELD QUALITY CONTROL

- A. The Roofing Contractor shall coordinate inspection services during roof application. Prior to final payment, and as a condition thereof, the Roofing Contractor shall obtain final approval from the Roof Consultant indicating proper compliance with the Contract Documents.
- B. The Roof Consultant shall review and approve all shop drawing submittals.
- C. Notify Roof Consultant whenever roofing work is to be done in sufficient time to arrange inspections. Provide safe access to roof for monitoring.
- D. Furnish Roof Consultant with all pertinent job information prior to beginning work.
- E. The Roof Consultant may perform any testing required to verify the integrity of the work and confirm that work is in conformance with manufacturer's recommendations.

3.16 CLEANING

- A. Remove adhesives, soil or other markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

- D. The Roofing Contractor will be responsible for cleaning the building interior on a daily basis of any reroofing related debris entering the building as a result of deck repair and reroofing operations.

3.17 PROTECTION

- A. Where traffic must continue over finished roof membrane, protect surfaces using rigid insulation and plywood.
- B. The use of ATVs on installed insulation or roof membrane is not permitted.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Shop fabricated counterflashing, gravel stop/ fascia and expansion joint cover.
- B. Premanufactured sheet metal fascia cap.
- C. Sealants for joints within sheet metal fabrications.

1.03 RELATED REQUIREMENTS

- A. Section 075300 - Elastomeric Membrane Roofing.

1.04 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.
- B. ASTM B32 - Standard Specification for Solder Metal; 2020.
- C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021.
- D. ANSI/SPRI ES-1-2003 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- E. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.05 SUBMITTALS

- A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- B. Samples: Submit selection and verification samples for finishes, colors and textures. Color to be selected by the Owner.
- C. Samples: Submit one sample, 12-inches in length, of each type of flashing and counterflashing for verification and acceptance of metal type, finish and profile.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience. Engage an experienced installer who has completed sheet metal flashing and trim work similar in material, design and extent to that indicated for this Project and with a record of successful in-service performance.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.
- C. Do not expose to direct sunlight or extreme heat trim material with factory applied strippable film.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Mill Finish Aluminum: ASTM B209, 0.032-inch and 0.040-inch thick sheets.

- B. Premanufactured Snap-On Fascia Cap: NOTE: Shop fabricated fascia cap will not be permitted on this project. Meet ANSI/SPRI ES-1-2003 Wind Design Standard to a design pressure of 275 lbs./ft². Rigid retainer anchor bar: 6063-T6 alloy aluminum (12-feet long maximum) with pre-punched slotted holes. Snap-on fascia cap: 0.040" mill finish aluminum smooth (12-feet long maximum). Use premanufactured corners only.
1. Acceptable Manufacturer's:
 - a. Carlisle, SecurEdge 3000 Roof Edge Fascia System
 - b. Firestone, UNA-Edge AnchorGard Platinum Fascia System
 - c. Johns Manville, Presto-Tite Fascia System
 - d. Metal-Era, Anchor-Tite Fascia System
 - e. Pac-Clad, Snap Edge Fascia System
- C. Accessories
1. Fasteners: Stainless steel as recommended by the manufacturer.
 2. Gasketed washers: Soft neoprene washers.
 3. Elastomeric Sealant: High performance, one component polyurethane-base, non-sag elastomeric sealant as manufactured by one of the following manufacturers or approved equivalent:
 - a. Sika Corporation, Sikaflex - 1a
 - b. Tremco, Vulkem 116
 4. Expansion Joint Vapor Retarder and Insulation: 6 mil polyethylene sheeting and unfaced fiberglass batt insulation.
- D. Fabrication, General
1. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal and other characteristics of the item indicated.
 2. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Form material with watertight end joints and seams.
 4. Fabricate vertical faces with bottom edge hemmed 1/2-inch and bent outward to form a drip edge unless specified otherwise.
 5. Form exposed sheet metal work, shop fabricated or field fabricated, that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated.
 6. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
 7. Conceal fasteners and expansion provision where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
 8. Fabricate continuous cleats from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
 - a. Size: One gauge heavier than thickness of metal being secured.
 9. Corners (counterflashing only): corners must be formed, mitered, lapped, notched, sealed or soldered as necessary to provide a continuous system that is not more susceptible to leaks than straight sections.
- E. Fabrication, Sheet Metal
1. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
 2. Gravel Stop/ Fascia: Fabricate from the following material:
 - a. Mill Finish Aluminum: ASTM B209, 0.032-inch thick sheets.
 - b. Fabricate the gravel stop/ fascia in accordance with SMACNA Figure 2-5C. Fabricate with a face dimension of 7-inches, one-inch tall gravel stop, 2.5-inch nailing flange and a 1/2-inch hemmed drip edge along the bottom edge. Form the hem with an

- open lock to receive a continuous cleat. Continuous cleat gauge: 0.040-inch thick. Provide 6-inch wide concealed cover plates at the end joints.
3. Expansion Joint Cover: Fabricate from the following material:
 - a. Mill Finish Aluminum: ASTM B209, 0.032-inch thick sheets.
 - b. Fabricate the two piece expansion joint cover in accordance with SMACNA Figure 5-6B. Fabricate with a maximum of 10-foot lengths and from two pieces to make the expansion joint cover and cleat. The expansion joint cover shall be fabricated as shown in Detail 3. The cleat and cover shall provide for 3/4-inch expansion and contraction. End joints between cover sections: one-inch tall standing seams. End joints between cleat sections: 4-inch lap joints.
 4. Counterflashing: Fabricate from the following material:
 - a. Mill Finish Aluminum: ASTM B209, 0.032-inch thick, 12-foot long.
 - b. Fabricate the surface mounted counterflashing (slip flashing) in accordance with SMACNA Figure 4-5B. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a minimum face of 4-inches. The top edge to receive behind the curb cap cover 2-inches minimum.
 - c. Fabricate the surface mounted counterflashing (with a caulk lip) in accordance with SMACNA Figure 4-6. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a 5-inch minimum face as shown on the Details. Fabricate the top edge with a hem bent at 45 degrees to receive the specified sealant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 INSTALLATION

- A. Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions and SMACNA's "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 12 feet with joints located near the building corners as required.
- C. Prefabricated Sheet Metal Fascia Cap
 1. Verify EPDM membrane is fully adhered to perimeter edge, extends at least one-inch below the bottom edge of wood nailers on the outside face and is fastened 12-inches on center with roofing nails.
 2. Install the specified prefabricated sheet metal fascia cap system along the perimeter edges. The installation shall be in accordance with the manufacturer's requirements. Apply non-curing sealant and install fasteners in the anchor bar as required.
 3. Install the prefinished fascia cap onto the anchor bar and lap the cover sections as required.
 4. Use the manufacturers hardware accessories only.
- D. Gravel Stop/ Fascia
 1. Install sheet metal gravel stop/ fascia along the outside perimeter edges of Area 9. See Detail No. 8. Notch the nailing flange as required to provide for the curved portion of parapet. Secure the flange of the gravel stop/ fascia with nails spaced 4-inches on-center. Leave 1/4-inch gaps between adjacent sections of gravel stop/ fascia. Install concealed cover plates at the joints in the gravel stop/ fascia. Apply a continuous bead of sealant between the gravel stop/ fascia and the concealed cover plates. Secure the bottom of the gravel stop/ fascia with continuous cleats. Secure the cleats 6-inches on-center with roofing nails in horizontal and vertical surfaces. Strip-in the flange of the gravel stop/ fascia in accordance with the selected roof system manufacturer's 20-year full-system

warranty. Seal the joint between the toe of the gravel stop/ fascia and the edge of the self-adhering flashing.

E. Expansion Joint Cover

1. Install vapor retarder and batt insulation in the expansion joint opening along the north edge of Area 5 as shown in Detail No. 3.
2. Install a continuous cleat along the expansion joint curb. Provide 4-inch wide lapped joints between cleat sections. Secure the cleat with gasketed screws spaced 18-inches on center. Install sheet metal expansion joint cover over the expansion joint opening. Engage the cover with the cleat and provide 3/4-inch space for expansion and contraction. Secure the cover to the existing concrete with Tapcon or expansion anchors spaced 18-inches on center. Form one-inch tall single lock standing seams between sections of the cover. Seal weak points as necessary with polyurethane sealant. Form termination ends to a watertight condition.
3. Install counterflashing to protect the top edge of the expansion joint cover as shown in the Detail No. 3 and SMACNA Figure 4-6. Notch and lap the endjoints. Secure the counterflashing to the concrete with masonry anchors spaced 12-inches on center. Apply the specified sealant in the caulk lip and tool the sealant to promote adhesion and watershedding capabilities.

F. Counterflashing

1. Slip Flashing: Install counterflashing along the top of rail curbs with existing rail curb cap flashings. The counterflashing must cover the top edge of the base flashing a minimum of 3-inches. The top edge of the counterflashing must be concealed by the curb cap 1-inch minimum. Notch and lap the inside corners and end joints. Seam and seal the outside corners. Secure 18-inches on center with gasketed screws.
2. Surface Mounted Counterflashing: Install counterflashing to protect the top edge of the flashing on concrete walls, piers and columns as shown in the RTA Details and SMACNA Figure 4-6. Notch and lap the endjoints and inside corners. Seam and seal the outside corners. Secure the counterflashing to the concrete with masonry anchors spaced 12-inches on center. Apply the specified sealant in the caulk lip and tool the sealant to promote adhesion and watershedding capabilities.
3. Provide corners and counterflashing at vertical terminations covering termination bars, flashing edges and parapet terminations as required by the manufacturer.

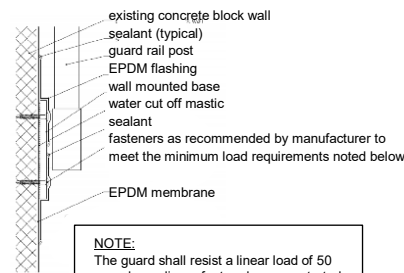
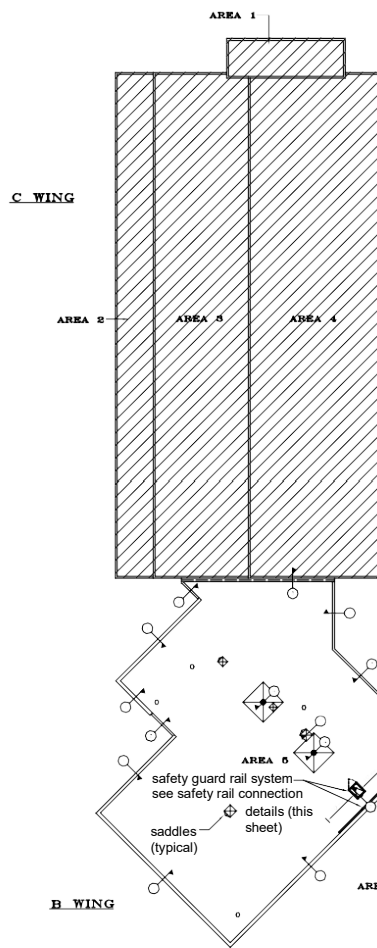
END OF SECTION

APPENDIX

Roof Plan – 24X36 sheet size	Plate 1
Guardrail Drawing – 11x17 sheet size	Area 1
Parapet	Detail 1
Parapet	Detail 2
Expansion Joint	Detail 3
Roof Drain	Detail 4
Parapet	Detail 5
Wall Flashing	Detail 6
Roof Curb Flashing	Detail 7
Wall Flashing	Detail 8
Curb Flashing	Detail 9

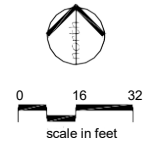
Architectural Sheet Metal Manual – Sheet Metal and Air Conditioning Contractors National Association, Inc., Seventh Edition, 2012.

Formed Gravel Stop/ Fascia – Joint Systems.....	Figure 2-5C
Counterflashing Systems - Installation	Figure 4-5B
Counterflashing Systems - Installation.....	Figure 4-6
Building Expansion Joints – Roof-To-Wall	Figure 5-6B

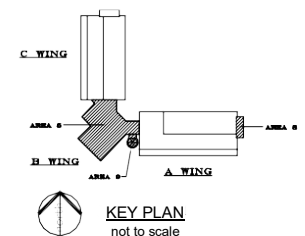


SAFETY RAIL CONNECTION
not to scale

NEW INSULATION SCHEDULE					
	ROOF SLAB INSULATION	4-8811 TAPERED INSULATION	FLAT SPOON INSULATION	TAPERED SADDLES	CORNER SADDLES
1	Slope 1/2" per foot Min. thickness 2" 0"	---	2 inches of 2" 0" thick insulation	Slope 1/2" per foot Min. thickness 2" 0"	1/2" thick high density polystyrene insulation
2	Slope 1/2" per foot Min. thickness 2" 0"	---	---	Slope 1/2" per foot Min. thickness 2" 0"	1/2" thick high density polystyrene insulation
3	Slope 1/2" per foot Min. thickness 2" 0"	---	---	Slope 1/2" per foot Min. thickness 2" 0"	1/2" thick high density polystyrene insulation
4	---	Slope 1/2" per foot Min. thickness 2" 0"	---	---	---



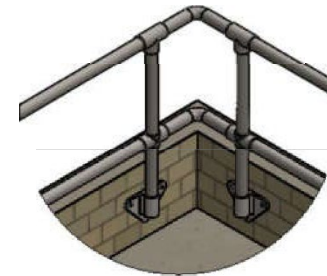
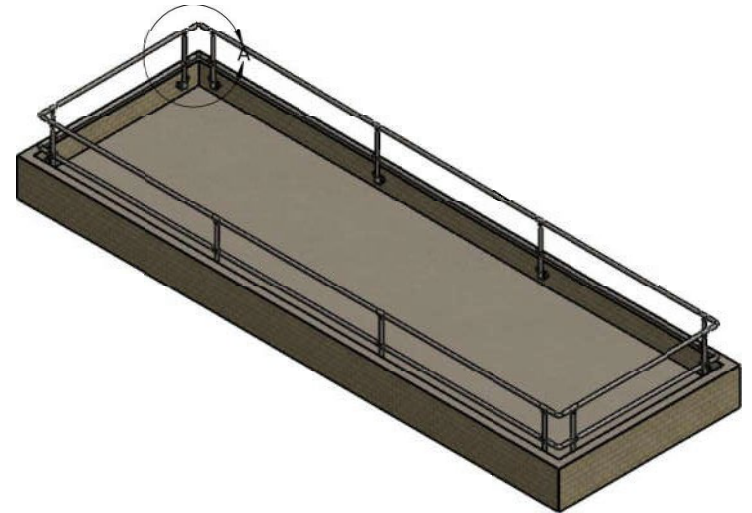
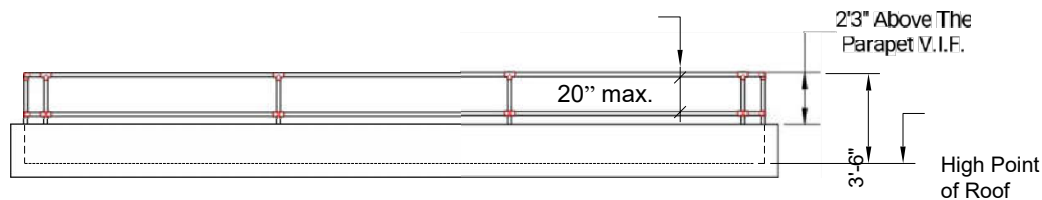
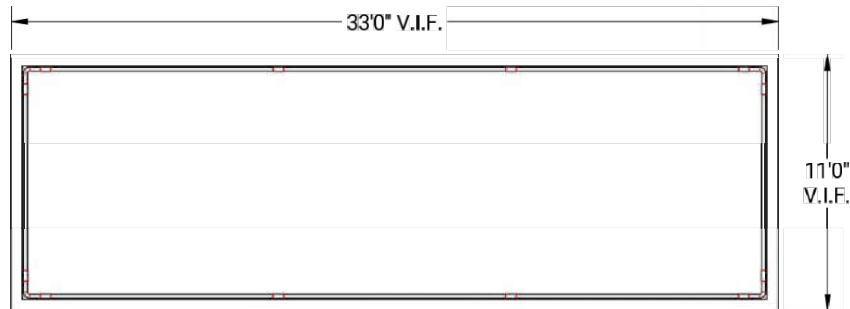
- LEGEND**
- roof drain
 - round penetration
 - ⊗ mechanical unit
 - slope of tapered insulation
 - walk pad
 - RTA detail
 - ⊗ roof hatch
 - expansion joint



GENERAL NOTES:

- All areas and dimensions show are approximate and based upon rough field measurements taken by representatives of Roofing Technology Associates, Ltd.
- This drawing should not be used for bidding or estimating purposes. Contractors are responsible for their own field measurements, quantities, and verification of conditions shown.

 ROOFING TECHNOLOGY ASSOCIATES, LTD., 38031 SCHOOLCRAFT ROAD LIVONIA, MICHIGAN 48150-1065 (734) 591-4444	ROOF PLAN		
	WAYNE COUNTY REGIONAL EDUCATIONAL SERVICE AGENCY ROOF AREAS 2, 3, 4 AND 5 33500 VAN BORN ROAD WAYNE, MICHIGAN		
	Project No.	22-037	Drawn By: RDK
	Date:	4-29-22	Checked By: RDK



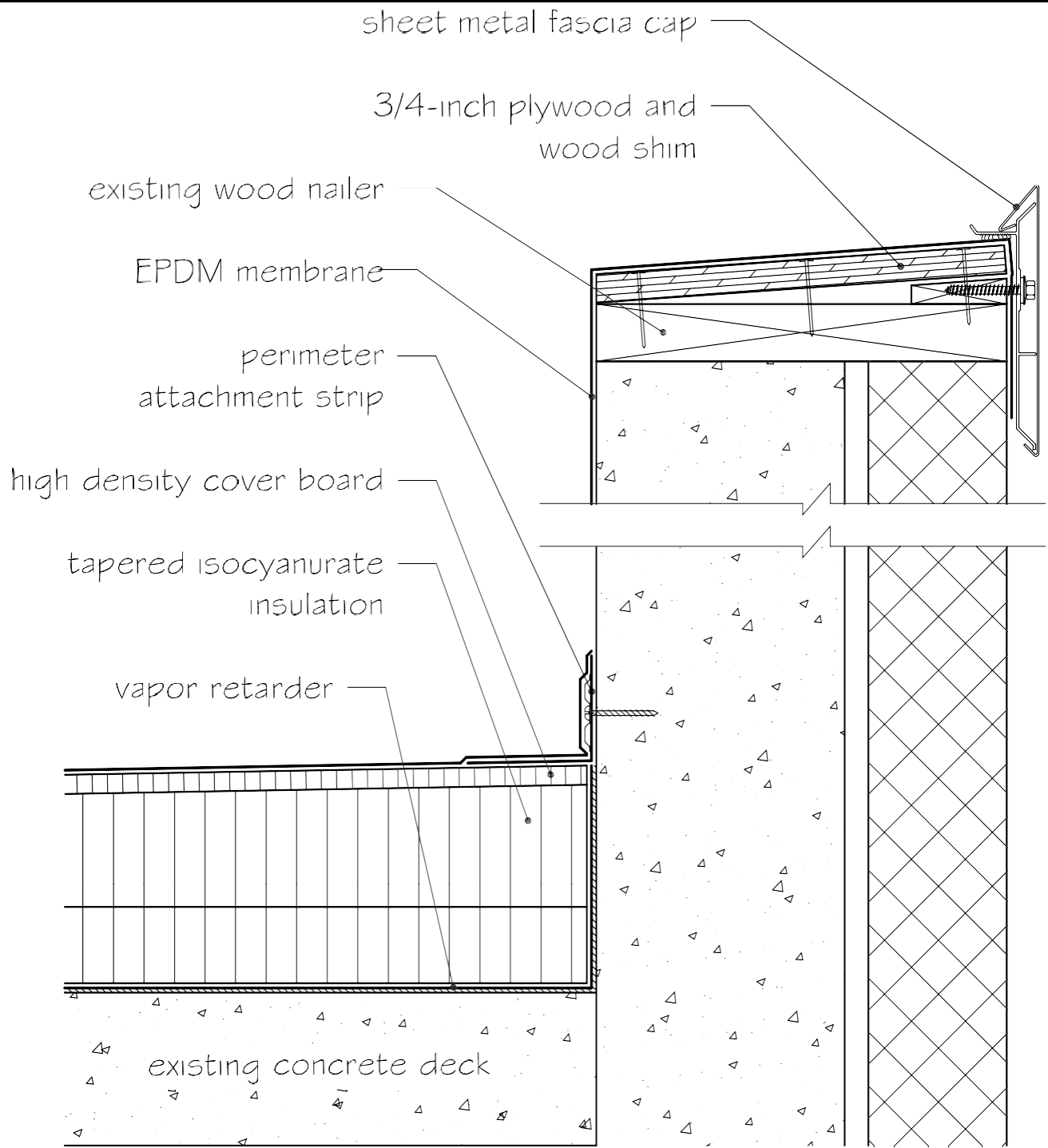
DETAIL A
SCALE 1 : 20

NOTE:
The guard shall resist a linear load of 50 pounds per linear foot and a concentrated load of 200 pounds.

Note : Drill & Epoxy Set the Wall Mounted Bases into the Masonry.



Drawn By: Hunter Jaarsma	2/7/2022	DWG. NO.
INTERPRET GEOMETRIC TOLERANCING PER ASME Y14.5-2009	SHEET SIZE	B Area 1
PROPRIETARY AND CONFIDENTIAL	Description:	
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SKYLINE FALL PROTECTION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SKYLINE FALL PROTECTION IS PROHIBITED.		
UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES		
TOLERANCES:		
FRACTIONAL ±1/32		
ANGULAR ±2°		
TWO PLACE DECIMAL ±.010		
THREE PLACE DECIMAL ±.005		
MATERIAL:		
SCALE: 1:64	WEIGHT:	SHEET 1 OF 1



NOTE: components shown are new unless noted as existing



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ROOF AREAS 5, 8 and 9
33500 VAN BORN ROAD
WAYNE, MICHIGAN

Project No: 22-037

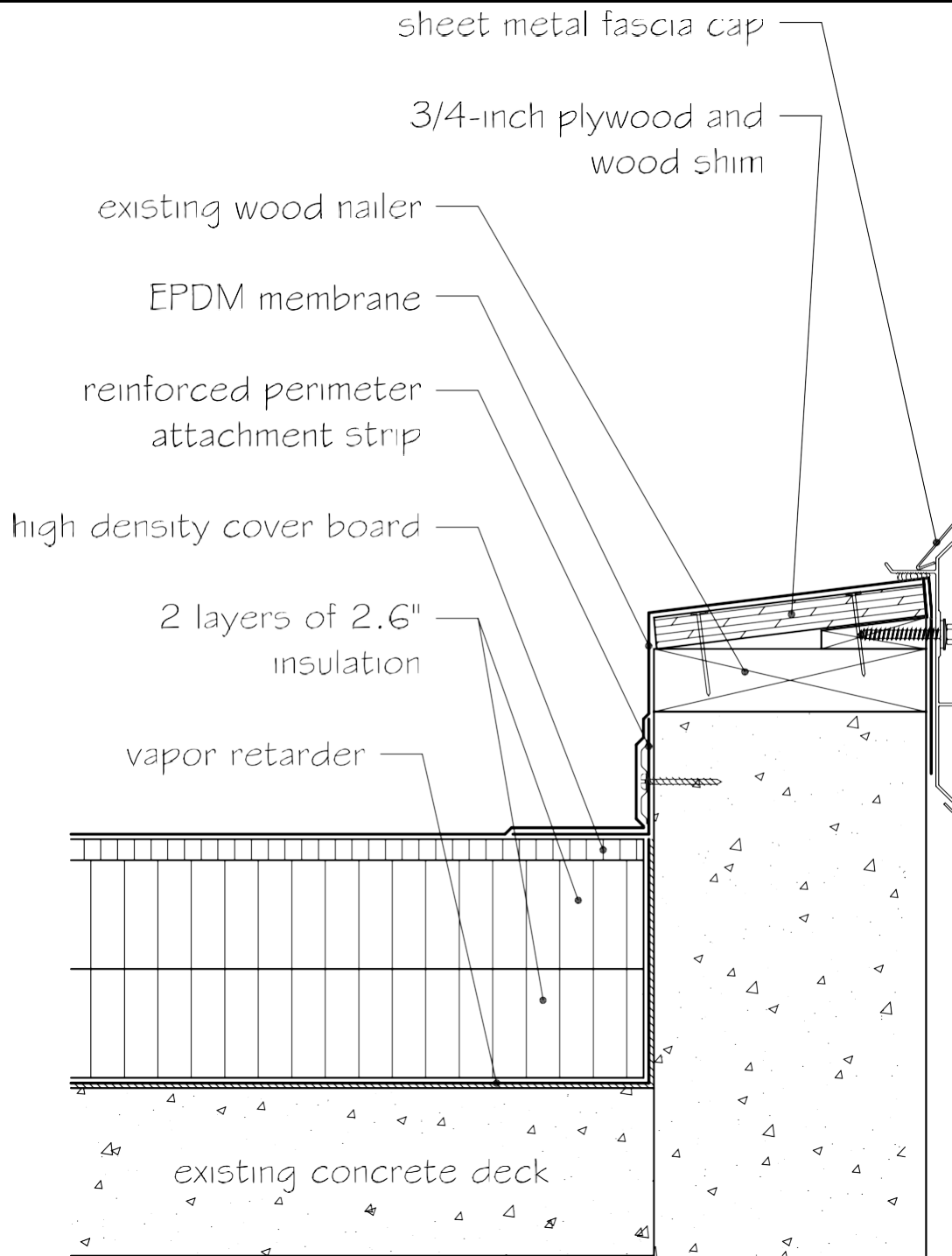
Drawn By: RDK

Detail No:

Date: 4-29-22

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1



PARAPET not to scale

NOTE: components shown are new unless noted as existing



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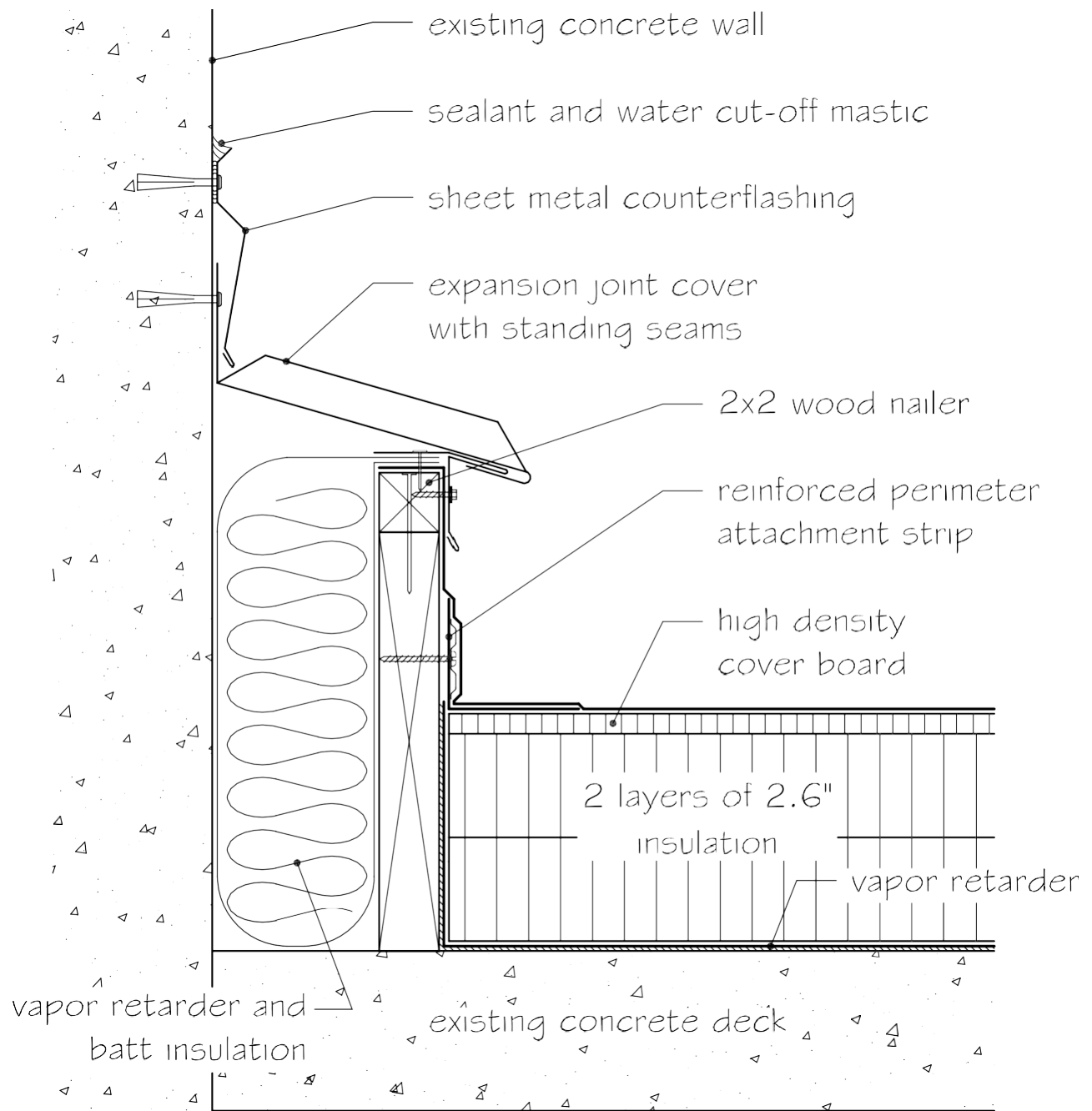
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Checked By: RDK

2



EXPANSION JOINT

not to scale

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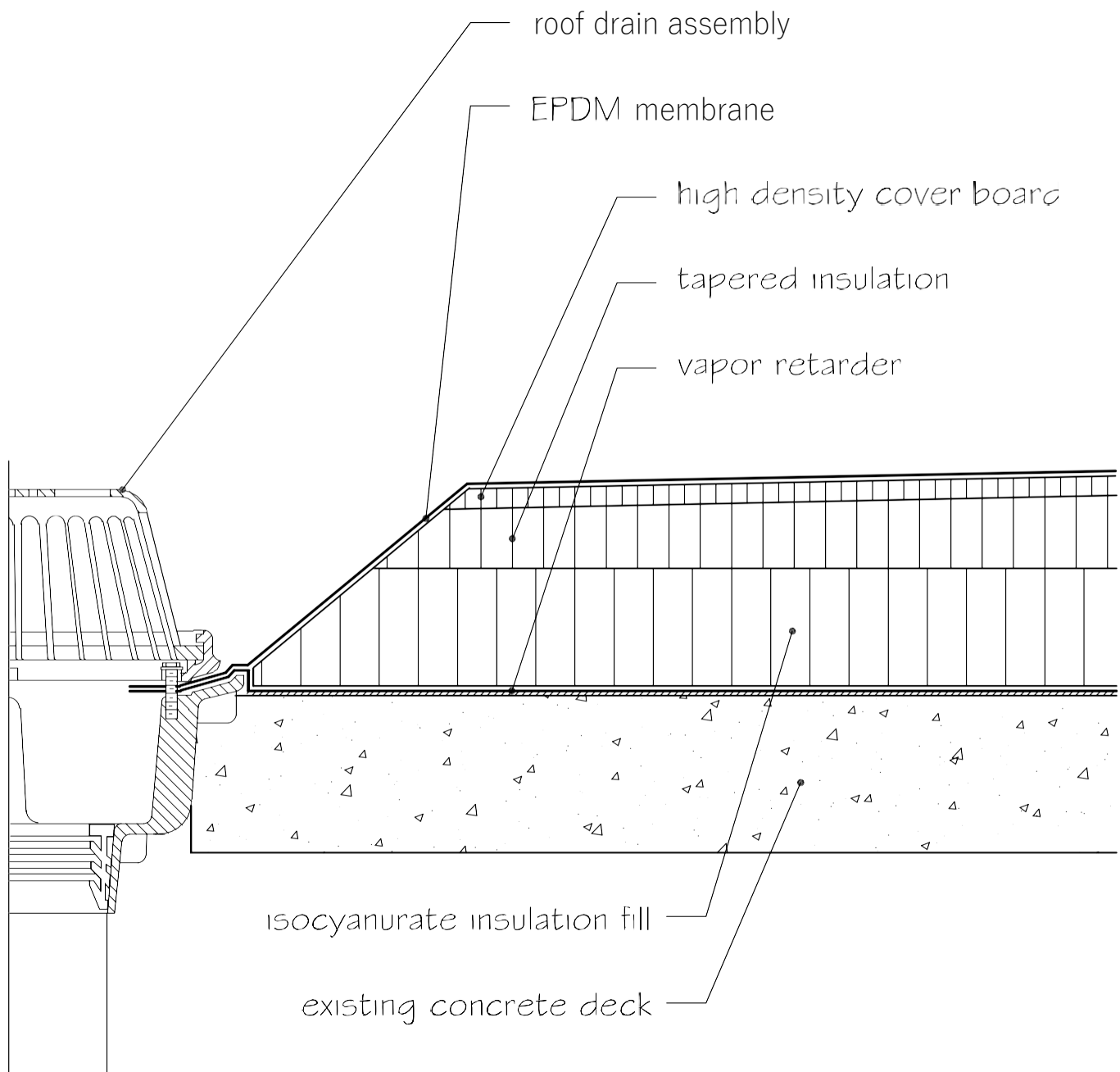
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Detail No:

Date: 5-2-22

Checked By: RDK

3



ROOF DRAIN not to scale

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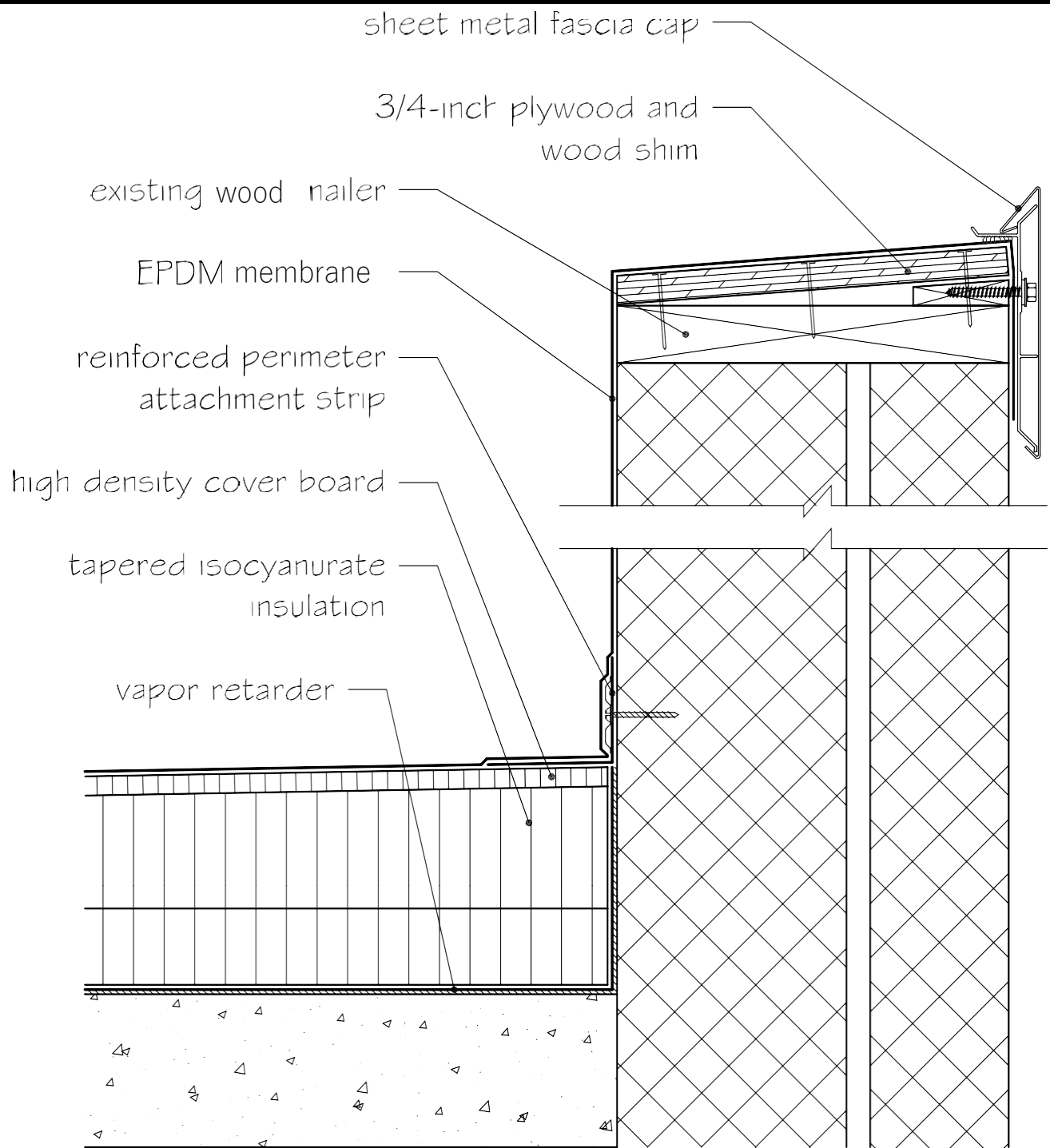
Drawn By: RDK

Detail No:

Date: 4-29-22

Checked By: RDK

4



PARAPET
not to scale

NOTE: components shown are new unless noted as existing

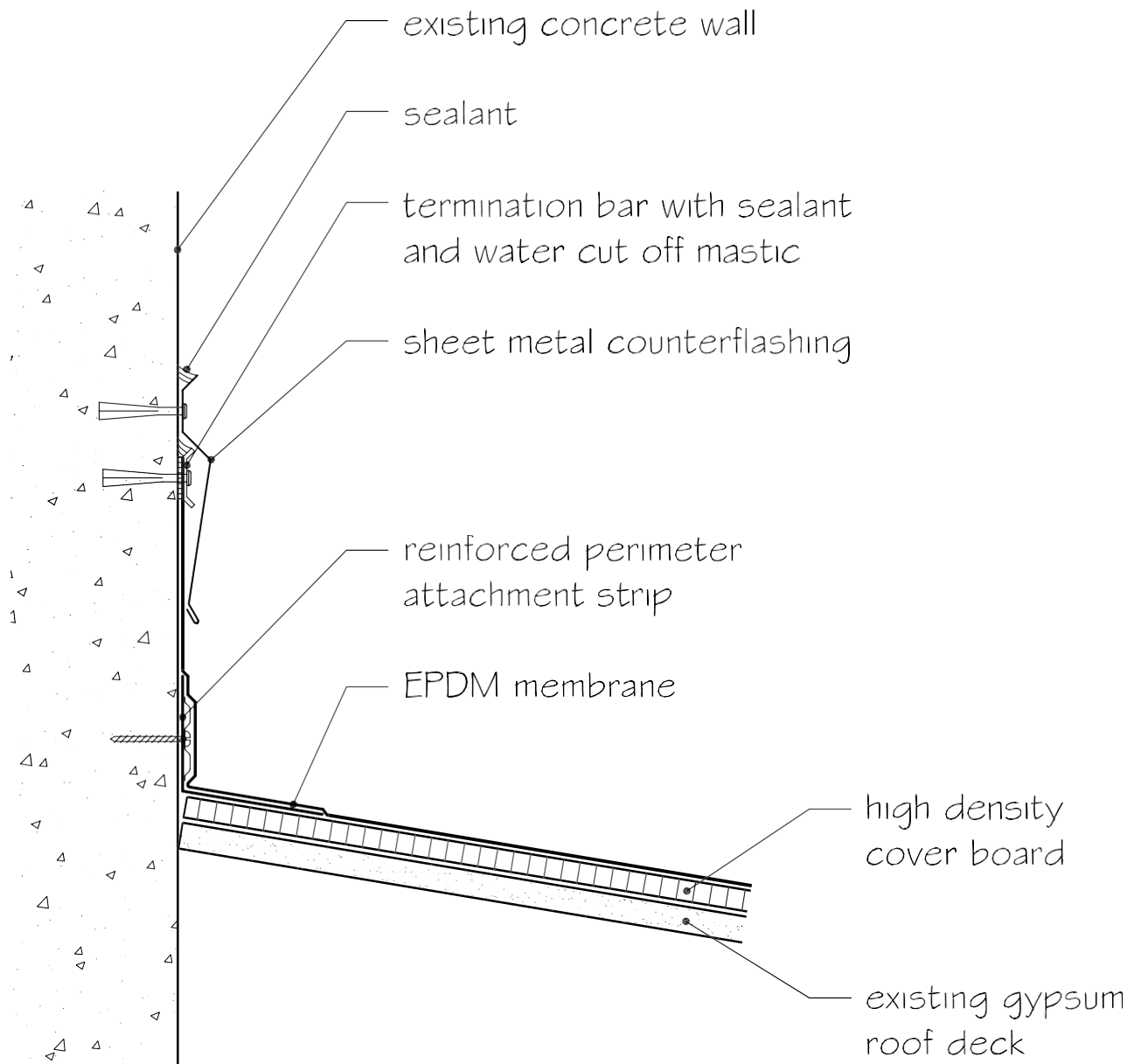


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WAYNE, MICHIGAN

<i>Project No:</i>	22-037	<i>Drawn By:</i>	RDK	<i>Detail No:</i>
<i>Date:</i>	4-29-22	<i>Checked By:</i>	RDK	5



WALL FLASHING

not to scale

NOTE: components shown are new unless noted as existing



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Project No: 22-037

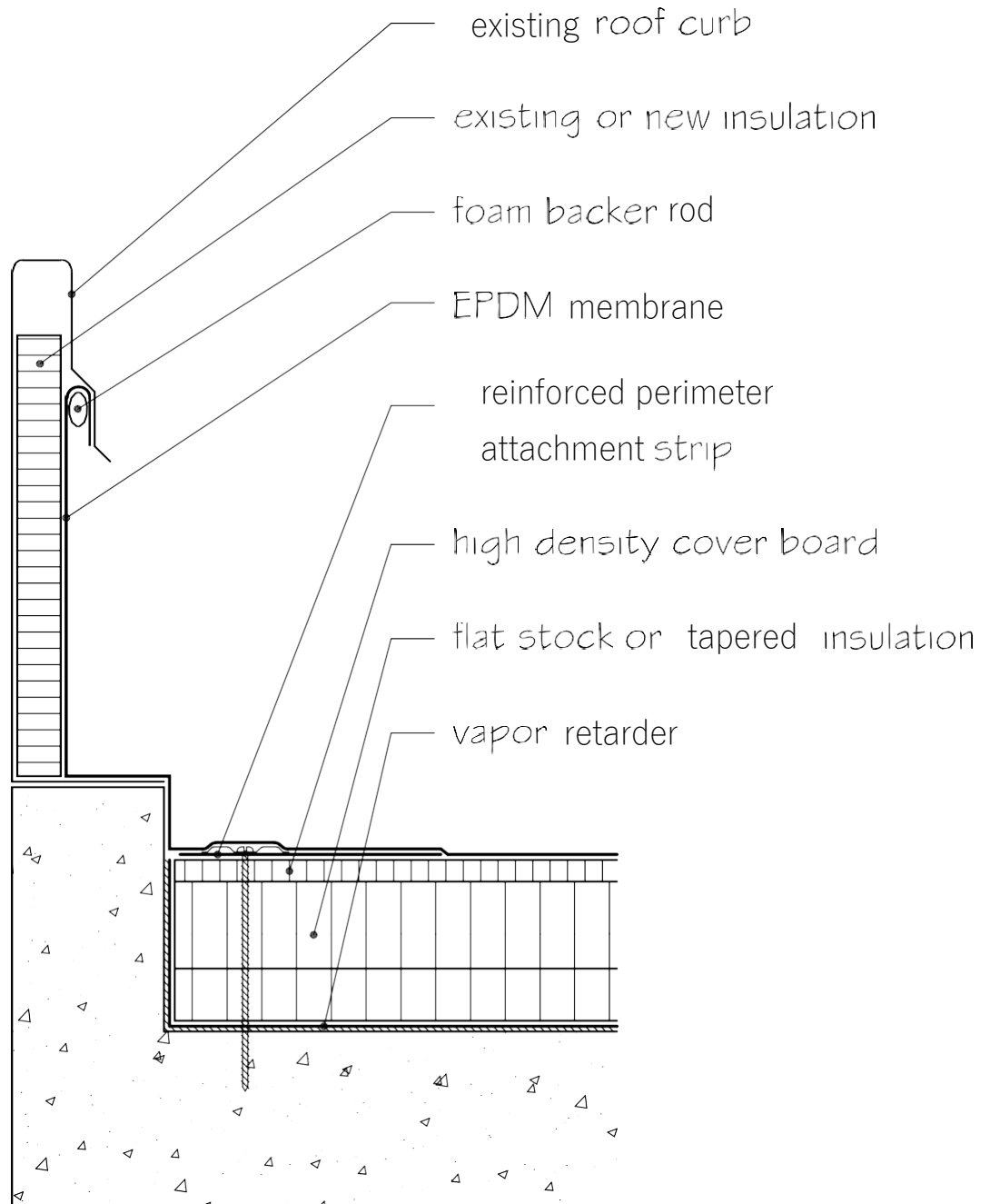
Drawn By: RDK

Detail No:

Date: 5-24-22

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6



ROOF CURB FLASHING

not to scale

NOTE: components shown are new unless noted as existing



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Project No: 22-037

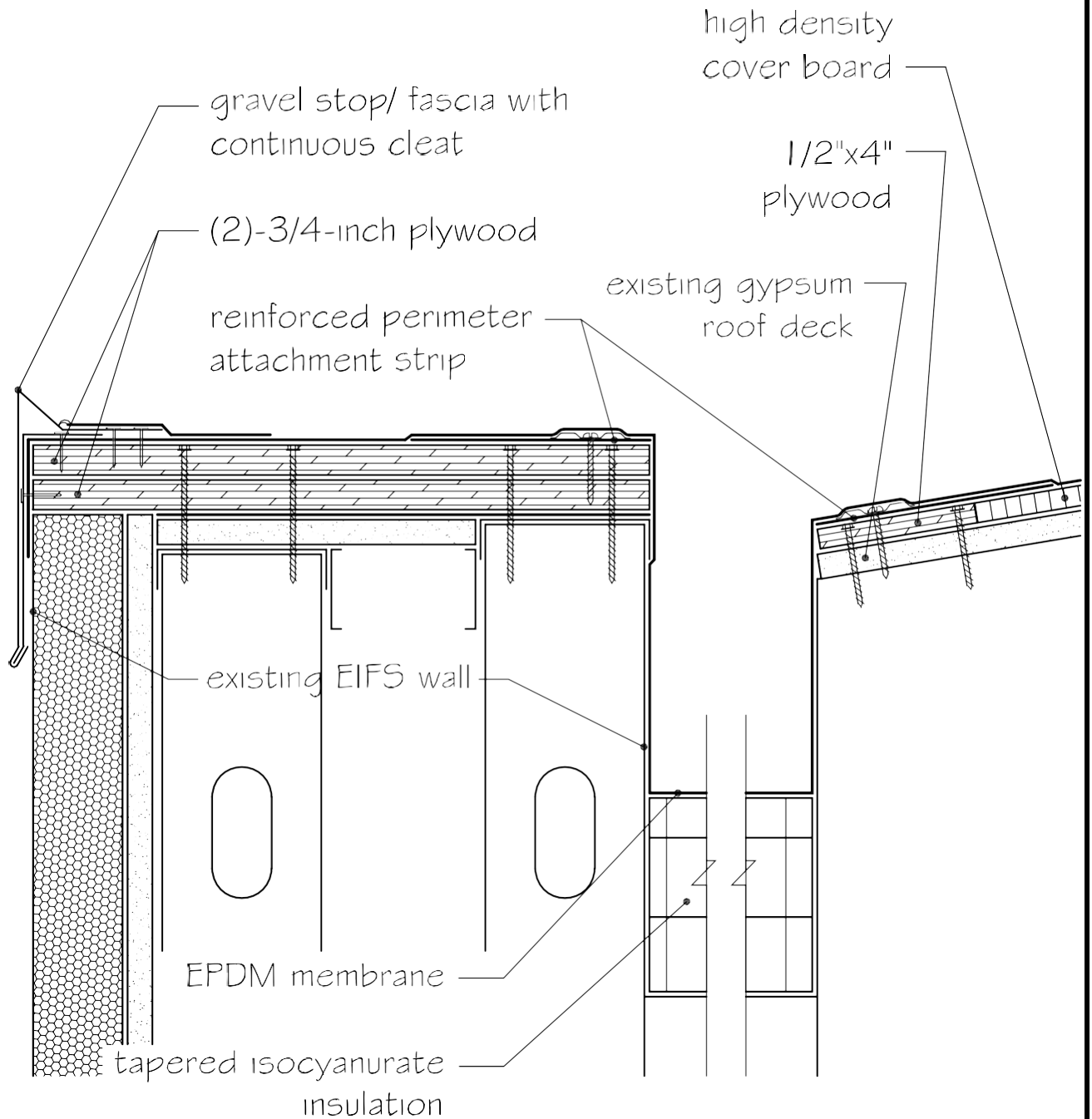
Drawn By: RDK

Detail No:

Date: 1-5-22

Checked By: RDK

7



WALL FLASHING

not to scale

NOTE: components shown are new unless noted as existing



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Project No: 22-037

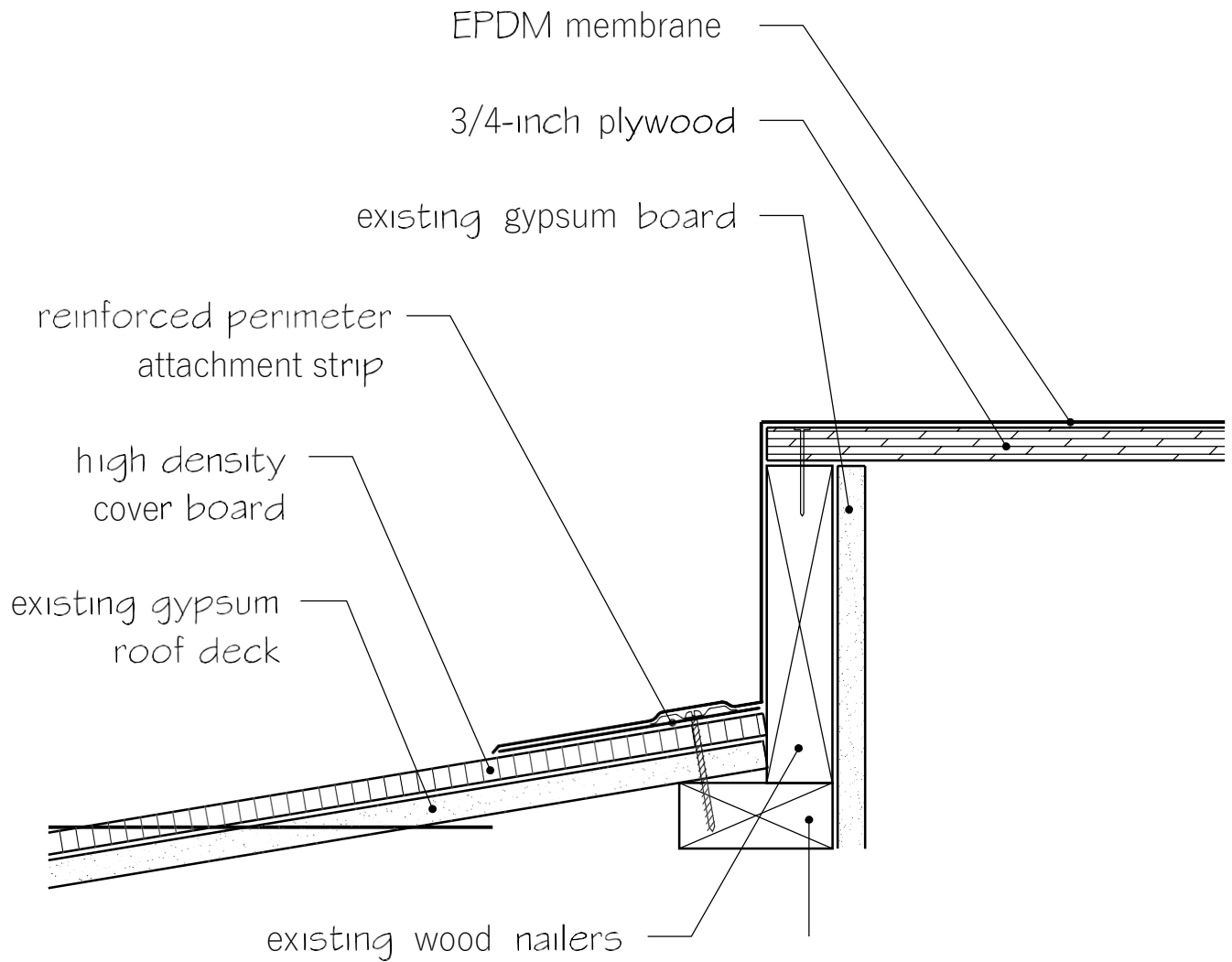
Drawn By: RDK

Detail No:

Date: 5-24-22

Checked By: RDK

8



CURB FLASHING

not to scale

NOTE: components shown are new unless noted as existing



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Project No: 22-037

Drawn By: RDK

Detail No:

Date: 5-25-22

Checked By: RDK

9

FORMED GRAVEL-STOP-FASCIA — JOINT SYSTEMS

FIGURE 2-5

Figure 2-5 illustrates three different joints for formed gravel-stop-fascia systems. Soldered or welded joints are not recommended, except at corners, because they offer no provision for expansion and contraction.

Figure 2-5A shows a gravel-stop installed with a $\frac{1}{4}$ in. (6.4 mm) opening between sections. This opening is covered by a 6 in. (152 mm) cover plate formed to the profile of the gravel-stop. The cover plate is embedded in compatible sealant, nailed through the opening between the gravel-stop sections, and loose locked to the drip edge.

Detail 1 shows the notch necessary in the concealed drip edge at a lap.

Figure 2-5B shows a lap joint for gravel-stop. The joint should be set in compatible sealant and lapped 4 in. (102 mm). Lap joints should not be used where the face exceeds 4 in. (102 mm).

Figure 2-5C shows a gravel-stop installed using a 6 in. min (152 mm) back-up plate. The back-up plate is nailed in place before the gravel-stop is installed. Mastic is applied, and the gravel-stop set in place with a $\frac{1}{4}$ in. opening between sections. The back-up plate must be formed to the exact profile of the gravel-stop. Adding a cover plate is an alternative (from Figure 2-5A).

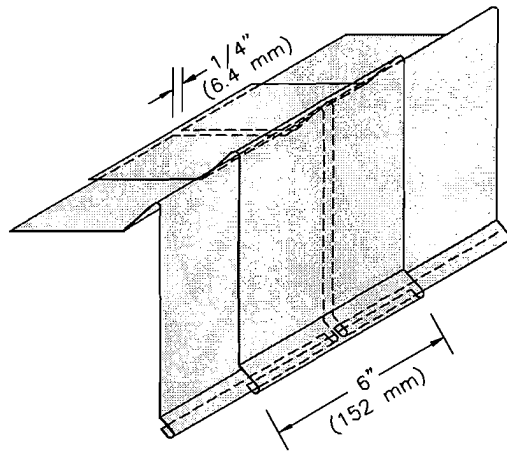


FIG 2-5A

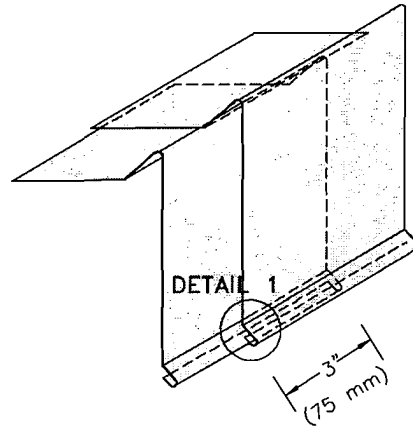
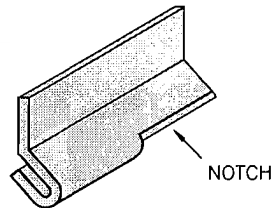


FIG 2-5B



DETAIL 1

ALL JOINT LAPS
TO BE SEALED

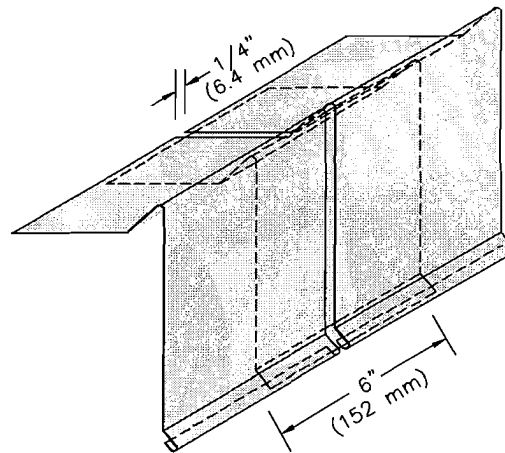


FIG 2-5C

FIGURE 2-5 FORMED GRAVEL-STOP-FASCIA — JOINT SYSTEMS

COUNTER FLASHING SYSTEMS — INSTALLATION

Figure 4-5A shows counter flashing installed using a metal reglet which is furnished by the sheet metal contractor for installation by others. The reglet is attached to the forms before the concrete is poured. Reglet corners should be mitered.

The counter flashing is held in place by wedges and the reglet filled with a sealant.

The counter flashing is notched and lapped at inside corners and joints. Outside corners are notched and seamed.

The Alternate Detail shows another method of installing counter flashing. The counter flashing is snapped in place and the reglet filled with a compatible sealant.

Reglets installed in concrete forms usually need to be fastened 12 in. (305 mm) OC to avoid being dislodged

by vibration of concrete mix. Figure 4-5B shows a complete counter flashing system for use with poured concrete walls. The flashing receiver is furnished by the sheet metal contractor for installation by others. This receiver is attached to the forms before the concrete is poured. The down leg of the receiver is butted at corners. After the roofing and composition flashing are in place, the counter flashing is riveted to the receiver. The counter flashing is lapped at all joints and is lapped and sealed at corners.

Figure 4-5C shows a counter flashing method that can be used for exterior wall coverings of several types, both metallic and non-metallic.

The recommended minimum gage for counter flashing shown in this figure is 16 oz. (0.55 mm) copper, 26 ga (0.477 mm) stainless steel, or 26 ga (0.5512 mm) galvanized steel.

FIGURE 4-5

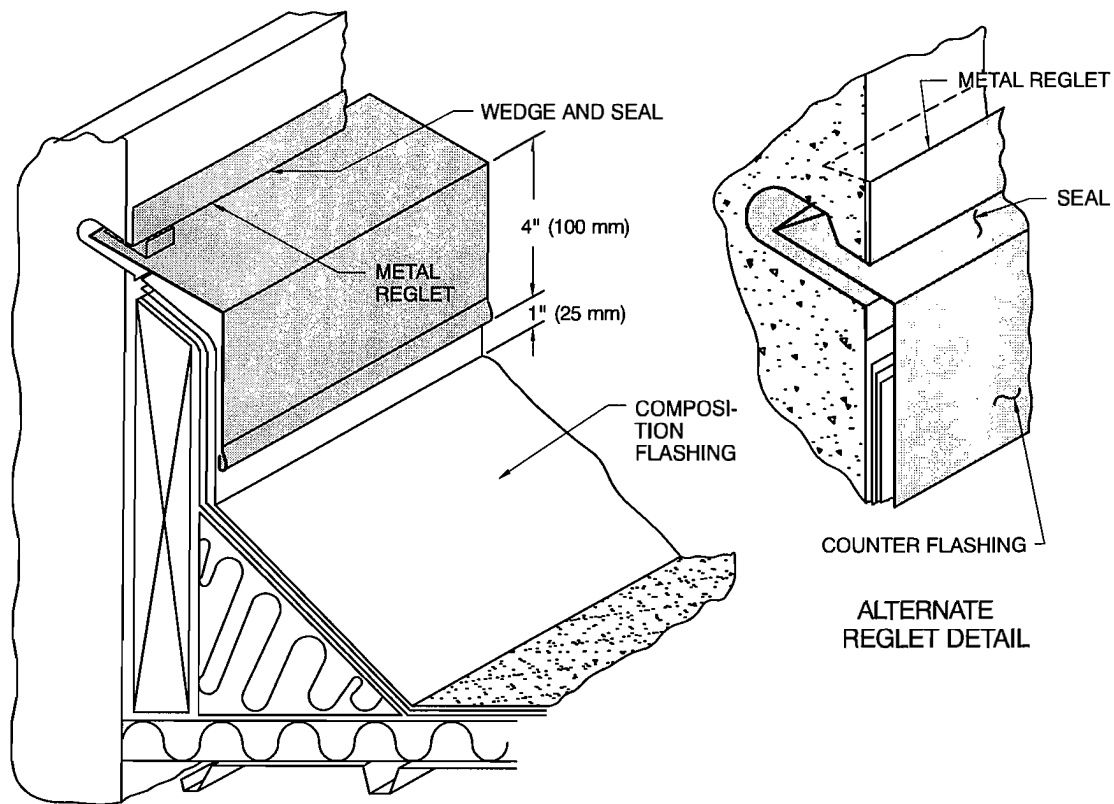


FIG 4-5A

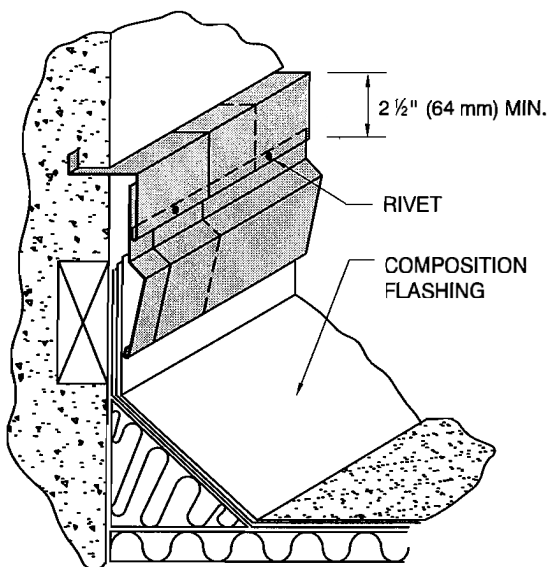


FIG 4-5B

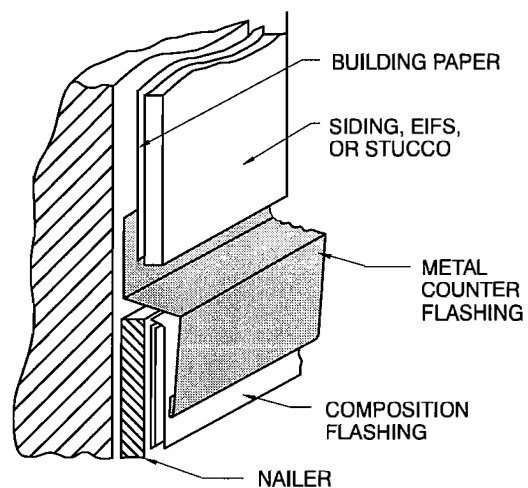


FIG 4-5C

FIGURE 4-5 COUNTER FLASHING SYSTEMS — INSTALLATION

COUNTER FLASHING SYSTEMS — INSTALLATION

Figure 4-6 illustrates the installation of counter flashing at concrete walls where reglets are not used.

In Figure 4-6 the counter flashing is held in place by use of masonry anchors on 18 in. (460 mm) centers.

The joint between the flashing and the wall is filled with a sealant as indicated on the drawing. Counter flashings should be lapped at inside corners and joints, and seamed at outside corners.

Counter flashings should be lapped at joints and mitered and soldered or sealed at corners. The recommended minimum gage for counter flashing is 16 oz.

FIGURE 4-6

(0.55 mm) copper, 26 ga (0.477 mm) stainless steel, 24 ga (0.7010 mm) galvanized steel, or 0.032 in. (.812 mm) aluminum. Flashing material should be at least 24 oz. (0.82 mm) copper, 24 ga (0.635 mm) stainless steel, 22 ga (0.759 mm) for steel or 0.050 in. (1.27 mm) thickness for aluminum. These counter flashing methods may be applied to sloped roof situations as well. One application is shown in Figure 4-8C.

Flashing must not be a continuous piece across moving wall joints. Lap seal or cap seal at every moving joint.

Powder-actuated fasteners are not used where spalling occurs; spalling causes loss of seal.

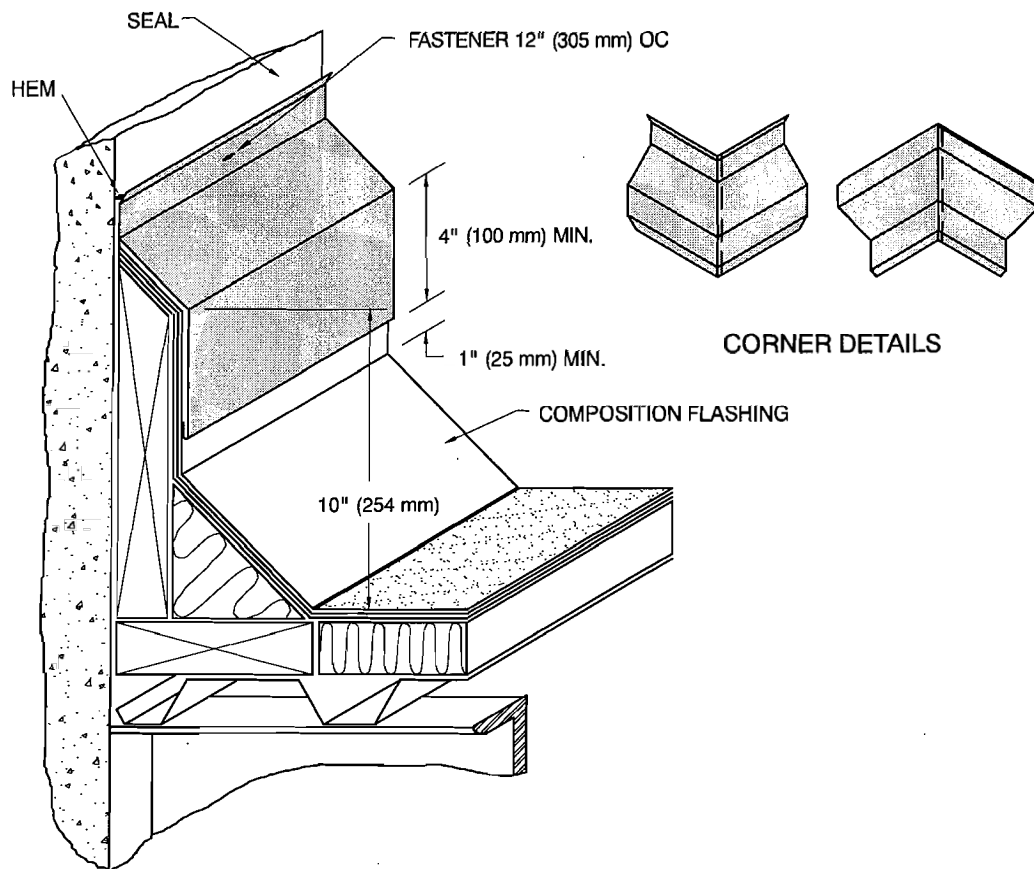


FIGURE 4-6 COUNTER FLASHING SYSTEMS — INSTALLATION

BUILDING EXPANSION JOINTS — ROOF-TO-WALL

FIGURE 5-6

Expansion joints on this plate are designed to allow independent movement of the roof structure. This joint must also be used at the junction of low and high rise buildings. Metal is used to waterproof these joints.

In Figure 5-6A the expansion joint is between a concrete curb and a concrete wall. Composition base flashings are brought up over the top of the curb. A counter flashing is nailed through the base flashing into the wood nailer.

The expansion joint cover is anchored to the concrete wall and extends past the counter flashing to allow for roof movement. In high wind areas the sloped cover should be of a thicker metal to resist wind uplift.

Joints between lengths in this cover are lapped and sealed. Corners are mitered and sealed. Counter flashing

over expansion joint cover is installed as shown on Figure 4-4. The expansion joint in Figure 5-6B is between a wood curb and a masonry wall. Composition base flashings are brought up over the top of the curb. The counter flashing is formed to serve also as a continuous cleat. Counter flashing is nailed through the base flashing into the wood curb.

The expansion joint cover is hooked over the continuous cleat and inserted into a flashing receiver. See Figure 4-4A for detail of receiver. Joints between lengths in the cover are lapped and sealed. Corners are mitered and sealed.

Minimum recommended gage for expansion joint cover is 22 ga (0.759 mm) galvanized steel, 16 oz. (0.55 mm) copper, 0.050 in. (1.27 mm) aluminum, and 24 ga (0.635 mm) stainless steel, or coated metal.

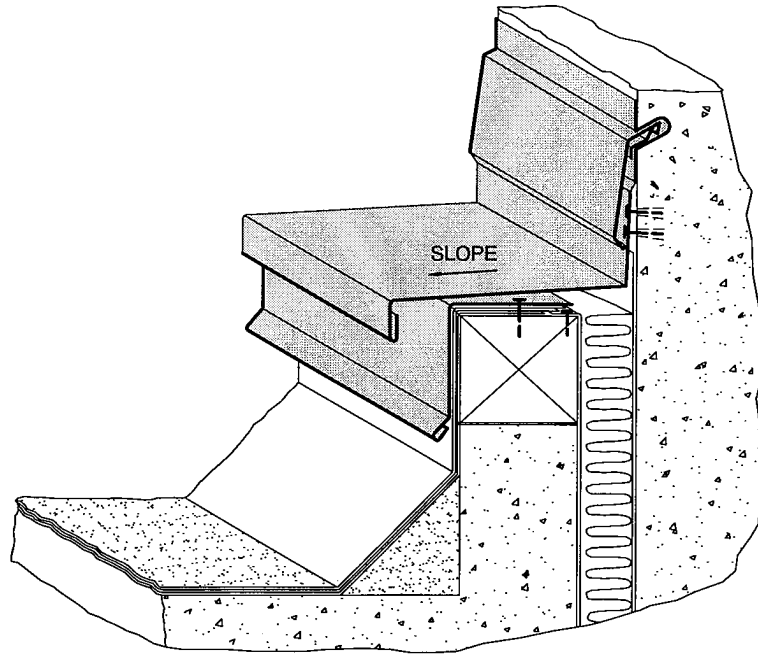


FIGURE 5-6A

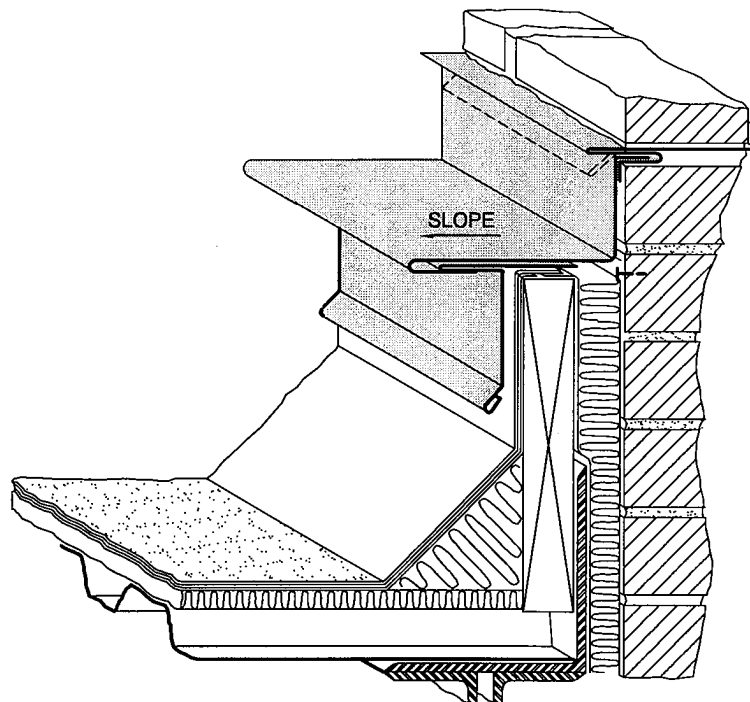


FIGURE 5-6 B

FIGURE 5-6 BUILDING EXPANSION JOINTS — ROOF-TO-WALL