REQUEST FOR PROPOSALS
FOR
SALINE HIGH SCHOOL SOLAR INTEGRATED ROOF REPLACEMENT

SALINE AREA SCHOOLS
Attention: Miranda Owsley
7265 North Ann Arbor Street
Saline, Michigan 48176
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I. OVERVIEW

1.1. PURPOSE

The purpose of the Request For Proposals ("RFP") is for Saline Area Schools (the "School District") to obtain proposals from qualified contractors to provide a comprehensive installation of the Saline High School Solar-Integrated Roof Replacement (the "Work").

1.2. SELECTION TIMELINE

NOTE: Throughout the remainder of this RFP, a prospective contractor is referred to as the "Contractor."

The School District's anticipated timeline for its selection process is:

Issuance of this RFP	October 30, 2024
Deadline for written Requests For Clarifications	4 p.m. Local Time, November 17, 2024
Non-Mandatory Pre-Proposal Meeting at Saline High School – 1300 Campus Parkway, Saline, MI	3:30 p.m. Local Time, November 12, 2024
DUE DATE FOR PROPOSALS	**11 a.m. Local Time, November 21, 2024**
School District's Consideration of the Contract	December 10, 2024
Commencement of Work Year 1	June 9, 2024
Substantial Completion of Work Year 1	August 15, 2024
Final Completion of Work Year 1	September 15, 2024
Commencement of Work Year 2	June 8, 2025
Substantial Completion of Work Year 2	August 14, 2025
Final Completion of Work Year 1	September 14, 2025

PLEASE NOTE: The School District reserves the right, in its sole and absolute discretion, to make modifications to the above selection timeline as it determines to be in its best interest.

II. SUBMISSION OF PROPOSALS

2.1. PROPOSAL SUBMISSION DEADLINE AND REQUIREMENTS

The Due Date for receipt of Proposals is:

November 21, 2024 at 11:00 a.m Local Time (the "Due Date")

2.1.1. Sealed proposals should be submitted through Buildingconnected.com with the following link: https://app.buildingconnected.com/public/5cc9d7f637c1a90018cb55dc. No physical bids will be accepted in person or via delivery service.

2.1.2. **Late Proposals:** Each Contractor is responsible for submission of its Proposal. Proposals or Proposal revisions received after the Due Date will not be accepted or considered. The School District is not liable for any delivery or postal delays.

2.1.3. **Returned Proposals:** All Proposals received after the Due Date will be unopened and made available to the respective Contractor for pick-up, at its sole cost and expense.

2.1.4. **Signed Original Proposal:** Each Proposal must be signed by an authorized member of the Contractor's firm. This member should be the highest-ranking officer at the local level. NO ORAL, FAX, or E-MAILED Proposals will be accepted. Each Proposal must be submitted on the Proposal Forms attached to this RFP.

2.1.5. **Opening of Proposals:** At the specified location and Due Date stated above, all submitted Proposals shall be publicly opened and read aloud with the following link: **meet.google.com/vju-upkf-vnx** or phone number (804) 876-2942 PIN: 185 710 881#. Any interested parties may attend. No immediate decision will be rendered.

2.1.6. **E-Mail Clarifications:** The School District intends to communicate with Contractors via e-mail (e.g., RFP clarifications and addenda). Except for the delivery of the Proposal itself, references in this RFP to "written" form of communications include e-mail.

2.1.7. **Additional Requests For Clarification:** Prospective Contractors may request that the School District clarify information contained in this RFP. All such requests must be made in writing via email. The School District will attempt to provide a written response to all written Requests For Clarification within five (5) business days after the receipt of such request. School District will not respond to any Request For Clarification received after **4 p.m. on November 17, 2024**. Requests For Clarification and inquiries must be made via e-mail. All requests For clarification must be directed to Mark Paulus at lecoleplanners3@gmail.com. (Subject Line: Roof-Integrated Solar Install RFP Request For Clarification). No response will be made to any oral questions. All questions and answers will be posted on the School District's website. It is each Contractor's responsibility to check School District's website prior to RFP Due Date to ensure that it has received all of the information, including, but not limited to, all Addenda to this RFP.

2.1.8. **Restrictions On Communication:** From the issue date of this RFP until a Contractor is selected and the selection announced, a prospective Contractor shall not communicate about subject of this RFP or a Contractor's Proposal with the School District, its Board of Education, or any individual member, administrators, faculty, staff, students, employees, or its Construction Manager, if any, except for additional Requests For Clarification in accordance with Paragraph 2.1.7 above, or as otherwise required by applicable law.

2.1.9. **Addenda to the RFP:** If it becomes necessary to revise any part of this RFP, notice of the revision will be e-mailed to all parties that requested a copy of this RFP. All addenda will be issued through the School District's website and all addenda shall become a part of this RFP. Each Contractor must in its Proposal, to avoid any miscommunication, acknowledge all addenda which it has received, but the failure of a Contractor to receive, or acknowledge receipt of, any addendum shall not relieve the Contractor of the responsibility for complying with the terms thereof.

2.1.10. RFP/Proposal Information Controlling: The School District intends that all Contractors shall have equal access to information relative to this RFP, and that this RFP contains adequate information. No information communicated, either verbally or in writing, to or from a Contractor shall be effective unless confirmed by written communication contained in an addendum to this RFP, a Request For Clarification or other written response thereto, or in the Proposal.

2.1.11. Finality of Decision: Any decision made by the School District, including the Contractor selection, shall be final.

2.1.12. Reservation of Rights: The School District reserves the right, in its sole and absolute discretion (for this provision and all other provisions contained in this RFP), to accept or reject, in whole or in part, any or all Proposals with or without cause. The School District further reserves the right to waive any irregularity or informality in the RFP process or any Proposal, and the right to award the Contract to other than the Contractor(s) submitting the best financial Proposal (low bidder). The School District reserves the right to request additional information from any or all Contractors. The School District reserves the right to select one or more Contractors to perform the Work on behalf of the School District. In the event the Contractor's Proposal is accepted by the School District and the Contractor asserts exceptions, special considerations or conditions after acceptance, the School District, in its sole and absolute discretion, reserves the right to reject the Proposal and award the Contract to another contractor.

2.1.13. Release of Claims: Each Contractor by submitting its Proposal releases the School District from any and all claims arising out of, and related to, this RFP process and selection of a Contractor.

2.1.14. Contractor Bears Proposal Costs: A recipient of this RFP is responsible for any and all costs and liabilities incurred by it or others acting on its behalf in preparing or submitting a Proposal, or otherwise responding to this RFP, or any negotiations incidental to its Proposal or this RFP.

2.1.15. Irrevocability of Proposals: All Proposals submitted shall not be withdrawn and shall be irrevocable for a minimum period of ninety (90) calendar days following the Due Date for receipt of Proposals set forth above.

2.1.16. Collusive Bidding: The Contractor certifies that its Proposal is made without any previous understanding, agreement, or connection with any person, firm or corporation making a Proposal for the same Work and is in all respects fair, without outside control, collusion, fraud, or otherwise illegal action.

2.2 PROPOSAL REQUIREMENTS AND FORMAT

This outlines the information that must be provided by each Contractor and the required format for its Proposal. Any Proposal not providing the required information, or not conforming to the format specified, may be disqualified on that basis. Please also refer to Sections 2.1, 4.1, and 4.2 of this RFP for additional Proposal requirements. Attached to this RFP is a form of contract under which the Work requested under this RFP shall be provided by the successful Contractor (the "Contract" and referred to throughout the Contract as the "Agreement") (See also Section 3.1 of this RFP). The Contract contains many details relative to the Work requested by the School District, the terms and conditions under which the Work shall be provided by the Contractor, and should be reviewed carefully by each Contractor prior to submitting a Proposal.

Any exceptions to the terms and conditions contained in this RFP or the form of Contract attached to this RFP, or any other special considerations or conditions requested or required by the Contractor MUST be specifically enumerated by the Contractor and be submitted as part of its Proposal, together with an explanation as to the reason such terms and conditions of the RFP or form of Contract cannot be met by, or, in the Contractor's opinion, are not applicable to, the Contractor. The Contractor shall be required and expected to meet the specifications and requirements as set forth in this RFP and the form of Contract in their entirety, except to the extent exceptions or special considerations or conditions are expressly set forth in the Contractor's Proposal and those exceptions or special considerations or conditions are expressly accepted by the School District. All Pricing factors must be clearly indicated in the Proposal Forms provided as part of Contractor's Proposal.

Each Proposal must include, at a minimum, the following:

2.2.1 A detailed list setting forth any exceptions to this RFP and/or the Contract, or other special considerations or conditions of Contractor, including explanations of such exceptions or the reason such terms and conditions of the RFP or form of Contract cannot be met by, or on Contractor's opinion are not applicable to, the Contractor.

2.2.2 References – Each Proposal must include detailed evidence that the Contractor is currently providing Work for other public school districts (preferred) or similar sized projects. The Contractor must provide this information, including contact names, addresses, phone numbers, and type and scope of work provided. This should include projects of similar size and scope as the School District.

2.2.3 Evidence of the Contractor's ability to provide adequate insurance coverages as required by this RFP and the Contract to protect the interests of the Contractor and the School District.

2.2.4 Demonstrate that the Contractor understands and will comply with all regulatory laws, codes, and requirements of any Local, State, and Federal law that apply to the requirements and obligations under this RFP and the Contract.

2.2.5 A completed Proposal Pricing Form provided as **ATTACHMENT A**.

2.2.6 A completed Familial Disclosure Affidavit provided as **ATTACHMENT B**.

2.2.7 A completed Iran Economics Sanctions Act Affidavit of Compliance provided as **ATTACHMENT C**.

2.3 DRAWINGS AND SPECIFICATIONS

Specifications

#	Description	# of Pages
01 2100	Allowances	1
01 2200	Unit Prices	2
07 5400	Thermoplastic Membrane Roofing	11
07 6200	Sheet Metal Flashing and Trim	4

Drawings

#	Description
Plate 1	Saline High School North Roof Plan – Bid Pack "A" (Areas 1-14)
Plate 2	Saline High School South Roof Plan – Bid Pack "B" (Areas 16-25)
Plate 3	Saline High School Roof Deck Designation Plan
Detail 1	Coping
Detail 1A	Coping
Detail 2	Counterflashing at Masonry Wall
Detail 2A	Counterflashing at Masonry Wall
Detail 3	Counterflashing at Sheet Metal Wall Panels
Detail 4	Expansion Joint
Detail 5	Expansion Joint at Wall
Detail 6	Counterflashing at Existing Radius Coping
Detail 7	Area 13 & 16 Wall Flashing
Detail 8	Pipe Chase Curb Flashing
Detail 9	Pipe Chase Curb Cap
Detail 10	Roof Deck Transition

Architectural Sheet Metal Manual – Sheet Metal and Air Conditioning Contractors National Association (SMACNA), Seventh Edition, 2021

Fig. 3-1	Formed Metal Coping – Design Data
Fig. 4-5	Counterflashing Systems – Installation
Fig. 8-9	Roof Penetration Flashing
Fig. 8-11	Equipment Support Flashing

Architectural Specialities – Armstrong World Industries, Inc.

Fig. SK1	2035 – Replacing Tectum Roof Plank
Fig. SK1	2039 – Replacing Tectum III Roof Panels

2.4 CONTRACTOR'S RESPONSIBILITIES

2.4.1 WORK SCHEDULE

The contractor will note on their bid form if they will be planning on completing this project over 1 summer or 2 summers. If the project is 2 summers and after August 16, 2024, a roof area/section must be completed including all sheet metal, no temporary tie-in locations will be allowed and all materials, equipment, and other items must be removed from the site.

- 2025 Start Date: June 9, 2025
- 2025 Substantial Completion Date: August 15, 2025
- 2026 Start Date: June 8, 2026
- 2026 Substantial Completion Date: August 14, 2026
- Completion/Closeout Date: 45 Days after Substantial Completion

3 CONTRACTUAL OBLIGATIONS

3.2 FORM OF CONTRACT

3.2.1 **Form of Contract**: This is a Request For Proposals only. Proposals will be treated as offers to enter into the Contract (as defined above) with the School District. The School District and successful Contractor shall memorialize their contractual relationship and obligations using the form of example Contract attached hereto as **ATTACHMENT D**. The Contract contains many details relative to the Work required under this RFP, as well as the terms and conditions under which the Work shall be provided by the successful Contractor. The Contract should be reviewed carefully by each Contractor prior to submitting a Proposal. Any exceptions to the terms and conditions contained in the Contract, or any other special considerations or conditions requested or required by the Contractor relative to this RFP or the form of Contract shall be expressly/specifically enumerated by the Contractor and be submitted as part of its Proposal, together with an explanation as to the reason such terms and conditions cannot be met by, or, in the Contractor's opinion are not applicable to, the Contractor, provided however, that exceptions or special conditions of the Contractor will not be binding upon the School District unless those exceptions or special conditions are expressly accepted by the School District, and incorporated into the final Contract. Following the selection of the successful Contractor by the School District, the Contract will be finalized by the parties. The below sections contain information relative to selected provisions of the Contract and/or the expectations of the School District relative to the provision of the Work.

3.2.1.1 **Familial Disclosure Affidavit**: All Contractors must provide familial disclosure in compliance with MCL 380.1267 and attach this information to its Proposal. The Proposal must be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner and/or any employee of the Contractor and any member of the School District's Board of Education or the School District's Superintendent. The School District will not accept a Proposal that does not include this sworn and notarized disclosure statement. The Familial Disclosure Affidavit is attached to this RFP as **ATTACHMENT B**.

3.2.1.2 **Iran Economic Sanctions Act**: In accordance with Michigan Public Act No. 517 of 2012, all Proposals must be accompanied by a sworn and notarized statement certifying that the Contractor is not an Iran Linked Business. The School District will not accept a Proposal that does not include this sworn and notarized statement. The Affidavit of Compliance – Iran Economic Sanctions Act is attached to this RFP as **ATTACHMENT C**.

3.2.1.3 **Bid Security:** Contractors must submit with its Proposal bid security in the form of a Bid Bond issued by a qualified surety or certified check/money order in an amount of five percent (5%) of the Proposal ("Bid Security"). Failure to include this Bid Security with the Contractor's Proposal may result in rejection of your Proposal. If a Bid Bond is posted by a Contractor, it shall be from a Treasury Surety licensed to do business in the State of Michigan, and the attorney-in-fact who executes the Bid Bond on behalf of the Contractor shall attach a certified, current copy of its power of attorney. In the event a certified check/money order is submitted, it shall be made payable to "Saline School District." The School District shall not be liable for any interest earned thereon. Bid Security shall be forfeited as liquidated damages, and not as a penalty, if Contractor withdraws its Proposal after the Due Date for submission of Proposals or, upon acceptance of its Proposal by the School District, the Contractor fails to execute the form of Contract acceptable to School District, substantially evidencing and incorporating this RFP and its Proposal and fails to provide the required Performance Bond and/or Payment Bond, if any, and the required insurance certificates, within fifteen (15) days of an award of a Contract to the Contractor. Bid Bonds shall be duly executed by the Contractor, as principal and by a surety that is properly licensed and authorized to do business in the state in which the Work is to be performed. All sureties providing bonds for this Project must be listed in the latest version of the Department of Treasury's Circular 570, entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies", with the bond amount less than or equal to the underwriting limitation, and/or have an A.M. best rating of A- or better. Bid Security shall be returned to all non-successful Contractors within a reasonable time after the award of a Contract and execution of a Contract by the successful Contractor. The bid bond can be included with the proposal as submitted through Buildingconnected.com. If the bid security is a certified check/money order, this must be delivered to the following address: 7265 North Ann Arbor Street, Saline, Michigan 48176 prior to the bid due date and time.

3.2.1.4 **Performance Bond**: Successful Contractors whose Proposals are $50,000 or more will be required to furnish Performance and Payment Bonds, in a form satisfactory to the School District, in the amount of 100% of its Proposal by a Treasury-listed Surety licensed to do business in the State of Michigan, and the attorney-in-fact who executed the Performance and Payment Bonds on behalf of the Contractor shall attach a certified, current copy of its power of attorney. The cost of the Bonds shall be included in each Proposal.

3.2.1.5 **Governing Law**: The Contract shall be governed by and construed in accordance with the laws of the State of Michigan. The parties hereby agree to the exclusive jurisdiction and venue of courts sitting in Washtenaw County, Michigan.

3.2.1.6 **General Indemnification**: Contractor shall indemnify, defend and hold harmless the School District, its Board of Education, its Board Members, in their official and individual capacities, its administrators, employees, agents, contractors, successors and assignees, from and against any and all claims, counter claims, suits, debts, demands, actions, judgments, liens, costs, expenses, damages, injuries and liabilities, including actual attorney's fees and actual expert witness fees arising out of or in connection with Contractor's performance of the Contract and/or from Contractor's violation of any of the terms of the Contract, including, but not limited to: (i) the negligent acts or willful misconduct of the Contractor, its officers, directors, employees, successors, assignees, contractors and agents; (ii) any breach of the terms of the Contract by the Contractor, its officers, directors, employees, successors, assignees, contractors and agents; (iii) any violation or breach of any applicable Federal, State or local law, rule, regulation, ordinance, policy and/or licensing and permitting requirements applicable to the Contract; or (iv) any breach of any representation or warranty by the Contractor, its officers, directors, employees, successors, assignees, contractors and agents under the Contract. The Contractor shall notify the School District by certified mail, return receipt requested, immediately upon actual knowledge of any claim, suit, action, or proceeding for which Saline School District may be entitled to indemnification under the Contract. This paragraph shall survive the expiration or earlier termination of the Contract.

3.2.1.7 **Compliance With Laws**: Contractor shall comply with any and all applicable federal, state, and local laws, rules, ordinances, policies, and regulations, including any licensing and permitting requirements, under the Contract. Contractor, including its personnel, employees, contractors, consultants, and agents shall be responsible for knowing the School District's policies concerning appropriate behavior of persons in School District facilities and, on School District properties, including for example, the prohibitions of sexual harassment and smoking, and shall comply with all such policies. Contractor represents and warrants to the School District that it shall at all times be in compliance with any and all applicable federal and state laws, rules, ordinances, policies and regulations, and licensing and permitting requirement applicable to the Contract. Contractor shall indemnify, defend, and hold School District harmless from any liability from its failure to so comply.

3.2.1.8 **Right to Terminate on Breach**: Each party shall have, in addition to all other remedies available to it, the right to terminate the Contract immediately upon written notice to the other party that the other party has committed a material breach of any of its obligations herein and such material party has committed a material breach of any of its obligations herein and such material breach shall not have been cured or corrected within ten (10) days following written notice of the same. Furthermore, if the School District must regularly request that the Contractor cure breaches of the Contract, such circumstances shall be grounds for termination of the Contract for cause, even if each breach on its own would not be material.

3.2.1.8.1 **Events Upon Termination:** Upon termination of the Contract by either party for Breach or default of the other party, each party shall be entitled to exercise any other right, remedy or privilege which may be available to it under applicable law or proceed by appropriate court action to enforce the terms of the Contract or to recover damages for the breach of the Contract. Upon termination of the Contract, the Contractor shall immediately provide the School District with any and all drawings and documentation regarding the Work. In the event of termination, title to all supplies, materials, equipment or products purchased by the Contractor for integration into the Work shall pass to the School District, and Contractor shall deliver possession of said supplies, materials, equipment or products to the School District at a location to be designated by the School District.

3.2.1.9 **Pricing**: Prices quoted are to be F.O.B. to Saline School District. All purchases Prices shall be net; including transportation, insurance and delivery charges fully prepaid by the successful Contractor to destinations indicated in the Proposal.

3.2.1.10 **Taxes**: This project is NOT exempt from taxes.

3.2.1.11 **Proposal Withdrawal**: Contractors may withdraw its Proposals any time before the Due Date. Proposals may not be withdrawn for at least 90 days after the Due Date.

3.2.1.12 **Competition**: The name of a model, manufacturer, or brand in this RFP shall not be considered as exclusive of other brands. Brands and models specified in this RFP are preferred. The School District expects all supplies, materials, equipment, or products bid by a Contractor to meet or exceed the Specifications set forth in this RFP. Further, it is the School District's intent that this RFP permit competition. Accordingly, the use of any patent, proprietary name, or manufacturer's name is for demonstrative purposes only and is not intended to curtail competition. Whenever any supplies, material, equipment, or products requested in this RFP are specified by patent, proprietary name or by the name of the manufacturer, unless stated differently, such specification shall be considered as if followed by the words "or comparable equivalent," whether or not such words appear. The School District in its sole and absolute discretion, shall have the right to determine if the proposed equivalent products/brands submitted by the Contractor meet the Specifications contained in this RFP and possess equivalent and/or better qualities. It is the Contractor's responsibility to notify the School District in writing if any Specifications or suggested comparable equivalent products/brands require clarification by the School District prior to the Due Date for Proposals. Any and all deviations from Specifications must be noted on the Proposal Form.

4 PROPOSAL

4.1 PROPOSAL FORMS

Each Contractor shall submit its Proposal using the Proposal Pricing Form attached hereto as **ATTACHMENT A**, along with any other information required by this RFP or deem necessary and appropriate by the Contractor for evaluation of its Proposal.

4.2 PROPOSAL CHECKLIST

In addition to the Proposal Pricing Form and any information required under Section 4.1 above, please attach copies of the following documents to your Proposal:

4.2.1 Proposal Pricing Form and detailed list setting forth any exceptions to the RFP and/or Contract, or other special considerations or conditions of the Contractor, including explanations of such exceptions or the reason such terms and conditions of the RFP or form of Contract cannot be met by, or are not applicable to, the Contractor.

4.2.2 List of Contractor's References (K-12 references preferred) with which Contractor has contracted to perform Work or services similar to the Work described herein. The Contractor must provide this information, including contact names, addresses, phone numbers, and type and scope of Work/services provided including the size of the array and date of installation.

4.2.3 Contractor's Verification of addenda to the RFP, if any.

4.2.4 Evidence of the Contractor's ability to provide adequate insurance coverages as required by this RFP and the Contract to protect the interests of the Contractor and the School District.

4.2.5 A completed Familial Disclosure Affidavit, which is attached hereto as **ATTACHMENT B**.

4.2.6 A completed Iran Sanctions Act Affidavit of Compliance, which is attached hereto as **ATTACHMENT C**.

ATTACHMENT A

CONTRACTOR INFORMATION:

CONTRACTOR'S NAME:_____

CONTACT PERSON:_____

ADDRESS:_____

CITY/STATE:_____

TELEPHONE NUMBER:_____

FAX NUMBER:_____

E-MAIL ADDRESS:_____

A. CONTRACTOR PRICING & SCHEDULE

BID PACK "A"

Base Bid Amount: Includes the replacement of Areas 1, 2, 3 4, 5, 6, 7, 8, 9, 11,12 13, & 14	$ _____	
Allowance Amount: Replace 20 Plank of Tectum III and 3 planks of Tectum E composite roof deck	$ _____	
Allowance Amount: 1,500 square feet of 1.5 inch- thick isocyanurate insulation replacement	$ _____	
Allowance Amount:	$	20,000.00
Bond Amount:	$ _____	
Grand Total Amount Bid Pack "A":	$ _____	
Work to be completed over 1 or 2 Summers (Please Circle)	1 year	2 years

BID PACK "B"

Base Bid Amount: Includes the replacement of Areas 16, 17, 18, 19, 20, 21, 22, 23, 24, & 25	$ _____	
Allowance Amount: Replace 3 planks of Tectum E composite roof deck	$ _____	
Allowance Amount: 1,500 square feet of 1.5 inch-thick isocyanurate insulation replacement	$ _____	
Allowance Amount:	$	20,000.00
Bond Amount:	$ _____	
Grand Total Amount Bid Pack "B":	$ _____	
Work to be completed over 1 or 2 Summers (Please Circle)	1 year	2 years

BID PACK "A" and "B" Combined

Grand Total Amount Bid Pack "A" and "B" Combined:	$ _____	
Work to be completed over 1 or 2 Summers (Please Circle)	1 year	2 years

UNIT PRICING

The undersigned agrees that at the Owner's discretion, the Base Bid Sum may be altered as follows if the Unit Prices indicated and defined in the Unit Prices Section and elsewhere in the Bidding Documents are to be executed. Failure to bid upon requested Unit Prices shall indicate no change in the Base Bid Sum.

1" x 6" per lineal foot	$ _____
1" x 8" per lineal foot	$ _____
2" x 4" per lineal foot	$ _____
2" x 6" per lineal foot	$ _____
2" x 8" per lineal foot	$ _____
2" x 10" per lineal foot	$ _____
2" x 12" per lineal foot	$ _____
7/16-inch OSB plywood per square foot	$ _____
Repair Deck 18 Gauge Sheet Metal Plate per square foot	$ _____
Replace Deteriorated Steel Deck per square foot	$ _____
Replacement Roof Insulation 1" Thick per square foot	$ _____
Replacement Roof Insulation 1.5" Thick per square foot	$ _____
Replacement Roof Insulation 2" Thick per square foot	$ _____
Replacement Roof Insulation 3" Thick per square foot	$ _____
Tapered "X" Panels (1/4"/ft.) per square foot	$ _____
Tapered "Y" Panels (1/4"/ft.) per square foot	$ _____
Tapered "Q" Panels (1/2"/ft.) per square foot	$ _____
Roof Drain Replacement per drain	$ _____
Drain Clamping Ring Replacement per each	$ _____

B. ACKNOWLEDGEMENT OF ADDENDA TO RFP

The Contractor acknowledges receipt of the following addenda:

Addendum Number _____dated_____

Addendum Number _____dated_____

Addendum Number _____dated_____

The undersigned understands that the School District reserves the right to accept or reject in whole or in part any and all Proposals, to waive informalities and irregularities therein, and to award the Contract to other than the Contractor(s) submitting the best financial Proposal (low bidder) and to award the Contract to one (1) or more Contractors in the School District's sole and absolute discretion.

If award is made to our firm based upon our Proposal, we agree to enter into the attached form of Contract with the School District to furnish the Work in strict accordance with this Request For Proposal, the Contract, and our Proposal.

My signature certifies that the Proposal as submitted complies with all terms and conditions as set forth in this Request For Proposal and the Contract, unless specifically enumerated as an exception as part of our Proposal.

I hereby certify that I am authorized to sign as a Representative for the firm.

CONTRACTOR HEREBY SUBMITS THIS PROPOSAL PRICING FORM IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE RFP.

Name of Contractor:_____

_____
(Signature/Principal)

_____
(Name Printed)

Date: _____

ATTACHMENT B

FAMILIAL DISCLOSURE AFFIDAVIT

The undersigned, the owner or authorized officer of _____ (the "Contractor"), pursuant to the familial disclosure requirement provided in the Saline Area Schools (the "School District") Request For Proposals For Saline High School Solar-Integrated Roof Replacement, hereby represents and warrants that, except as provided below, no familial relationships exist between the owner or any employee of the Contractor, and any member of the Board of Education of the School District or the Superintendent of the School District. A list of the School District's Board of Education Members and its Superintendent may be found at http://www.salineschools.org

List any Familial Relationships:

CONTRACTOR:

_____

By: _____

Its: _____

STATE OF _____)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20__, by _____.

_____

, Notary Public

_____ County, _____

My Commission Expires:_____

Acting in the County of :_____

ATTACHMENT C

IRAN ECONOMIC SANCTIONS ACT AFFIDAVIT OF COMPLIANCE
Michigan Public Act No. 517 of 2012

The undersigned, the owner or authorized officer of the below-named contractor ("Contractor"), pursuant to the compliance certification requirement provided in the Saline Area Schools (the "School District") Request For Proposals For Saline High School Solar-Integrated Roof Replacement (the "RFP"), hereby certifies, represents and warrants that the Contractor (including its officers, directors, and employees) is not an "Iran linked business" within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the "Act"), and that in the event Contractor is awarded a contract as a result of the aforementioned RFP, the Contractor will not become an "Iran linked business" at any time during the course of performing any Work under the Contract.

The Contractor further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the School District's investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a request for proposal for three (3) years from the date that it is determined that the person has submitted the false certification.

CONTRACTOR:

_____
Name of Contractor

By: _____

Its: _____

Date: _____

STATE OF _____)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20__, by _____.

_____
, Notary Public

_____ County, _____

My Commission Expires:_____

Acting in the County of _____

ATTACHMENT D

CONTRACT

I. This Contract ("Contract") is made on _____, 20__ ("Effective Date"), between **SALINE AREA SCHOOLS**, a Michigan public school district ("School District"), whose address is 7265 North Ann Arbor Street, Saline, Michigan 48176 and _____, a _____ ("Contractor"), whose address is _____. The School District and Contractor may each be referred to herein as a "Party" and collectively as the "Parties."

RECITALS

A. The School District issued a Request For Proposal For _____ dated _____, as amended by [INSERT ADDENDA BY NAME AND DATE HERE] (collectively the "RFP"), the purpose of which was to solicit proposals from qualified contractors to furnish to the School District all of the materials and labor required to _____ identified in the RFP in accordance with the terms and conditions contained in the RFP and the Specifications attached thereto (the "Work").

B. In response to the RFP, the Contractor submitted to the School District a Proposal dated _____, to perform the Work contemplated by the RFP.

C. The Parties have, in accordance with the provisions of the RFP, conducted negotiations concerning the Contractor's Proposal to the RFP. The Contractor's Proposal together with written clarifications of the Parties, if any, are attached hereto, incorporated by reference, and marked as **Exhibit A** (collectively referred to as the "Proposal").

D. Pursuant to the terms of the RFP, the Contractor is required to enter into a written contract in accordance with the School District's written acceptance of its Proposal.

E. The Parties agree that certain terms, conditions, and provisions of the RFP and the Proposal must be further clarified and that certain additional terms and conditions need to be expressly set forth by way of this Contract.

NOW THEREFORE, in consideration of the foregoing and the mutual covenants set forth herein, the Parties agree as follows:

- **1. RESTATEMENT CONSTITUTES THE CONTRACT**

(a) Incorporation By Reference. The object of this Contract is to formalize in one document the complete agreement between the Parties, and to do so by specifically incorporating by reference into this Contract the RFP, the Proposal, and other related documents, and by including certain additional necessary or appropriate Contract terms, particularly where the Contract terms agreed to by the Parties during the RFP negotiation process do not correspond with the RFP and/or the Proposal.

(b) Order of Precedence. The Contract Documents, which are all incorporated herein by reference, include the following:

This Contract, including all Attachments hereto;
The RFP, including the Specifications attached thereto; and
Contractor's Proposal.

To the extent that the terms and conditions of the Contract Documents are in conflict, the terms and conditions shall be interpreted in the above-referenced order from 1 to 3. However, the Parties also agree that where there is not a conflict between any of the terms and conditions contained in the above-referenced Contract Documents, all of the Contract Documents shall be binding upon both Parties, except to the extent the exceptions contained in the Contractor's Proposal are not expressly accepted by the School District in writing and incorporated into this Contract.

2. TERM AND TERMINATION

(a) This Agreement shall commence as of the Effective Date and all Work hereunder shall be completed no later than _____ and shall be in compliance with the Project Schedule attached hereto as **Exhibit B**.

(b) Each Party shall have, in addition to all other remedies available to it, the right to terminate this Contract upon written notice to the other Party that the other Party has committed a material breach of any of its obligations herein and such material breach shall not have been cured or corrected within ten (10) days following written notice of the same. Furthermore, in addition to the rights of the School District under this Paragraph if the School District must regularly request that the Contractor to cure breaches of this Contract, such circumstances shall be grounds for termination of this Contract for cause, even if each breach on its own would not be material. Upon termination of this Contract by the School District for breach or default of the Contractor pursuant to this Paragraph, the School District shall be entitled to exercise any other right, remedy, or privilege which may be available to it under applicable law or proceed by appropriate court action to enforce the terms of the Contract or to recover damages for the breach of this Contract. If this Contract is terminated in accordance with any of the provisions contained herein, all rights of the Contractor under this Contract shall cease. Regardless of the basis for termination, the School District shall neither be liable to, nor obligated to pay, the Contractor for any incidental or consequential damages or lost profits, or costs incurred for Work not actually performed.

(c) Notwithstanding anything contained herein to the contrary, the School District may terminate this Contract at any time and for any reason or no reason at all upon written notice to the Contractor.

3. WARRANTY

The Contractor warrants and represents that its Work, will be in accordance with all applicable federal, state, and local laws and regulations for a minimum of two (2) years from completion of the Work.

4. INSURANCE

The Contractor shall maintain, at its expense, during the term of this Contract the following insurance:

(a) Worker's Compensation Insurance with statutory limits and Employer's Liability Insurance with a minimum limit of $1,000,000 each occurrence.

(b) Comprehensive General Liability Insurance with a minimum combined single limit of $1,000,000 per occurrence and $3,000,000 in the aggregate, in the same amount made for bodily injury and property damage. The policy is to include products and completed operations, cross liability, broad form property damage, independent bidders, and contractual liability coverage. The policy shall be endorsed to provide thirty (30) days written notice to the School District of any material change of coverage, cancellation, or non-renewal of coverage.

(c) If Subcontractors are likely to be used, the Comprehensive General Liability policy shall include coverage for independent contractors.

(d) Automobile Liability insurance covering all owned, hired, and non-owned vehicles with personal protection insurance and property insurance to comply with the provisions of the Michigan no-fault Insurance Law, including residual liability insurance with a minimum combined single limit of $1,000,000 each occurrence of bodily injury and property damage.

(e) All insurance policies shall be issued by companies licensed to do business in the State of Michigan. The companies issuing the policies must be domestic (on-shore) companies and have an A-rating by AM Best.

(f) The Contractor shall be responsible for payment of all deductibles contained in any insurance policy required in this Contract.

(g) Other requirements: Evidence of your insurance coverages, required herein, is to be provided to the School District and must indicate:

1. A Best's rating for each of your insurance carrier at A-VII or better,
2. "Saline School District" is endorsed as an additional insured on the General Liability policies.
3. All consultants must be listed as additional insured.

5. CONTRACTOR'S COMPENSATION

Based upon the School District's RFP and the Contractor's Proposal, the School District shall pay the Contractor for its Work as follows:

_____

_____

6. MISCELLANEOUS

(a) Notices. All notices hereunder shall be in writing and shall be effective when sent by facsimile or electronic mail (provided, however, that any notice which could materially affect the rights of either Party shall also be sent by courier as provided herein) or a nationally known courier service such as DHL or Federal Express, addressed to the addresses written below, or to such other address as either Party may have last designated in writing in the manner herein provided. Such notice shall be deemed given when received, but in any event no later than four (4) days after sent by the internationally known courier. All notices shall be sent to the following address:

If to the Contractor:

_____

_____

_____

Attention: _____

Copy To: _____

_____

_____

_____

If to the School District: Saline Area Schools
7265 North Ann Arbor Street
Saline, Michigan 48176

(b) Assignment. This Contract and any other interest herein may not be assigned or transferred, in whole or in part, by either Party without the prior written consent of the other Party, which consent shall not be unreasonably withheld, and any assignment or transfer without such consent shall be null and void. This Contract shall be binding upon the successors, and subject to the above, assigns of either Party.

(c) Severability. If any provision of this Contract is held invalid or unenforceable, the remainder of this Contract shall nevertheless remain in full force and effect. If any provision is held invalid or unenforceable with respect to particular circumstances, it shall nevertheless remain in full force and effect in all other circumstances.

(d) Independent Contractor; No Joint Venture. It is expressly agreed that Contractor is acting hereunder as an independent contractor and under no circumstances shall any of the employees of either Party be deemed the employees of the other for any purpose. This Contract shall not be construed as authority for either Party to act for the other Party in any agency or other capacity or to make commitments of any kind for the account of, or on behalf of, the other Party, except to the extent, and for the purposes, expressly provided for and set forth herein, and no partnership or joint venture is created hereby.

(e) Modifications. No provision of this Contract or any Exhibit hereto may be modified without the prior written consent of both Parties.

(f) Captions. The captions used in this Contract are for convenience only and shall not affect in any way the meaning or interpretation of the provisions of this Contract.

(g) Governing Law. This Contract shall be construed in accordance with, and its performance governed by, the laws of the State of Michigan. The Parties hereby agree to the exclusive jurisdiction and venue of courts sitting in Wastenaw County, Michigan.

(h) Taxes. Contractor is responsible for sales taxes and any other applicable taxes related to the Work provided under this Contract.

(i) Entire Agreement. This Contract and all Exhibits and documents incorporated herein by reference constitute the entire agreement between the Parties, and supersedes all previous agreements, whether written or oral.

IN WITNESS WHEREOF, the undersigned have caused this Contract to be duly executed on the dates indicated below.

CONTRACTOR:		**SCHOOL DISTRICT:**	
By:	_____	By:	_____
Its:	_____	Its:	_____
Date:	_____	Date:	_____

EXHIBIT A

WRITTEN CLARIFICATIONS

EXHIBIT B

PROJECT SCHEDULE

SECTION 01 2100
ALLOWANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insultation replacement allowance.

B. Contingency allowance.

1.02 INSULATION REPLACEMENT ALLOWANCE

A. The contractor will include in his base bid (both for bid package A and bid package B, the replacement of 1,500 square feet of 1.5-inch thick wet insulation.

B. The unused portion of this allowance will be returned back to the owner in the form of a credit at the rate determined by the contractor's unit price for 1.5-inch thick isocyanurate insulation.

1.03 CONTINGENCY ALLOWANCE

A. The contractor will include a contingency allowance of $20,000 to accommodate unforseen adjustments to the work such as broken drain bowls, deteriorated nailers, damaged/warped (but dry) insulation, etc. The unit prices for these materials will be applied at the appropriate unit quantities. The unused portion of this allowance will be returned back to the owner in the form of a credit.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2200
UNIT PRICES

PART 1 GENERAL

1.01 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.

1.02 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03 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.

1.04 MEASUREMENT OF QUANTITIES

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

B. Measurement by Area: Measured by square dimension using mean length and width or radius.

C. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

1.05 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.

1.06 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.

1.07 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1 - Wood Nailers and Plywood - Replace, as necessary and designated by the Owner's Representative, deteriorated wood nailers and plywood. Quote a per lineal foot price for dimensional lumber and a per square foot price for plywood on the Bid Form for the following sizes:
   1. 1" x 6"
   2. 1" x 8"
   3. 2" x 4"
   4. 2" x 6"

5. 2" x 8"
6. 2" x 10"
7. 2" x 12"
8. 7/16-inch CDX plywood

B. Unit Price No. 2 - Repair isolated roof 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. Install No. 12 self-drilling screws at 6-inches on center along the perimeter of the plate. The price quoted shall be per square foot.

C. Unit Price No. 3 - Replace deteriorated steel deck, if necessary and as directed by the Owner's Representative, with compatible materials to provide a structurally sound deck matching existing deck type and thickness. The price quoted shall be a per square foot of decking replaced including labor.

D. Unit Price No. 4 - Replacement Roof Insulation - Replace, as necessary and designated by the Owner's Representative, wet, warped, or damaged roof insulation. Roof insulation board replacement shall be bid as a Unit Price Extra. The price quoted shall be per square foot.
1. 1-inch thick flat stock isocyanurate insulation
2. 1.5-inch thick flat stock isocyanurate insulation
3. 2-inch thick flat stock isocyanurate insulation
4. 3-inch thick flat stock isocyanurate insulation
5. Tapered "X" Panels (1/4 inch per foot - 0.5" to 1.5")
6. Tapered "Y" Panels (1/4 inch per foot - 1.5" to 2.5")
7. Tapered "Q" Panels (1/2 inch per foot - 0.5" to 2.5")

E. Unit Price No. 5 - Roof Drain Replacement - 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 plumbing codes. The price quoted shall be per roof drain bowl removed and replaced, including labor.

F. Unit Price No. 6 - Drain Clamping Ring Replacement - Replace broken roof drain clamping rings as necessary.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 07 5400
THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Adhered system with thermoplastic roofing membrane.

B. Insulation, cover board.

C. Prefabricated pipe flashing, penetration flashing and walkway pads.

1.02 RELATED REQUIREMENTS

A. Section 07 6200 - Sheet Metal Flashing and Trim: Coping, Fascia cap, sheet metal penetration flashing and counterflashings.

1.03 REFERENCE STANDARDS

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

B. ASTM D4434/D4434M - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing; 2021.

C. NRCA (WM) - The NRCA Waterproofing Manual; 2005.

D. UL (DIR) - Online Certifications Directory; Current Edition.

E. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

A. Product Data: Provide data indicating membrane materials, flashing materials, insulation, and fasteners.

B. Shop Drawings: Submit drawings that indicate joint or termination detail conditions and conditions of interface with other materials.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Warranty Documentation:
   1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
   2. Submit installer's written verification that installation complies with warranty conditions for waterproof membrane.

1.05 PRE-CONSTRUCTION MEETING

A. Prior to scheduled commencement of roofing work, the Contractor and representatives of other entities directly concerned with performance of roofing system 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 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.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact, unless otherwise indicated.

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.

D. Protect foam insulation from direct exposure to sunlight.

1.07 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather.

B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C)

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 end of workday.

1.08 WARRANTY

A. Provide the Owner with a Contractor’s written warranty covering all materials and workmanship for a 2-year period after Date of Substantial Completion.

B. Provide 25-year manufacturer's material and labor warranty to cover failure to prevent penetration of water.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Thermoplastic Polyvinyl Chloride (PVC) Membrane Roofing Materials. Approved Manufacturers and products shall be as follows:
1. Sika Corporation Roofing, Sarnafil S327-80 EnergySmart; usa.skia.com
2. Carlisle Roofing Systems, Inc., Sure-Flex PVC KEE HP 80 mil: www.carlisle-syntec.com.
3. Holcim Elevate, PVC KEE 80 mil: www.holcimelevate.com.
4. Duro-Last, EV Fleece 80-MIL Membrane

2.02 MEMBRANE ROOFING AND ASSOCIATED MATERIALS

A. Membrane Roofing Materials:
1. PVC: Polyvinyl chloride (PVC) complying with ASTM D4434/D4434M, Type III, sheet contains polyester reinforcing scrim.
   a. Membrane thickness: 80 mil, 0.080 inch (2.032 mm), minimum.
2. Sheet Width: Largest sheet size allowed by the manufacturer.

B. Flexible Flashing Material: Same material as membrane.

C. Membrane Adhesive: Low VOC, One-part, synthetic polymer-based membrane adhesive as recommended by the roofing manufacturer.
1. Sika Corporation Roofing, Sarnacol-2170 Adhesive

2. Carlisle Roofing Systems, Inc., Sure-Flex PVC Low-VOC Bonding Adhesive.
3. Holcim Elevate, PVC LVOC Bonding Adhesive.
4. Duro-Last, WB II Adhesive.

D. All materials used in the roofing system shall be as furnished by a single roofing manufacturer. Adhesives, sealants, seam sealants, water cut-off mastic, pourable sealers and other required items shall be as furnished or recommended by a single roofing manufacturer.

E. 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 roofing manufacturer will furnish its 20-year total system warranty for the installation.

F. Accessories: Prefabricated penetration flashings, corner flashing, slef-adhering flashing, t-joint patches, walkway pads, termination bars, insulation plates and fasteners and base tie-in plates and fasteners as required by the roofing manufacturer for use in their roof system assemblies.

2.03 TECTUM III AND TECTUM E ROOF DECK

A. Replacement composite planks to be composed of a Tectum substrate with a thickness of 1-1/2 inches, a foam core of 4 inch-thick extruded polystyrene insulation for Tectum III deck, (4 inch-thick expanded polystyrene for Tectum E), and a topsurface of 7/16 inch-thick OSB. These panels have square ends with a tongue-and-groove joint along the long edge.
1. Tectum III panels shall be 10 feet long by 47-inches wide - Include 20 panels in the base bid for bid package A.
2. Tecum E panels shall be 12 feet long by 47 inches wide. - Include 3 panels in the base bid for bid package A and 3 panels in the base bid for bid package B.
3. Given the estimate lead time for the above products (4 to 6 weeks), the contractor needs to have the material for deck replacement on site at the beginning of the reroofing project.

2.04 INSULATION

A. Manufacturers: Match the roofing manufacturer. Subject to compliance with requirements:
1. Sika Corporation Roofing, Sarnatherm ISO
2. Carlisle SynTec Incorporated, InsulBase Polyiso
3. Holcim Elevate, ISOGARD GL
4. Duro-Last, Duro-Guard ISO II

B. Coverboard:
1. Densdeck Prime 1/2 inch-thick
2. Duro-Last, Duro-Guard Securock Glass-Mat 1/2-inch Roof Board

C. Insulation Materials:
1. Replacement Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Class 1, Grade 2.
   a. Thermal Resistivity (R-value): 11.4 at 75 degrees F for 2.0-inch thick insulation board.
   b. Compressive Strength: 20 psi.
   c. Maximum size: 4-feet by 8-feet.
2. Tapered Edge Strips: Wood fiber uniform density board complying to ASTM C 208.
   a. Tapered edge strip: 1-1/2-inches by 18-inches.

D. Insulation Screws and Plates For Use On Steel Deck: Fasteners for securing the roof insulation to steel roof deck shall be a #14 heavy duty screw (self-drilling) and metal plate system approved by the roofing manufacturer for the type of deck being covered. The fasteners shall provide a minimum of 300 pounds of pull-out when tested on the subject deck. Length shall be sufficient to penetrate deck a minimum of 3/4-inch to a maximum of 1-1/2-inch. Minimum insulation plate size: 3-inch by 3-inch.

E. Insulation Screws and Plates for Use on Gypsum Deck: Fasteners for securing the coverboard (through the roof insulation to gypsum roof deck) shall by Polymer fasteners by one of the following manufacturers:

1. Sika Corporation Roofing: Fastener Polymer Gyptec and Sarnadisc GypTec
2. Carlisle SynTec Incorporated: Gyptec Fasteners and Plates
3. Holcim Elevate: Polymer Fastener
4. Duro-Last, Augur Fastener

F. Insulation Adhesive: Two-component, construction grade, insulating polyurethane low-rise adhesive. Approved manufacturers and products:
1. Carlisle SynTec Incorporated, FAST Bag in a Box Adhesive.
2. Holcim Elevate, I.S.O.Stick Insulation Adhesive.
3. OMG Roofing Products, OlyBond 500 Insulation Adhesive.

2.05 WOOD NAILERS AND CURBS

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. Thicknesses: 1/2-inch and 3/4-inch.

C. Fasteners in contact with wood blocking and nailers shall be galvanized nails in conformance with ASTM A153 unless otherwise specified.

2.06 MISCELLANEOUS

A. Steel deck replacement: Match existing roof deck: material, gauge, profile and finish.

B. Plates to cover small holes in the steel deck and/or isolated areas of deterioration shall be 18-gauge galvanized steel.

C. Filler for sheet metal penetration pockets shall be non-shrink grout (bottom) and pourable elastomeric sealant (top).

D. Foam backer rod: Closed-cell polyethylene foam, 1-1/2 times the diameter of intended opening.

E. Replacement roof drains and accessories for the low-slope roof areas shall be cast iron as manufactured by J. R. Smith Manufacturing Co., 1000 Series, Size: to match the existing diameter and a bottom outlet to match the existing drain pipe. Acceptable connection: Speedi-Set Gasket. Utilize the drain manufacturer's specified cast iron underdeck clamp, clamping ring and drain strainer.

F. Replacement roof drain strainers and clamping rings shall be cast iron, sized to fit the existing roof drain bowl.

G. Walkway Pads: PVC roll, 30-inch to 36-inch with non-slip tread surface as manufactured by the selected roofing manufacturer.

H. Equipment Pads: Three-inch thick reinforced polypropylene pad for installation below AC units. Approved manufacturers or approved equal:
1. Carson Industries, DuraGrid Equipment Pads.
2. Diversitech, E Lite Equipment Pad.

I. Pipe Supports:
1. Up to 1.5-inch diameter: Miro Industries, Inc., Product Name: Pillow Block Pipestand Model No. 1.5 or an approved equal.
2. Up to 3-inch diameter: Miro Industries, Inc., Roller-bearing pipe support, Model No. 3-RAH or an approved equal.
3. For 4-inch diameter gas supply line: Base Material: High density polypropylene with UV-Inhibitors and Antioxidants. Rod Type: Hot dip galvanized. Roller Type: 5" cast iron roller with malleable sockets. Approved manufacture or approved equal:
    a. Miro Industries, Inc., Roller-bearing pipe support, Model No. 3-RAH or an approved equal.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify walls and deck are clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Maintain a daily watertight condition in the existing roof areas. At no time shall the existing roof remain vulnerable to moisture intrusion. Overnight tie-ins are required regardless of the weather forecast.

3.02 DEMOLITION AND SURFACE PREPARATION

A. Remove and discard the following components or prepare surfaces as described:
   1. On all existing EPDM Roof Areas except Area 10 (which is out of contract) remove and discard existing EPDM roof membrane, base flashing, walkpads and other miscellaneous debris down to the surface of the roof insulation.
   2. Save the existing polyicocyanurate insulation for re-use except where noted below.
   3. On Area 4, in the portion of the roof where Tectum E deck panels are present (approximately 5,000 square feet), remove the existing polyisocyanurate insulation and prepare to install coverboard directly onto the OSB (top layer) of the Tecum E composite deck, in order to improve/maintain the flashing height of the adjacent wall. Existing weep holes limit the available flashing height in this section. NOTE: New isocyanurate saddles (1/2 per foot) will be required (see Roof Plan)
   4. Closely inspect the existing steel decking for deteriorated conditions. Repair isolated deck damage not exceeding 6-inches x 6-inches with 18-gauge galvanized flat stock.
      a. NOTE: Deck repairs accomplished with 18-gauge galvanized flat stock shall be bid as a Unit Price Extra.
      b. NOTE: Excessively sized roof deck openings at rooftop penetrations shall be reduced using 18-gauge galvanized flat stock installed as a Unit Price Extra.
   5. Closely inspect the existing Tectum III or Tectum E roof deck for deteriorated conditions including deteriorated OSB material. Replace deteriorated composite panels in pairs as described in this specification.
      a. NOTE: Tectum III and Tectum E deck replacement will be included in the base bid amounts (20 planks of Tectum III in base bid package A, 3 planks of Tectum E in base bid package A, and 3 planks of Tectum E in base bid package B).
   6. Remove and discard deteriorated, wet or damaged roof insulation. Prepare to install matching new roof insulation.
      a. NOTE: Replacement insulation shall be bid as a Unit Price Extra with an allowance amount carried in the base bid.
   7. Remove and discard the existing sheet metal coping, termination bars, counterflashing, and other sheet metal flashing accessories. Remove and discard the repair materials from the walls and perimeter edges.
   8. Remove and discard the existing receiver mounted counterflashing. The existing receiver is to remain in place.
   9. Temporarily displace mechanical ventilator unit covers to facilitate the removal and replacement of the base flashing. Remove and discard existing counterflashing from the roof curbs if present.
   10. Add nailers as needed in order to raise curbs where a minimum of 8-inches of base flashing height is not present.
   11. Temporarily displace the AC units supported by wood sleepers. Remove and discard the wood sleepers to be replaced by Equipment Pads.
   12. Remove and discard existing plumbing vent pipe flashings and supply line penetration flashings. Clean off all repair materials and caulk from the pipes.

13. Remove and discard the existing sheet metal flange, sleeve and umbrella from the stacks, elevated frame support legs and supply line penetration locations.
14. Remove and discard the existing penetration pocket flashing and filler material. Clean off the filler material from the penetrations.
15. Remove and discard multiple pipe penetration flashings. Neatly trim the EPDM membrane flashings to remain above the 8-inch height (See Details 8 and 9). The new PVC flashing will be terminated just below this portion of the curb.
16. Temporarily displace the existing stair system leading onto Area 4. Remove and discard the exisitng wood sleeper/support resting on the existing membrane. Replace the top layer of 1.5-inch thick isocyanurate insulation at this location. Do not install coverboard here. Expand the nearby drain sump as close as possible to this location to assist in drainage.
17. Remove and discard the obsolete rooftop equipment as shown on the Roof Plan. Prepare to infill the resultant openings in the roof deck with matching roof deck.
18. Remove and discard wood blocking pipe supports in preparation for replacement with prefabricated pipe supports. Remove and discard damaged prefabricated pipe supports.
    a. Prefabricated pipe supports in good condition shall remain.
    b. NOTE: Report gas supply line clean outs too low to the new roof system requiring raising to the Owner's Representative.
19. Remove and discard plastic roof drain strainers. Replace any missing or plastic roof drain strainers with properly sized cast iron drain strainers. Remove and save the existing cast iron clamping rings.
    a. Broken or damaged roof drain clamping rings shall be removed and replaced with matching new cast iron clamping rings as a Unit Price Extra.
20. Closely inspect the existing roof drain bowls for cracks, broken flanges or deteriorated conditions. Remove and replace any damaged drain bowl with a matching cast iron drain bowl. The installation shall be in accordance with local plumbing codes.
    a. Roof drain replacement shall be bid as a Unit Price extra.
    b. NOTE: Roof drain inserts will not be permitted on this project.
21. Thoroughly clean out the roof drain bowls and clamping rings in preparation for reuse.
22. Remove and discard deteriorated wood nailers and plywood.
    a. NOTE: Wood nailer and plywood replacement shall be bid as a Unit Price extra.
23. Remove and replace deteriorated steel deck with matching steel deck to provide a structurally sound roof deck.
    a. NOTE: Steel deck replacement shall be bid as a Unit Price Extra.
24. Prior to cutting and removing the deteriorated roof deck, the area below the required deck replacement area must be receive interior protection as required by the interior components such as a pool or gymnasium floor.
25. Prior to cutting and removing the deteriorated roof deck, the area below the required deck replacement area must be cordoned off and monitored by the Contractor's appointed safety coordinator during the entire cutting and patching procedure. The safety coordinator must be in communication with the foreman during removal and replacement and have in his possession a fully charged fire extinguisher.
26. Broom sweep and utilize gas powered blowers to remove rooftop debris from the existing roof deck surface prior to installing new materials.
27. Remove debris, scrap and rubbish from the roof areas and building grounds daily.

3.03 INSTALLATION PROCEDURES

A. General: Comply with roofing manufacturer's instructions, except where more stringent requirements are indicated herein.
    1. Details relating to the installation of the new roof system shall be approved by the roofing manufacturer and the Roof Consultant and installed in such a manner that the roofing manufacturer will furnish the specified warranty for the installation.
    2. 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.

3. 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.
4. 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.
5. At the end of each day's roofing installation, protect edge of incomplete work, including membrane and insulation. Install 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.
6. 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.

B. Steel Deck
1. Install replacement steel roof deck where deteriorated steel roof deck was removed.
   a. The replacement steel deck shall not span less than three supports when replacing deteriorated roof deck. The roof deck may be installed in single span (two supports) where obsolete curbs are removed, provided the opening is framed with steel and is less than 6-feet wide. The end of each roof deck panel shall be supported for two inches and overlap the purlin a minimum of two inches. Each roof deck panel is to be fastened to the purlins with self-drilling screws drilled through the bottom ribs at intermediate supports at 12-inch centers. Fasteners at end laps and intermediate supports within 6-feet of the building perimeter shall be spaced at 6-inch centers. The new roof deck panels shall overlap adjacent panels at the side laps. The side laps shall be mechanically fastened with self-tapping sheet metal screws spaced a maximum of 36-inches on-center. For spans under 6-feet, a single side lap fastener shall be provided at mid-span. For spans over 6-feet, the side lap fasteners shall be placed at the third points of the span.
2. Infill the roof deck with matching steel deck at resultant openings where obsolete rooftop equipment was removed. Properly secure the new roof deck to purlins and structural steel framing.
3. Install 18-gauge galvanized plates at small holes (less than 6-inches by 6-inches) and/or at isolated areas of deterioration of the steel roof deck. Install plates where excessively sized roof deck openings exist. The plates shall extend 6-inches past the deficient area in each direction. The plates shall be mechanically fastened in place with self-drilling screws 6-inches on center.
4. Install 18-gauge galvanized plates at obsolete equipement openings in the roof deck which are 6-inches by 6-inches or smaller. Mechanically fasten the plate in place.

C. Tectum III or Tectum E Deck
1. Install replacement Tectum III or Tectum E deck, where deteriorated deck composite panels were removed.
2. Remove damaged panels
3. Cut multiple span panels over each structural member. Remove attachment mechanism. Panels must be removed in pairs to maintain integrity of tongue and groove.
4. Replace panels in pairs. Place right panel in tongue and groove and left panel in tongue and groove and fold down to the structural member with tongue and groove interlocked. Screw down replacement and adjacent panels with factory recommended screws and 2" washers.
5. Panel edges are adhered together with a 3/8" bead of construction adhesive.
6. Install insulation, coverboard, and EPDM membrane above newly installed deck plank by the end of each work day.

D. Roof Drain Replacement (If Required)

1. The Contractor shall hire a licensed plumbing subcontractor to install replacement roof drains as necessary. The Contractor shall coordinate the roof drain installation with the plumber. Temporary roofing work needed at the roof drain location shall be provided by the Contractor at no additional cost to the Owner.
    a. Install new roof drain assemblies at the deteriorated roof drain locations. Utilize the manufacturer's recommended underdeck clamp to secure the drain bowl in place or to the sump pan.
    b. 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.
    c. Install new cast iron clamping rings and cast iron roof drain strainers at the new replacement roof drain locations.

E. Wood Nailers
1. Install new wood nailers as designated on the attached RTA Details. Secure the wood nailers to existing roof deck with screws spaced 12-inches on center. Or to existing wood nailers with galvanized 16d nails in two staggered rows spaced 12-inches on center.
2. 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.
3. Install wood nailers at roof curbs which are not 8-inches above the new finished roof surface. 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 wood nailers with appropriate fasteners.
4. Install replacement wood nailers where the existing wood nailers were removed due to deterioration. The 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.

F. Insulation - Replacement
1. Install isocyanurate insulation where existing pieces were removed due to moisture and/or damage.
2. Install the specified insulation in accordance with manufacturer's latest printed instructions as shown on the Roof Plan Insulation Schedule.
3. Install new 1/2-inch per foot saddles on Area 4 as shown on the roof plan.
4. Install tapered edge strips at perimeter edges as needed or in lieu of installing fasteners and plates if height difference will permit. Trim the tapered edge strip as required to provide a smooth transition. Mechanically fasten or foam adhere the tapered edge strip to provide solid securement.

G. Insulation - Cover Board (All roofs)
1. Install new 1/2-inch thick cover board on the properly prepared insulation layers. Stagger the board joints from the intermediate layer of insulation. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
    a. Mechanically fasten the cover board layer through the existing insulation boards with the approved screws and metal plates as follows:
        1) One approved fastener per two square feet (8 fasteners per 4-foot by 4-foot board) of cover board.
    b. On Area 18 - Use caution when fastening into the steel deck, conduit has been observed to be installed between the flutes on the underside of the deck.

H. Membrane Installation
1. Roofing system shall be installed following the latest printed installation instructions of the roofing manufacturer.

2. Evenly apply adhesives at rate recommended by the roofing manufacturer to both the underside of the membrane and the insulation. Apply bonding adhesive uniformly, stopping short of the splice areas along the seams. Allow the adhesive to flash off until tacky.
3. 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.
4. Overlap edges and ends and seal by roofing manufacturer's recommended dimensions.
5. Shingle lap joints on sloped substrates in the direction of drainage.
6. Complete the roof membrane seams by heat welding. Use mechanical welding machine wherever possible. Roll the hand welded seams with a hand roller across the seam as required. Check all seams daily. Provide welded seam test samples as required by the manufacturer.
7. Secure the roof membrane at base tie-ins with the roofing manufacturer's screws and fasteners at the required spacing.
8. Apply T-joint covers, stripping and appropriate sealant where specified by the roofing manufacturer on a daily basis.
9. Apply seam sealer on all cut edges of the PVC membrane and flashing.

I. Flashing Installation
1. Use pre-formed flashing accessories wherever possible.
2. Perimeter edge flashing, wall flashing and roof curbs shall be installed in accordance with the roofing manufacturer's adhered 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 roofing manufacturer. Hand roll the flashings to promote adhesion.
   a. NOTE: ALL FLASHINGS SHALL BE COMPLETED DAILY AS THE PROJECT PROGRESSES WITH THE INSTALLATION OF THE NEW ROOF SYSTEM.
3. Install a termination bar at the horizontal and vertical ends of the flashing where the flashing is exposed to the weather or as shown on the details. The termination bar shall be mechanically fastened (12-inches on-center, maximum) into slotted holes. The termination bar and fastener heads shall be sealed with the specified polyurethane sealant.
4. Secure the top edge of the flashing installed on the roof hatch curbs with foam backer rod. Adhere the backer rod in place as required by the roofing manufacturer.
5. Seal roof drains per the roofing manufacturer's required details. Install 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.

J. Penetration Flashing
1. Provide isolation material to eliminate PVC flashing contact with residual asphalt products.
2. Use pre-formed flashing accessories wherever possible.
3. Flash single penetrations passing through the membrane and flashing. Factory prefabricated pipe flashing shall be used to flash all penetrations where installation is possible. Where factory prefabricated pipe flashing cannot be installed, field fabricated penetration flashing may be used. All flashings and terminations shall be completed in accordance with the roofing manufacturer's requirements.
4. Flash multiple pipe penetration flashings with manufacturer approved flashing method to provide a watertight condition.
   a. Penetration pocket side wall material may be PVC or sheet metal as approved by the roofing manufacturer.
   b. Fill penetration pockets with non-shrink grout (bottom half) and the roofing manufacturer's pourable sealer (top half). Mound the pourable sealer to shed water.
5. Hot vent stacks require isolation flanged sleeves and umbrellas. See Section 07 6200 Sheet Metal Flashing and Trim.

6. Square penetration flashings shall receive sheet metal counterflashing. See Section 07 6200 Sheet Metal Flashing and Trim.

K. Sheet Metal
   1. See Section 07 6200 Sheet Metal Flashing and Trim for fabrication and installation.

L. Miscellaneous
   1. Return the existing 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.
   2. Install new walkway pads at the locations shown on the Roof Plan. Hot air weld the entire perimeter edges of the new walkway pads in accordance with the roofing manufacturer's instructions.
      a. Note: Additional walkpads will be required to be installed concurrent with the installation of the solar panel trays and arround the solar panel arrays. This work will be priced separately at a later time.
   3. Install new equipment pads at the AC units. Secure the AC units to the new equipment pads using stainless steel hardware. The equipment pads must be set on walkpads.
   4. Return the existing supply lines to their original positions. Reinstall prefabricated pipe supports on the supply lines. Replace the wood pipe supports and the damaged pipe supports with new prefabricated pillow block style and roller type style pipe supports depending on the supply line diameter. Provide membrane protection at each pipe support if required by the manufacturer. Maximum pipe support spacing: 10-feet or as required by the pipe support manufacturer.
   5. Return the concrete splash blocks to original positions below condensate lines. Provide membrane protection at each splash block location.

M. Precautions
   1. Do not use asphalt or coal-tar pitch base products or other products known to cause membrane contamination in conjunction with PVC materials.
   2. Heat welding surfaces must be clean and dry.
   3. 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 overnight. The roofing manufacturer's requirements should be followed closely.
   4. An open flame may not be used to dry the roof membrane or to heat the flashing materials.

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

O. Cleaning
   1. Remove adhesives, soil or other markings from finished surfaces.
   2. 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.
   3. Repair or replace defaced or damaged finishes caused by work of this section.
   4. The 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.

P. Protection

1. Protect installed roofing and flashings from construction operations.
2. Where traffic must continue over finished roof membrane, protect surfaces using rigid insulation and plywood.

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. Sheet metal coping, counterflashing and miscellaneous penetration flashing.

1.03 RELATED REQUIREMENTS

A. Section 07 5400 - Thermoplastic 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. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

C. ANSI/SPRI ES-1-2003 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

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.

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 METAL FLASHING AND TRIM

A. Sheet Materials
   1. Galvanized Steel for Continuous Cleat: ASTM A 653, with G90 zinc coating; minimum 0.034 inch (22 gauge) thick base metal.
   2. Galvanized Steel Base Metal: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch (0.61 mm) thick base metal.

B. Prefinished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch (0.61 mm) thick base metal, shop pre-coated with PVDF coating.
   1. Fluoropolymer Coating: High performance organic powder coating, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
   2. Color: As selected by Owner from manufacturer's standard colors.

3. Acceptable Manufacturer's:
    a. Holcim Elevate: Una-Clad
    b. Petersen Aluminum Corporation: Pac-Clad
    c. Duro-Last: Exceptional Metals

C. Accessories
1. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal 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 equivalents:
4. Sika Corporation, Sikaflex - 1a
5. Tremco, Vulkem 116

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. Corners: 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. Coping: Coil-Coated Galvanized Steel: 0.0276 inch (24 gauge) thick. Fabricate the coping in accordance with SMACNA Figure 3-1. Fabricate the coping with 1-inch tall single lock standing seams. Fabricate the inside face with a minimum face dimension of 3-inches. Fabricate the outside face of the coping to extend a minimum of 1-inch below the bottom of the wood nailer along the parapet. Hem the bottom edge of the inside and outside faces and bent outward to form a drip edge. Form the outside face with an open lock to receive a continuous cleat. See RTA Detail No. 1.
3. Counterflashing: Fabricate from the following material:
    a. Coil-Coated Galvanized Steel: 0.0276 inch (24 gauge) thick.
    b. Fabricate the receiver mounted counterflashing 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 receiver or as shown in RTA Details 1-1/2-inches minimum. See RTA Detail Nos. 2, 3, and 5.
    c. Fabricate the surface mounted counterflashing in accordance with RTA Detail Nos. 7 and 9. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a minimum face of 4-inches.

d. 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. See RTA Detail No. 6.

4. Miscellaneous Flashing: Fabricate from the following material:
   a. Galvanized Steel: 0.028 inch (24 gauge) thick.
   b. Fabricate penetration pockets in accordance with SMACNA Figure 8-11C. Fabricate the penetration pockets with 4-inch tall sides (minimum), 4-inch wide flanges and soldered corner stiffeners.
   c. Fabricate the closure box flashing in accordance with SMACNA Figure 8-9A. Closure box size shall be as required to accommodate the pipes. Pipe penetration diameters shall closely match the pipe diameters. Provide watershedding slope in the closure box cap. Fabricate the vertical curb covers with 4-inch wide faces and hemmed bottom edges. Lap widths: 1-inch minimum. Seam and solder all joints in the closure box where possible. See RTA Details No. 9.
   d. Fabricate flange, sleeve and umbrellas in accordance with SMACNA Figure 8-11A. Fabricate the flashing with 4-inch wide flanges. Fabricate the flange and sleeve with continuous soldered joints. Fabricate with a sleeve height of 8-inches minimum. Fabricate the umbrella to lap the top of the sleeve 4-inches minimum.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. 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 and weatherproof.

B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner of intersection.

C. Coping
   1. Install a continuous cleat along the outside face of the parapet wall in preparation for receiving the coping. Secure the continuous cleat with sheet metal screws spaced 12-inches on-center. Use screws long enough to achieve 1-1/2-inches of embedment into the substrate. Use screws with a screw head which will not contact the back side of the coping.
   2. Install coping on the parapet walls as shown in the RTA details. Engage the bottom edge outside face of the coping with the continuous cleat. Hand crimp the bottom edge along the entire length. Secure the coping sections along the inside face with gasketed screws spaced 18-inches on-center. Provide the specified end joints between coping sections.

D. Counterflashing
   1. Receiver Mounted Counterflashing: Install counterflashing into the existing receivers. Notch and lap the endjoints in the counterflashing 4-inches. Secure the counterflashing to the receiver with stainless steel pop rivets spaced 24-inches on center.

2. Slip Flashing: Install counterflashing along the top of any curb where the top of the base flashing is not protected by a minimum of 3-inches. 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 a minimum of 2-inches. Secure 24-inches on center with gasketed screws. Notch and lap the corners and end joints in the counterflashing 4-inches.
3. Counterflashing At Structural Supports: Install counterflashing at square and round structural supports to protect the top edge of the PVC flashing. Use any approved counterflashing detail from the selected roofing membrane manufacturer.

E. Penetration Pocket
1. Install sheet metal penetration pockets at the locations shown on the Roof Plan. Secure the penetration pocket flanges with screws into the roof deck. Seal the flanges in accordance with the manufacturer's typical details.
2. Fill the flashing with the specified non-shrink grout and pourable sealer. The pourable sealer must be mounded to promote watershedding capabilities.

F. Closure Box
1. Provide closure box caps at existing pipe chases. Trim the existing EPDM flashing high enough up the box such that the new PVC flashing can be terminated 8 inches or higher above the new roof membrane. See RTA Detail No. 9.
2. Install the closure box cap and secure the cap to the box with gasketed screws spaced 6-inches on center or a minimum of one gasketed screw per side of the box.

G. Stack Flashing
1. Provide flange, sleeve and umbrella flashing at round stacks and roof penetrations whenever possible. Field seam and solder the joints in the flange and sleeve.
2. Secure the flange to the roof deck with screws. Neatly field wrap the sheet metal flashing in accordance with the selected membrane manufacturer's requirements.
3. Install an umbrella with 1/4-inch minimum clearance from the top of the sleeve. Tightly secure the umbrella in place with a stainless steel drawbands. Seal the top of the umbrella to the penetration with the specified caulk.

3.03 FIELD QUALITY CONTROL

A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

3.04 CLEANING

A. Remove bituminous 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 conform to their documented instructions.

C. Repair or replace defaced or damaged finishes caused by work of this section.

END OF SECTION

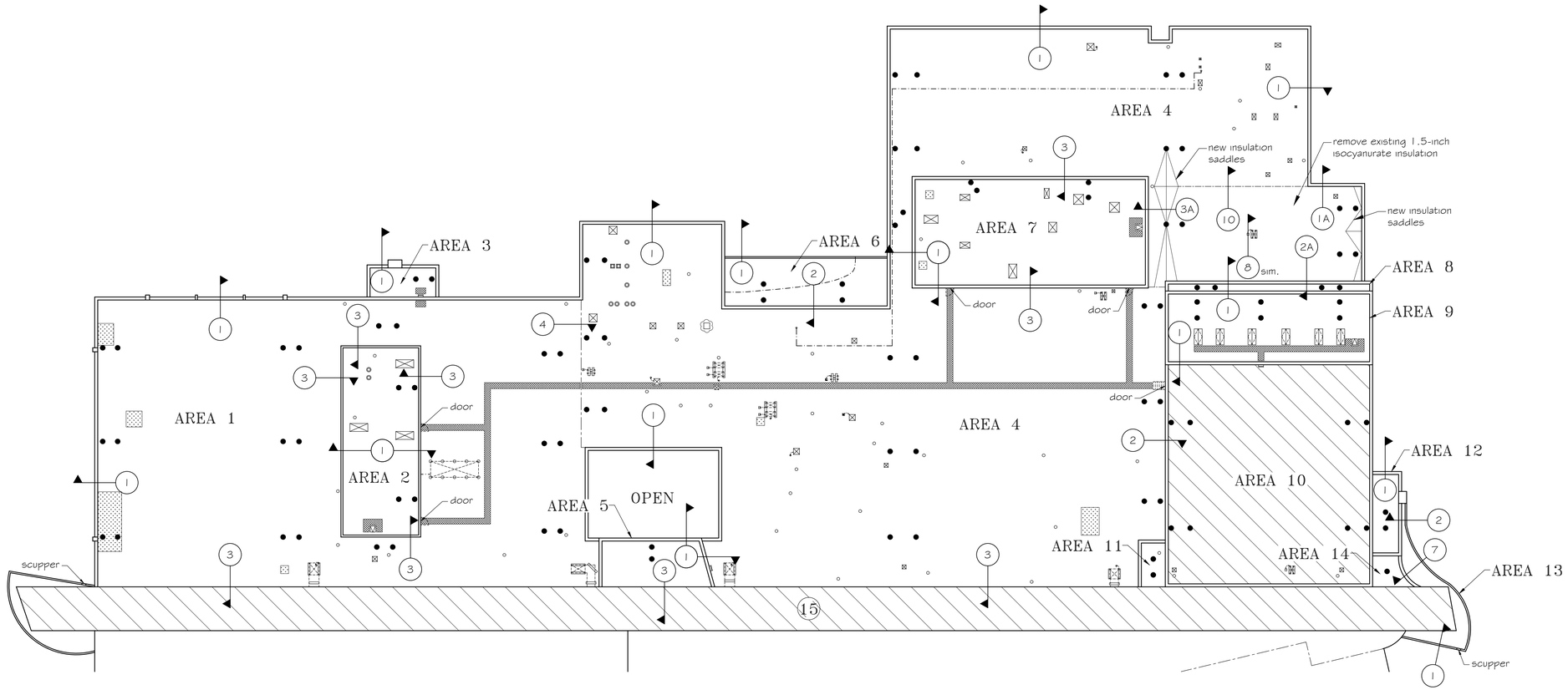
APPENDIX

Roof Plans

Architectural Sheet Metal Manual – Sheet Metal and Air Conditioning Contractors National Association, (SMACNA), Seventh Edition, 2012

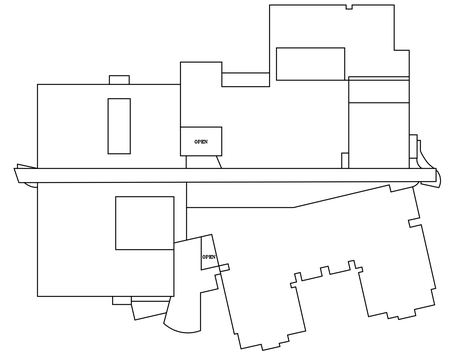
Architectural Specialties – Armstrong World Industries, Inc.

Bid Package "A"



LEGEND:

- roof drain
- round penetration
- pitch pan
- mechanical unit
- elevated equipment
- roof hatch
- ladder
- obsolete
- expansion joint
- supply line
- RTA detail
- walk pads
- not in contract
- areas of substrate moisture



KEY PLAN
not to scale

GENERAL NOTES:

1. All areas and dimensions shown are approximate and based upon rough field measurements taken by representatives of Roofing Technology Associates, Ltd.
2. 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

NORTH ROOF PLAN

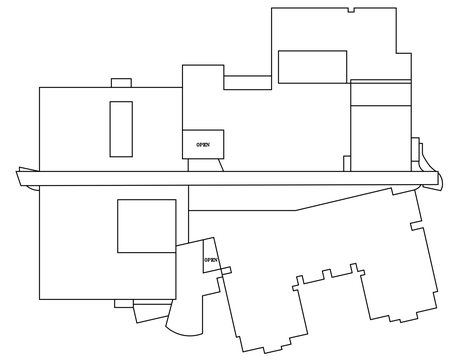
SALINE AREA SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Plate No:
24-071	JDS	1
Date: 9-13-24	Checked By: JJW	

Bid Package "B"

LEGEND:

- roof drain
- round penetration
- pitch pan
- mechanical unit
- elevated equipment
- roof hatch
- ladder
- obsolete
- expansion joint
- supply line
- RTA detail
- walk pads
- not in contract
- areas of substrate moisture



KEY PLAN
not to scale

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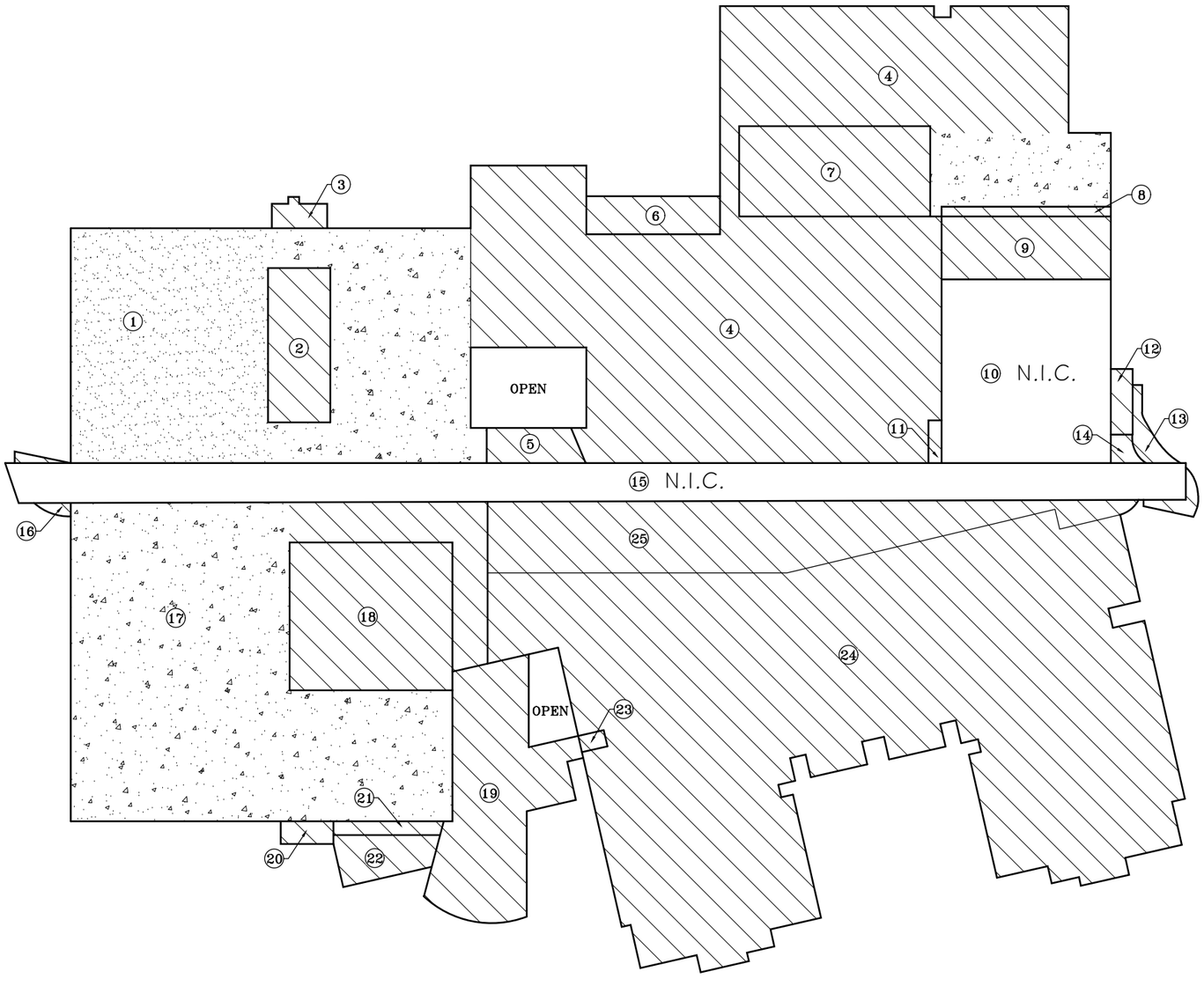
SOUTH ROOF PLAN

SALINE AREA SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Plate No:
24-071	RJW	2
Date: 9-13-24	Checked By: JJW	



north

0 80 160

scale in feet

legend

- Steel Roof Deck
- Tectum III Roof Deck
- Tectum E Roof Deck

GENERAL NOTES:

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2. 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.

rta

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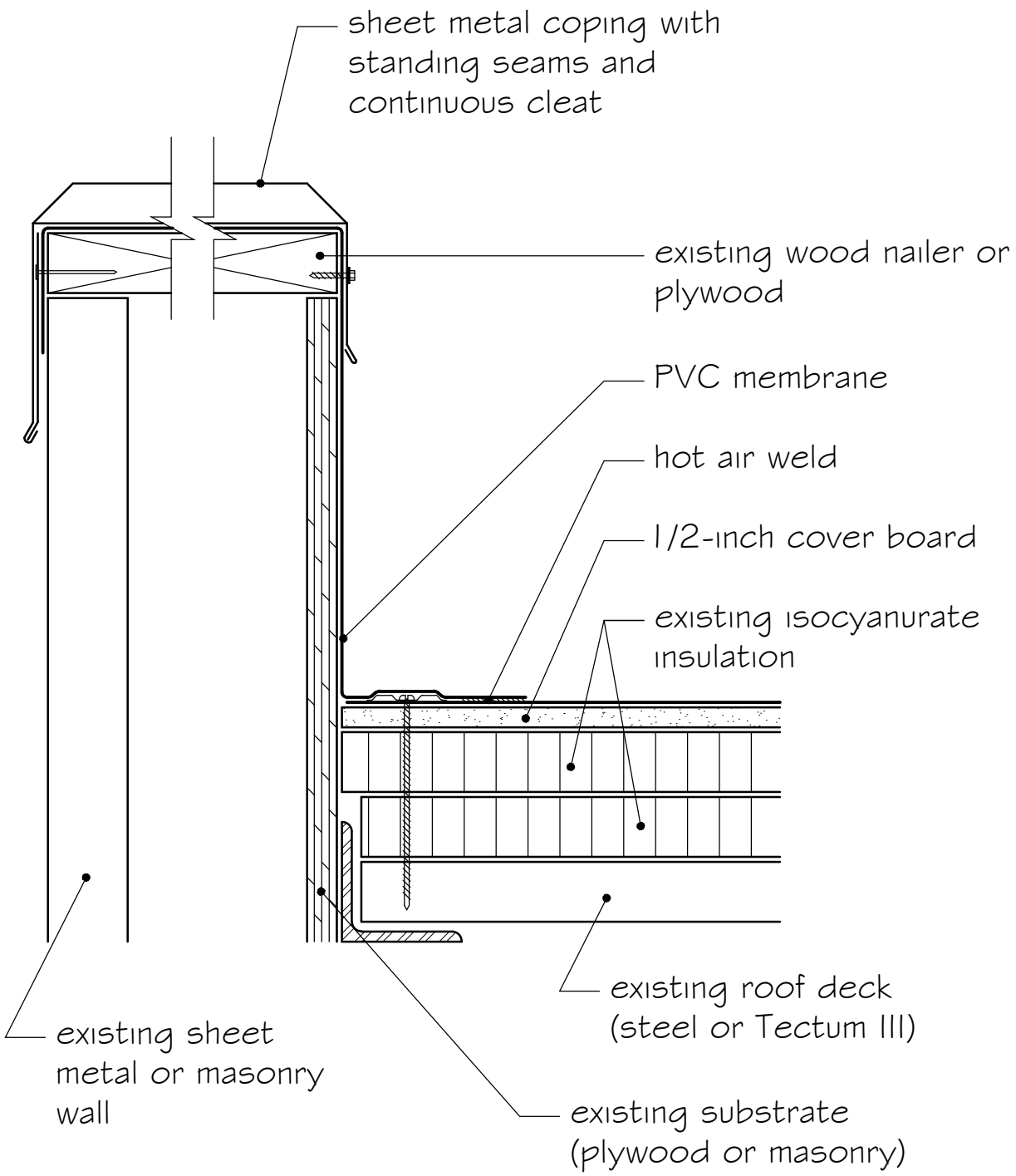
ROOF DECK DESIGNATION PLAN

SALINE SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Plate No:
24-071	APW	3
Date: OCT, 2024	Checked By: JJW	



COPING

not to scale

NOTE: components shown are new unless noted as existing

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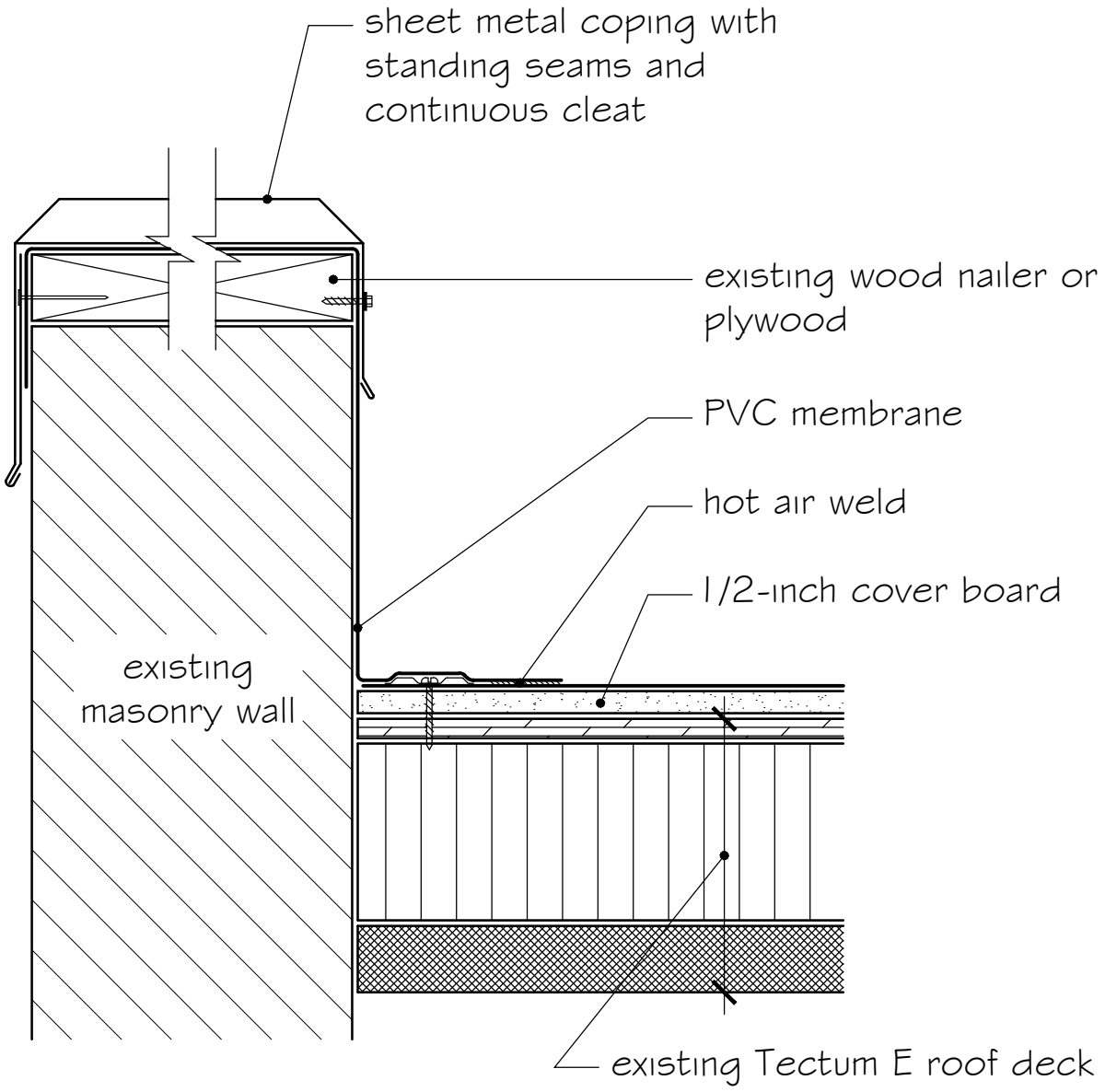
SALINE AREA SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	1
Date: 10-2-24	Checked By: JJW	



COPING

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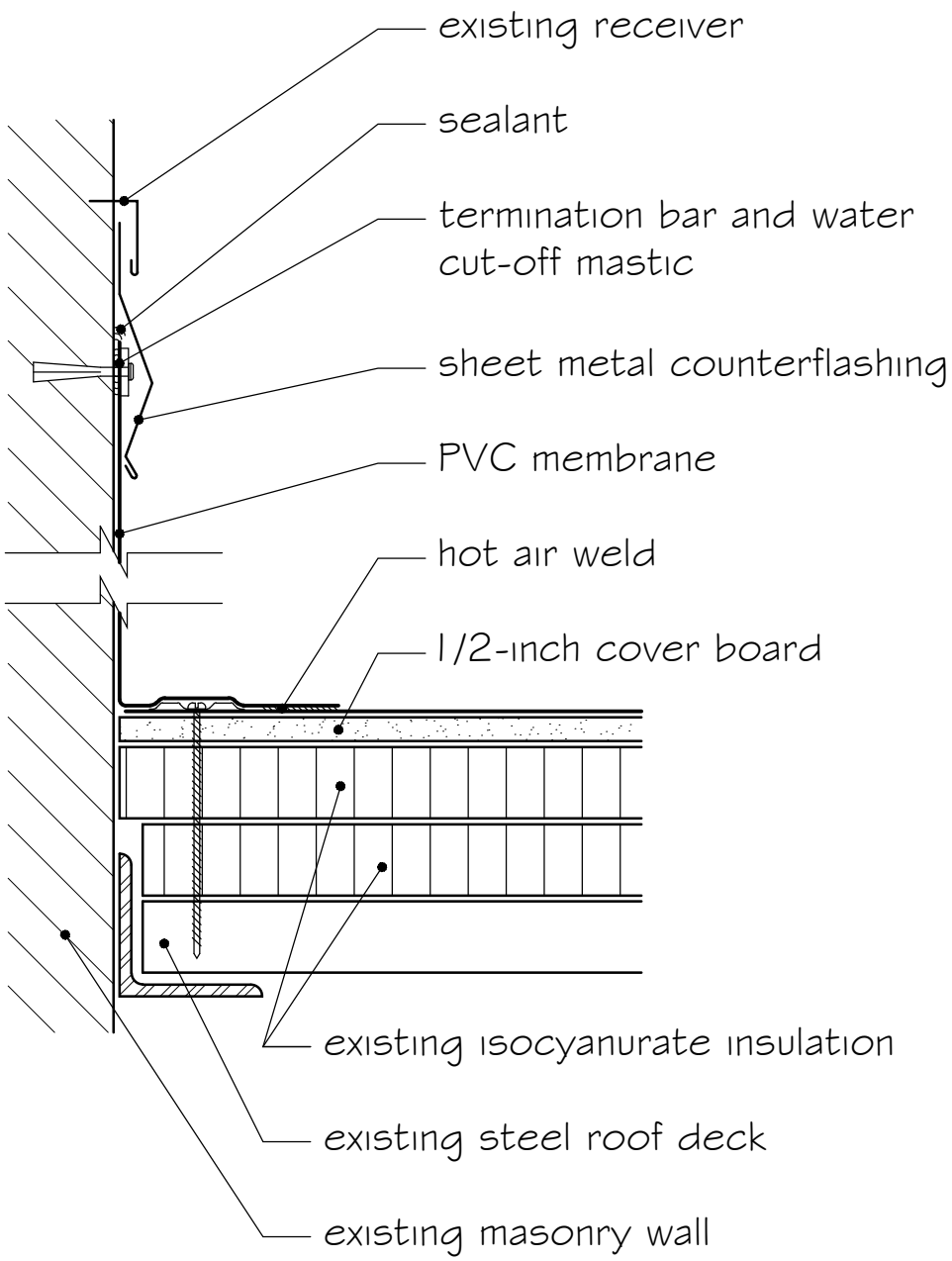
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	1A
Date: 10-2-24	Checked By: JJW	



COUNTERFLASHING AT MASONRY WALL

not to scale

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1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
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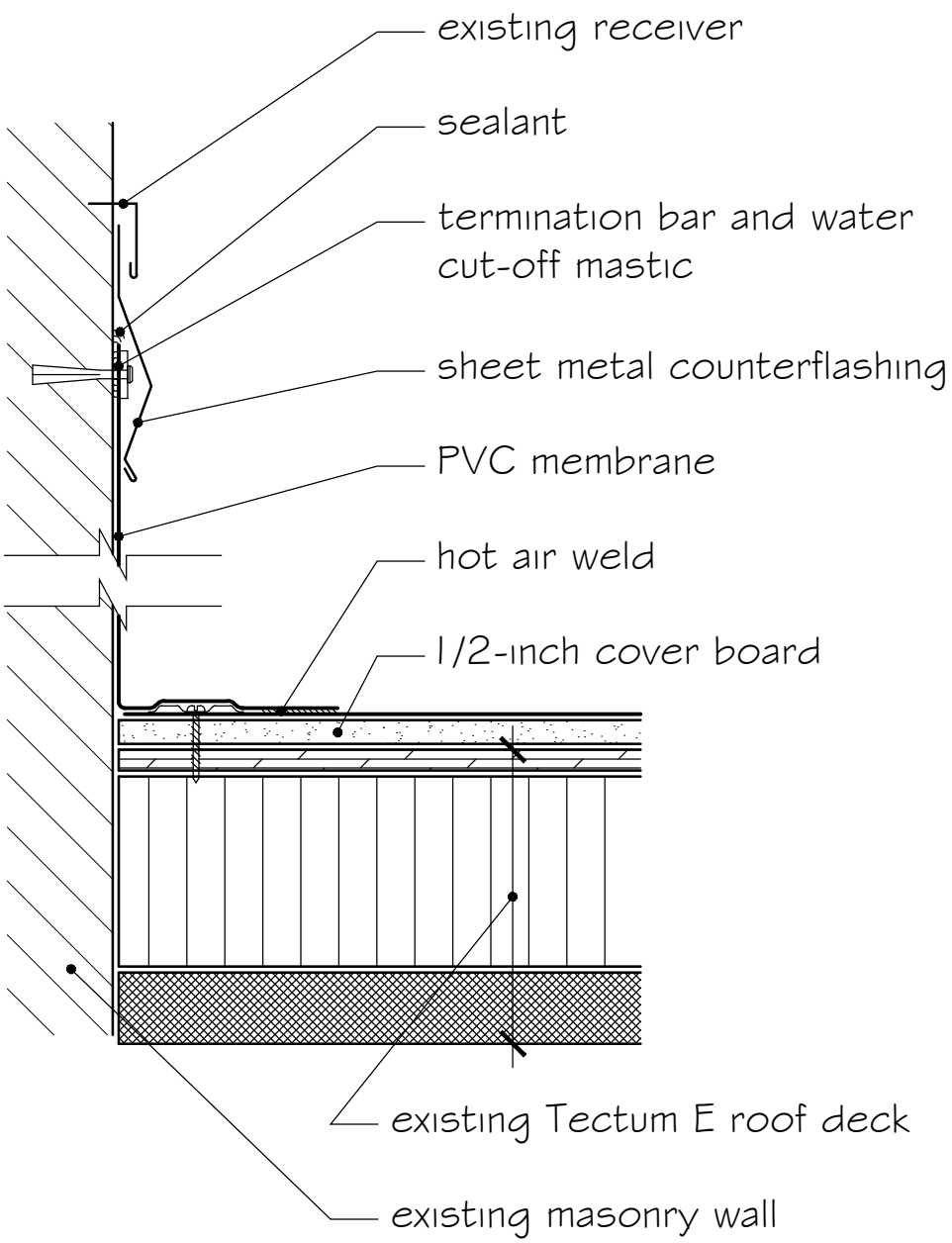
Date: 10-2-24	Checked By: JJW	



COUNTERFLASHING AT MASONRY WALL

not to scale

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SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	2A
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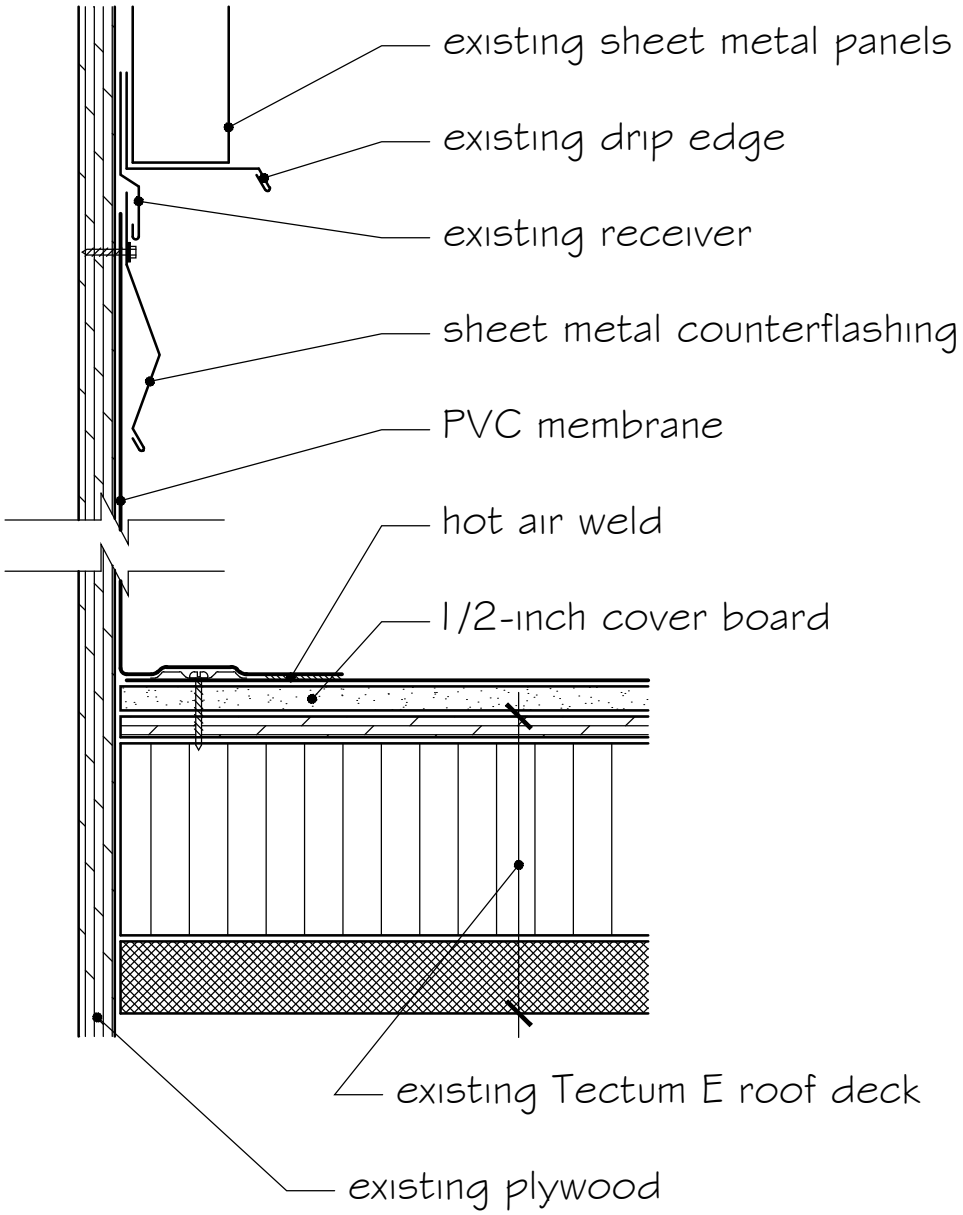

COUNTERFLASHING AT SHEET METAL WALL PANELS

not to scale

NOTE: components shown are new unless noted as existing

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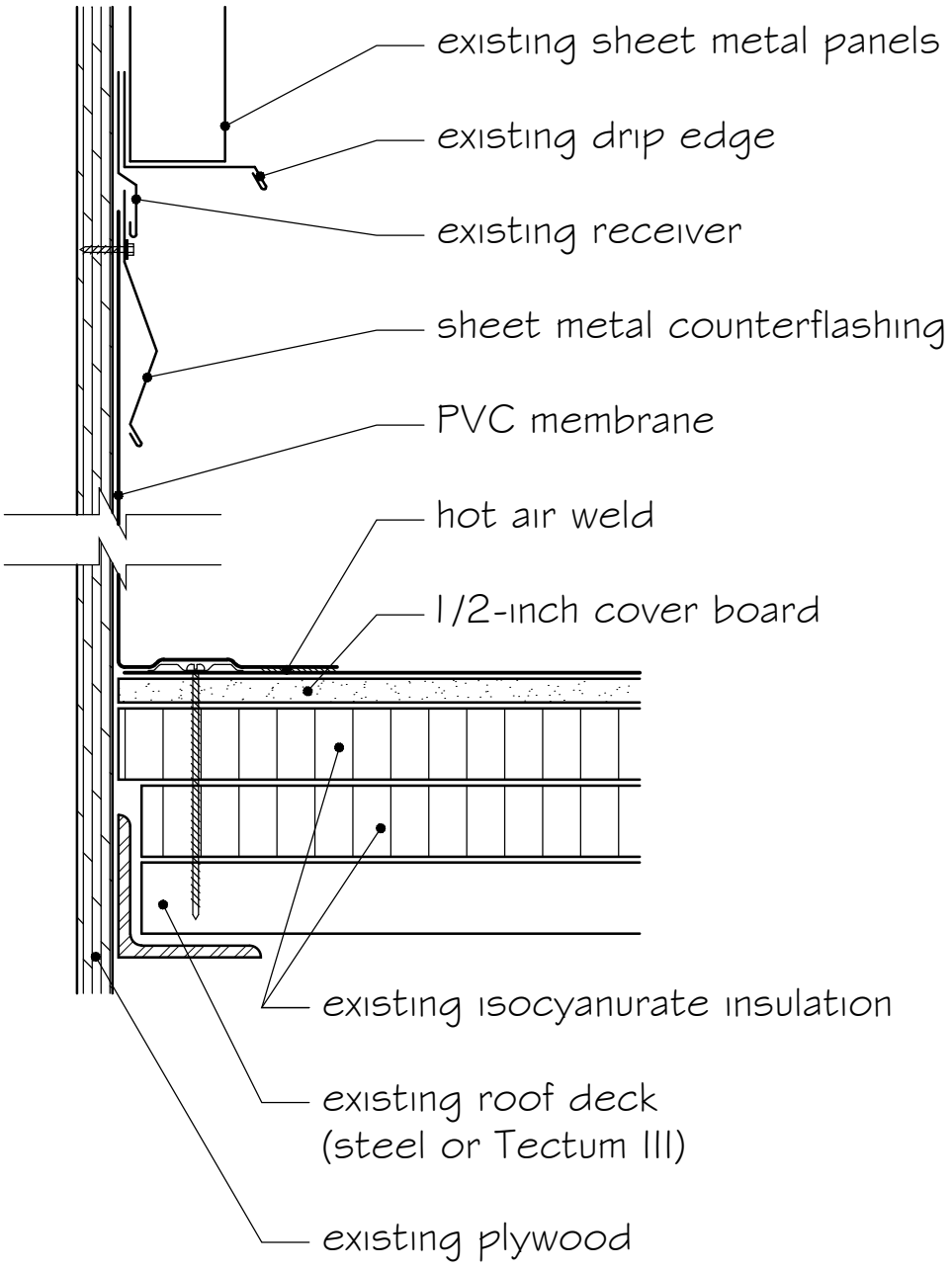
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	3
Date: 10-2-24	Checked By: JJW	



COUNTERFLASHING AT SHEET METAL WALL PANELS

not to scale

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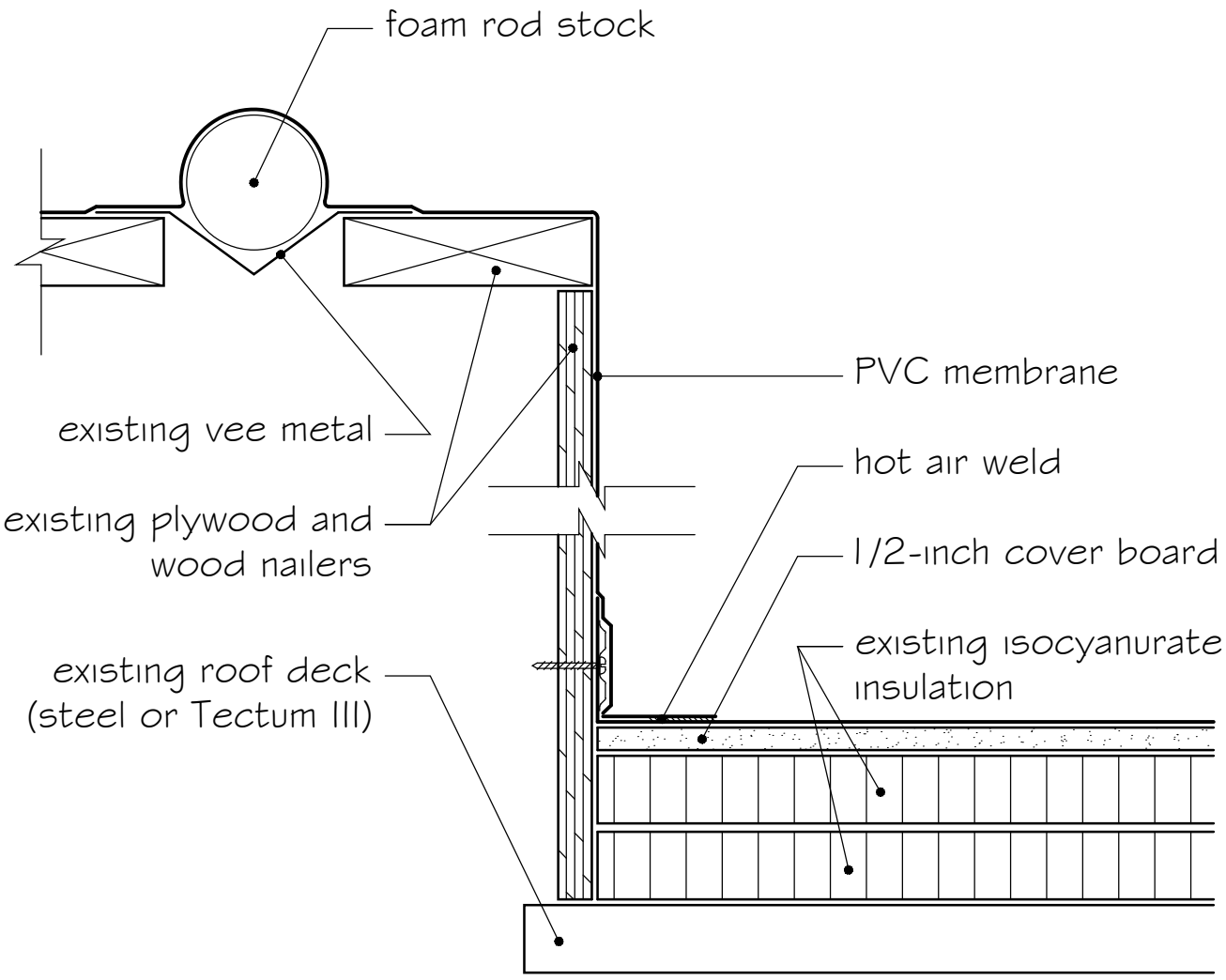
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	3
Date: 10-2-24	Checked By: JJW	



EXPANSION JOINT

not to scale

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SALINE AREA SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
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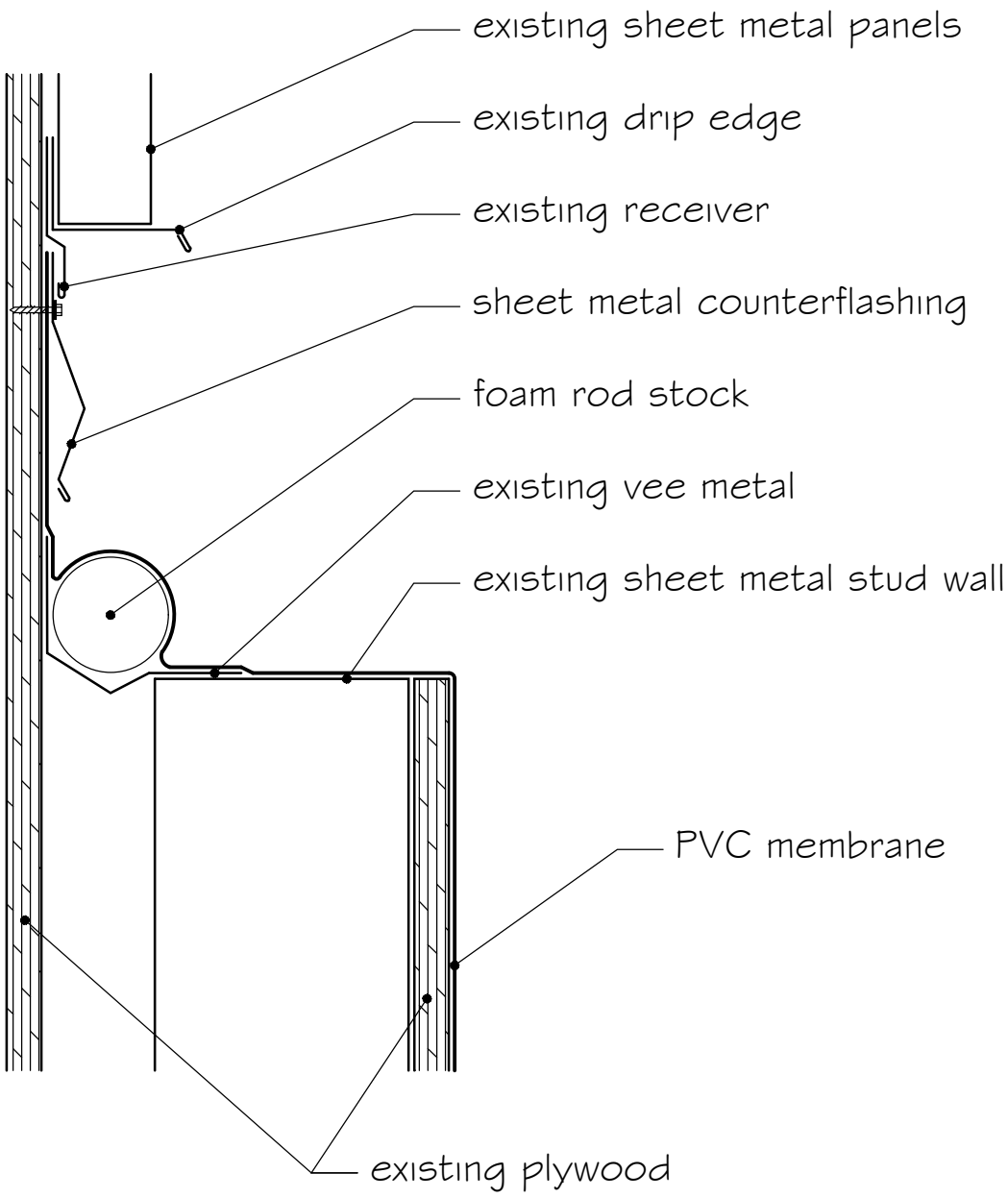
Date: 10-2-24	Checked By: JJW	



EXPANSION JOINT AT WALL

not to scale

NOTE: components shown are new unless noted as existing

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SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-0711	APW	5
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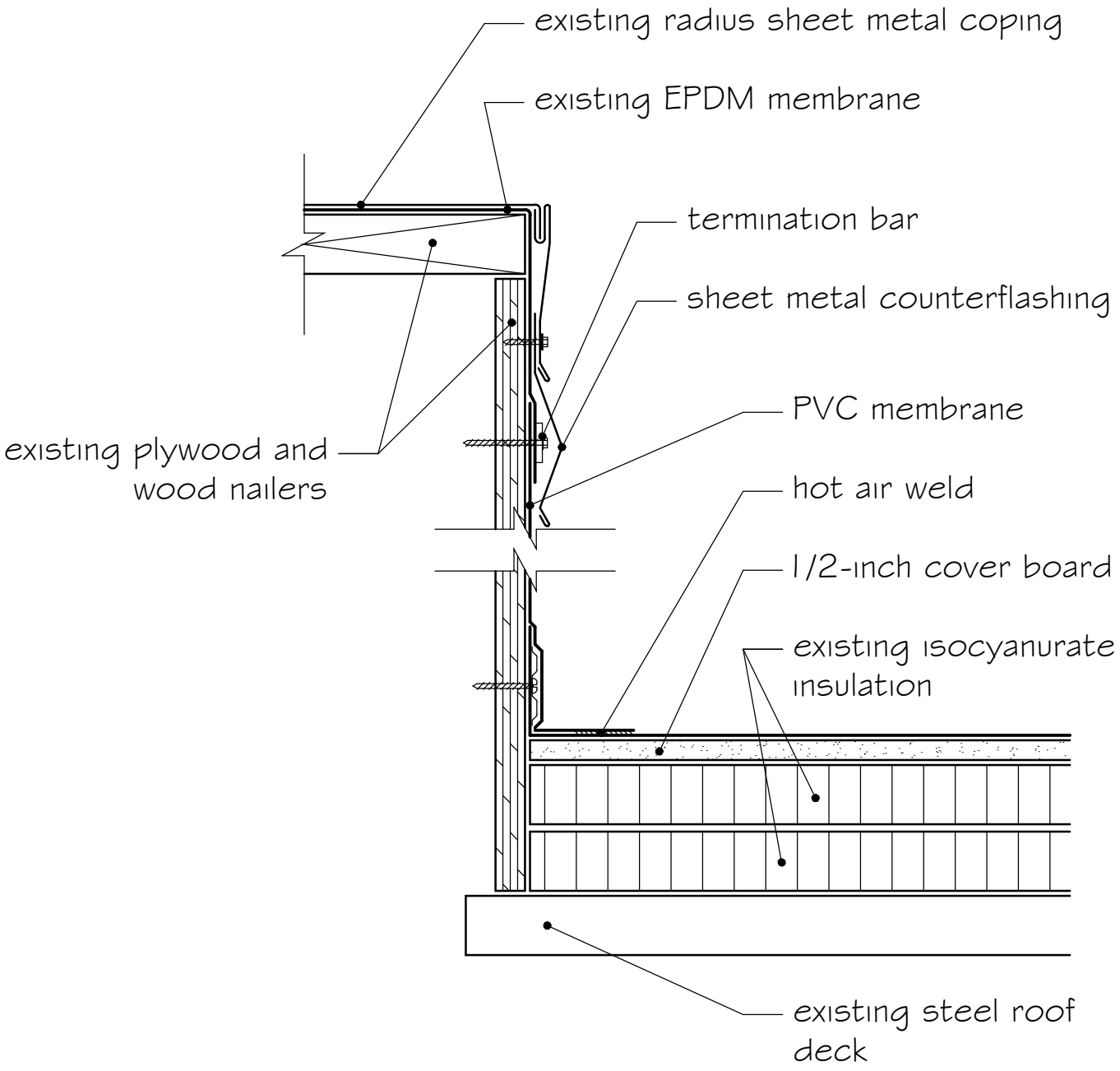

COUNTERFLASHING AT EXISTING RADIUS COPING

not to scale

NOTE: components shown are new unless noted as existing

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SALINE AREA SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
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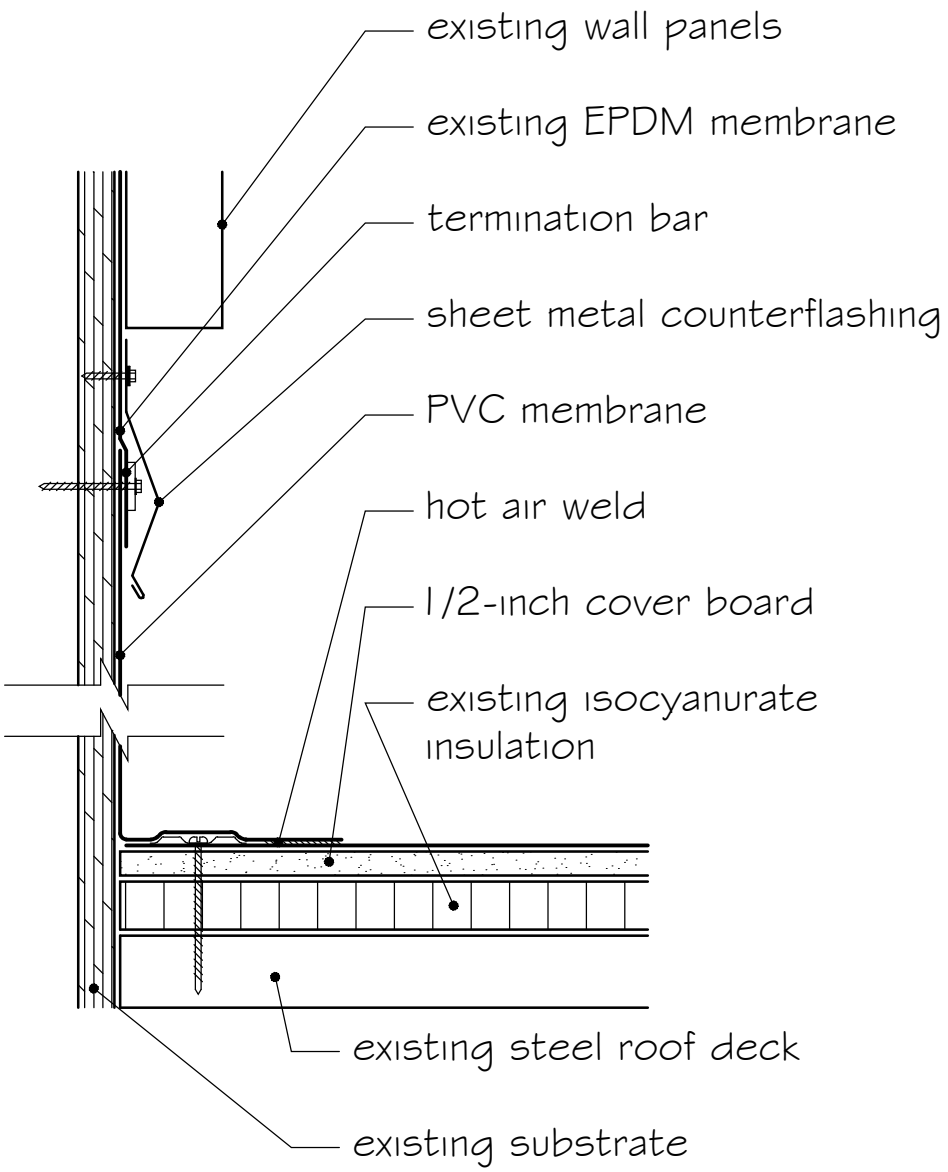

AREA 13 & 16 WALL FLASHING

not to scale

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SALINE AREA SCHOOLS
SALINE HIGH SCHOOL
1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	7
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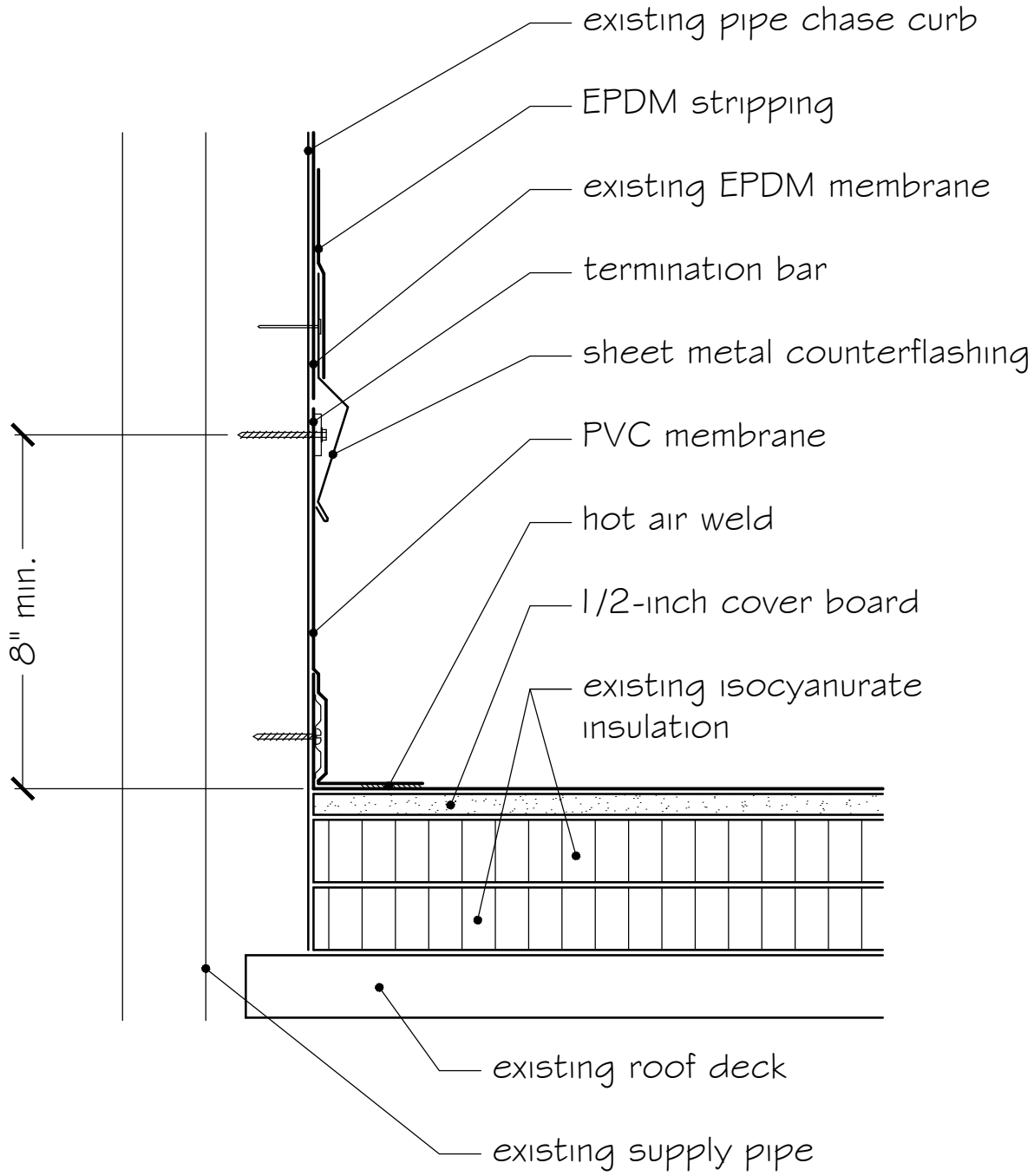

PIPE CHASE CURB FLASHING

not to scale

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1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
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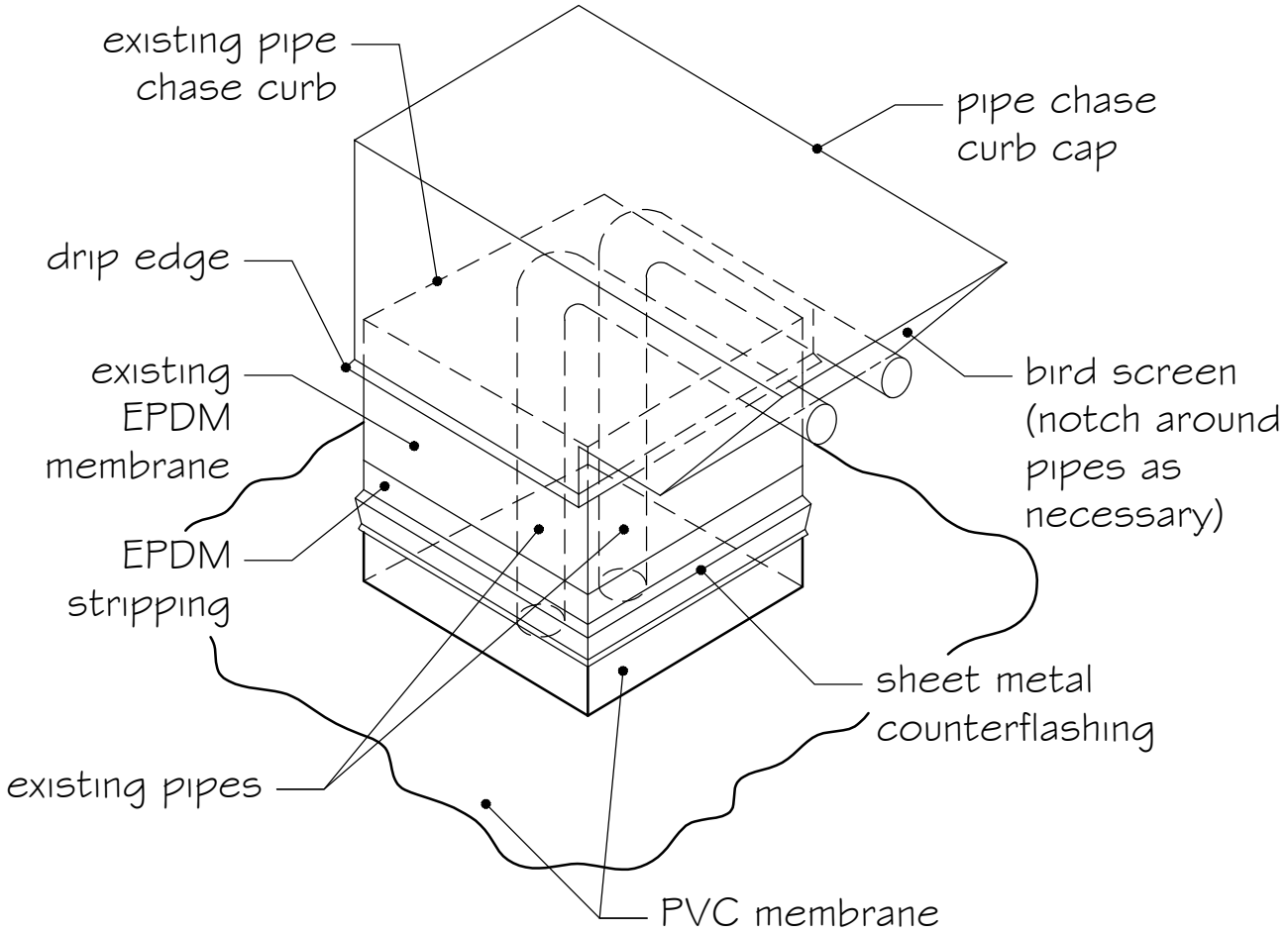

PIPE CHASE CURB CAP

not to scale

NOTE: components shown are new unless noted as existing

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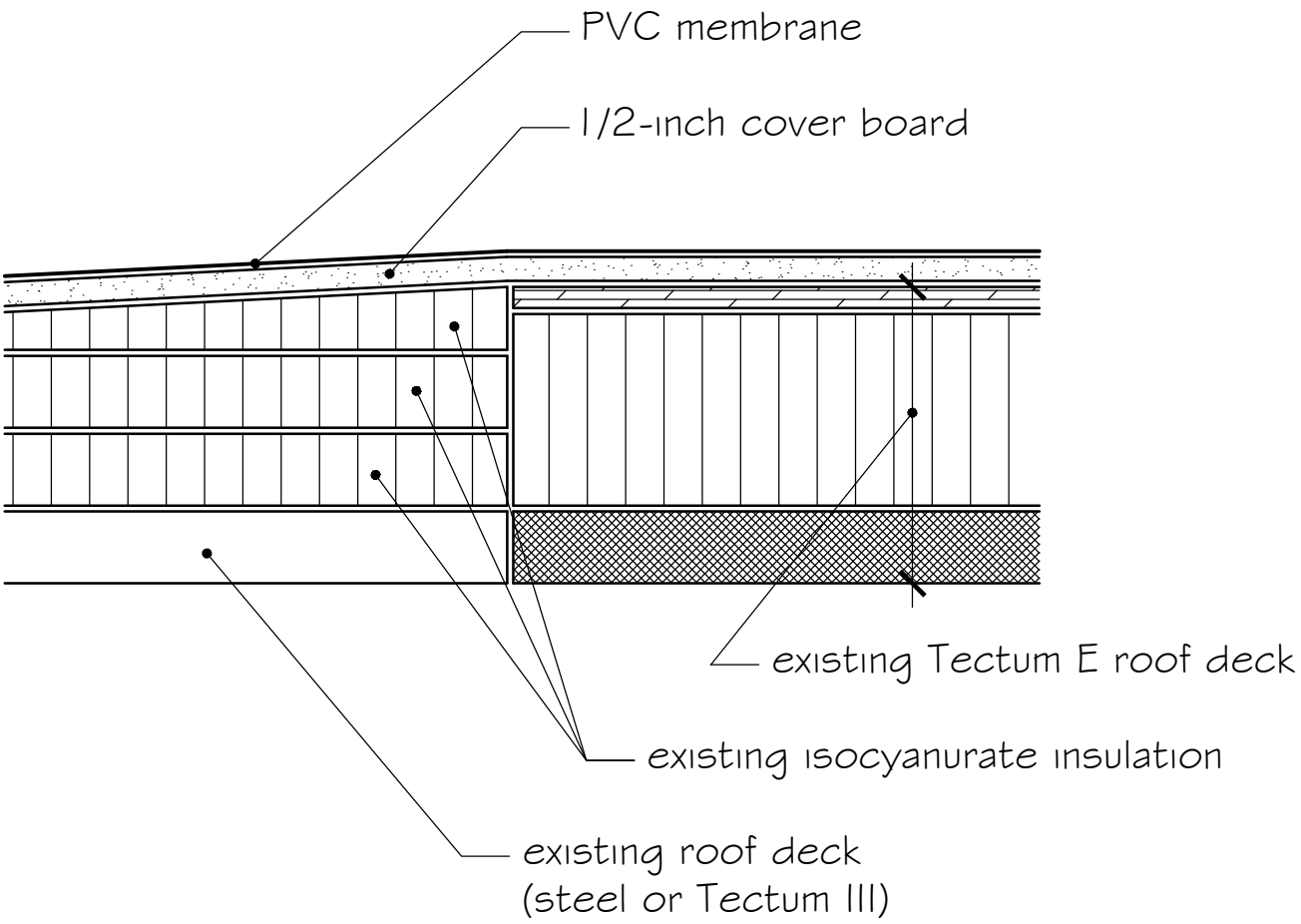
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	9
Date: 10-2-24	Checked By: JJW	



ROOF DECK TRANSITION

not to scale

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1300 CAMPUS PKWY
SALINE, MICHIGAN

Project No:	Drawn By:	Detail No:
24-071	APW	10
Date: 10-2-24	Checked By: JJW	

METAL COPING (GENERAL)

The horizontal top surface of a wall is the most vulnerable point for water to penetrate. This is especially true of masonry walls. The most practical and attractive way to waterproof this vulnerable spot is to cap the wall with formed metal coping.

FORMED METAL COPINGS — DESIGN DATA

Figure 3–1 shows a typical coping installed on a masonry wall. Continuous blocking that is sloped toward the interior roof side must be securely anchored to the top of the wall. An appropriate underlayment must go over the blocking past the wall-to-blocking joint and then the cleats and coping are fastened to the blocking.

Continuous cleats are used on the side away from the roof—the exterior face side. On the interior roof side, the copings can be fastened through oversized holes located 24 in. (610 mm) OC with screws and watertight washers. Copings can be installed with continuous cleats on both sides of the coping. However, a coping that can be snapped on may also have enough flexibility to either snap off or admit water in some circumstances.

The coping is generally formed in 10 ft (3 m) sections and joined to allow for longitudinal expansion. Corners on copings should be mitered, lap-seamed, and sealed. On wider copings, stiffening type joints should be specified.

Sample coping shapes are shown in Figure 3-4. These combinations of corners, joints, and edges are representative.

See Figure 3-5 to 3-9 for installations. Recommended gages for formed copings are shown in Table 3–1 and are based on copings that have continuous backing. Thicker metal would be necessary for intermittent support and joint selection would be more limited.

The final selection of a coping design involves study of the service, exposure, thermal expansion, material durability, forming capability, wind uplift, and maintenance needs.

FIGURE 3–1

All single lap joints should be 3 in. (76 mm) minimum width. All back-up plates should be 6 in. (152 mm) width. All cover plates should be 6 in. (152 mm) minimum width.

Caulking is NOT indicated along either of the lower edges, intentionally. The only place sealing should be applied to a coping system is at the overlap of certain types of expansion joints—primarily flat, overlapping type joints—and at mitered corners that use folded seam construction. Since the coping and wall will expand at different rates, if sealant were continuously applied along the lower coping edges that sealant would be unlikely to remain adhered to both the wall and coping on a long-term basis.

If it were possible to completely and successfully seal along both the inside and outside lower edges of a coping, moisture could not escape. After a rain, sun-driven vapor pressure would force moisture up the wall and condensate would form under the coping and underlayment, drain down the "legs" of the coping and accumulate anywhere the caulking created an effective dam.

The most likely side of coping to be subject to wind-driven rain penetration is the outside edge but the continuous cleat on the outside edge is fastened against the wall and forms an effective block to wind-driven rain from that side.

If a designer requires that a sealant or sealing material be applied along a coping, between the wall and continuous cleat is the only appropriate location. Sealing the lower edge of copings or the cleats is not a recommended design practice.

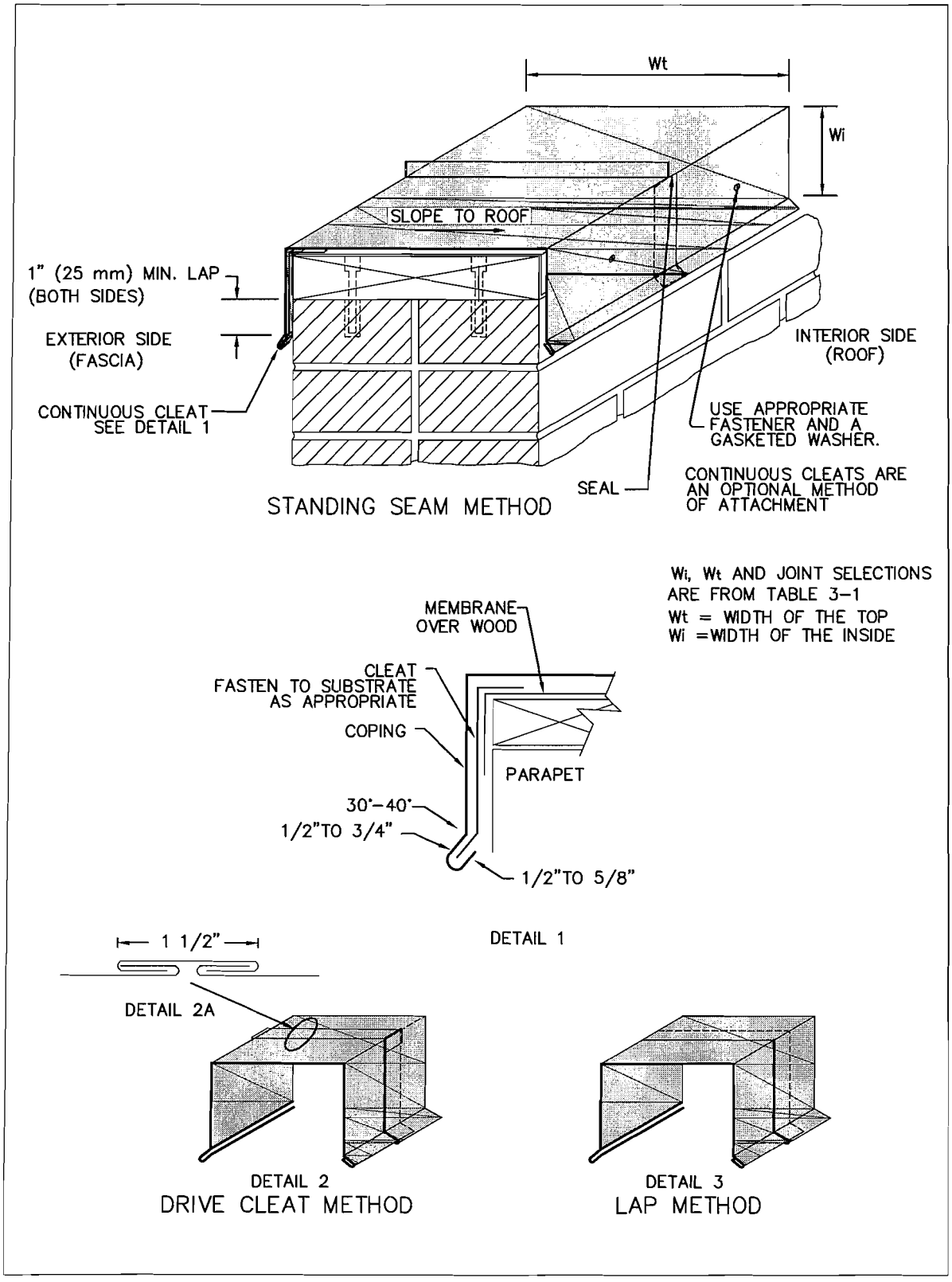
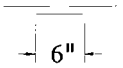
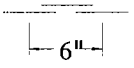
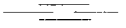
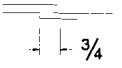


FIGURE 3-1 FORMED METAL COPINGS — DESIGN DATA

Metal Thickness (Nom.)				Joint (J) for Top Width (W_T)				Joint (J) for Interior / Exterior Fascia Dimension	
S/S gage (mm)	Al in. (mm)	Cu oz. (mm)	Steel* gage (mm)	6" Max. (150 mm)	Over 6" to 12" (300 mm)	Over 12" to 18" (450 mm)	Over 18" (460 mm)	9" Max. (230 mm)	Over 9" to 12" (300 mm)
28 (.38)	.025 (.64)	12 (.41)	26 (.55)	ALL	ALL	NONE	NONE	ALL	8–12
26 (.46)	.032 (.81)	16 (.55)	24 (.70)	ALL	ALL	5–12	8–11	ALL	8–12
24 (.58)	.040 (1.0)	20 (.69)	22 (.85)	ALL	ALL	5–12	5–9,12	ALL	8–12
22 (.74)	.063 (1.6)	24 (.82)	20 (1.0)	1–10,12	1–10,12	1–10,12	5–9,12	1–7,9,11,11A,12	1–7,9–12
20 (.89)	.080 (2.0)	32 (.92)	18 (1.3)	1–7,12	1–7,12	1–7,12	5–7,12	1–7,11A,12	1–7, 10–12
18 (1.2)	.100 (2.5)	48 (1.6)	16 (1.6)	1–7,12	1–7,12	1–7,12	5–7,12	1–7,11A,12	1–7, 10–12
16 (1.5)	.125 (3.2)		14 (2.0)	2,4,5,12	2,4,5,12	2,4,5,12	5–7,12	2, 4, 5, 11A, 12	2, 4, 5, 12
.075 (1.9)			12 (2.8)	2,4,12	2,4,12	2,4,12	5–7,12	2, 4, 5, 11A, 12	2, 3, 5, 12
.105 (2.7)			10 (3.5)	2,4,12	2,4,12	2,4,12	5–7,12	2, 4, 5, 11A, 12	2, 4, 5, 12

*Galvanized or coated 1" = 25 mm

J1	J2	J3	J4	J5	J6
					
3" LAP	BUTT + BACK-UP PLATE	4" JOGGLE (OFF-SET FLUSH)	BUTT + COV-ER PLATE	6" COVER + 6" BACKUP PLATES	T & G

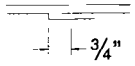
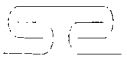
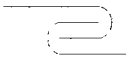
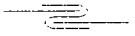
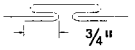
J7	J8	J9	J10	J11	J11A	J12
						
T & G FLUSH	STDG SEAM	1" DRIVE	¾" HOOK SEAM	¾" INSIDE SLIP (POCKET)	¾" S SLIP	DBL S

Table 3–1 Coping Design

NOTE:

Some cover plates slips and drives maybe fabricated with thickness lighter than the base coping material used. (J_2, J_4, J_5, J_6, J_7, J_9, J_{11A}, J_{12})

COUNTER FLASHING SYSTEMS — INSTALLATION

FIGURE 4–5

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.

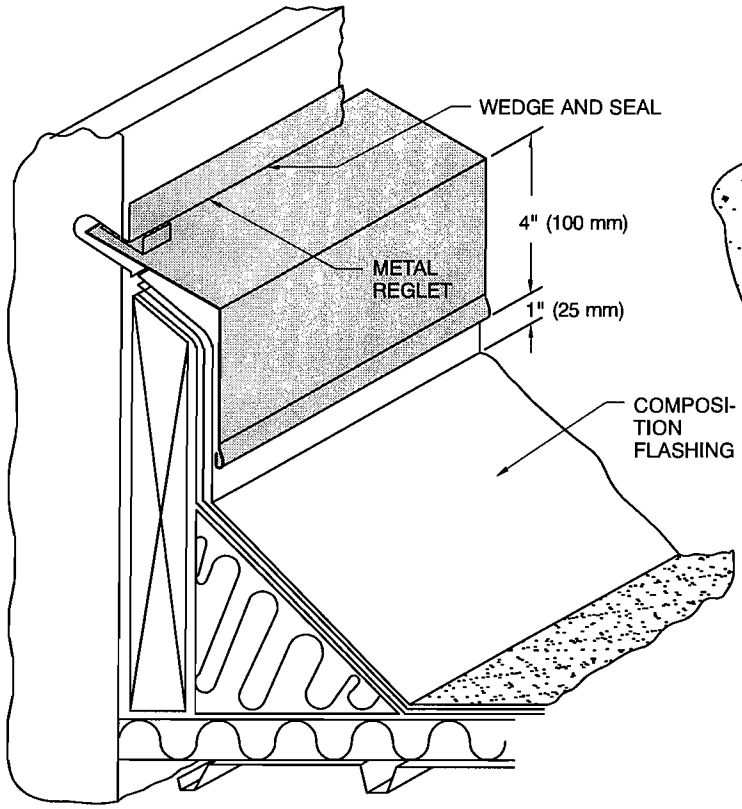
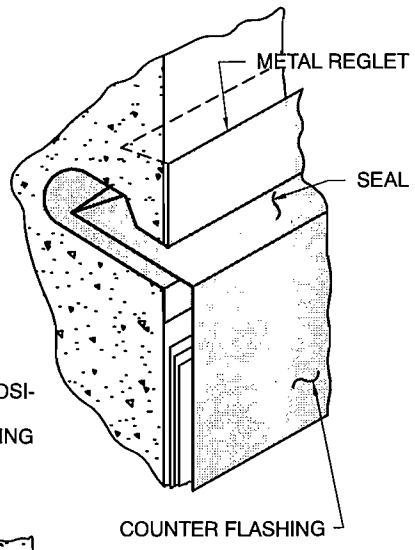


FIG 4–5A



ALTERNATE REGLET DETAIL

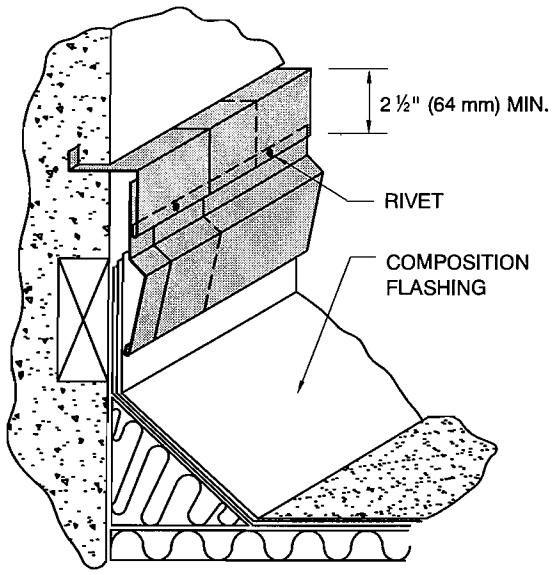


FIG 4–5B

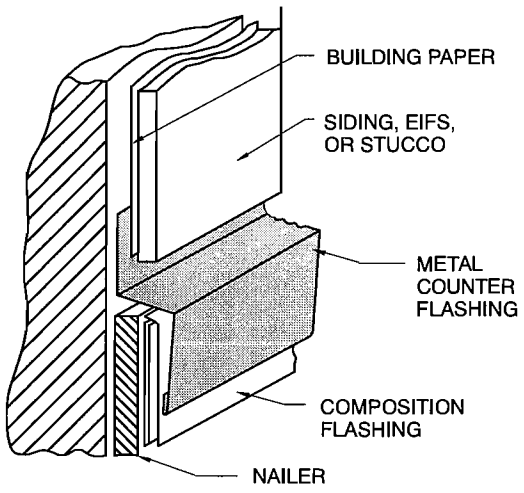


FIG 4–5C

FIGURE 4–5 COUNTER FLASHING SYSTEMS — INSTALLATION

ROOF PENETRATION FLASHING — PIPES

FIGURE 8–9

Figure 8–9A illustrates a method for flashing a roof opening without a curb. This method is recommended only if the pipes are turned horizontally within 24 in. (610 mm) of the roof and the opening is not greater than 18 × 18 in. (460 × 460 mm).

The flashing is made in pieces with base portion being flanged 4 in. (100 mm) onto the roof. The flange is fastened through the roofing felts and is then stripped in by the roofer. The top section is a formed metal hood over the metal pipe. The pipes should be sloped away from the penetration.

The recommended minimum gage for flashing in Figure 8–9A is 16 oz. (0.55 mm) copper, 26 ga (0.477 mm) stainless steel, or 24 ga (0.607 mm) galvanized steel.

Figure 8–9B illustrates two methods of flashing a vent pipe. The flange extends 4 in. (100 mm) on the roof and is stripped in by the roofer. Turn the top of the flashing down inside the vent pipe. The flashing may be of a one-piece or a two-piece style. When a vent pipe extends above the roof so far that it is impractical to completely cover it with flashing (Figure 8–9B), it is recommended that it be flashed as shown in Figure 8–9C, minimum 2 in. (50 mm). The minimum height of the base flashing in Figures 8–9B and 8–9C is 8 in. (205 mm) above the roof's surface.

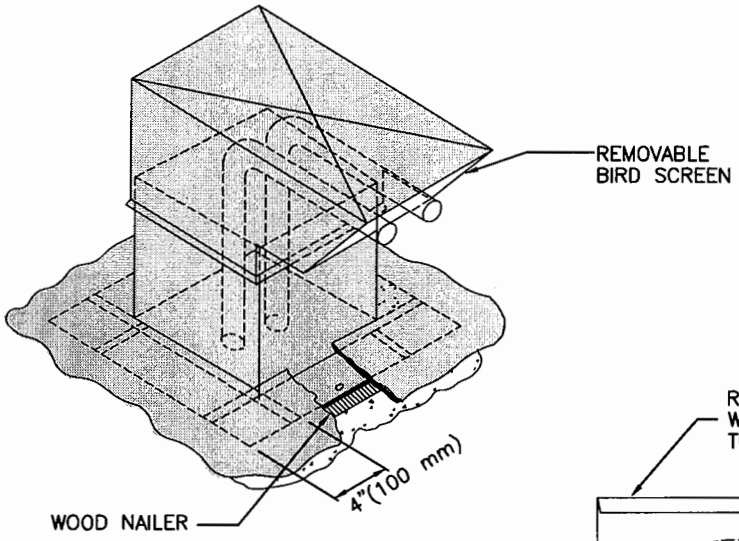
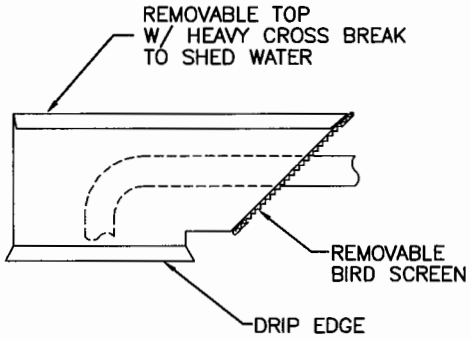


FIG 8-9A



TOP SECTION DETAIL

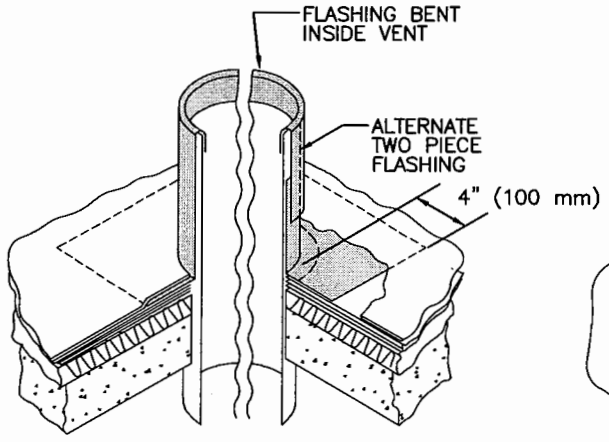


FIG 8-9B

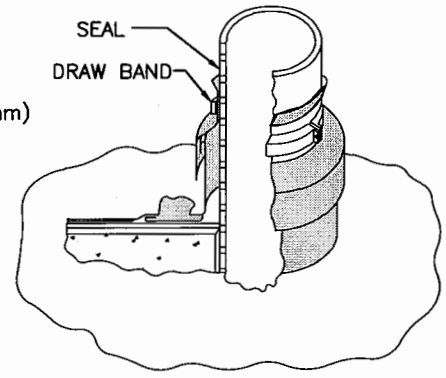


FIG 8-9C

FIGURE 8-9 ROOF PENETRATION FLASHING — PIPES

EQUIPMENT SUPPORT FLASHING

FIGURE 8-11

Figure 8–11A shows a method for flashing pipe stanchions. Attach a watertight counter flashing (umbrella) over a stripped-in metal base (roof jack) flashing on a concrete deck. The roof jack top should be 8 in. (203 mm) above the roof. The umbrella should lap the jack 4 in. (100 mm) and have ¼ in. (6.4 mm) minimum clearance.

Figure 8–11B illustrates a method for flashing equipment supports. Install composition base flashing over a cant and up 4 in. (100 mm) on the side of the support. Fabricate metal flashing to cap the support and extend 4 in. (100 mm) over the base flashing. Seam and solder all corners. This flashing may be used to cover columns that have been stubbed through the roof.

The bottom elevation of support structures and equipment supported should be selected by the designer with regard to access to the roof surface for maintenance and repair. Table 8–1 is a guide.

The designer should consider ease of access to the roof's surface for maintenance and repair when selecting the height of the equipment support structures. Consult Table 8–1.

Figure 8–11C illustrates the use of a pitch pan to flash a small penetration through the roofing where it is impossible to use other types of flashings.

Extend the flange onto the roof 4 in. (100 mm) and fasten it over the roofing felts. The flange is stripped in by the roofer. The sides should extend up from the roof a minimum of 4 in. (100 mm). All joints should be seamed and sealed.

A pitch pan should be 2 in. (50 mm) greater in length and width than the support it is flashing. It is filled by the roofer. A bonnet flashing should be used to cover a pitch pan. It is easier to fit this to a pipe stanchion than to other shapes of support.

Precaution: Pitch pans are not inherently maintenance free. Building managers should set up a program of routine inspection and maintenance.

Manufactured rubber boots that effectively seal against supports and shield the roof jacks are acceptable as umbrellas. Such products must resist ozone and ultraviolet rays and have a suitable service temperature.

The gage of metal used will depend on the size of the flashing. The recommended minimum gage is 16 oz. (0.55 mm) copper, 26 ga (0.477 mm) stainless steel, or 24 ga (0.607 mm) galvanized steel.

Width of Equipment		Height of Legs	
inches	**mm**	**inches**	**mm**
Up to 24	Up to 610	14	360
25 to 36	635 to 910	18	460
37 to 48	930 to 1220	24	610
49 to 60	1240 to 1520	30	760
60 and wider	1520 and wider	48	1220

Table 8–1 Rooftop Equipment Elevation

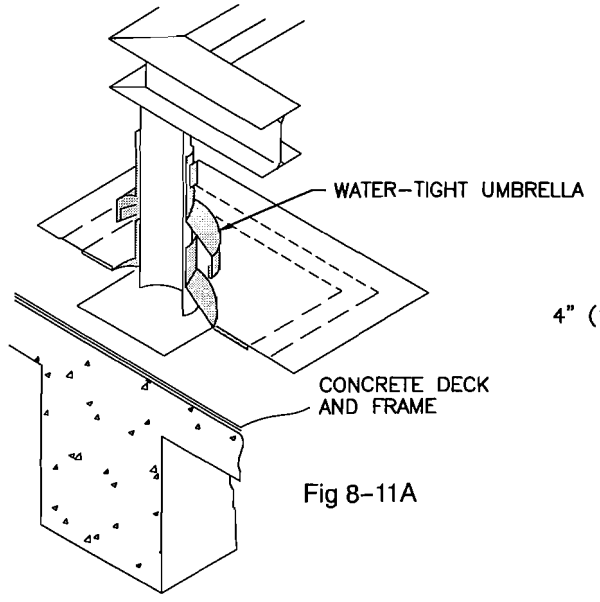
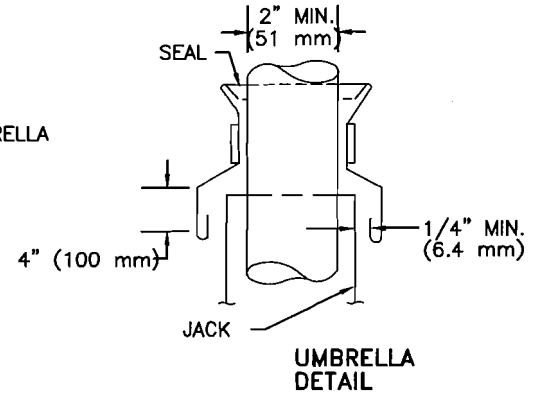


Fig 8–11A



UMBRELLA DETAIL

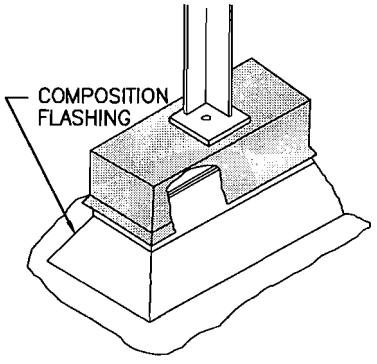


Fig 8–11B

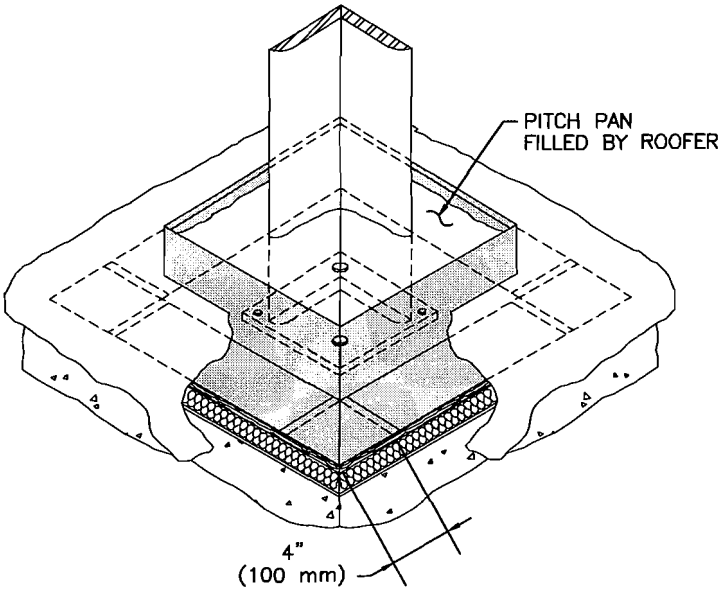
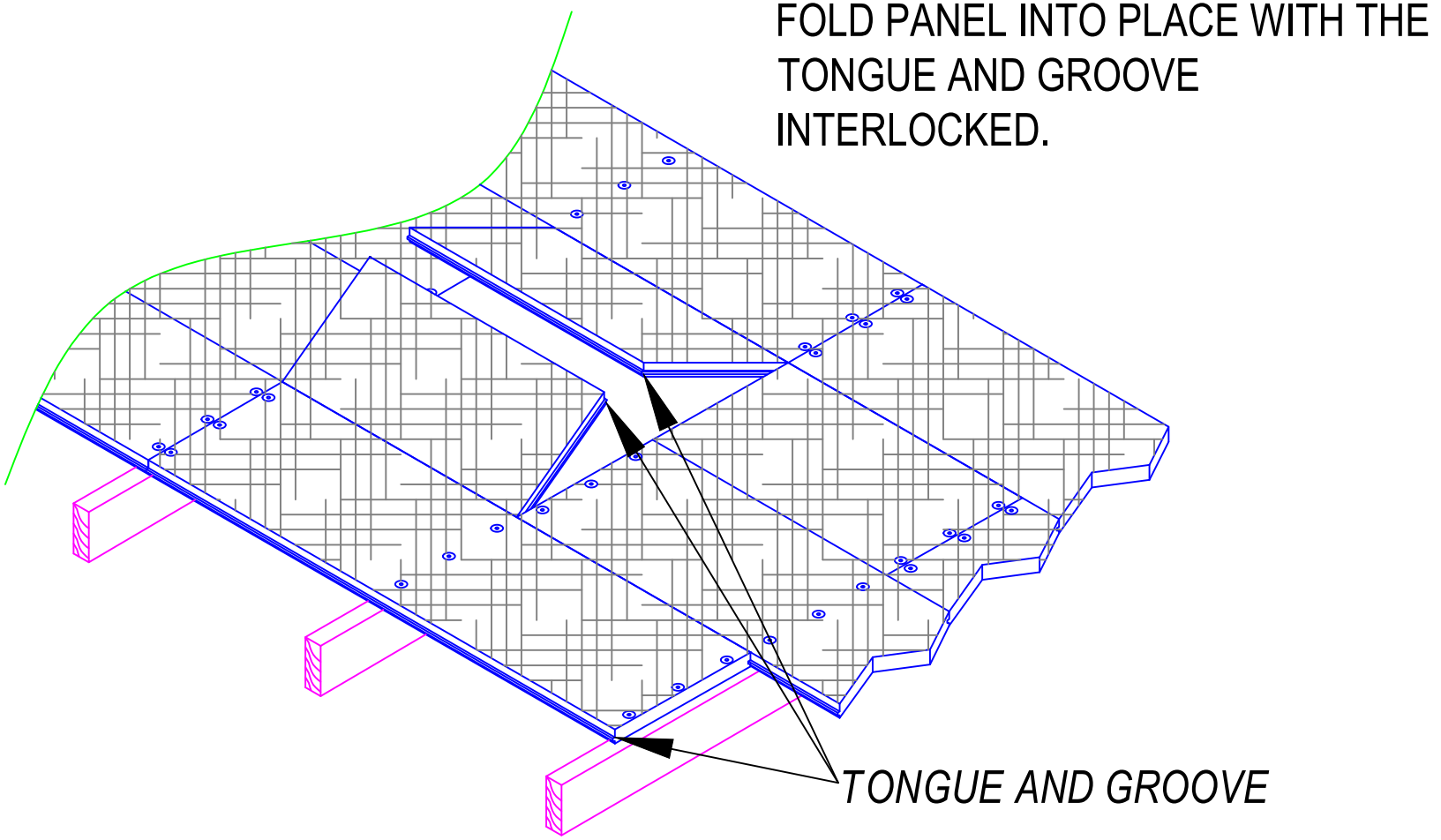


Fig 8–11C

FIGURE 8–11 EQUIPMENT SUPPORT FLASHING



1 REPLACING TECTUM ROOF PLANK
Scale: N.T.S.

These drawings show typical conditions in which the Armstrong product depicted is installed. They are not a substitute for an architect's or engineer's plan and do not reflect the unique requirements of local building codes, laws, statutes, ordinances, rules and regulations (Legal Requirements) that may be applicable for a particular installation.
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PROJECT NAME: REPLACING TECTUM ROOF PLANK

Armstrong® CEILING & WALL SOLUTIONS

DATE: 10-19-17	SCALE: N.T.S.	PROJECT NO.: XXX	DRAWN BY: KBD	PROJECT MNGR: XXX	SHEET
REV:	DATE:	DESC.: 2035 - REPLACING TECTUM ROOF PLANK			SK1
REV:	DATE:				1 OF 1

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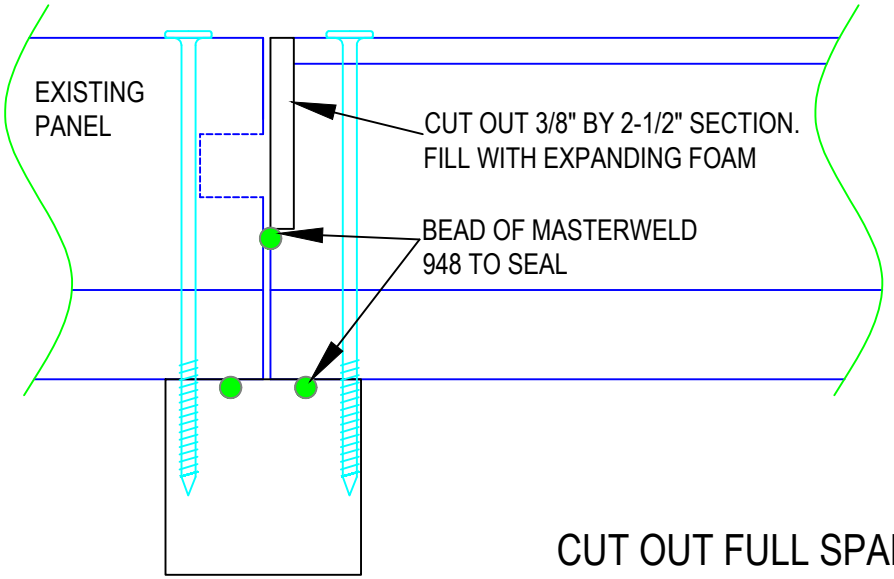
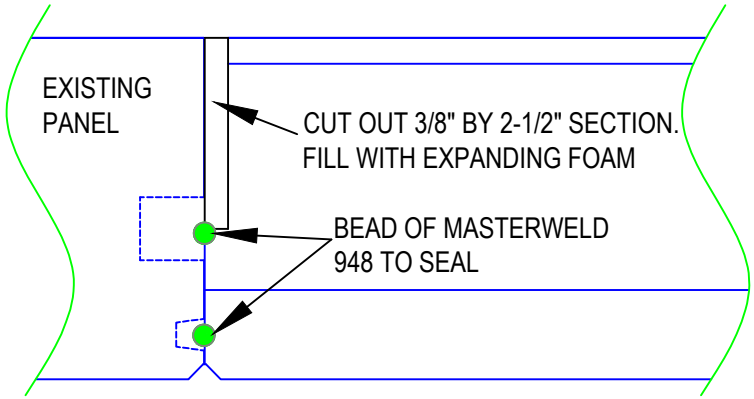
TECTUM III REPLACEMENT PANELS ARE TO BE 47" WIDE BEVELED SIDES AND SQUARE ENDS

TYPICAL END CONDITION



TYPICAL SIDE CONDITION



CUT OUT FULL SPAN AND FULL WIDTH BEFORE INSTALLING REPAIR PANEL. LEAVE CUT PIECES IN PLACE. SCREW NEW PANELS IN PLACE AT ENDS.

1 REPLACING TECTUM III PANELS
Scale: N.T.S.

PROJECT NAME: REPLACING TECTUM III PANELS					Armstrong® CEILING & WALL SOLUTIONS
DATE: 10-20-17	SCALE: N.T.S.	PROJECT NO.: XXX	DRAWN BY: KBD	PROJECT MNGR: XXX	SHEET SK1 1 OF 1
REV:	DATE:	DESC.: 2039 - REPLACING TECTUM III PANELS			
REV:	DATE:				

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