

REQUEST FOR PROPOSAL (RFP)

2021 STERLING ELEMENTARY ROOFING PROJECT

Standish – Sterling Community Schools

April 13, 2021



HENDRICK
SINCE 1876
GENERAL CONTRACTORS
CONSTRUCTION MANAGERS

Questions/Communications to:
R.C. Hendrick & Son, Inc.
Daniel J La Pan, AIA
2885 S. Graham Rd.
Saginaw, MI 48609
P: 989.781.8166

STANDISH – STERLING COMMUNITY SCHOOLS

Advertisement for Request for Proposals

Sterling Elementary Roofing Project

Proposals for the Sterling Elementary Roofing Project will be received by the Standish-Sterling Community School District at the Office of the Superintendent, 3789 Wyatt Rd., Standish, MI 48658 until Thursday, May 6, 2021 at 3:30 PM. Any proposal received after the designated closing time will be returned unopened.

The purpose of this Request for Proposals is to seek the service of qualified roofing contractors certified in the application of PVC roofing and silicone roof coatings to repair the existing elementary school roofs at the Sterling Elementary School building. The proposal is to include the inspection, pre-application cleaning, minor repairs, the supply and installation of a new silicone roof system to meet a minimum 10 year manufacturer's warranty. Also to remove the existing EPDM roof and wood fiber system and install new insulation and ISO cover board over the existing BUR system. Complete the project installing a 50 mil PVC roof system over the entire area the roofing was removed.

A pre-bid project review meeting has been planned for April 29, 2021 at 3:30 PM. Although it is not mandatory, it is highly recommended that the site be visited to verify site limitations, layout and exact condition/location of the project.

An original and one (1) copy of the proposal shall be submitted in a sealed envelope addressed to Mr. Darren Kroczaleski, Superintendent and marked Sterling Elementary Roofing Project.

The School District reserves the right to accept or reject any and all proposals and to waive any technicalities or irregularities therein. The district further reserves the right to award the contract to that proposer whose proposal best complies with the project requirements. Proposers may not withdraw their proposal for a period of ninety (90) days for the date set for the opening thereof.

Darren Kroczaleski
Superintendent

Dated: 13 April 2021

1. INTRODUCTION

1.1 PURPOSE AND GENERAL INFORMATION

The Standish-Sterling Community School District is requesting responses to this Request for Proposal (RFP) to enter into a contract with a Roofing Contractor to install a new PVC roof and silicone roof coating system at the Sterling Elementary School.

A copy of this RFP can be obtained from www.rchendrick.com. It is incumbent upon Respondents to check the website www.rchendrick.com for additional information and/or addendums. Questions regarding the substance of the RFP or scope of services must be submitted via e-mail to Daniel La Pan, AIA at dan@rchendrick.com the school districts representative on this project. Oral comments are not official responses.

Responses are due prior to the deadline indicated and must be delivered or mailed to Standish-Sterling Community School District, 3789 Wyatt Rd., Standish, MI 48658. **Late responses will not be accepted – NO EXCEPTIONS.**

1.2 DEFINITIONS

In this RFP the following definitions shall apply:

“**District**” means Standish-Sterling Community School District;

“**District Representative**” has the meaning set out in section 1.5;

“**Website**” means www.rchendrick.com

“**Closing Time**” has the meaning set out in section 1.3;

“**Contract**” means a formal written contract between the District and a Preferred Proponent to undertake the Services, the preferred contract form of which is AIA Document A132-2009.

“**Preferred Proponent**” means the Proponent selected by the District to enter into negotiations for a Contract;

“**Proponent**” means an entity that submits a Proposal;

“**RFP**” means this Request for Proposals;

“**Services**” has the meaning of any and all construction and administration work necessary to complete this project;

“**Site**” means the place where the Services are to be performed.

1.3 PROPOSAL SCHEDULE

Closing Time and Address for Proposal Delivery

Proposal must be received by the office of:
Office of the Superintendent
3789 Wyatt Rd.
Standish, MI 48658

Proposal Closing Date and Time: **Thursday, May 6, 2021 at 3:30 PM** (Local Time).

Submissions by email **will not** be accepted.

LATE PROPOSALS

Proposals received after the Closing Time will not be accepted or considered. Delays caused by and delivery, courier or mail service(s) will not be grounds for an extension of the closing time.

1.4 INFORMATION MEETING

A pre-bid meeting has been planned for April 29, 2021 at 3:30 PM. Interested suppliers/contractors are encouraged to attend the site meeting to review the existing conditions. Although it is not mandatory, it is highly recommended that the site be visited to verify site limitations, layout and exact location of the project.

1.5 AMMENDMENTS TO PROPOSALS

Proposals may be revised by written amendment, delivered to the location set out above, at any time before the closing time but not after. An amendment must be signed by an authorized signatory of the Proponent in the same manner as provided in the original proposals.

All inquiries related to this RFP shall be directed in writing, via e-mail to the person named below (the ‘**District Representative**’). Information obtained from any person or source other than the District Representative may not be relied upon.

District Representative:

Mr. Daniel La Pan, AIA

Phone: 989.781.8116

E-mail: dan@rchendrick.com

Inquiries should be made no later than 3 days before Proposal Closing Time. The District reserves the right not to respond to inquiries made within 3 days of Closing Time.

Inquiries and responses will be recorded and posted on the Website. It is the responsibility of the Proponent to check the Website for Addendums prior to submitting their proposal.

Proponents finding discrepancies or omission in the Contract or FRP or having doubts as to the meaning or intent of any provision should immediately notify the District Representative. If the District determines that an amendment is required to this RFP, the District Representative will issue an addendum in accordance with section 1.6. No oral conversation will affect or modify the terms of this RFP or may be relied upon by any Proponent.

1.6 ADDENDA

If the District determines that an amendment is required to this RFP, the District Representative will post a written addendum on the Website at www.rchendrick.com and upon posting will be deemed to form a part of this RFP. No Amendment of any kind to the RFP is effective unless it is posted in a formal written addendum on the Website. Upon submitting a Proposal, Proponents will be deemed to have received notice of all addenda that are posted on the Website.

1.7 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

Proponents will be deemed to have carefully examined the RFP, including any attached schedules, the Contract and the Site (as applicable) prior to preparing and submitting a Proposal with respect to any and all facts which may influence a Proposal.

1.8 STATUS INQUIRIES

All inquiries related to the status of this RFP, including whether or not a Contract has been awarded, should be directed to the District Representative.

2. PROPOSAL SUBMISSION FORM AND CONTENTS

2.1 PACKAGE

Proposals shall be in a sealed package, marked on the outside with the Proponent's name and title of the Project.

2.2 FORM OF PROPOSAL

Proponents are to complete the form of Proposal attached as Schedule A.

2.3 SIGNATURE

The legal name of the person or firm submitting the Proposal should be inserted in Schedule A. The Proposal should be signed by a person authorized to sign on behalf of the Proponent and include the following:

- A. If the Proponent is a corporation then the full name of the corporation should be included, together with the names of authorized signatories. The Proposal should be executed by all of the authorized signatories or by one or more of them provided that a copy of the corporate resolution authorizing those persons to execute the Proposal on behalf of the corporation is submitted;
- B. If the Proponent is a partnership or joint venture then the name of the partnership or joint venture and the name of each partner or joint venturer should be included and each partner or joint venturer should sign personally (or, if one or more person(s) have signing authority for the partnership or joint venture, the partnership or joint venture should provide evidence to the satisfaction of the District that the person(s) signing have signing authority for the partnership or joint venture). If a partner or joint venture is a corporation then such corporation should sign as indicated in subsection (A) above; or;
- C. If the Proponent is an individual, including a sole proprietorship, the name of the individual should be included.

2.4 ADDITIONAL INFORMATION

The District may, at its discretion, request clarifications or additional information from a Proponent with respect to any Proposal, and may make such requests to only selected Proponents. The District may consider such clarifications or additional information in evaluating a Proposal.

2.5 NEGOTIATION OF CONTRACT AND AWARD

If the District selects a Preferred Proponent or Proponents, then it may:

- A. Enter into a Contract with the Preferred Proponent(s); or

- B. Enter into discussions with the Preferred Proponent(s) to clarify any outstanding issues and attempt to finalize the terms of the Contract(s), including financial terms. If discussions are successful, the District and the Preferred Proponent(s) will finalize the Contract(s); or
- C. If at any time the District reasonably forms the opinion that a mutually acceptable agreement is not likely to be reached within a reasonable time, give the preferred Proponent(s) written notice to terminate discussions, in which event the District may then either open discussions with another Proponent or terminate this RFP and retain or obtain the Services in some other manner.

The District is under no obligation to accept any Proposal submitted. The District reserves the right in its sole discretion to waive informalities in, or reject any or all Proposals, or to accept any Proposal deemed most favorable in the interest of the District, or cancel the competition at any time without award. Thereafter, the District may issue a new Invitation/Request, sole source or do nothing.

All costs incurred in the preparation and presentation of the proposal shall be wholly absorbed by the contractor. All supporting documentation and manuals submitted with this proposal will become the property of the Standish – Sterling Community School District unless otherwise requested by the contractor at the time of submission.

3. GENERAL CONDITIONS

3.1 NO DISTRICT OBLIGATION

This RFP is not a tender and does not commit the District in any way to select a Preferred Proponent, or to proceed to negotiations for a Contract, or to award any Contract, and the District reserves the complete right to at any time reject all Proposals, and to terminate this RFP process.

3.2 NO CONTRACT

By submitting a Proposal and participation in the process as outlined in this RFP, Proponents expressly agree that no contract of any kind is formed under, or arises from, this RFP prior to the signing of a formal written Contract.

3.3 CONFLICT OF INTEREST

Proponents shall disclose any potential conflicts of interest and existing business relationships that they may have with the District. If requested by the District, Proponents should provide all pertinent information regarding ownership of their company within forty-eight (48) hours of the District's request.

3.4 SOLICITATION OF DISTRICT BOARD MEMBERS

Proponents and their agents will not contact any Board Member of the District or staff with respect to this RFP at any time prior to the award of a contract or the termination of this RFP. The District may reject the proposal of any Proponent that makes any such contact.

3.5 CONFIDENTIALITY

All submissions become the property of the District and will not be returned to the Proponent. The District will hold all submissions in confidence unless otherwise required by law.

4. SCOPE OF SERVICES

4.1 Area "A" Services will include but not limited to:

1. Lightly power wash the existing roof system to remove dirt and debris.
2. Allow existing roof membrane to dry.
3. Inspect existing roof system for high fasteners. Remove and replace any high fasteners.
4. Inspect all existing caulk areas. Apply new caulk as required.
5. Inspect existing roof membrane for cracks. Apply Duro Shield brush grade mastic to all membrane cracks.
6. Inspect existing perimeter edge metal for any loose fascia and secure as needed.
7. Mask or otherwise protect all surfaces not to be coated.
8. Apply Duro Shield 2 part epoxy primer to any areas of the roof surface that have ponding water at a rate of 350 sq ft per gallon
9. Apply the Duro-Shield Silicone coating at a rate of 1.5 gallons per 100 sq ft. Duro Shield Coating may be applied by brush or airless sprayer. Minimum cured thickness is to be 23 mills.
10. After roof coating is cured, remove all masking and completely remove all job related debris
11. Provide a 10 year manufacturers warranty.

4.2 Area "B" Services will include but not limited to:

1. Remove existing EPDM roof system and wood fiber insulation.
2. Remove all existing penetration flashing and wall flashings.
3. Remove existing perimeter edge metal.
4. Install new wood nailer around perimeter of roof area.
5. Install (1) layer of Duro Guard 1 ½" ISO cover board over existing BUR roof system
6. Install a 50 mil, pre-fabricated, Duro- Last roof system to the entire roof area.
7. Flash and seal all roof penetrations per manufacturers' specifications.
8. Remove and replace existing gutters and down spouts with new 24 gauge-kynar coated gutters and down spouts.
9. Install two- way breather vents per manufacturers specifications.
10. Install Duro-Last VCM drip edge metal to roof perimeter.
11. Provide complete clean up and removal of all job related debris.
12. Provide a 20 year NDL warranty covering material and labor for 20 years.

Alternate:

1. In lieu of coat in pit roof area – remove existing membrane and add 1.5" ISO and new 50 mil Duro Last roof system.

- 4.2 Contractors will be responsible for any and all damage due to construction. Any damage caused by the contractor must be repaired within ten (10) working days at the expense of the contractor. If damage occurs, the contractor will be liable for such damages.
- 4.3 It is expressly agreed and understood that the Contractor is, in all respects, an independent contractor as to work; however, in certain aspects, the Contractor is bound to follow the directions of the District Superintendent or appointed designee at the time of repair and/or construction, and that the Contractor is in no respect an agent, servant or employee of the District.
- 4.4 The Contractor's timeliness and delivery of quality products shall be monitored by the District Superintendent or appointed designee. If at any time the Contractor is performing less than satisfactory work, the Contractor, upon notification by the District Superintendent or appointed designee, shall do whatever is necessary to perform the work properly at no additional cost to the District. Failure to give such notification shall not relieve the Contractor of his obligation to perform the work at the time and in the manner specified.

5. INSURANCE REQUIREMENTS

- 5.1 The selected service provider shall agree to indemnify and hold harmless the District and its officers, agents, and employees for any and all claims, causes, or actions, and damages of every kind, for injury to or death of any person and damages to property arising out of or in connection with the work done by the Contractor under this contract, and including acts of omissions of the District or its officers, agents, or employees in connection with said contract.
- 5.2 The District will require proof of professional liability insurance with errors and omissions coverage, workers compensation insurance, general liability and automobile insurance with companies authorized to do business in Michigan, and in amounts meeting or exceeding the amounts listed in Attachment B.
- 5.3 Each proposal that exceeds \$50,000 must be submitted with an attached certified check, money order, or a bid bond from a surety company approved to do business in the State of Michigan, payable to the **Owner** in an amount not less than 5% of the base proposal sum of the work.
- 5.4 Prior to the execution of the contract, furnish Performance and Payment Bonds covering the faithful performance of the contract and the payment of all obligations arising there under. Include cost of bonds in the base proposal. The bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of their power of attorney.
- 5.5 The successful Contractor, within ten (10) days after the contract award, shall furnish the District with proof of insurance as stated in Attachment B.

- 5.6 The District and RC Hendrick shall be named as additional insured on all policies as directed in Attachment B. Should any insurance required by this contract lapse, the Contractor shall immediately cease any operations until authorized in writing by the District. If the lapse period extends fifteen (15) days, the contract shall automatically terminate and the Contractor shall be in breach of this contract.

6. AGREEMENT/EXCEPTIONS

- 6.1 Submission of a proposal indicates the Contractor agrees to the terms, conditions and other provisions contained in the RFP, unless the Contractor clearly and specifically presents in its proposal any exceptions to the terms, conditions, and other provisions contained in the RFP.
- 6.2 Exceptions presented in a proposal are not to be considered incorporated into the contract between the District and the selected Contractor unless and until the District agrees to accept such exceptions.
- 6.3 The selected Contractor must acknowledge and agree that the contract resulting from this RFP include the terms, conditions, and other provisions contained in the RFP, the proposal selected (including any exceptions accepted by the District) which is acceptable to the District and is not in conflict or contravention of the RFP, and any other documents mutually agreed upon by the District and selected Contractor.
- 6.4 No oral statements or any person shall modify or otherwise change or affect the terms, conditions, or specifications stated in the RFP or the resulting contract.
- 6.5 A formal contract will be negotiated after the selection of a contractor for the services identified in the scope of services by the District.
- 6.6 The contractor shall not assign the contract or any part thereof to any other person unless such assignment is first approved in writing by the District, it being understood that the contract shall not be assignable unless the proposed assignee is acceptable to the District. The request for assignment must include evidence that the proposed assignee qualifies under all requirements of the contract and must be addressed as defined in the contract for services.

7. PROPOSAL SUBMITTAL

One original plus one (copy) of the entire bid package must be submitted to the District as follows:

Sterling Elementary Roofing Project
Standish-Sterling Community School District
Office of the Superintendent
3789 Wyatt Rd.
Standish, MI 48658

All proposals must be received prior to, Thursday, May 6, 2021 at 3:30 PM. Proposals may be mailed or dropped off at the Office of the Superintendent. Proposals must be received in the Superintendents Office for it to be considered in the RFP process.

SCHEDULE A
STANDISH – STERLING COMMUNITY SCHOOLS
2021 STERLING ELEMENTARY ROOFING PROJECT
BID FORM

TO: Mr. Darren Kroczaleski, Superintendent
Standish-Sterling Community School District
Standish, MI 48658

Having carefully reviewed the bidding documents described in the RFP and understanding the scope of work involved in the proposed Bid and those that interface with it, we hereby propose to furnish labor, materials, tools, equipment, supervision, insurance and services required for the completion of all work required for the Bid indicated in accordance with the RFP.

BASE BID, ROOFING PROJECT:_____

BIDDERS NAME:_____

ADDENDA:

And having Received and Examined the Following Addenda: (include date for acknowledgement)

Addendum Number_____, dated_____, 2020

Addendum Number_____, dated_____, 2020

SUBSTITUTIONS:

Bidder is cautioned to bid on the "Standards" specified. The following substitutions for the "Standards" specified are listed herein for consideration, and if accepted, the contract sum may be adjusted in accordance with the following:

_____ Add / Deduct \$_____

_____ Add / Deduct \$_____

ALTERNATE:

In lieu of coating in pit roof area – remove existing membrane and add 1.5" ISO and new 50 mil Duro Last roof system.

_____ Add / Deduct \$_____

CONTRACT:

The undersigned agrees that the above Base Bid Prices shall hold for 60 days and Alternate Prices for 90 days after receipt of proposals, to accept provisions of "Instructions to Bidders"

IRAN BUSINESS RELATIONSHIP AFFIDAVIT:

Pursuant to the Michigan Iran Economic Sanctions Act, 2012 P.A. 517, by submitting a bid, proposal or response, Respondent certifies, under civil penalty for false certification, that it is fully eligible to do so under law and that it is not an "Iran Linked Business," as that term is defined in the Act.

SUBMITTED BY:

Firm Name: _____

Address: _____

Email Address: _____

Signed: _____

Typed Name: _____

Date: _____ Title: _____

Phone: _____ Fax: _____

If bidder is a Corporation, indicate State of Incorporation: _____

If a Partnership, give full names of all Partners: _____

Please submit (1) one original copy and (1) one copy of this proposal. Contractor should retain (1) one copy for your records.

FAMILIAL DISCLOSURE STATEMENT

All bidders must complete the following familial disclosure form in compliance with MCL 380.1267 (Public Act 232 of 2004) and attach this information to the bid.

By the attached sworn and notarized statement we are disclosing the following familial relationship(s) that exist between the owner or any employee of the bidder and any member of the board, intermediate school board, or board of directors or the superintendent of the school district, intermediate superintendent of the intermediate school district, or chief executive officer of the public school academy. The Owner shall not accept a bid that does not include this sworn and notarized disclosure statement.

Disclose any familial relationship and complete the form below in its entirety:

The following are familial relationships as described above (provide employee name, family contact name, family contact position, and familial relationship or NONE.)

Signature(s): Title: Name of Firm:

STATE OF MICHIGAN
SS COUNTY OF

On this day of _____, 20____,

Said county, personally appeared

before me a Notary Public
in and for ,
agent of the said firm

And acknowledged the same to be his free act and deed as such agent.

Notary Public

SCHEDULE B

STANDISH – STERLING COMMUNITY SCHOOLS 2021 STERLING ELEMENTARY ROOFING PROJECT INSURANCE REQUIREMENTS

WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE:

Worker's Compensation: State of Michigan Statutory Limits

Employer's Liability:

- \$500,000 – each accident
- \$500,000 – disease (each employee)
- \$500,000 – disease (policy limit)

The limits for Commercial General Liability insurance including -coverage for Premises-Operations, Independent Contractors' Protective, Products-Completed Operations, Contractual Liability, Personal Injury and Broad Form Property Damage (including coverage for Explosion, Collapse, and Underground Hazards) shall be as follows:

COMMERCIAL GENERAL LIABILITY INSURANCE:

Each occurrence \$2,000,000 – aggregate

Each occurrence \$2,000,000 – aggregate

Fire Damage (any one fire) \$100,000

Medical Expense (any one person) \$5,000

The Contractor shall furnish and maintain during the entire period of construction, a Protective/Contractual Liability policy written in the name of the Owner and Architect with the following limits:

Bodily Injury \$1,000,000 – each occurrence
Property Damage \$1,000,000 – each occurrence
Property Damage \$1,000,000 – aggregate

Notes:

Products-Completed Operations Insurance shall be maintained for a minimum period of one (1) year after final payment.

The Owner and Architect shall be listed as additional insured. The Owner shall be the certificate holder.

Automobile Liability insurance (owned, non-owned and hired vehicles) for bodily injury and property damage:

AUTOMOBILE LIABILITY INSURANCE:

Bodily Injury \$1,000,000
Property Damage \$1,000,000

Umbrella or Excess Liability Coverage: UMBRELLA/EXCESS LIABILITY INSURANCE:

Umbrella/Excess Insurance	\$2,000,000 – each occurrence
	\$2,000,000 – aggregate

SCHEDULE C
STANDISH – STERLING COMMUNITY SCHOOLS
2021 STERLING ELEMENTARY ROOF COATING SPECIFICATIONS

DURO-SHIELD ROOF COATING
SPECIFICATION OVER DIURO-LAST PVC ROOFS

PART 1 — GENERAL

1.1 Summary:

- A. This specification provides a remedial coating system for application over approved Duro-Last and other PVC roof systems. The use is restricted to circumstances where the roof surface is in sound condition, but requires a renewal of the surface due to the normal effect of aging and use.
- B. Duro-Shield Silicone Roof Coating, manufactured by Duro-Last, is a high solids, solvent-free, silicone roof coating which moisture cures to a durable, breathable, waterproof barrier that is highly resistant to degradation from UV and natural weathering.
- C. Scope: Installation of Duro-Shield Silicone roof coating, labor and accessory materials.
- D. Exclusions: This guide specification does not include: repair or replacement of roof accessory items such as vents, expansion joints, drains, penetrations and mechanical equipment; evaluation and correction of roof load capacity or wind uplift resistance.

1.2 Submittals:

- A. Product Data: Technical Data Sheet (TDS) and Safety Data Sheet (SDS) for all products used on project.

1.3 Quality Assurance:

- A. Manufacturer Qualifications: Duro-Shield Silicone Roof Coating is a high solids, silicone roof coating supplied and manufactured by Duro-Last and are approved for and shall be used on this project. Upon request, Duro-Last will provide certification that all roof coating materials used meet the physical properties required by the specification.
- B. Adhesion Test: Prior to estimating coating restoration project, conduct an adhesion test in accordance with DURO-SHIELD published guidelines to determine proper adhesion or other specific surface preparation is required.
- C. The silicone coating manufacturer shall have a minimum of 10 years' experience in the manufacture of silicone roof coatings.
- E. Deviations: Any deviation from this specification must be approved in writing by Duro-Last Inc.

1.4 Delivery, Storage and Protection of Materials:

- A. Delivery: All products shall be delivered in the original, factory- sealed drums, pails or other containers. All product containers shall be labeled with the manufacturer's name and address, product name and description, product date/expiration date and batch/lot number.

- B. Materials damaged during shipment, delivery or storage shall not be used on this project without approval of Duro-Last and the building owner's representative.
- C. Handling and Storage: Store Duro-Shield Silicone Roof Coating containers between 35°F and 90°F. Keep all products out of direct sunlight and protected from extreme temperatures.
- D. SDS and TDS for all materials used on this project will be kept on site and reviewed by appropriate personnel before use.

1.5 General Site Conditions:

- A. All mechanical units, skylights, vents and other rooftop accessories should be in place prior to surface preparation and coating application.
- B. Mask or otherwise protect all surfaces not to be prepared and/or coated to prevent overspray damage. Use wind screens as appropriate.
- C. Review existing and imminent weather conditions (including potential for extreme temperatures, relative humidity, frost, dew, and precipitation) to assure that coating and accessory material will have sufficient curing time.
- D. Apply Anvil 9900 Silicone Roof Coatings only to clean, dry and secure surfaces.
- E. Duro-Last strongly suggests that Duro-Shield coating should not be applied to gravel surfaced roofs.

PART 2 -- PRODUCTS

2.1 Duro-Shield:

- A. Silicone Roof Coating a high solids, solvent-free, moisture-cured, silicone roof coating supplied and manufactured by Duro-Last.
- B. Physical Properties shall be tested in accordance with ASTM D6694 as indicated in the table below.

DURO-SHIELD SILICONE ROOF COATING PROPERTIES

	Test Method	Results
Weight	ASTM D 1147	11.5 lb. / gallon
Color	—	Bright white
VOC Content	EPA 24	< 25 g/L
Flash Point	ASTM D 56	Not applicable
Cure	—	2 to 4 hours per coat

LIQUID PROPERTIES

Viscosity	ASTM D 2196	27,494 cps
Solids by Volume	ASTM D 2697	94%
Solids by Weight	ASTM D 1644	96%

FILM PROPERTIES

Tensile Properties at 73.4° F

Elongation		169%
Tensile Strength		380 psi
Elongation(Accelerated Weathering – 1,000 hrs)	ASTM D 2370/D 6694	133%
Elongation(Accelerated Weathering – 5,000 hrs)		186%

hrs)

Tensile Properties at 0° F

Elongation		235%	
Tensile Strength		478 psi	
Elongation(Accelerated Weathering – 1,000 hrs)	ASTM D 2370/D 6694	190%	
Elongation(Accelerated Weathering – 5,000 hrs)		196%	
Permeance	ASTM E 96 Procedure B	8.7 perms	
Accelerated Weathering – 5,000 hrs		Pass – no cracking or checking	
Tear Resistance	ASTM D 624	29 lbf/in	
Low Temperature Flexibility	ASTM D 522 Method B	Pass	
		Initial	3-Year Aged
Reflectivity	ASTM C 1549	0.84	0.71
Emissivity	ASTM C 1371	0.91	0.90
SRI	LEED	106	87

2.2 Primer:

- A. Duro-Shield Universal 2 Part Epoxy Primer: refer to Duro-Shield Universal 2 Part Epoxy Primer Technical Data Sheet for physical property information.

2.3 Seam Treatment Materials

- A. Seam Mastic: Duro-Shield Brush Grade Sealant: refer to Duro-Shield Brush Grade Sealant Technical Data Sheet for physical property information.
- B. Reinforcement Fabric: Duro-Shield Polyester Fabric is a 100% polyester spun-laced textile reinforcing fabric that is available in 4" widths. Refer to the Fabric Technical Data Sheet for physical property information.

PART 3 — EXECUTION

3.1 Surface Preparation:

- A. Underside of deck must be inspected for rot, rust or deterioration. Corrective measures must be taken, if needed, before coating preparations begin.
- B. Substrate of roof system must not contain water. An moisture survey must be performed and the report must be provided to Duro-Last indicating any areas that have moisture content under or within the roof system in place.
- C. Remove and replace any areas of wet insulation or substrate and replace with like materials.
- D. The surface must be clean, sound, dry and free of any materials, laitance and loose coating that may inhibit the proper adhesion of the coating or sealant.

- E. Pressure wash entire roof surface at a minimum of 1,000 psi utilizing biodegradable detergent as needed to remove oils or other materials that interfere with adhesion. Rinse with clean water. Let dry thoroughly.
- F. Apply Duro-Shield Universal 2 Part Epoxy Primer to areas roof surface that have ponding water at a rate of 350-400 square feet per gallon.
- G. Use Duro-Shield Seam Reinforcement fabric into the Duro-Shield Brush Grade Sealant (100lf /gallon) on any minor voids, splits or tears or seam openings.
- H. Seams should be treated by embedding the Duro-Shield Reinforcement fabric in a layer of the Duro-Shield Brush Grade Sealant.

3.2 Finished Coating Characteristics:

- A. The cured Duro-Shield Silicone Roof Coating shall be monolithic and seamless, encapsulating the entire roof surface.
- B. Coating is to be applied at a rate of 1.5 gallons per 100 square feet.
- C. Duro-Shield Silicone Roof Coating may be applied by brush, roller, or airless sprayer. Back-rolling should be kept to a minimum.
- D. Duro-Shield Brush Grade Sealant may be applied by brush, trowel, or gloved hand.
- E. Minimum cured thickness of the coating is 23 dry mils.

3.3 Safety Requirements

- A. All OSHA guidelines are to be followed at all times.
- B. Flammable materials must be stored on ground level, away from potential fire hazards.
- C. A guide specification, Safety Data Sheet and Product Data Sheet must be kept in triplicate at the jobsite at all times
- D. No skylights shall be coated the same color as the roof.
- E. After discussion with building owner/occupant regarding odors or overspray, sources of air entry into the building may be sealed to prevent overspray or odor intrusion.

3.4 Cleanup

- A. Keep all work areas clean, clear and free of debris at all times.
- B. Do not allow trash, waste or debris to accumulate on the roof. Remove these items from the roof on a daily basis.
- C. Collect and properly store all tools and unused materials at the end of each workday.
- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition.

END OF SECTION

SCHEDULE D
STANDISH – STERLING COMMUNITY SCHOOLS
2021 STERLING ELEMENTARY ROOF REPLACEMENT SPECS

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. Remove existing EPDM and wood fiber
- B. Overlay BUR: Smooth Surface.
- C. Duro-Last® PVC thermoplastic membrane attached with mechanical fasteners.
- D. Duro-Guard® ISO II (flat), attached with mechanical fasteners.
- E. Prefabricated flashings, corners, parapets, stacks, vents, and related details.
- F. Fasteners, adhesives, and other accessories required for a complete roofing installation.
- G. Remove and replace existing gutters and down spouts with new.
- H. Traffic Protection.

1.2 REFERENCES

- A. NRCA - The NRCA Roofing and Waterproofing Manual.
- B. ASCE 7 - Minimum Design Loads For Buildings And Other Structures.
- C. UL - Roofing Materials and Systems Directory, Roofing Systems (TGFU.R10128).
- D. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- E. ASTM D 751 - Standard Test Methods for Coated Fabrics.
- F. ASTM D 4434 - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing.
- G. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- H. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 SYSTEM DESCRIPTION

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.
- C. Physical Properties:
 - 1. Roof product must meet the requirements of Type III PVC sheet roofing as defined by ASTM D 4434 and must meet or exceed the following physical properties.
 - 2. Thickness: 50 mil, nominal, in accordance with ASTM D 751.
 - 3. Thickness Over Scrim: ≥ 28 mil in accordance with ASTM D 751.
 - 4. Breaking Strengths: ≥ 390 lbf. (MD) and ≥ 438 lbf. (XMD) in accordance with ASTM D 751, Grab Method.
 - 5. Elongation at Break: $\geq 31\%$ (MD) and $\geq 31\%$ (XMD) in accordance with

ASTM D 751, Grab Method.

6. Heat Aging in accordance with ASTM D 3045: 176 °F for 56 days. No sign of cracking, chipping or crazing. (In accordance with ASTM D 4434).
7. Factory Seam Strength: ≥ 417 lbf. in accordance with ASTM D 751, Grab Method.
8. Tearing Strength: ≥ 132 lbf. (MD) and ≥ 163 lbf. (XMD) in accordance with ASTM D 751, Procedure B.
9. Low Temperature Bend (Flexibility): Pass at -40 °F in accordance with ASTM D 2136.
10. Accelerated Weathering: No cracking, checking, crazing, erosion or chalking after 5,000 hours in accordance with ASTM G 154.
11. Linear Dimensional Change: $< 0.5\%$ in accordance with ASTM D 1204 at 176 ± 2 °F for 6 hours.
12. Water Absorption: $< 1.7\%$ in accordance with ASTM D 570 at 158 °F for 166 hours.
13. Static Puncture Resistance: ≥ 56 lbs. in accordance with ASTM D 5602.
14. Dynamic Puncture Resistance: ≥ 14.7 ft-lbf. in accordance with ASTM D 5635.

D. Cool Roof Rating Council (CRRC):

1. Membrane must be listed on CRRC website.
 - a. Initial Solar Reflectance: $\geq 88\%$
 - b. Initial Solar Reflective Index (SRI): ≥ 111
 - c. 3-Year Aged Solar Reflectance: $\geq 68\%$
 - d. 3-Year Aged Thermal Emittance: $\geq 84\%$
 - e. 3-Year Aged Solar Reflective Index (SRI): ≥ 82

E. Insulation

1. Provide overall thermal resistance for roofing system as follows:
 - a. Minimum Thickness: 1.5 inch.
2. Install using a minimum of two layers.
3. Configuration as indicated on the Drawings.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Duro-Last data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
 4. Maintenance requirements.
- C. Shop Drawings: Indicate insulation pattern, overall membrane layout, field seam locations, joint or termination detail conditions, and location of fasteners.
- D. Verification Samples: For each product specified, two samples, representing actual product, color, and finish.

1. 4 inch by 6 inch sample of roofing membrane, of color specified.
 2. 4 inch by 6 inch sample of walkway pad.
 3. Termination bar, fascia bar with cover, drip edge and gravel stop if to be used.
 4. Each fastener type to be used for installing membrane, insulation/recover board, termination bar and edge details.
- E. Installer Certification: Certification from the roofing system manufacturer that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
- F. Manufacturer's warranties.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with manufacturer's installation instructions.
- B. Manufacturer Qualifications: A manufacturer specializing in the production of PVC membranes systems and utilizing a Quality Control Manual during the production of the membrane roofing system that has been approved by and is inspected by Underwriters Laboratories.
- C. Installer Qualifications: Company specializing in installation of roofing systems similar to those specified in this project and approved by the roofing system manufacturer.
- D. Source Limitations: Obtain components for membrane roofing system from roofing membrane manufacturer.
- E. There shall be no deviations from the roof membrane manufacturer's specifications or the approved shop drawings without the prior written approval of the manufacturer.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for roof assembly wind uplift and fire hazard requirements.
- B. Fire Exposure: Provide membrane roofing materials with the following fire-test-response characteristics. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
1. Exterior Fire-Test Exposure:
 - a. Class A; ASTM E 108, for application and roof slopes indicated.
 2. Fire-Resistance Ratings: Comply with ASTM E 119 for fire-resistance-rated roof assemblies of which roofing system is a part.
 3. Conform to applicable code for roof assembly fire hazard requirements.

- C. Wind Uplift:
 - 1. Roofing System Design: Provide a roofing system designed to resist uplift pressures calculated according to the current edition of the ASCE-7 Specification *Minimum Design Loads for Buildings And Other Structures*.

1.7 PRE-INSTALLATION MEETING

- A. Convene meeting not less than one week before starting work of this section.
- B. Review methods and procedures related to roof deck construction and roofing system including, but not limited to, the following.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing installer, roofing system manufacturer's representative, deck installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 4. Review structural loading limitations of roof deck during and after roofing.
 - 5. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 6. Review governing regulations and requirements for insurance and certificates if applicable.
 - 7. Review temporary protection requirements for roofing system during and after installation.
 - 8. Review roof observation and repair procedures after roofing installation.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Store roof materials and place equipment in a manner to avoid permanent deflection of deck.

- E. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 WARRANTY

- A. Contractor's Warranty: The contractor shall warrant the roof application with respect to workmanship and proper application for two (2) years from the effective date of the warranty issued by the manufacturer.
- B. Manufacturer's Warranty: Must be no-dollar limit type and provide for completion of repairs, replacement of membrane or total replacement of the roofing system at the then-current material and labor prices throughout the life of the warranty. In addition the warranty must meet the following criteria:
 - 1. Warranty Period: 20 years from date issued by the manufacturer.
 - 2. Must provide positive drainage.
 - 3. No exclusion for damage caused by biological growth.
 - 4. Issued direct from and serviced by the roof membrane manufacturer.
 - 5. Transferable for the full term of the warranty.

PART 2 -- PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: Duro-Last Roofing, Inc., which is located at: 525 Morley Drive, Saginaw, MI 48601. Telephone: 800-248-0280.
- B. All roofing system components to be provided or approved by Duro-Last Roofing, Inc.
- C. Substitutions: Not permitted.

2.2 ROOFING SYSTEM COMPONENTS

- A. Roofing Membrane: Duro-Last® PVC thermoplastic membrane conforming to ASTM D 4434, type III, fabric-reinforced, PVC, NSF/ANSI 347 Gold or Platinum Certification, and a product-specific third-party verified Environmental Product Declaration. Membrane properties as follows:
 - 1. Thickness:
 - a. 50 mil.
 - 2. Exposed Face Color:
 - a. White.
 - 3. Minimum recycle content 7% post-industrial and 0% post-consumer.
 - 4. Recycled at end of life into resilient flooring or concrete expansion joints.
- B. Accessory Materials: Provide accessory materials supplied by or approved for use by Duro-Last Roofing, Inc.
 - 1. Sheet Flashing: Manufacturer's standard reinforced PVC sheet flashing.
 - 2. Duro-Last Factory Prefabricated Flashings: manufactured using Manufacturer's standard reinforced PVC membrane.
 - a. Stack Flashings.
 - b. Curb Flashings.

- c. Inside and Outside Corners.
 - 3. Sealants and Adhesives: Compatible with roofing system and supplied by Duro-Last Roofing, Inc.
 - a. Duro-Caulk® Plus.
 - b. Strip Mastic.
 - 4. Slip Sheet: Compatible with roofing system and supplied by Duro-Last Roofing, Inc.
 - 5. Fasteners and Plates: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane and insulation to substrate. Supplied by Duro-Last Roofing, Inc.
 - a. #14 Heavy Duty Fasteners.
 - b. Cleat Plates.
 - c. 3 inch Metal Plates.
 - 6. PV Anchors
 - 7. Termination and Edge Details: Supplied by Duro-Last Roofing, Inc.
 - a. Termination Bar.
 - b. Vinyl Coated Metal Drip Edge.
 - 8. Vinyl Coated Metal: Supplied by Duro-Last Roofing, Inc. 24 gauge, hot-dipped galvanized, grade 90 metal with a minimum of 17 mil of Duro-Last membrane laminated to one side.
 - 9. Two-Way Roof Vents: Supplied by Duro-Last Roofing, Inc. Install a minimum of 1 vent for each 1,000 ft² (93 m²) of roof area.
 - C. Walkways:
 - 1. Provide non-skid, maintenance-free walkway pads in areas of heavy foot traffic and around mechanical equipment.
 - a. Duro-Last Roof Trak® III Walkway Pad.
- 2.3 ROOF INSULATION
- A. General:
 - 1. Provide preformed roof insulation boards that comply with requirements and referenced standards, as selected from manufacturer's standard sizes.
 - 2. Provide preformed saddles, crickets, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
 - B. Polyisocyanurate Board Insulation: Complying with ASTM C 1289, Type II, felt or glass-fiber mat facer on both major surfaces. Material as supplied by Duro-Last.
 - 1. Duro-Guard® ISO II (flat).

2.4 ROOF INSULATION ACCESSORIES

- A. General: Provide roof insulation accessories approved by the roof membrane manufacturer and as recommended by insulation manufacturer for the intended use.
- B. Fasteners: Provide Duro-Last factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening insulation and/or insulation cover boards in conformance to specified design requirements.

PART 3 -- EXECUTION

3.1 EXAMINATION

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.
- C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are dry and free of standing water, ice or snow.
- E. Verify that all roof openings or penetrations through the roof are solidly set.
- F. If substrate preparation is the responsibility of another contractor, notify Architect of unsatisfactory preparation before proceeding.
- G. Prior to re-covering an existing roofing system, conduct an inspection of the roof system accompanied by a representative of the membrane manufacturer or an authorized contractor.
 - 1. Determine required fastener type, length, and spacing.
 - 2. Verify that moisture content of existing roofing is within acceptable limits.
 - 3. Identify damaged areas requiring repair before installation of new roofing.
 - 4. Conduct core cuts as required to verify information required.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Surfaces shall be clean, smooth, free of fins, sharp edges, loose and foreign material, oil, grease, and bitumen.
- D. Re-Roofing Over Existing Single-Ply System:
 - 1. Remove all loose or high fasteners.
 - 2. Membrane contaminated with bitumen must be immediately cleaned. If cleaning does not remove the bitumen, the contaminated membrane must be replaced, or covered with both a slip sheet and new membrane.
 - 3. Blisters, buckles and other surface irregularities must be repaired or removed. If the damage is extensive, an approved rigid board insulation or a cover board must be installed.

4. When the system is smooth or granular-surfaced, any approved slip sheet, insulation or cover board may be used to provide separation of the roof system and new membrane. Duro-Guard fan folds may be used if the surface is pea gravel or crushed stone which is 1/4 to 3/8 inch in size and has been leveled and maintained at 4 psf. For larger rock/gravel, utilize an approved rigid insulation or cover board.
5. If rock/gravel surfacing is removed, an approved fan fold, rigid insulation or cover board must be used. If embedded rock/gravel remains that protrudes out of the deck more than 1/4 inch, do not use fan fold board. Instead, use an approved cover board or rigid insulation.
6. When installing polystyrene insulation over coal tar pitch or asphalt-based roof systems, a slip sheet must be used between the insulation and existing roof.

3.3 INSTALLATION

- A. Install insulation in accordance with the roof manufacturer's requirements.
- B. Insulation: Duro-Guard® ISO II (flat).
 1. Install insulation in accordance with the roof manufacturer's requirements.
 2. Insulation shall be adequately supported to sustain normal foot traffic without damage.
 3. Where field trimmed, insulation shall be fitted tightly around roof protrusions with no gaps greater than 1/4 inch.
 4. No more insulation shall be applied than can be covered with the roof membrane by the end of the day or the onset of inclement weather.
 5. If more than one layer of insulation is used, all joints between subsequent layers shall be offset by at least 6 inches.
 6. Mechanical Attachment: Use only fasteners, stress plates and fastening patterns accepted for use by the roof manufacturer. Fastening patterns must meet applicable design requirements.
 - a. Install fasteners in accordance with the roof manufacturer's requirements. Fasteners that are improperly installed must be replaced or corrected.
 7. Mechanically attach Duro-Guard® ISO II (flat) insulation boards in parallel courses with end joints staggered 50% and adjacent boards butted together with no gaps greater than 1/4 inch.
- C. Roof Membrane: 50 mil, Duro-Last® PVC thermoplastic membrane.
 1. Use only fasteners, stress plates and fastening patterns accepted for use by the roof manufacturer. Fastening patterns must meet the applicable design requirements.
 2. Install fasteners in accordance with the roof manufacturer's requirements. Fasteners that are improperly installed shall be replaced or corrected.
 3. Mechanically fasten membrane to the structural deck utilizing fasteners and fastening patterns that in accordance with the roof manufacturer's requirements.
 4. Cut membrane to fit neatly around all penetrations and roof projections.
 5. Unroll roofing membrane and positioned with a minimum 6 inch overlap.

- D. Seaming:
1. Weld overlapping sheets together using hot air. Minimum weld width is 1-1/2 inches.
 2. Check field welded seams for continuity and integrity and repair all imperfections by the end of each work day.
- E. Membrane Termination/Securement: All membrane terminations shall be completed in accordance with the membrane manufacturer's requirements.
1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.
 2. Provide securement at any angle change where the slope or combined slopes exceeds two inches in one horizontal foot.
- F. Flashings: Complete all flashings and terminations as indicated on the drawings and in accordance with the membrane manufacturer's requirements.
1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.
 - a. Do not apply flashing over existing thru-wall flashings or weep holes.
 - b. Secure flashing on a vertical surface before the seam between the flashing and the main roof sheet is completed.
 - c. Extend flashing membrane a minimum of 6 inches (152 mm) onto the main roof sheet beyond the mechanical securement.
 - d. Use care to ensure that the flashing does not bridge locations where there is a change in direction (e.g. where the parapet meets the roof deck).
 2. Penetrations:
 - a. Flash all pipes, supports, soil stacks, cold vents, and other penetrations passing through the roofing membrane as indicated on the Drawings and in accordance with the membrane manufacturer's requirements.
 - b. Utilize custom prefabricated flashings supplied by the membrane manufacturer.
 - c. Existing Flashings: Remove when necessary to allow new flashing to terminate directly to the penetration.
 3. Pipe Clusters and Unusual Shapes:
 - a. Clusters of pipes or other penetrations which cannot be sealed with prefabricated membrane flashings shall be sealed by surrounding them with a prefabricated vinyl-coated metal pitch pan and sealant supplied by the membrane manufacturer.
 - b. Vinyl-coated metal pitch pans shall be installed, flashed and filled with sealant in accordance with the membrane manufacturer's requirements.

- c. Pitch pans shall not be used where prefabricated or field fabricated flashings are possible.

G. Roof Drains:

1. Coordinate installation of roof drains and vents.
2. Remove existing flashing and asphalt at existing drains in preparation for sealant and membrane.
3. Provide a smooth clean surface on the mating surface between the clamping ring and the drain base.

H. Edge Details:

1. Provide edge details as indicated on the Drawings. Install in accordance with the membrane manufacturer's requirements.
2. Join individual sections in accordance with the membrane manufacturer's requirements.
3. Coordinate installation of metal flashing and counter flashing.
4. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies.

I. Walkways:

1. Install walkways in accordance with the membrane manufacturer's requirements.
2. Provide walkways where indicated on the Drawings.
3. Install walkway pads at roof hatches, access doors, rooftop ladders and all other traffic concentration points regardless of traffic frequency. Provided in areas receiving regular traffic to service rooftop units or where a passageway over the surface is required.
4. Do not install walkways over flashings or field seams until manufacturer's warranty inspection has been completed.

J. Water cut-offs:

1. Provide water cut-offs on a daily basis at the completion of work and at the onset of inclement weather.
2. Provide water cut-offs to ensure that water does not flow beneath the completed sections of the new roofing system.
3. Remove water cut-offs prior to the resumption of work.
4. The integrity of the water cut-off is the sole responsibility of the roofing contractor.
5. Any membrane contaminated by the cut-off material shall be cleaned or removed.

3.4 FIELD QUALITY CONTROL

- A. The membrane manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.

3.5 PROTECTION

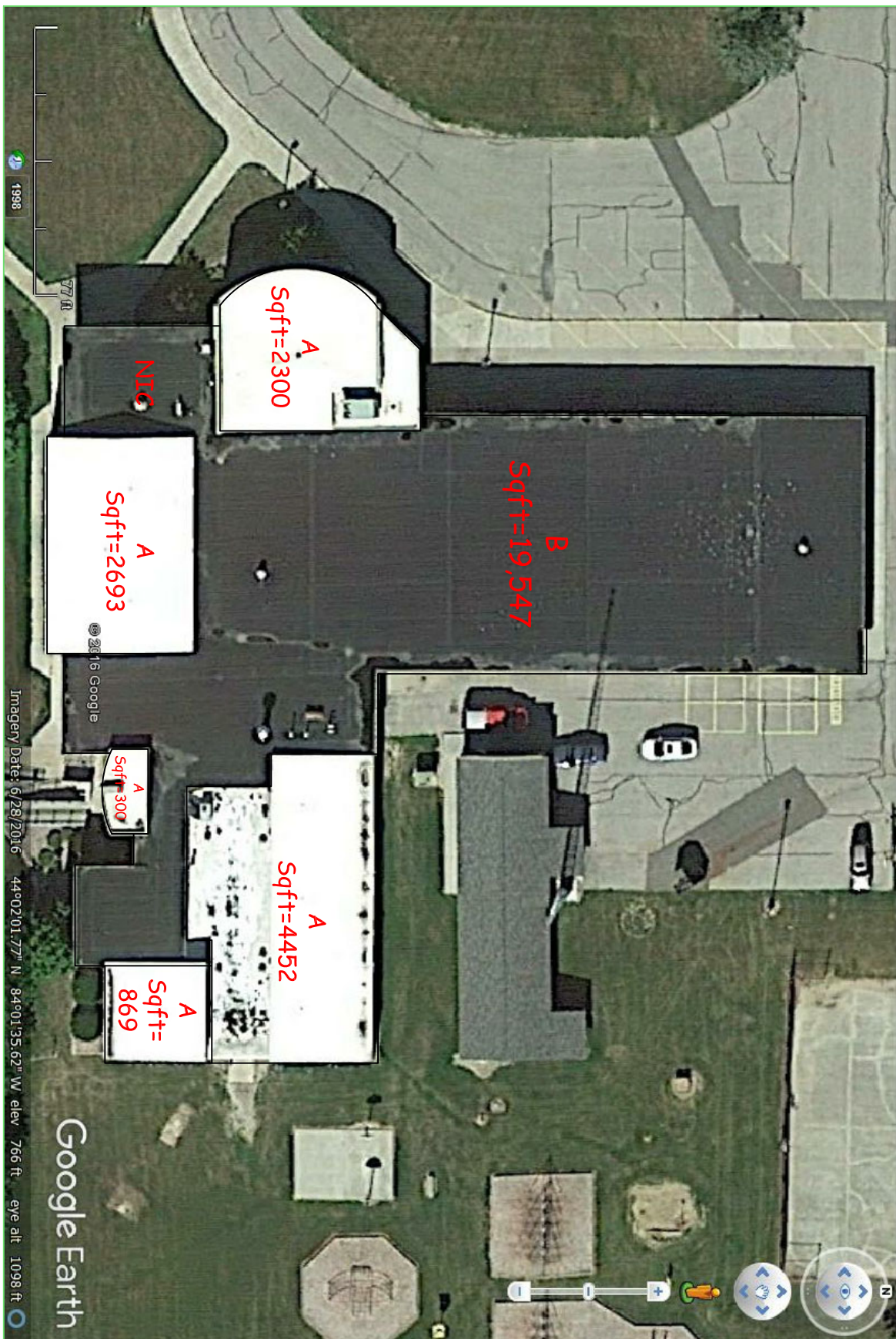
- A. Protect installed roofing products from construction operations until completion of project.
- B. Where traffic is anticipated over completed roofing membrane, protect from damage using durable materials that are compatible with membrane.
- C. Repair or replace damaged products after work is completed.







END OF SECTION

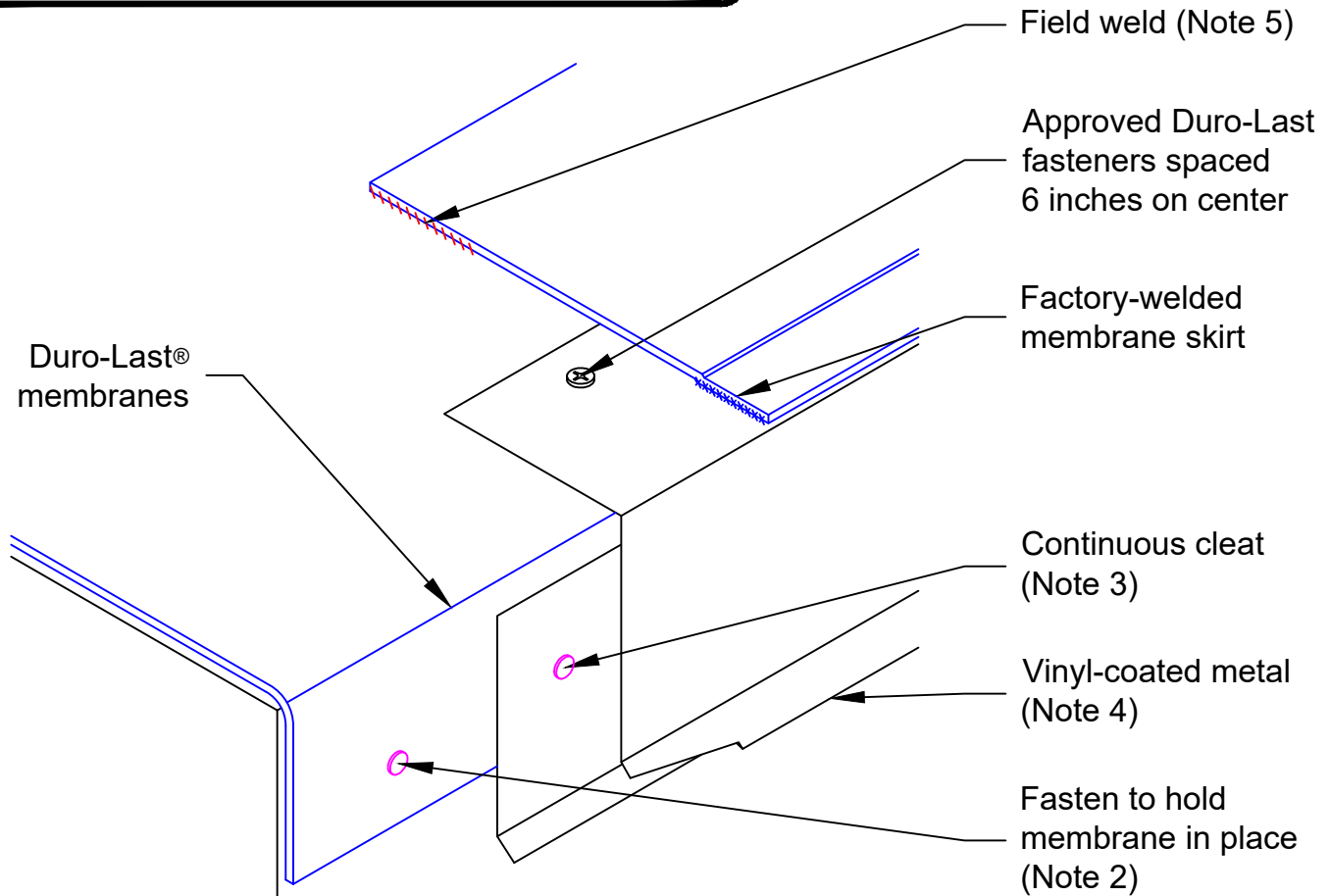
SCHEDULE E
STANDISH – STERLING COMMUNITY SCHOOLS
2021 STERLING ELEMENTARY ROOF DWGS & DTLs

Part 1 – GENERAL

1.1 See attached.



<div>Legend</div>	Drawn By: JTM	Sterling Elementary			<div> DURO-Last. THE WORLD'S BEST ROOF®</div> <div>525 E Morley Drive Saginaw, MI 48601 Fax: 989-758-6359 Phone: 800-248-0280 engineering@duro-last.com</div> <div>Project #: 60905-1</div>
Factory 	Date: 04/21/17	Sterling, MI			
Field 	Scale: N.T.S.	Trevor Wagester			
Curb 	<div>Duro-Last Roofing, Inc. is the supplier of the materials only. The proposed layout is based upon the information provided by the contractor and/or independent sales rep. Verification of local building codes, dimensions and quantities are the sole responsibility of the architect, installing contractor, independent sales rep, or owners representative prior to ordering</div>	Date	Revision	By	
Stack 		00/00/00	Add A and B areas	Marci G	
Walkpad 		04/12/2021	-	-	
		00/00/00	-	-	



Note 1: This detail may also be used on parapet walls.

Note 2: If used in a gutter, back-seal membrane with an approved Duro-Last sealant and fasten 6 inches on center with approved Duro-Last fasteners. Refer to Detail Drawing 3050.

Note 3: Vinyl-Coated Metal Drip Edge with a 4-inch face or greater requires a continuous cleat fastened 6 inches on center. Use roofing nails that penetrate substrate by a minimum of 1-1/2 inches.

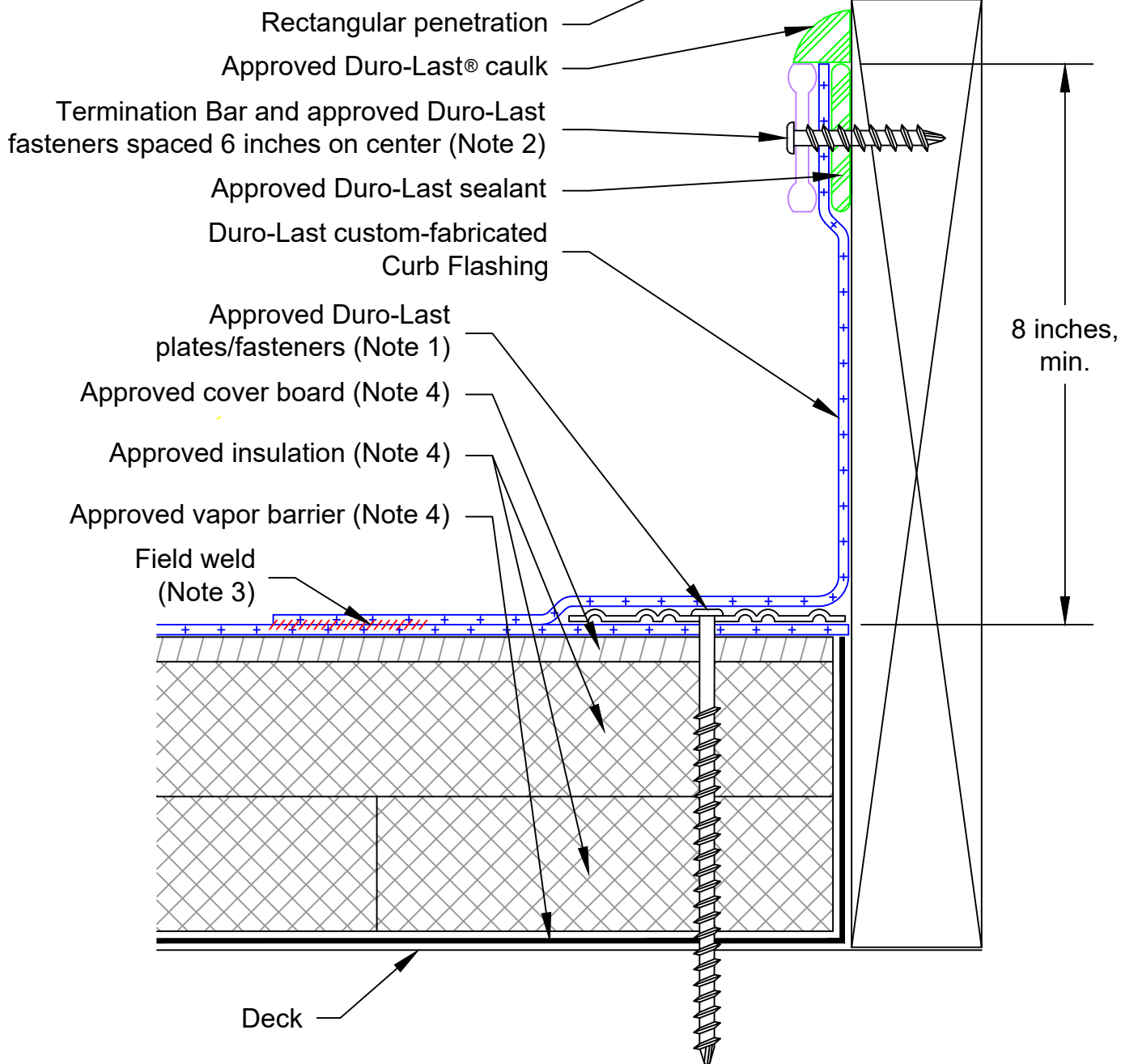
Note 4: Each section must overlap by 1-1/2 inches.

Note 5: All field welds shall be a minimum of 1-1/2 inches wide.

Note 6: Wood nailers must withstand a minimum force of 180 pounds per lineal foot (per building code). Any pull values greater than 270 pounds will allow for a fastener spacing of 18 inches on center. Pull values less than 270 pounds will require additional fasteners. **The installing contractor is responsible for meeting building codes.**

Note 7: Refer to specifications for vapor barrier, insulation and cover board requirements.

REVISED: 09/07/2017	EDGE DETAIL FOR MECHANICALLY FASTENED SYSTEMS
PREVIOUS: 01/01/2009	VINYL-COATED METAL DRIP EDGE
SCALE: NONE	NEW CONSTRUCTION OR RE-ROOF



Note 1: Deck membrane shall be fastened around perimeter of roof penetration as per respective □one the roof access hatch is located within (field, perimeter, corner).

Note 2: Termination Bar shall have an approved Duro-Last fastener within 1 inch of each corner.

Note 3: All field welds shall be a minimum of 1-1/2 inches wide.

Note 4: Refer to specifications for vapor barrier, insulation and cover board requirements.

REVISED: 02/23/2017

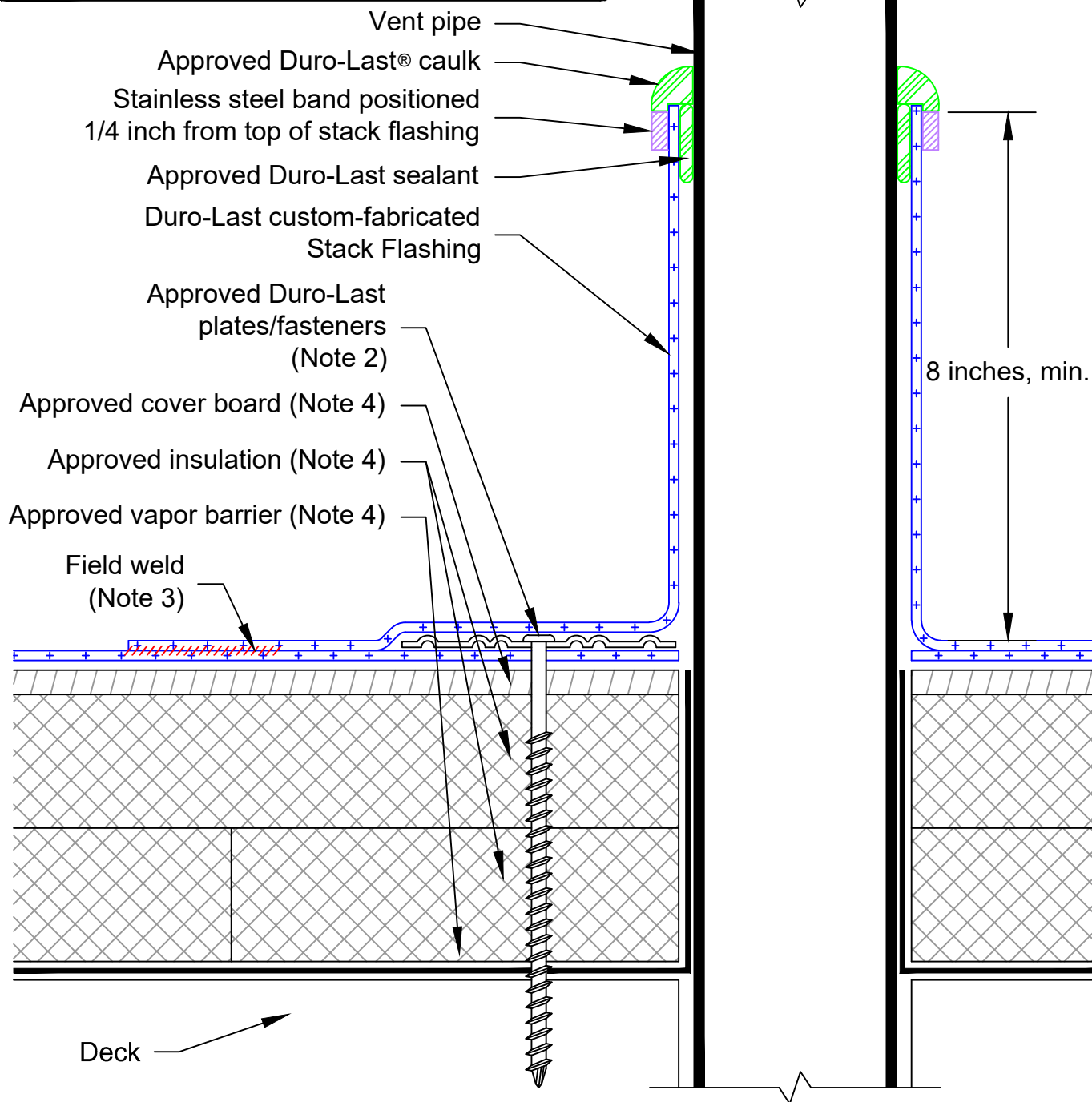
ROOF PENETRATION DETAIL FOR MECHANICALLY FASTENED SYSTEMS

PREVIOUS: 01/01/2009

RECTANGULAR PENETRATION

SCALE: NONE

NEW CONSTRUCTION OR RE-ROOF



Note 1: Lead flashings must be removed prior to installing Duro-Last Stack Flashings.

Note 2: Deck membrane shall be fastened around the perimeter of the Duro-Last Stack Flashing as per the respective ☐ one the Duro-Last Stack Flashing is located within (field, perimeter, corner), no less than one fastener per flashing.

Note 3: All field welds shall be a minimum of 1-1/2 inches wide.

Note 4: Refer to specifications for vapor barrier, insulation and cover board requirements.

REVISED: 02/02/2017

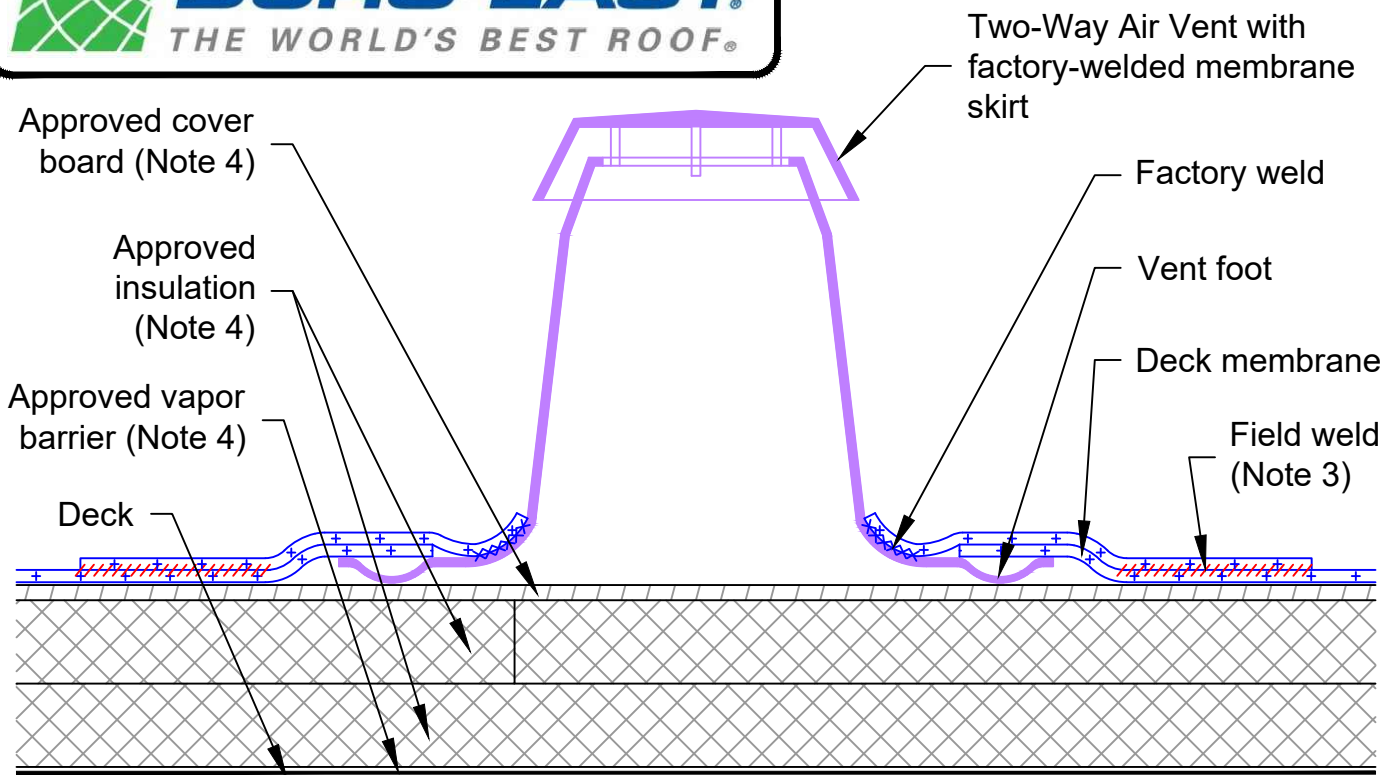
ROOF PENETRATION DETAIL FOR MECHANICALLY FASTENED SYSTEMS

PREVIOUS: 01/01/2009

ROUND PENETRATION

SCALE: NONE

NEW CONSTRUCTION OR RE-ROOF



INSTRUCTIONS

1. Install Two-Way Air Vents (vents) between fastener rows and at high points of roof area. Vents must not be installed within 7 feet of the building edge. Never install vents in low, or drainage areas.
 - a. A minimum of one vent must be installed for every 1,000 square feet of roof area, or portion thereof, but with a minimum of two vents per roof area.
 - b. Vent Placement
 - i. Corners - Vents must first be installed within 8 to 10 feet of the outer corners. Install vents at opposite corners whenever possible.
 - ii. Remaining Roof Area - Starting at 8 to 10 feet from the building edge, evenly distribute the remaining vents throughout the remaining roof area. (Smaller roof areas may not have additional vents.)
2. Cut a 7-inch diameter hole and a 2-inch slit in deck membrane. Rotate vent to allow feet to slide underneath deck membrane at slit (see drawing above). Do not fasten vent to roof deck.

Note 1: **Vents must NOT be used on refrigerated buildings, freezer buildings or adhered roofing systems.**

Note 2: Vents are not required on open-air structures (e.g. carports) or roofing systems with overburden (e.g. ballast, paver, vegetation, etc.).

Note 3: All field welds shall be a minimum of 1-1/2 inches wide.

Note 4: Refer to specifications for vapor barrier, insulation and cover board requirements.

REVISED: 01/16/2019	VENT DETAIL FOR MECHANICALLY FASTENED SYSTEMS
PREVIOUS: 02/02/2017	TWO-WAY AIR VENT
SCALE: NONE	NEW CONSTRUCTION OR RE-ROOF