Notice to Bidders

The Mio-AuSable Schools – 1110 W. 8th St – Mio, MI 48647 will receive proposals from certified contractors for the following projects:

Installation of a new PVC Roof System ***on the Mio-Ausable Area Schools –***
Base Bid – Middle School Roof Replacement
Alternate – Library Roof Replacement

A Mandatory site visit can be arranged by contacting Becky Holloway @ 989 826-2401

All sealed bids must be received at the Mio-AuSable Schools – Central Office – 1110 W. 8th St – Mio, MI 48647 on or before May 27, 2026 @ 11:00 am (local time). All bids will be opened publicly and if qualified, read aloud. All bids must be in plain envelopes marked **"Sealed bid for Mio-AuSable Schools Partial Roof Replacement"**. Proposals must be received before 11:00 am. Proposals received after the designated time may not be opened. Evaluation of the proposals and awards by the Mio-AuSable Schools will be at a later date.

The Mio-AuSable Schools reserves the right to accept or reject any or all bids and to waive all irregularities in Proposals. Proposals shall remain firm for forty-five (45) days from date of Bid Opening. A 5% Bid Bond will be required before any bid that is read aloud. 100% Performance, Labor and Material Bid will be required.

Any questions regarding bidding procedures should be directed to:
Ms. Becky Holloway– 989 826-2401

Right to Know Hazardous Materials

The Contractor shall comply with the Michigan Right-to-Know Law (HB 411). Provide the owner with Proof of Compliance including a copy of the Contractor's written plan, a list of all chemicals to be brought on site, Material Safety Data Sheets (MSDS) and a certificate that all employees have been trained.

The contractor shall furnish owner with a copy of contractors safety program.

Legend			
Drawn By:	G.Seafert	Mio Ausable Community Schools	
Date:	9-11-2020	Mio, MI	
Scale:	N.T.S.	DL Trevor Wagester	
Factory			
Field			
Curb			
Stack			
Walkpad			

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

Date	Revision	By
00/00/00	-	-
00/00/00	-	-
00/00/00	-	-

DURO-LAST
THE WORLD'S BEST ROOF®
525 E Morley Drive
Saginaw, MI 48601
Fax: 989-758-6359
Phone: 800-248-0280
engineering@duro-last.com

Project #:150375

Mio-AuSable Schools

2026 Roof Replacement
Middle School-Base Bid
Library – Alternate Bid
Scope of Work

1. Remove existing stone ballast and store on site for owners future use.
2. Remove existing EPDM roof membrane and dispose of in a legal manner
3. Remove existing perimeter edge metal and dispose of in a legal manner
4. Inspect existing insulation and replace any wet insulation at a predetermined unit cost.
5. Install new perimeter nailer to match new insulation height.
6. Install (1) layer of 1.5" ISO insulation to entire roof area.
7. Install a 50 mil PVC roof membrane to entire roof area. Roof membrane is to be mechanically fastened per manufacturers specifications. Exercise caution not to penetrate fastener thru the underside of the roof deck.
8. Flash and seal all roof penetrations per manufacturers specifications.
9. Install two way breather vents per manufacturers specifications. Two way vents will need to be installed near the ridge line to avoid snow shear.
10. Install new 24 gauge, Kynar coated T-edge to entire roof perimeter. New edge metal is to extend a minimum of ½" beyond the fade line of the existing metal.
11. Tie in new roof system to existing roof system to warranty requirements.
12. Provide complete clean up and removal of all job related debris.
13. Provide a manufacturer's 20 year NDL warranty covering material and labor.

Alternate # 1: Reroof Library Roof

Contractors are responsible for any damage to sidewalks, landscaping, parking lots and Etc.

Bid Proposal Form
2026 Mio-AuSable Schools
Partial Roof Replacements

NAME OF BIDDER: _____

ADDRESS: _____

PHONE :(___)_____ FAX:(___)_____

TO:

Mio-AuSable Schools
Attn: Superintendent
1110 W. 8th St
Mio, MI 48647

Bids are due: May 27 2026 at 11:00 am local time

The undersigned having become fully conversant with all the existing dimensions and conditions, and having examined the Plans and Specifications for this project, hereby submits the following bid for your consideration:

Base bid for Mio-AuSable Schools - Middle School Roof Replacement (including bond cost):

$_____.00

_____

_____Dollars

Alternate # 1 : Roof replacement of Mio-AuSable Schools – Library Roof Replacement (including bond cost):

$_____;00

_____

_____**Dollars**

Unit Cost:

2" x 4" lumber.....$_____per lineal foot

12" x 12" x ¾" treated CDS plywood.....$_____per board foot

Metal deck replacement.....$_____per square foot

12" x 12" x 2.0" ISO replacement.....$_____per square foot

Number of days required to complete project_____

The Mio-AuSable Schools have the right to reject any or all bids and to waive any irregularities.

Bid is to be held good for 90 days

Signature of Contractor: _____

Printed Name and Title: _____

Date: _____

FAMILIAL RELATIONSHIP DISCLOSURE FORM

AFFIDAVIT OF BIDDER

The undersigned, the owner or authorized officer of _____(the Bidder), pursuant to the familial disclosure requirements provided in the Advertisement for Bid, hereby represents and warrants, except as provided below, that no familial relationships exist between the owner(s) or any employee of _____(the Bidder)

and any member of the Mio-AuSable Schools

List and describe any Familial Relationships:

_____
_____
_____
_____

BIDDER:

_____
By:_____
Its:_____

STATE OF MICHIGAN

COUNTY OF _____

Subscribed and sworn to before me on the _____ day of _____ 2021,
by_____
_____
_____

_____(notary public)

_____County, Michigan

My Commission Expires:_____

Acting in County of _____

Familial Relationships

As required by State Law (P.A. 232 of 2004), all proposals/bids must be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the Owner or employee of the bidder and any member of the Mio-AuSable Schools District or Mio-AuSable Schools District School Board. The Board will not accept a bid that does not include this sworn and notarized statement.

Mio-AuSable Schools

2026 Partial Roof Replacement

Bid Documents

INSURANCE

Unless otherwise specified. The contractor shall, before commencing work hereunder, procure and thereafter maintain policies of insurance satisfactory to the Owner covering the liabilities assumed above in the following minimum amounts:

Property Damage	$100,000 (each accident)
Bodily Injury	$ 1,000,000 (each person)
Workman's Compensation	All liabilities imposed by statue
Employers Liability	All liabilities imposed by statue
Contractual Liability	All liabilities imposed by statue

Owner, hired and non-ownership vehicle bodily injury and property damage to the following limits:

Bodily Injury	$1,000,000 (each person)
Accidental Death	$1,000,000 (each accident)
Property Damage	$ 1,000,000 (each accident)

The Mio-AuSable Schools and it's officials, officers, employees and agents shall be listed as additional insured on all such insurance.

The contractor agrees to file with the owner or it's representative before commencing work hereunder, copies of such insurance which shall contain by endorsements, the specific liabilities assumed above, together with certificates of insurance which shall contain a provision that the amount of said insurance shall not be decreasing and a termination thereof, shall not take place without a ten day notice to the owner and it's written consent to such change or termination.

Iran Business Relationship Affidavit

Effective April 1, 2013 all bids, proposals, and/or qualification statements received in the State of Michigan must comply with the "Iran Economic Sanctions Act". The following certification is to be signed and included at time of submittal.

Certification

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 the term is defined in the Act.

_____ _____

Signature Title

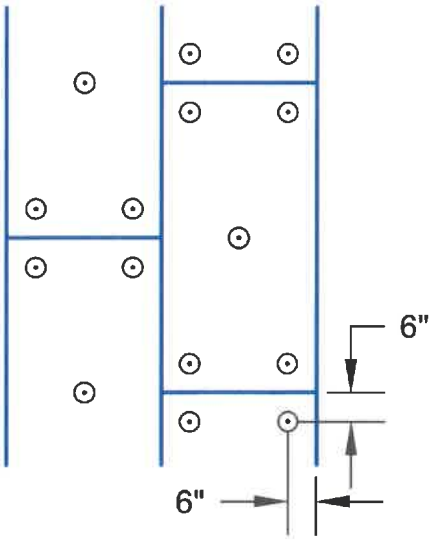
_____ _____

Company Date

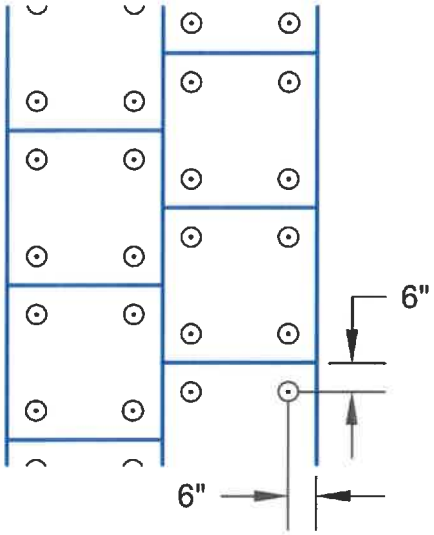
DURO-LAST. THE WORLD'S BEST ROOF.

DETAIL 1020

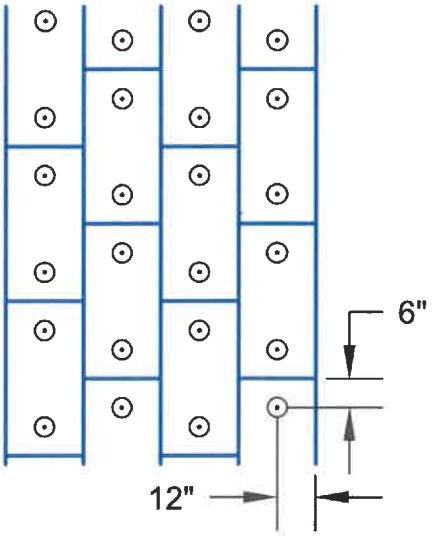
4 x 8 ft
Approved Insulation



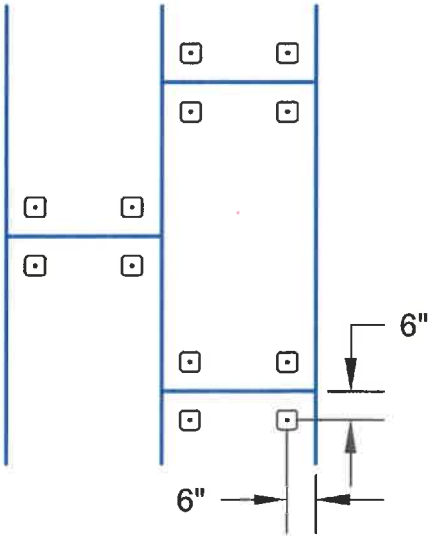
4 x 4 ft
Approved Insulation



2 x 4 ft
Approved Insulation



4 x 8 ft
Approved Cover Board



Note 1: It is recommended to stagger all joints between boards by 50% from row to row and layer to layer.

Note 2: Adjoin panel edges together. Neatly fit to the roof deck and around penetrations with no gaps greater than 1/4 inch.

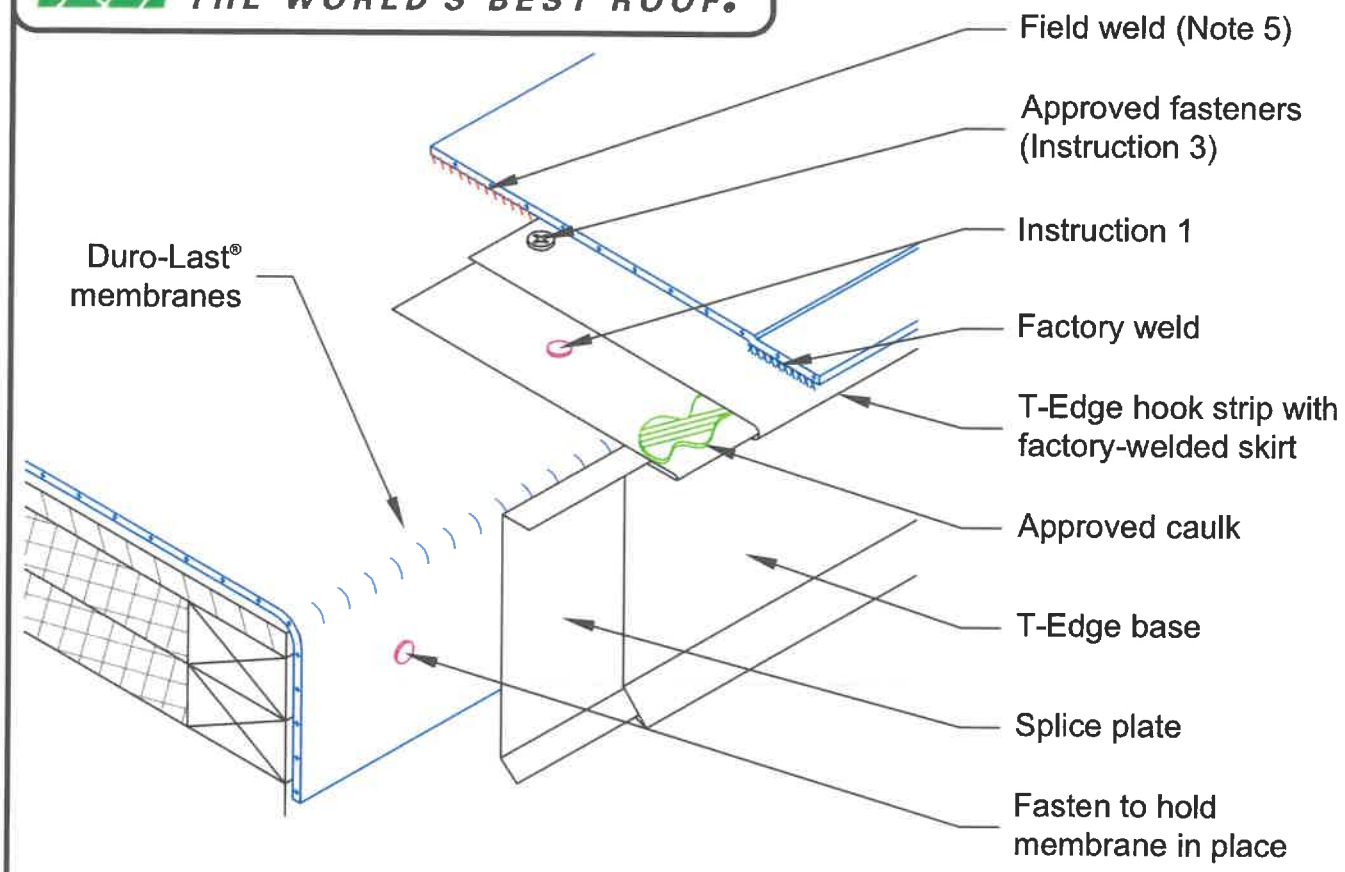
Note 3: Fasten with approved plates and fasteners.

Note 4: **These fastening patterns are to be used with mechanically fastened systems only.**

REVISED:	01/30/2017	GENERAL DETAIL FOR MECHANICALLY FASTENED SYSTEMS
PREVIOUS:	01/01/2009	INSULATION AND RECOVER FASTENING
SCALE:	NONE	NEW CONSTRUCTION OR RE-ROOF

DURO-LAST. THE WORLD'S BEST ROOF.

DETAIL 3550



INSTRUCTIONS

1. Fasten **T-Edge base** to hold in place. Allow for 1/8 in. gap between sections of T-Edge base. Install splice plates at each gap.
2. Apply an approved sealant on top of T-Edge base as shown above.
3. Attach **T-Edge hook strip** to T-Edge base ensuring that seams are staggered by a minimum of 12 in. between hook strip and base. Each hook strip section must overlap next section by 1 in. Fasten hook strip and base 6 in. on center with approved fasteners.

Note 1: The use of this detail is not allowed on adhered applications.

Note 2: This detail may also be used on parapet walls.

Note 3: If used in a gutter, back-seal membrane with an approved sealant and fasten 6 in. on center with approved fasteners.

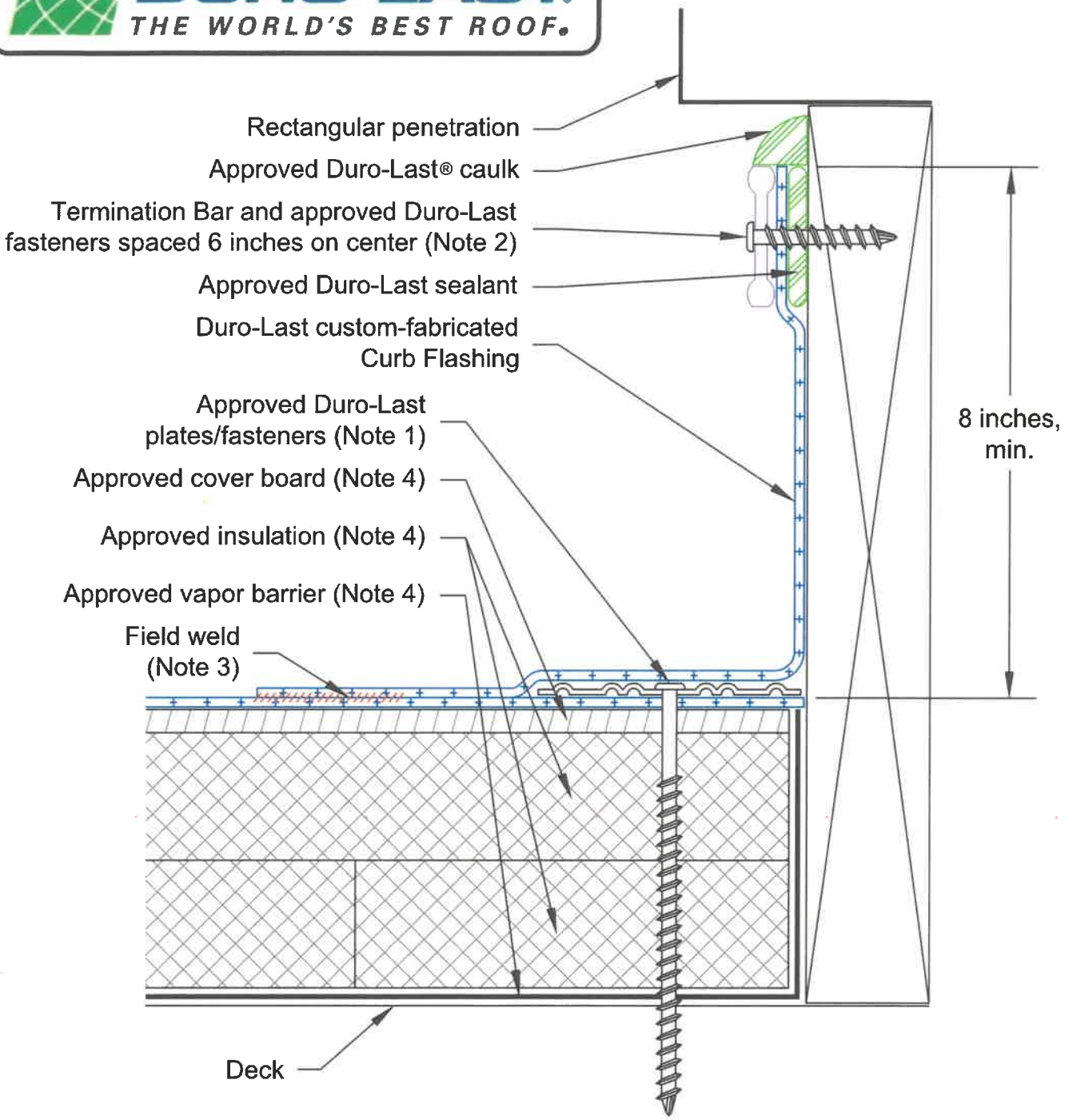
Note 4: T-Edge with a 4 in. face or greater requires a continuous cleat fastened a maximum of 12 in. on center. Use roofing nails that penetrate substrate by a minimum of 1-1/2 in.

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

REVISED: 10/31/2025	METAL EDGE DETAIL FOR MECHANICALLY FASTENED SYSTEMS
PREVIOUS: 04/20/2017	T-EDGE
SCALE: NONE	NEW CONSTRUCTION OR RE-ROOF

DURO-LAST.
THE WORLD'S BEST ROOF.

DETAIL 4010



Note 1: Deck membrane shall be fastened around perimeter of roof penetration as per respective zone 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.

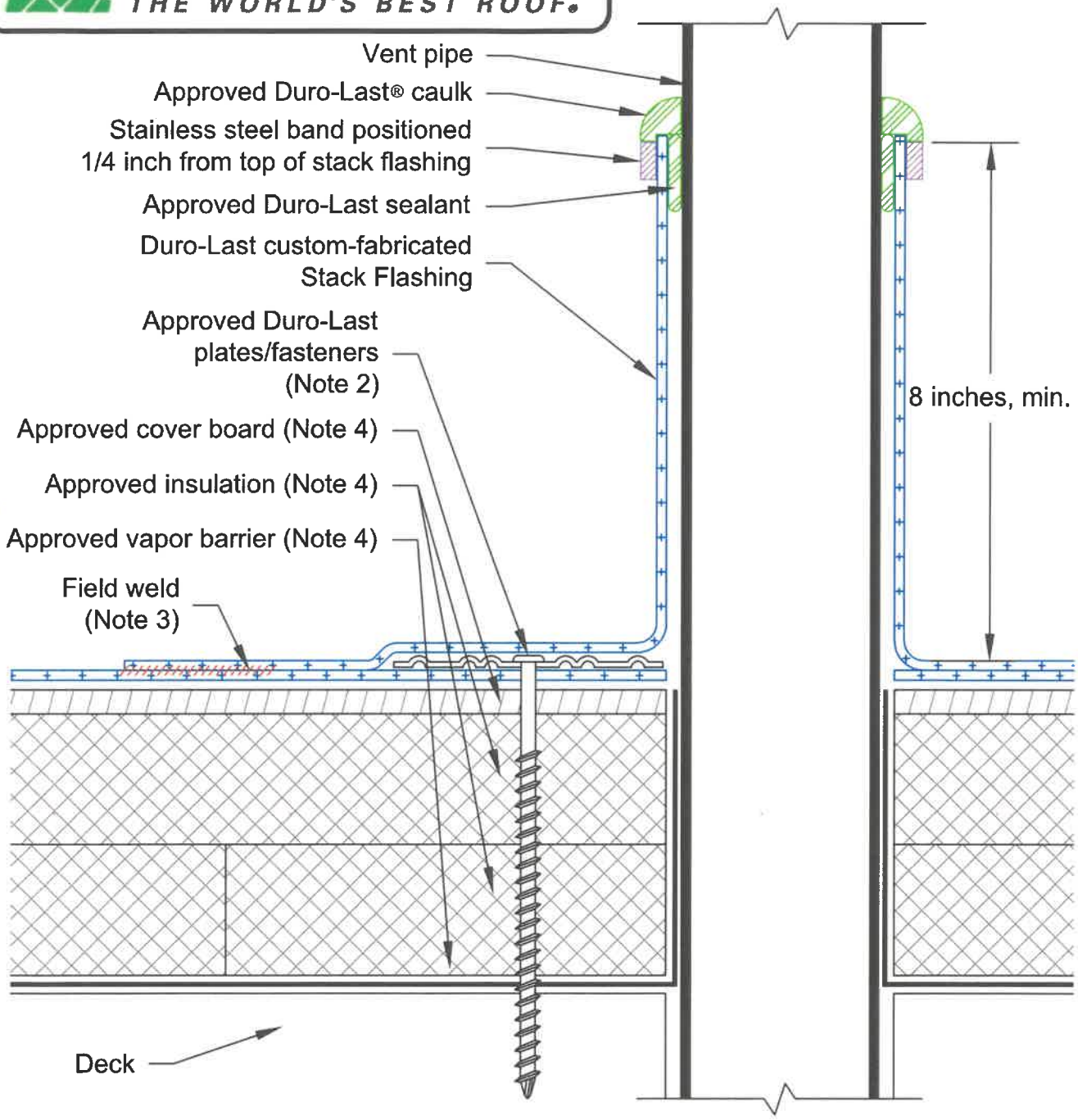
Note 3: All field welds shall be a minimum of 1-1/2 inches wide.

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

DURO-LAST.
THE WORLD'S BEST ROOF.

DETAIL 4070



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 zone the Duro-Last Stack Flashing is located within (field, perimeter, corner), no less than one fastener per flashing.

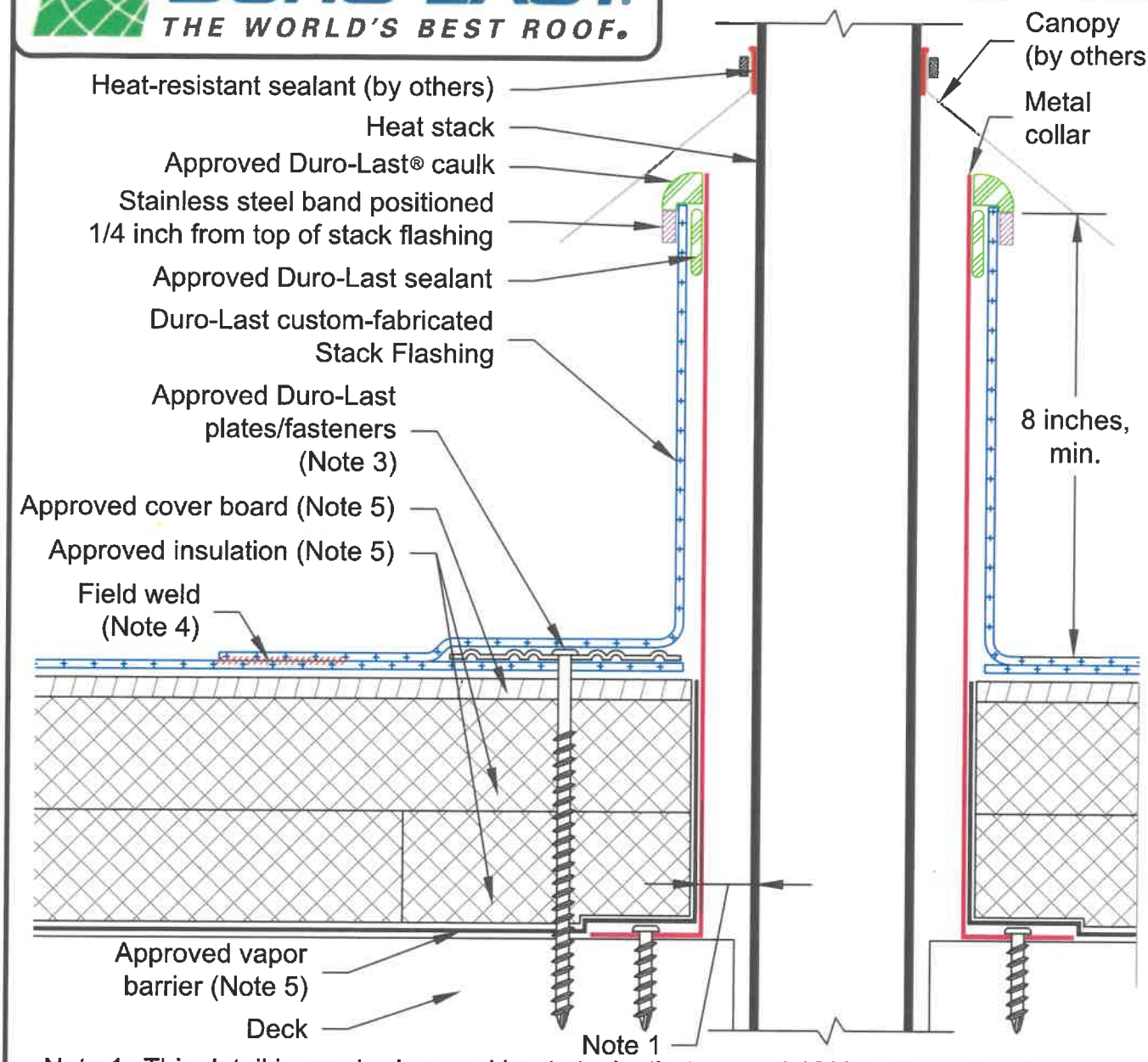
Note 3: All field welds shall be a minimum of 1-1/2 inches wide.

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

DURO-LAST. THE WORLD'S BEST ROOF.

DETAIL 4080



Note 1: This detail is required around heat stacks that exceed 120° F, including all insulated chimney stacks. A minimum of 1-inch air space is required between the metal collar and heat stack. The canopy must be positioned to allow adequate air flow above the termination.

Note 2: Lead flashings must be removed prior to installing Duro-Last Stack Flashings.

Note 3: Deck membrane shall be fastened around the perimeter of the Duro-Last Stack Flashing as per the respective zone the Duro-Last Stack Flashing is located within (field, perimeter, corner), no less than one fastener per flashing.

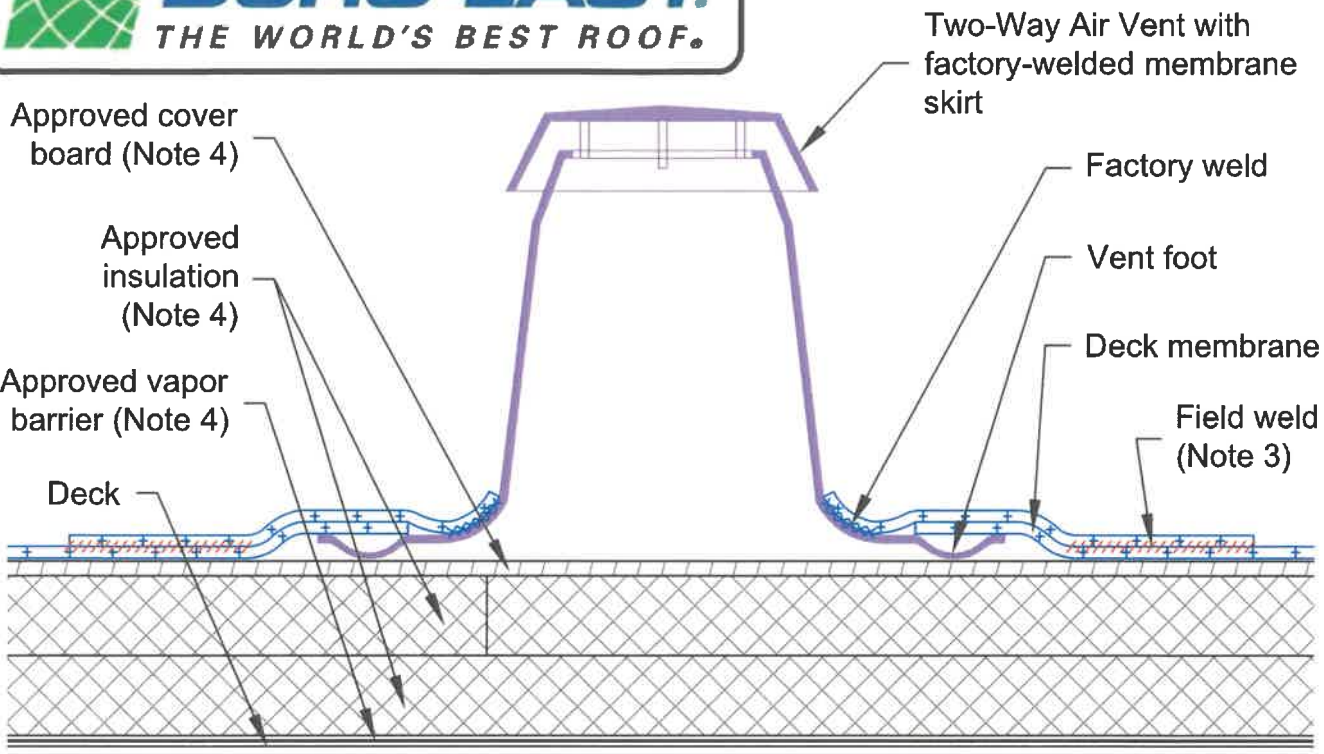
Note 4: All field welds shall be a minimum of 1-1/2 inches wide.

Note 5: 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	HEAT STACK
SCALE:	NONE	NEW CONSTRUCTION OR RE-ROOF

DURO-LAST. THE WORLD'S BEST ROOF.

DETAIL 5020



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

Partial Payments:

Partial payment of 90% of the value of the work completed can be applied for upon the verification of the Mio-AuSable Schools representative. At no time will the total of the partial payment exceed 9-% of the total contract price. The final 10% will be issued thirty days after the warranty has been received and all work is completed to the satisfaction of the owner. At this time the necessary waivers of liens will be submitted by the contractor. Once all materials are on the job site and are stored according to manufacturer's specification's, a material payment can be applied for.

Defense and Indemnification:

Contractor shall defend, indemnify and hold harmless the owner (including it's officials, officers, employees and agents), from any and all claims, suites, losses, damages, cost, fines, expenses, (including cost of defense, settlement and attorney's fees), and causes of actions including and judgements which may be entered against them, arising out of or caused by, directly or indirectly, in whole or in part, any act, error or omission of the contractor or sub-contractor or their employees, agents or representatives. The obligation of the contractor to defend, indemnify and hold harmless the owner as described above shall survive and continue after final payment, acceptance of the work and termination of the contract.

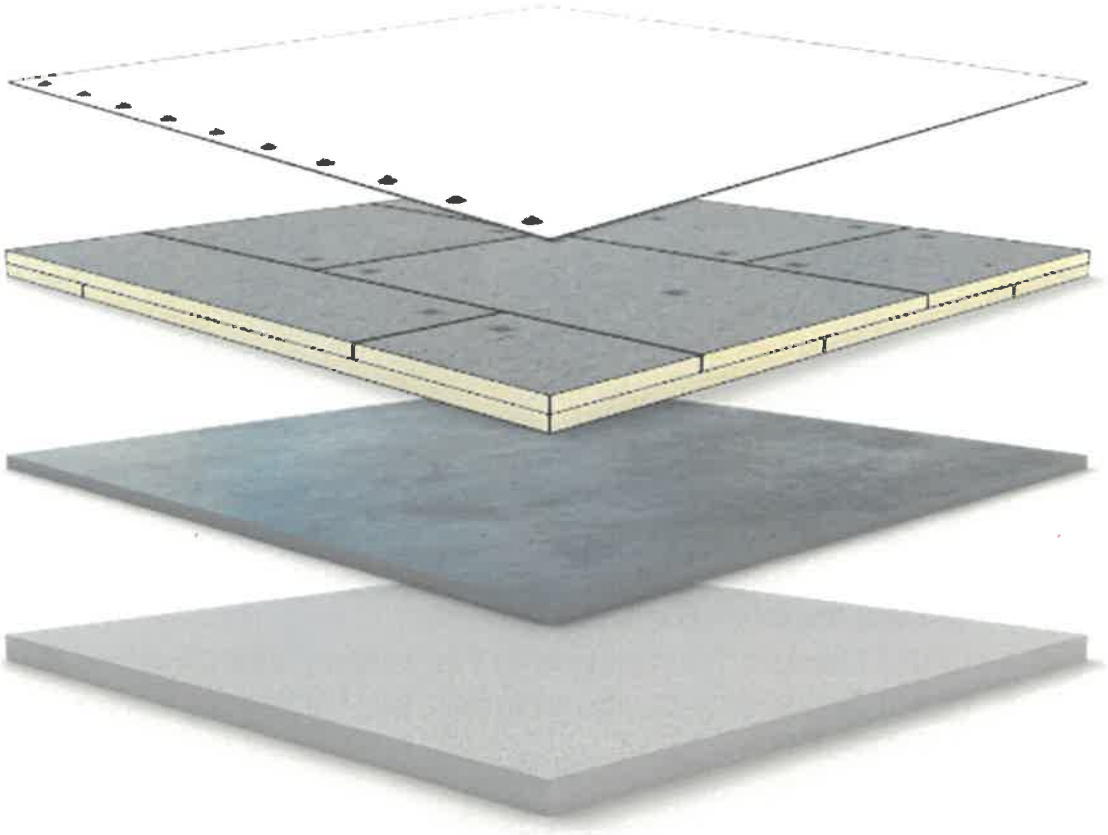
3-part Specification

Mio-AuSable Schools

MIDDLE SCHOOL-BASE BID

LIBRARY-ALTERNATE

1110 W. 8th ST
Mio, MI 48647



PART 1 GENERAL

1.1 SUMMARY

A. Membrane Type: Duro-Last 50-mil Membrane (Custom Fab or DLX roll goods)
    1. Roll Width: 60" & 30". The use of 120" rolls will not be allowed
    2. Membrane Color: White
    3. Attachment Type: Mechanically Fastened
    4. Fasteners: Auger Fastener

5. Plates: Auger Plate

B. Insulation Assembly Type: Duro-Guard® ISO II (Fiber-Reinforced Facer)
    1. Board Application: Flat Stock
    2. Board Style: Assembly Thickness
    3. Board Size: 4' x 8'
    4. Thickness/R-Value: 1.50"
    5. Attachment Type: Mechanically Fastened
    6. Fasteners: Auger Fastener
    7. Plates: Auger Plate
C. Existing Roof Type: EPDM
    1. Existing Roof Thickness: 2"
    2. Core Samples: Yes
    3. Attachment Type: Ballasted
D. Deck Type: Cementitious Wood Fiber (Tectum) Deck
E. Prefabricated flashings, corners, parapets, stacks, vents, and related details.
F. Fasteners, adhesives, and other accessories required for a complete roofing installation.
G. Traffic Protection.

1.2 REFERENCES

A. ASTM INTERNATIONAL (ASTM)
    1. (2019) Standard Test Methods for Coated Fabrics (D751)
    2. (2021) Standard Specification for Poly(Vinyl Chloride) Sheet Roofing (D4434/D4434M)
    3. (2022) Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board (C1289)
    4. (2020) Standard Test Methods for Fire Tests of Roof Coverings (E108)
    5. (2020) Standard Test Methods for Fire Tests of Building Construction and Materials (E119)
B. UL SOLUTIONS (UL)
    1. (2021) UL Roofing Systems (TGFU.R10128)
C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
    1. (2014) Minimum Design Loads for Buildings and Other Structures (ASCE Standard - ASCE/SEI 7-10)
    2. (2017) Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE Standard - ASCE/SEI 7-16)
    3. (2022) Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE Standard - ASCE/SEI 7-22)
D. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
    1. (2019) NRCA Roofing Manual - Membrane Systems

E. Insulation:
    1. General Requirements
        a. Install using a single layer of 1.5" ISO over existing 2" ISO.
        b. Configuration as indicated on the drawings.
    2. Duro-Guard® ISO II (Fiber-Reinforced Facer)
        a. Assembly Thickness: 1.50"

1.4 SUBMITTALS

A. Product data sheets to be used, with the following information included:
    1. Preparation instructions and recommendations
    2. Storage and handling requirements and recommendations
    3. Installation methods
    4. Maintenance requirements
B. Sustainability Documentation:
    1. NSF/ANSI Standard 347 Certificate
    2. Type III product-specific Environmental Product Declaration
C. Shop Drawings: Indicate insulation pattern, overall membrane layout, field seam locations, joint or termination detail conditions, and location of fasteners.
D. Provide verification samples for each product specified (two samples representing each 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 standard reinforced 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.

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 (must meet or exceed):
   1. Roof product must meet the requirements of Type III PVC sheet roofing as defined by ASTM D4434.
   2. Thickness: 50 mil, nominal, in accordance with ASTM D751.
   3. Thickness over Scrim: ≥ 28 mil in accordance with ASTM D7635.
   4. Breaking Strength: ≥ 438 lbf. (machine direction) and ≥ 390 lbf. (cross machine direction) in accordance with ASTM D751 Grab Method.
   5. Elongation at Break: ≥ 31% (machine direction) and ≥ 31% (cross machine direction) in accordance with ASTM D751 Grab Method.
   6. Seam Strength: ≥ 417 lbf. in accordance with ASTM D751 Grab Method.
   7. Tear Strength: ≥ 132 lbf. (machine direction) and ≥ 163 lbf. (cross machine direction) in accordance with ASTM D751 Procedure B.
   8. Low Temperature Bend: Pass at -40 °F in accordance with ASTM D2136.
   9. Heat Aging: Pass after being conditioned for 56 days in oven maintained at 176 °F in accordance with ASTM D3045.
   10. Accelerated Aging: Pass after 10,000 hours of total test time in accordance with ASTM G155.
   11. Dimensional Stability: Change of -0.30% (machine direction) and -0.45% (cross machine direction) in accordance with ASTM 1204.
   12. Water Absorption: < 1.7% at 158 °F for 168 hours in accordance with ASTM D570.
   13. Static Puncture Resistance: ≥ 56 lbf. in accordance with ASTM D5602.
   14. Dynamic Puncture Resistance: ≥ 14.7 ft-lbf. in accordance with ASTM D5635.

D. Cool Roof Rating Council (CRRC) (Membrane must be listed on the CRRC website):
   1. Solar Reflectance (Initial): ≥ 86%
   2. Solar Reflectance (3-Year Aged): ≥ 74%
   3. Thermal Emittance (Initial): ≥ 89%
   4. Thermal Emittance (3-Year Aged): ≥ 89%
   5. Solar Reflectance Index (SRI) (Initial): ≥ 108%
   6. Solar Reflectance Index (SRI) (3-Year Aged): ≥ 91%

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 fire hazard, wind uplift, and cool roof requirements.
B. Fire Hazard Requirements: 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. Class A
    2. Fire-test-response standard: Comply with ASTM E108 for application and roof slopes indicated.
    3. Fire-Resistance Ratings: Comply with ASTM E119 for fire-resistance-rated roof assemblies of which roofing system is a part.
    4. Conform to applicable code for roof assembly fire hazard requirements.
C. Wind Uplift Requirements: Roofing System Design: Provide a roofing system designed to resist uplift pressures calculated according to the current edition of ASCE/SEI 7, Minimum Design Loads and Associated Criteria 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.
9. Review existing roof manufacturer's recycling program and return roofing system to the manufacturer for recycling.

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 adequate or sufficient drainage.
    3. Issued direct from and serviced by the roof membrane manufacturer.
    4. Transferable for the full term of the warranty.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Duro-Last®, 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

C. Substitutions: Must meet warranty and performance requirements. Alternate products must be submitted and approved prior to bidding.

2.2 ROOFING SYSTEM COMPONENTS

A. Roofing Membrane:
    1. Properties:
        a. Type: Duro-Last 50-mil Membrane (Custom Fab or DLX roll goods)
        b. Roll Width: 60" & 30" rolls. The use of 120" rolls will not be allowed
        c. Membrane Color: White
        d. Attachment Type: Mechanically Fastened
        e. Fasteners: Auger Fastener
        f. Plates: Auger Plate
    2. Features:
        a. ASTM D4434, Type III
        b. Fabric-reinforced, PVC, NSF/ANSI 347 Gold or Platinum Certification, and a product-specific third-party verified Environmental Product Declaration.
        c. Minimum recycle content 7% post-industrial and 0% post-consumer.
        d. Recycled at end of life into resilient flooring or concrete expansion joints.

B. Insulation:
    1. General Requirements
        a. Provide preformed roof insulation boards that comply with requirements and referenced standards, as selected from manufacturer's standard sizes.
        b. Provide preformed saddles, crickets, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
        c. Provide roof insulation accessories approved by the roof membrane manufacturer and as recommended by insulation manufacturer for the intended use.
    2. Component:
        a. Properties:
            1. Type: Duro-Guard® ISO II (Fiber-Reinforced Facer)
            2. Board Application: Flat Stock
            3. Size: 4' x 8'
            4. Method: Assembly Thickness: 1.50"
            5. Attachment Type: Mechanically Fastened
            6. Fasteners: Auger Fastener
            7. Plates: Auger Plate

b. Features:
    1. Closed-cell polyisocyanurate foam core insulation board.
    2. Complying with ASTM C1289, Type II, felt or glass-fiber mat facer on both major surfaces.
    3. 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.

C. Existing Roof:
    1. Properties:
        a. Type: EPDM
        b. Core Samples: Yes
        c. Attachment Type: Ballasted

D. Deck Type:
    1. Properties:
        a. Type: Cementitious Wood Fiber (Tectum) Deck

E. Accessory Materials: Provide accessory materials supplied by or approved for use by Duro-Last®:
    1. Sheet Flashing: Manufacturer's standard reinforced PVC sheet flashing.
    2. Penetrations and Flashings: Manufactured using standard reinforced PVC membrane.
        a. Duro-Last® Inside and Outside Corners
        b. Duro-Last® Stack Flashing
        c. Duro-Last® Curb Flashing
    3. Drains, Scuppers, and Vents: Manufactured using standard reinforced PVC membrane.
        a. Duro-Last® Two-Way Air Vent
    4. Fasteners: Factory-coated steel fasteners meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane and insulation to substrate. Supplied by Duro-Last.
        a. Auger Fastener
    5. Plates: Metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane and insulation to substrate. Supplied by Duro-Last.
        a. Auger Plate
    6. Termination and Edge: Compatible with roofing system and supplied by Duro-Last.
        a. T-Edge
    7. Additional Roof Components: Compatible with roofing system and supplied by Duro-Last.

a. Roof Trak® III Walkway Pad (PVC)

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. Remove existing stone ballast and store onsite for owner's use.
    3. Remove existing epdm roof membrane and dispose of in a legal manner.
    4. 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.
    5. 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 ¼ 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.
    6. 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 ¼ inch, do not use fan fold board. Instead, use an approved cover board or rigid insulation.

7. 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. Insulation:
    1. General Requirements
        a. Install insulation in accordance with the roof manufacturer's requirements.
        b. Insulation shall be adequately supported to sustain normal foot traffic without damage.
        c. Where field trimmed, insulation shall be fitted tightly around roof protrusions with no gaps greater than ¼ inch.
        d. Tapered insulation boards shall be installed in accordance with the insulation manufacturer's shop drawings.
        e. 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.
        f. If more than one layer of insulation is used, all joints between subsequent layers shall be offset by at least 6 inches.
    2. Duro-Guard® ISO II (Fiber-Reinforced Facer)
        a. Use only fasteners, stress plates and fastening patterns accepted for use by the roof manufacturer. Fastening patterns must meet applicable design requirements.
        b. Install fasteners in accordance with the roof manufacturer's requirements. Fasteners that are improperly installed must be replaced or corrected.
        c. Install all layers in parallel courses with end joints staggered 50% and adjacent boards butted together with no gaps greater than ¼ inch.

B. Roofing Membrane:
    1. General Requirements
        a. Install membrane in accordance with the roof manufacturer's requirements.
        b. Cut membrane to fit neatly around all penetrations and roof projections.
    2. Duro-Last 50-mil Membrane (Custom Fab or DLX Roll Goods)
        a. Use only fasteners, stress plates and fastening patterns accepted for use by the roof manufacturer. Fastening patterns must meet applicable design requirements.

b. Install fasteners in accordance with the roof manufacturer's requirements. Fasteners that are improperly installed must be replaced or corrected.
c. Mechanically fasten membrane to the structural deck utilizing fasteners and fastening patterns in accordance with the roof manufacturer's requirements.

C. Weld overlapping sheets together using hot air. Minimum weld width is 1-1/2 inches.
D. Check field welded seams for continuity and integrity and repair all imperfections by the end of each work day.
E. 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.

F. Roof Drains: Coordinate installation of roof drains and vents.
    1. Drain Assemblies with Clamping Rings:
        a. Remove existing roofing system materials from drain bowl and clamping ring.
        b. The membrane must extend beyond the inside of the clamping ring.
        c. Use a manufacturer supplied or approved sealant (1/2 tube minimum) between the membrane and drain bowl assembly.
        d. After the membrane is properly installed onto the bowl and the clamping ring set in place, all bolts securing the ring must be installed to provide constant, even compression on the sealant. If bolts are broken or missing, replacements must be installed.
    2. Drain Boots:
        a. Remove existing flashing and asphalt at existing drains in preparation for sealant and membrane.
        b. Use a manufacturer supplied or approved sealant (1/2 tube minimum) to the outside of the drain boot and insert it into the drain.
        c. Fasten membrane around the perimeter of the drain with the same fastening pattern as the field membrane, no less than 1 fastener per drain.
        d. Install a pair of composite drain rings (CDRs) to compress the boot to the pipe. Ensure the CDR openings face in opposite directions.
        e. Secure the manufacturer's drain guard over the opening by heat welding the attachment tabs to the roof membrane.

G. 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.

H. 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.

I. 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