
SAGINAW CAREER COMPLEX

2022 RE-ROOFING PROJECT

SAGINAW, MICHIGAN

NOVEMBER 11, 2021



SECTION 00 0100

PROJECT DIRECTORY

PROJECT: Saginaw Career Complex - Roofing

PROJECT LOCATION/OWNER: The School District of the City of Saginaw
Saginaw Career Complex
2102 Weiss
Saginaw, MI

CM/CONSULTANT: R.C. Hendrick & Son, Inc.
2885 S. Graham Road
Saginaw, MI 48609
989.781.8116 (phone)
989.781.9512 (fax)

DESIGNER/SPECIFIER: Duro-Last
525 Morley Drive
Saginaw, MI 48601

END OF SECTION 00 0100

SECTION 00 0110

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ADVERTISEMENT FOR BID

Notice is hereby given that The School District of the City of Saginaw is receiving bids from trade contractors for the following project:

Saginaw Career Complex-2022 Re-Roofing Project

Complete proposals will be received for the following work categories in accordance with drawings and specifications as prepared by the Architect, Engineers and/or Construction Manager.

BID CATEGORY 1: ROOFING

Bids will be received at the Office of The Superintendent until **2:00 p.m. on Tuesday, December 7, 2021** at which time the bids will be publicly opened and read aloud.

Proposals should be submitted in TRIPLICATE and be addressed to

Timothy Furtaw, Director of Facilities
School District of the City of Saginaw
550 Millard Street
Saginaw, MI 48607

R.C. Hendrick & Son, Inc. is the CM and/or Owner's Consultant on this Project. Please do not phone, fax, or email bids to the Construction Manager.

The Owner reserves the right to reject any, part of any or all bids and to waive all informalities in the bidding procedures. The Owner reserves the right to reject any bid when Bidder fails to submit data required by the Bidding Documents, or if the bid is submitted incomplete or irregular. No telephonic, telegraphic, email, fax bids or modification to a submitted bid will be received or considered by the Owner.

Each bid that exceeds Fifty Thousand Dollars (\$50,000) must be submitted with an attached certified check or 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 five percent (5%) of the base bid.

Bids may not be withdrawn for a period of sixty (60) days after the bid date.

PRE-BID CONFERENCE

There is a pre-bid conference scheduled for **Tuesday, November 23, 2021 at 11:00 a.m.** The meeting is not mandatory however a site visit to familiarize yourself with existing conditions is highly encouraged.

SCHEDULE

Project may begin on June 8, 2022 and must be complete by August 27, 2022.

QUESTIONS / RFI's

All questions regarding the plans and specifications are to be emailed to R.C. Hendrick & Son, Inc. at chip@rchendrick.com.

DRAWINGS, SPECIFICATIONS AND ADDENDUMS

Plans, Specifications and Addendums will be available for download from the R.C. Hendrick Plan Room located at www.rchendrick.com. Click on "Plan Room" and then follow the link to access the project files. If a password is required to access the files, please email the Project Manager associated with the project.

Addendums will be posted to R.C. Hendrick's Online Plan Room. Addendums will be posted no later than 12:00 Noon on the day before the bid is due. R.C. Hendrick will send out a notice that an addendum is available to all known planholders. **It is the responsibility of every bidder to check the project site for addendums and note them on the bid form.**

END OF SECTION 00 1000

SECTION 00 2000

INSTRUCTIONS TO BIDDERS

1. DEFINITIONS

Definitions set forth in the General Conditions of the Contract Construction, AIA Document A232 – Current Edition, and in other contract documents are applicable to the Bidding Documents.

Bidding Documents: Bidding Documents include the Drawings, Specifications, Addenda prepared by the Architects, Engineers, Consultants and Construction Manager and anything referenced within those documents.

Addenda: Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

Bid: A bid is a complete and properly signed proposal to do the work for a stipulated sum, submitted in accordance with the Bidding Documents.

Base Bid: The sum stated in the Bid Form for which the Bidder offers to perform the work described in the Bidding Documents as the Base Bid.

Alternate: An alternate is an amount stated in the Bid to be added or deducted from the Base Bid if the corresponding change in the work, as described in the Bidding Documents, is accepted.

Unit Price: An amount stated as a price per unit of measurements for materials or services described in the Bidding Documents.

Bidder: A person or entity who submits a bid.

Furnish: This term is used to mean supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation and similar operations.

Install: The term is used to describe operations at the Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

Provide: To furnish and install, complete and ready for the intended use.

2. CONSTRUCTION MANAGER

R.C. Hendrick & Son, Inc. has been selected by the Owner to organize and/or direct the complete construction of the project and, as such, will act as a representative of the Owner in those matters so designated. Depending on the contractual arrangement with the Owner, R.C. Hendrick may not have on-site supervision and may not be available for questions during the construction process.

3. BIDDING PROCEDURE

R.C. Hendrick's online Plan Room is the official location for all bidding documents. **It is each bidder's responsibility to ensure that they have viewed all addenda posted to the Plan Room.** Addendums will be posted no later than 12:00 Noon on the day before the bid is due.

Bidders are to bid COMPLETE Bid Categories only. Bids for partial categories or noting any exceptions may cause your bid to be rejected. If you feel that something is part of your category that should not be included, please submit a Pre-Bid RFI.

Bidders shall include all work noted in the Bid Category Description as well as General Bid Category Notes which apply to ALL Categories.

Each Bidder by submitting this Bid to the Owner represents that they have read and understand the Bidding Documents. Each bidder also represents that they have made a site inspection, familiarized themselves with the local conditions under which the work is to be performed, and have correlated observations with requirements of the Bidding Documents.

Bids shall be submitted in TRIPLICATE. (1) One Original and (2) Two Copies of the Bid Form are required. Fill in ALL blanks on the bid form. Information must be typed or in ink. Express sums in both words and figures. The amount in words will govern in case of a discrepancy. The signer of the bid must initial all interlineations, alterations and erasures.

Enclose the bid and other documents required in a sealed envelope. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with "Sealed Bid Enclosed" printed on the envelope.

Address the envelope to the party receiving the bids and state project name, the bidder's name and address, and the designated Bid Category # for which the bid is submitted on the outside of the envelope. If you are bidding on more than one Bid Category, each bid must be in its own **clearly marked** envelope.

Bids will be **PUBLICLY** opened after the deadline to submit bids. Only properly identified bids received on time will be opened.

4. COMBINED BIDS

If you intend on offering a discount as part of a Combined Bid, you MUST submit a base bid in each category and each category MUST be in a separate envelope. The Combined Bid must be entered on at least one Bid Form submitted by the bidder.

5. ALTERNATES

Alternates are listed on the Bid Form and are described in further detail in the Architectural Specification. Each bidder should review all Alternates and determine if what is described in the Specification and shown on the Drawings causes an addition or deduction to their Base Bid. Bidders shall indicate on the Bid Form if the Alternate is an ADD or DEDUCT to the Base Bid and indicate the costs associated. If the Alternate does not affect your scope of work, enter "No Change" in the space provided. The Owner will have the right to accept Alternates in any order or combination and to determine the low bidder on the basis of the sum of the base bid and the accepted Alternate.

6. VOLUNTARY ALTERNATES

The bidder may submit voluntary alternates with their bid. Voluntary Alternates are changes in scope or a specification. Voluntary alternates shall be listed in the appropriate space on the Bid Form. If additional pages are necessary, attach them to the end of the Bid Form on your company letterhead. Voluntary alternates will be reviewed after the award of a contract and the Owner reserves the right to accept or reject any Voluntary Alternate.

7. QUESTIONS AND DISCREPENCIES

Notify the Construction Manager at least five (5) days prior to bid of ambiguities, inconsistencies, or error discovered upon examination of the Bidding Documents, site or local conditions. Submit requests for clarification or interpretation of the Bidding Documents in writing. Interpretation, correction, or change of the Bidding Documents will be made by Addendum, all other forms will be non-binding. Questions should be EMAILED to the Project Manager listed in the R.C. Hendrick Online Plan Room.

8. SUBSTITUTIONS

The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality. Pre-Bid substitution requests must be submitted in writing and received by the CM at least ten (10) days prior to bid date. The burden of proof of the merit of the proposed substitute is upon the proposer. The Owner's decision of acceptance or rejection of a proposed substitution will be final.

Requests for substitutions shall include:

1. The name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cut-sheets, performance, test data and other information necessary for an evaluation.
2. A statement setting forth any changes in other materials, equipment, other work that incorporation of the substitute would require, shall be included.

9. MODIFICATION OR WITHDRAWAL OF A BID

A bid may not be modified or withdrawn following the time and date designated for the receipt of bids. Prior to the time and date designated for receipt of bids, a submitted bid may be withdrawn by notice to the party receiving bids at the place designated for receipt of bids. Notice shall be in writing over the signature of the bidder or in person. Withdrawal notice shall be submitted by mail, telegram, or fax postmarked on or before the date and time for receipt of bids. Withdrawn bids may be resubmitted up to the time designated for the receipt of bids.

10. OWNER'S RESERVATION OF RIGHTS

The Owner reserves the right to reject any, part of any or all bids and to waive all informalities in the bidding procedures. The Owner reserves the right to reject any bid when Bidder fails to submit data required by the Bidding Documents, or if the bid is submitted incomplete or irregular. No telephonic, telegraphic, email, fax bids or modification to a submitted bid will be received or considered by the Owner.

The Owner will have the right to accept Alternates in any order or combination and to determine the low bidder on the basis of the sum of the base bid and the accepted Alternate.

It is the Owner's intent to award a contract to the lowest responsible and competent bidder provided the bid has been submitted in accordance with the requirements of the bidding documents and does not exceed the funds available for construction.

The Owner reserves the right to cancel the project and contract at any point. The contractor will be reimbursed for work performed up to cancellation based upon the amount of work completed.

11. SUBSURFACE MATERIALS AND SOIL BORINGS

Contractors may review test-boring data if it is available. Soil Boring data will be available either as a part of the specification or will be available as a separate file in the Electronic Plan Room. The Owner, CM, or Architect as part of Contract Drawings or Specification does not guarantee its accuracy or completeness. Contractor shall assume all responsibility in excavating for this project and shall not rely on subsurface information obtained for CM. Bidders shall make their own investigation of existing subsurface conditions; neither Owner, CM, nor Architect will be responsible in any way for additional compensation for excavation work performed under the contract due to Contractor's assumptions based on subsoil data prepared solely for Owner's and Architect's use.

12. BONDS

Bid Bond

Each bid which 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 bid sum of the work.

Performance Bond & Labor and Material Payment Bond

Prior to the execution of the contract, furnish bonds covering the faithful performance of the contract and the payment of all obligations arising there under. Include cost of bonds in the base bid. 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.

13. POST BID INFORMATION

The Bidder shall within seven (7) days of notification of selection for the award of the Contract for the work, submit the following information.

- A. Designation of the Work to be performed by the Bidder with his own forces.
- B. Proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the Work.
- C. List of names of the subcontractors or other persons or entities (including those who are to furnish materials or equipment fabricated to the special design) proposed for the principal portions of the Work.
- D. A list of proposed job site staff and home office staff directly involved with this Project. Indicate the qualifications, pay rates, titles, responsibilities, and duties of each person.
- E. Certificates evidencing insurance coverage in the amounts and types specified.
- F. An interim construction schedule in a bar graph format.
- G. A completed Schedule of Values in the format provided by the Owner.

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

Prior to the award of the Contract, the Bidder will be notified in writing. If the Owner has reasonable objection to any proposed person or entity, the Bidder may at his option, (1) withdraw his bid or (2) submit an acceptable substitute person or entity with an adjustment in cost occasioned by such substitution. The Owner may at his discretion, accept the adjusted bid price or disqualify the Bidder.

The Owner reserves the right to request financial statements from the bidder before the award of a contract.

14. POST BID INTERVIEW

The selected Contractor as determined by the Owner may be required to attend a pre-contract award interview at the job site office of R.C. Hendrick & Son, Inc. for the purpose of reviewing the submitted bid for compliance with specified products, methods of installation, warranties, general job procedures, post bid information and related items.

Meeting minutes of the pre-contract interview will be taken by R.C. Hendrick. Before concluding the interview, the minutes will be signed by those in attendance. The interview may be recorded in person or via conference call and will become part of the contract.

15. TAXES

Each bidder shall include in their proposal, and agree to pay, all fees and taxes including Sales and Use which they may be required to pay in connection with the performance of the contract. Also, the bidder includes and agrees to pay for all contributions to unemployment compensation, health and welfare, appropriate benefits, or other purposes now or hereafter during the term of the contract and the Owner and Construction Manager shall not be liable for any additional charges.

16. INDEMNIFICATION AND GENERAL LIABILITY INSURANCE

Each trade contractor shall agree to indemnify and hold harmless the Owner, Architect and R.C. Hendrick from and against any and all general liability claims whatsoever arising out of or occurring during and occasioned directly or indirectly by its negligence or fault. Prior to entering into a contract, each trade contractor shall provide evidence satisfactory to the Owner, Architect and R.C. Hendrick of adequate general liability insurance coverage which names the Owner, Architect and R.C. Hendrick as additional insured. Each trade contractor shall also provide evidence of Worker's Compensation Insurance in the amounts required by the State of Michigan.

17. LOCAL PRODUCTS

All prime bidders, subcontractors and suppliers shall utilize products that are local to the region or State whenever possible where price, quality and performance are equal to or better than non-local products.

18. MINORITY SUBCONTRACTORS

Bidders are encouraged to use the services of minority subcontractors if possible in the pursuance of this project.

19. NON-COLLUSION CLAUSE

By submitting and signing the proposal form, the bidder declares that neither the bidding firm nor agents of the bidding firm or any other members of the proposed team have entered into any collusion or agreement concerning any aspect of the proposal.

20. CONSTRUCTION DOCUMENT RESPONSIBILITIES

All bidders are responsible for the COMPLETE set of drawings and specifications including the CM Issued Front-End, Technical Specifications (Architectural, Mechanical, and Electrical), Drawings (Civil, Structural, Architectural, Mechanical, Electrical, etc.). Bidders are to familiarize themselves with the work of other trades and participate in the coordination of work activities.

All bidders are to include, in their entirety, the work and instructions described in Division 0 – “Bidding and Contract Requirements” and Division 1 – “General Requirements.”

21. WARRANTY

All work shall be guaranteed for a period of twelve (12) months from the date of substantial completion of the entire Bid Package unless more specifically stated in the contract documents. All service during this 12-month period shall be rendered without charge to the Owner. This 12-month warranty does not replace any longer warranties required by the specification.

22. SITE VISIT

All contractors are required to visit the site to familiarize themselves with existing conditions either through the Pre-Bid Conference or through a visit you have scheduled with R.C. Hendrick. Contractors shall not visit or walk through the site without permission from R.C. Hendrick.

23. SUBMITTALS

Submittals of product data, shop drawings, color charts and samples are required for this project. When submitting information electronically all contractors shall use the Portable Document Format (.pdf) for all email attachments. Forms and requests that are submitted in a different format may be rejected resulting in delays to the schedule and payments.

24. ADDITIONAL SETS OF DRAWINGS AND SPECS

The Owner will not furnish additional sets to the successful bidder(s). Contractors will need to purchase or reproduce additional sets of plans and specifications at their own expense.

25. PERMITS AND INSPECTIONS

Contractors shall submit and pay for all applicable permits required for their work. Contractors shall also schedule timely inspections and provide inspection reports to the Owner. The Owner shall secure and pay for the Building Permit ONLY.

26. EXTRA WORK

The maximum amount of markup for extra work is 15% and that shall include overhead, profit, estimating expense, other office expense, insurance and bonds.

27. CLEANUP

All contractors shall provide daily and weekly cleanup including dust control. If contractors are not cleaning up, they shall be notified by the Owner and if there is not a response, the Owner will hire a cleaning company and backcharge the contractor(s).

28. LAYOUT

All contractors are responsible for their own layout and field dimensions.

29. TEMPORARY ENCLOSURES AND WEATHER PROTECTION

All temporary enclosures shall be weather-tight and secure at the end of every work day. Contractors shall be responsible for any damage due to enclosures not being weather-tight or not secure.

30. SWORN STATEMENTS AND WAIVERS

Sworn statements and waivers are required with every payment request. Final payment will not be issued without full unconditional waivers from all suppliers.

31. PROJECT CLOSEOUT

Closeout documents must be submitted in both paper and electronic (PDF) formats.

END OF SECTION 00 2000

BID CATEGORY #1

ROOFING

The work scope for this Bid Category includes, but is not limited to the work as specified in the R.C. Hendrick Project Manual, the Architect's Technical Specification, the Drawings and any Addenda issued prior to the bid date.

Provide all labor, materials and equipment to satisfy the following Specification Sections and Notes unless otherwise noted.

07 5419 Polyvinyl-Chloride Roofing

Bid Category Notes (Including, but not limited to):

- Remove all existing perimeter edge metal and dispose of in a legal manner.
- Remove existing epdm roof membrane and dispose of in a legal manner.
- Inspect existing insulation and remove and replace any wet insulation.
- Install tapered insulation in connector roof areas to assist with drainage.
- Install (1) layer of 1" extruded polystyrene insulation board over the entire roof area.
- Install (1) layer of FR-10 slip sheet over the extruded polystyrene insulation board.
- Install a 50 mil, PVC roof system over the entire roof area. The roof membrane is to be mechanically fastened per manufacturer's specifications.
- Install two way breather vents per manufacturer's specifications.
- Install custom flashings to all roof penetrations per manufacturer's specifications.
- Install 30" x 60" walk pads at all roof access points and service doors of all RTUs.
- Install 24 gauge, Kynar coated, two piece compression fascia system to entire roof perimeter. Fascia is to be sized to cover fade line from existing fascia system.
- Install 24 gauge, Kynar coated spillout/collector boxes around roof perimeter. Spillout/collector boxes are to be positioned at column lines to the greatest extend possible.
- Install 24 gauge, Kynar coated down spouts to all collector boxes. Down spouts are to extend to the grade and have an elbow at the end of each down spout where ever possible. Down spouts that are not able to be extended to grade shall come down 3-5' from the collector boxes and have an elbow attached.
- Provide complete clean up and removal of all job related debris.
- Provide a manufacturer's 20 year NDL warranty covering materials and labor.

All Bidders shall include a \$20,000.00 allowance in their bid to cover wet insulation replacement

All Bidders shall provide a square foot price for removal and replacement of 2" ISO.

Base Bid (Entire Building): \$ _____

Area A: \$ _____

Area B: \$ _____

Area C: \$ _____

Area D: \$ _____

SECTION 00 4000

BID FORM

TO: Timothy Furtaw, Director of Facilities
Saginaw Career Complex
2102 Weiss
Saginaw, MI 48602

RE: Saginaw Career Complex- 2022 Re-Roofing Project

Having carefully reviewed the bidding documents described in Section 001000 and understanding the scope of work involved in the proposed Bid Category 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 Category indicated in accordance with the Bid Category Description and the Contract Documents prepared by the Architect and Construction Manager

BID CATEGORY #: _____ **DESCRIPTION:** _____

BIDDERS NAME: _____

BASE BID: (Entire Building)

Total Base Sum of _____

_____ Dollars \$ _____

AREA A:

Total Base Sum of _____

_____ Dollars \$ _____

AREA B:

Total Base Sum of _____

_____ Dollars \$ _____

AREA C:

Total Base Sum of _____

_____ Dollars \$ _____

AREA D:

Total Base Sum of _____
_____ Dollars \$ _____

ADDENDA:

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

Addendum #: _____ Date: ____/____/____ Addendum #: _____ Date: ____/____/____
Addendum #: _____ Date: ____/____/____ Addendum #: _____ Date: ____/____/____
Addendum #: _____ Date: ____/____/____ Addendum #: _____ Date: ____/____/____
Addendum #: _____ Date: ____/____/____ Addendum #: _____ Date: ____/____/____

ALTERNATES:

Bidders shall indicate on the Bid Form if the Alternate is an ADD or DEDUCT to the Base Bid and indicate the costs associated. If the Alternate does not affect your base bid you must circle NO CHANGE.

None

UNIT PRICES:

Unit prices shall include all necessary material plus costs for delivery, installation, insurance, bonds, applicable taxes, overhead and profit. See the drawings and Section 01 2200 for the full description.

None

VOLUNTARY ALTERNATES / SUBSTITUTIONS:

Bidder is cautioned to bid on the "Standards" specified. The following substitutions from 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 \$ _____

WORK TIME:

The undersigned hereby agrees to complete the entire work per the Milestone Schedule.

EXPERIENCE MODIFICATION RATE (EMR):

List the EMR for your firm as described by your insurance carrier for the past three (3) years.

2019 _____ 2018 _____ 2017 _____

CONTRACT:

The undersigned agrees that the above Base Bid Prices shall hold for 60 days and Alternate Prices for 120 days after receipt of proposals, to accept provisions of "Instructions to Bidders."

TIME AND MATERIAL RATES: (REQUIRED)

Labor rates listed below include the following: Cost of labor including Michigan Single Business Tax, Social Security and Medicare, Federal and State Unemployment tax, and Fringe Benefits Under Collective Bargaining Agreements, and Worker's Compensation Insurance. The rates listed below do not include overhead and/or profit. These rates are only for additions and/or deletions to the contract that could not have been anticipated at the time of the bid.

Trade	Straight Time	Shift Time	1 ½ Time	Double Time

SUBMITTED BY:

Firm Name: _____

Address: _____

City/St/Zip: _____

Email Address: _____

Signed: _____ Title: _____

Typed Name: _____ Date: _____

Phone: _____ Fax: _____

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

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

Please submit (3) copies and retain (1) copy for your records.

Sworn and Notarized Familial Disclosure Statement

The undersigned, the owner or authorized officer of _____ (the "Bidder"), hereby represents and warrants except as provided below, that no familial relationships exist between the owner or any employee of the bidder and any member of the Board of Education or the Superintendent of the School District of the City of Saginaw.

The following are the familial relationship(s)

Owner/Employee Name:	Related To:	Relationship:

There are no familial relationships that exist between the owner or employee(s) of the Bidder.

BIDDER:

 By: _____
 Printed Name & Title:

STATE OF MICHIGAN)
)ss.
 COUNTY OF _____)

Subscribed and sworn before me, this _____
 day of _____, 20____, in and for
 _____ County, Michigan

by _____
 (Signature) NOTARY PUBLIC

My Commission Expires _____

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:

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.

Signature

Title

Company

Date

SECTION 007300

SUPPLEMENTARY CONDITIONS

GENERAL CONDITIONS

1. The General Conditions of this contract are the American Institute of Architects Standard Document A232-2009, titled "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition." This document is hereby made part of the Contract Documents.
2. The following supplements modify AIA Document A232-2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 2 – OWNER

1. Delete subparagraph 2.2.5 and substitute:
2.2.5 – The Contractor will be furnished, subject to a deposit, all copies of drawings and specifications reasonably necessary for execution of the work as determined by the Construction Manager.

ARTICLE 3 – CONTRACTOR

1. Add Section 3.4.2.1 to Section 3.4.2:
3.4.2.1 After the Contract has been executed, the Owner, Construction Manager and Architect will consider requests for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications).
By making requests for substitutions, the Contractor:
 - .1 represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
 - .2 represents that it will provide the same warranty for the substitution as it would have provided for the product specified;
 - .3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that subsequently become apparent; and
 - .4 shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
2. Delete subparagraph 3.4.3 and substitute:
3.4.3 The Contractor shall at all times enforce strict discipline and good order among the Contractor's employees and any subcontractor employed by the contractor and shall not employ on the work any unfit person or anyone not skilled in the task assigned to them.
3. Add subparagraph 3.7.6

3.7.6 Regarding OSHA fines: The Contractor for any fines incurred as a result of the Contractor shall reimburse the Construction Manager for similar fines against the Construction Manager.

4. Add subparagraph 3.9.4

3.9.4 The Construction Manager reserves the right to cause the replacement of the superintendent, assistant superintendent or employee of the contractor who is not qualified, in the opinion of the Construction Manager to do the work.

ARTICLE 5 – SUBCONTRACTORS

1. RE: Subparagraphs 5.2.1, 5.2.2, 5.2.3, and 5.2.4.

Delete the words, “the Construction Manager or Architect” and insert the words, “the Construction Manager and Architect.”

ARTICLE 7 – CHANGES IN THE WORK

1. Add Subparagraph 7.1.4

7.1.4 The maximum allowable markup on Changes in the Work shall be eleven percent (15%) which includes overhead, profit, estimating expenses, other office expense, bond and insurance costs.”

2. RE: Subparagraph 7.3.7

Delete the words, “the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount.” and insert the words, “Section 7.1.4.”

ARTICLE 8 – TIME

1. Add subparagraph 8.3.4

8.3.4 Claims for Delay: In the event the contractor is delayed in completing the work by the Owner for any reason, whether intentional or otherwise, and the delay does not preclude the contractor from completing the work within the time period specified in the contract agreement, the contractor shall be entitled to no remedy for such delay.

ARTICLE 9 – PAYMENTS AND COMPLETION

1. Add subparagraph 9.3.1.3

9.3.1.3 Up to time the work is substantially complete, the owner will make monthly payments to the contractor, based on the schedule of values of 90% of the value of labor and materials incorporated in the work and of 90% of all tangible materials stored at the site during that month. The Owner will have retained five percent (5%) of the total contract price for “Closeout Materials” and five (5%) of the total contract price for “Punch List Completion”. The Contractor may request payment of the retained percentages upon completion of that portion of their Work.

2. Add subparagraph 9.3.1.4

9.3.1.4 Deliver estimates to the Construction Manager for approval as agreed upon. The form of application for payment shall be AIA Document G732-2009, notarized by Contractor and supported by AIA Document G703 – Continuation Sheet.

3. Add clause .8 to subparagraph 9.5.1

.8 Unsatisfactory clean-up in accordance with subparagraph 3.15.

ARTICLE 11 – INSURANCE AND BONDS

1. Add the following Sections 11.1.2.1 through 11.1.2.4 to Section 11.1.2:
11.1.2.1 The limits for Worker’s Compensation and Employers’ Liability insurance shall meet statutory limits mandated by State and Federal laws. If (1) limits in excess of those required by statute are to be provided, (2) the employer is not statutorily bound to obtain such insurance coverage, or (3) additional coverages are required, additional coverages and limits for such insurance shall be as follows:

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)

11.1.2.2 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:

Bodily Injury	\$1,000,000 – each occurrence \$2,000,000 – aggregate
Property Damage	\$1,000,000 – each occurrence \$2,000,000 – aggregate
Fire Damage (any one fire)	\$100,000
Medical Expense (any one person)	\$5,000

Notes:

- (1) Products-Completed Operations Insurance shall be maintained for a minimum period of one (1) year after final payment.
- (2) The Owner, Architect and Construction Manager shall be listed as additional insured. The Owner shall be the certificate holder.

11.1.2.3 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

11.1.2.4 Umbrella or Excess Liability Coverage:

UMBRELLA / EXCESS LIABILITY INSURANCE:

Umbrella/Excess Insurance	\$2,000,000 – each occurrence \$2,000,000 – aggregate
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2. **Add Subparagraph 11.3.11**
11.3.11 The provisions of this paragraph 11.3 shall not operate to relieve the Contractor of responsibility for loss or damage to the Contractor's own or rented property or property of Contractor's employees of whatever kind or nature, including but not limited to: tools, equipment, forms, scaffolding and temporary structures, including their contents. The Owner shall in no event be liable for loss or damage to the aforementioned items or other property of the contractor that is not included in the permanent construction.
3. **Delete Subparagraph 11.3.7 Waivers of Subrogation**

ARTICLE 13 – MISCELLANEOUS PROVISIONS

1. **Delete subparagraph 13.6 – Interest in its entirety.**

END OF SECTION 007300

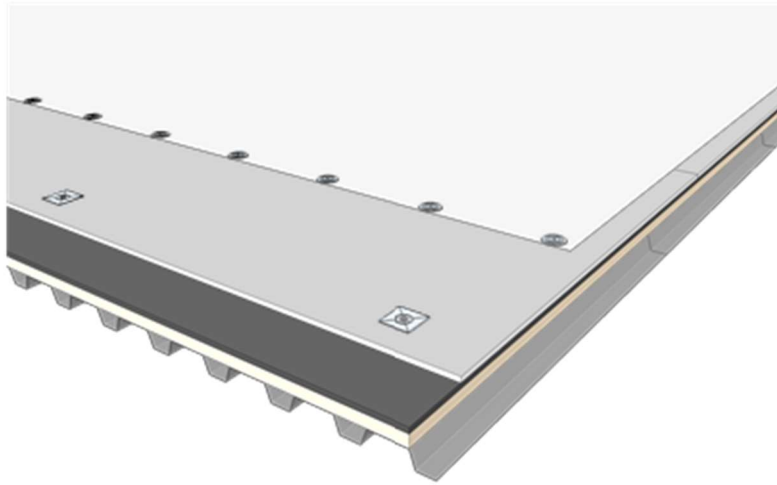
Saginaw Career Complex

2102 Weiss
Saginaw, MI

Entire Building

Prepared For:

Prepared By: Trevor Wagester
Duro-Last Roofing



Duro-Last Roof Assembly Description

- **Duro-Last® PVC thermoplastic membrane**
Membrane Thickness: 50 mil
Color: White
Attachment: Attached with mechanical fasteners
- FR-10 slip sheet
- **Extruded polystyrene insulation board**
1.0" Attachment: Attached with mechanical fasteners
- Remove existing **Single-Ply: EPDM**
- **Steel Roof Deck**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Remove existing Single-Ply: EPDM leaving existing iso and BUR system in place.
- B. Duro-Last® PVC thermoplastic membrane attached with mechanical fasteners.
- C. FR-10 Slip sheet
- D. Extruded polystyrene insulation board, 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. 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.

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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

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.

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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. – Basis of design.
- B. All roofing system components to be provided or approved by Duro-Last Roofing, Inc.
- C. Substitutions must meet all performance and warranty requirements and be approved prior to bidding.

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 DL or DLX membrane
 - 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: FR-10 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

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7. Termination and Edge Details: Supplied by Duro-Last Roofing, Inc. Contractor fabricated metal will not be accepted.
 - a. Termination Bar.
 - b. Universal 2-Piece Compression Metal System.
 - c. Collector boxes/ scuppers
 - d. Down spouts
 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. Substrate Board:
1. Extruded polystyrene insulation board.
 - a. 1 inch thick.
- D. 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.
 - 1.

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. Remove existing Single-Ply System:
 - 1. Remove all loose or high fasteners.
 - 2. Remove and replace wet insulation.
 - 3. 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.
 - 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. Install insulation in accordance with the roof manufacturer's requirements.
- B. Separation Board: Extruded polystyrene insulation board.
- C. FR-10 Slip Sheet
 - 1. 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.
 - b. Attach boards in parallel courses with end joints staggered 50% and adjacent boards butted together with no gaps greater than ¼ inch.
- D. 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.

- E. 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.
- F. 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.
- G. 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.
- H. Roof Drains:
1. Coordinate installation of roof drains and vents specified in Section 15146 - Plumbing Specialties.
 2. Remove existing flashing and asphalt at existing drains in preparation for sealant and membrane.

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3. Provide a smooth clean surface on the mating surface between the clamping ring and the drain base.

I. 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 specified in Section 07620.
4. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies specified in Section 07710.

J. 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.

K. 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.

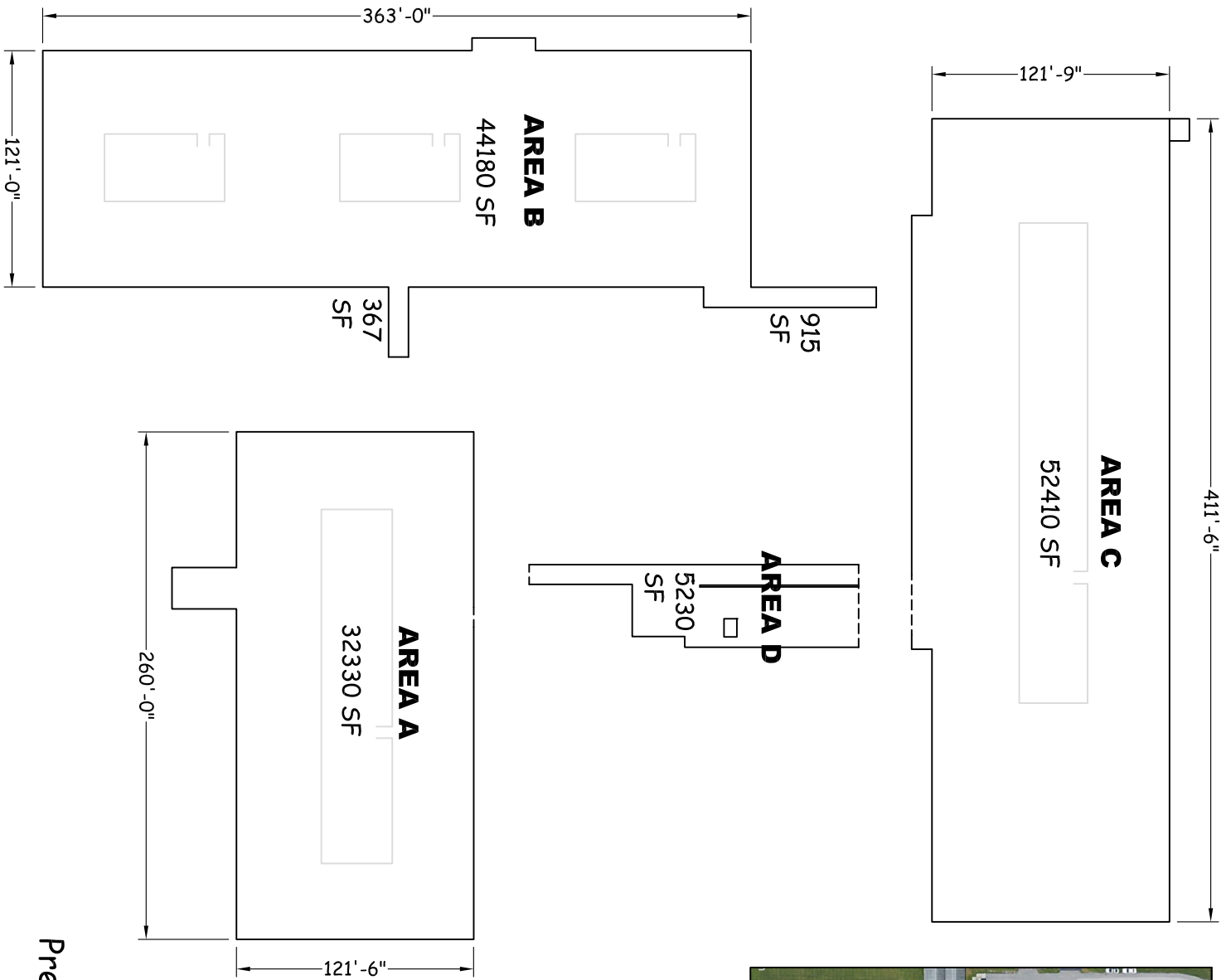
3.4 FIELD QUALITY CONTROL

- 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



Presentation Drawing Only

Legend	
Factory	
Field	
Curb	
Stack	
Walkpad	

Drawn By: P. Vargas
 Date: 11/4/2021
 Scale: N.T.S.

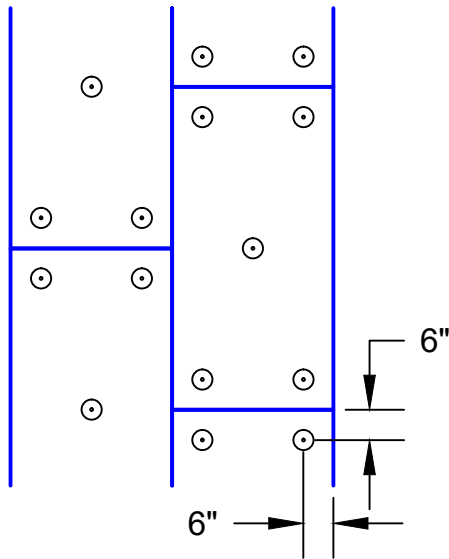
Duro-Last Roofing, Inc. is the supplier of the materials only. The proposed layout is based upon the information provided by the contractor and/or independent sales rep. Verification of local building codes, dimensions and quantities are the sole responsibility of the architect, installing contractor, independent sales rep, or owners representative prior to ordering

Career Complex Saginaw, MI Trevor Wagester		
Date	Revision	By
00/00/00	-	-
00/00/00	-	-
00/00/00	-	-

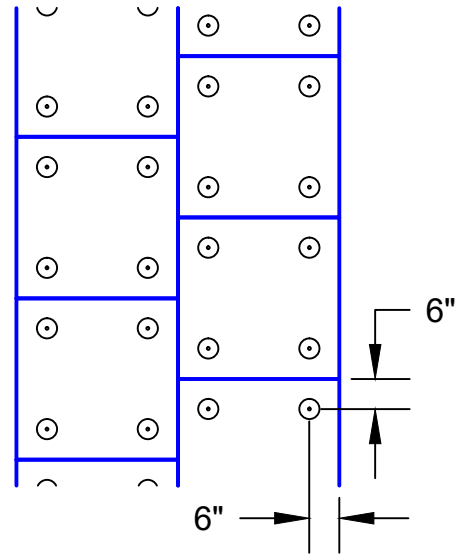
525 E Morley Drive
 Saginaw, MI 48601
 Fax: 989-758-6359
 Phone: 800-248-0280
engineering@duro-last.com

Project #: 179540

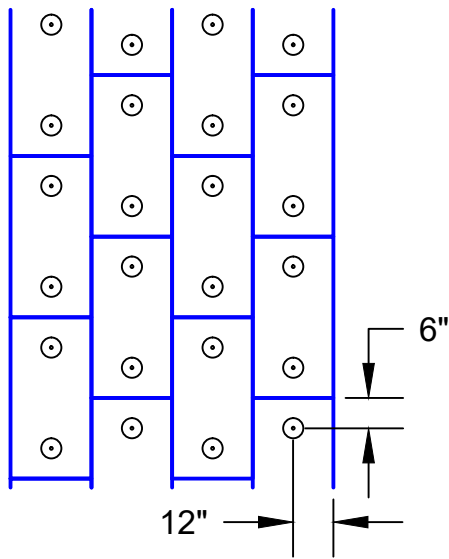
4 □ 8 ft
Approved Insulation



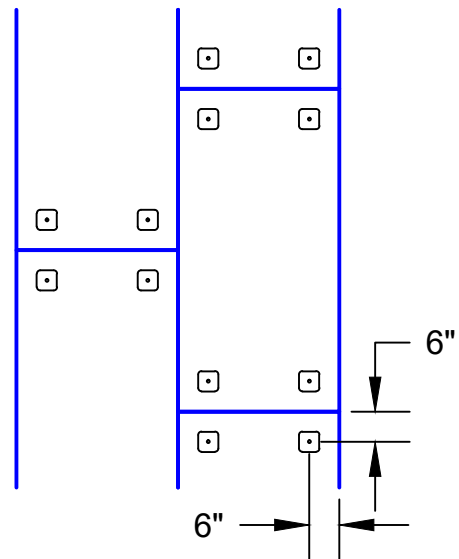
4 □ 4 ft
Approved Insulation



2 □ 4 ft
Approved Insulation



4 □ 8 ft
Approved Cover Board



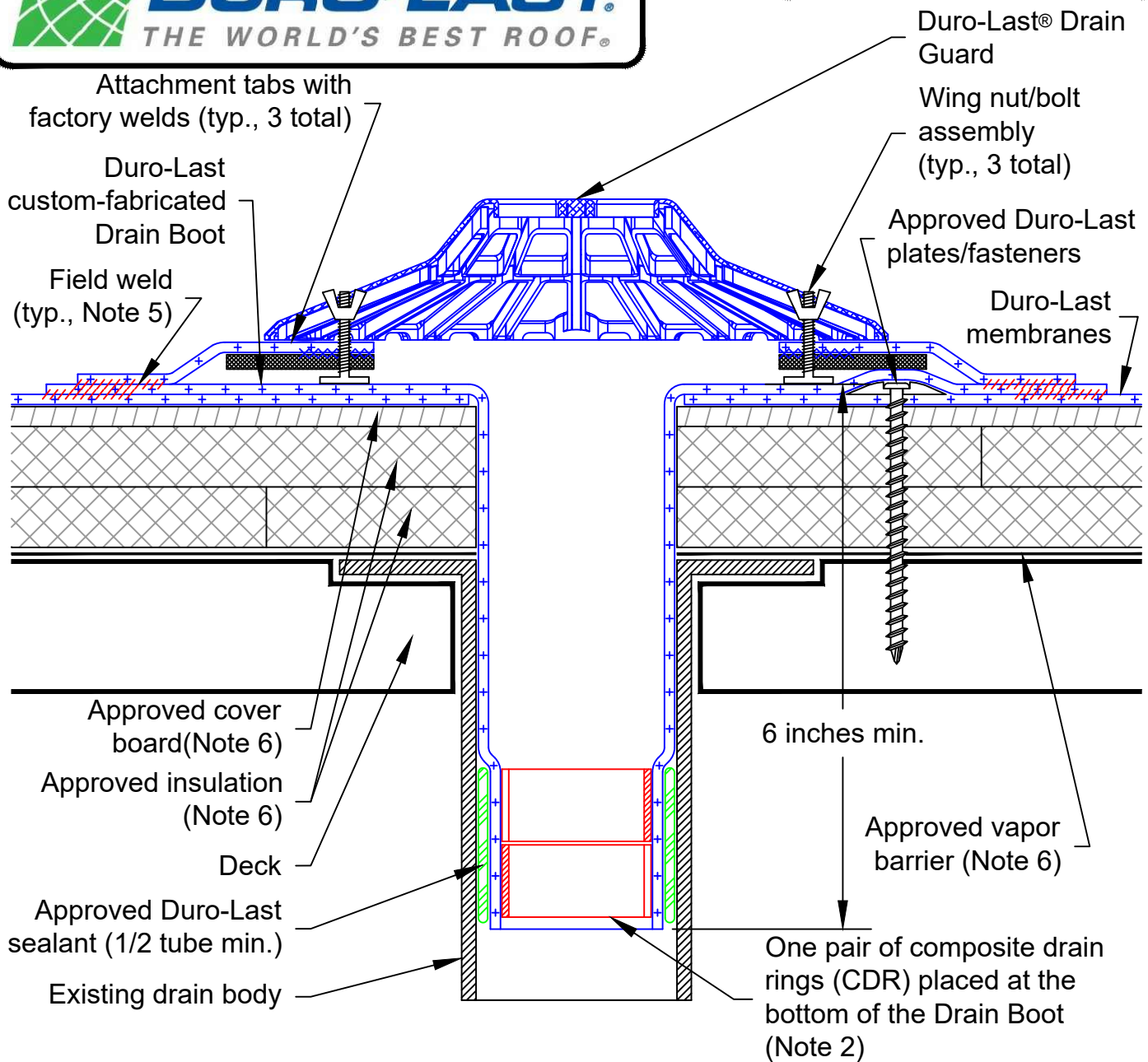
Note 1: It is recommended to stagger all joints between boards by 50% from row to row and layer to layer.

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



Note 1: Membrane must be fastened around the perimeter of the drain with the same fastening pattern as the field membrane, no less than 1 fastener per drain.

Note 2: Openings in the CDRs must face in opposite directions. Sealant must be behind the membrane at the CDRs' location.

Note 3: Duro-Last Drain Guard attachment tabs are secured to the roof membrane by heat welding. Do not mechanically fasten.

Note 4: Duro-Last Drain Boots are made to fit specific drain sizes. Never install a Duro-Last Drain Boot into a drain of a different size.

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

Note 6: Refer to specifications for vapor barrier, insulation and cover board requirements.

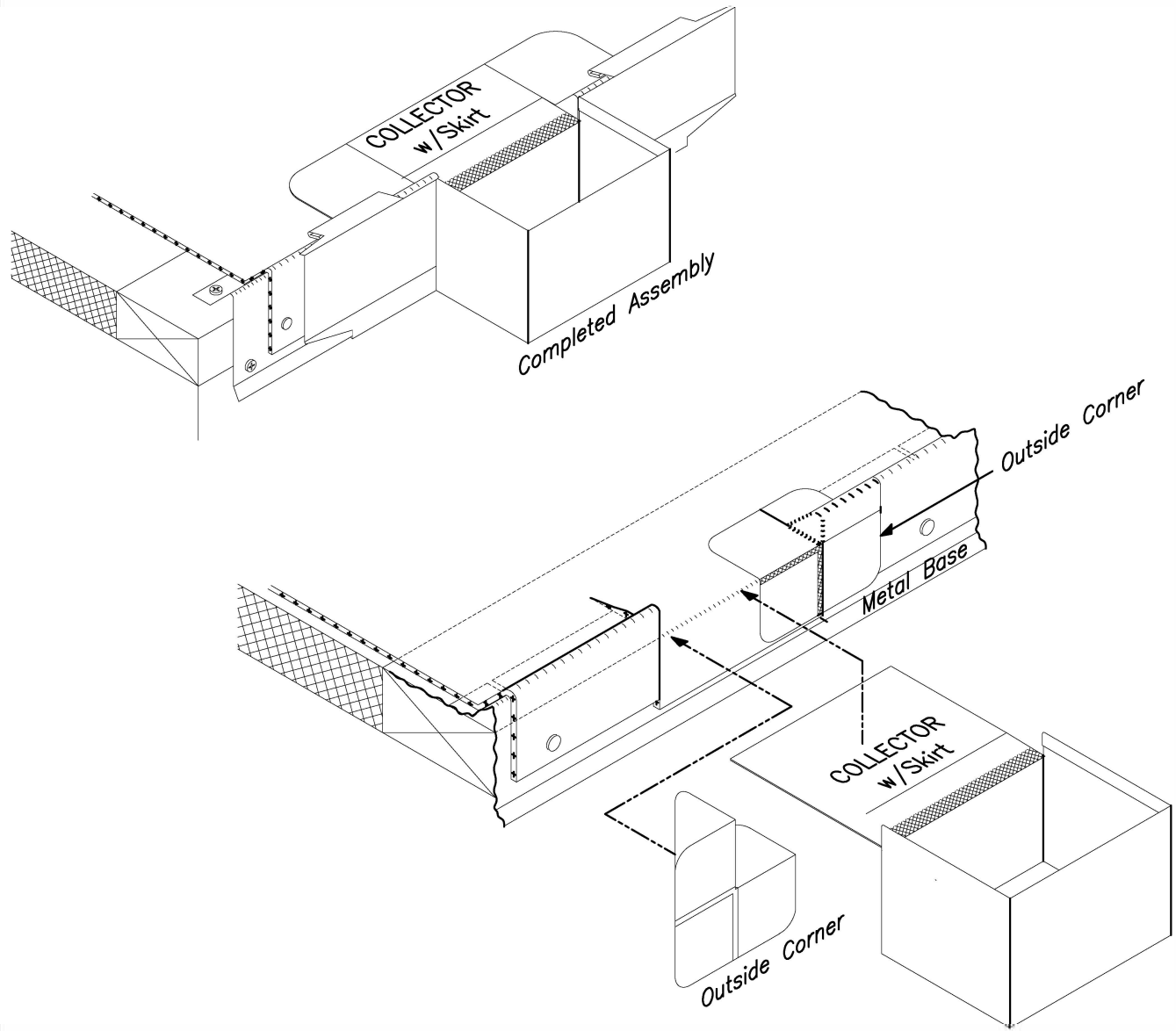
REVISED:	N/A	DRAINAGE DETAIL FOR MECHANICALLY FASTENED SYSTEMS
PREVIOUS:	06/03/2020	ROOF DRAIN WITH DRAIN GUARD
SCALE:	NONE	NEW CONSTRUCTION OR RE-ROOF



DURO-LAST, INC.

525 Morley Drive
Saginaw, MI 48601

EDGE COLLECT.

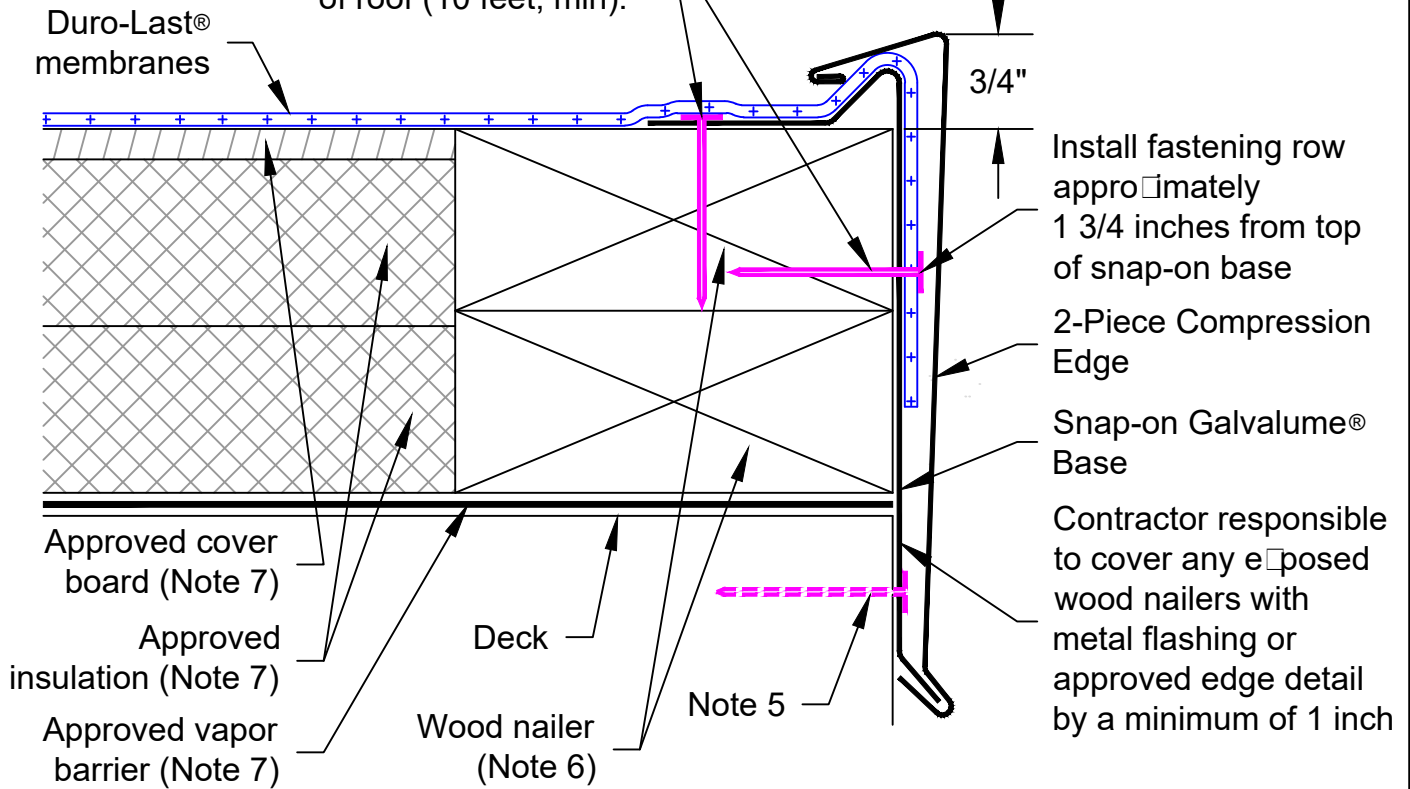


Outlet Centered Left to Right

© COPYRIGHT 2006

DATE: JANUARY 2008	EDGE COLLECTOR
DRAWN BY: EM	2-PIECE COMPRESSION COLLECTOR
SCALE: NONE	NEW CONSTRUCTION OR RE-ROOF

Fasten 6-inches on center with 1 1/4-inch roofing nails. Increase fastener spacing to 3 inches on center at outer corners of roof (10 feet, min).



Note 1: This detail is limited to membrane thicknesses of 60 mils or less.

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

Note 3: The use of this detail is not to exceed a 2-inch per 12-inch slope.

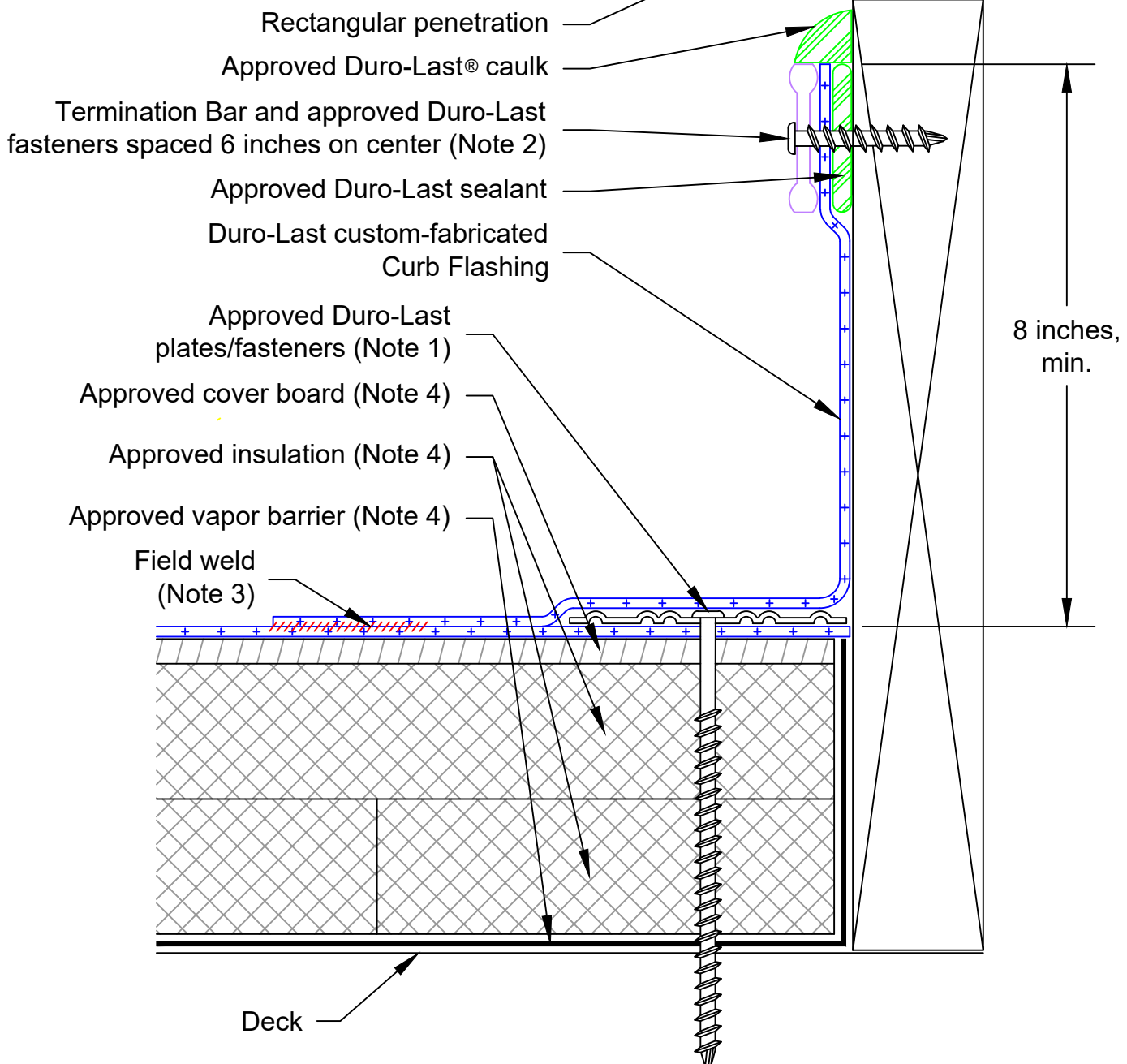
Note 4: Allow for 1/8-inch expansion gap between 10-foot lengths of snap-on base. Overlap snap-on covers by 2 inches between 10-foot lengths.

Note 5: When installing this detail with a 6-inch or greater vertical surface, an additional fastening row must be located approximately 1 1/8 inches from bottom of snap-on base.

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.**

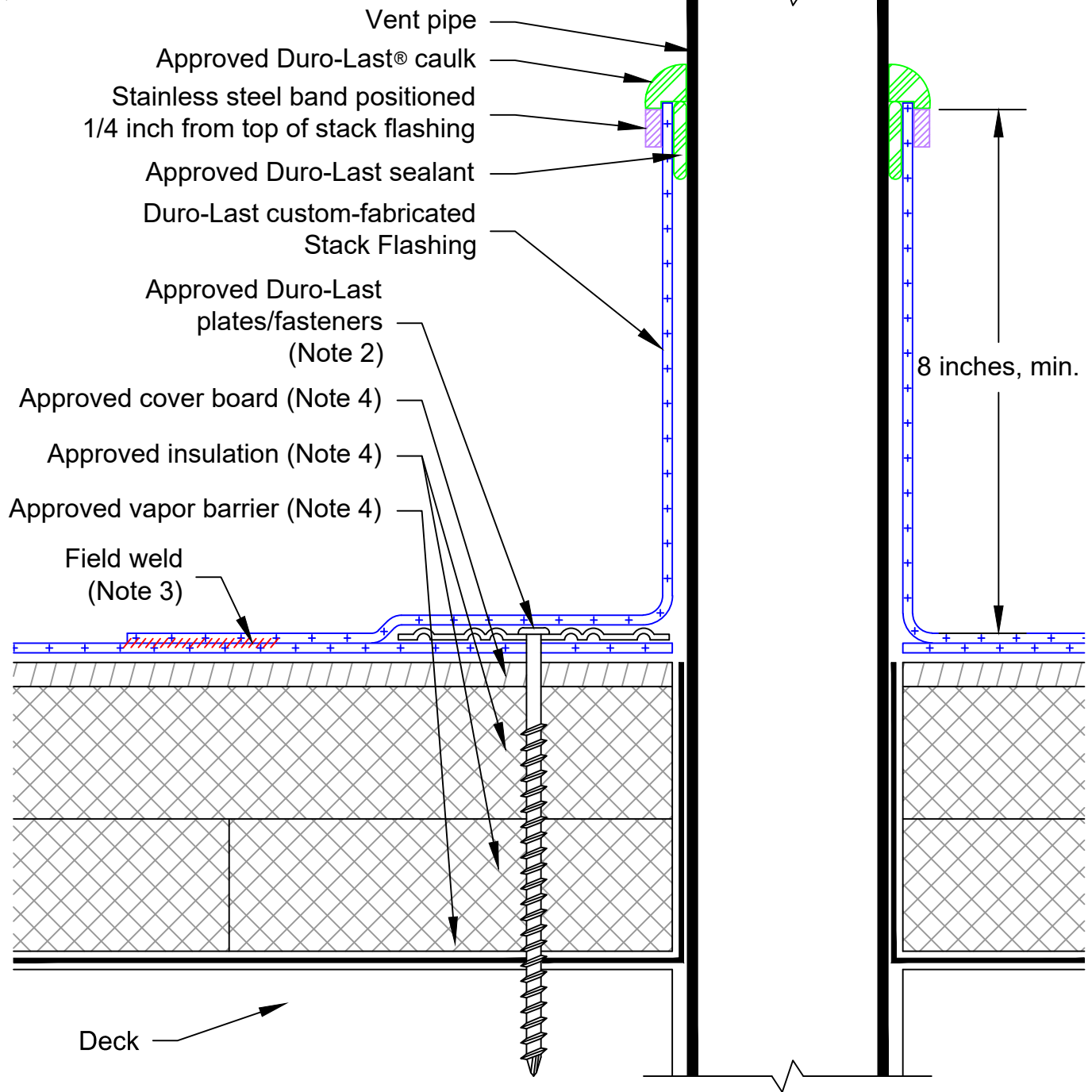
Note 7: Refer to specifications for vapor barrier, insulation and cover board requirements.

REVISED: 08/24/2017	EDGE DETAIL FOR MECHANICALLY FASTENED SYSTEMS
PREVIOUS: 01/01/2009	UNIVERSAL 2-PIECE COMPRESSION EDGE
SCALE: NONE	NEW CONSTRUCTION OR RE-ROOF



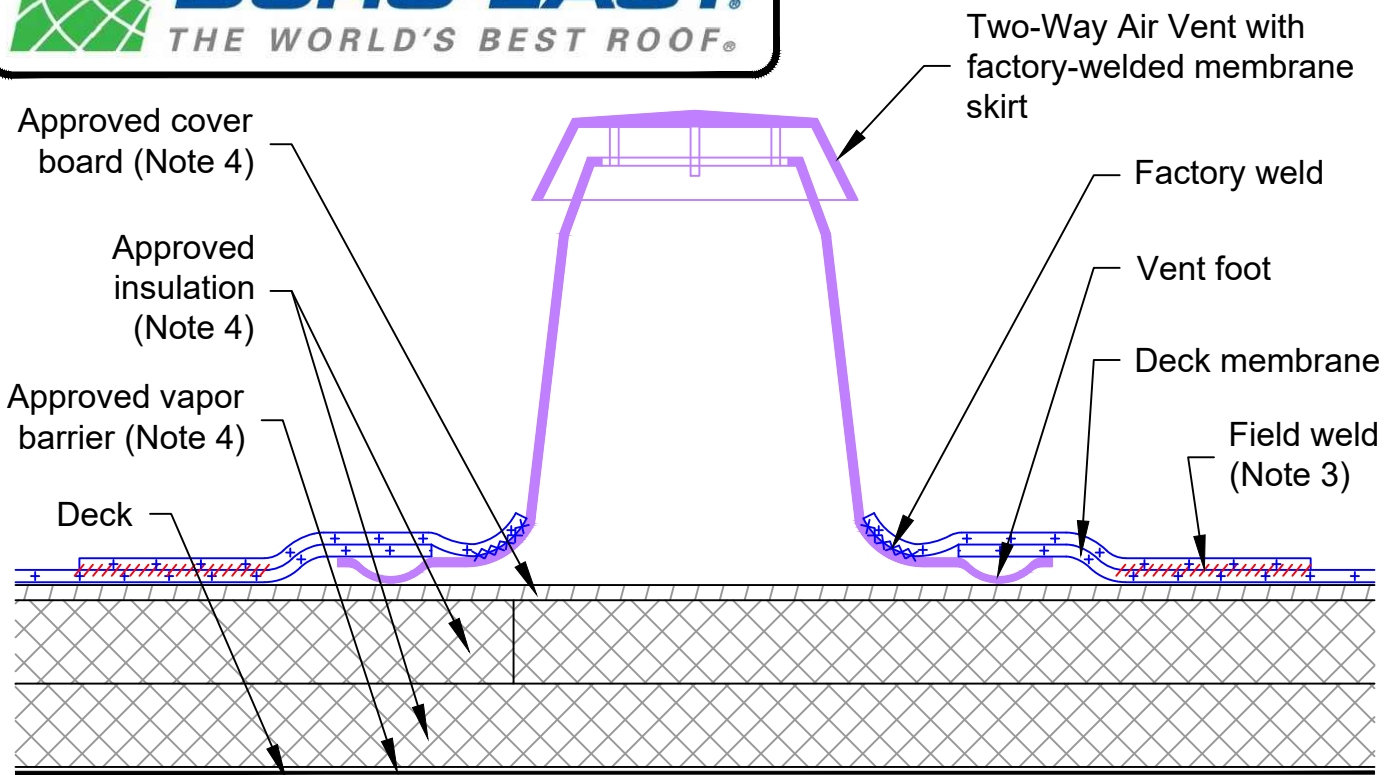
- Note 1: Deck membrane shall be fastened around perimeter of roof penetration as per respective □one the roof access hatch is located within (field, perimeter, corner).
- Note 2: Termination Bar shall have an approved Duro-Last fastener within 1 inch of each corner.
- Note 3: All field welds shall be 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