



Jefferson County
School District 509J
UNITE. ENGAGE. SOAR.

ADDENDA #2

Madras Elementary School
Seismic Improvements
Issue Date 04/19/22

DATE: April 19, 2022

TO: Potential Bidders

FROM: Jefferson County School District
445 SW Buff Street
Madras, OR 97741

Revisions: Section 22039 Roof Specification

1. Roof specification for Madras Elementary Gym.

Mike Tiller

Mike Tiller, Project Manager

Cc:

ROOF WORK --- INDEX

RE-ROOF SPECIFICATIONS:

Section 07 01 00 - GENERAL INSTRUCTIONS FOR ROOFING.....	Page 1 thru 13
Section 07 54 19 – FULLY ADHERED SINGLE-PLY ROOF SYSTEM -	Page 1 thru 22
Section 07 60 00 - FLASHING & SHEET METAL.....	Page 1 thru 6
Section 07 99 07 - ROOF CONSTRUCTION DATA	Page 1 thru 1
Section 07 99 13 - AS-BUILT DRAWING.....	Page 1 thru 1
Section 07 99 16 - ROOF DETAILS.....	Page 1 thru 3
Section 07 99 19 - DETAIL CALLOUT MAP	Page 1 thru 1
Section 07 99 28 - ROOFING SYSTEM CONTRACTOR'S GUARANTEE – SINGLE-PLY	Page 1 thru 2

Section 07 01 00
GENERAL INSTRUCTIONS FOR ROOFING

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION

A. Project Name:

1. This project shall be known as the:
JEFFERSON COUNTY SCHOOL DISTRICT, Madras Oregon
- 2022 – MADRAS ELEMENTARY SCHOOL-GYM
-- Single-Ply roof system over new plywood sheathing roof project

1.02 QUALITY ASSURANCE

A. Bid Instructions:

1. Refer to “Bid Form” and “Instructions to Bidder’s” for specific quoting information with regard to roof areas.
2. Compliance with all Owner’s (*Jefferson County School District*) requirements is considered a baseline requirement of this project.

B. Performance Specification:

1. Special Note: This specification is a “Performance Specification” and is based on a defined manufacturer’s system for establishment of the baseline standard only. There are equal systems available and additional manufacturers are listed within the document. The products listed are the minimum standard upon which a manufacturer’s system will be approved as long as all other aspects of the specification are complied with.
 - a. Only the listed manufacturers will be accepted for this project, without exception.
2. There are multiple manufacturers listed with equal systems and the listed manufacturers herein are listed for the bidder’s convenience, but it is the bidder’s responsibility to make sure that the system that they are quoting in compliance with the specified system requirements.
3. The term “System” refers to all components that comprise the roof assembly including but not limited to the roof insulation, adhesives, fasteners, flashing materials, membrane, etc.

1.03 GENERAL SCOPE - (*by bid requirements*)

A. SPECIAL NOTE:

1. Because of the on-going roofing supply chain issues, this project is specified with two (2) approved membrane assemblies:
 - a. Baseline system is 60-mil PVC - fully adhered membrane
 - b. Alternate System is 80-mil TPO - fully adhered membrane

B. The following is a general review of the scope of work as it applies to the required quotes.

1. Removal & Replacement:
 - a. All roofs that are included within this project.

2. General Scope: -

NOTE: Refer to other sections of the specification documents for specific and general system requirements by roof defined Building/Roof(s).

a. Removal & Replacement --- Roof A

- (1) Single-Ply System - (new): Removal of all existing single-ply roof membrane, flashing, sheet metal and all incidentals down to the deck/substrate; clean and prepare substrate for the new specified roof system.
- (2) Seismic Up-Grade: New 15/32" plywood sheathing shall be installed over cleaned and prepared deck to meet the engineer's nailing requirements as defined within these specification documents.
 - (a) Roofing Contractor is responsible for all aspect of the new sheathing installation including labor, materials, scheduling, and keeping building watertight.
 - (b) Work shall be coordinated with General Contractor on this project.
- (3) New System: Adhered vapor retarder; mechanically attached polyisocyanurate insulation and 1/2" HD Coverboard (*DensDeck Prime*) to meet and/or exceed FM-1-90 attachment; fully adhere Single-ply membrane and all flashings (*refer to instruction on approved membrane assemblies for this project*), flashings and walk-pads, termination bar as required by mfg.; removal and replacement of fascia boards; perimeter flashing metal, counter-flashing metal, new clad metal, wood nailers to meet height requirements; pre-painted perimeter metal, fall protection warning line; raising of roof-mounted equipment to meet minimum 8" height requirements; and all incidentals, to complete the specified warranted system/assembly.

b. Alternates: Other than as defined, there will be no membrane type and/or system or manufacturer alternates accepted for this project. Material alternates that meet the requirements of the defined system and are approved by the membrane system manufacturer for their warranted assembly will be reviewed. All Owner's decisions are final.

c. Additional General Information - (*All Quotes / All work on this project*):

- (1) Crickets: Install crickets at upslope side of all equipment.
- (2) New wood nailers to raise perimeter height.
- (3) Raise all equipment, vents, etc. as may be required to meet the minimum 8" clearance height above the finished roof surface.
- (4) Fall protection warning line system (*permanent/heat welded*).
- (5) Incidentals: All incidentals to complete the system to a warrantable level.

d. All trades to complete the work shall be included within cost/quote.

e. Roofer shall include all sub-contractors necessary to complete the roofing work including the installation of the new specified plywood sheathing.

f. Sub-contractors will be discussed at mandatory pre-bid meeting.

C. General Project/Scope Information:

1. Comply with written specifications and roof system manufacturer's printed requirements and Owner's requirements on this project for the specified warrantable system.
 - a. Strictest document shall apply at all times if a conflict arises or is noted.
2. Contractor must comply with all Owner's requirements throughout the course of this project, without exception.
3. Incidentals: All incidentals to complete the system to the specified warrantable level.
4. All trades to complete the work shall be included within cost/bid with special notations/requirement.
5. Sub-contractors will be discussed at the mandatory pre-bid meeting.

D. Alternates:

1. No additional manufacturers systems other than those listed/ identified herein as approved manufacturers.
2. No alternates will be accepted without pre-approval.
3. No system alternates (*i.e. built-up for single-ply or TPO or EPDM for specified PVC*) will be accepted on this project.

1.04 GENERAL SCOPE SUMMARY (*items included in project*)

A. Membrane System:

1. 60 mil PVC (*membrane – minimum thickness*) fully adhered assembly including all manufacturer approved/specified system components
2. Alternate: 80-mil TPO (*membrane – minimum thickness*) fully adhered assembly including all manufacturer approved/specified system components.

B. Insulation & tapered insulation board– General as applicable to specific roof area:

1. Polyisocyanurate insulation.
 - a. Thickness: 1.5" minimum.
 - b. Mechanically attached.
 - (1) Attachment shall meet and/or exceed FM 1-90 minimum requirements
2. HD Coverboard:
 - a. Field of roof: Mechanically attach ½" DensDeck Prime coverboard.
 - b. Vertical surfaces: ¼" DensDeck Prime – mechanically attached.
3. Insulation General:
 - a. Submittals on this project shall include attachment pattern layout for perimeter, field corners, etc. (*systems rating is applicable*).
 - (1) Attachment shall be minimum FM 1-90 (*or equivalent*).
 - b. Staggering of the insulation is required a minimum of 24" on ends and 12" on the sides (*all layers*).
 - c. Comply with published standards and specification with strictest requirements in effect.

C. Crickets – Insulation:

1. As applicable: Refer to drawings for cricket design requirements for each roof area.
2. Crickets at the up-slope side of all equipment, curbs (*large or small*), etc.
3. Crickets must be installed within insulation assembly and under coverboard.
4. To be reviewed at the pre-bid meeting.

D. Sheet Metal:

1. New perimeter metal to match the existing style, type, gauge and color.
2. Perimeter: New - (*Replace existing with new*)

3. Equipment (*as required*):
 - a. Raise all equipment as necessary to meet 8" height requirements above finished roof field.
 - b. Install new counter-flashing of all equipment and proper flashing of base flashing membrane.
 - c. Curbs: New metal and counter-flash if possible.
 - d. Remove any equipment noted for removal by Owner's representative during bidding process and include in base bid. Removal includes deck repair/patch using a metal plate adhered to concrete decks and mechanically attached to metal decks.
 4. All new sheet metal shall be installed to SMACNA standards when conflict occurs and finished assembly shall match the assembly removed.
 - a. Metal shall be galvanized or stainless steel only, with scupper being only stainless steel.
 5. Refer to Section 07 54 19 for further information.
 6. Attachment of the sheet metal shall meet and/or exceed all current SMACNA published guidelines.
 - a. Nails are not an acceptable attachment method. Screws, with appropriate (*specified*) washers, are required.
 7. A shop drawing approved by consultant, including gauge, style, color, and fastener pattern is required prior to the project start.
 8. All fabricated sheet metal work necessary to complete the project and not defined as salvage (*removed and reinstalled*) shall receive standing seams and shall employ double breaks with no exposed sharp edges.
- E. Deck – Existing roof deck/substrate system repairs:
1. Inspect existing deck and repair as required at complete tear-off and replacement areas in preparation for the installation of the new sheathing and new roof assembly - system components.
 2. At equipment removal areas, new framing and deck installation is required and shall comply with all current building code. Deck shall be same dimension as existing.
 3. All major deck/substrate repairs, other than at defined equipment removal areas, shall be considered a cost-plus item.
 - a. Immediate notification of deck problems to Owner's representative is required in order to process any applicable cost-plus billing.
 - b. Violation of this instruction and failure to submit a fully executed change order within twenty-four hours (*workdays*) of the notification shall result in possible loss of and/or non-payment of any applicable repairs.
 4. New 15/32" plywood sheathing.
 - a. Refer to Engineer's drawings, details, and scope requirements within this specification.
 - b. Roofing contractor is responsible for the materials and all installation association with this part of the project.
 - (1) Keep the roof work and building watertight at all times.
 - (2) Roofing contractor will be responsible for all costs and/or damage repairs for violation of the requirement to keep the building watertight at all times.
 5. See Single-ply Roof Section 07 54 19 for further information.

F. Penetrations:

1. Penetrations shall be detailed based on roof membrane system manufacturer's most recent printed instructions and/or the specification documents with the strictest document being the requirement.
 - a. Owner (*Owner's Representative*) decisions are final in the case of a dispute or needed interpretation.
2. General Notes / As approved by Manufacturer:
 - a. New flashing of all other roof penetrations including conduct, pipes, etc. to meet manufacturer's requirements.

G. Fascia Removal & Replacement:

1. Existing Fascia board system shall be removed and replaced with new wood fascia board system.
 - a. Wood: Standard or Better Fir
 - (1) Straight and true board required
 - b. Prepainted (*primed and painted*) prior to installation
 - (1) Touch-up installed assembly with same color paint after installation.

H. Fall Protection:

1. Single-ply system: Fall Protection line installation at six foot (6') in from outboard perimeter at all perimeters with edges below forty-two inches (42").
 - a. PVC Fully Adhered system: Heat Welded.
 - b. Painted is only acceptable with prior approval and only if adhered system is not available.
2. No attachment (*davit, etc.*) included within the scope of this project unless addressed under other sections of this project.

I. Asbestos Management:

1. ACRM – asbestos containing roofing materials.
2. Refer to Lab results if included within the document.
3. As applicable, the project has areas of ACRM that require removal and areas where the ACRM will remain and has been inventoried and identified as such within these documents.
4. Contractor shall meet and comply with all ACRM instructions as well as current Code, Laws and other requirements for the handling and/or removal of ACRM materials.

J. Prefabricated Pipe Supports: - As may be required

1. Project requires removal and disposal of all existing pipe and conduit supports and replacement with new prefabricated units a maximum of eight (8) foot on center spacing and in compliance with current Code for spacing which varies by pipe size.
2. Type: Pre-manufactured pipe support blocking with recycled materials and clamping assembly; H-Block mini; mfg. by Haydon; Roof Top Support System; (*or equivalent*) with unitstrut and adjustable support depending on height of the pipe/conduit.
3. Approval: Approved for use on particular roof system applicable to this project. Refer to roof system sections for further information.

K. Miscellaneous - General:

1. Removal of any obsolete equipment.
 - a. Equipment noted on drawings and on the roof.
 - b. Equipment noted and discussed during the pre-job meeting.
2. Raise all roof mounted equipment to meet minimum 8" height requirement above finished roof surface including crickets.
3. New roofing shall not be installed over dirty or otherwise unacceptable substrate including equipment, moisture, debris, etc.
4. Contractor's moving forward with installation is an acceptance of the substrate by the applicator/contractor. Notify project manager of any unacceptable conditions before proceeding.
5. Protect the existing and new roof system at all times during the course of the project.
6. All existing sleepers shall be replaced with new roofed in curb and/or platform detail.
7. Any wood replacement that may be necessary shall standard or better dimensional lumber except when in contact with concrete where the use of treated wood shall be required.
8. All Incidentals to complete the project to a warrantable level based on these specifications and the manufacturer's printed instructions.
 - a. Whenever a conflict occurs, the strictest interpretation shall be utilized.

1.05 SQUARE FOOTAGE

- A. The roofs within the scope of this project include an approximate total.
1. Contractor is responsible for verification of all square footage. Owner and/or Roof Consultant shall not be responsible for the accuracy of any square footage information provided within this specification or mistakes and/or errors by the bidder and/or contractor.
- B. For individual square footage, please refer to drawings and "Roof Construction Data" section within specification and "Detail & Insulation Rebuild Callout Sheet" drawings.
- C. **NOTE:** The noted figures herein are approximate square footage only. Contractor is responsible for the verification of all square footage and components.

1.06 INSPECTIONS

- A. Bid/Quote Process:
1. Inspection of the work area may be obtained by authorized Bidder's representatives during quoting process, after *(not before)* the mandatory pre-bid meeting.
 2. Notification to Owner as noted during pre-bid meeting is required before accessing roof.
 - a. Do not access roof without checking in with the designated on-site building representative, as the building is a secured facility.
 - b. Access procedures will be discussed at the pre-job meeting and included in the Addenda issues based on that meeting.
- B. Work-in-Progress Inspections: *(during work)*
1. Project is subject to periodic and possibly full-time inspections by Owner's representative(s) and Roof Consultant during the course of the project.
 2. Supplemental as required during course of project.

- C. Close-out:
1. Substantial Completion Inspection(s).
 2. Final Inspection.
 3. Manufacturer's Warranty Inspection(s).
 4. Any additional inspections that Owner or Project Representative (*Roof Consultant*) requires in order for project to be accepted as completed.

1.07 SCHEDULE

- A. A written schedule is required to be submitted and approved before project start-up.
1. Refer to submittal requirements within this document.
- B. Completion of work is required based on approved schedule.
1. Refer to 1.11 "Weather..." for further information.
 - a. Schedule must include not only start and finish dates, but work patterns, staging areas, etc.
 2. Once contractor starts the work on this project, they are required to stay on the project until completion other than normal non-workdays (*holidays, weekends, etc.*) as identified within the approved schedule.
 - a. Failure to comply with this instruction will possibly remove contractor from Owner's pre-approved and invited bidder's list for future projects.
- C. Completion of the work, in its entirety, by the date indicated within the "Bid/Project Information" and applicable contract documents are considered mandatory on this project.
1. Coordination with Roof Consultant on schedule, delays, etc. is required during the entire course of this project.

1.08 FACILITY OPERATIONS - and - SCHEDULING

- A. The contractor shall comply with all special requirements as noted at pre-bid meeting with regard to this public school facility.
1. Storage on-site is available during the project including the parking area.
 - a. Final decisions on area(s) will be made during the pre-construction meeting.
 2. Building access locations will be identified and approved during the pre-construction meeting and must be via ladder.
 - a. Refer to special security requirements within this specification document - (*refer to 2.12 Safety & Security*).
- B. The contractor shall be required to meet all Owners' requirements for set up and storage of materials and work noise, etc.
1. Blockage of building access doors and/or adjacent traffic areas is not acceptable without prior written approval. Inside access during the project is restricted to designated path/patterns, unless otherwise pre-approved by Owner's representative.
 - a. Contractor is responsible for any damage associated with inside access (*i.e. stains on floor, etc.*)
 2. Contractor shall comply with all odor and low odor adhesive requirements on this project.
 3. To be reviewed at pre-bid meeting and again in more detail during pre-job meeting.

- C. This project is to be conducted while the normal day-to-day operations of the facility are being conducted. Contractor is required to take care to make as little interruption and disruption as possible of the day-to-day activities.
1. Early and/or late hours as well as weekends are acceptable, within compliance with City and County regulation applicable to work locations, but the contractor shall be required to notify Owner's representative and Roof Consultant of work area and schedule at least two (2) working days prior to work on a specific area.
 2. There is a possibility of a few non-workdays due to special activities within the facility will be reviewed during the pre-bid meeting.
 3. Schedule must comply with local zoning laws and requirements for noise, etc.
 4. Prior schedule approval, including non-acceptable workdays (*periods*) is required by Owner and Owner's representative prior to project start.

1.09 BUILDING ACCESS; STAGING & LOADING

- A. No building access is available to roofing crew other than that which is necessary to complete the project as specified and reviewed/noted during pre-bid meeting.
1. Coordination with Owner's representative (*Consultant and on-site*) is required applicable to any work that is necessary on the inside of the building.
 2. This is a secured building and all Owner's security requirements must be complied with at all times.
- B. Roof access to be reviewed at pre-bid meeting.
- C. Contractor to work from sides and back of building whenever possible and under no circumstances shall the Main (*Front*) Entry(s), loading dock or other restricted areas be blocked.
1. Under certain circumstances, other building access or work areas may be blocked with prior approval by the Owner's representative. Approval is required a minimum of two (2) working days prior to work at requested area.
- D. Location of access, staging, crane, drop box, etc. shall be discussed at the mandatory pre-bid meeting and confirmed during pre-construction meeting.
1. Notification of selected applicable locations shall be provided to the Owner's representative and Consultant prior to start up.
- E. Materials movement on ground:
1. Contractor is responsible for the safety of anyone and/or property while moving materials on ground at any time, associated with the project
 2. A ground spotter with safety vest and warning flags is required at all times when moving a fork-lift or other equipment while on-site, during the course of the project.
- F. Damage:
1. Contractor is responsible for any and all damage to building and/or grounds. Contractor shall take all precautions to protect all areas during the course of the project.

1.10 ENVIRONMENTAL

- A. The contractor is responsible for maintaining the quality of the environment within and around the building, at all times, during this project.
 - 1. Notify Owner of any situation that may be considered unhealthy to building inhabitants.
 - 2. Special conditions applicable to air intakes are the contractor's responsibility during the project. These may include shut down of equipment during work at or adjacent to intake areas, etc.
 - a. To be discussed at pre-bid meeting.
- B. Equipment Shutdown:
 - 1. If the contractor requires shut down of equipment, prior scheduling of a minimum of twenty-four (24) hours is required.
 - a. Violation of this instruction will render contractor responsible for any damage to products, etc. due to the action (*i.e. loss of freezer, cooling, etc.*)

1.11 WEATHER RELATED REQUIREMENTS

- A. Weather:
 - 1. This project is located in a region where weather is a very high consideration.
 - 2. Contractor is responsible for monitoring weather conditions and adjusting their project activities, coordination, and protection accordingly.
 - 3. All precautions and protections of building, building components/occupants, new roofing, storage, and work areas are required during the project due to any inclement weather conditions.
 - 4. Contractor is responsible for all damage/costs associated with moisture and weather affecting the roof system (*new or existing*) as well as new roofing materials and any interior damage.

1.12 CREW SIZE REQUIREMENTS

- A. Contractor shall provide a crew large enough to complete the project in a timely manner and stay within submitted and approved schedule
 - 1. Once the project starts, the contractor is required to provide adequate crew size to complete work within the defined/approved schedule.
- B. The Owner reserves the right to disqualify any member of the contractor or sub-contractor from working on the project without cause.
 - 1. Contractor will be notified in written form (*electronic or hard copy*) of the disqualification and the contractor must remove that/those individual(s) immediately from the job site and replace with an experienced crew member so as not to jeopardize the project schedule.
- C. Crew shall comply with all Owner's requirements at all times.

1.13 MISCELLANEOUS

- A. SANITARY CONTROL:
 - 1. Contractor shall supply portable restroom facilities and maintain in a clean and secure manner during the course of the project. (*No building access allowed.*)
 - a. Unit shall be immediately removed upon completion of the project.
 - b. If unit shall not be mounted on roof, it shall be located only on the ground at a location that is agreeable to the Owner.

B. POWER & WATER:

1. Contractor shall supply own power and water unless prior written approval by Owner is received.
 - a. If approval is provided, a written correspondence from the Consultant to the Contractor will be provided.
 - b. Contractor is responsible for all problems, damage, etc. that may result from the use of the Owner's power and water should permission be granted.

C. Damage to Building & Surrounding Area/Grounds:

1. Contractor is responsible for any and all damage to building and grounds and shall return the applicable area or structure to its original condition prior to finishing the project.

1.14 SAFETY

A. General:

1. Safety is a priority on this project including but not limited to the roofing crew, building occupants, pedestrians and anyone that may venture into the work area.
2. Contractor shall:
 - a. Be responsible for safety at site during the duration of the project and must comply with Owner requirements and requests
 - b. Be responsible for the security of all applicable equipment and materials during the course of the project.
 - c. Comply with all applicable Codes and Standards with regard to safety and health issues and assume all responsibility for compliance, at all times.
 - (1) Applicable to, but not limited to, all Federal, State, and Local laws, standards, and regulations.
 - d. Meet all Owner's safety requirements as defined within their company policy or directed by Owner's representative and/or Roof Consultant.
 - e. Comply with all industry standards, as well as any additional Owner and/or Owner's representative requests, at all times during the course of the project.
 - f. Maintain a safe work site including not only persons working on project but also building occupants and/or persons that may be in the area.
 - g. Comply with all Owner's safety requirements during the course of the project.
3. Fall protection requirements shall be adhered to at all times during the project and is the contractor's responsibility.
4. Special Note: A ground spotter with safety vest and warning flags is required when moving a fork-lift or other equipment while on-site, during the course of the project.
5. The Owner shall not be responsible for any problems, damage or loss associated with this instruction without additional cost to Owner.

1.15 SECURITY

A. General:

1. Contractor shall:
 - a. Maintain a secured site during the course of the project.
 - b. Comply with Owner's security requirements at all times.

B. Specific:

1. During Bidding:

- a. Roof Access for follow-up to pre-bid inspection is acceptable, but only after attending pre-bid meeting
- b. No access prior to pre-bid and only will be available for those firms that attended the pre-bid meeting and signed in.
- c. Comply with directions for access give at pre-bid meeting if different than the following.
- d. Check-in at the front desk and identify yourself as a bidder on the reroof project and that you need to access the roof.
- e. After checking in, you can access the roof with your own ladder at the front of the building only.
 - (1) The ladder must be place at the front of the building only.
 - (2) Ladder must be attended at all times. If you are the only person, it is acceptable to use your ladder while on the roof, but it must be taken down and put back on your vehicle immediately upon finishing your inspection.
 - (3) When you ladder is properly secured then proceed into the building to check out.
 - (a) Do not leave the ladder unattended at any time.

2. During Roof Project:

- a. Access will be via ladders, supplied by contractor, at designated (*approved during the pre-construction meeting*) location(s).
- b. Ladders will be taken down when the roof is not attended (*at any instance*) including lunch breaks or when the roofing crew leaves the site. No Exceptions.
- c. An Emergency Contact List will be supplied by contractor to the roof consultant prior to the project start and updated as contractor personnel change.
 - (1) Roofing contractor shall be required to keep the list current at all times during the course of the project.
 - (2) Any changes must be emailed to roof consultant immediately after a change is made.

1.16 LIQUIDATED EXPENSES (*Liquidated /Stipulated Damages*)

- A. Refer to other sections of this document.

1.17 BONDS

- A. Bid Security Bond:

1. Refer to other sections of this document.

- B. Performance / Payment / Public Works Bonds:

1. Refer to other sections of this document.

1.18 ASBESTOS (*NOT APPLICABLE TO THIS PROJECT*)

- A. RESULTS: Refer to Asbestos Analysis if included herein

- B. As applicable, Contractor must comply with all local state and federal requirements for asbestos removal within the scope of a roof project.

1. If, during the course of the project, asbestos conditions are identified that were not previously noted, the Contractor shall immediately notify the Roof Consultant and Owner's representative, IN WRITING, of the conditions.

2. At that time, the Owner and Roof Consultant shall determine the best course of action and will notify the Contractor in a timely manner.
 3. At all times, the Contractor is required to meet minimum standards with regard to asbestos as it relates to roofing and retrofit roofing projects.
 4. The Owner reserves the right to contract with an Asbestos Abatement Contractor for removal and any and all asbestos if the successful bidder (*Contractor*) and Owner are unable to agree on a cost for such related work.
- C. Contractor shall submit their asbestos abatement plan prior to project start-up (*as applicable*). Refer to Submittals section within this specification document.
- D. Under no circumstances shall any materials containing asbestos be allowed with the scope of this project. This includes all mastics, plies, coatings, etc.
1. Contractor shall be responsible for all costs, fines, labor, etc., as may be applicable for removal, via approved asbestos removal methods, for any materials installed in violation of this instruction.

PART 2 - SUBMITTALS

2.01 SUBMITTALS

- A. DOCUMENTS:
1. Refer to other sections of this document
 2. Submittals shall be as defined elsewhere within this document as a full and complete package.
 - a. Electronic submittals are accepted for this project.
 - b. Submittals go directly to Roof Consultant unless otherwise directed during pre-bid meeting.
 3. Submittals shall be submitted as a complete document applicable to the required submittal time.
 - a. If the submittal is not complete and/or is submitted in pieces at different times, it will be subject to rejection of the entire submittal package by the Consultant and/or Owner's representative.
- B. PRIOR TO BID: (*To Consultant*)
1. Substitution Request within five (5) working days of bid date.
 2. Refer to other sections of this document for substitution requirements and limitations.
- C. AT TIME OF BID: (*To Owner within Bid Package*)
1. Refer to other sections of this document.

PART 3 - CONTRACT DOCUMENTS - and - ADMINISTRATIVE REQUIREMENTS

3.01 APPLICATION FOR PAYMENT (Roofer)

- A. Refer to other sections of this document.
- B. Execute a copy of AIA Document G702 "APPLICATION AND CERTIFICATE FOR PAYMENT" along with AIA Document G702A "Continuation Sheet".
1. Document must be fully executed and signed with all change order documentation, etc.
 2. Include Company Invoice for each billing with fully executed application for payment.
 - a. Billing will not be processed without the required Company Invoice for each billing.
 3. Retainage of 5% per billing is required on this project and shall be properly indicated on both the AIA documents and the required Company Invoice.

- C. Submit original on a monthly basis to Roof Consultant for review and processing.
 - 1. Roof Consultant will forward approved documents to Owner after the review or contact Contractor if a problem occurs.
 - 2. Do not submit billing directly to Owner.
 - a. This will slow payment considerably.
- D. Final payment will be made upon receipt by Owner of fully executed AIA Document G706, "CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS" and AIA Document G706A, "CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS" and if P/P bonded, AIA Document G707, "CONSENT OF SURETY TO FINAL PAYMENT".
 - 1. Under no circumstances will final payment be released until receipt and acceptance of all project documents by Owner.
 - 2. Final payment shall not be approved until all punch list items are completed and roof project has been completely accepted by Roof Consultant and Owner.

3.02 OCCUPATIONAL SAFETY AND HEALTH ACT REQUIREMENTS

- A. It shall be the sole responsibility of the Contractor to assess the job conditions and to comply with all applicable safety precautions to insure that the Owner's personnel, agents, invitees, business associates, and workers, engaged in project or not, are protected from injury during the time of the contract, and all activities associated with this project.
- B. The Contractor and applicable sub-contractors shall indemnify and hold the Owner and the Owner's agent(s) harmless from any and all expenses incurred as a result of legal action(s) resulting from injury to any party during the time of the contract.
 - 1. This instruction applies to anyone whether they are a part of the project or not.
- C. The Contractor shall comply fully with the provisions of the "Occupational Safety and Health Act" of 1970 (*or most recent as applies*) applicable to the work of this project.
 - 1. Contractor shall indemnify and hold the Owner and Owner's agent(s) and Consultant harmless of and from any and all penalties, fines, or expenses which may occur by reason of violation by the Contractor and/or their sub-contractor(s) of any of the terms and provisions of said act or standards.

- END OF SECTION -

SECTION 07 54 19

**Fully Adhered Single-Ply Insulated Roof System
PVC Membrane & Roof Insulation**

PART 1 - GENERAL

1.01 DESCRIPTION:

A. General: "Performance Specification Statement"

1. This specification is a "Performance Specification" and is based on a defined manufacturer's system for establishment of the baseline standard only. There are equal systems available and additional manufacturers are listed within the document. The products listed are the minimum standard upon which a manufacturer's system and only the listed manufacturers and their applicable system will be approved for this project.
 - a. The installed system requires a manufacturer issued 20-yr NDL system warranty and minimum 2-yr Contractor's Guarantee of Workmanship upon the successful completion/acceptance of the project.
2. SPECIAL NOTE:
 - a. Due to the on-going roofing/construction materials delivery problems, this project is bid with the 60-mil PVC fully adhered assembly as the baseline system. However, an 80-mil TPO membrane system can be substituted and will be approved. You must indicate at time of bid which membrane system you are bidding.

B. Scope:

1. Removal & Replacement --- Roof A

- a. Single-Ply System - (new): Removal of all existing roof membrane, insulation, flashing, sheet metal and all incidentals down to the existing deck/substrate; clean and prepare substrate for the new specified roof system. Install new 15/32" plywood sheathing per engineer's specified instructions; new vapor retarder; mechanically attached 1½" polyisocyanurate insulation and ½" HD DensDeck Prime; fully adhered 60-mil PVC membrane system or alternate 80-mil TPO, flashings and walk-pads, termination bar as required by mfg.; perimeter flashing metal, counter-flashing metal, new clad metal, wood nailers to meet height requirements; pre-painted perimeter metal, fall protection warning line; raising of roof mounted equipment to meet minimum 8" height requirements; and all incidentals, to complete the specified warranted system/assembly.

2. Related Work: The work includes but is not limited to the installation of:

- a. Substrate Preparation -Cleaning and repair.
- b. New 15/32" plywood (CDX) sheathing per Engineer's details, drawings, and specifications.
- c. Insulation – New, new additional and new crickets
- d. Roof Membrane – Fully adhered PVC-60 mil (*baseline spec*) or Alternate TPO 80-mil f/a
- e. Membrane Attachment: Fully adhered
- f. Fasteners (*insulation & sheet metal*)
- g. Adhesives for Roof System and Flashings
- h. Roof Membrane Flashings
- i. Walkpads at defined areas (*if required*)
- j. Metal Flashings

- k. Sealants
 - l. Sheet Metal Flashing
 - m. Raising of equipment to meet height requirements
 - n. Fall protection warning line.
3. Upon successful completion of work the following warranties may be obtained:
- a. Contractor's 2-year Workmanship Guarantee.
 - b. Membrane Manufacturer's Twenty (20) Year NDL System Warranty.
4. Related Work Specified Elsewhere:
- a. Sheet Metal (*Section 07 60 00*)
 - b. All primary roof membrane manufacturer's requirements including, but not necessarily limited to, pertinent portions of their Specifications and General Requirements and recommendations apply to the work of this section as fully as though repeated herein based on their most recent printed literature.

1.02 QUALITY ASSURANCE – Applicable to this Section of Work

- A. Acceptable PVC Roofing Materials Manufacturer shall be:
- 1. Sika-Sarnafil (*base line standard for the performance specification*)
 - 2. Carlisle Syntec Roofing Corporation.
 - 3. GAF Roofing Materials Corporation
 - 4. Johns Manville Roofing Corporation.
- B. Acceptable TPO Materials Manufacturer shall be:
- 1. Carlisle Syntec Roofing Corporation
 - 2. Firestone Roofing Systems
 - 3. Johns Manville Roofing Corporation
 - 4. Versico Roofing Systems

Special Note:

This is a **Performance Based Roof System specification** with the Sika-Sarnafil fully adhered system listed herein as the base-line standard. Refer to other portions of this document for further requirements applicable to approved equals.

While the manufacturers are listed for the bidder's convenience, the system bid/quote must comply with building Code and other listed requirements as specified within this document. In addition, the Siplast assembly/system listed within this document shall be considered the base/standard upon which any alternates shall be reviewed. The term "system" refers to all components that comprise the roof assembly including insulation, adhesive, fasteners, membrane, base flashing, etc. to comply with warranted system specifications.

- C. General Contract Requirements:
- 1. Whenever specification items found herein are less stringent than Manufacturer's General Requirements, manufacturer's requirements shall be followed, including but not limited to, compliance with any and all guarantee requirements.
 - 2. Meet all Owner's requirements as may be dictated and/or defined within their contract documents and/or printed instructions.

D. Approved Equals: -

1. Only the listed manufacturers will be approved for this project.
2. This applies to substitutions to the listed manufacturers system components within the approved manufacturers listed herein.
3. Approved equals must be submitted per specification general instructions/requirements prior to award of project.
 - a. The Owner reserves the right to approve other products after award if it is in the best interest of Jefferson County and the overall intent of the project.
4. Equals will be reviewed for compliance with all aspects of the specification documents including membrane system performance, compliance with specific manufacturer requirements as noted within specification documents, references, and similar projects, etc.
5. No alternates will be approved without meeting all requirements and intent of this specification and the scope of work of this project and have complied with all instruction, etc.
6. Submit requests for substitution on format per form included within the specification documents. Requests not submitted on approved format are unacceptable and may not be reviewed.
7. No unlisted product substitutions are acceptable.
 - a. Substitution for material components with similar components that comprise an approved system will be reviewed; however, changes in system from the Single-ply roof assembly specified herein to a SBS Modified, etc., will not be reviewed.
 - b. All Owner's, and their assigned project representative's, decisions are final.

E. Acceptable Products:

1. Primary roofing products, including each type of roofing membrane/sheet, all manufactured in the United States, shall be supplied by a single manufacturer, which has been successfully producing the specified types of primary products for not less than ten (10) years.
2. The primary roofing products shall have maintained a consistent composition for a minimum of five (5) years.
3. Manufacturer shall comply with all requirements as noted within the specification documents and supply a formal letter thru the bidder, with bid documents, stating such.

F. Manufacturer Requirements:

1. Shall be a company specializing in manufacturing the products specified in this Section.
2. Shall be a company with a minimum ten (10) years documented experience with the specified products.
3. Shall comply with all special conditions and requirements as defined within this particular project's specifications and general requirements.
4. The Manufacturer selected for this work must be willing to participate in all phases of the bidding and application process.
5. Shall provide 20-year NDL warranty to Owner upon completion of the project.

G. Roofing Contractor Qualifications:

1. Contractor selected for this work must be capable of submitting to the Owner the Manufacturer's Unlimited Penal Sum Guarantee upon completion and acceptance by Owner.
 - a. Refer to Guarantee and Warranty sections within this document for further information.

2. Contractor must be an “approved applicator” by the primary roof system manufacturer and shall submit a dated letter from Mfg. on the manufacturer’s letterhead stating the same, with reference to this specific project.
 - a. Any roofing sub-contractors must be approved by membrane system manufacturer as defined under Contractor Qualifications herein.
 - b. It is understood that some roofing companies have contract agreements with roofing crews rather than direct employees to the primary roofing company. This is acceptable; however, this arrangement must be disclosed at time of bidding and within submittal requirements.
 3. Contractor shall have a minimum of five (5) years’ experience in successfully installing the same or similar roofing materials.
 4. Contractor must be willing to work with Owner’s designated representative(s) with regard to quality control and correct any deficiencies in a timely manner.
 5. The Owner and/or its agent(s) reserve the right to require removal of a roofing contractor’s crew, in all or part, if it is deemed that they are not acceptable for and/or completing the work to the established standards defined within the project specifications.
- H. Roofing Contractor Installation/Application Requirements - General:
1. Roofing Foreman shall have a copy of these Specifications on the job at all times during application and shall refer to it for proper application methods.
 2. Contractor shall comply with Local, State and Federal Regulations, Safety Standards and Codes.
 - a. Use the strictest document when a conflict arises.
 3. Contractor shall be responsible for meeting all fire regulations.
 - a. A certified fire extinguisher of adequate size shall be located at the asphalt kettle and elsewhere as required and applicable.
 - b. A mandatory three-hour fire watch is required after all torch work is completed.
 - (1) This instruction can be modified only upon written approval from the Owners designated representative.
 - c. Torches and torch applications NOT acceptable on this project although torches can be utilized to work on asphalt equipment with the stipulation that all safety requirements are met at all times.
- I. Roofing Contractor Responsibility - General:
1. The responsibility for proper installation of all components of the roofing system and repairs included within the scope of this specification/project lies with the Roofing Contractor applicable to their trade, the specification documents and any sub-contractors that may be working for them directly during the course of this project.
 - a. Refer to Environmental and Safety portions of this document for further information.
 2. Specific detail and attention to application temperatures and compliance with all written and printed instructions is a key element of this project.
 - a. Contractor is required to correct any and all deficiencies in a timely manner without additional charge to Owner.
 3. The Contractor shall inform the Owner’s representative, in writing, of any conditions detrimental to the quality of construction or long-term performance of the roofing system and shall not proceed with the work until the conditions are corrected to the satisfaction of the Owner’s representative.

- J. Roofing Contractor Installation/Application Requirements - General:
1. Adhesive application rates and fastener spacing shall conform to the specifications herein, applicable Manufacturer's most recent published requirements, Uniform Building Code, and wind uplift requirements for area where building is located and as indicated within these specification documents.
 2. Special precautions are necessary when installing the roof system to maintain optimum application temperatures if the application work occurs with outside ambient air temperatures below 50° F and in order to insure satisfactory application and performance.
 - a. Meet and/or exceed all manufacturer's requirements and printed instructions at all times.
 3. Contractor to notify Owner's representative if there is a potential for cold weather applications prior to working in these conditions.

1.03 ENVIRONMENTAL AND SAFETY REQUIREMENT

- A. Environmental – Roofing Contractor's Responsibility:
1. Contractor shall be responsible for all environmental control during course of project applicable to the work of this section. This includes but is not limited to:
 - a. Post copies of Material SDS information at site and notify Owner's representative of location. This is the Contractor's responsibility entirely.
 - b. Notify Owner's representative in writing, with copy to the Roof Consultant, of any potential danger to building and/or occupants, including process, procedures, or materials prior to starting.
 - c. Notify Owner's representative, in writing, with copy to the Roof Consultant, of methods of controlling entry of fumes into building interior.
- B. Safety – Roofing Contractor's Responsibility:
1. It is the contractor's responsibility to maintain a safe work site and comply with all laws and regulations at all times, as well any/all Owner's representative directives.
 2. Contactor shall install and maintain adequate barriers and traffic control devices to maintain a safe and secure work site and as may be directed by Owner's representative.
 3. Contractor shall not only take into consideration the safety of their employees but also building occupants and anyone that may be on and/or around the jobsite in any capacity.

1.04 FIELD QUALITY CONTROL

- A. Project Coordination –Owner's Representative & Roof Consultant:
1. The project shall be subject to inspections by Owner's representative(s) and Roof Consultant during the entire course of the project.
 2. The Roof Consultant's responsibility shall include enforcement of Specified Requirements and the General Requirements of the Specifications stated herein, as well as documentation of deficient conditions, installation conditions, etc.
 - a. The Roof Consultant shall have the authority to recommend to the Owner's representative to stop the work of this section at any time that they find that the project is not in compliance with the project specifications; is a danger to the building or occupants; or other unforeseen circumstances that may have a significant impact on the outcome of the project.

3. Manufacturer's participation:
 - a. Primary roofing materials manufacturer for this project shall provide direct trained company personnel (*or approved representative*) to attend all meetings, inspections, etc. upon request and as may be noted within this specification document.
 - b. Representative shall not only meet the specified requirements of this project but also conduct a final inspection and applicable follow-up inspection (*if necessary*) upon completion of the project in order to issue the required NDL warranty.
 - c. Manufacturer shall supply Owner's representative with written report of all inspections within seven (7) working days after inspection is conducted.
- B. PRE-JOB MEETING: (*aka: pre-construction and/or pre-application*)
 1. Prior to beginning work, a Pre-construction Meeting will be held at the job site and coordinated by roof consultant.
 - a. Meeting shall be conducted a minimum of 10-working days prior to project start.
 2. The following representation is required at this on-site meeting (*as applicable*):
 - a. Owner Representative(s);
 - b. General Contractor
 - c. Roof Consultant;
 - d. Roofing Contractor's manager in charge of project;
 - e. Roofing Contractor Foreman;
 - f. Roof System Manufacturer's field representative;
 - g. Sheet Metal and other applicable Sub-contractors;
 - h. Owner's designated representative(s).
 3. Attendees shall review the facility and all pertinent details and Specifications, noting any potential problems and making any changes, deletions, or additions as deemed necessary. Also included in the discussion will be the following: safety, scheduling and forecast of weather conditions, regulatory requirements, protection of building, building components, and completed roof system, proposed installation procedures, and any additional items related to the total roof system.
 4. Discussion will be recorded. The Roof Consultant will furnish a copy of recorded discussions to all attendees.
 5. No roofing work shall commence nor material delivered to the jobsite until after the Pre-job Meeting, unless previously approved, in writing, by Owner's representative.
 - a. This instruction may be waived upon award of the contract, and agreement by all parties that a written Authorization-to-Proceed is acceptable, in order to expedite the delivery of materials to the job site on this project.
- C. CONTRACTOR'S ACCEPTANCE OF CONDITIONS:
 1. Prior to the start of the project, Contractor shall ascertain that all aspects of this Specification and possible modifications are workable and do not conflict with the manufacturer's requirements for the specified guarantee.
 - a. This requires participation of the manufacturer in the approval process of this specific project.
 2. Upon commencement of the work, it will be presumed that this specification, drawings, addenda, and modifications are satisfactory to both the Contractor and the Manufacturer in their entirety.
 - a. Contractor accepts conditions under which this project is specified and contracted and the requirements to fulfill the installation of the specified roofing system and all applicable components.
 - b. Exceptions are as noted within the documents and defined within the Cost-Plus requirements and options of this project.

D. WORK-IN-PROGRESS INSPECTIONS:

1. Project shall be subject to periodic inspection by Architect and/or Roof Consultant and/or Owner's representative(s) on an as-required basis during the course of the project. *(Full-time to part-time scheduling)*
 - a. Under no circumstances shall access to work area by inspector and/or Owner's representative be restricted.

E. SUBSTANTIAL COMPLETION INSPECTION:

1. Prior to completion, Roofing Contractor shall schedule a Substantial Completion Inspection via the Roof Consultant and Owner's designated representatives and Roof Consultant for potential punch-list development.
 - a. Inspection is intended as a pre-acceptance inspection to be conducted when Contractor feels project is substantially completed. A "punch-list" of all unfinished or unsatisfactory work will be noted.
 - b. *NOTE: This is not intended as a way for the Contractor to see what Owner wants but is to render the project complete if at all possible.*

F. FINAL INSPECTION:

1. Upon completion of all specified work items, a Final Roof Inspection shall be performed by the Owner's designated representative, Roof Consultant and the Manufacturer's representative and anyone else the Owner may wish to have present, including the Owner's representative if they so desire.
 - a. The Roofing Contractor will be notified of the date and time and may attend if they wish.
 - b. Any discrepancies or incomplete work shall be documented in a "punch list" which will be issued to the Contractor.
 - c. The Manufacturer's Guarantee *(as applicable)* shall not be issued until completion and confirmation of all punch list items as well as all other guarantee requirements.
2. **ROOF SAMPLES** *(as may be necessary):*
 - a. The Owner via their representatives reserve the right, at any time during the installation of the membrane roofing or thereafter, to order a sample or samples to be cut at random from the roof membrane.
 - b. **Sample Approvals & Non-Approvals:**
 - (1) Approved: If the sample is immediately approved by the Roof Consultant and/or Owner's representative, Contractor shall patch the area(s) of such test cuts to whatever size and dimension as needed to properly ensure the specified longevity of the roof and comply with Manufacturer's requirements.
 - (2) Non-Approved: If for any reason the sample is not immediately approved by the Roof Consultant, install all temporary protection needed to prevent penetration of water through the roof until final patches or new roofs are installed, and upon the decision of the Roof Consultant, make all required patches and repairs/replacement.
 - c. All laboratory testing will be done by either an independent laboratory and/or the Manufacturer's Laboratory based upon the Owner's representative's directions. Copies of the lab results will be forwarded to Owner's representative to be forwarded to applicable parties.
 - d. **REPAIR REQUIREMENTS:**
 - (1) Cut areas shall be replaced to avoid depression in the membrane.
 - (2) All plies shall be built up and feathered out onto the adjacent membrane with succeeding plies to extend at least four inches (4") beyond previous ply in all directions.

- (3) Contractor is responsible for making repairs to any and all test cuts that may have been taken and for performing any recommended corrective work as required by these Specifications and/or any applicable Manufacturer for issuance of a Guarantee, at no additional charge to Owner.
- (4) Meet manufacturer's requirements and printed instructions, as applicable.

1.05 SUBMITTALS

A. PRIOR TO BID:

1. Substitution request

B. AT TIME OF BID:

1. Refer to Other Sections within this ITB/Specification document.

C. PRIOR TO COMMENCING WORK - (Submittals due a minimum 10 working days prior to project start)

- During the submittal process /supplemental to any other requirements of the specification documents:

1. **MANUFACTURER'S LITERATURE:** Submit most recent copies of Manufacturer's Printed Literature and Specifications applicable to all products, materials and specifications proposed for use within the scope of this project.
2. **SHOP DRAWINGS:** Submit applicable shop drawings for items not detailed or changes not supplied by specifier and not modified by applicable addenda.
 - a. Drawings are required for all details that are not specifically included within this document but will be installed during the course of the work of this project.
 - b. Insulation fastener layout pattern is required on this project including perimeter, field, and corners.
3. **APPLICATION TOLERANCES:** Submit Manufacturer's application tolerances for all products and applications applicable to this project.
4. **PERMITS:** Fully executed building permits for the project. (project specific).
5. **SAFETY PROGRAM:** Copy of Contractor's Written Safety Program.
 - a. *NOTE: Additional copy of Contractor's Safety Program shall be kept at the job site.*
6. **MANUFACTURERS WARRANTY:** Submit a sample of the NDL manufacturer's published warranty documents.

D. UPON COMPLETION: (To Owner's Representative for review/approval)

1. GUARANTEE(s) / WARRANTIES:

- a. **CONTRACTOR'S 2-YR WORKMANSHIP GUARANTEE:** Submit fully executed copy, as supplied within bid documents, of the Contractor's Guarantee of workmanship.
 - (1) It is acceptable for the contractor to submit the Contractor's Guarantee on their own form however, the supplied form (*within the specifications*) is required, and any additional forms can be attached to the required document, at the contractor's discretion.
- b. **MANUFACTURER'S WARRANTY:** Submit fully executed copy of any applicable Manufacturer's Warranty (*as applicable and if purchased by Owner*) to the Roof Consultant for review with Final close-out paperwork.
- c. Submitted within five (5) days of final acceptance by Owner and before final billing will be processed.

2. PERMITS (*Roofing as applicable to general conditions*)
 - a. Note: Final payment will not be released until all permit requirements are approved and supporting documents submitted
3. Refer to other sections of this specification for further information and requirements.

1.06 REFERENCES

- A. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.
- B. ASTM D4434 latest version, "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II, Grade I.
- C. NSF/ANSI Standard 347, "Sustainability Assessment for Single Ply Roofing Membranes" Certification Level: Platinum.
- D. ASTM D751, D3054, D1004, D2136, G154, D1204, D570, D5602, D5635, E903, E408, C1371
- E. American Society for Testing and Materials (*ASTM*)
- F. Manufacturer's most recent published Roofing Specifications Catalog and General Conditions.
- G. SPRI "Single-ply Roofing: A Professional's Guide to Specifications" (*most recent issue*).
- H. Sheet Metal and Air condition Contractors National Association, Inc. (*SMACNA*) – Architectural Sheet Metal Manual.
- I. Roofing terminology: Refer to AST D1079 and the glossary of the NRCA Roofing and Waterproofing Manual for definitions of roofing terms related to this section
- J. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.

1.07 PRODUCT HANDLING - Delivery and Storage

- A. BUILDING MUST BE KEPT WATERTIGHT AT ALL TIMES.
- B. Wet materials shall not be applied nor shall roofing application proceed during wet weather or when moisture is present on roof deck.
- C. Deliver materials to jobsite on pallets in original, unopened packaging with legible labels. Package labels shall indicate material name, products date, and product code.
- D. Store materials in dry, protected areas in upright position. When stored outdoors, store on pallets above ground and cover with suitable protective sheet or tarpaulin. Shrink-wrap packaging is not intended for long-term jobsite storage and shall be removed upon arrival at jobsite and replaced with a watertight breathable covering.
 1. Roofing Contractor to meet or exceed all manufacturers' minimum standards for materials storage and handling at all times.
- E. Store curable materials (*adhesives, sealants, etc.*) between 60 °F and 80 °F, in dry areas protected from water and direct sunlight.
 1. If exposed to lower temperature, restore to 60 °F minimum temperature before using.
- F. If membrane is exposed to the elements (*unwrapped*) to the elements for approximately seven (7) days must be prepared with applicable membrane cleaner prior to hot air welding.
 1. Due to the location of the project, special care must be taken to ensure welded surfaces are cleaned prior to welding.

- G. Select and handle materials and equipment in such a way as to avoid damage to materials, existing construction, or applied roofing. Refer to Specifications and all materials manufacturer's published material for guideline and standards.
- H. Do not load or permit any part of structure to be loaded with a weight that will endanger its safety or cause damage. Confine equipment, storage of materials, and debris and the operations and movements of workmen within any limits as indicated or as directed by the Owner and/or Owner's Representative.
- I. Contractor must take every precaution to prevent interior leakage, materials falling into the interior, or other such occurrences. Installation of materials shall be conducted and accomplished in such a manner that drippage or falling objects does not occur at any time.
 - 1. Contractor is responsible for all damage and associated liabilities caused by any material entering the building during the course of the project.
- J. Any wet, damaged, or defective material will be marked and removed from the jobsite by Roofing Contractor that same day.
 - 1. This material will promptly be replaced at no cost to Owner.
- K. Temporary waterstops shall be installed at the end of each day's work and shall be removed before proceeding with the next day's work. Waterstops shall be compatible with all materials and shall not emit dangerous or incompatible fumes.
- L. Environmental Controls:
 - 1. Contractor is responsible for coordination with Owner of shut down of any air handling equipment as necessary to prevent odors and fumes from entering building.
 - 2. Building Occupant (*as well as surrounding areas*) safety shall be taken into consideration at all times.
 - 3. Contractor assumes all responsibility for environmental control during the course of this project.

1.08 GUARANTEE AND WARRANTY

A. CONTRACTOR'S 2-YEAR WORKMANSHIP GUARANTEE AGREEMENT:

- 1. For a two (2) year period from the date of completion and Owner's written acceptance, Roofing Contractor agrees to inspect and make necessary repairs to defects of leaks in the roof and flashings.
 - a. Leakage will be attended to within twenty-four (24) hours or sooner if required by Owner based on severity of the leak as solely determined by Owner from receipt of notice of problem from Owner.
 - b. As soon as weather permits, Contractor will restore affected areas to standards of this contract without voiding the Manufacturer's Guarantee and repair any damages from these leaks without cost to Owner, except for leaks caused by abuse to roof by others or by abnormal weather conditions such as lightning, severe hail, or other unusual climatic phenomena.
 - c. This Guarantee must be submitted to the Owner in writing before final payment is released for the project.
 - (1) Refer to "Roofing System Contractor's Guarantee" included within this document.
 - (2) Form included within this document must be utilized (*fully filled out and submitted*).

B. MANUFACTURER'S NDL WARRANTY: (*20-year minimum required on this project*)

- 1. This project requires that the quoted system INCLUDE a 20-year NDL manufacturer's warranty.
 - a. A minimum 20-year NDL is required on this project.

2. Submit to the Owner a Manufacturer's unlimited penal sum Guarantee covering any and all repairs and/or replacements to keep the roof, including the field and flashing, watertight for a period of X-years (*as defined on Bid Form*) beginning at the time of the Owner's acceptance of final product. Cost of this Guarantee to be borne by the Owner upon notification of Contractor of option to purchase. (*Refer to 1.05 SUBMITTALS for further discussion.*)
3. The Guarantee shall be executed by Manufacturer to cover any and all costs for repairs necessary to stop leaks which occur resultant of, but not limited to, the following:
 - a. Deterioration of the roofing membrane or base flashing system resulting from ordinary wear and tear by the elements.
 - b. Workmanship on the part of the Approved Roofing Contractor in application of the roofing membrane or base flashing system.
 - c. Splits or cracks in the roofing membrane not caused by structural movement.
4. If, twenty-four (24) hours after notification of roof leakage Contractor has not responded, Owner shall have the right, without invalidating any Guarantees and at the expense of the Contractor, to make any emergency temporary repairs that are required in order to protect the building and its contents from damage due to roof leakage.
5. Should roof samples be required by Manufacturer, and if for any reason deficiencies are found within the samples, Contractor will, at his expense, make repairs as necessary to correct deficiencies and satisfy Manufacturer's requirements.

1.09 MISCELLANEOUS

- A. Refer to other sections within this specification for further information.

PART 2 - PRODUCTS

2.01 GENERAL

- A. ROOFING SYSTEM --- ***Performance Specification – Baseline Standards***

2.02 MANUFACTURERS

-- (*See special notes with regard to approved membrane types*)

- A. Acceptable PVC Roofing Materials Manufacturer shall be:
 1. Sika-Sarnafil (base line standard for the performance specification)
 2. Carlisle Syntec Roofing Corporation.
 3. GAF Roofing Materials Corporation
 4. Johns Manville Roofing Corporation.
- B. Acceptable TPO Materials Manufacturer shall be:
 1. Carlisle Syntec Roofing Corporation
 2. Firestone Roof Systems Company
 3. Johns Manville Roofing Corporation
 4. Versico Roofing Systems
- C. Roofing systems manufactured by above approved listed manufacturers are the only manufacturers that will be considered for this project.

2.03 SUMMARY OF MATERIALS

A. ROOFING SYSTEM DESCRIPTION

1. Roofing System: 60 mil PVC fully adhered (or 80-mil TPO fully adhered).
2. Membrane: Polyvinyl Chloride (PVC).
3. Thickness: .060; 60 mil membrane (1.5 mm) -- Minimum thickness EITHER membrane type
4. Membrane Attachment: Fully Adhered - (comply with FM 1-90 wind up-lift requirements applicable to assembly-substrate, insulation, etc.).
---- Note: Self Adhered (s/a) is acceptable.
5. Comply with applicable local building code requirements.
6. Insulation:
 - a. 1½" (1.5") Polyisocyanurate board insulation
 - b. Mechanically attach all fill and new specified insulation system plus applicable new crickets.
7. Coverboard: ½" High Density DensDeck Prime – or membrane manufacturers approved HD polyisocyanurate board – mechanically attached.
8. Perimeter attachment: Minimum ASCE #7 / 85 mph (or most recent published standard) plus safety importance factor for schools / or 93½ mph minimum.
9. Pre-painted perimeter metal – Refer to other sections of specification documents.

2.04 PVC MEMBRANE MATERIALS

- A. Membrane: Flexible polyester reinforced thermoplastic PVC roof system membrane specifically formulated as a roof membrane for long-term, direct exposure to the elements, this membrane shall be a reinforced assembly with PVC and lacquer coating, specifically designed for a fully adhered attached assembly, with the following additional characteristics:
 1. Thickness: 0.060 inch - Minimum - (reinforced/coated assembly).
 2. Solar Efficiency/Reflectance: Initial solar reflectance of 0.83, emittance of 0.90, and a solar reflective index SRI of 104 (*Energy Star listed*) minimum, when tested in accordance with ASTM C 1549.
 3. Color: White.
 4. Acceptable Product: 60 mil PVC - (*minimum thickness*).
- B. Adhesive: Membrane Manufacturer Approved.
 1. Self-adhered (s/a) membrane is acceptable on this project.
- C. Flashing Membrane:
 1. Fiberglass reinforced membrane adhered to approved substrates with mfg-system approved adhesive.
- D. Flashing, Pre-Clad Metal, Fasteners, Reinforcing strips, Termination bars, Adhesives, Cleaners, Sealants, molded system pieces, etc.
- E. General Purpose Sealant: White, general purpose sealant as approved by manufacturer.
- F. Coated Metal Flashing and Edgings: Galvanized steel with roofing manufacturer's bonded PVC coating; PVC Coated Metal by and/or approved by membrane system manufacturer.
- G. Roof Walkway Pads: Non-reinforced PVC walkway pads, 0.130 inch by 30 inches by 50 feet long or approved equal. Manufacturer approved for use within specified warrantable system.

2.05 ROOF INSULATION

- A. Refer to system requirements.
 - 1. Polyisocyanurate insulation board - (m/a).
 - 2. Polyisocyanurate Cover board. - Mechanically attached
 - 3. All insulation shall be installed to minimum FM 1-90 standards.
- B. POLYISOCYANURATE FOAM INSULATION:
 - 1. Material: Rigid, foamed Polyisocyanurate board sandwiched between fiberglass skins on both sides.
 - 2. Manufacturer and Brand: As approved by Prime Manufacturer for use within specified system for cricket and slope development.
 - 3. Manufacturing Standard: FM Class I; Fed. Spec. #HH-I-1972/2.
 - 4. Density: As approved by manufacturer for use within the warranted system.
 - 5. Size: 4' x 8' manufactured sheets / 4' x 4' acceptable with membrane manufacturer's written approval.
 - 6. Thickness: 1-layer 1.5" minimum – plus tapered cricket assembly with ¼" minimum slope.
 - 7. Attachment: Mechanically attached / tightly fit with ¼" max gap allowable.
 - 8. Minimum Resistance Value (R) Standard: ASTM C 1289 (2002 version) / LTTR / RIC/TIMA 281-I 1/01/22014 published standards:
 - a. R-Value: New combined Assembly: R-8.5 (LTTR) – Not including interior insulation calculations
- C. Insulation Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by prime roof membrane manufacturer.
 - 1. 6 (six) fasteners per 4x8 board minimum in field with corners and perimeters additional required.
 - 2. Comply with FM-1-90 minimum requirements including field, edges, and corners.
 - a. Submittals shall include FM-listed insulation fastener layout pattern.
- D. High Density Coverboard:
 - 1. High Density Coverboard:
 - a. DensDeck Prime
 - b. Or HD polyisocyanurate insulation board – specifically designed and approved for use in the specified warranted roof assembly including fire ratings, etc.
 - 2. Name - (Common industry name):
 - a. Gypsum: DensDeck Prime or approved equal - ¼" gypsum board must be used at vertical areas as specified.
 - b. Polyisocyanurate board: Membrane manufacturer approved for use within specified warranted assembly -
 - 3. Thickness: ½" field.
 - 4. Attachment: Mechanical -- (FM 1-90 minimum requirement).
- E. Crickets:
 - 1. Polyisocyanurate tapered board
 - 2. Membrane manufacturer approved
 - 3. Note: Must be installed under coverboard.

2.06 ADDITIONAL COMPONENTS WITHIN ASSEMBLY - (As applicable)

- A. SCREW AND PLATE FASTENERS: *(Insulation)*
1. Type: Self-tapping screw with cap plate.
 2. Manufacturer and Brand: Prime Manufacturer approved.
 3. Cap Plate Material: Prime Manufacturer approved.
 4. Screw Material: Carbon steel with corrosion-resistant finish.
 5. Screw Head Type: Deep recessed Phillips or hex head.
 6. Screw Length: Penetrate deck minimum ½ inch.
 7. Test Standards:
 - a. Factory Mutual:
 - (1) 1-90; Wind up-lift minimum requirements
 8. NOTE: Fasteners shall not penetrate and/or extend beyond bottom of metal deck.
- B. STRUCTURAL SHEATHING UP-GRADE
1. 15/32" plywood – CDX
 2. All other information --- Refer to Engineers details, drawings, and specifications.
 3. Roofing Contractor is responsible for this installation and keeping building watertight during this work.
- C. PIPE / CONDUIT SUPPORTS: *(to replace any/all existing wood supports)*
1. Provide pre-manufactured pipe/conduit supports with separator sheet as noted within specifications spot adhered to the underside of the all supports.
 2. Manufacturer: Dura-Block w/unistrut bracket.
 - a. Product ID: -- RTSTRUT6 – *(standard)*.
 3. Secure pipes to supports using oversized galvanized clamps secured on both sides of pipe.
 4. Adjust height of supports to provide a straight and true transitional run of the pipe.
 5. Use adjustable pipes supports as required to accommodate elevated pipes, substrate slope, etc.
 6. Supports shall be spaced based on current Code requirements.
 - a. Install so as not to impede water flow.
- D. CLAD METAL – Membrane Mfg Approved/Supplied:
1. Refer to Sheet Metal Section within this document.
 2. Applicable Clad metal to complete project to specified standards.
 - a. Clad metal shall be supplied/approved by membrane manufacturer for use within the specified system.
 - b. Perimeter metal shall be approved by membrane system manufacturer for use within the specified roof assembly.
 - c. Metal shall be PVC clad where attachment to roof membrane system is required.
- E. FALL PROTECTION WARNING LINE:
1. Required: Permanently installed OSHA safety warning line fall protection system.
 - a. Required when any perimeter system (*parapet, wall, etc.*) is less the 40" high from top of roof surface to top of perimeter assembly.
 - b. Width: Four inch (4") wide.
 - c. Color: Yellow – OSHA standard color.
 - d. Application: Hot air weldable to finished/installed membrane roofing system.

F. WALK PADS/ROLLS: *(as applicable)*

1. Mark lines on membrane to determine location and direction(s) of walkway network. Membrane surface shall be clean.
2. Follow Manufacturer's written application instructions including adhesive coverage rate requirements.
3. Cross Grip:
 - a. Trim walkway to lay on roof surface where identified on Drawings.
4. General: Do not install flexible walkways within 6 feet (1830 mm) of a roof perimeter without written authorization from designated Owner's representative.
5. Install walkway products in locations if indicated on drawings and as noted herein:
 - a. Perimeter work/service areas of large HVAC units
 - b. Roof Access Hatch and all typical access-points to roof
 - c. Roof Ladders

G. CURBS and PLATFORMS:

1. GENERAL:
 - a. Provide new roofed in curbs and/or platforms at designated locations.
 - (1) Curbs shall have new standing seam cap metal.
 - b. Platforms shall have:
 - (1) CDX plywood tops with a minimum $\frac{3}{4}$ " CDX thickness.
 - (2) Top of platform shall have a dry sheet and then standing seam metal cap.

H. PARAPET WALLS: - *(As applicable)*

1. Refer to Sheet Metal Section within this document.
2. Removal of all roofing including sheet metal and membrane from all parapet walls.
3. Inspect to assure that wood nailers are in place.
4. Add wood perimeter nailers to achieve addition height.
 - a. Refer to drawings.
5. Add beveled cedar siding at top of wood nailers to establish slope to roof side of wall.
6. Install $\frac{1}{4}$ " DensDeck Prime over prepared surface.

PART 3 - INSTALLATION

3.01 PREPARATION OF SUBSTRATE

- A. Work shall be done in compliance with the requirements of this specification document and the manufacturers most recent printed instructions applicable to the specified system/standards within this specification document.
- B. Upon beginning installation, Roofing Contractor implies and accepts, by his starting work, that the substrate meets all specified requirements and manufacturer's requirements for installation of specified roof system.

3.02 GENERAL APPLICATION REQUIREMENTS

- A. Application shall conform, at all times, to most recent manufacturer's published literature including General Requirements and Specifications as submitted as well as these Specifications.
 - 1. Unless otherwise noted, contractor shall comply with manufacturer's printed requirements at all times.
 - a. When conflict occurs, the strictest document shall apply.
- B. Do not remove more existing roofing than can be successfully reinstalled to keep the building and existing roof system watertight at the end of the work period.
 - 1. All existing roof shall be removed as a part of this project but only as applicable to the areas that can be recovered during that same work period and roof must be watertight at the end of each work period and capable of temporary sealing if the weather changes rapidly in order to keep the building watertight.
- C. Roofing shall not be applied unless correct application temperatures can be maintained to meet manufacturer's published requirements.
- D. No roofing installation shall be conducted when water in any form is present on deck, such as rain, dew, ice, frost, or snow. Water shall be limited to containers for human consumption.
- E. Start roofing work in dry weather only and without threat of immediate inclement weather. Keep the roofed area of the building watertight each day as the work progresses.
- F. Precautions shall be taken to keep materials clean, dry, and free of damage. All damaged materials to be removed from the jobsite immediately.
- G. Do not start application of more materials each day than can be totally completed within the same day (*i.e. insulation, membrane, and flashing*).
- H. At the end of the day, edge-seal the finished portion of the roofing system completed that day with material and method(s) as noted within the manufacturer's most recent published literature. Remove edge-seals prior to the start of the next day's work.
- I. Use only materials and procedures that are proper and suitable for the slopes and for the underlying materials to which they are attached. All materials are to be manufactured by or approved by Roofing System Manufacturer for use within approved system.
- J. No heavy objects shall be placed on the finished membrane at any time. Use all means necessary to protect the membrane before, during and after installation. In the event of damage, immediately make all repairs and/or replacements necessary to the satisfaction of the Owner and/or Owner's representative at no additional cost.
 - 1. Materials storage on membrane must have protection (*3/4" plywood with protection membrane*) under material and over membrane.
- K. An approved fire extinguisher is required on the roof at all times when work is underway. In addition, Contractor shall comply with any and all additional requirements of OSHA Safety Regulations as well as any Local, City, State and Federal codes.
- L. Install proper width starter sheets to insure minimum manufacturer's specified coverage for roofing system throughout.
- M. Do not use any wet or damaged materials.
- N. Equipment must be clean and in sufficiently good operating condition to perform specified work.
- O. All stains, foreign material, spills, etc. are to be removed from finished roof surface immediately. If not removable, then membrane shall be cut and patched within the manufacturer's patch methods to render the surface clean and true.

- P. Roofing Contractor shall inspect (*as applicable to this project*) all nailers for compliance with the following prior to installing roof system and notify Roofing Contractor of any deficiencies immediately:
1. Wood nailers shall be treated for fire and rot resistance (*wolmanized or osmose treated*), #2 or better lumber. Creosote or asphaltic treated lumber is not acceptable.
 2. Nailers shall be anchored to resist a minimum force of 175 pounds per lineal foot in any direction. Fastener spacing shall be a maximum of three feet (3') on center. Fasteners shall be installed within six inches (6") of each end. Spacing and fastener embedment shall conform to Factory Mutual Loss Prevention Data 1-49.
 3. Nailer thickness shall be as required to match substrate or insulation height.
- Q. If additional curb or support unit is to be added after the insulation and membrane have been installed, the membrane and insulation must be removed, and the curb installed directly to the deck and roofing system reinstalled at that area. Under no circumstances will curbs be installed over the insulation and membrane system considered acceptable.

3.03 EXAMINATION

- A. Examine roof substrate (*per defined option*) to determine that it is sufficiently rigid to support installers and their mechanical equipment, and that deflection will no strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Examine roof substrate to verify that it is properly sloped to drains.
- D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.
1. Strictest document applies.

3.04 GENERAL:

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations follow "good roofing practices and industry standards".
1. Comply with federal, state, and local regulations.
- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
1. Copy of notice shall be e-mailed to Roof Consultant prior to commencing work.
- D. Perform work using competent and properly equipped personnel.
- E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- F. Install roofing membrane only when surfaces are clean, dry, smooth, and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F.

- G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 - 1. Protect from spills and overspray from bitumen, adhesives, sealants, and coatings.
 - 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
 - 3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
- H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (SDS) for specific safety instructions. Keep all adhesives, sealants, primers, and cleaning materials away from all sources of ignition.

3.05 PREPARATION

- A. Removal of existing roofing and flashing and then clean, inspect and otherwise prepare existing substrate in preparation as a suitable substrate for the specified new roof system and all components.
- B. As applicable, take appropriate measures to ensure that fumes from any adhesive solvents are not drawn into the building through air intakes or building vent openings.
- C. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease, and other materials that may damage the new specified roof components and single-ply membrane assembly.
- D. At work areas inspect substrate for damage and or rust-corrosion damage conditions. If adverse conditions are identified or otherwise noted, immediately notify Owner's Representative and Roof Consultant before proceeding.

3.06 PYWOOD SHEATHING INSTALLATION

- A. Roofing Contractor is responsible for this work.
- B. Comply with and follow Engineer's details, drawings, and specifications
- C. Keep building watertight during this and all phases of the work.
 - 1. Roofing contractor is responsible for any damage due to violation of this requirement.

3.07 INSULATION AND COVER BOARD INSTALLATION

- A. Install insulation in configuration and with attachment method(s) specified.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay roof insulation in courses parallel to roof edges with an offset stagger of a minimum of 24" at ends and 12" at the sides for all layers.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch. Fill gaps greater than 1/4 inch with acceptable insulation and gypsum board. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch.
- E. Mechanical Fastening: Using specified fasteners and insulation plates engage fasteners through insulation into deck to depth and in pattern required by Factory Mutual for FM Class specified in PART 2 and membrane manufacturer, whichever is more stringent.
- F. Crickets shall be installed between internal drains and at all other areas as indicated on drawing and/or via addenda during the bid process.
 - 1. Cricket size must be adequate to move surface water to the drains without ponding.
 - 2. Crickets must be installed under coverboard without exception.

3.08 SINGLE-PLY MEMBRANE INSTALLATION

A. ROOFING MEMBRANE: -- Fully Adhered

1. Install roofing membrane in accordance with the manufacturer's installation instructions.
 - a. Cut sheets to maximum size possible in order to minimize seams.
2. Position membrane over substrate without stretching membrane.
 - a. Allow membrane to relax one-half (½) hour before bonding and flashing.
3. Begin installation of roofing system at the highest point of the Project area and work to the lowest point.
 - a. Prevent moisture migration into the roof system. Complete flashings, terminations, and seals in area on a daily basis.
4. Execute work so membrane can be temporarily sealed on a down slope surface at the end of each day with night seal.
 - a. Tie off with a water stop to the structural deck to prevent water flow into the new roofing installation.
5. Fully adhere perimeter in accordance with manufacturer's recommended procedures for building height and location.
 - a. Comply with approved submittals for field, perimeter and corner fastening patterns for all components within the assembly.
 - b. Termination bar is required at any parapet or vertical surface (*fully adhered*) with a height higher than 18".
6. Ensure that the installed roofing will not be marked, spotted, stained, or damaged.
 - a. Power washing of the membrane may be required if surface staining is deemed unacceptable to the Owner, at no additional cost to Owner.
7. Fully adhere membrane at all vertical areas including parapets, equipment, etc.

B. MEMBRANE SPLICING:

1. Membrane Lap Splices: 6 inches (152 mm) wide, minimum.
 - a. Locate field splices at roof drains outside drain sump.
2. Allow top sheet to fall freely into place over bottom ply without wrinkling or stretching.
3. Insure that surfaces to be spliced are cleaned, primed and dirt free.
 - a. Use automatic hot air welding equipment approved by the roof system manufacturer for field seams. Seam small work and repairs with hand welders.
 - b. Install minimum 1-1/2 inch (38 mm) wide weld.
4. Probe laps each day to verify seams are bonded. In addition, perform random lap test sample checks (*including checks at start of each day*) to verify peel strength.
 - a. Caulk cut edges by applying manufacturer's seam sealant, if required.
 - b. Roof system manufacturer's representative shall be on site at start of project to supervise operations and to inspect and approve seams.

C. FLASHING:

1. Walls, Parapets, Mechanical Equipment Curbs:
 - a. All Parapets require fully adhered attachment with termination bars required at perimeters and walls that are higher than 18".
 - b. All field to vertical flashing details require a 3" cant adhered with adhesive.
 - c. Install flashing at roof penetrations, interruptions, and any roof intersection including roof edges with vertical or sloped surfaces in accordance with manufacturer's recommended procedures and Drawings.
 - (1) Pipe penetrations require cone/boot with foam filler.

- d. Curbs, projections, and vertical surface/wall conditions require a minimum 8-inch (203-mm) height for base flashings and sleeves.
 - e. Apply manufacturer's bonding adhesive to both underside of flashing and surface to which it is to be bonded, at a rate of approximately 1 gallon (3.8 l) per 50 sq. ft. (4.65-sq.m) of surface coverage.
 - f. Do not apply bonding adhesive to portion of flashing that overlaps onto itself. Use seam tape where membrane overlaps itself.
 - g. Allow bonding adhesive to dry to a finger touch until it does not string or stick to a dry finger. Roll the flashing into dry adhesive.
 - (1) Care must be taken to assure that flashing does not bridge where there is any change of direction.
 - h. Mechanically fasten top all of flashing under or through appropriate counter flashing with approved fasteners as shown on Drawings.
 - i. Install flashings for vents, pipe, soil vents and other round projections in accordance with manufacturer's recommendations and Drawings.
 - j. Install uncured or preformed flashing membrane as required to form a continuous membrane seal in each corner or change in plane.
 - k. Waterproof and positively secure flashings with termination bar at the top and sides to prevent seepage behind or into the flashing or roofing system.
- D. Other Penetrations:
- 1. Flash penetrations passing through membrane in accordance with the manufacturer's recommended procedure, Specifications and Drawings.
 - 2. Seal flashing directly to the penetration passing through the membrane system.
 - 3. Pipes, Round Supports:
 - a. Flash pipes with pre-molded pipe flashings where their installation is possible.
 - b. Where molded pipe flashings cannot be installed, use field fabricated pipe seals.
 - 4. Pipe Clusters and Unusually Shaped Penetrations: Flash pipe clusters and unusually shaped penetrations which prohibit the installation of field fabricated pipe seals with hooded sheet metal boxes.
 - a. Provide penetration boxes with solid sheet metal face closures.
 - b. Slope piping down slightly and away from the penetration flashings.
 - c. Provide removable tops.

3.09 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.

3.10 WATER CUT-OFF

- A. At the end of each day's work, Contractor shall provide temporary water cut-offs at the edge of the membrane installation to render the installation watertight.
- B. Comply with manufacturer's requirements.
- C. Water cut-offs shall be sealed so that the detail cannot be blown loose with windy conditions.
- D. Remove water cut-offs before proceeding with work. (Mandatory)

3.11 WALK-PAD INSTALLATION (as applicable)

- A. General:
 - 1. Fully adhere walk pads.
 - 2. Do not install flexible walk-pads within 6 feet (1830 mm) of a roof perimeter.
- B. Install walk-pad (*walkway*) products in locations if indicated on drawings and as noted herein:
 - 1. Perimeter work/service areas of large HVAC units
 - 2. Roof Access Hatch
 - 3. Roof Ladders
- C. Specific:
 - 1. Adhere walk-pad (*walkway*) products to substrate with compatible adhesive or seam tape according to roofing system manufacturer's written instructions.
 - a. Walk pads shall be fully adhered in compatible/mfg. approved adhesive.
 - 2. Walk pads will be installed at hatch, access ladders, and around large, serviced HVAC units.
 - 3. Walk pads should be spaced approximately one to two inches (1" – 2") apart, to allow for water flow. Minimum spacing is 1.0" between pads with a maximum of 3.0".
 - 4. If installation of walkway pads over field fabricated splices or within 6 inches of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6 inches on either side.
 - a. Seams must be inspected and approved prior to walk-pad installation over the seam.
 - b. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

3.12 FALL PROTECTION WARNING LINE

- A. Scope of work includes OSHA safety warning line – Permanent.
 - 1. Location: 6' in from outboard perimeter at all perimeters except walls over six feet (6') high.
 - 2. Width: Four inch (4") wide.
 - 3. Color: Yellow – OSHA standard color.
 - 4. Application: Hot air weldable to finished/installed membrane roofing system.

3.13 FIELD QUALITY CONTROL

- A. Refer to other portions of this Section for additional instructions/requirements.
- B. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (*i.e. not a sales person*).
 - 1. Formal written report shall be provided to Owner's Representative (*copy to Roof Consultant*) within seven (7) working days after any manufacturer's inspection.

3.14 MISCELLANEOUS WORK ITEMS

- A. PIPE & CONDUIT SUPPORTS:
 - 1. Provide specified pre-manufactured pipe/conduit supports with separator sheet as noted within specifications spot adhered to the underside of all supports.
 - 2. Secure pipes to supports using oversized galvanized clamps secured on both sides of pipe.
 - 3. Adjust height of supports to provide a straight and true transitional run of the pipe.
 - a. Use adjustable pipes supports as required to accommodate elevated pipes, substrate slope, etc.

4. Supports shall be spaced no more than six feet (6') apart and installed so as not to impede water flow.
5. Code Requirements & minimum spacing:
 - a. Code for electrical support spacing --- all sizes:
 - (1) PVC and MC every 6'
 - (2) EMT and rigid every 10'
 - (3) 12" max from junction box (*either type*)
 - (4) Additional: Max 18" from corner (*90 - 45 or T*).
 - b. Code for plumbing pipe support spacing --- different pipe sizes/types.
 - (1) 1/2" – every 4'
 - (2) 3/4" or 1" – every 6'
 - (3) 1 1/4" or larger – every 8'
 - (4) Additional: Max 18" from corner (*90- 45 or T*).

3.15 CLEAN UP

- A. Roofing Contractor shall:
1. Remove all stains or other markings from finished surfaces.
 2. Keep the roof and premises clean and free from accumulations of waste materials and rubbish at all times.
 - a. Remove all debris, scrap, and rubbish from the work area daily.
 - b. Roofing Contractor is responsible for any material blown off the roof.
 - c. Surplus materials and all equipment shall be promptly removed from the site upon completion of work.
 3. If Roofing Contractor fails to keep premises clean of debris, Owner reserves the right to contract for clean-up of the premises and charge the Contractor for the direct cost of this work
 - a. Owner shall notify Contractor, in writing, of the intent to hire an independent clean-up firm or crew if a problem and/or situation develops.
 - b. Contractor has twenty-four (24) hours to rectify the condition before the Owner will proceed.
 4. Prior to final acceptance, the Roofing Contractor shall restore all areas affected by his work to their original state of cleanliness and repair all damage done to the premises, by his workmen and equipment.
 5. Roofing Contractor shall coordinate all clean-up activities with and as may be directed by the Roof Consultant and/or Owner's Representative for the duration of the project.
 6. Roofing Contractor is responsible for any and all damage to building or surrounding area during the course of the project, NO EXCEPTIONS.

- END OF SECTION -

SECTION 07 60 00
FLASHING & SHEET METAL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Supplemental to Standing Seam Section and as applicable to the Single-ply Section. Provide Flashing and Sheet Metal not specifically described in other sections of these specifications and details but is required to prevent penetration of water through the exterior shell of the building as it applies to the roof and parapet areas supplemental to the standing seam metal roof system.
2. GENERAL REVIEW:
 - a. New:
 - (1) Pre-painted perimeter metal --- pre-painted Kynar finish.
 - (2) Drip-edge/fascia metal
 - (3) Manufacturer's clad metal as required for warranted system.
 - (4) Counter-flashing at all equipment, hatches, penetrations, equipment curb with metal cover, etc. and where it cannot be carefully salvaged at perimeter. (*Galvanized metal is acceptable rather than pre-painted for this item.*)
 - (5) Mfg. requirements; Termination bar, clad-metal, etc.
3. WALL METAL:
 - a. No wall metal this project.
4. PERIMETER METAL: - (*As applicable to the existing conditions*)
 - a. Surface Mounted Reglets.
 - b. Match existing style with new
 - c. Perimeter fascia, gutter, and venting system.
5. CAP METAL – Roofed-in Curbs: (*as applicable*)
 - a. New cap metal at all roofed in curbs.
6. OTHER METAL:
 - a. Remove, properly dispose of and replace with new unless specifically identified within the specification documents or during the pre-job meeting.
 - b. Counter-flashing required at all equipment.
 - (1) *Exception*: Not necessary at units that can be raised and roofed around and/or a part of the Ventilation Equipment rework portion of the project.
7. General Work Summary on this project shall include the following:
 - a. Installation of new manufacturer requires clad metal.
 - b. Installation of perimeter metal to match existing color/style.
 - c. Equipment counter-flashing/skirting.
 - d. Curb/Platform sheet metal caps.

- e. Miscellaneous details to meet the manufacturer's and "good roofing" practices for entire completed roof system.
- 8. Roofing accessories and incidentals as may be required during the project.
- 9. All painted metal surfaces which must be removed to properly complete the project, shall be carefully removed, examined, cleaned, primed, painted and replaced to match existing colors as applicable and discussed at pre-job meeting.
 - a. Color shall match the existing perimeter metal where replacement requires painted metal.
 - b. Color shall be standard manufacturer's color. No special order color required on this project.

1.02 SYSTEM DESCRIPTION

- A. Work within this Section is to physically protect membrane roofing, base flashing, etc. from damage that would permit moisture entry into building interior.

1.03 QUALITY ASSURANCE

- A. In addition to complying with pertinent codes and regulations, all work shall comply with pertinent recommendations contained in current edition of "Architectural Sheet Metal Manual" published by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).
- B. Standard commercial items may be utilized for flashing trim, reglets and similar purposes provided such items meet or exceed the quality standards specified herein.
- C. All metal shall meet and/or exceed compliance with membrane manufacturer's warrantable system.
 - 1. Utilize membrane manufacturer's specific product with any specific application where the metal is considered a warrantable item under the manufacturer's warrantable system.

1.04 SUBMITTALS

- A. Submit shop drawings to describe all detail installations and compliance with scope of these Specifications and General Requirements where no detail drawing currently exists. This includes any proposed changes to detail drawings herein.
 - 1. The scope of the shop drawing details will be reviewed at the mandatory pre-job meeting.

1.05 REFERENCES

- A. American Society for Testing and Materials (ASTM) A525-Steel Sheet, Zinc Coated (*Galvanized*) by the Hot-Dip Process.
- B. SMACNA – Architectural Sheet Metal Manual.

1.06 PRODUCT HANDLING

- A. Store products under applicable provisions of Section 07 54 19.
- B. Stack pre-formed material to prevent twisting, bending, or abrasion.
- C. Prevent contact with materials during storage, which may cause discoloration, staining or damage.
- D. Any material to be removed and replaced shall be marked for identification and carefully removed and stored until re-installation is completed.
 - 1. Items that cannot be removed and replaced without damage must be discussed and approved prior to the work at this area or the contractor shall be responsible for replacement of materials damaged during their operations.

1.07 PROTECTION

- A. Exercise care when working on or about roof surface to avoid damaging or puncturing membrane or other components.
- B. Immediately remove any screws, fasteners, trim, etc. from roof surface.
- C. All open roof areas exposed by the sheet metal removal shall be in a waterproof condition at the end of each day's work.
- D. Immediately notify Roofing Contractor (*if sheet metal contractor is a sub-contractor*) of any damage or punctures to newly installed or existing membrane waterproofing.

1.08 WARRANTY

- A. Work of this section shall be covered under Contractor's Warranty as specified in Section 07 54 19.

PART 2 - PRODUCTS

2.01 MATERIALS AND GAUGE

- A. Where sheet metal is required, and no material or gauge is indicated on the drawings and details, provide the highest quality and gauge commensurate with the standards associated with this Specification with a minimum gauge of twenty-four (24).
- B. Utilize specified roofing system manufacturer's products as a first priority.
- C. Galvanized Steel: ASTM A-525, G-90; 24 gauge minimum.
- D. Pre-painted metal: Factory finish; 24 gauge minimum.
- E. Sheet Lead Flashing: Hard type conforming to Federal Specification QQ-L-201; 4 lbs per square foot for drain flashing and pipe sleeves requiring field soldering, 2 ½ lbs minimum per square foot for pre-fabricated pipe sleeves.

2.02 ACCESSORIES -- (*as applicable*)

- A. Fasteners: Galvanized steel with steel neoprene washers at exposed fasteners and other appropriate products in other unspecified locations.
- B. Metal Primer: ASTM D-41
- C. Sealant: 1 part polyurethane
(*As approved by prime membrane manufacturer for use and compatibility with specified assembly.*)
- D. Plastic Cement: ASTM D-4586, Type I
- E. Solder: FS QQ-S-571; ANST/ANTM B3; 50/50 type
- F. Flux: FS O-F-506
- G. Pitch Pan Sealant: ASTM C-920, Type S, Grade P, Class 25
(*As approved by prime membrane manufacturer for use and compatibility with specified assembly.*)

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest practical lengths.
- C. Hem exposed edges on underside ½"; miter and seam corners.
- D. Form material with flat lock seam, unless otherwise specified or detailed.
- E. Solder and seal metal joints. After soldering, remove flux. Wipe and wash solder joints clean.

- F. Fabricate corners from one piece with minimum 18" seam or solder for rigidity, seal with sealant.
- G. Fabricate vertical faces with bottom edge formed outward $\frac{1}{4}$ " (6mm) and hemmed to form drip.
- H. Fabricate flanged flashings (*pitch pans*) to allow flanges to extend at least four inches (4") – (50mm) over roofing.
 - 1. Provide full soldered corners.
- I. All fabricated sheet metal work necessary to complete the project shall receive standing seams and shall employ double breaks with no exposed sharp edges.

2.04 FINISH

- A. Shop prepare and prime exposed ferrous metal surfaces.
- B. Back paint flashings with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.
- B. Refer to details and drawings for specific direction on various types of equipment.
- C. Coordinate with Roofing Contractor (*if sub-contractor to roofing contractor*) so that sheet metal work is completed in a timely manner following installation of roof membrane waterproofing systems. Roof shall remain watertight at all times.
 - 1. Do not install sheet metal until all roofing work is completed to an acceptable level at the area where sheet metal work is to proceed.
- D. Verify roof openings, curbs pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
- E. Verify membrane termination and roof system primary and base flashings sheets are in place, sealed, and secure.
- F. Beginning of installation of flashing metals means acceptance of existing conditions by the Sheet Metal Contractor (*if other than Roofing Contractor*).

3.02 WORKMANSHIP

- A. GENERAL METAL FABRICATION:
 - 1. Shop-fabricate work to greatest extent possible.
 - 2. Comply with details shown and with applicable requirement of SMACNA "Architectural Sheet Metal Manual" and other industry recognized practices.
 - 3. Fabricate for waterproof and weather-resistant performance with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work.
 - 4. Angle bottom edges of exposed vertical surfaces to form drips.
 - 5. Fabricate to profiles and sizes as to match existing installations.
 - 6. Form work to fit all substrates.
 - 7. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and level indicated, with exposed edges folded back to form hems.

- B. Form, fabricate and install sheet metal so as to adequately provide for expansion and contraction in the finished work.
- C. Installation process and finished work shall be installed in a manner that will not damage the surrounding surfaces and or waterproofing.
 - 1. Contractor shall repair and/or correct the defective workmanship at no additional cost to Owner.

3.03 INSTALLATION

- A. Embed metal in contact with roof assembly in a solid bed of sealant, using materials and methods approved by the prime roofing system Manufacturer as applicable and compatible with specified and/or installed system.
- B. Conform to standard Prime Manufacturer's and/or SMACNA details as applicable for the successful completion of project.
- C. Pipe Flashing:
 - 1. Open vent stacks shall be sealed using lead sleeves with the tip edge crimped carefully back down into the pipe at least one inch. Replace existing damaged lead flashings with two-piece fabrication to prevent future damage from building settlement and/or movement.
(Prime Manufacturer's pre-formed sleeves are acceptable as approved for use within specified system and applicable to existing conditions.)
 - 2. At electrical lines and pipes which cannot be disassembled, solder lead sleeve and flange together in the field, maintaining minimum six-inch (6") sleeve height and eight-inch (8") wherever possible.
(Prime Manufacturer's pre-formed sleeves are acceptable as approved for use within specified system and applicable to existing conditions.)
- D. Screw fastened: All fasteners shall comply with current SMACNA published recommendations applicable to size and installation pattern(s).
 - 1. All fasteners require neoprene washers.
- E. Install and seal new metal-flanged sleeve flashing and drain flashing in accordance with Section 07 54 19 and applicable details.

3.04 SOLDERING

- A. GENERAL:
 - 1. Thoroughly clean and tin the joint materials prior to soldering.
 - 2. Perform soldering slowly, with a well-heated copper (*or applicable component material*), in order to heat the seams thoroughly and to completely fill them with solder.
 - 3. Perform soldering with a heavy soldering copper of blunt design, properly tinned for use.
 - 4. Make exposed soldering on finished surfaces neat, full flowing and smooth.
- B. After soldering, thoroughly wash acid flux with a soda solution.
- C. Safety:
 - 1. Care shall be taken during any soldering work so as not to damage the roofing membrane system and/or components.

3.05 TESTS

- A. Upon request of the Consultant and/or Owner, demonstrate by hose or running water that the system is completely watertight.

3.06 FINISH

- A. Finish to match existing style and color.
 - 1. Finish color shall be manufacturer's standard color.
 - 2. Color to be selected by Owner based on submittals provided by contractor after award of contract.
 - 3. Refer to specific instructions within specifications, addenda and/or drawings with regard to specific metal type and color requirements associated with various components.
- B. If painting is required, clean, prime and paint per Consultant's and/or Owner's recommendations to match existing color.

3.07 CLEAN UP

- A. Contractor shall:
 - 1. Remove all excess materials from finished surfaces and keep the roof and premises clean and free from accumulations of waste materials and rubbish at all times.
 - a. Remove all debris, scrap, and rubbish from the work area daily.
 - b. Surplus materials and all equipment shall be promptly removed from the site upon completion of the work.
 - 2. Prior to final acceptance, the Contractor shall restore all areas affected by his work to their original state of cleanliness and repair all damage done to the premises, by his workmen and equipment.

-- END OF SECTION --

Section 07 99 07

Jefferson County School District

Madras, Oregon

Building tested:

MADRAS ELEMENTARY SCHOOL - GYM

215 Southeast 10th Street

Madras, Oregon

Roof Construction Data

Existing – Roof Construction Data - Roof included in project

Roof - A: -- (Roof over Roof assembly)

ROOF TYPE:	Single-Ply Membrane - (type not determined)
SURFACE:	Smooth - White
INSULATION (Under S-Ply):	½" Coverboard
VAPOR RETARDER:	None
DECK:	Wood

NEW ASSEMBLY --- Roof Construction Data

Roof - A: -- (Removal & Replace with structural up-grade)

SCOPE -- GENERAL:	Remove existing roof system down to structural deck.
ROOF TYPE:	Single-Ply – 60-mil PVC or Alternate 80-mil TPO– Fully adhered membrane.
NEW ASSEMBLY:	60 mil PVC – fully adhered – or alternate --- 80-mil TPO fully adhered
	½" High Density Coverboard – m/a (DensDeck Prime or approve equal)
	1.5" Polyisocyanurate board – m/a - Mechanically attached (m/a)
	Vapor Retarder (adhered)
STRUCTURAL UP-GRADE:	Refer to Engineer's drawing and instructions within specification documents.
	Roofer will be responsible for installation and materials associated with new sheathing (15/32" – nailed)
	-- Refer to other sections of the specification documents for additional instructions

Roof Area Data

New Single-ply roof - (1 roof in project)

Roof A: 7,277 sq. ft.

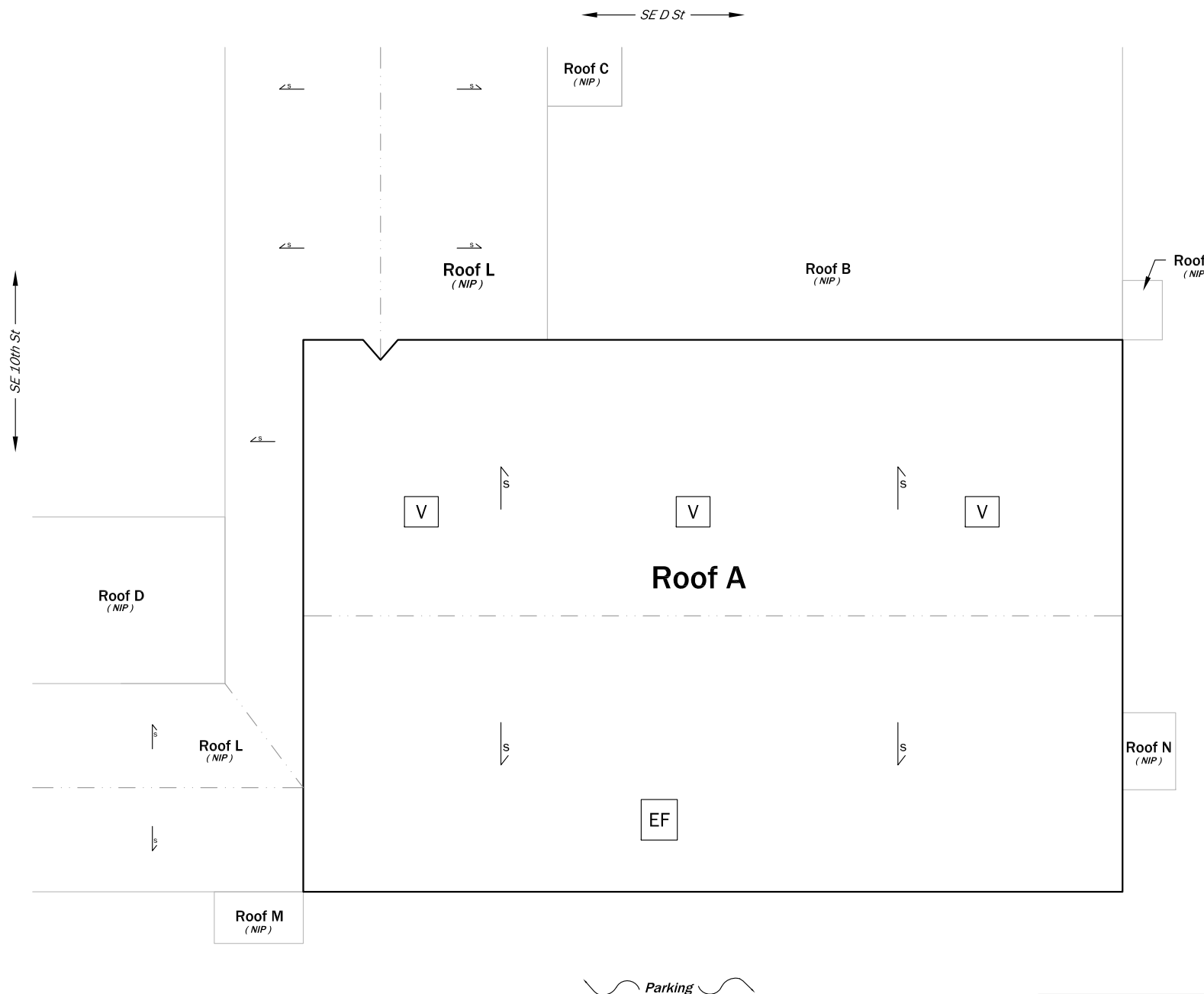
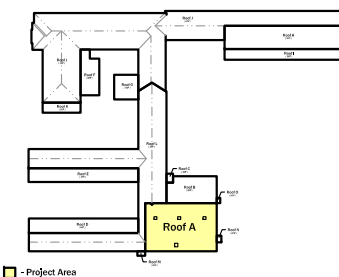
SPECIAL NOTES: ---

1. The roofing contractor shall include the cost of materials, labor and supervision to install the new 15/32 inch plywood sheathing.
2. Roof MUST be kept watertight during every step of the project.
3. Refer to other sections of the specification for additional information.

-- End of Section --

22039-Sec 07 99 07-Roof Constr Data-JCSD-Madras Elem-RR-FA-80-PVC-80-TPO-Perf

JCSD – Jefferson County SD
Madras Elementary - Gym (Roof A) - Madras, OR
ROOF LAYOUT



Roof A
(Barrel Roof)
ROOF AREA SQ.FT.
(Approximate)
Roof A: 7,277 sf

Madras Elementary - Gym (Roof A)
215 SE 10th St
Madras, Oregon

NIP = Not in Project



JCSD – Jefferson County SD
Madras Elementary - Gym (Roof A) - Madras, OR

SCALE: NTS	1 of 1	DRAWN BY: D.V.G.
DATE: 04/04/22		REVISED: 04/18/22

A-TECH/NORTHWEST, INC.
Portland & Prineville, Oregon 503-628-2882

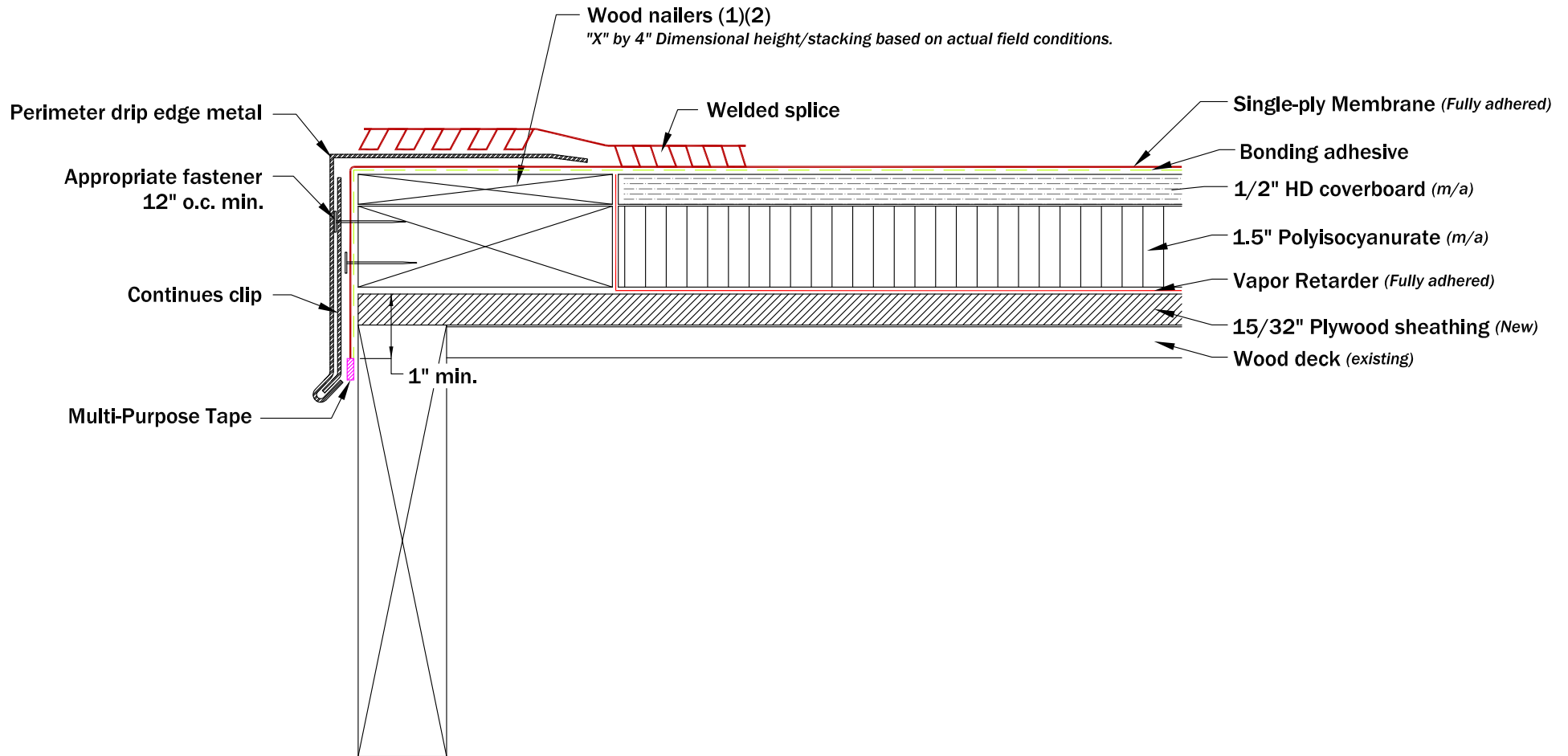
As-Built Drawing




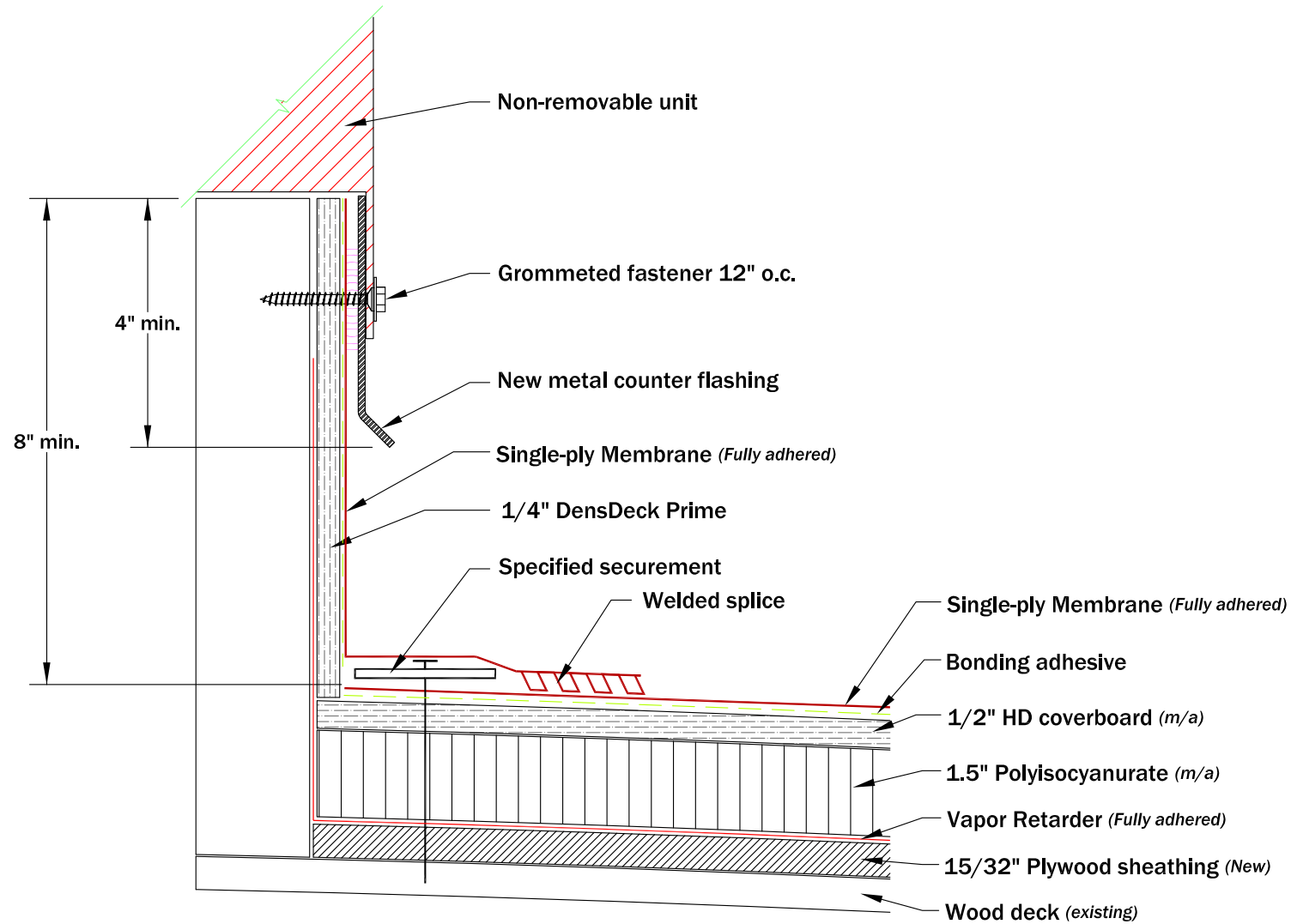
PROJECT NUMBER:
22039

NOTES:


- 1) Attachment: Minimum ASCE Is #7/85 (or most recent published standard) plus safety factor for schools /or 93-1/2" MPH minimum.
- 2) Add additional nailers to meet perimeter height with nailers to be equal too or slightly higher than new Insulation height

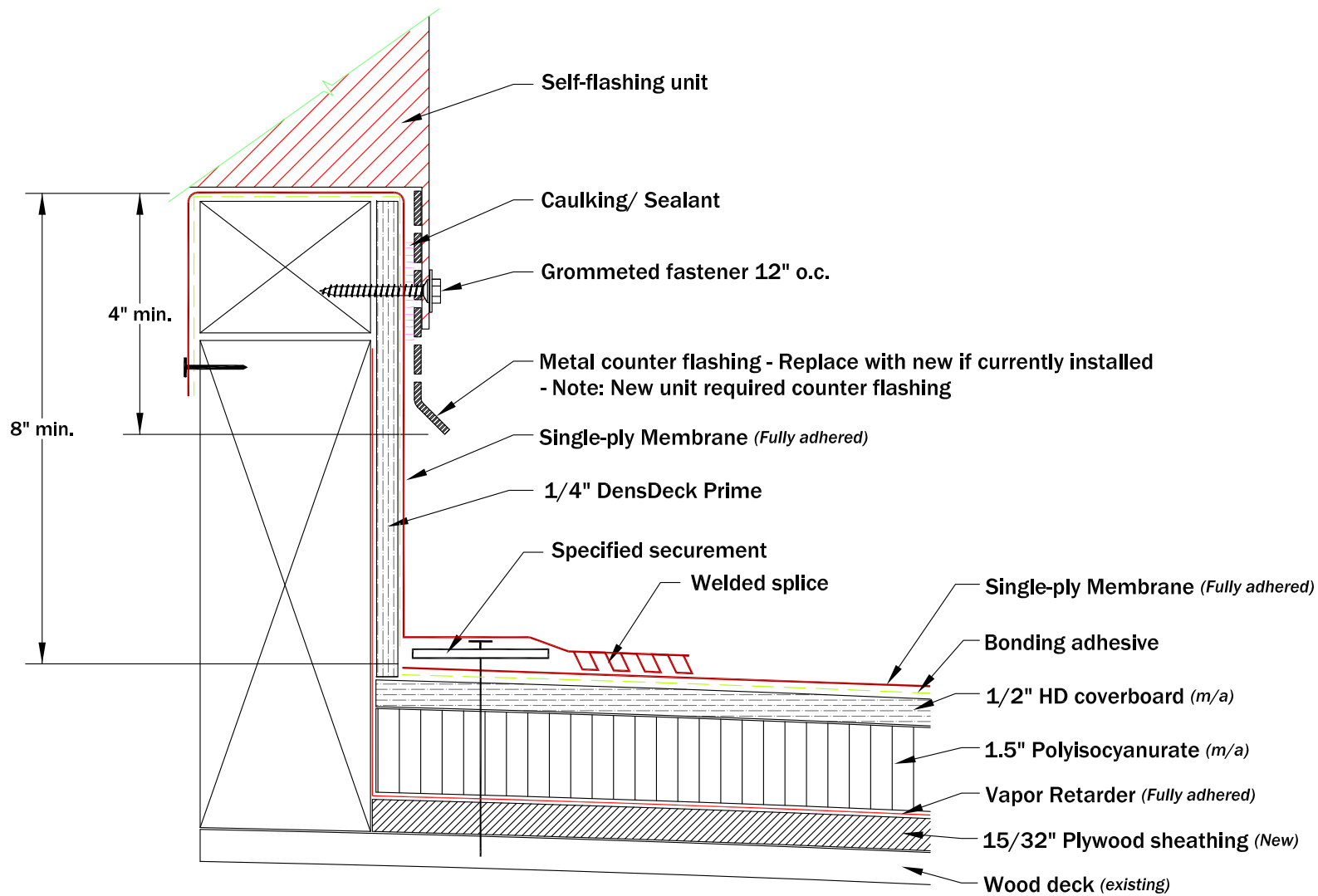
**Detail Ref: MES-1**

JCSD – Jefferson County SD		
Madras Elementary - Gym (Roof A) - Madras, OR		
SCALE: NTS	1 of 3	DRAWN BY: D.V.G.
DATE: 04/04/22		REVISED: 04/18/22
A-TECH/NORTHWEST, INC. Portland & Prineville, Oregon 503-628-2882		
Drainage - Drip edge - Detail		




Detail Ref: MES-2

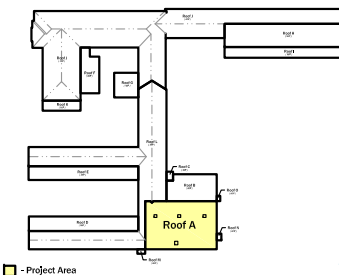
JCSD – Jefferson County SD Madras Elementary - Gym (Roof A) - Madras, OR		
SCALE: NTS	2 of 3	DRAWN BY: D.V.G.
DATE: 04/04/22		REVISED: 04/18/22
A-TECH/NORTHWEST, INC. Portland & Prineville, Oregon 503-628-2882		
Equipment - Non-Removable Unit Curb Flashing - Detail		 PROJECT NUMBER: 22039



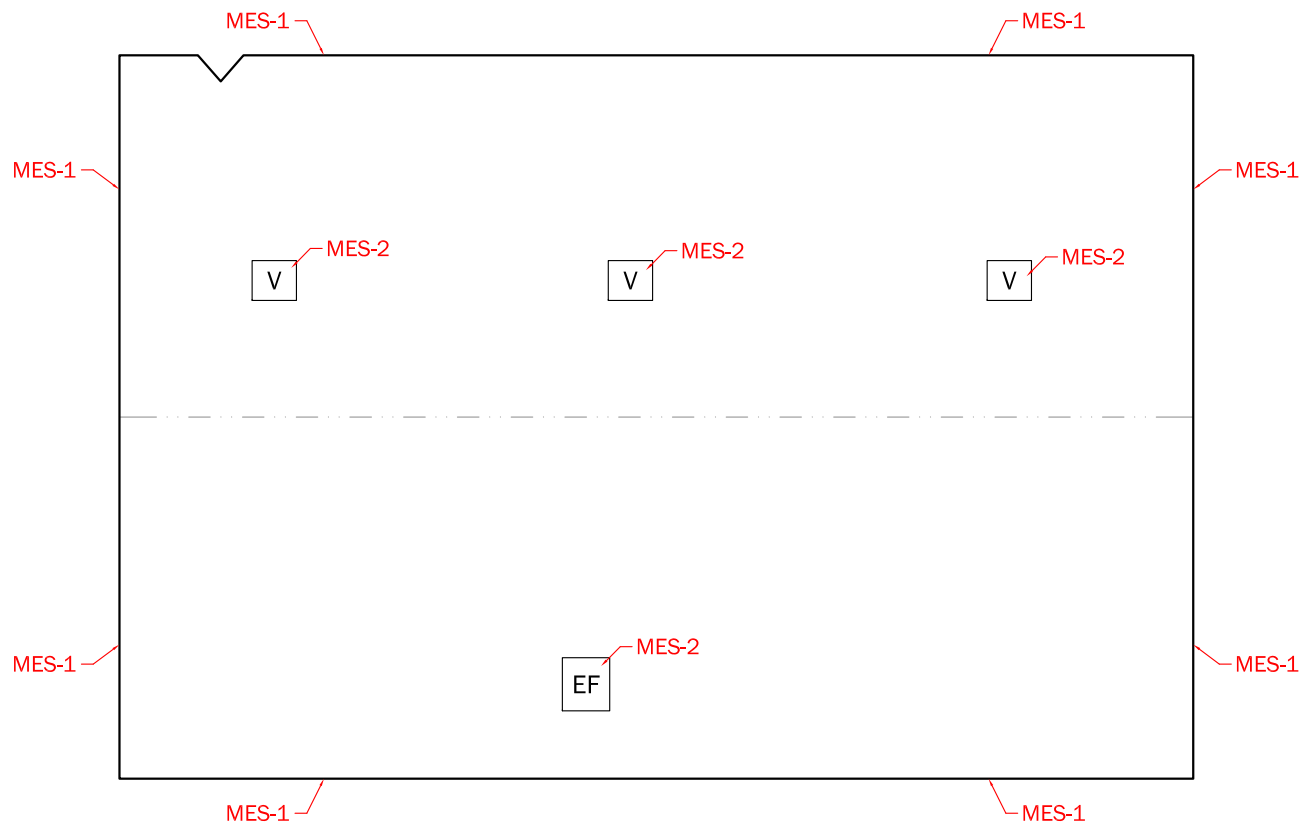
Detail Ref: MES-3

JCSD – Jefferson County SD Madras Elementary - Gym (Roof A) - Madras, OR		
SCALE: NTS	3 of 3	DRAWN BY: D.V.G.
DATE: 04/04/22		REVISED: 04/18/22
A-TECH/NORTHWEST, INC. Portland & Prineville, Oregon 503-628-2882		
Equipment - Removable Unit Curb Flashing - Detail		 PROJECT NUMBER: 22039

JCSD – Jefferson County SD
Madras Elementary - Gym (Roof A) - Madras, OR
ROOF LAYOUT




Roof A



Madras Elementary - Gym (Roof A)
215 SE 10th St
Madras, Oregon



JCSD – Jefferson County SD		
Madras Elementary - Gym (Roof A) - Madras, OR		
SCALE: NTS	1 of 1	DRAWN BY: D.V.G.
DATE: 04/04/22		REVISED: 04/18/22
A-TECH/NORTHWEST, INC. Portland & Prineville, Oregon 503-628-2882		 PROJECT NUMBER: 22039
Callout Map		



Section 07 99 28
ROOFING SYSTEM CONTRACTOR'S 2-YR WORKMANSHIP GUARANTEE
- Single-Ply Roof System -

DATE ISSUED: _____	CONTRACTOR: _____
OWNER: _____	ADDRESS: _____
ADDRESS: _____	_____
_____	_____
BLDG NAME: _____	ROOF SPEC#: _____
ADDRESS: _____	MANUFACTURER: _____
_____	ROOF AREA: _____
_____	COMPLETION DATE: _____
ROOF PROJECT #: _____	ACCEPTANCE DATE: _____
ROOF TYPE / THICKNESS: _____	MANUFACTURER'S WARRANTY: (y/n) _____
MISC COMMENTS: _____	MANUFACTURER'S WARRANTY DATE: _____
_____	MANUFACTURER'S WARRANTY LENGTH: _____
_____	Note: <i>Attach Applicable Manufacturer's Warranty</i>

The above named Roofing contractor guarantees the roofing system installed as the above project reference number on the above identified facility for a period of **TWO (2) years** from the Date of Acceptance (*noted above*) and will pay all authorized material and labor costs of repair to the roof system necessary to stop leaks as described within this Guarantee and project Specifications which occur during the guarantee period, as a result of any of the following causes and as noted within the specification documents for this project:

1. Abnormal deterioration of the roofing membrane, seams, base flashing system and/or other integral components of the installed system resulting from ordinary wear and tear by the elements.
2. Workmanship as it applies to the application of the roof system including any and all components.
3. Physical defects such as voids, blisters, fishmouths, bare spots, delaminations, ridges, wrinkles, fastener problems and/or other defects that result in leakage into the roofing system and/or the building interior. (*As applicable to roof system installed.*)
4. Damage to the roof system not caused by structural movement of the building and/or structural deck.

EXCLUSIONS:

It is understood that leakage caused by any of the following are excluded from this guarantee:

1. Natural disasters including but not limited to floods, lightening, hail, ice, earthquakes, wind damage exceeding force seven on the Beaufort Scale, etc.
2. Damage to the roof assembly resulting from:
 - a. Traffic and/or damage by Owner or Owner's representative(s).
 - b. Movement and/or deterioration of metal not associated with this specific project and not under the control of the Roofing Contractor during the course of this project.
 - c. Chemical attacks on the roof assembly.
 - d. Changes to building or roof system after acceptance.



**JEFFERSON COUNTY SCHOOL DISTRICT
MADRAS ELEMENTARY SCHOOL**
Single-ply Reroof Project - 2022
**ROOFING SYSTEM CONTRACTOR'S GUARANTEE
SINGLE-PLY
(22039)**

CONTRACTOR'S RESPONSIBILITY:

1. Roofing Contractor shall respond to leak calls within twenty-four (24) hours of notification by Owner and/or Owner's representative(s).
2. Temporary repairs may be made based on roof system manufacturer's recommendations for temporary repair techniques.
3. Permanent repairs (*restoring the roof to its original condition*) shall be completed within the thirty (30) day period after the first call from Owner and/Owner's representative.
4. Manufacturer's guidelines for repair of all problem(s) shall be strictly adhered to, and all techniques and products utilized during the repair must be approved by manufacturer.

OWNER'S RESPONSIBILITY:

In the event of a problem with the Roof System, the Owner's responsibilities under this guarantee are as follows:

1. Owner and/or Owner's representative will notify the Roofing Contractor via telephone followed by a written notification within thirty (30) days of the leak (*problem*).
2. Owner will notify Roofing Contractor in writing of any proposed modification, major repair, and/or addition on or through the roof system for each situation occurring after the "Date of Issue" of this guarantee.
 - a. Applicable drawings and plans showing the location of the proposed changes will be provided as may be available.

ACCEPTANCE:

OWNER SIGNATURE: _____ Date: _____
Printed Name: _____ Title: _____
ROOFING CONTRACTOR: _____ Date: _____
Printed Name: _____ Title: _____

DISTRIBUTION:

1. Original to Roof Consultant –to be delivered to Owner
2. Copy to Project Manual

22039-S_Sec 07 99 28 - Contr-2-yr SP-Work Guarantee-JCSD-Madras Elem RR FA-80-PVC-60-TPO-Perf