Rockingham County Facilities Operations
116 North Road
Brentwood, NH 03833
Jude Gates/Director of Facilities, Planning & IT
603-679-9375
jgates@co.rockingham.nh.us

Proposal Submission Deadline:
05/14/26 at 7:30 a.m. Eastern Time
*Proposal Opening is noted on page 2

Non-Mandatory Site Visit:
Wednesday, May 6, 2026, at 9:30AM
Meet at the Rockingham County Facilities Office 116 North Road, Brentwood NH 03833

REQUEST FOR PROPOSALS
ROCKINGHAM COUNTY DOC ROOFING PROJECT
FACILITIES OPERATIONS
04/29/2026

You (ORGANIZATION) are hereby invited to submit a proposal in accordance with the specifications outlined in this Request for Proposal (RFP). All necessary information required to complete your submission is contained within this document. Please refrain from adding our e-mail addresses to your marketing or distribution lists. Failure to comply may result in your domain being blocked, which could hinder the receipt of future proposals or communications from you.

Rockingham County, New Hampshire (Rockingham County) is a public entity composed of various departments, including general administrative offices, a nursing home, an assisted living facility, a correctional facility, facilities operations, and offices of Elected Officials such as the Commissioners, the Delegation, County Attorney, High Sheriff, Register of Deeds, and Treasurer.

QUESTIONS?

For questions specific to the product or service listed in this RFP, please direct inquiries to the contact listed in the upper-left corner of this page. For questions regarding the proposal submission process, please send an email to the RFP submission email listed below.

Please note: Any alteration or modification of documents or proposal forms downloaded from Rockingham County or Public Purchase is strictly prohibited. Such actions may result in disqualification from the proposal process.

INSTRUCTIONS

Proposals can be submitted through one of the following methods:

1. **Hard Copy Submission**

   Submit two (2) copies, or one (1) copy along with a thumb drive, in a sealed envelope labeled "RFP – (Rockingham County DOC Roofing Project)". Deliver to:

   Rockingham County Commissioners
   94 North Road
   Brentwood, NH 03833

2. **Email Submission**

   Email your proposal as a PDF attachment to rfp@co.rockingham.nh.us. Ensure that no submissions are sent to any other Rockingham County email address, as this may result in disqualification. File attachments must not exceed 20 MB in total. If your attachments exceed this limit, send multiple emails as needed. You will receive a confirmation email within one business day. If you do not receive confirmation, please contact the individual listed in the upper-left corner of this document.

3. **Online Submission**

Proposals may also be submitted online via Public Purchase. Account registration is free, but please allow 24 hours for activation. Visit the Public Purchase: Rockingham County Home Page, or www.rockinghamcountynh.org/rfpbidding for more information and the submission link.

Submission must include:

- Organization legal name with DBA if applicable.
- Tax ID.
- Physical address and mailing address (if different).
- Organization representative name and contact information (phone, fax, and email).
- Itemized pricing (including shipping or freight, if applicable).
- Cut sheets, specifications, brochures, etc. for all products quoted, if applicable.
- Equivalents must be clearly identified, with all variations from the specification annotated and are subject to approval.
- Complete details about warranty and service availability.
- The proposed start and completion time schedule for after bid has been awarded.
- Insurance requirements, non-appropriations and indemnification obligations.

Proposal Openings

Authorization to open proposals will be given during the regularly scheduled Rockingham County Board of Commissioners' meeting on **05/14/2026**. Please note that proposals will not be reviewed during this meeting. Instead, they will be forwarded to the respective department that issued the RFP for thorough review after the meeting. Proposals will be awarded or rejected once Rockingham County has completed a comprehensive evaluation and comparison of all submissions.

Meetings are held in the Lobby Conference Room at the Rockingham County Municipal Building, located at 94 North Road, Brentwood, NH. Remote attendance is available via Zoom. To register for virtual access, please contact the Commissioners' Office at 603-679-9350 at least 24 hours prior to the meeting.

Please note that meeting schedules are subject to change. For the most up-to-date information, visit: www.rockinghamcountynh.org/events.

Proposal Award

Proposals will be formally awarded and publicly announced at a regular scheduled Rockingham County Board of Commissioners meeting. Following the announcement, formal notification of the award decision will be provided.

Pricing

Proposal prices must remain valid for a period of sixty (60) days from the proposal opening date and must remain firm once the proposal is awarded to the successful organization(s).

- Vendors holding a state bid/contract are encouraged to offer the corresponding pricing.
- If any variations, such as discounts or penalty clauses, may affect the proposed price, please specify them clearly in your submission.

Additional Materials

Organizations may be invited to participate in the final selection process following the review and screening of all proposals. This process may include providing additional information, such as cost adjustments or other clarifications, as requested by Rockingham County.

Performance Clause

If the successful organization or Rockingham County defaults on any stipulations outlined the RFP, and such default is not corrected within thirty (30) days of receiving written notice, either party may opt to cancel the agreement.

Contractual Obligations

Should the proposal require contracts for the provision of materials, equipment, or services, the Rockingham County Board of Commissioners reserves the right to review and amend these contracts to ensure compliance with county legal requirements. All agreements or contracts requiring our signature must be submitted in Microsoft Word format to facilitate efficient review and tracking. All contracts must include Non-Appropriation and Indemnification clauses, as specified in the RFP. Sample language for these clauses is provided below.

Non-Appropriation

Rockingham County is obligated to pay only such contract amounts that can lawfully be made from funds budgeted and appropriate for that purpose during Rockingham County's then current fiscal year, subject to annual approval by the Rockingham County Delegation. Should Rockingham County fail to budget, appropriately, or otherwise make available funds to make payments under this contract, such contract shall be deemed terminated at the end of the then current term. Rockingham County agrees to deliver prompt notification after any decision to non-appropriation is made, but failure to give such notice will not extend the term beyond such Original or Renewal Term.

Indemnification

To the fullest extent permitted by law, (ORGANIZATION) shall protect, indemnify, save, defend and hold harmless Rockingham County, including its officials, agents, volunteers and employees, ("Indemnified Parties"), from and against any and all liabilities, obligations, claims, damages, penalties, causes of action, costs, interest and expenses, including but not limited to reasonable attorney and paralegal fees, which Indemnified Parties may become obligated or suffer by reason of any accident, bodily injury, personal injury, death of person, or loss of or damage to property, arising indirectly or directly under, out of, in connection with, or as a result of this Contract or the activities of (ORGANIZATION) or its agents, employees, contractors or subcontractors, and even if caused in whole or in part by any negligent or intentional act or omission of Indemnified Parties.

In addition, and regardless of respective fault, (ORGANIZATION) shall defend, indemnify and hold harmless the Indemnified Parties for any costs, expenses and liabilities arising out of a claim, charge or determination that (ORGANIZATION) officers, employees, contractors, subcontractors or agents are employees of the Indemnified Parties, including but not limited to claims or charges for benefits, wages, fees, penalties, withholdings, damages or taxes brought in connection with laws governing workers compensation, unemployment compensation, social security, Medicare, state or federal taxation, and/or any other similar obligation associated with an employment relationship.

(ORGANIZATION'S) obligations to defend, indemnify and hold harmless the Indemnified Parties hereunder shall survive the term of this Contract.

Rockingham County shall not be required to defend or indemnify (ORGANIZATION) or its agents, employees, contractors or subcontractors or any professional service provider.

Insurance Requirements

The organization shall maintain insurance coverage throughout the duration of this proposal. Subcontractors engaged by the organization must also maintain the required coverage. Any requests for modifications to these insurance requirements must be submitted in writing with the proposal and will be subject to evaluation.

1. **Coverage Requirements**

   The organization must have professional liability/errors and omissions insurance with limits of no less than $1,000,000 per occurrence. The insurance certificate and coverage must be issued by a carrier authorized to conduct business in the State of New Hampshire, with an A.M. Best Company rating of "A" or better.

2. **Workers' Compensation Insurance**

   The organization shall carry workers' compensation insurance as mandated by the State of New Hampshire.

3. **Comprehensive General Liability Insurance**

   The organization must maintain a comprehensive general liability insurance policy, including contractual liability coverage, with limits of no less than $1,000,000 per occurrence.

4. **Motor Vehicle Insurance**

   The organization must carry motor vehicle insurance, including coverage for bodily injury, property damage, and uninsured motorists, with a combined single limit of no less than $1,000,000 per accident.

5. **Insurance Certificate**

   The organization shall provide an insurance certificate confirming the required coverage. Certificates must be filed with Rockingham County and included with the proposal submission. A 30-day notice is required for cancellation or material changes to coverage, and notices must be sent directly to the Rockingham County Commissioners' Office, 94 North Road, Brentwood, NH 03833.

NOTICE:

1. The Rockingham County Board of Commissioners reserves the right to accept or reject any proposals or parts thereof, select the proposal deemed to be in the best interest of Rockingham County, and waive any formalities in the bidding process.
2. Proposals are subject to public review and cannot include proprietary, confidential, or restricted information that conflicts with New Hampshire's Right to Know law.
3. The information provided in this RFP is solely for the purpose of preparing proposals detailing costs and services for Rockingham County. Organizations are expected to carefully review these specifications. Failure to meet specified conditions may result in invalidation.
4. Although believed to be accurate, the information provided herein is not warranted and should be verified independently.
5. Rockingham County reserves the right to award contracts to multiple providers.
6. All modifications to the specifications must receive prior approval from Rockingham County.
7. Any variations, including discounts or penalty clauses, that may affect pricing, must be clearly specified in the proposal.
8. Payment for satisfactory work completion or product delivery is subject to Rockingham County 's standard accounts payable process.

DETAIL OF ITEM(S), SCOPE OF SERVICE(S), SERVICES

A. ***SPECIFICATIONS***

Attachment A

B. ***PRICE SHEET***

An itemized price proposal is required with submission unless otherwise noted

C. ***GENERAL***

- Provide complete specifications for the equipment and/or materials quoted.
- Include an anticipated delivery date of the equipment and/or materials ordered.
- Include anticipated Start and Completion dates.
- Provide information with regards to warranty and parts/service availability.
- Pricing to include all freight charges. Rockingham will not be responsible for any additional freight charges not specified in your proposal.

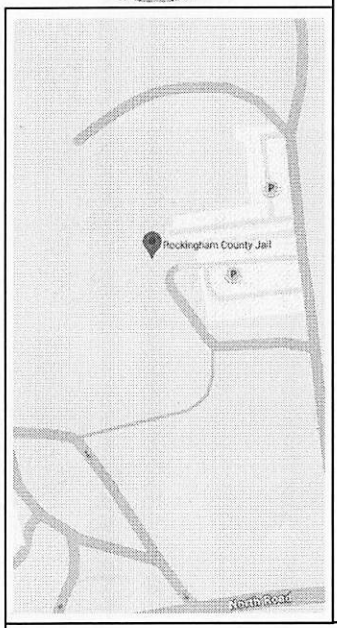
NOTE: Items presented as "equivalent" must be clearly identified, with all variations from the specification annotated and are subject to approval by the Director of Facilities, Planning & IT.

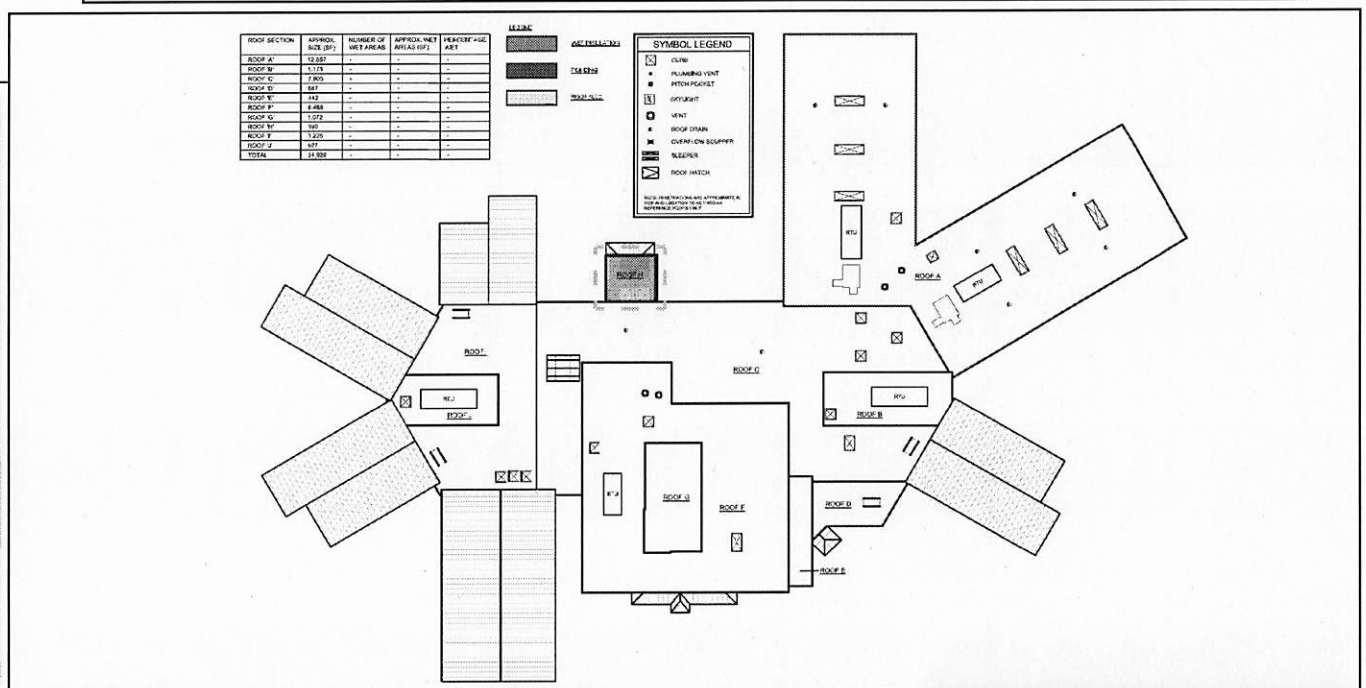
Sincerely,

Jude Gates, Director of Facilities, Planning/IT

JG/dsr

Rockingham County Corrections





ROOF SECTION	APPROX. SIZE (SF)	NUMBER OF WET AREAS	APPROX. WET AREAS (SF)	PERCENTAGE WET
ROOF 'A'	12,687	-	-	-
ROOF 'B'	1,175	-	-	-
ROOF 'C'	7,805	-	-	-
ROOF 'D'	567	-	-	-
ROOF 'E'	442	-	-	-
ROOF 'F'	8,468	-	-	-
ROOF 'G'	1,072	-	-	-
ROOF 'H'	160	-	-	-
ROOF 'I'	1,225	-	-	-
ROOF 'J'	577	-	-	-
TOTAL	34,936	-	-	-

KEY

A-1: COVER PAGE
A-2A: BASE BID SCOPE OF WORK
A-2B: ALT. BID SCOPE OF WORK
A-3: EXISTING CONDITIONS
A-4: TAPERED INSULATION LAYOUT
A-5: WIND UPLIFTS
A-6: DETAIL DRAWINGS

GENERAL NOTES

GENERAL NOTES

1. IT IS THE ROOFING CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH ALL DETAILS INVOLVED IN THE ROOFING CONTRACT.
2. ALL DRAWINGS ARE GRAPHIC REPRESENTATION OF APPROXIMATE LOCATION OF EXISTING AND NEW MATERIALS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
3. THE ROOFING CONTRACTOR TO PROTECT ALL ADJACENT SURFACES NOT SCHEDULED FOR WORK AND TO REPAIR ANY DAMAGED AREAS AS A RESULT OF CONTRACTOR WORK AT NO ADDITIONAL COST TO THE OWNER.
4. THE ROOFING CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN WATER TIGHTNESS AND PROVIDE PROTECTION AT ANY/ALL OPENINGS IN THE ROOF LEFT AT THE END OF EACH CONSTRUCTION DAY.
5. ALL WOOD BLOCKING SHALL BE FIRE RATED.
6. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, CONDITIONS, AND QUANTITIES.
7. STORE AND HANDLE ROOFING SHEETS IN A DRY, WELL-VENTILATED, WEATHER-TITE PLACE. STORE ROLLS OF MEMBRANE AND OTHER MATERIALS ON RAISED SURFACE. STAND ALL ROLL MATERIALS ON END. COVER ROLL GOODS WITH A CANVAS TARPAULIN OR OTHER BREATHABLE MATERIAL (NOT POLYETHYLENE).
8. DO NOT LEAVE UNUSED MATERIALS ON THE ROOF WHEN ROOFING WORK IS NOT IN PROGRESS UNLESS PROTECTED FROM WEATHER AND OTHER MOISTURE SOURCES.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE ALL MATERIAL AND EQUIPMENT ON THE JOB SITE. IF ANY MATERIAL OR EQUIPMENT IS STORED ON THE ROOF, THE CONTRACTOR MUST MAKE SURE THAT THE INTEGRITY OF THE DECK IS NOT COMPROMISED AT ANY TIME.

No.	Date	Revision Desc.

Rockingham County
Brentwood, NH 03833

COVER PAGE

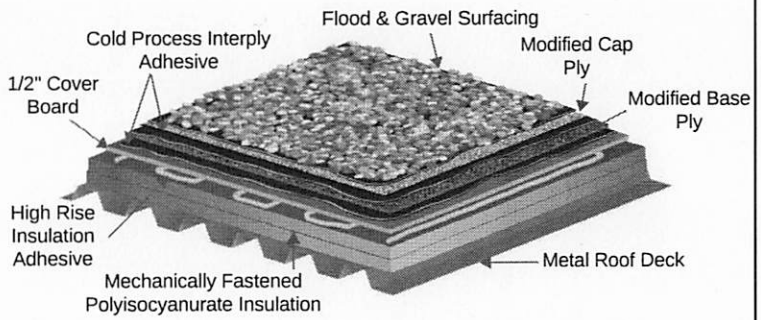
A-1

Rockingham County Corrections

<u>Base bid:</u> Removal of approximately 500 +/- square feet of existing gravel surfaced two-ply modified roof assembly and installation of new cold applied 185 mil. two-ply modified bitumen gravel surfaced roof system

1. Furnish and facilitate all necessary labor, materials, equipment, safety precautions, and related services necessary to properly, safely, and efficiently complete the specified roofing project. All staging areas to be kept roped off at all times. Materials, tools, and equipment to be secured daily prior to departure. Materials to be stored per manufacturers guidelines.
2. All specified details and drawings to be strictly followed.
3. Remove the existing roof assemblies and all associated components. Properly dispose of any and all debris caused by the specified roofing project.
4. Inspect the metal roof deck to verify and ensure no deterioration, deficiencies, or failures are present. Repairs to be made on a per square foot cost basis, per bid form.
5. Wood blocking to be added/replaced, as necessary. Existing wood blocking to be replaced if damaged, wet, or deteriorated.
6. New drain assemblies to be installed and flashed, per manufacturers specifications. Drain sumps to be minimum 12' X 12' with at least 1/2":12" slope.
7. Mechanically fasten 1/4":12" 4-way tapered polyisocyanurate insulation throughout the metal roof deck, per current wind uplift calculations.
8. Install 1/2" Gypsum based cover board in high-rise insulation adhesive, per current wind uplift calculations. Stagger all insulation and cover board seams.
9. Fill any voids/gaps larger than 1" throughout the substrate, then install 80 mil. SBS modified base ply membrane in modified cold process adhesive at the rate of 2.5 gallons per 100 square feet achieving a minimum of 1/4" visible bleed out from all base ply seams.
10. Install new 105 mil. SBS modified cap ply membrane in modified cold process adhesive at the rate of 2.5 gallons per 100 square feet achieving a minimum of 1/4" visible bleed out from all seams.
11. Install new ANSI/SPRI ES-1 rated 7.25" .040 aluminum pre-manufactured raised flash-less snap-on edge metal throughout. Rockingham County to verify and confirm the color choice in writing with the awarded contractor prior to project commencement.
12. Install aluminum gravel fences surrounding the drain in approved adhesive.
13. Apply a flood coat of cold process modified adhesive at a minimum of 4-5 gallons per 100 square feet then immediately embed 3/8" double washed pea stone gravel at a rate of 400-450 pounds per 100 square feet.

Provide Manufacturer 30-Year warranty and 2-year Installer watertight workmanship warranty.



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Rockingham County
Brentwood, NH 03833

SCOPE OF WORK: BASE BID

A-2A

Rockingham County Corrections

Add Alternate #1: Various repairs throughout the gravel surfaced modified bitumen roof sections.

1. Troubleshoot and repair deficiencies and open conditions throughout the gravel surfaced roof sections. Repairs to be prioritized surrounding active leak areas identified by onsite staff and areas of identified moisture contamination, per the most recently completed infrared thermal survey. Areas to be repaired include field seams, drain areas, curb details, wall flashing details, and the removal and replacement of existing moisture contaminated roof assembly in kind. In the areas to be repaired, spud and broom gravel to expose cap sheet without damaging the roof system.
2. Repair up to a total of 2,500 square feet of roof areas with identified moisture contamination within the substrate by removing and replacing the existing roof assembly in kind. Repair by cutting out the existing assembly then cleaning and prepping the area to receive the new assembly. Fasten new polyisocyanurate insulation that matches the existing assemblies' heights and profile through the roof deck, adhere 1/2" wood fiberboard to the fastened polyiso in InsuLock HR, then install FlexBase 80 base ply and StressPly Plus smooth cap ply in WeatherKing cold process adhesive at a rate of 2.5 gallons per square achieving a minimum of 1/4" of bleed out from all seams. Flood coat the entire area with BlackKnight Cold at approximately 5 gallons per square then immediately embed gravel throughout the area to ensure sufficient gravel coverage.
3. Identify the two drains with active leaks and marked "wet" areas and spud/broom gravel in approximately a 15'x15' area around the drains. Repair by cutting out the existing assembly then cleaning and prepping the area to receive the new assembly. Reset and reflash the existing drains with new hardware. Fasten new polyisocyanurate insulation that matches the existing assemblies' heights and profile through the roof deck, adhere 1/2" wood fiberboard to the fastened polyiso in InsuLock HR, then install FlexBase 80 base ply and StressPly Plus smooth cap ply in WeatherKing cold process adhesive at a rate of 2.5 gallons per square achieving a minimum of 1/4" of bleed out from all seams. Flood coat the entire area with BlackKnight Cold at approximately 5 gallons per square then immediately embed gravel throughout the area to ensure sufficient gravel coverage.
4. Repair up to 30 areas of open conditions/open seams on exposed mineral surfaced cap sheet at by cleaning and priming the area, followed by applying a 3 course of SilverFlash and GarMesh extending at least 6" in all directions past the open conditions.
5. Apply two coats of GarlaBrite at a rate of .5 gallons per square to vertical exposed mineral surfaced cap ply throughout the roof sections totaling up to 1,000 square feet.
6. Areas of open conditions/failed sealant at metal flashings to be cleaned and resealed using a heavy bead of tooled Green-Lock XL sealant.
7. Clean all debris caused by newly completed repairs

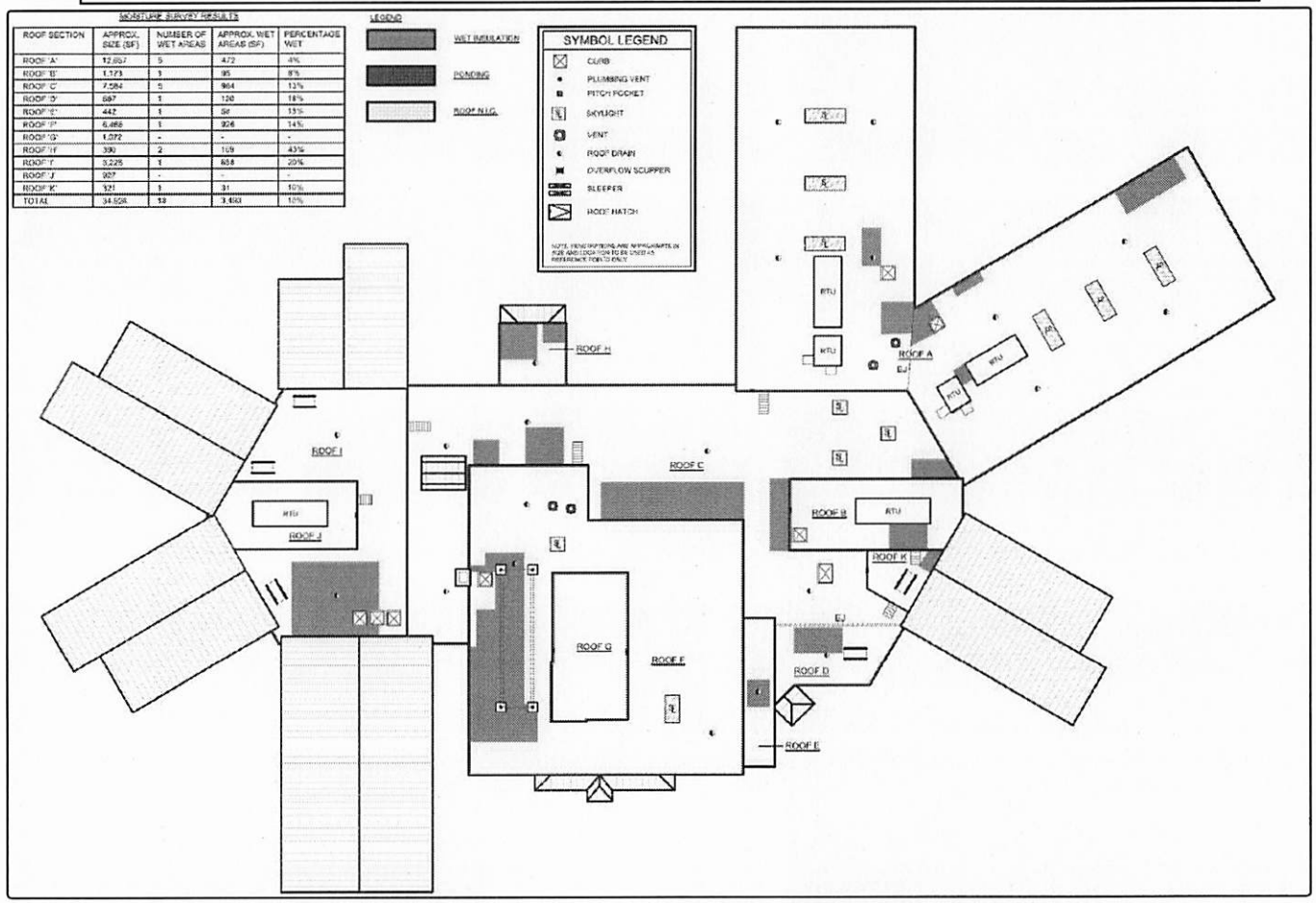
No.	Date	Revision Desc.

Rockingham County
Brentwood, NH 03833

SCOPE OF WORK: ALTERNATE BID

A-2B

Rockingham County Corrections



Roof Section	Low Slope Roof Section H
Existing Assembly	Multi-Ply Modified Bitumen w/ Flood & Gravel Surfacing 1/2" Wood Fiber Cover Board Tapered Polyiso Insulation Metal Deck

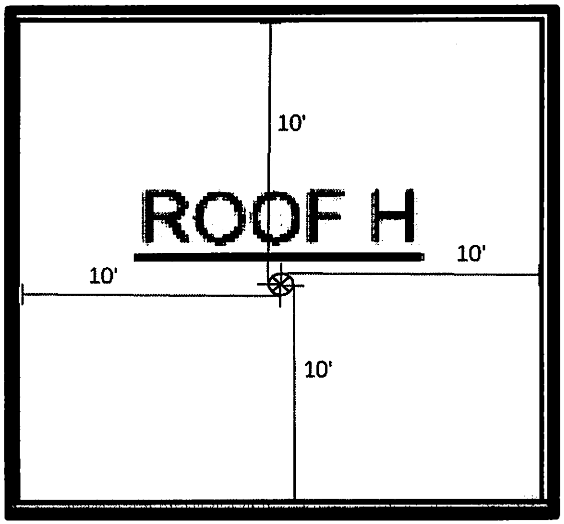
No.	Date	Revision Desc.

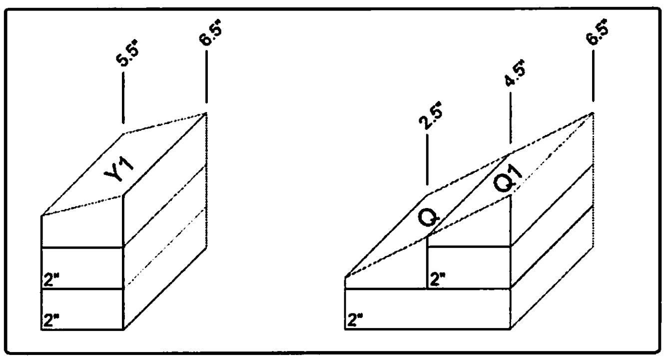
Rockingham County
Brentwood, NH 03833

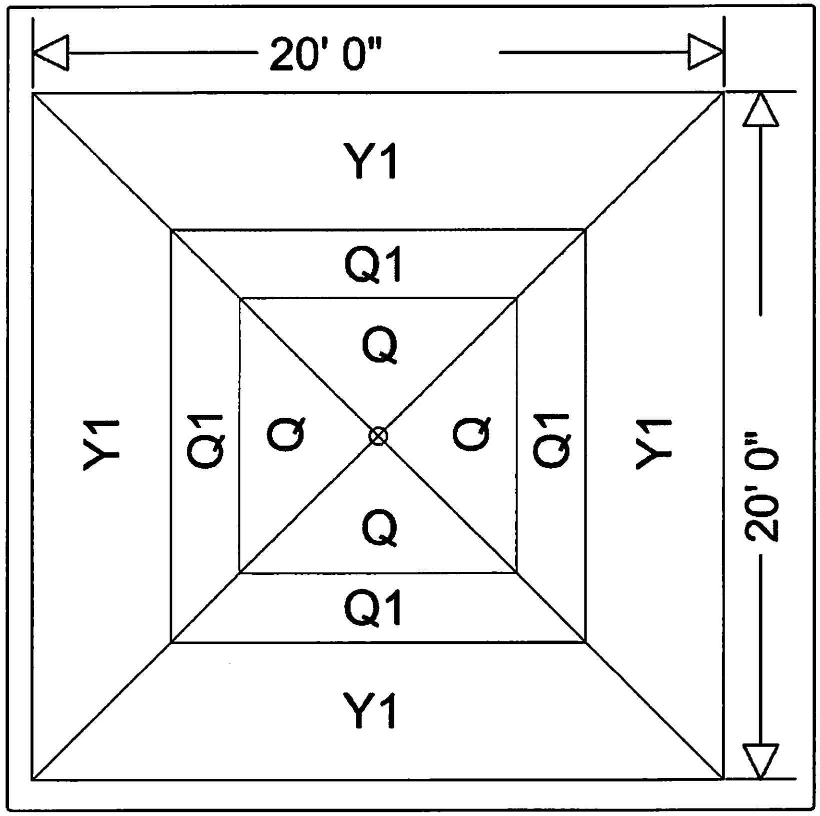
EXISTING CONDITIONS

A-3

Rockingham County Corrections







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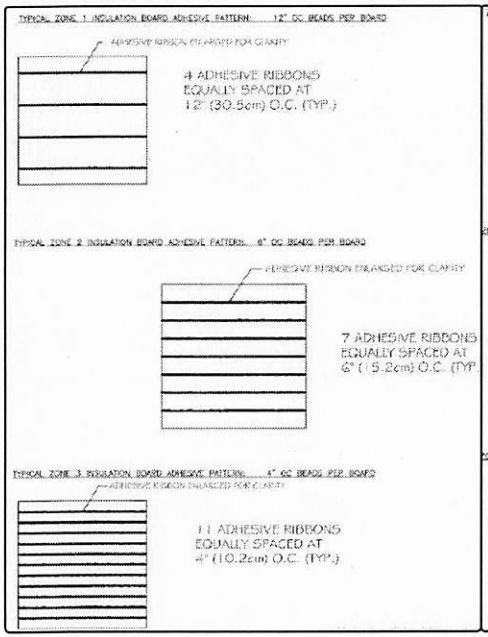
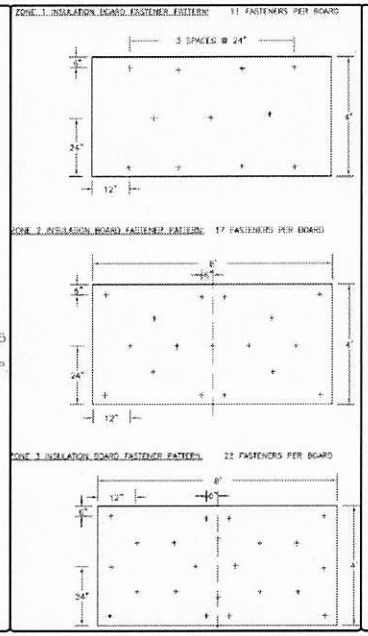
Rockingham County
Brentwood, NH 03833

TAPERED INSULATION LAYOUT

A-4

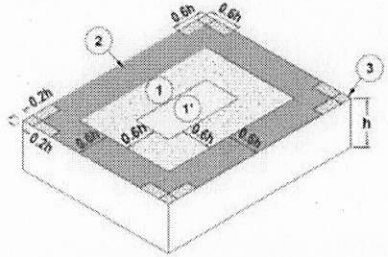
Rockingham County Corrections





Design Code	ASCE 7-16 ASD		Base Velocity Pressure	20.2 psf	Gcpi = 0.55
Exposure Category	C		Roof Type	Gable	
Risk Category	III		Edge Zones		
Wind Speed	119 mph		Zone 1 width =	30'-0"	
Design Roof Height:	50 ft		Zone 2 width =	30'-0"	
Minimum Building Width:	50 ft		Zone 3 width =	10'-0"	
Roof Pitch (X, Y)	0 : 12		Zone 3 length =	30'-0"	
Roof Angle	0.00 deg		=		
Parapet ≥ 36" Entire Roof	No		=		
Deck Type	0		Zone Image		

Notes:



Zone Pressures (psf)

Zone 1'	Zone 1	Zone 2	Zone 3			Wall Perimeter Zone 4	Wall Corner Zone 5
29.3	45.5	57.6	75.8			30.0	35.5

17.1 Allowable Pressure - Zone 1 = 45psf. - RoofNav # 259826-224938-0	
Wind: FM 1-90 Fire: Class A Hail: SH Max Slope: 0.5:12	
Assembly Details (see RoofNav for options):	**Attachment:**
Modified Cap Sheet	Weatherking (2 gal/square)
Modified Base sheet	
4'x4' Woodfiber, DensDeck or SECUROCK coverboard set in insulation adhesive	Insul-Lock HR 3/4" wide ribbons Z1 = 12" Z2 = 6" Z3 = 4"
4'x8' Polyisocyanurate mechanically fastened	Fasteners Z1 =11 , Z2 =17, Z3 = 22 (32 for FM jobs)
Steel Deck	See RoofNav

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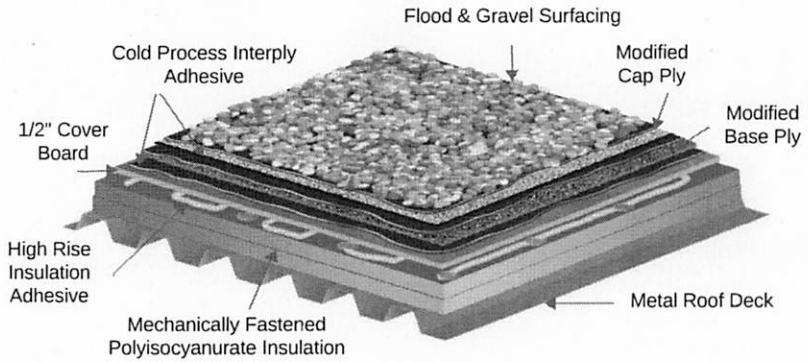
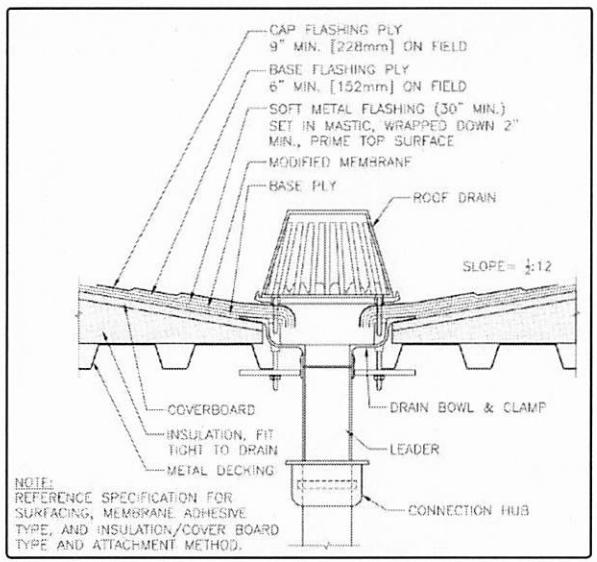
Brentwood, NH 03833

WIND UPLIFTS

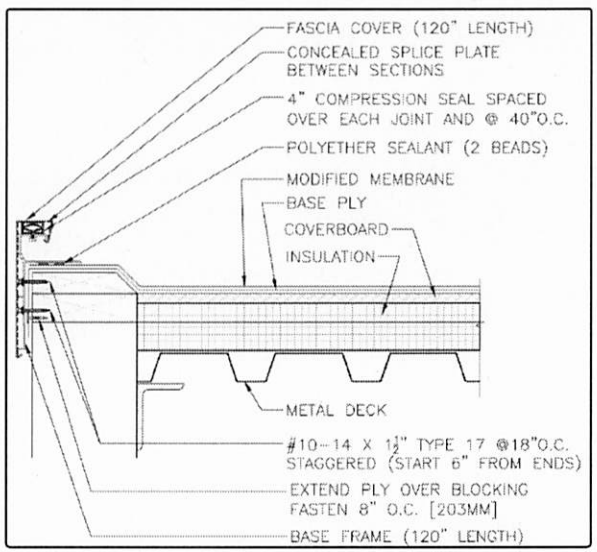
A-5

Rockingham County Corrections





Internal Roof Drain



Raised Flash-less Edge Metal

No.	Date	Revision Desc.

Rockingham County
Brentwood, NH 03833

DETAILS

A-6

ATTACHMENT: A

PROJECT SPECIFICATIONS FOR:

Rockingham County Corrections
99 North Rd
Brentwood, NH 03833

PROJECT:

2026 Roof Section H Replacement & Various Repairs

NON-MANDATORY PRE-BID MEETING:

Wednesday, May 6th, 2026, at 9:30am
Rockingham County Facilities Operations Office
116 North Road
Brentwood, NH 03833

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INVITATION TO BID AND CONTRACTOR NOTICE

Rockingham County Facilities Services
116 North Road
Brentwood, NH 03833
Jude Gates
Director of Facilities, Planning & IT
603-679-9375
jgates@co.rockingham.nh.us

Proposal Submission Deadline:
Thursday, May 14th, 2026, at 7:30AM

Non-Mandatory Site Visit:
Rockingham County Facilities Office
16 North Rd, Brentwood, NH 03833
Wednesday, May 6th, 2026, at 9:30am

REQUEST FOR PROPOSAL

Rockingham County Corrections Roof Section H Replacement & Various Repairs as specified April 29th, 2026

You (ORGANIZATION) are hereby invited to submit proposals as specified in this Request for Proposal. An itemized proposal is required with submission. The information necessary to complete the proposal is contained within this document.

Rockingham County, New Hampshire (Rockingham County) is a public entity composed of general administrative offices, nursing home, assisted living, correctional facility, engineering and maintenance services, and offices from Elected Officials: Commissioners, Delegation, County Attorney, High Sheriff, Register of Deeds, and Treasurer.

Questions on the technical specifications of the Request for Proposal should be directed to the contact listed above. Questions on bidding procedures can be directed to rfp@co.rockingham.nh.us. Do not alter or modify any documents or proposal forms downloaded from Rockingham County or Public Purchase. Altering or modifying such documents or forms may result in disqualification.

1. **General Scope of Work:** Removal and replacement of "Roof Section H" (approximately 500 square feet) and various repairs throughout the flood and gravel surfaced multi-ply modified bitumen roof sections, on the Rockingham County Corrections Facility, as defined by the project manual and scope of work. Contractors are required to adhere to the project specification and project documents.
    A. CONTRACTOR PROVISIONS:
        a. The Contractor shall supply everything necessary for the execution and completion of the work including but not limited to; roof replacement, Modified Bitumen materials, insulation, tools, cleaning equipment, lifting equipment, PPE, safety harnesses, pressure washer, bristle brushes. Contractor is required to provide written proof of liability insurance before commencement of work.

B. Rockingham County PROVISIONS
   a. Rockingham County to provide the contractor with adequate access to the roof area. Rockingham County to provide the contractor with water supply. Rockingham County to provide adequate storage for temporary toilets and material on job site. Cones and caution tape to be placed around working areas and lifting equipment when in use.
   b. The Contractor shall at all times keep the work area free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the premises any debris, tools, equipment, and materials that are not the property of Rockingham County. Unsightly materials and debris including rags, garbage, and equipment should be removed as necessary.

2. Proposal Instructions (3 ways to submit):

A. Two (2) copies (or one copy and one thumb drive) of the Proposal should be submitted in a sealed envelope addressed and delivered to:
"RFP: 2026 County Corrections Roofing Project"
Rockingham County Commissioners
119 North Road
Brentwood, NH 03833

C. Submit your bid as a PDF to: rfp@co.rockingham.nh.us. ***DO NOT*** send your bid to any other Rockingham County email address. Doing so may result in disqualification. You will receive a confirmation email within 1 business day. If you do not receive your confirmation email, you may inquire with the contact person listed at the top of this document.

D. Submit your Proposal online through Public Purchase, which is free to sign up and submit. Please visit Public Purchase: Rockingham County Home Page, or www.rockinghamcountynh.org/rfpbidding for the link to our Public Purchase page.

2. Submission must include:

A. Organization legal name with DBA if applicable.
B. Tax ID.
C. Physical address and mailing address (if different).
D. Organization representative name and contact information (phone, fax, and email).
E. An itemized price proposal including shipping/freight is required with submission.
F. Items presented as "equivalent" must be clearly identified, with all variations from the specification annotated and are subject to approval.
G. Complete cut sheets and specifications for all products quoted, if applicable.
H. All pertinent information regarding warranty and service availability.
I. Anticipated start time after receipt of order and anticipated time to perform the scope of services.
J. Insurance requirements, non-appropriations and indemnification obligations.
K. Attachments must be uploaded in PDF format. **Any** agreements or contracts that require our signature need **to** be in Microsoft Word format **for** review and tracking purposes.

3. **Proposal Openings:** Authorization to open proposals will be given at the regular scheduled meeting of the Board of Rockingham County Commissioners beginning. Proposals will be distributed after the meeting and will be awarded or rejected as soon as a complete review and comparison of the proposals received has been made by Rockingham County. Scheduled meetings are subject to change and information may be found here: www.rockinghamcountynh.org/events.
4. **Proposal Award:** The proposal(s) will be formally awarded and announced publicly at a regular scheduled meeting of the Board of Rockingham County Commissioners. Formal notification of proposal award will occur thereafter.
5. **Pricing:** Proposal prices are to remain in effect for a period of (60) days from opening date of the proposal and are to remain firm once proposal is awarded to the successful Organization(s).
    A. Vendors awarded a state bid/contract should offer that pricing.
    B. Should you have any variations (discounts and/or penalty clauses) that may affect the price, please specify in proposal.
6. **Additional Materials**: Following the review and screening of all proposals, Organization may be invited to participate in the final selection process, which may include the submission of additional information regarding cost or other issues, as requested by Rockingham County.
7. **Performance Clause:** In the event that the successfully awarded Organization/Rockingham County should default in the observance of the stipulations set forth in this Request for Proposal and such default **is** not corrected within 30 days of written notice from either party, the successfully awarded Organization/ Rockingham County shall have the option of canceling the proposal.
8. **Contractual Obligations:** If contracts for the supply of materials, equipment, or services are required under the proposal, the Board of Rockingham County Commissioners reserves the right to review said contracts and amend to comply with county legal requirements prior to signing by the appointed representative of the Board of Rockingham County Commissioners. All contracts entered by Rockingham County are required to contain Non-Appropriation and Indemnification clauses. Sample language is provided below.
    A. Non-Appropriation: Rockingham County is obligated to pay only such contract amounts that can lawfully be made from funds budgeted and appropriated for that purpose during Rockingham County's then current fiscal year, subject to annual approval by the Rockingham County Delegation. Should Rockingham County fail to budget, appropriately, or otherwise make available funds to make payments under this contract, such contract shall be deemed terminated at the end of the then current term. Rockingham County agrees to deliver prompt notification after any decision to non-appropriation is made, but failure to give such notice will not extend the term beyond such Original or Renewal Term.
    B. Indemnification: To the fullest extent permitted by law, (ORGANIZATION) shall protect, indemnify, save, defend and hold harmless Rockingham County, including its officials, agents, volunteers and employees, ("Indemnified Parties"), from and against any and all liabilities, obligations, claims, damages, penalties, causes of action, costs, interest and expenses, including but not limited to reasonable attorney and paralegal fees, which Indemnified Parties may become obligated or suffer by reason of any accident, bodily injury, personal injury, death of person, or loss of or damage to property, arising indirectly or directly under, out of, in connection with, or as a result of this Contract **or** the activities of (ORGANIZATION) or its agents, employees, contractors or subcontractors, and even if caused in whole or in part by any negligent or intentional act or omission of Indemnified Parties.

a. In addition, and regardless of respective fault, (ORGANIZATION) shall defend, indemnify and hold harmless the Indemnified Parties for any costs, expenses and liabilities arising out of a claim, charge or determination that (ORGANIZATION) officers, employees, contractors, subcontractors or agents are employees of the Indemnified Parties, including but not limited to claims or charges for benefits, wages, fees, penalties, withholdings, damages or taxes brought in connection with laws governing workers compensation, unemployment compensation, social security, Medicare, state or federal taxation, and/or any other similar obligation associated with an employment relationship. (ORGANIZATION'S) obligations to defend, indemnify and hold harmless the Indemnified Parties hereunder shall survive the term of **this** Contract. Rockingham County shall not be required to defend or indemnify (ORGANIZATION) or its agents, employees, contractors or subcontractors or any professional service provider.

9. **Insurance Requirements:** The Organization shall always maintain during the life of this proposal insurance coverage. The Organization must also require its subcontractors to maintain such coverage. Any request for modification of the coverage requirements must be submitted in writing with the proposal and will be evaluated accordingly.
   A. Coverage: The Organization shall have professional insurance/errors and omissions insurance with limits of not less than $1,000,000 each occurrence. The insurance certificate and the underlying insurance coverage shall be issued by a carrier authorized to do business in the State of New Hampshire and having A.M. Best Company rating of "A" or better. Workers Compensation Insurance: The Organization shall carry workers compensation insurance as required by the State of New Hampshire.
   B. Comprehensive General Liability Insurance: The Organization shall maintain comprehensive general liability insurance policy, which includes coverage for contractual liability, in an amount of no less than $1,000,000 per occurrence.
   C. Motor Vehicle Insurance: The Organization shall carry motor vehicle insurance to include bodily injury, property damage, and uninsured motorist, coverage in an amount of no less than $1,000,000 combined single limit per accident.
   D. Insurance Certificate: The Organization shall provide an insurance certificate confirming the above insurance coverage. The provider shall file certificates with Rockingham County showing that the above insurance has been purchased. Include with proposal submission and use mail to: Rockingham County, attn. Commissioners Office, 119 North Road, Brentwood, NH 03833. A 30-day notice is required for cancellation and/or material change of coverage and sent directly to the above mail to address.

10. **NOTICE:**
   A. The Board of Rockingham County Commissioners reserves the right to accept or reject any and all proposals or parts thereof, to accept the proposal which they deem to be in the best interest of Rockingham County and to waive any bid formality.
   B. Proposals are subject to public review and cannot be honored with proprietary, confidential, do not disclose, or any other restriction that conflicts with the New Hampshire Right To Know law.

C. Information provided in these specifications is to be used only for the purpose of preparing a proposal detailing costs and services to be provided to Rockingham County. It is expected that each Organization will read these specifications with care. Failure to meet certain conditions may invalidate proposals.
D. The information contained herein is believed to be accurate but should not be considered as warranted in any way.
E. Rockingham County may award to multiple providers.
F. Any changes to the specifications shall meet with the approval of Rockingham County.
G. Any variations (discounts and/or penalty clauses) that may affect the price, please specify in your proposal.
H. Upon satisfactory completion of the work and or receipt of product, payment is subject to standard accounts payable process at Rockingham County.

Sincerely,

Jude Gates,
Senior Director of Facilities, Planning & IT Jg/dr

BID PROPOSAL
Bids Due by 7:30AM on Thurssday, May 14th, 2026

I, _____, the undersigned, having familiarized myself with the attached Contract Documents do hereby propose to furnish all labor, equipment, material, drayage, tolls, supervision, additional services, etc. and to complete all work as specified in these Documents and Specifications. By submission of this Bidding Proposal, I acknowledge receipt of the Project Manual containing all applicable project documents.

Scope of Work: Removal and replacement of approximately 500 +/- square feet of existing gravel surfaced multi-ply roof assembly on roof section H and various repairs throughout the gravel surfaced modified bitumen roof sections. Install new cold process two-ply flood and gravel modified bitumen roofing system and all the associated components, per specifications. This shall include all necessary labor, materials, flashings, equipment, safety requirements, coordination, permits, and services, in accordance with any applicable building code requirements, specifications, scopes of work, details, and industry standards/best practices.

Pursuant to the notices given, the undersigned proposes to complete the specified roofing project as described within all project documents, in strict accordance with any and all plans, details, specifications, and schedule herein. The OWNER reserves the right to reject any and all Bids for any reason and to waive any irregularity in Bidding. The successful Bidder will be required to furnish the necessary Bonds and Insurance Certificates prior to project commencement

Base Bid Proposal: Total cost associated with the base bid scope of work (approximately 500 +/- square feet) (30-year manufacturer warranty) (2-year contractor warranty).

Written: _____
Dollars: ($_____)

Alternate #1 Bid Proposal: Total cost associated with alternate #1 scope of work (various repairs throughout the roof sections).

Written: _____
Dollars: ($_____)

Respectfully Submitted,

_____
NAME: TITLE: DATE:

_____
BUSINESS NAME & ADDRESS:

_____
SIGNATURE:

SECTION 00 10 00 (SUMMARY OF ROOFING WORK)

PART 1 GENERAL

1. RELATED DOCUMENTS

   A. Attached SUMMARY OF WORK, INTENT OF THE SPECIFICATIONS, PROTECTION, HOUSEKEEPING, forms a component part of this section.

2. SUMMARY OF WORK:

   A. SUMMARY OF WORK- GENERAL:

      1. Removal of the existing roof system and all components throughout the roof elevation identified as "Roof Section H", approximately 500 square feet. Installation of the specified complete modified bitumen roofing system, per the project manual and contract documents.

   B. SUMMARY OF WORK- SPECIFIC:

      1. Base Bid: Removal and Replacement of the entire "Roof Section H"
         a. Adhere to all applicable OSHA safety standards, building codes, industry standard best practices, and Manufacturer application and storage guidelines, to effectively and efficiently complete the specified roofing project.
         b. Remove the existing roof assembly, exposing the existing metal roof deck to make any necessary repairs. Repairs to be completed on a per square foot cost basis, as outlined on the bid form.
         c. Install any necessary wood blocking, PT 2x6 TYP. Replace any damaged, wet, deteriorated, or rotted existing wood nailers.
         d. Fasten 1/4":12" 4-way tapered 20 PSI polyisocyanurate insulation at 11, 17, and 22 fasteners per board, per current wind uplift requirements, through the prepared metal roof deck. Drain to be at least a 12'x12' sump with a minimum of 1/2":12" slope.
         e. Using 4", 6", and 12" OC ribbon patterns, per current wind uplift requirements, install ½" Gypsum based cover board in high rise insulation adhesive while staggering all seams.
         f. Install and set 45 D cant strip at all vertical to field transitions.
         g. Install SBS modified 80 mil. modified bitumen base ply in cold applied adhesive at a rate of 2.5 gallons per 100 square feet.
            1. At least ¼" of bleed out must be achieved throughout all seams.
            2. Probe every seam one day after application, to ensure proper adhesion and no fish mouths present. Repair all fish mouths/creases/openings along seams by slicing and patching in a new piece of base ply.
         h. Install SBS modified 105 mil. modified bitumen cap ply in cold applied adhesive at a rate of 2.5 gallons per 100 square feet, while staggering all seams and laps between each ply.
            1. At least ¼" of bleed out must be achieved throughout all seams.

2. Probe every seam one day after application, to ensure proper adhesion and no fish mouths are present. Repair all fish mouths/creases/openings along seams by slicing and patching in a new piece of cap ply.

i. Install and flash new pre-manufactured ANSI/SPRI/FM 4435 ES-1 rated 7.25" .040 aluminum flash-less raised edge metal and matching 0.40 aluminum fascia extender pieces throughout the roof sections.

j. Install aluminum gravel fence surrounding the roof drain in approved adhesive.

k. Apply cold process coal tar modified flood coat at a minimum of 5 gallons per 100 square feet, immediately embedding 3/8" double washed pea stone gravel at a rate of 400-450 pounds per 100 square feet as the flood coat is being installed.

2. Add Alternate #1: Various repairs throughout the gravel surfaced multi-ply modified bitumen roof sections throughout the Rockingham County Corrections facility.

a. Troubleshoot and repair deficiencies and open conditions throughout the gravel surfaced roof sections. Repairs to be prioritized surrounding active leak areas identified by onsite staff and areas of identified moisture contamination, per the most recently completed infrared thermal survey. Areas to be repaired include field seams, drain areas, curb details, wall flashing details, and the removal and replacement of existing moisture contaminated roof assembly in kind. In the areas to be repaired, spud and broom gravel to expose cap sheet without damaging the roof system.

b. Repair up to a total of 2,500 square feet of roof areas with identified moisture contamination within the substrate by removing and replacing the existing roof assembly in kind. Repair by cutting out the existing assembly then cleaning and prepping the area to receive the new assembly. Fasten new polyisocyanurate insulation that matches the existing assemblies' heights and profile through the roof deck, adhere 1/2" wood fiberboard to the fastened polyiso in InsuLock HR, then install FlexBase 80 base ply and StressPly Plus smooth cap ply in WeatherKing cold process adhesive at a rate of 2.5 gallons per square achieving a minimum of 1/4" of bleed out from all seams. Flood coat the entire area with BlackKnight Cold at approximately 5 gallons per square then immediately embed gravel throughout the area to ensure sufficient gravel coverage.

c. Identify the two drains with active leaks and marked "wet" areas and spud/broom gravel in approximately a 15'x15' area around the drains. Repair by cutting out the existing assembly then cleaning and prepping the area to receive the new assembly. Reset and reflash the existing drains with new hardware. Fasten new polyisocyanurate insulation that matches the existing assemblies' heights and profile through the roof deck, adhere 1/2" wood fiberboard to the fastened polyiso in InsuLock HR, then install FlexBase 80 base ply and StressPly Plus smooth cap ply in WeatherKing cold process adhesive at a rate of 2.5 gallons per square achieving a minimum of 1/4" of bleed out from all seams. Flood coat the entire area with BlackKnight Cold at approximately 5 gallons per square then immediately embed gravel throughout the area to ensure sufficient gravel coverage.

d. Repair up to 30 areas of open conditions/open seams on exposed mineral surfaced cap sheet at by cleaning and priming the area, followed by applying a 3 course of SilverFlash and GarMesh extending at least 6" in all directions past the open conditions.
e. Apply two coats of GarlaBrite at a rate of .5 gallons per square to vertical exposed mineral surfaced cap ply throughout the roof sections totaling up to 1,000 square feet.
f. Areas of open conditions/failed sealant at metal flashing details to be cleaned and resealed using a heavy bead of tooled Green-Lock XL sealant.
g. Clean all debris caused by newly completed repairs.

3. INTENT OF THE SPECIFICATION

A. The intent of these specifications is to describe the material and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. When there is a discrepancy between drawings, referenced specifications, and standards and this specification, this specification shall govern. Written consent is required prior to any additional work and costs above and beyond the original scope of work and lump sum contract amount.

4. PROTECTION

A. The contractor shall use every available precaution to provide for the safety of the property owner, visitors to the site, and all connected with the work under the Contract.
B. All existing facilities both above and below ground shall be protected and maintained free of damage.
C. Existing facilities shall remain operating during the period of construction unless otherwise permitted.
D. All access roadways must remain open to traffic unless otherwise permitted.
E. Barricades shall be erected to fence off all construction areas from operations personnel.
F. Safety Requirements:
    1. All applications, material handling, and associated equipment operations shall conform to and be operated in conformance with any applicable Federal, local, OSHA, Manufacturers', and Rockingham County's safety requirements and guidelines. No exceptions will be permitted
    2. Comply with federal, state, local, and owner fire and safety requirements.
    3. Advise owner whenever work is expected to be hazardous to owner employees and/or operations.
    4. Maintain a crewman as a floor guard whenever roof decking is being repaired or replaced and whenever any roofing is being removed.
    5. Always maintain proper fire extinguisher within easy access.
    6. A minimum of a 2-hour fire watch shall be strictly adhered to whenever open flame torches are in use. Costs to be covered by awarded contractors.
    7. Safety orientation meeting required prior to performing any work.

5. PROJECT SITE CONDITIONS AND CONSIDERATIONS

A. Contractor is responsible to coordinate schedules, staging, access, and work with Owner. Plywood protection shall be placed on all grounds where heavy equipment, materials, storage, or dumpsters are to be placed to mitigate any damage to any grounds and roadways. All disturbed grounds to be repaired/rectified to bring back to the original condition. No heavy materials or equipment shall be dropped on the roof at any time. All tools and equipment shall be locked/caged during non-working hours. All materials to be stored per Manufacturers' requirements at all times.

6. QUESTIONS

A. All Technical questions regarding this project's scope, specifications, details or drawings can be sent in writing via email to: Jude Gates, Director of Facilities, jgates@co.rockingham.nh.us
B. If the Contractor feels a conflict exists between what is considered good roofing practice and these specifications, he/she shall state in writing all objections prior to submitting quotations/proposals/bids.
C. It is the Contractors responsibility, during the course of the work, to bring to the attention of the Owner and the associated Manufacturer of any defective membrane, insulation, coverboard or anything discovered which has not been previously identified or clarified.

7. HOUSEKEEPING

A. Keep materials neat, orderly, and dry, remove scrap, waste, and debris from the project area daily.
B. Maintenance of clean conditions while work is in progress and cleanup when work is completed shall be in strict accordance with the "General Conditions" of this contract.
C. Follow all requirements established by the building owner.
D. Any unruly or vulgar language or acts directed at staff will result in the immediate and permanent dismissal of the worker from the job site for the duration of the project.

END OF SECTION

SECTION 01 43 33 (ROOFING MANUFACTURER'S FIELD SERVICES)

PART 1 GENERAL

1. RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 07 Specification Sections apply to this Section.

2. SUMMARY

A. Section includes Manufacturer's field services for roofing assemblies.

B. Related Sections:
1. Section 07 05 00 – Common Work Results for Thermal and Moisture Protection.

C. Related Work Specified Elsewhere:
1. Roofing Material: Section 07 52 00- Modified Bituminous Membrane Roofing.
2. Roofing Material: Section 07 51 13 – Built-Up Asphalt Roofing – Cold-Applied.
3. Roofing Material: Section 07 51 16 – Mineral Embedded Cap Sheet.

3. REFERENCES

A. International Building Code (current edition) or local authority building code.

B. American Society of Civil Engineers (ASCE): ASCE 7, Minimum Design Loads for Buildings and Other Structures.

C. National Roofing Contractors Association (NRCA):
1. Roofing and Waterproofing Manual.

D. American National Standards Institute and Single Ply Roofing Institute (ANSI/SPRI):
1. ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal.

4. SUBMITTALS FOR REVIEW

A. Product Data:
1. Provide manufacturer's technical product data for each type of roofing product specified. Include data substantiating that materials comply with specified requirements.

B. Specimen Warranty:
   1. Provide an unexecuted copy of the warranty specified for this project, identifying the terms and conditions required of the Manufacturer and the Owner.

C. Roofing System Manufacture's Evaluation:
   1. Provide a comprehensive written assessment comparing available roofing solutions with validation of why the roofing system selection for the specific project is suitable and appropriate.

D. Roofing System Manufacturer's Report Form:
   1. Provide a copy of the report form utilized by the Job Site Inspector for progress inspections to monitor installation and quality.

5. SUBMITTALS FOR INFORMATION

A. Manufacturer's Installation Instructions:
   1. Submit installation instructions and recommendations indicating special precautions required for installing each membrane.

B. Manufacturer's Certificate:
   1. Certify that the roof system furnished is approved by Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
   2. Certify that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
   3. Submit a certified copy of the roofing manufacturer's ISO 9001 compliance certificate.
   4. Written certification verifying the applicator is currently authorized for the installation of the specified roof system.

C. Design Loads:
   1. Submit copy of manufacturer's minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those detailed in Design and Performance Criteria article of this specification.

D. Qualification data for firms and individuals identified in Quality Assurance Article 1.7 below.

E. Test Reports:
   1. Submit ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal Products.

F. Substitutions:
1. Products proposed as equal to the products specified for this project shall meet all of the requirements in the appropriate Division 7 specifications and shall be submitted for consideration at least seven (7) days prior to the date that bids must be submitted.
2. Proposals shall be accompanied by a copy of the manufacturer's standard specification Section.
   a. That specification Section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place.
   b. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
3. Manufacturer's checklist will accompany any proposed substitution to verify equal performance characteristics to those specified in Division 7 of this specification.
4. The Owner's decision regarding substitutions will be considered final.

6. CONTRACT CLOSEOUT SUBMITTALS

A. Project Warranty:
1. Provide the specified warranty for the Project, executed by the authorized agent of the Manufacturer.

B. Roofing Maintenance Instructions:
1. Provide a roof care and maintenance manual of manufacturer's recommendations for maintenance of installed roofing systems.

C. Insurance Certification:
1. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

D. Inspection Logs:
1. Copy of inspection reports as performed by the Job Site Inspector or manufacturer shall be submitted at project closeout and include photographic documentation of installation progress, weather conditions, and personnel on the project at the time of every inspection.

7. QUALITY ASSURANCE

A. Manufacturer Qualifications:
1. Company specializing in manufacturing the products specified in this Section with not less than 15 years documented experience and have ISO 9001 certification.

B. Installer Qualifications:
1. Company shall be a certified installer of the membrane Manufacturer.
2. Company specializing in the specified roofing system installation with not less than 5 years' experience, at least 3 references for similar size and scope projects within the last 5 years and authorized by the roofing system manufacturer as qualified to install manufacturer's roofing materials.

C. Installer's Field Supervision:
   1. Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
   2. Maintain proper supervision of workmen.

D. Maintain a copy of the roof plans, details, and specifications in the possession of the Supervisor/Foreman and on the roof at all times.

E. Source Limitations:
   1. Obtain all primary components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer.
   2. The manufacturer providing the roofing system warranty must verify that they manufacture a minimum of 75% of the products utilized in the roofing system of this project. Products that are private labeled shall not be considered as manufactured by the roofing system supplier.
   3. Upon request of the Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

F. Source Quality Control:
   1. Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001.

8. PRE-INSTALLATION CONFERENCE

A. Pre-Installation Roofing Conference:
   1. Convene onsite with Owner and membrane materials Manufacturers' representative for a pre-roofing conference a minimum of two (2) weeks before the scheduled commencement of roofing system installation and associated work.

B. Require attendance of:
   1. Installer of each component of associated work to be completed:
      a. Installers or Contractors of construction to complete any work associated with the project
   2. Contractors or subcontractors of any other work in and around roofing that must precede or follow roofing work (including but not limited to, mechanical, plumbing, electrical, and roof hatch work, if any)
   3. Owner or representative of building owner
   4. Manufacturer's full-time employee
   5. Other representatives directly concerned with performance of the Work, including (where applicable) owner's insurers, testing agencies and governing authorities.

C. Objectives of the conference include:
   1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
   2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by others.
   3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
   4. Review of the roofing system requirements (drawings, specifications and other contract documents).
   5. Review required submittals both completed and yet to be completed.
   6. Review and finalize construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
   7. Review required inspection, testing, certifying and material usage accounting procedures.
   8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions. Temporary roofing tie ins are to be completed daily prior to departure.
   9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish a copy of record to each party attending.
      a. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
      b. Do not proceed with roofing work until such issues are resolved to the satisfaction of the owner. This shall not be construed as interference with the progress of Work on the part of the owner.
   10. The Owner will designate one of the conference participants to record the proceedings and promptly distribute them to the participants for record.

D. The intent of the conference is to resolve any issues affecting the installation and performance of roofing work.

9. MANUFACTURER'S INSPECTIONS

A. When the Project is in progress, a full-time employee of the roofing system manufacturer with a primary residence within 100 miles of the project location must provide the following:
   1. Report progress and quality of the work as observed, as referenced in Section 1.4. Progress reports must be distributed electronically via email and published to an online system that is accessible to the Owner.
   2. Provide daily roofing installation and job site inspections at least three (3) out of every five (5) working days: Inspections must include photographic documentation of work in progress and written statements of compliance with details/shop drawings.
   3. Report to the owner in writing any failure or refusal of the contractor to correct unacceptable practices called to the contractor's attention.
   4. Confirm after project completion that the Manufacturer has observed no application procedures in conflict with the specifications other than those that may have been previously reported and corrected.

10. WARRANTY

A. Upon completion of installation, and acceptance by the owner, the manufacturer will supply the owner with the specified warranty.

B. Awarded CONTRACTOR will submit either a three (3) year or four (4) year workmanship warranty, based on the awarded scope of work per the contract, to the Owner and the membrane Manufacturer guaranteeing a leak free performance of the roof system that covers all labor and materials to properly and effectively rectify deficiencies and/or failures.

C. The roofing system manufacturer must have been in continuous business operation for a period of time at least as long as the length of the roof system warranty provided for this project.

2.- PRODUCTS (NOT USED)

3.- EXECUTION

3.1. EXECUTION, GENERAL

A. Comply with requirements of related Division 07 Section.

3.2. GENERAL INSTALLATION REQUIREMENTS

A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.

B. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.

3.3. FIELD QUALITY CONTROL

A. Clients Representative shall perform field inspection as specified in Article titled: MANUFACTURER'S INSPECTIONS, above. Inspections must include photographic and written documentation of installation progress, weather conditions, and personnel on the project at the time of inspection.

B. Correct defects or irregularities discovered during field inspection. Issues deemed defective must be re-inspected and determined suitable by the roofing manufacturer.

C. Require attendance of roofing materials manufacturers' representatives at site during installation of the roofing system. A copy of the specification shall also be on site at all times.

D. Frequent progress meetings shall be conducted during the performance of roof system installation and must be attended by the owner, roofing system manufacturer's full-time employee, and other representatives directly concerned with performance of the work.

3.4. FINAL INSPECTION

A. At the completion of the roofing installation and associated work, meet with contractor and installer of associated work, owner, roofing system client's representative, and other representatives directly concerned with performance of roofing system.

B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.

C. The owner is to be notified upon completion of any necessary corrections.

D. The roofing system manufacturer reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided by the roofing contractor, and the roofing contractor shall solely incur all associated costs.

E. If core cuts verify the presence of damp or wet materials, the roofing contractor shall be required to replace the damaged areas at his own expense.

F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

G. Immediately correct roof leakage during construction. If the contractor does not respond within twenty-four (24) hours, the owner may exercise right to correct the Work under the terms of the Conditions of the Contract.

END OF SECTION

SECTION 06 10 00 (ROUGH CARPENTRY)

1.GENERAL

1.1. RELATED DOCUMENTS

A. The provisions of the Contract, the General Conditions and Supplementary Conditions apply to the work in this section.

1.2. RELATED SECTIONS

A. Section 07220 - Roof and Deck Insulation

B.Section 07520 - Modified Bitumen Roof Membrane

C.Section 07565 - Preparation for Re-Roofing

D. Section 07620 - Flashing and Sheet Metal

1.3. DELIVERY STORAGE AND HANDLING

A. Time delivery and installation of carpentry work to avoid delaying other trades whose work is dependent on or affected by the carpentry work. Keep materials dry during delivery.

B.Store lumber and plywood in stacks with provisions for air circulation within stacks. Protect the bottom of stacks against contact with damp or wet surfaces.

C.Protect exposed materials against water and wind. Remove damaged or unsuitable material from the job site.

1.4. QUALITY ASSURANCE

A. Comply with governing codes and regulations.

B.Use experienced and licensed installers.

C.Lumber Standards:
1.American Softwood Lumber Standard PS 20-70 by the U.S. Department of Commerce.

D. Plywood Standards:
1.U.S. product Standard PSI-74/ANSI A 199.1 or latest APA Performance Standards for American Plywood Association.

E.Factory Marking:
1.Mark each piece of lumber or plywood to indicate type, grade, agency providing inspection service.

F.Size and Shape:

1.Dress lumber 4 sides (S4S) and work to shapes and patterns shown. Nominal sizes shown and specified refer to undressed lumber dimensions. Detailed dimensions show actual lumber size required.

1.5. SCOPE OF WORK

A. Build up all perimeters as needed and each penetration, curb, and field vent to create a minimum 8" flashing height with pressure treated acceptable lumber.

2.PRODUCTS

2.1. DIMENSIONAL LUMBER AND PLYWOOD

A. Construction Lumber: Standard Grade Douglas Fir, Western Larch, Western Hemlock (WWPA or WCLB) or No. 2 dimension Southern Pine (SPIB).

B.Exterior Type Plywood: APA Rated sheathing, EXT.

C.Bucks, Nailers, Blocking, etc.: No. 2 common grade of any WWPA or WCLA species or No. 2 Southern Pine (SPIB).

D. Anchorage and Fastenings: Proper type, size material and finish for each application Please refer to Factory Mutual Website for reference and selection.

2.2. QUALITY

A. Sound, seasoned, well manufactured materials of longest practical lengths and sizes to minimize joints.

B.Free from warp which cannot be easily corrected by anchoring and attachment. Discard material with defects which would impair quality of work.

3.EXECUTION

3.1. EXAMINATION

A. Verify measurements and dimensions shown before proceeding with carpentry work.

B.Examine supporting structure and conditions under which carpentry work is to be installed.
1.Do not proceed with installation until unsatisfactory conditions have been corrected.

C.Correlate location of nailers, blocking and similar supports for attached work.

D. Scribe and cope as required for accurate fit of carpentry work to other work.

3.2. PROTECTION

A. Protect installed work from damage by other trades until acceptance of work.

3.3. INSTALLATION

A. Provide all nailers, blocking and sleepers where shown on the drawings or required for attachment of other work. Minimum flashing height of eight 8" is required. Coordinate with location with other work involved; refer to shop drawings of such work.

B. Attach to substrate securely as required to support applied loading. Countersink bolts and nuts flush with surfaces.

C. Securely attach wood nailers to substrates in accordance with Factory Mutual Loss Prevention Data Sheet 1-49 and as required by recognized standards.

D. Provide washers under bolt heads and nuts in contact with wood.

E. Do not wax or lubricate fasteners that depend on friction for holding power.

F. Select fasteners of size that will not penetrate members or system decking where opposite side will be exposed to view will need to receive finish material.

G. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required. Do not drive threaded friction type fasteners; turn into place. Tighten bolts and lag screws at installation and retighten as required for tight connections prior to closing in or at completion of work.

END OF SECTION

SECTION 07 22 00 (ROOF DECK AND INSULATION)

PART 1 GENERAL

1. RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

2. SUMMARY

A. Section includes roof insulation over the properly prepared deck substrate.

B. Related Sections:
1. Section 07 05 00 – Common Work Procedures for Thermal and Moisture Protection.

3. REFERENCES

A. American Society for Testing and materials (ASTM):
1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
3. ASTM B29 Standard Specification for Refined Lead.
4. ASTM B32 Standard Specification for Solder Metal.
5. ASTM E96 Waterproofing.
6. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
7. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.

B. Cast Iron Soil Pipe Institute, Washington, D.C. (CISPI)

C. National Roofing Contractors Association (NRCA):
1. Roofing and Waterproofing Manual.

D. Underwriters Laboratories, Inc. (UL):
1. Fire Hazard Classifications.

E. Warnock Hersey (WH):
   1. Fire Hazard Classifications.

F. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

G. Steel Deck Institute, St. Louis, Missouri (SDI)

H. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)

I. Insulation Board, Polyisocyanurate (FS HH-I-1972)

1.4. SUBMITTALS

A. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.

B. Provide a sample of each insulation type.

C. Shop Drawings
   1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
   2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.

D. Certification
   1. Submit roof manufacturer's certification that insulation fasteners (if needed) furnished are acceptable to roof manufacturer.
   2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5. QUALITY ASSURANCE

A. Fire Classification, ASTM E-108.

B. Manufacturer's Certificate: Certify that roof system furnished is approved by Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

C. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.6. DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.

B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site and replaced at contractors' expense.

C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).

D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the project site and replaced at contractors' expense.

PART 2 PRODUCTS

2.1. PRODUCTS, GENERAL

A. Refer to Division 01 Section "Common Product Requirements."

B. Basis of Design: Materials, manufacturer's product designations, manufacturer's names, and/or materials performance characteristics specified herein shall be regarded as the minimum standard of quality and performance required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
   1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
   2. Include a list of three (3) projects of similar type and extent, located within a one-hundred-mile radius from the location of the project.

2.2. INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.
   1. Rigid Polyisocyanurate (20 PSI) Roof Insulation; ASTM C1289:
      a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. Thicknesses: 0.5" – 2.0"
      c. Taper: 0 – 1/8":12"
      d. Compliances: UL or WH listed under Roofing Systems Federal Specification HH-I-1972, Class 1.
      e. Cricket slope: 1/4":12"
      f. Drain Sump: Minimum 12' x 12' with a minimum slope of 1/4":12"
   2. Gypsum Roof Board
      a. Qualities: Nonstructural glass mat faced, noncombustible, water-resistant treated gypsum core panel.
      b. Board Size: Four feet by four feet (4'x4') and/or four feet by eight feet (4'x8').
      c. Thickness: One half (1/2") inch.
      d. Compliances: UL or WH listed under Roofing Systems.
      e. Source
         a. Densdeck Primed
         b. Securock
         c. Approved Equivalent

2.3. RELATED MATERIALS

A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.

B. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.

C. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

D. Fasteners: Corrosion resistant screw fastener - Heavy Duty #14 by OMG; or approved equal.

E. Insulation Adhesive: Dual-component, high rise foam adhesive as recommended by insulation manufacturer.
1. Tensile Strength (ASTM D412).....250 psi
2. Density (ASTM D1875).....8.5 lbs./gal.
3. Viscosity (ASTM D2556).....22,000 to 60,000 CP.
4. 2 `Peel Strength (ASTM D903).....17 lb/in.
5. 3 `Flexibility (ASTM D816).....Pass @ -70°F
6. VOC..... 0g/L

PART 3 EXECUTION

1. EXECUTION, GENERAL

A. Comply with requirements of Division 01 Section "Common Execution Requirements."

B. R-Value to meet any and all applicable state and local building requirements and codes.

2. INSPECTOR OF SURFACES

A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
1. Verify that NO work shall penetrate components attached to and/or under roof deck.
2. Verify that wood nailers are properly and securely installed.

3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
4. Do not proceed until defects are corrected.
5. Do not apply insulation until substrate is sufficiently dry.
6. Broom clean substrate immediately prior to application.
7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
8. Verify that temporary roof has been completed.

3. INSTALLATION

A. Polyisocyanurate Attachment.

1. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose or embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.

2. Approved Polyisocyanurate insulation boards shall be installed over prepared substrate and existing 3.5" base layer of polyisocyanurate insulation with approved mechanical fasteners through the existing metal roof Deck.

   a. Zone 1 - 11 fasteners per 4' x 8' board of insulation

   b. Zone 2 - 17 fasteners per 4' x 8' board of insulation

   c. Zone 3 - 22 fasteners per 4' x 8' board of insulation

3. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit one quarter (1/4") inch away from vertical surfaces and the surrounding insulation boards or less. All seams to be staggered.

B. Gypsum Board Attachment with Insulation Adhesive.

1. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose or embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.

2. Staggering the seams, the approved recovery board shall be installed over the fastened insulation into insulation adhesive. Adjust amount as directed below per the roof zones as outlined in the wind uplift calculations. Do not allow the adhesive to skin over. Briefly step each board into place to ensure contact with the adhesive. Temporary weights must be used immediately after installation to ensure proper adhesion.

3. Applying adhesive directly to the substrate in a ribbon pattern in 1/2" to 3/4" beads, using either the pail or an automatic applicator, achieve proper coverage rates:

   a. Zone 1 - 12" OC in ribbon pattern per board

   b. Zone 2 - 6" OC in ribbon pattern per board

   c. Zone 3 - 4" OC in ribbon pattern per board

4. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit one quarter (1/4") inch away from vertical surfaces and the surrounding cover boards or less. All gaps or voids greater than one (1") inch are to be filled so a flush substrate is achieved.

4. CLEANING

A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive specified coverboard.

5. CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 07 55 00 (MODIFIED BITUMINOUS MEMBRANE ROOFING)

1.GENERAL

1.1. SECTION INCLUDES

A. Cold Applied 2-Ply Asphalt Roofing

B. Edge Treatment and Roof Penetration Flashings

1.2. RELATED SECTIONS

A. Section 06100 - Rough Carpentry.

B. Section 06114 - Wood Blocking and Curbing: Wood nailers and cant strips.

C. Section 07220 – Roof Deck and Insulation

D. Section 07 62 00 – Edge Metal Sheet Metal Flashing and Trim.

E. Section 07724 - Roof Hatches: Frame and integral curb; Counter flashing.

1.3. REFERENCES

A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.

C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.

D. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.

E. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.

F. ASTM D 2178 Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.

G. ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.

H. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.

I. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.

J. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.

K. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.

L. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.

M. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

N. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.

O. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

P. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.

Q. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

R. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.

S. Warnock Hersey (WH): Fire Hazard Classifications.

T. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.

U. ASCE 7-10, Minimum Design Loads for Buildings and Other Structures

V. UL - Fire Resistance Directory.

1.4. DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state, local, and University codes.

B. Exterior Fire Test Exposure: Roof system shall achieve a UL or WH Class rating for roof slopes indicated on the Drawings as follows:
   1. Underwriters Laboratory Class A Rating.
   2. Warnock Hersey Class A Rating.

C. Design Requirements:
   1. Uniform Wind Uplift Load Capacity
      a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
         1. Design Code: ASCE 7-16 ASD, Method 2 for Components and Cladding.
         2. Importance Category:
            a. III
         3. Importance Factor of:
            a. 1.0
         4. Wind Speed: 119 mph
         5. Exposure Category:
            a. C
         6. Design Roof Height: 50 feet
         7. Minimum Building Width: 50 feet
         8. Roof Pitch: ¼":12"
         9. Roof Area Design Uplift Pressure:
            a. Zone 1 (Width 12') - Field of roof 29.3 psf
            b. Zone 2 (Width 12') - Eaves, ridges, hips and rakes 57.6 psf
            c. Zone 3 (Width 4' x Length 12') - Corners 75.8 psf
   2. Live Load: 20.2 psf, or not to exceed original building design.

3. Dead Load:
   a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.

D. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

E. LEED: Roof system shall meet the reflectivity and emissivity criteria to qualify for one point under the LEED credit category, Credit 7.2, Landscape & Exterior Design to Reduce Heat Island - Roof.

F. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.

G. Roof system shall have been tested in compliance with the following codes and test requirements:
   1. Underwriters Laboratories:
      a. Certification TGFU.R
   2. Warnock Hersey
      a. ITS Directory of Listed Products

1.5. SUBMITTALS

A. Submit upon request from Owner.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions.

C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation, and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.

D. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.

E. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
   1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
   2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products.
   3. Product reflectivity and emissivity criteria to qualify for one point under the LEED credit category, Credit 7.2, Landscape & Exterior Design to Reduce Heat Island - Roof.

F. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio-based materials.

G. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

H. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.

I. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.

J. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6. QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of fifteen years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

C. Installer Qualifications: Company specializing in the installation of the specified roofing system with not less than 5 years' experience, at least 3 references for similar size and scope projects within the last 5 years and authorized by the roofing system manufacturer as qualified to install manufacturer's roofing materials.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.7. PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section.

B. Require attendance of installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in and around roofing that must precede or follow roofing work, Architect, Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where

applicable) Owner's insurers, testing agencies and governing authorities. Objectives of conference include:

1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by others.
3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review of the roofing system requirements (drawings, specifications and other contract documents).
5. Review required submittals both completed and yet to be completed.
6. Review and finalize construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
7. Review required inspection, testing, certifying and material usage procedures.
8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not mandatory requirement).
9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
10. Review notification procedures for weather or non-working days.

C. The Owner's Representative will designate one of the conference participants to record the proceedings and promptly distribute them to the participants for record.

D. The intent of the conference is to resolve issues affecting the installation and performance of roofing work. Do not proceed with roofing work until such issues are resolved to the satisfaction of the Owner. This shall not be construed as interference with the progress of Work on the part of the Owner.

E. Inspect and make notes of job conditions prior to installation:
1. Record minutes of the conference and provide copies to all parties present.
2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Owner.

1.8. DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end and on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from Architect/Engineer.

F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C).

1.9. WARRANTY

A. Upon final completion of the work, provide the Manufacturer's written and executed Warranty contract. The warranty shall cover any leak that develops in the roof during the term of this warranty, due to either defective material and or defective workmanship by the installing Contractor. The Manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the leak/defective area to a watertight condition.
   1. Warranty Period:
      a. 30 years from date of acceptance.

B. Upon final completion of the work, provide the Contractor's written and executed Warranty contract. The warranty shall cover any leak that develops in the roof during the term of this warranty, due to either defective material and or defective workmanship by the installing Contractor. The Contractor shall provide the Owner, at the Contractor's expense, with the labor and material necessary to return the leak/defective area to a watertight condition.
   1. Warranty Period:
      a. 2 years from date of acceptance.

1.10. MANUFACTURER'S INSPECTIONS

A. When the Project is in progress, the roofing system manufacturer will provide the following:

   1. Report progress and quality of the work as observed on a weekly basis.

   2. Provide daily job site inspections a minimum of three (3) out of every five (5) working days, at no additional cost to the building owner or contractor, by a full-time employee of the roof system manufacturer with a primary residence within 100 miles of the job site. The project inspector must possess field and technical experience with the roof system manufacturer.

   3. Provide weekly inspection reports to the Owner and/or Architect. Inspection reports must include digital photographic documentation and a summary of daily work progress. Progress reports must be made available to the Owner and/or Architect via a password secure on-line data base and a PDF formatted electronic copy.

4. Confirm after completion that the manufacturer has observed no application procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.11. COORDINATION

A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.12. PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by Manufacturers for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

2.PRODUCTS

2.1. MANUFACTURERS

A. Performance Standard
1. The performance standard specified shall be indicative of a minimum standard performance required and are the minimum Standard of Quality and Performance for the products required for this project. If other products are proposed the bidder must disclose in the bid, the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of specified products.
2. Quality and performance in all areas of roofing construction is of utmost importance and as a result, sourcing of all cold adhesives, ply sheets, flashing materials and related items are to be manufactured by a single Roofing Materials manufacturer in order to ensure consistent quality. Requests for substitutions will be considered in accordance with the performance criteria as listed in this specification.
3. Bidder will not be allowed to change materials after the bid opening date.
4. If alternate products are included in the bid, the products must be equal to or exceed the performance of the performance characteristics specified. Supporting technical data shall be submitted to the Architect/Owner for approval seven business days prior to proposal due date for review.
5. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
   a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
   b. Will provide the same guarantee for substitution as for the product and method specified.
   c. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
   d. Will waive all claims for additional cost related to substitution, which consequently become apparent.
   e. Cost data is complete and includes all related costs under his/her contract or other contracts, which may be affected by the substitution.
   f. Will reimburse the Owner for all redesign cost for accommodation of the substitution.

6. Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids and any proposed alternate roofing systems or materials that can meet ALL specified requirement criteria.
7. Failure to submit substitution package with bid proposal, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.

2.2. COLD APPLIED 2-PLY ASPHALT ROOFING

A. Asphalt Primer: ASTM D41.

B. Asphalt Roofing Mastic:
   1. Cold applied flashing mastic: V.O.C. compliant, ASTM D 4586, Type II, Class I
      a. Non-Volatile Content ASTM D 4586
         1. 70% min.
      b. Density ASTM D 1475
         1. 8.3 lbs./gal. (1.17 g/m3)
      c. Viscosity
         1. @77°F (25°C) Mobilometer, 1500 g Typical 7 sec
      d. Flash Point ASTM D 93
         1. 103 deg. F min. (39.4 deg. C)

C. Cold Bitumen Membrane Adhesive:
   1. Membrane Adhesive: V.O.C. compliant, Cold applied membrane adhesive
      a. Non-Volatile Content ASTM D 4479
         1. Typical 78%
      b. Density ASTM D 1475
         1. 9 lbs./gal. (1.07 g/cm3)
      c. Viscosity ASTM D 562
         1. 900-1100 grams
      d. Flash Point ASTM D 93
         1. 100 deg. F min. (37.7 deg. C)
      e. Slope:
         1. up to 2":12"

D. Cold Bitumen Flood Coat Surfacing Adhesive:
   1. Membrane Surfacing Adhesive: Cold applied bitumen adhesive
      a. Non-Volatile Content ASTM D 4479
         1. Typical 77%
      b. Density ASTM D 1475
         1. 9.4 lbs./gal. (1.26 g/cm3)
      c. Viscosity: Stormer Viscometer, 600 g
         1. 125-175 seconds
      d. Flash Point ASTM D 93
         1. 105 deg. F min. (40 deg. C)
      e. Recycled Content
         1. 70%
      f. Slope:
         1. up to 2":12"

E. Flashing Adhesive
1. Cold applied flashing adhesive: V.O.C. compliant, ASTM D 4586, Type II, Class I
   a. Non-Volatile Content ASTM D 4586
      1. 70% min.
   b. Density ASTM D 1475
      1. 8.3 lbs./gal. (1.17 g/m3)
   c. Viscosity
      1. @77°F (25°C) Mobilometer, 1500 g Typical 7 sec
   d. Flash Point ASTM D 93
      1. 103 deg. F min. (39.4 deg. C)

F. Modified Base (Ply) Sheet:
1. 80 mil. SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual polyester and fiberglass reinforcement scrim, minimum performance requirements to meet or exceed ASTM D 5147 and ASTM D 6163, TYPE III.
   a. Tensile Strength, ASTM D 5147
      1. 0.08 in/min @ 0 +/- 3.6 deg. F MD 550 lbf./in. XD 500 lbf./in.
      2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 96.25 kN/m XD 96.25 kN/m
   b. Tear Strength, ASTM D 5147
      1. 0.08 in/min @ 0 ± 3.6 deg. F MD 1000 lbf XD 1000 lbf
      2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 4448 N XD 4448 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1. 0.08 in/min @ 0 ± 3.6 deg. F MD 9% XD 9%
      2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 9% XD 9%
   d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

G. Modified Cap (Ply) Sheet:

1. 105 mil. SBS modified, Type I reinforcement, roofing membrane. ASTM D 6162, Grade G
   a. Tensile Strength, ASTM D 5147
      1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
      2. 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
   b. Tear Strength, ASTM D 5147
      1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
      2. 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
   d. Low Temperature Flexibility, ASTM D 5147
      1. Passes: -30 deg. F (-34 deg. C)

H. Flashings: Modified Base (Ply) Sheet:
1. 80 mil. SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual polyester and fiberglass reinforcement scrim, minimum performance requirements to meet or exceed ASTM D 5147 and ASTM D 6163, TYPE III.
   a. Tensile Strength, ASTM D 5147
      1. 0.08 in/min @ 0 +/- 3.6 deg. F MD 550 lbf./in. XD 500 lbf./in.
      2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 96.25 kN/m XD 96.25 kN/m
   b. Tear Strength, ASTM D 5147
      1. 0.08 in/min @ 0 ± 3.6 deg. F MD 1000 lbf XD 1000 lbf

2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 4448 N XD 4448 N

c. Elongation at Maximum Tensile, ASTM D 5147
   1. 0.08 in/min @ 0 ± 3.6 deg. F MD 9% XD 9%
   2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 9% XD 9%

d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

I. Flashings: Modified Cap (Ply) Sheet:

1. 155 mil. SBS modified, Type I reinforcement, roofing membrane. ASTM D 6162, Grade G
   a. Tensile Strength, ASTM D 5147
      1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
      2. 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
   b. Tear Strength, ASTM D 5147
      1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
      2. 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
   d. Low Temperature Flexibility, ASTM D 5147
      1. Passes: -30 deg. F (-34 deg. C)

J. Hybrid Polymer Sealant – Single component, non-sag sealant as approved and furnished by the membrane manufacturer for moving joints.
1. Tensile Strength, ASTM D 412: 250 psi
2. Elongation, ASTM C 920: 550%
3. Hardness Shore A, ASTM C 661: 24 +/- 3
4. Adhesion-in-Peel, ASTM C 92: 30 pli

K. Sealant - Structural Adhesive: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
1. Elongation, ASTM D 412: 300%
2. Hardness, Shore A, ASTM C 661: 53-59 +/- 3
3. Shear Strength, ASTM D 1002: 120 psi
4. Slump/Sag, ASTM C 697: 0 slump

L. Pitch Pocket Sealer – One-part, 100% solids, self-leveling, urethane sealant for filling pitch pans as recommended and furnished by the membrane manufacturer.
1. Durometer, ASTM D 2240: 40-50 Shore
2. Elongation, ASTM D 412: 250%
3. Tensile Strength, ASTM D 412: 200 psi @ 100 mil

M. Glass Fiber Cant - Glass Cant: Continuous triangular cross Section made of inorganic fibrous glass used as a cant strip as recommended by the membrane manufacturer.

N. Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless-steel nails shall be used with aluminum; and stainless-steel nails shall be used with stainless steel. Fasteners shall be self-clinching type of penetrating type as recommended by the manufacturer of the deck material. Nails and fasteners shall be flush driven through flat metal discs of not less than one (1) inch diameter. Omit metal discs when one piece composite nails or fasteners with heads not less than one (1) inch diameter are used.

O. Metal Discs: Flat discs or caps of zinc-coated sheet metal not lighter than twenty-eight (28) gauge and not less than one (1) inch in diameter. Form discs to prevent dishing. Bell or cup shaped caps are not acceptable.

2.3. EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

A. Pre-Manufactured Edge Metal: Edge Metal Fascia and Extender.
1. Aluminum, ASTM B209, alloy 3105-H14, in thickness of .040" nom., Kynar finish

B. Pre-Manufactured Edge Metal Finishes:
1. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, as shipped from the mill
2. Exposed surfaces for coated panels:
a. Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer. Weathering finish as referred by National Coil Coaters Association (NCCA). Provided with the following properties.
1. Pencil Hardness: ASTM D3363, HB-H / NCCA II-2.
2. Bend: ASTM D-4145, O-T / NCCA II-19
3. Cross-Hatch Adhesion: ASTM D3359, no loss of adhesion
4. Gloss (60 deg. angle): ASTM D523, 25+/-5%
5. Reverse Bend: ASTM D2794, no cracking or loss of adhesion
6. Nominal Thickness: ASTM D1005
a. Primer: 0.2 mils
b. Topcoat, 0.7 mils min
7. Color: Provide as specified. (Subject to minimum quantities)

C. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.

D. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.

E. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07 62 00.
1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.

F. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07 71 00.
1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

3.EXECUTION

3.1. EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.

C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

D. If substrate preparation and other conditions are the responsibility of another installer, notify the Owner/Architect of unsatisfactory preparation before proceeding.

3.2. PREPARATION

A. General: Clean surfaces thoroughly prior to installation.
1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
2. Fill substrate surface voids that are greater than ¼" inch wide with an acceptable fill material.
3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
7. Prime decks and substrates where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.3. INSTALLATION – GENERAL

A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures is unavoidable use the following precautions:
1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1-inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16

ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.4. INSTALLATION COLD APPLIED ROOF SYSTEM

A. Modified Base Ply(s): Cut base ply sheets into 18-foot lengths and allow plies to relax before installing. Install base sheet in interply adhesive applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2.5 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4-inch side laps and 8-inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend plies at least 2 inches beyond top edges of cants at wall and projection bases.
   6. Install base flashing ply to all perimeter and projection details.
   7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified cap ply membrane. However, the modified cap ply membrane must be installed the same day as the base plies.

B. Modified Cap Ply(s): Cut cap ply sheets into 18-foot lengths and allow plies to relax before installing. Install cap sheet in interply adhesive applied at the rate required by the manufacturer. Shingle cap sheets uniformly over the prepared substrate to achieve the number of specified plies. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the base layers with specified cold adhesive at the rate of 2.5 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4-inch side laps and 8-inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Allow cold adhesive to set for 5 to 10 minutes before installing any additional top layers of modified membrane.
   6. Extend membrane at least 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.

C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives.

D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified.
   1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components where indicated.
   2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
   3. Nailer lengths should be spaced with a minimum 1/8-inch gap for expansion and contraction between each length or change of direction.
   4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

F. Termination Bar: Follow all details and flashings as provided by approved manufacturer. Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression.

G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
   1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
   2. Prepare all walls, penetrations, and expansion joints, where shown on the Drawings, to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
   3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
   4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
   5. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
   6. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
   7. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed or nailed 4 inches on center and covered with an acceptable counter flashing.

H. Flashing Cap Ply:
   1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
   2. Prepare all areas to be flashed with required primer, per Drawings, at the rate of 100 square feet per gallon. Allow primer to dry tack free.
   3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c.

from the finished roof at all vertical surfaces.

4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Seal all vertical laps of flashing ply with a three-course application of trowel-grade aluminized mastic and fiberglass mesh.
9. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

I. Roof Drains:

1. Install new drain sumps- Tapered insulation to drain a minimum of twelve feet (12') from center of drain.
2. Provide new hardware, clamping ring, and metal strainer baskets.
3. Run roof system plies over drain. Cut out plies inside of drain bowl.
4. Set lead flashing (30" square minimum) in ¼" of mastic. Run lead into drain a minimum of 2". Prime lead / copper at a rate of 10 square feet per gallon and allow to dry.
5. Install base flashing ply (40" square minimum) in bitumen. It may be that the base ply has to be cut on the 45-degree angle in order to eliminate wrinkles.
6. Install modified membrane (48" square minimum) in adhesive. Cut the flashing membrane on the corners to eliminate wrinkles. Weld 12" wide pieces of modified over the cuts with heat or set in mastic.
7. Install clamping ring and strainer assure all plies are under the clamping ring.

J. Plumbing Stack:

1. Minimum stack height is 12 inches (609 mm).
2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4-inch (6 mm) bed of roof cement.
4. Install base flashing ply in bitumen.
5. Install cap ply membrane in bitumen.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.

K. Heat Stack:

1. Minimum stack height is 12 inches (609 mm).
2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
4. Install base flashing ply in bitumen.
5. Install modified cap ply membrane in bitumen.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Install new collar over cape. Weld collar or install stainless steel draw brand.

L. Pitch Pocket with Umbrella:
1. Run all plies up to the penetration.
2. Place the pitch pocket over the penetration and prime all flanges.
3. Strip in flange of pitch pocket with one ply of base flashing ply. Extend 6 inches (152 mm) onto field of roof.
4. Install second layer of modified membrane extending 9 inches (228 mm) onto field of the roof.
5. Fill pitch pocket half full with non-shrink grout. Let this cure and top off with pourable sealant.
6. Caulk joint between roof system and pitch pocket with roof cement.
7. Place a water shedding type bonnet over the top of the pitch pocket and clamp the top with a drawband collar. Caulk the upper edge of the band with an elastomeric sealant.

3.5. CLEANING

A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.

B. Completely remove asphalt markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.6. PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Protect exposed surfaces of finished walls with tarps to prevent damage.

C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

D. 1/2-inch recover board with 5/8-inch Plywood on top is required over new roofing for traffic ways, material movement, and equipment movement.

E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.7. FIELD QUALITY CONTROL

A. Inspection: When the project is in progress, the roofing system manufacturer will provide the following:
1. Report progress and quality of the work as observed.
2. Provide daily job site inspections a minimum of four (3) out of every five (5) working days, at no additional cost to the building owner or contractor, by a full-time employee of the roof system manufacturer with a primary residence within 50 miles of the job site. The project inspector must possess field and technical experience with the roof system manufacturer. Roof system manufacturer must provide a written letter, signed by a corporate officer, that the required inspector meets the above referenced criteria.
3. Provide weekly inspection reports to the owner and architect. Progress reports must include digital photographic documentation and a summary of the daily work progress. Progress reports must be made available to the Owner via a password secure on-line database and an electronic PDF file.

4. Warranty shall be issued upon manufacturer's acceptance of the installation.
5. Field observations shall be performed by a Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
6. Provide observation reports from the Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
7. Provide a final inspection upon completion of the Work. Provide a final report from the Manufacturers' Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8. SCHEDULES

A. Modified Base (Ply) Sheet:
   1. Cold Bitumen Membrane Adhesive: V.O.C. compliant, Cold applied membrane adhesive
      a. Non-Volatile Content ASTM D 4479
         1. Typical 78%
      b. Density ASTM D 1475
         1. 9 lbs./gal. (1.07 g/cm3)
      c. Viscosity ASTM D 562
         1. 900-1100 grams
      d. Flash Point ASTM D 93
         1. 100 deg. F min. (37.7 deg. C)
      e. Slope:
         1. up to 2":12"

   2. 80 mil. SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual polyester and fiberglass reinforcement scrim, minimum performance requirements to meet or exceed ASTM D 5147 and ASTM D 6163, TYPE III.
      a. Tensile Strength, ASTM D 5147
         1. 0.08 in/min @ 0 +/- 3.6 deg. F MD 550 lbf./in. XD 500 lbf./in.
         2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 96.25 kN/m XD 96.25 kN/m
      b. Tear Strength, ASTM D 5147
         1. 0.08 in/min @ 0 ± 3.6 deg. F MD 1000 lbf XD 1000 lbf
         2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 4448 N XD 4448 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1. 0.08 in/min @ 0 ± 3.6 deg. F MD 9% XD 9%
         2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 9% XD 9%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

B. Modified Cap (Ply) Sheet:
   1. Cold Bitumen Membrane Adhesive: V.O.C. compliant, Cold applied membrane adhesive
      a. Non-Volatile Content ASTM D 4479
         1. Typical 78%
      b. Density ASTM D 1475
         1. 9 lbs./gal. (1.07 g/cm3)
      c. Viscosity ASTM D 562
         1. 900-1100 grams
      d. Flash Point ASTM D 93

1. 100 deg. F min. (37.7 deg. C)

e. Slope:
1. up to 2":12"

2. 105 mil. SBS modified, Type I reinforcement, roofing membrane. ASTM D 6162, Grade G
a. Tensile Strength, ASTM D 5147
1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
2. 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
b. Tear Strength, ASTM D 5147
1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
2. 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
c. Elongation at Maximum Tensile, ASTM D 5147
1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
d. Low Temperature Flexibility, ASTM D 5147
1. Passes: -30 deg. F (-34 deg. C)

B. Flashings: Modified Base (Ply) Sheet:
1. Flashing Ply Adhesive: Cold applied adhesive, V.O.C. compliant, ASTM D 4586, Type II, Class I
a. Non-Volatile Content ASTM D 4586
1. 70% min.
b. Density ASTM D 1475
1. 8.3 lbs./gal. (1.17 g/m3)
c. Viscosity
1. @77°F (25°C) Mobilometer, 1500 g Typical 7 sec
d. Flash Point ASTM D 93
1. 103 deg. F min. (39.4 deg. C)

2. 80 mil. SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual polyester and fiberglass reinforcement scrim, minimum performance requirements to meet or exceed ASTM D 5147 and ASTM D 6163, TYPE III.
a. Tensile Strength, ASTM D 5147
1. 0.08 in/min @ 0 +/- 3.6 deg. F MD 550 lbf./in. XD 500 lbf./in.
2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 96.25 kN/m XD 96.25 kN/m
b. Tear Strength, ASTM D 5147
1. 0.08 in/min @ 0 ± 3.6 deg. F MD 1000 lbf XD 1000 lbf
2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 4448 N XD 4448 N
c. Elongation at Maximum Tensile, ASTM D 5147
1. 0.08 in/min @ 0 ± 3.6 deg. F MD 9% XD 9%
2. 2.0 mm/min. @ -18 +/- -3 deg. C MD 9% XD 9%
d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

C. Flashings: Modified Cap (Ply) Sheet:
1. Flashing Ply Adhesive: Cold applied adhesive, V.O.C. compliant, ASTM D 4586, Type II, Class I
a. Non-Volatile Content ASTM D 4586
1. 70% min.
b. Density ASTM D 1475
1. 8.3 lbs./gal. (1.17 g/m3)
c. Viscosity

1. @77°F (25°C) Mobilometer, 1500 g Typical 7 sec

d. Flash Point ASTM D 93
1. 103 deg. F min. (39.4 deg. C)

2. 155 mil. SBS modified, Type I reinforcement, roofing membrane. ASTM D 6162, Grade G
a. Tensile Strength, ASTM D 5147
1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
2. 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
b. Tear Strength, ASTM D 5147
1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
2. 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
c. Elongation at Maximum Tensile, ASTM D 5147
1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
d. Low Temperature Flexibility, ASTM D 5147
1. Passes: -30 deg. F (-34 deg. C)

D. Surfacing:
1. Base Bid: Cold applied bitumen flood coat surfacing adhesive with embedded double washed 3/8" pea stone rocks:
a. Non-Volatile Content ASTM D 4479
1. Typical 77%
b. Density ASTM D 1475
1. 9.4 lbs./gal. (1.26 g/cm3)
c. Viscosity: Stormer Viscometer, 600 g
1. 125-175 seconds
d. Flash Point ASTM D 93
1. 105 deg. F min. (40 deg. C)
e. Recycled Content
1. 70%
f. Slope:
1. up to 2":12"

END OF SECTION

SECTION 07 62 00 (EDGE METAL, SHEET METAL FLASHING AND TRIM)

1.GENERAL

1.1. RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2. SUMMARY

A. Provide all labor, equipment, and materials to fabricate and install the following.
   1. Edge strip and flashing
   2. Fascia, trim, and edge material

B. Related Sections:
   1. Division 07 Section Common Work Results for Thermal and Moisture Protection

C. Related Work Specified Elsewhere:
   1. Division 06 Section - Rough Carpentry
   2. Division 07 Section - Modified Bituminous Membrane Roofing
   3. Division 07 Section - Joint Sealants

1.3. REFERENCES

A. American Society for Testing and Materials (ASTM)
   1. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (galvanized) or Zinc-Iron Alloy-Coated (galvannealed) by the Hot-Dip Process.
   2. ASTM A792 Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.
   3. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
   4. ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   5. ASTM D692 Standard Specification for Coarse Aggregate for Bituminous Paving Mixtures.

B. American National Standards Institute and Single Ply Roofing Institute (ANSI/SPRI)
   1. ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal

C. Warnock Hersey International, Inc., Middleton, WI (WH)

D. Underwriters Laboratories (UL)

E. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
   1. 1993 Edition Architectural Sheet Metal Manual

F. National Roofing Contractors Association (NRCA)
   1. Roofing and Waterproofing Manual

G. American Society of Civil Engineers (ASCE)
   1. ASCE 7-10 Minimum Design Loads for Buildings and Other Structures

1.4. SUBMITTALS FOR REVIEW

A. Product Data:
   1. Provide manufacturer's specification data sheets for each product.
   2. Metal material characteristics and installation recommendations.
   3. Submit color chart prior to material ordering and/or fabrication so that equivalent colors to those specified can be approved.

B. Samples: Submit two (2) samples, illustrating typical metal edge, coping, gutters, and fascia extenders for material and finish.

C. Shop Drawings
   1. For manufactured and ANSI/SPRI ES-1 compliant shop fabricated gravel stops, fascia, scuppers, and all other sheet metal fabrications.
   2. Indicate material profile, jointing details, fastening methods, flashing, terminations, and installation details.
   3. Indicate type, gauge and finish of metal

D. Specimen Warranty: Provide an unexecuted copy of the warranty specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.

1.5. SUBMITTALS FOR INFORMATION

A. Design Loads: Any material submitted as equal to the specified material must be accompanied by a report signed and sealed by a professional engineer licensed in the state in which the installation is to take place. This report shall show that the submitted equal meets the wind uplift and perimeter attachment requirements according to ASCE 7 and that the submitted equal edge metal system is compliant with the ANSI/SPRI ES-1 standard. Substitution requests submitted without licensed engineer approval will be rejected for non-conformance.

B. A letter from the manufacturing company certifying that the materials furnished for this project are the same as represented in tests and supporting data.

C. Mill production reports certifying that the steel thicknesses are within allowable tolerances of the nominal or minimum thickness or gauge specified.

D. Certification of work progress inspection. Refer to Quality Assurance Article below.

E. Certifications:
   1. Submit roof manufacturer's certification that metal fasteners furnished are acceptable to roof manufacturer.

2. Submit roof manufacturer's certification that metal furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.6. CONTRACT CLOSEOUT SUBMITTALS

A. General: Comply with Requirements of Section 01 78 00 – Closeout Submittals

B. Special Project Warranty: Provide specified warranty for the Project, executed by the authorized agent of the Manufacturer.

C. Roofing Maintenance Instructions. Provide a manual of manufacturer's recommendations for maintenance of installed roofing systems.

D. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.7. QUALITY ASSURANCE

A. Engage an experienced roofing contractor with a minimum of five (5) years 'sheet metal flashing work experience.

B. Maintain a full-time supervisor/foreman who is on the job-site at all times during installation. Foreman must have a minimum of five (5) years 'experience with the installation of similar system to that specified.

C. Source Limitation: Obtain components from a single manufacturer. Secondary products which cannot be supplied by the specified manufacturer shall be approved in writing by the primary manufacturer prior to bidding.

D. Upon request fabricator/installer shall submit work experience and evidence of financial responsibility. The Owner reserves the right to inspect fabrication facilities in determining qualifications.

1.8. DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.

B. Stack pre-formed and pre-finished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials which may cause discoloration or staining.

1.9. PROJECT CONDITIONS

A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for pre-formed metal edge system.

1.10. DESIGN AN DPERFORMANCE CRIERIA

A. Thermal expansion and contraction:
1. Completed metal edge flashing system, shall be capable of withstanding expansion and contraction of components caused by changes in temperature

without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.

PART 2 PRODUCTS

1. PRODUCTS, GENERAL

A. Refer to Division 01 Section "Common Product Requirements."

B. Basis of Design: Materials, material performance characteristics, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
   1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section.
   2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Owner or The Owner.
   3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
   4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2. MATERIALS

A. Materials: Minimum gauge copper, steel or thickness of Aluminum to be specified in accordance with Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractor's National Association, Inc. recommendations.

B. General: Product designations for the materials used in this section shall be based on performance characteristics of the R-Mer Force Fascia metal edge system.

C. Aluminum Flat Stock
   1. Aluminum, ASTM B209, alloy 3105-H14, in thickness of .040" nom., Kynar finish

D. R-Mer Force Fascia

   1. Aluminum, ASTM B209, alloy 3105-H14, in thickness of .040" nom., Kynar finish

   2. Continuous Cleat: Pre-Punched Extruded Aluminum Base Anchor

   3. Sealant: Single-component high performance 100% solids, interior and exterior polyether joint sealant

E. Finishes:
1. Exposed surfaces for coated metal flashing and trim:
a. Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
b. Coating system shall provide nominal 1.0 mil dry film thickness, consisting of primer and color coat.
c. Color shall be determined by Owner and confirmed with Installer in writing. Weathering finishes as referred by National Coil Coaters Association (NCCA).

3. RELATED MATERIALS AND ACCESSORIES

A. Metal Primer: Zinc chromate type.

B. Plastic Cement: ASTM D 4586

C. Sealant: Specified in Section 079200 or on drawings.

D. Self-Adhering Underlayment:
1. 45 mil self-adhering high temperature underlayment with cross laminated polymer surface

E. Slip Sheet: Rosin sized building paper.

F. Fasteners:

1. Corrosion resistant screw fastener as recommended by metal manufacturer.

2. Finish exposed fasteners same as flashing metal.

3. Fastening shall conform to Factory Mutual requirements or as stated on section details, whichever is more stringent.

G. Gutter and Downspout Anchorage Devices: Material as specified for system

1. Aluminum, ASTM B209, alloy 3105-H14, in thickness of .040" nom, Kynar finish

2. Color to match all edge metal.

PART EXECUTION

1. EXECUTION, GENERAL

A. Refer to Division 07 Section Common Work Results for Thermal and Moisture Protection.

2. PROTECTION

A. Isolate metal products from dissimilar metals, masonry or concrete with bituminous paint, tape, or slip sheet. Use gasketed fasteners where required to prevent corrosive reactions.

3. GENERAL

A. Secure fascia to wood nailers at the bottom edge with a continuous cleat.

B. Fastening of metal to walls and wood blocking shall comply with building code standards.

C. All accessories or other items essential to the completeness of sheet metal installation, whether specifically indicated or not, shall be provided and of the same material as item to which applied.

D. Allow sufficient clearances for expansion and contraction of linear metal components. Secure metal using fasteners as required by the system. Exposed face fastening will be rejected.

4. INSPECTION

A. Verify that curbs are solidly set and nailing strips located.

B. Perform field measurements prior to fabrication.

C. Coordinate work with work of other trades.

D. Verify that substrate is dry, clean and free of foreign matter.

E. Commencement of installation shall be considered acceptance of existing conditions.

5. MANUFACTURED SHEET METAL SYSTEMS

A. Furnish and install manufactured drip edge fascia in strict accordance with manufacturer's printed instructions.

B. Provide factory-fabricated accessories including, but not limited to, fascia extenders, miters, scuppers, joint covers, etc. refer to Source limitation provision in Part 1.

6. SHOP-FABRICATED SHEET METAL

A. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.

B. Hem exposed edges.

C. Angle bottom edges of exposed vertical surfaces to form drip.

D. Lap corners with adjoining pieces fastened and set in sealant.

E. Install sheet metal to comply with referenced ANSI/SPRI, SMACNA and NRCA standards.

7. FLASHING MEMBRANE INSTALLATION

A. Flash-less Raised Edge Metal Detail

1. Extend base ply over wood blocking and fasten eight (8) inches on center. Cap ply to be installed flush to roof edge.

2. Install new pre-manufactured pre-punched extruded aluminum base anchor cleat, fastened six (6") on center to the face of the nailers, over the installed base ply and cap ply. Two heavy beads of sealant to be applied under the anchor base plate on the horizontal roof side.

3. Install new pre-manufactured fascia covers to the prepared base anchor over the compression seals hooked to the continuous cleat.

8. CLEANING

A. Clean installed work in accordance with the manufacturer's instructions.

B. Replace damaged work that cannot be restored by normal cleaning methods.

9. CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated. Comply with requirements of authorities having jurisdiction.

10. FINAL INSPECTION

A. At completion of installation and associated work, meet with Contractor, installer, installer of associated work, Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of roofing system.

B. Inspect work and flashing of roof penetrations, walls, curbs, and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.

C. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

D. Notify the Owner upon completion of corrections.

E. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

F. Immediately correct roof leakage during construction. If the Contractor does not respond within twenty-four (24) hours, the Owner will exercise rights to correct the Work under the terms of the Conditions of the Contract.

11. DEMONSTRATION AND TRAINING

A. At a time and date agreed to by the Owner, instruct the Owner's facility manager, or other representative designated by the Owner, on the following procedures:

1. Troubleshooting procedures
2. Notification procedures for reporting leaks or other apparent roofing problems
3. Maintenance

4. The Owner's obligations for maintaining the warranty in effect and force
5. The Manufacturer's obligations for maintaining the warranty in effect and force

END OF SECTION

SECTION 07 92 00 (JOINT SEALANTS)

PART 1 GENERAL

1. SUMMARY

A. This document describes the sealing of joints, cracks, and openings using a one-component elastomeric joint sealant.

B. Related Sections:
   1. Section 033000 – Cast in Place Concrete
   2. Section 042100 – Masonry Assemblies Unit Masonry

2. PRECONSTRUCTION TESTING

A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to project joint substrates as follows:
   1. Locate test joints indicated on project or, if not indicated, as directed by the manufacturer's representative.
   2. Perform field tests for each application indicated below.
   3. Notify the Owner minimum of (3) days in advance of dates and times when test joints will be performed.
   4. Each test patch will need a minimum of 5 full days to cure.
   5. Arrange for tests to take place with joint-sealant manufacturer's representative present.
      a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in ASTM C 1193.
   6. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
   7. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
   8. Evaluation of Preconstruction Field-Adhesion-Test Results.
   9. Do not use sealants that fail to adhere to joint substrates during testing.

3. SYSTEM DESCRIPTION

A. Design Requirements:
   1. Design number of joints and joint widths for maximum of ±25% movement.
   2. Design depth of sealant to be ½ width of joint.
      a. Maximum Depth: ½ in.
      b. Minimum Depth: ¼ in.
      c. Maximum Recommended Width: 1 in.

B. Performance Requirements: ASTM C 920, Type S, Grade NS, Use T2, NT, M, A, G and O, Federal Specification TT-C-0230C, ASTM C 1382 for use with EIFS

4. DELIVERY, STORAGE AND HANDLING

   A. All materials must be delivered in original packaging.

   B. Materials must be kept off the ground and protected from inclement weather conditions including but not limited to rain, snow, ice, frost, and high temperatures.

5. SUBMITTALS

   A. Product Data: For each joint-sealant product indicated.

   B. Samples for Verification: Manufacturer must provide a sample of each sealant to be applied.

   C. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
      1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
      2. Interpretations of test results written recommendations for substrate preparation as needed to obtain proper adhesion.

6. QUALITY ASSURANCE

   A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of the material for this project.

   B. Source Limitations: Obtain each kind of joint sealant from single source and single manufacturer.

   C. Product Testing: Field Test to ensure adhesion.

   D. Pre-installation Conference: Conduct conference at project site.

7. PROJECT CONDITIONS

   A. Do not proceed with installation of joint sealants under the following conditions:
      1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
      2. When joint substrates surfaces are damp or wet.
      3. Where joint widths are outside of the joint width parameters set by the joint sealant manufacturers recommendations.
      4. Where contaminants capable of interfering with adhesion have not yet been properly removed from joint substrates.
      5. Where joint movement will occur exceeding the sealants capabilities.

8. WARRANTY

   A. Upon completion of installation, and acceptance by the owner, the manufacturer will supply to the owner the appropriate warranty.

   B. Installer will submit a workmanship warranty, based on the awarded scope of work requirements, to the owner directly.

PART 2 PRODUCTS

2.1. GENERAL MATERIALS

A. Compatibility: Provide joint sealants, approved backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

C. Backing Material: Provide backing material or bond breaker tape compatible with joint sealant based on manufacturers recommendations.

2.2. MS JOINT SEALANTS

A. Sealant: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
1. Elongation (ASTM D412): 450 - 550%
2. Hardness, Shore A (ASTM C920): 25 - 35
3. Shear Strength (ASTM D1002): 275 psi

2.3. POLYETHER JOINT SEALANTS

A. Sealant: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
1. Elongation at Break: 750%
2. Hardness, Shore A (ASTM D-2240) at 21 days: 24 ±3

PART 3 SCOPE OF WORK

3.1. EXAMINATION

A. Examine joints indicated to receive joint sealants. With installer present, ensure joint sealant manufacturer's requirements for joint configuration, installation tolerances, and other conditions proven to affect joint sealants performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant including; dust, old joint sealant, oil, grease, frost, moisture, and any other foreign contaminants that could interfere with proper adhesion.
2. Prepare and clean porous joint substrate surfaces by mechanical abrading, grinding, brushing, or a combination of these methods to produce a virgin, sound substrate capable of developing a tenacious bond with joint sealants.

Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.

3. Once joint is prepared adequately wipe surface with denatured alcohol prior to sealant application.

3.2. INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install approved sealant backings of kind indicated on sealant manufacturers data sheet to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Ensure sealant backing material is continuous and free of any gaps between each section.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry approved material.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
   1. Ensure proper backing material is used.
   2. Ensure backing material is installed at proper depth.
   3. Ensure proper size backing material is used.

E. Install masking tape to protect surfaces adjacent to recessed tooled joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Install sealant into prepared joints when joint is at the midpoint of its contraction and expansion cycle.
   2. Install sealants so they directly contact and fully wet the joint substrates.
   3. Completely fill the recesses in each joint configuration.
   4. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow sealants to utilize maximum movement capabilities.

END OF SECTION