CONTRACT FOR ROOFING SERVICES

(Using the Line Item / Performance Specification Method)

FAYETTEVILLE, NORTH CAROLINA

FOR THE

CUMBERLAND COUNTY BOARD OF EDUCATION

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DR. MARVIN CONNELLY
SUPERINTENDENT

MARCH 3, 2021

CONTRACT FOR ROOFING SERVICES

USING THE LINE ITEM / PERFORMANCE SPECIFICATION METHOD

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INVITATION TO BID

FOR THE
CUMBERLAND COUNTY BOARD OF EDUCATION
810 GILLESPIE STREET
FAYETTEVILLE, NORTH CAROLINA 28306
(910) 678-2565, (910) 678-2642 FAX

CONTRACT FOR ROOFING SERVICES USING A LINE-ITEM / PERFORMANCE SPECIFICATION METHOD

SCOPE OF WORK

This is a competitive procurement for a company for a Firm-Fixed Price (FFP), Indefinite Delivery Indefinite Quantity (IDIQ), pre-priced line item Contract for Roofing Services to include repair and replacement of various types of roofs at various locations within the Cumberland County School System. Contractor will provide labor, materials, equipment, testing, supervisor, quality control, site safety, and management including training, issuing reports, field office administration, and other incidental work necessary to execute the required work.

NOTICE TO BIDDERS
Sealed proposals for this work will be received by:

Phillip Perry, Director, Operations (Project Manager)
Cumberland County Board Of Education, Operations Center
810 Gillespie Street
Fayetteville, N.C. 28306
(910) 678-2551, Cell (910) 824-6592

up to **2:00 p.m. on April 6, 2021** in the Foremen's Meeting Room, Operations Center and immediately thereafter publicly opened and read aloud.

A Mandatory Pre-Bid conference will be held. Contractors interested in bidding shall meet at 10:00 a.m. on March 18, 2021 in the Operations Center Training Room. Masks are required, as is social distancing. A virtual option will be provided. For those wishing to join the meeting virtually, please click the following link:

meet.google.com/nfr-hhze-qpq

Join by phone: +1 601-803-2851 PIN: 281 403 133#

Contractors are hereby notified that they must have proper license under the State laws governing their respective trades and that North Carolina General Statutes 87 and 143(sections as applicable) will be observed in soliciting for, receiving and awarding contracts.

Single prime bids will be accepted in accordance with G.S. 143-128. Complete Bid Documents will be available on the CCS Operations Bid Links page (https://www.ccs.k12.nc.us/Page/5102) under this Project's Name, and at the Pre-bid Conference or may be obtained prior to the Pre-Bid Conference from Chip Perry, Project Manager, Cumberland County Schools, (678-2551).
A single proposal will be received for roofing repairs, restorations and small replacements. A number of separate projects will be undertaken with the successful bidder. The size of the individual projects will range from more than $5,000.00 to less than $90,000.00.

The Contract term is for a base period of twelve (12) months and four (4) one-year option periods for a total maximum period of five (5) years. The contract term begins on the 1st day of July, 2021. The maximum project scope is expected to exceed $100,000.00 and will not exceed $500,000.00 within the base year.

The work undertaken will be compensated on the basis of a multiplier (factor), times the sum of various unit prices, times actual quantities. That is, project cost = FACTOR [(unit price A x quantity) + (unit price B x quantity) = (unit price C x quantity) + …etc.]. As a result, it is the FACTOR, or multiplier, that is to be bid competitively by prospective bidders.

Requirements for bidding this project are as follows:

1. Three references from previously satisfied commercial customers.

2. Furnish NC License Number (G.S. Chapter 87 establishes licensing requirements for general, plumbing, heating, electrical, and refrigeration contractors for construction projects costing $30,000 or more). License numbers must be included on each proposal in order for the proposal to be considered.

3. The Contractor shall provide and maintain during the life of this contract Workman's Compensation

A.	Workman's Compensation	Statutory
	Employers Liability	$1,000,000
	Owner/Officer must be included in coverage	
B.	General Liability (per person/per occurrence):	
	1. Bodily and Personal Liability	$1,000,000/$2,000,000
	2. Property Damage	$1,000,000/$2,000,000 Aggregate
C.	Automobile Liability (per person/per occurrence)	
	1. Bodily Injury	$1,000,000
	2. Property Damage:	$1,000,000 Aggregate
D.	Builder's Risk or Installation Floater	Contract Amount*
E.	Owner shall be listed on the General Liability and Auto Liability insurance	
	` policies as an additional insured (an additional insured endorsement similar to	

the one attached to this contract must be included/attached with the certificate of insurance. If blanket additional insured is provided by the policy, a copy of the blanket additional insured wording form must be included/attached to the certificate.)

F. Owner reserves the right to reject any carrier of insurance shown in the certificate of insurance by the Carrier(s) on the grounds of poor claim service or financial responsibility.

4. Recruitment of minority business participation in accordance with G.S. 143-128. Guidelines for the recruitment of minority participants are included, and must be followed. The failure of a bidder or prime contractor to comply with the MBE/WBE guidelines' procedural requirements as defined in the Bid Documents may render the bid non-responsive, which may result in rejection of the bid and award to the next lowest responsible bidder.

Performance and Payment Bonds may be required on any portion of the work which the owner determines to be necessary. The cost of such bonds will be compensated on a project-by-project basis as a stand-alone expense, and is not to be considered in establishing the FACTOR referenced previously. The Contractor will be compensated for such bonds at direct expense times 1.1.

The Owner reserves the right to reject any or all bids and waive informalities.

Proposals shall be made only on the form provided herein with all blank spaces for bids properly filled in and all signatures properly executed.

Note on the envelope:

Bid Proposal For:

(Project Name)_____
(Contract Type)_____
(Bid Date)_____
(License Number)_____

Dr. Marvin Connelly, Superintendent
Cumberland County Schools
PO Box 2357
Fayetteville, NC 28302

END OF INVITATION TO BID

INSTRUCTIONS TO BIDDERS

The Cumberland County Schools will not consider a proposal unless it is in accordance with the following instructions.

PROPOSALS

Proposals must be made in strict accordance with the **Form of Proposal** provided therefore, and all blank spaces for bids, alternates and unit prices shall be properly filled. When requested alternates are not bid, the proposal may be considered incomplete. Numbers shall be stated both in writing and in figures for the base bids and alternates. In the event of a discrepancy, the amount stated in writing shall be the valid figure

The bidder agrees that a bid submitted on the **Form of Proposal** detached from the specifications will be considered valid, and will have the same force and effect as if attached thereto. Photocopied or faxed proposals may be considered invalid unless directed otherwise or specifically authorized in writing.

Any modification to the **Form of Proposal**, including alternates and/or unit prices, will disqualify the bid and may cause the bid to be rejected. No voluntary alternates will be considered.

The contractor shall fill in the **Form of Proposal** as follows:

a) If the documents are executed by a sole owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
b) If the documents are executed by a partnership, the fact shall be evidenced by the word "Copartner" appearing after the name of the partner executing them.
c) If the documents are executed on the part of a Corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.
d) If the proposal is made by a joint venture, it shall be executed by each member of the joint venture in the above form for the sole owner, partnership, or corporation, whichever form is applicable to each particular member.
e) All signatures shall be properly witnessed.
f) If the contractor's license is held by a person other than an owner, partner or officer of the firm, then the licensee shall also sign and be party to the proposal. The title "Licensee" shall appear under his/her signature.

Proposals shall be addressed as indicated in the **Notice to Bidders** and shall be delivered enclosed in a sealed envelope marked "PROPOSAL" and bearing the title of the work, name of the bidder, and the bidder's license number. This project shall be bid as a single-prime informal contract.

It shall be the specific responsibility of the bidder to deliver his bid to the office of the Specified Project Manager at the Cumberland County Schools offices, 810 Gillespie Street, Fayetteville, North Carolina 28306 prior to the announced time for the opening of bids and to ascertain that it reaches that destination.

Modifications of previously deposited bids will be acceptable only if delivered in writing or by telegram of fax to the place of the bid opening prior to the time for opening bids. Telegraphic and fax modifications must be confirmed in writing within 72 hours of the opening of bids.

Unit prices provided in the **Form of Proposal** shall include overhead and profit, and shall be the full compensation of the contractor's costs involved in the work.

EXAMINATION OF CONDITIONS

It is understood and mutually agreed that by submitting a bid the Contractor acknowledges that he has carefully examined all documents pertaining to the work, the location, accessibility and general character of the site of the work and all existing buildings and structures within and adjacent to the site, and has satisfied himself as to the nature of the work, the condition of existing buildings and structures, the conformation of the ground, the character, quality and quantity of the material to be encountered, the character of the equipment, machinery, and permitting needed prior to and during prosecution of the work, the general and local conditions, the construction hazards, and all other matters, including, but not limited to, the labor situation which can in any way affect the work under the contract, and including all safety measures required by the Occupational Safety and Health Act of 1970 and all rules and regulations issued pursuant thereto. It is further mutually agreed that by submitting a proposal the Contractor acknowledges that he has satisfied himself as to the feasibility and meaning of the plans, drawings, specifications and other Contract Documents for the construction of the work and that he accepts all the terms, conditions and stipulations contained therein; and that he is prepared to work in cooperation with other Contractors performing work on the site.

Each bidder may, at his own expense, make such additional surveys and investigations as he may deem necessary to determine his bid price for the performance of the work. Any on-site investigation shall be done at the convenience of the Owner. Any reasonable request for access to the facility will by honored by the Owner.

The bidder recognizes that it is intended that this be a completed project to the extent set forth in the Contract Documents. However, the Contract Documents are not intended to delegate different phases of work on this project to various trades and subcontractors. Rather, it is the contractor who must delegate within his own (sub)contracts with various subcontractors and suppliers the work for which they will be held responsible. The final responsibility for the completed project will belong to the contractor.

The bidder acknowledges that he accepts sole responsibility for the accuracy of all estimates of material quantities and for all measurements critical to the accuracy of those estimates.

BULLETINS AND AGENDA
Any addenda to drawings and specifications issued during the time of bidding are to be considered covered in the proposal, and in closing the Contract, they will become a part thereof. It shall be the Contractor's responsibility to ascertain prior to bid time the addenda issued and to see that his bid includes any changes thereby required.

Should the bidder find discrepancies in or omissions from the drawings or documents, or should he be in doubt as to their meaning, he shall at once notify the Owner, who will send written instructions in the form of addenda to all bidders. Notification should be no later than four (4) working days prior to the date for receipt of bids. Failure to so notify the Owner of such discrepancies or omissions or doubts as to meaning will obligate the bidder to include in his bid any item reasonably inferred to be necessary in order to complete the work to the level indicated in the Bid Documents. Neither the Owner nor the Designer will be responsible for any oral instructions.

All addenda shall be acknowledges by the bidder on the **Form of Proposal**.

RECEIPT OF BIDS
Bids shall be received in strict accordance with requirements of the General Statutes of North Carolina, G.S. 143-131. Prior to the opening of any bids on the Project the bidders will be permitted to change or withdraw their bids.

OPENING OF BIDS
Once the first bid is opened, there shall not be any withdrawal of bid by any bidders, and no bids may be returned by the Owner to any bidder. Upon opening, all bids shall be read aloud. After the opening of bids, no bid may be withdrawn except under the provisions of General Statue 143-129.1 for a period of forty-five (45) days. Should the successful bidder default and fail to execute a Contract, the Contract may be awarded to the next lowest and responsible bidder.

The Owner reserves the unqualified right to reject any and all bids. Reasons for rejection or disqualification of individual bids may include but shall not be limited to the following:

a) If the Form of Proposal furnished to the bidder is not used or is altered.
b) If the bidder fails to insert a price for all bid items, alternates and unit prices requested.
c) If the bidder adds any provisions reserving the right to accept or reject any award.
d) If there are unauthorized additions or conditional bids, or irregularities of any kind which tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
e) If the bidder fails to complete Form of Proposal where information is requested so the bid may be properly evaluated by the Owner.
f) If the unit prices contained in the bid schedule are unacceptable to the Owner and the Architect.
g) If the bidder fails to comply with other instructions stated herein.

EVALUATION OF BIDS

The award of the Contract will be made to the lowest responsible bidder as soon as practical. The Owner may award on the basis of the base bid and any alternates the Owner chooses.

In determining the lowest responsible bidder, the Owner shall take into consideration the past performance of the bidder on construction contracts of a similar nature. Particular concern will be given to completion times, quality of work, cooperation with other Contractors, and cooperation with the Designer and Owner.

Before awarding the Contract, the Owner may require the apparent low bidder to qualify himself to be a responsible bidder by furnishing any or all of the following data:

a) The latest financial statement showing assets and liabilities of the company or other information satisfactory to the Owner.
b) A listing of completed projects of similar size.
c) Permanent name and address of place of business.
d) The number of regular employees of the organization and length of time the organization has been in business under present name.
e) The name and home office address of the surety proposed and the name and address of the responsible local claim agent.
f) The names of members of firm who hold appropriate trade licenses, together with license numbers.
g) A complete list arranged in chronological order of all bonding companies, their representatives, addresses and phone numbers, from whom the bidder has procured Performance and Payment Bonds for the five (5) years prior to the bid date.

Failure or refusal to furnish any of the above information, if requested, shall constitute a basis for disqualification of any bidder. Should the Owner adjudge that the apparent low bidder is not the lowest responsible bidder by virtue of the above information, said apparent low bidder will be so notified.

FORM OF CONTRACT

The Owner will prepare the Contract using the CONTRACT FOR CONSTRUCTION form, a sample of which is herein attached.

FORM OF PERFORMANCE BOND

Performance Bonds may be required on any portion of the work which the owner determines to be necessary. The cost of such bonds will be compensated on a project-by-project basis as a stand-alone expense, and is not to be considered in establishing the FACTOR referenced previously. The Contractor will be compensated for such bonds at direct expense times 1.1. Upon notification of such a requirement for a specific project, the successful bidder shall furnish a performance bond in an amount equal to 100 percent of the contract price. Form of Performance Bond shall be as herein attached.

FORM OF PAYMENT BOND

Payment Bonds may be required on any portion of the work which the owner determines to be necessary. The cost of such bonds will be compensated on a project-by-project basis as a stand-alone expense, and is not to be considered in establishing the FACTOR referenced previously. The Contractor will be compensated for such bonds at direct expense times 1.1. Upon notification of such a requirement for a specific project, the successful bidder shall furnish a performance bond in an amount equal to 100 percent of the contract price. Form of Payment Bond shall be as herein attached.

MINIMUM INSURANCE REQUIREMENTS

The Contractor shall not commence work until he has obtained all insurance required, and the Owner has approved such insurance, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been obtained.

The Contractor shall provide and maintain during the life of this contract Workman's Compensation

A.	Workman's Compensation	Statutory
	Employers Liability	$1,000,000
	Owner/Officer must be included in coverage	
B.	General Liability (per person/per occurrence):	
	1. Bodily and Personal Liability	$1,000,000/$2,000,000
	2. Property Damage	$1,000,000/$2,000,000 Aggregate
C.	Automobile Liability (per person/per occurrence)	
	1. Bodily Injury	$1,000,000
	2. Property Damage:	$1,000,000 Aggregate
D.	Builder's Risk or Installation Floater	Contract Amount*

E. Owner shall be listed on the General Liability and Auto Liability insurance policies as an additional insured (an additional insured endorsement similar to the one attached to this contract must be included/attached with the certificate of insurance. If blanket additional insured is provided by the policy, a copy of the blanket additional insured wording form must be included/attached to the certificate.)

F. Owner reserves the right to reject any carrier of insurance shown in the certificate of insurance by the Carrier(s) on the grounds of poor claim service or financial responsibility.

The Builders' Risk Coverage shall be written on a Special Covered Cause of Loss form and shall include theft, vandalism, malicious mischief, collapse, false-work, temporary buildings, transit, debris removal including demolition, increased cost of construction, architect's fees and expenses, soft cost, flood (including water damage), earthquake, and if applicable, all below and above ground structures, piping, foundations including underground water and sewer mains, piling including the ground on which the structure rests and excavation, backfilling, filling, and grading.

Insured property shall include portions of the work located away from the site but intended for use at the site, and shall also cover portions of the work in transit. The policy shall cover the cost of removing debris, including demolition as may be made legally necessary by the operation of any law, ordinance or regulation.
Equipment Breakdown Coverage (a.k.a. Boiler & Machinery) shall be included as required by the Contract Documents or by law, which shall specifically covers insured equipment during installation and testing (including cold and hot testing).

Certificates of Insurance shall be filed with the Owner. During construction of the work, the Contractor shall provide updated records whenever any of these coverages become outdated.

Each Certificate of Insurance shall bear the provision that the policy cannot be canceled, or coverage reduced or eliminated in less than thirty (30) days after mailing notice to the insured and/or the Owner of such alteration or cancellation.

The certificate holder shall be named Cumberland County Board of Education, Attn: M. J. Desormeaux, Associate Superintendent Auxiliary Services, P.O. Box 2357 Fayetteville, NC 28302.

END OF INSTRUCTIONS TO BIDDERS

FORM OF PROPOSAL (BID FORM)

Contract for Roofing Services Using a Line-Item / Performance Specification Method

Cumberland County Board Of Education
P.O. Box 2357
Fayetteville, NC 28302-2357

BIDDER: _____
ADDRESS: _____
_____
LICENSE: _____PHONE:_____EMAIL:_____

The undersigned, as Bidder, hereby declares that the only person or persons interested in this Proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this Proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The Bidder further declares that he has examined the site of the Work and the Contract Documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees if this Proposal is accepted to contract with Cumberland County Schools, Fayetteville, North Carolina, in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the **Contract for Roofing Services / A Line Item-Performance Specification** in accordance with the plans, specifications, and contract documents to the full and entire satisfaction of Cumberland County Schools, Fayetteville, North Carolina with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the Contract Documents, for the sum of: $1.00 plus other valuable considerations to be negotiated.

For use in calculating the value of individual projects as defined within the Contract Documents, the Bidder further proposes and agrees to develop, propose and apply a single multiplier, or a factor as referenced herein, whose application shall result in the all-inclusive value for each individual project; the factor proposed being the following (carry to 4 decimals, for example – 1.2345):

Factor (written longhand as words)_____

_____

(expressed numerically, as a decimal amount) _____

Minority Status *:	**Form of Minority Certification**:**

***N**on-**m**inority, **B**lack, **H**ispanic, **A**sian/**A**merican, **A**merican **I**ndian, **F**emale, **S**ocially and **E**conomically **D**isadvantaged, **D**isabled

**Not Applicable, Local Agency, Self-Identified, State of NC HUB, Federal Agency, State of NC DOT, Out of State Agency, Unknown (Note: In July 2009, businesses will be required to be certified through the State of NC HUB)

FORM OF PROPOSAL

Contract for Roofing Services Using a Line-Item / Performance Specification Method

Cumberland County Board Of Education
Fayetteville, NC

The Bidder further proposes and agrees hereby to commence work under each project of work under the Contract on a date established by the procedures explained within the Bid Documents.

The Bidder further agrees that in the case of failure on his part to execute said Contract within ten (10) consecutive calendar days after written notice being given of the award or the Contract, the Bid Bond accompanying this Proposal shall be paid into the funds of the Owner's account set aside for this project, as liquidated damages for such failure; otherwise, the Bid Bond accompanying this Proposal shall be returned to the undersigned.

Respectfully submitted this _____ day of _____, 2014.

_____
(Name of firm or corporation making bid)

Witness:

_____ By: _____
(Proprietorship or Partnership)

Title:_____
(Owner, Partner, or Corp. Pres. Or Vice Pres. only)

Address: _____
_____
_____

License No.: _____

Attest:

By: _____ **(CONTRACTOR CORPORATE SEAL)**

Title: _____
(Secretary or Assistant Secretary)

ADDENDA USED IN COMPUTING THIS BID

ADDENDUM NO#_____ Dated_____ / ADDENDUM NO# _____ Dated _____

END OF FORM OF PROPOSAL

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
ADDRESS _____
_____
TASK ORDER NO. _____
BUILDING NO's _____ROOF PLAN NO._____

STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
7. 1			**WATERPROOFING & DAMPROOFING**			
7.1	10	100	Pressure Cleaning	sf	$0.39	
7.1	10	200	WP-asphalt emulsion brush grade	sf	$1.93	
7.1	10	300	WP-rubberized ctg brush applied	sf	$2.68	
7.1	10	400	WP - acrylic brush applied smooth	sf	$2.57	
7.1	10	500	WP - acrylic brush applied textured	sf	$3.06	
7.1	10	600	WP-non-pigmented, Silane 1 coat vertical	sf	$1.40	
7.1	10	700	WP- non-pigmenting, Silane 1 coat horizontal	sf	$2.05	
7.1	20	100	Remove caulking	sf	$0.44	
7.1	20	300	Caulk polyurethane 1 component 1/4 x 1/4	lf	$4.62	
7.1	20	400	Caulk poly 1 compound 1/2 x 1/2	lf	$5.01	
7.1	20	500	Caulk silicone 1/4x1/2	lf	$5.45	
7.1	30	100	Backer rod 1/4"	lf	$0.66	
7.1	30	200	Backer rod 1/2"	lf	$0.69	
7.1	30	300	Backer rod 3/4"	lf	$0.71	
7.1	40	100	Build. paper15# felt	lf	$0.26	
7.1	40	200	Build. red rosin	lf	$0.77	
7.1	50	100	Vapor retarder or base sheet 1 ply	sf	$1.76	
7.2			**INSULATION**			
7.2	10	100	Dem. of roof insul 1"	sf	$0.46	
7.2	10	200	Dem. lightwt. per 1"	sf	$0.48	
7.2	30	100	lnsul. 1" Iso in type III	sf	$1.38	
7.2	30	200	lnsuL 1.5" lso In type Ill	sf	$1.48	
7.2	30	300	lnsul. 1" iso mech fast	sf	$1.36	

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
ADDRESS _____
_____
TASK ORDER NO. _____
BUILDING NO's _____ROOF PLAN NO._____

STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
7 2	30	400	Insul. 1.5" lso mech fast	sf	$1.45	
7.2	40	100	Insul. 1/2" fiberboard in type III	sf	$1.13	
7.2	40	200	Insul. 1" fiberboard intype III	sf	$1.60	
7.2	40	300	Insul. 1/2" fiberbd. mech fast	sf	$0.19	
7.2	50	400	Insul. 1" fiberbd. mech fast	sf	$1.27	
7.2	50	100	Insul. Lightweight cellular per 1" depth	sf	$1.55	
7.2	60	200	Insul. Tapered 1/4" Iso in type III	sf	$1.98	
7.3			**SHINGLES & ROOF TILES**			
7.3	10	100	Remove comp. shingles	sf	$0.59	
7.3	20	200	Shingles 260/300 lb.	sf	$2.72	
7.4			**ROOFING & RESTORATION**			
7.4	10	100	Remove BUR	sf	$0.89	
7.4	10	120	Sweep loose aggregate	sf	$0.29	
7.4	10	110	Spud embedded gravel	sf	$0.60	
7.4	10	130	Wet vac roof membrane	sf	$0.33	
7.4	10	200	Remove single ply ballast and membrane	sf	$0.70	
7.4	10	210	Remove single ply membrane adhered	sf	$0.40	
7.4	10	220	Remove single ply mech fast membrane	sf	$0.95	
7.4	20	100	3 ply Type IV in Premium III	sf	$2.18	
7.4	30	200	BUR 4 ply type VI in Premium III	sf	$2.87	
7.4	30	400	BUR 3 ply G2 in cold adhesive 1-500	sf	$4.65	
7.4	30	500	BUR 3 ply G2 in cold adhesive over 500 sf	sf	$3.87	
7.4	30	600	BUR 2 ply type IV, 1 ply mod. Bit in type III	sf	$4.00	

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
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BUILDING NO's _____ROOF PLAN NO._____

STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
7.4	35	100	BUR surface with cold process adhesive	sf	$2.72	
7.4	35	200	BUR surface emulsion	sf	$2.07	
7.4	35	300	BUR surface emulsion and aluminum	sf	$2.58	
7.4	35	400	BUR surface emulsion & 1 ply poly membrane	sf	$2.68	
7.4	35	500	BUR surface with aluminum	sf	$1.24	
7.4	35	600	BUR surface with white elastomeric	sf	$2.66	
7.4	40	100	BUR repairs fib. Asph. Mastic w/ mesh	sf	$4.71	
7.4	40	300	BUR repair pitch base w/ mesh	sf	$4.27	
7.4	40	400	BUR repair elast. w/ mesh	sf	$7.96	
7.4	50	100	BUR restoration asphalt PRIMER	sf	$0.83	
7.4	50	200	BUR restoration pitch	sf	$2.18	
7.4	50	300	BUR restoration odorless	sf	$2.58	
7.4	60	100	Single ply elvaloy 60 mil, mechanically fast.	sf	$4.23	
7.4	60	300	Single ply elvaloy 60 mil, fully adhered	sf	$4.90	
7.4	80	400	Flashing membrane, 2 ply, composite ply	sf	$5.21	
7.4	80	500	Flashing CSPE	sf	$6.60	
7.4	90	200	Copper 16 oz. standing seam	sf	$7.96	
7.4	90	300	Copper 16 oz. flat seam	sf	$10.97	
7.5			**MASONRY**			
7.5	10	200	Remove brick and reset 50 sq. ft. minimum	sf	$19.46	
7.5	10	400	Bell tile coping remove and reset	lf	$2.02	
7.5	10	500	Coping stone remove and reset	sf	$7.71	

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
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STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
7.6			**METAL WORK**			
7.6	10	100	Remove metal decking	sf	$1.03	
7.6	10	200	Install metal decking	sf	$6.35	
7.6	20	100	Remove counter flashing	lf	$0.73	
7.6	20	200	Counterflashing .040 alum 6" wide	lf	$3.37	
7.6	20	300	Counterflashing 16 oz. 6" wide	lf	$3.81	
7.6	30	100	Remove metal edge	lf	$4.20	
7.6	30	200	Metal edge free floating MF 4"-8"	lf	$26.58	
7.6	30	210	Metal edge free floating painted 4"-8"	lf	$27.71	
7.6	30	220	Metal edge pre-formed MF	ea	$57.13	
7.6	30	230	Metal pre-formed corner painted	ea	$68.46	
7.6	30	240	Gravel stop .040 painted 4"-6"	lf	$6.00	
7.6	40	100	Remove metal gutter	lf	$1.42	
7.6	40	200	Gutter .050 5" MF OG/box	lf	$8.11	
7.6	40	300	Gutter .050 painted 5" OG/box	lf	$8.47	
7.6	50	100	Remove downspouts	lf	$0.45	
7.6	50	200	Downspouts alum. .024 3x4 painted	lf	$5.74	
7.6	60	400	Metal trim .032 painted	sf	$3.64	
7.6	60	500	Metal storm collar	ea	$75.52	
7.6	60	600	Metal coping alum. .040 std. seam painted	sf	$5.33	
7.6	70	100	Resolder joints in sheet metal	lf	$3.48	

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
ADDRESS _____
_____
TASK ORDER NO. _____
BUILDING NO's _____ROOF PLAN NO._____

STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
7.7			**WOODWORK**			
7.7	10	100	Dem of plywood or 1x6 decking	sf	$0.67	
7.7	10	200	Dem of std. 2x6 t & g decking	sf	$0.38	
7.7	20	100	Plywood decking CDX 1/2"	sf	$1.56	
7.7	20	200	Plywood decking CDX 5/8"	sf	$1.84	
7.7	20	300	Plywood decking CDX 3/4"	sf	$2.14	
7.7	20	400	Standard 1x6 decking	sf	$4.50	
7.7	20	500	Standard 2x6 decking t & g	sf	$3.30	
7.7	30	100	Cants woodfiber	lf	$0.90	
7.7	30	200	Cants treated wood	lf	$1.69	
7.7	40	100	Nailer treated 1x4	lf	$0.83	
7.7	40	200	Nailer treated 2x4	lf	$0.99	
7.7	40	300	Nailer treated 2x6	lf	$1.56	
7.7	50	100	Curbing treated 2x12	lf	$4.71	
7.7	60	100	Joist fir 2x6	lf	$2.64	
7.7	60	200	Joist fir 2x10	lf	$2.78	
7.8			**ROOF SPECIALTIES & ACCESSORIES**			
7.8	10	100	Remove roof hatch	ea	$155.06	
7.8	10	200	Roof hatch alum. 2.5x3	ea	$986.85	
7.8	10	300	Roof hatch alum larger sizes	sf	$123.39	
7.8	20	100	Remove existing roof drain	ea	$426.16	
7.8	20	200	Install new roof drain	ea	$583.75	
7.8	20	300	Reflash existing roof drain	ea	$173.47	
7.8	20	400	Plumbing stack #4 lead	ea	$76.25	

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
ADDRESS _____
_____
TASK ORDER NO. _____
BUILDING NO's _____ROOF PLAN NO._____

STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
7.8	20	500	Scupper 16 oz. match existing	ea	$109.08	
7.8	30	100	Remove existing walkways	sf	$0.38	
7.8	30	200	Walkway, BUR	sf	$4.43	
7.8	40	100	Roof ventilators	ea	$539.32	
7.8	50	100	Roof ladder, 20 ft & up w/o cage	lf	$65.45	
7.8	50	200	Roof laddder, 20 ft up w/ cage	lf	$167.96	
7.8	50	300	Roof ladder, security ladder guard	sf	$43.64	
7.8	60	100	Termination bar	lf	$5.27	
7.8	70	100	Pitch pocket, 16 oz. 4x4	ea	$109.63	
7.8	70	200	Pitch pocket, 16 oz. 8x8	ea	$134.76	
7.8	70	300	Pitch pocket resurface only	ea	$7.09	
7.8	80	100	Expansion joint butyl/neoprene 16 oz.	lf	$26.00	
7.8	80	200	Exp. Jt. CSPE reinforced	lf	$39.27	
7.8	80	300	PVC Support	ea	$35.93	
7.9			**FLUID APPLIED ROOFING**			
7.9	10	100	HydroStop Premium Coat System (HSPCS)	sf	$5.10	
7.9	10	200	Unisil Silicon Roof Coating (10 Year Rate)	sf	$5.00	
7.10			**ROOF WARRANTY & GUARANTEES**			
7.10	10	100	Warranty re-roof 10 yr less 10,000 s.f.	ea	$1100.00	
7.10	10	200	Warranty re-roof 10 yr over 10,000 s.f.	sf	$0.16	
7.10	20	300	Guarantee - Contractors 3-year guarantee	sf		

CUMBERLAND COUNTY SCHOOLS
SCHOOL _____LEA 260- _____
ADDRESS _____
_____
TASK ORDER NO. _____
BUILDING NO's _____ROOF PLAN NO._____

STATEMENT OF ROOFING PROJECT SCOPE (MUST SUBMIT WITH BID)

Individual Line Item Multiplier (Factor) - annotate to four decimal places

DIV	SEC	ITEM	DESCRIPTION	units	$/unit	
				Average Multiplier >>>>>>>>		**#DIV/0!**

CONTRACTOR'S SIGNATURE _____

DATE: _____

INFORMAL CONTRACT FOR CONSTRUCTION

THIS CONTRACT, made the ____day of _____ in the year of _____ by and between _____("Contractor") and the **Cumberland County Board of Education** ("Owner").

WITNESSETH:

That the Contractor and the Owner for the consideration herein named agree as follows:

1. Scope of Work: The Contractor shall furnish and deliver all of the materials, and perform all of the work in the manner and form as provided by the following enumerated plans, specifications and documents, which are attached hereto and made a part hereof as if fully contained herein: Notice to Bidders; General Conditions; Supplementary General Conditions; specifications; this Contract; and drawings, titled:

   CONTRACT FOR ROOFING SERVICES – USING THE LINE-ITEM / PERFORMANCE SPECIFICATION METHOD

   Dated: March 03, 2021 and the following addenda:

   Addendum No. ___ Dated _____ Addendum No. ___ Dated _____

2. That the Contractor shall commence work to be performed under this Contract on a date to be specified in a written Notice to Proceed issued by the Owner and shall fully complete all work hereunder within: **360** consecutive calendar days from said date. For each day in excess thereof, liquidated damages shall be assessed in the amount of N/A Dollars (_____) per day for each day beyond the substantial completion date. If the Contractor fails to begin the Work as described under Paragraph 1 above within ten days after the date specified in the Notice to Proceed, or the progress of the Work is not maintained on schedule, or the Work is not completed within the time specified, or if the Contractor fails to perform the Work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of the Work, or shall perform the Work unsuitably, or not in accordance with the plans and specifications, or in violation of safety requirements or for any cause whatsoever shall not carry out the Work in an acceptable manner, then the Owner shall declare this Contract in default and may terminate the performance of the Contract and assume possession of the Project site and of all materials and equipment at the site and may complete the work. In such case, the Contractor shall not be paid until the Work is complete.

   After Final Completion has been achieved, if any portion of the contract price, as it may be modified thereafter, remains after the cost to the Owner of completing the work, including all costs and expenses of every nature incurred, such remainder shall belong to the Contractor. Otherwise, the Contractor shall pay and make whole the Owner for such cost. This obligation for payment shall survive the termination of the Contract. Failure of a Contractor to meet the requirements of a Contract and/or

insufficient performance may disqualify the Contractor from being awarded future Projects.

3. The Owner hereby agrees to pay to the Contractor for the faithful performance of this Contract, subject to additions and deductions as provided in the Specifications or the accepted Proposal, in lawful money of the United States as follows:

   BASE BID: **Pre-Set Unit Prices multiplied by an Average Factor of:**

   _____ (_____)

   Based upon an Application for Payment, submitted to the Owner by the Contractor, the Owner shall make payment to the Contractor upon inspection and acceptance by the Owner within 15 days.

4. This contract consists of the Informal Contract for Construction, the Contractor's bid, the General Conditions, the Supplementary General Conditions, the Standard Addendum for Contract Services and any other written documents, specifications, plans, drawings, exhibits, or addenda specifically referenced herein or executed by the parties. This Contract contains all of the parties' terms, agreements, and understandings regarding the Work, and it supersedes and replaces any prior discussions or communications of any kind, and this Contract may only be amended or changed in writing, executed by the parties. If any term of this Contract is subsequently judicially determined to be unenforceable or invalid, the remaining terms shall remain in full force and effect. This Contract is governed by North Carolina law.

IN WITNESS WHEREOF, the Owner and Contractor have executed this Contract on the day and date first above written in two counterparts, each of which shall without proof or accounting for other counterparts, be deemed an original.

CUMBERLAND COUNTY BOARD OF EDUCATION

This Instrument has been pre-audited in the manner required by the School Budget and Fiscal Control Act.

_____ _____

Date Finance Officer, Cumberland County Board of Education

OWNER_____ DATE_____

Mrs. Alicia Chisolm, Chair CCBOE

CONTRACTOR_____ DATE_____

ATTEST_____

GENERAL CONDITIONS

It is understood and agreed that by submitting a bid, the Contractor has examined these contract documents, drawings and specifications and has visited the site of the Work, and has satisfied himself relative to the Work to be performed.

MATERIALS, EQUIPMENT AND EMPLOYEES

The Contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, fuel, sanitary facilities and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied there from, all in accordance with the contract documents.

All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications. Used products, sub-standard products or leftover materials from a previous job will not be acceptable and shall not be allowed on the job site.

Products are generally specified by ASTM or other referenced standard and or by manufacturer's name and model number or trade name. When specified only by referenced standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Substitution of materials, items or equipment of equal or equivalent design shall be submitted to the architect or engineer for approval or disapproval; such approval or disapproval shall be made to the architect or engineer prior to the opening of bids.

If any time during the construction and completion of the work covered by these contract documents, the conduct of any workman of the various crafts be adjudged a nuisance to the Owner or if any workman be considered detrimental to the work, the Contractor shall order such parties removed immediately from the grounds.

The Contractor shall designate a foreman/superintendent who shall direct the work.

PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for the entire site and the construction of the same and provide all the necessary protections as required by laws or ordinances governing such conditions and as required by the Owner or Designer. The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry, and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155. The Contractor shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. Accident Prevention Manual in Construction, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. The Contractor shall protect against damage or injury resulting from falling materials and shall maintain all protective devices and signs throughout the progress of the work.

The Contractor shall perform demolition in such a manner as to eliminate hazards to property and personnel. He shall take precautions to minimize interference with the use of adjacent areas, utilities, and other structures and provide free passage to and from the areas or structures. Whenever any equipment is used that may cause a fire or if any flammable material is used, the Contractor shall provide and maintain a fully charged fire extinguisher in the area and instruct all personnel in its proper use.

The Contractor shall be responsible for any damage to the Owner's property, or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages.

At no time shall the Contractor block any fire hydrants or emergency exits with any material, equipment or debris. All equipment locations, storage, etc. shall be approved by the Owner. Outside storage areas shall be roped and/or barricaded and posted as restricted areas. The Contractor shall clearly mark or post signs warning of existing hazards and shall barricade work area if possible to prevent entry by students or other persons.

The Contractor shall wear appropriate clothing, shirts and long pants, while on the job. The Contractor is restricted from wearing clothing that displays offensive language or material. Smoking is prohibited inside the building and will be restricted to a designated site outside the facility.

CONTRACTOR-SUBCONTRACTOR RELATIONSHIPS

The Contractor agrees that the terms of these contract documents shall apply equally to a subcontractor as to the Contractor, and that the subcontractor is bound by those terms as an employee of the Contractor.

INSURANCE

The Contractor shall not commence work until he has obtained all insurance required, and the Owner has approved such insurance, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been obtained.

The Contractor shall provide and maintain during the life of this contract Workman's Compensation

A.	Workman's Compensation	Statutory
	Employers Liability	$1,000,000
	Owner/Officer must be included in coverage	
B.	General Liability (per person/per occurrence):	
	1. Bodily and Personal Liability	$1,000,000/$2,000,000
	2. Property Damage	$1,000,000/$2,000,000 Aggregate
C.	Automobile Liability (per person/per occurrence)	
	1. Bodily Injury	$1,000,000
	2. Property Damage:	$1,000,000 Aggregate
D.	Builder's Risk or Installation Floater	Contract Amount*

E. Owner shall be listed on the General Liability and Auto Liability insurance policies as an additional insured (an additional insured endorsement similar to the one attached to this contract must be included/attached with the certificate of insurance. If blanket additional insured is provided by the policy, a copy of the blanket additional insured wording form must be included/attached to the certificate.)

F. Owner reserves the right to reject any carrier of insurance shown in the certificate of insurance by the Carrier(s) on the grounds of poor claim service or financial responsibility.

The Builders' Risk Coverage shall be written on a Special Covered Cause of Loss form and shall include theft, vandalism, malicious mischief, collapse, false-work, temporary buildings, transit, debris removal including demolition, increased cost of construction, architect's fees and expenses, soft cost, flood (including water damage), earthquake, and if applicable, all below and above ground structures, piping, foundations including underground water and sewer mains, piling including the ground on which the structure rests and excavation, backfilling, filling, and grading.

Insured property shall include portions of the work located away from the site but intended for use at the site, and shall also cover portions of the work in transit. The policy shall cover the cost of removing debris, including demolition as may be made legally necessary by the operation of any law, ordinance or regulation.

Equipment Breakdown Coverage (a.k.a. Boiler & Machinery) shall be included as required by the Contract Documents or by law, which shall specifically covers insured equipment during installation and testing (including cold and hot testing).

Certificates of Insurance shall be filed with the Owner. During construction of the work, the Contractor shall provide updated records whenever any of these coverages become outdated.

Each Certificate of Insurance shall bear the provision that the policy cannot be canceled, or coverage reduced or eliminated in less than thirty (30) days after mailing notice to the insured and/or the Owner of such alteration or cancellation.

The certificate holder shall be named Cumberland County Board of Education, Attn: M. J. Desormeaux, Associate Superintendent Auxiliary Services, P.O. Box 2357 Fayetteville, NC 28302.

CONSTRUCTION CONFERENCES

The contractor is required to attend conferences called by the Owner. It shall be the principal purpose of these conferences to effect coordination, cooperation and assistance in every practical way toward the end of maintaining progress of the Project on schedule and toward completing the Project within the specified Contract time.

SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATE

The Contractor shall submit to the Owner all shop drawings, descriptive data, samples, color charts, etc., required for the work. All materials shall be submitted in duplicate. These shall be promptly reviewed by the Owner, noting desired corrections, if any, and one approved copy shall be returned to the Contractor. Once materials have been approved, no substitutions will be permitted except in unusual extenuating circumstances. If a proposed substitution is not approved by the Owner in writing, the Contractor shall supply materials as specified.

PERFORMANCE

The Contractor shall commence work to be performed under the Contract on a date to be specified in a Notice to Proceed issued by the Owner and shall substantially complete all work in accordance with the project Time Table. If the Contractor fails to begin the work within ten days after the date specified in the Notice to Proceed, or progress of the work is not maintained on schedule, or the Contractor fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure prompt completion of the work, or shall perform the work unsuitably, or not in accordance with plans and specifications, or in violation of safety requirements or for any cause whatsoever shall not carry on the work in an acceptable manner, then the Owner shall declare this Contract in default and Owner may terminate the performance of the Contract and assume possession of the Project site and of all materials and equipment at the site and may complete the work. In such case, the Contractor shall not be paid until the work is complete. After Final Completion has been achieved, if any portion of the contract price, as it may be modified there under, remains after the cost to the Owner of completing the work, including all costs and expenses of every nature incurred, has been deducted by the Owner, such remainder shall belong to the Contractor. Otherwise, the Contractor shall pay and make whole the Owner for such cost. This obligation for payment shall survive the termination of the Contract. Failure of a Contractor to meet the requirements of a Contract and/or insufficient performance may disqualify Contractor from bidding future Projects.

REFERENCES

Contractor shall furnish to the Owner a list of at least three commercial references with names and phone numbers.

PREREQUISITES FOR SUBSTANTIAL COMPLETION

The Owner will not delay Substantial Completion inspection pending receipt of the following items. Conversely, these are items which should be addressed at that time, and must be completed to achieve Final Completion.

A. Submission of Final Payment Request.
B. Submission of all Allowances/Change Orders and accounting for all adjustments to the Contract Sum.

CHANGE ORDER

No change shall be made in the Work except upon written approval and change order of the Designer/Owner. Change orders shall be subject to provisions in the current North Carolina Construction Manual.

Changes in the work within the general scope of this Contract, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Contract, by Change Order. Changes in the work shall be performed under applicable provisions of this Contract and the Contractor shall proceed promptly with such changes.

All Change Orders are to be submitted on FORM C/O99-00.(ATTACHED) The Contractor shall not proceed with such work without written authority. THE CONTRACTOR SHALL NOT ACT ON INSTRUCTIONS RECEIVED BY HIM FROM PERSONS OTHER THAN THE PROJECT MANAGER, OR THE ARCHITECT OR ENGINEER REPRESENTING THE OWNER. ANY CLAIMS FOR EXTRA COMPENSATION OR EXTENSION OF TIME ON ACCOUNT OF SUCH INSTRUCTIONS WILL NOT BE HONORED. In preparing figures for Change Orders for consideration, the percentage allowed for overhead and profit combined shall not exceed fifteen (15%) of net cost.

INSPECTION, PERMITS

The Contractor shall obtain the required permits, give all notice and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Engineer in writing. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the Owner, he shall bear all cost arising there from.

All permits must be posted or delivered to the Owner prior to the start of work. A copy of the permit invoice shall be conveyed to the Owner with the application for payment.

It is a condition of this Contract that the work shall be subject to inspection during normal working hours by designated representatives of the Owner, the Architect/Engineer, and those persons required by state law to test special work for official approval. The Contractor shall therefore provide safe access to the work at all times for such inspections.

All work under this Contract shall conform to the North Carolina State Building Code and all other state, local and national codes as are applicable. The cost of all required inspections and permits shall be the responsibility of the Contractor.

TAXES

Federal Excise Taxes do not apply to materials entering into State work (Internal Revenue Code, Section 3442(3)). Federal Transportation Taxes do not apply to materials entering into State work (Internal Revenue Code, Section 3475 (b) as amended). North Carolina Sales Taxes and Use Tax do apply to materials entering into State Work (N.C. Sales and Use Tax Regulation No. 42, Paragraph A), and such costs shall be included in the bid proposal and contract sum.

EQUAL OPPORTUNITY

The non-discrimination clause contained in Section 202 (Federal Executive Order 11246, as amended by Executive Order 11375, relative to Equal Employment Opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the Secretary of Labor, are incorporated herein.

The Contractor agrees not to discriminate against any employees or applicant for employment because of physical or mental handicap in regard to any position for which the employees or applicant is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices.

MINORITY PARTICIPATION

Contractor shall solicit minority participation in accordance with G.S. 143-128.2. Reporting requirements for solicitation and participation shall follow these guidelines. (Guidelines and documents are attached)

CONTRACT PAYMENTS

Payment Request shall be in submitted on an Application and Certificate for Payment AIA G702 Form to Phillip Perry, Cumberland County Schools, 810 Gillespie Street, Fayetteville, North Carolina 28306. The Invoice will be processed and paid within fifteen (15) consecutive days after acceptance of the work.

Certificate of Sales Tax Usage must be included with **each** request for payment. This Certificate shall include the date, the type of property and the cost of the property purchased from each vendor, the county in which the vendor made the sale and the amount of local sales and use taxes paid thereon. It the property was purchased out-of-state, the county in

which the property was delivered should be listed. Contractors are not to include any tax paid on supplies, tools and equipment which they use to perform their contracts and should include only those building materials, supplies, fixtures and equipment which actually become a part of or annexed to the building or structure.

CLEANING UP

The Contractor shall keep the building and surrounding area reasonably free from rubbish at all times, and shall remove debris from the site from time to time or when directed to do so by the Owner. Before final inspection and acceptance of the building, the Contractor shall clean its portion of the work, including glass, hardware, fixtures, masonry, and tile, clean all floors and completely prepare the building for use by the Owner, with no cleaning required by the Owner.
In the event the Contractor creates additional cleaning work for the Owner, the Contractor shall compensate the Owner for such cleaning. Any expense the Owner incurs to clean the building will be deducted from final payment to the Contractor.

GUARANTEE / WARRANTY

The contractor shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve (12) months following the final acceptance of the work and shall replace such defective materials or workmanship without cost to the Owner.

Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The contractor shall replace such defective equipment or materials, without cost to the Owner, within the manufacturer's warranty period.

Additionally, the Owner may bring an action of latent defects caused by the negligence of the Contractor, which is hidden or not readily apparent to the Owner at the time of beneficial occupancy or final acceptance, whichever occurred first, in accordance with applicable law.

Guarantee for roof, equipment, materials, and supplies shall be stipulated in the specifications sections governing such roof, equipment, materials, or supplies.

A. Additional Guarantee:
   If included in the Task Order Worksheet, upon project completion and Owner acceptance, and effective upon complete payment, the contractor shall issue the CUMBERLAND COUNTY SCHOOLS' ROOFING THREE YEAR GUARANTEE against defective workmanship and materials. Replacement of such defective workmanship or materials shall be done without cost to the owner. A copy is attached as Appendix A.

B. Additional Warranty:
   If included in the Task Order Worksheet, upon project completion, Manufacturer acceptance, and once complete payment has been received by both Contractor and

Manufacturer, the Manufacturer shall deliver to the Owner a ten (10) year CUMBERLAND COUNTY SCHOOLS' ROOFING SYSTEM QUALITY ASSURANCE WARRANTY. A copy is attached as Appendix B.

SUPPLEMENTARY GENERAL CONDITIONS

TIME OF COMPLETION

It is the Owner's intent to make a recommendation regarding award of this Contract by **May 14, 2021**. Notice of Intent to Award will be prepared and conveyed to the Contractor immediately. By **May 20, 2021**, prepared Contracts will be conveyed to the Contractor along with Notice to Proceed. The Notice to Proceed will set no later than **July 1, 2021** as the Construction Starting Date. The Contractor shall commence the performance of this Contract on this date and shall diligently continue its performance to and until final completion of the Project.

The Contractor shall develop a Project Construction Schedule, which shall be approved by and submitted to the Owner.

Substantial Completion shall be achieved by N/A. Final Completion shall be no later than N/A.
The Owner will occupy the existing building and grounds and conduct business on a daily basis while work is in progress. It is essential that the Contractor cooperate closely with the Owner in working to keep disruptions to a minimum. Anticipated disruptions/delays in projected work schedules must be reviewed and cleared in advance with the Owner.

The Contractor may be required to complete a Daily Work Log (Form LOG99-00) ATTACHED, which shall be kept on site for review by the Owner during routine inspections.

USE OF SITE

Normal working hours during the summer are 8:00 am – 5:00 pm Monday – Friday. The Contractor may not work outside these hours without prior authorization from the Principal and Operation's staff. If necessary, additional hours on the weekend or in the evenings may be considered. Extended hours maybe allowed at the discretion of the school staff with direct compensation by the Contractor. Liquidated damages apply whether or not extended hours are granted.

STORAGE OF MATERIALS

The Contractor shall store all materials and stage all work in areas designated by the Owner. The areas shall be roped / or barricaded, and posted as RESTRICTED. Only areas so designated will be used for storing materials and parking. Erection of a temporary chain link fence to secure storage areas and limit access to trailers, etc. is encouraged.

All insulation materials shall be stored in trailers or on pallets protected from the weather by non-condensing tarps. Factory plastic shipping coverings are not acceptable. Any wet

or damaged materials shall be identified and marked by the inspector for immediate removal from the project. Any wet or damaged materials which are applied shall be removed and replaced at the contractor's expense.

Materials shall not be stored on the roof overnight. Materials that are stored on the roof for immediate use must be distributed to avoid weight concentration.

LIQUIDATED DAMAGES

The Contractor shall commence work to be performed under this agreement on as stipulated within each task / work order. Unless otherwise negotiated, the individual projects will be of a size and scope to be performed in a single pay period, and thus compensated by a single payment. Liquidated Damages are therefore eliminated.

In reference to roofing work, the term "Substantial Completion" shall be defined as "Absolutely Watertight."

If the Contractor is delayed at any time in the progress of his work by any act or negligence of the Owner, his employees or his separate contractor, by changes ordered in the work; by abnormal weather conditions; by any causes beyond the Contractor's control or by any other causes deemed justifiable by Owner, then the contract time may be reasonable extended in a written order from the Owner upon written request from the Contractor within ten days following the cause for delay.

UTILITIES

A. Use of electric power, fuel oil, water, heating and cooling, and toilet facilities shall be coordinated with the building Owner prior to start of construction.
B. Any interruption of utilities (electricity, fuel oil, water, heating, cooling, etc.) shall be minimized and undertake through coordination with the Owner with at least 72 hours advance notice.
C. The contractor is responsible for locating all underground services prior to construction through the use of school property accounting information or through a utility locator service.

SECURITY

The Contractor shall take all necessary precautions to avoid jeopardizing the security of the building to include:

A. No entry shall be made into the building without the authorization and approval of the site administrative staff. Contractor's personnel will not enter the facility without daily express permission of the site administrator (usually the principal of principal's designee).
B. The contractor will not erect a shed or job sign.
C. Workers shall be identified at all times with either badges or company logo.
D. Contractor shall be responsible for securing area within which he is working.
E. The site supervisor shall be responsible for signing into the main office each day a crew is on site during normal working hours.

SAFETY

A. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
B. Comply with federal, state, local and Owner fire and safety requirements.
C. Advise Owner whenever work is expected to be hazardous to Owner, employees and/or operators.
D. Maintain a crewman as a floor area guard whenever roofing decking is being repaired or replaced.
E. Maintain fire extinguisher within easy access whenever power tools, roofing kettles, and torches are being used.
F. Advise Owner when volatile materials are to be used near air intakes. Coordinate such operations so affected areas can be evacuated, or intakes can be blocked, as Owner requires.

WEATHER CONDITIONS

A. Do not work in rain, snow, or with water present on the substrate materials.
B. Do not work in temperatures below 40 deg F (5 deg C).
C. Do not install materials marked "KEEP FROM FREEZING" when daily temperatures are scheduled to fall below 40 deg F (5 deg C).
D. Do not perform masonry work below 40 deg F (5 deg C).
E. Remove any work exposed to freezing.

SUMMARY OF WORK

A. Nature of the Project – It is the Owner's intent to enter into one open-ended or indefinite delivery contract for roof repair and restoration services, and for roof replacements of a limited scope. This project is submitted for bids with that attempt.
B. Scope of the Work – The work includes roof and sheet metal repairs, roof restorations, and replacements of roofs. Anticipated dollar volume within the fiscal year proposed ranges from $100,000.00 to $500,000.00.
C. Duration of the Contract – Contract shall go into effect on July 01, 2021, and will be valid until work which was committed prior to June 30, 2022 is complete.
D. Extension of the Contract – Owner and selected contractor can mutually agree to renew the project annually for four consecutive years beyond the base year defined at the existing factor, plus or minus changes in the market that would necessitate a change in the factor. Both parties must agree to the factor adjustment.
E. Size of the Projects – No project shall be less than $5,000.00. Should one site's needs fall short of $5,000.00, other sites with identical or similar problems will be grouped to reach this minimum value. No one project is expected to exceed $100,000.00.

F. Procedure for Initiating a Project –

1. Owner will define and prepare an estimate of the value of a project using the seven page landscape format 8 ½ x 11 STATEMENT OF ROOFING PROJECT SCOPE. The Owner will also generate a Work Order referencing the project. The completed estimate and task order will be provided to the selected contractor for his independent evaluation/confirmation of the remedial methods proposed and of the quantities required.

2. Owner and selected contractor will review the results in conference in order to reach agreement as to methods and quantities. Once methods and quantities are agreed, the sum of the products of the unit prices times quantities, MULTIPLIED BY THE SELECTED CONTRACTOR'S FACTOR, will become the value (Project Cost) established for the project. See example below.

Example:	Unit Price A x LI Factor x Quantity =	$ Amount
	Unit Price B x LI Factor x Quantity =	$ Amount
+	Unit Price C x LI Factor x Quantity =	$ Amount
	Project Cost = $ Adjusted Sum of Amounts	

G. Procedure for Proceeding with a Project – The Owner will prepare a Task Order Worksheet for the adjusted sum. Receipt of that Task Order Worksheet AND an identical amount Purchase Order AND a Work Order referenced to the project will constitute acceptance and Notice to Proceed.

H. Procedure for Payment – Projects are intended to be of a size to be completed within a pay period (one month). If projects which will exceed one month duration occur, the pay procedures will be negotiated. Payment will be made only when approval and acceptance of the Owner have been given on an invoice titles and numbered specifically to the job and Purchase Order.

MISCELLANEOUS

A. Modification to the Form of Proposal (The Bid Form) –

1. The contractor will still submit the Bid Form as instructed, using a single multiplier (Factor) to four decimal places. However, in addition to the two page bid form, the contractor shall also submit the seven page Unit Cost worksheet (attached) with an individual multiplier annotated for each line item. The Average of the line item multipliers will then be taken and used as the Overall Factor for the Bid.
2. The overall factor will be used in determining the lowest bid. However, each project will be based on the unit price multipliers for each line item noted on the bid form worksheet.
3. Failure to include the seven page worksheet with all line item multipliers will be considered a non-responsive bid and will be disqualified.
4. For your convenience, an electronic copy of the line-item worksheet in excel format will be attached to an e-mail for prospective bidders and uploaded on the Bid Links website.

B. Deadline for questions will be 5:00 p.m., March 30, 2021. Questions must be submitted in writing and e-mailed to Phillip Perry @ phillipperry@ccs.k12.nc.us.

CUMBERLAND COUNTY BOARD OF EDUCATION
STANDARD ADDENDUM FOR CONTRACT SERVICES

Effective February 12, 2018

This contract addendum shall be attached to and incorporated by reference as an integral part of each contract which is subject to Cumberland Board of Education Policy Code 6420, "Contracts with the Board," and which pertains to the purchase of materials, equipment, or services, and is entered into by the Cumberland County Board of Education ("Board") and any contractor or supplier ("Contractor").

1. **Iran Divestment Act and Divestment from Companies Boycotting Israel.** No contract may be entered into with a restricted company as listed by the State Treasurer in accordance with N.C.G.S. Chapter 147, Articles 6E or 6G, except as permitted by those laws. By entering into this contract ("Contract") and providing materials, equipment or services described in the Contract (the "Work"), Contractor acknowledges and represents that it is not a restricted company as defined in N.C.G.S. Chapter 147, Articles 6E or 6G.

2. **Lunsford Act.** Contractor acknowledges that N.C.G.S. 14-208.18 prohibits anyone required to register as a sex offender from knowingly being present upon the premises of any school, and Contractor shall insure that neither Contractor, its subcontractors, nor its suppliers shall allow any person registered as a sex offender to come on or about the premises of any subject school in any manner or for any reason related to the Work or the Contract.

3. **E-verify.** Contractor shall comply with the requirements of Article 2 of Chapter 64 of the General Statutes. Further, if Contractor utilizes a subcontractor, Contractor shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the General Statues.

4. **Policy Compliance.** Contractor, its subcontractors and suppliers, shall comply with all Board policies relating to visitors in the schools while engaged in the Work.

SIGNATURES:

CONTRACTOR:	CUMBERLAND COUNTY BOARD OF EDUCATION:
By: _____	By: _____ **Mrs. Alicia Chisolm**
Title: _____	Title: _____ Chair, Cumberland County BOE
Date: _____	Date: _____

Sample Certificate of Insurance

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:
	PHONE (A/C, No, Ext): / FAX (A/C, No):
	E-MAIL ADDRESS:
	INSURER(S) AFFORDING COVERAGE / NAIC #
INSURED	INSURER A : Insurance Company Name (not parent company)
	INSURER B :
	INSURER C :
	INSURER D :
	INSURER E :
	INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC	Y					EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	Y					COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
							UM/UIM *	$ 1,000,000
	UMBRELLA LIAB OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $						EACH OCCURRENCE	$
							AGGREGATE	$
								$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? Y / N N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A					X WC STATU-TORY LIMITS OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
A	Sexual Abuse/Molestation Liability							

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Cumberland County Schools is additional insured on the General Liability and Auto Liability policies shown above as respects contract with named insured above.

*Workers compensation coverage must be INCLUDED for the owner and box must be marked "N" as shown above.

If box is checked "Yes": you must list who has been excluded as owner/propietor/partner/executive/member

"UM/UIM" limits must be shown on the certificate.

CERTIFICATE HOLDER	CANCELLATION
Cumberland County Board of Education Attn: Joe Desormeaux, Assoc. Superintendent, Aux. Svcs. 2465 Gillespie Street, Fayetteville, NC 28306	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

ACORD 25 (2010/05) The ACORD name and logo are registered marks of ACORD

Sample GL Additional Insured Endorsement

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 20 26 07 04

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf:

A. In the performance of your ongoing operations; or

B. In connection with your premises owned by or rented to you.

Sample Auto Additional Insured Endorsement

Policy Number:
Effective:

COMMERCIAL AUTO
UGCA 35 99 01 07

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

SCHEDULE

Name Of Person Or Organization:
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Each person or organization shown in the Schedule is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in Section II of the Coverage Form. The inclusion of additional interest or interests will not operate to increase the limit of our liability.

An additional premium of $ is fully earned at the time of issue.

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on State construction projects in the amount of $300,000 or more. The legislation provides that the State shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

SECTION B: DEFINITIONS

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
   a. Black, that is, a person having origins in any of the black racial groups in Africa;
   b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
   c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
   d. American Indian, that is, a person having origins in any of the original peoples of North America; or
   e. Female

2. Minority Business - means a business:
   a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
   b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.

3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".

4. Public Entity - means State and all public subdivisions and local governmental units.

5. Owner - The State of North Carolina, through the Agency/Institution named in the contract.

6. Designer – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.

7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.

9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.

10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

   The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:
   a. Identify those areas of work for which there are minority businesses, as requested.
   b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
   c. Assist in the determination of technical assistance needed by minority business contractors.

   In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:
   (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
   (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the State Construction Office and other public entities.
   (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
   (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
   (5) The HUB Office also oversees the minority business program by:
      a. Monitoring compliance with the program requirements.
      b. Assisting in the implementation of training and technical assistance programs.
      c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
      d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. State Construction Office
   The State Construction Office will be responsible for the following:

   a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
      (1) Project description and location;
      (2) Locations where bidding documents may be reviewed;
      (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
      (4) Date, time and location of the bid opening.
      (5) Date, time and location of prebid conference, if scheduled.

   b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.

c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
d. Reviewing of minority business requirements at Preconstruction conference**.**
e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
f. Provide statistical data and required reports to the HUB Office.
g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

3. Owner
Before awarding a contract, owner shall do the following:

a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
b. Attend the scheduled prebid conference.
c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
    1. A description of the work for which the bid is being solicited.
    2. The date, time, and location where bids are to be submitted.
    3. The name of the individual within the owner's organization who will be available to answer questions about the project.
    4. Where bid documents may be reviewed.
    5. Any special requirements that may exist.
d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the State Construction Office.
g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment**.**
i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

4. Designer
Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with

corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.

e. During construction phase of the project, review "MBE Documentation for Contract Payment" – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the State Construction Office.
f. Make documentation showing evidence of implementation of Designer's responsibilities available for review by State Construction Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors
Under the single-prime bidding, the separate-prime biding, construction manager at risk and alternative contracting methods, contractor(s) will:

a. Attend the scheduled prebid conference.
b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
   (1) A description of the work for which the subbid is being solicited.
   (2) The date, time and location where subbids are to be submitted.
   (3) The name of the individual within the company who will be available to answer questions about the project.
   (4) Where bid documents may be reviewed.
   (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

   If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.
d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
e. Identify on the bid**,** the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by State Construction Office and HUB Office, upon request.
g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), "MBE Documentation for Contract Payment" – (Appendix E), for designer's review.
j. During the construction of a project, at any time**,** if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, State Construction Office, and the Director of the HUB Office in writing**,** of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.

k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities
While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

SECTION 4: DISPUTE PROCEDURES
It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

SECTION 5: These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 733-7962, Website: http://interscope2.doa.state.nc.us/main.htm.

SECTION 6: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of theses guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 733-7962, Website: http://interscope2.doa.state.nc.us/main.htm.

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

(1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.

(2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.

(3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.

(4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.

(5) Attending any prebid meetings scheduled by the public owner.

(6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.

(7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.

(8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.

(9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.

(10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments to be made to minority business contractors on this project for the above-mentioned period.

Firm Name	***Minority Category**	**Payment Amount**	**Owner Use Only**

*Minority categories: Black (**B**), Hispanic (**H**), Asian American (**AA**), American Indian (**AI**), White Female (**F**), Socially and Economically Disadvantaged (**SED**), Disabled (**D**)

Date: _____ Approved/Certified By: _____
Name

_____
Title

_____
Signature

****THIS DOCUMENT MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT****

Identification of HUB Certified/ Minority Business Participation

I,_____,
(Name of Bidder)
do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)

*Minority categories: Black (**B**), Hispanic (**H**), Asian American (**AA**), American Indian (**AI**), White Female (**F**), Socially and Economically Disadvantaged (**SED**), Disabled (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

The total value of minority business contracting will be ($)_____.

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of_____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ❑ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ❑ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ❑ **3** – **(15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ❑ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ❑ **5** – **(10 pts)** Attended prebid meetings scheduled by the public owner.
- ❑ **6** – **(20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ❑ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ❑ **8** – **(25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ❑ **9** – **(20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ❑ **10** - **(20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of_____, County of_____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____ Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black (**B**), Hispanic (**H**), Asian American (**AA**), American Indian (**AI**), White Female (**F**), Socially and Economically Disadvantaged (**SED**), Disabled (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

SEAL

Signature:_____

Title:_____

State of _____, County of _____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires_____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____ Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black (**B**), Hispanic (**H**), Asian American (**AA**), American Indian (**AI**), White Female (**F**), Socially and Economically Disadvantaged (**SED**), Disabled (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.

B. Copies of quotes or responses received from each firm responding to the solicitation.

C. A telephone log of follow-up calls to each firm sent a solicitation.

D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.

E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.

F. Copy of pre-bid roster

G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.

H. Letter detailing reasons for rejection of minority business due to lack of qualification.

I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public_____

My commission expires _____

CUMBERLAND COUNTY SCHOOLS ROOF LIC TASK ORDER

SCHOOL _____

ADDRESS _____

_____

TASK ORDER NO. _____

BUILDING NO / PLAN NO - _____

LEA-Unit #

260 -

STATEMENT OF ROOFING PROJECT SCOPE

	DIV	SEC	ITEM	DESCRIPTION	units	$/unit	Date / Measurements	Budget Costs	CCS Initials	Contractor Initials
	7 1			**WATERPROOFING & DAMPROOFING**						
1	7.1	10	100	Pressure Cleaning	sf	$0.39	1	$ 0.39		
2	7.1	10	200	WP-asphalt emulsion brush grade	sf	$1.93	1	$ 1.93		
3	7.1	10	300	WP-rubberized ctg brush applied	sf	$2.68	1	$ 2.68		
4	7.1	10	400	WP - acrylic brush applied smooth	sf	$2.57	1	$ 2.57		
5	7.1	10	500	WP - acrylic brush applied textured	sf	$3.06	1	$ 3.06		
6	7.1	10	600	WP-non-pigmented, Silane 1 coat vertical	sf	$1.40	1	$ 1.40		
7	7.1	10	700	WP- non-pigmenting, Silane 1 coat horizontal	sf	$2.05	1	$ 2.05		
8	7.1	20	100	Remove caulking	sf	$0.44	1	$ 0.44		
9	7.1	20	300	Caulk polyurethane 1 component 1/4 x 1/4	lf	$4.62	1	$ 4.62		
10	7.1	20	400	Caulk poly 1 compound 1/2 x 1/2	lf	$5.01	1	$ 5.01		
11	7.1	20	500	Caulk silicone 1/4x1/2	lf	$5.45	1	$ 5.45		
12	7.1	30	100	Backer rod 1/4"	lf	$0.66	1	$ 0.66		
13	7.1	30	200	Backer rod 1/2"	lf	$0.69	1	$ 0.69		
14	7.1	30	300	Backer rod 3/4"	lf	$0.71	1	$ 0.71		
15	7.1	40	100	Build. paper15# felt	lf	$0.26	1	$ 0.26		
16	7.1	40	200	Build. red rosin	lf	$0.77	1	$ 0.77		
17	7.1	50	100	Vapor retarder or base sheet 1 ply	sf	$1.76	1	$ 1.76		
	7.2			**INSULATION**						
18	7.2	10	100	Dem. of roof insul 1"	sf	$0.46	1	$ 0.46		
19	7.2	10	200	Dem. lightwt. per 1"	sf	$0.48	1	$ 0.48		
20	7.2	30	100	lnsul. 1" Iso in type III	sf	$1.38	1	$ 1.38		
21	7.2	30	200	lnsuL 1.5" lso In type Ill	sf	$1.48	1	$ 1.48		
22	7.2	30	300	lnsul. 1" iso mech fast	sf	$1.36	1	$ 1.36		
23	7 2	30	400	lnsul. 1.5" lso mech fast	sf	$1.45	1	$ 1.45		
24	7.2	40	100	lnsul. 1/2" fiberboard in type III	sf	$1.13	1	$ 1.13		
25	7.2	40	200	lnsul. 1" fiberboard intype III	sf	$1.60	1	$ 1.60		

CUMBERLAND COUNTY SCHOOLS ROOF LIC TASK ORDER	LEA-Unit #	STATEMENT OF ROOFING PROJECT SCOPE
SCHOOL _____	260 -	
ADDRESS _____		
_____		Date
TASK ORDER NO. _____		
BUILDING NO / PLAN NO - _____		

	DIV	SEC	ITEM	DESCRIPTION	units	$/unit	Measurements	Budget Costs	CCS Initials	Contractor Initials
26	7.2	40	300	Insul. 1/2" fiberbd. mech fast	sf	$0.19	1	$ 0.19		
27	7.2	50	400	Insul. 1" fiberbd. mech fast	sf	$1.27	1	$ 1.27		
28	7.2	50	100	Insul. Lightweight cellular per 1" depth	sf	$1.55	1	$ 1.55		
29	7.2	60	200	Insul. Tapered 1/4" Iso in type III	sf	$1.98	1	$ 1.98		
	7.3			**SHINGLES & ROOF TILES**						
30	7.3	10	100	Remove comp. shingles	sf	$0.59	1	$ 0.59		
31	7.3	20	200	Shingles 260/300 lb.	sf	$2.72	1	$ 2.72		
						$0.00				
	7.4			**ROOFING & RESTORATION**		$0.00				
32	7.4	10	100	Remove BUR	sf	$0.89	1	$ 0.89		
33	7.4	10	120	Sweep loose aggregate	sf	$0.29	1	$ 0.29		
34	7.4	10	110	Spud embedded gravel	sf	$0.60	1	$ 0.60		
35	7.4	10	130	Wet vac roof membrane	sf	$0.33	1	$ 0.33		
36	7.4	10	200	Remove single ply ballast and membrane	sf	$0.70	1	$ 0.70		
37	7.4	10	210	Remove single ply membrane adhered	sf	$0.40	1	$ 0.40		
38	7.4	10	220	Remove single ply mech fast membrane	sf	$0.95	1	$ 0.95		
39	7.4	20	100	3 ply Type IV in Premium III	sf	$2.18	1	$ 2.18		
40	7.4	30	200	BUR 4 ply type VI in Premium III	sf	$2.87	1	$ 2.87		
41	7.4	30	400	BUR 3 ply G2 in cold adhesive 1-500	sf	$4.65	1	$ 4.65		
42	7.4	30	500	BUR 3 ply G2 in cold adhesive over 500 sf	sf	$3.87	1	$ 3.87		
43	7.4	30	600	BUR 2 ply type IV, 1 ply mod. Bit in type III	sf	$4.00	1	$ 4.00		
44	7.4	35	100	BUR surface with cold process adhesive	sf	$2.72	1	$ 2.72		
45	7.4	35	200	BUR surface emulsion	sf	$2.07	1	$ 2.07		
46	7.4	35	300	BUR surface emulsion and aluminum	sf	$2.58	1	$ 2.58		
47	7.4	35	400	BUR surface emulsion & 1 ply poly membrane	sf	$2.68	1	$ 2.68		
48	7.4	35	500	BUR surface with aluminum	sf	$1.24	1	$ 1.24		
49	7.4	35	600	BUR surface with white elastomeric	sf	$2.66	1	$ 2.66		

CUMBERLAND COUNTY SCHOOLS ROOF LIC TASK ORDER	LEA-Unit #	STATEMENT OF ROOFING PROJECT SCOPE
SCHOOL _____	260 -	
ADDRESS _____		
_____		
TASK ORDER NO. _____		Date
BUILDING NO / PLAN NO - _____		

	DIV	SEC	ITEM	DESCRIPTION	units	$/unit	Measurements	Budget Costs	CCS Initials	Contractor Initials
50	7.4	40	100	BUR repairs fib. Asph. Mastic w/ mesh	sf	$4.71	1	$ 4.71		
51	7.4	40	300	BUR repair pitch base w/ mesh	sf	$4.27	1	$ 4.27		
52	7.4	40	400	BUR repair elast. w/ mesh	sf	$7.96	1	$ 7.96		
53	7.4	50	100	BUR restoration asphalt PRIMER	sf	$0.83	1	$ 0.83		
54	7.4	50	200	BUR restoration pitch	sf	$2.18	1	$ 2.18		
55	7.4	50	300	BUR restoration odorless	sf	$2.58	1	$ 2.58		
56	7.4	60	100	Single ply elvaloy 60 mil, mechanically fast.	sf	$4.23	1	$ 4.23		
57	7.4	60	300	Single ply elvaloy 60 mil, fully adhered	sf	$4.90	1	$ 4.90		
58	7.4	80	400	Flashing membrane, 2 ply, composite ply	sf	$5.21	1	$ 5.21		
59	7.4	80	500	Flashing CSPE	sf	$6.60	1	$ 6.60		
60	7.4	90	200	Copper 16 oz. standing seam	sf	$7.96	1	$ 7.96		
61	7.4	90	300	Copper 16 oz. flat seam	sf	$10.97	1	$ 10.97		
	7.5			**MASONRY**						
62	7.5	10	200	Remove brick and reset 50 sq. ft. minimum	sf	$19.46	1	$ 19.46		
63	7.5	10	400	Bell tile coping remove and reset	lf	$2.02	1	$ 2.02		
64	7.5	10	500	Coping stone remove and reset	sf	$7.71	1	$ 7.71		
	7.6			**METAL WORK**						
65	7.6	10	100	Remove metal decking	sf	$1.03	1	$ 1.03		
66	7.6	10	200	Install metal decking	sf	$6.35	1	$ 6.35		
67	7.6	20	100	Remove counter flashing	lf	$0.73	1	$ 0.73		
68	7.6	20	200	Counterflashing .040 alum 6" wide	lf	$3.37	1	$ 3.37		
69	7.6	20	300	Counterflashing 16 oz. 6" wide	lf	$3.81	1	$ 3.81		
70	7.6	30	100	Remove metal edge	lf	$4.20	1	$ 4.20		
71	7.6	30	200	Metal edge free floating MF 4"-8"	lf	$26.58	1	$ 26.58		
72	7.6	30	210	Metal edge free floating painted 4"-8"	lf	$27.71	1	$ 27.71		
72	7.6	30	220	Metal edge pre-formed MF	ea	$57.13	1	$ 57.13		

CUMBERLAND COUNTY SCHOOLS ROOF LIC TASK ORDER	LEA-Unit #	STATEMENT OF ROOFING PROJECT SCOPE
SCHOOL _____	260 -	
ADDRESS _____		
_____		Date
TASK ORDER NO. _____		
BUILDING NO / PLAN NO - _____		

	DIV	SEC	ITEM	DESCRIPTION	units	$/unit	Measurements	Budget Costs	CCS Initials	Contractor Initials
74	7.6	30	230	Metal pre-formed corner painted	ea	$68.46	1	$ 68.46		
75	7.6	30	240	Gravel stop .040 painted 4"-6"	lf	$6.00	1	$ 6.00		
76	7.6	40	100	Remove metal gutter	lf	$1.42	1	$ 1.42		
77	7.6	40	200	Gutter .050 5" MF OG/box	lf	$8.11	1	$ 8.11		
78	7.6	40	300	Gutter .050 painted 5" OG/box	lf	$8.47	1	$ 8.47		
79	7.6	50	100	Remove downspouts	lf	$0.45	1	$ 0.45		
80	7.6	50	200	Downspouts alum. .024 3x4 painted	lf	$5.74	1	$ 5.74		
81	7.6	60	400	Metal trim .032 painted	sf	$3.64	1	$ 3.64		
82	7.6	60	500	Metal storm collar	ea	$75.52	1	$ 75.52		
83	7.6	60	600	Metal coping alum. .040 std. seam painted	sf	$5.33	1	$ 5.33		
84	7.6	70	100	Resolder joints in sheet metal	lf	$3.48	1	$ 3.48		
	7.7			**WOODWORK**						
85	7.7	10	100	Dem of plywood or 1x6 decking	sf	$0.67	1	$ 0.67		
86	7.7	10	200	Dem of std. 2x6 t & g decking	sf	$0.38	1	$ 0.38		
87	7.7	20	100	Plywood decking CDX 1/2"	sf	$1.56	1	$ 1.56		
88	7.7	20	200	Plywood decking CDX 5/8"	sf	$1.84	1	$ 1.84		
89	7.7	20	300	Plywood decking CDX 3/4"	sf	$2.14	1	$ 2.14		
90	7.7	20	400	Standard 1x6 decking	sf	$4.50	1	$ 4.50		
91	7.7	20	500	Standard 2x6 decking t & g	sf	$3.30	1	$ 3.30		
92	7.7	30	100	Cants woodfiber	lf	$0.90	1	$ 0.90		
93	7.7	30	200	Cants treated wood	lf	$1.69	1	$ 1.69		
94	7.7	40	100	Nailer treated 1x4	lf	$0.83	1	$ 0.83		
95	7.7	40	200	Nailer treated 2x4	lf	$0.99	1	$ 0.99		
96	7.7	40	300	Nailer treated 2x6	lf	$1.56	1	$ 1.56		
97	7.7	50	100	Curbing treated 2x12	lf	$4.71	1	$ 4.71		
98	7.7	60	100	Joist fir 2x6	lf	$2.64	1	$ 2.64		
99	7.7	60	200	Joist fir 2x10	lf	$2.78	1	$ 2.78		

CUMBERLAND COUNTY SCHOOLS ROOF LIC TASK ORDER	LEA-Unit #	STATEMENT OF ROOFING PROJECT SCOPE
SCHOOL _____ ADDRESS _____ _____ TASK ORDER NO. _____ BUILDING NO / PLAN NO - _____	260 -	Date

	DIV	SEC	ITEM	DESCRIPTION	units	$/unit	Measurements	Budget Costs	CCS Initials	Contractor Initials
	7.8			**ROOF SPECIALTIES & ACCESSORIES**						
100	7.8	10	100	Remove roof hatch	ea	$155.06	1	$ 155.06		
101	7.8	10	200	Roof hatch alum. 2.5x3	ea	$986.85	1	$ 986.85		
102	7.8	10	300	Roof hatch alum larger sizes	sf	$123.39	1	$ 123.39		
103	7.8	20	100	Remove existing roof drain	ea	$426.16	1	$ 426.16		
104	7.8	20	200	Install new roof drain	ea	$583.75	1	$ 583.75		
105	7.8	20	300	Reflash existing roof drain	ea	$173.47	1	$ 173.47		
106	7.8	20	400	Plumbing stack #4 lead	ea	$76.25	1	$ 76.25		
107	7.8	20	500	Scupper 16 oz. match existing	ea	$109.08	1	$ 109.08		
108	7.8	30	100	Remove existing walkways	sf	$0.38	1	$ 0.38		
109	7.8	30	200	Walkway, BUR	sf	$4.43	1	$ 4.43		
110	7.8	40	100	Roof ventilators	ea	$539.32	1	$ 539.32		
111	7.8	50	100	Roof ladder, 20 ft & up w/o cage	lf	$65.45	1	$ 65.45		
112	7.8	50	200	Roof laddder, 20 ft up w/ cage	lf	$167.96	1	$ 167.96		
113	7.8	50	300	Roof ladder, security ladder guard	sf	$43.64	1	$ 43.64		
114	7.8	60	100	Termination bar	lf	$5.27	1	$ 5.27		
115	7.8	70	100	Pitch pocket, 16 oz. 4x4	ea	$109.63	1	$ 109.63		
116	7.8	70	200	Pitch pocket, 16 oz. 8x8	ea	$134.76	1	$ 134.76		
117	7.8	70	300	Pitch pocket resurface only	ea	$7.09	1	$ 7.09		
118	7.8	80	100	Expansion joint butyl/neoprene 16 oz.	lf	$26.00	1	$ 26.00		
119	7.8	80	200	Exp. Jt. CSPE reinforced	lf	$39.27	1	$ 39.27		
120	7.8	80	300	PVC Support	ea	$35.93	1	$ 35.93		

CUMBERLAND COUNTY SCHOOLS ROOF LIC TASK ORDER

SCHOOL _____

ADDRESS _____

_____

TASK ORDER NO. _____

BUILDING NO / PLAN NO - _____

LEA-Unit #

260 -

STATEMENT OF ROOFING PROJECT SCOPE

	DIV	SEC	ITEM	DESCRIPTION	units	$/unit	Measurements	Date	Budget Costs	CCS Initials	Contractor Initials
	7.9			**FLUID APPLIED ROOFING**							
121	7.9	10	100	HydroStop Premium Coat System (HSPCS)	sf	$5.10	1		$ 5.10		
	7.9	10	200	Unisil Silicon Roof Coating (10 Year Rate)	sf	$5.00	1				
									$ -		
	7.10			**ROOF WARRANTY & GUARANTEES**					$ -		
122	7.10	10	100	Warranty re-roof 10 yr less 10,000 s.f.	ea	$1100.00	1		$ 1,100.00		
123	7.10	10	200	Warranty re-roof 10 yr over 10,000 s.f.	sf	$0.16	1		$ 0.16		
124	7.10	20	100	Guarantee - Contractors 3-year guarantee	sf	$0.00	1				

$ 5,445.78

PURCHASE ORDER #_____**WO#**_____

CONTRACTOR'S SIGNATURE: _____

DATE: _____

OWNER'S SIGNATURE: _____

DATE: _____

ATTACHMENTS:

1. PROPERTY ACCOUNTING ROOF PLAN, AREA WITHIN PROJECT SCOPE MARKED AND DATED _____

2. ADDITIONAL CONDITIONS OR COMMENTS:_____

_____

_____

3. CUMBERLAND COUNTY SCHOOLS LINE ITEM / PERFORMANCE SPECIFICATION DATED _____ IS INCLUDED BY REFERENCE.

THIS PROJECT IS NOT AUTHORIZED UNTIL A PURCHASE ORDER NUMBER IS ENTERED ABOVE AND PURCHASE ORDER IS RECEIVED BY CONTRACTOR.

TOTAL PAGES IN THIS STATEMENT OF PROJECT SCOPE_____

DAILY WORK LOG

CUMBERLAND COUNTY SCHOOLS

SCHOOL_____
PROJECT_____
CONTRACTOR_____
NOTICE TO PROCED DATE_____
MOBILIZATION DATE_____

DATE	# OF EMPLOYEES ON SITE	MAN HOURS	NOTES

*Man hours = total number of hours worked by all employees on site per day

Form LOG99-00

CHANGE ORDER Number_____

DATE_____
SCHOOL _____
TASK ORDER TO REFERENCE _____
DESCRIPTION/SCOPE_____
_____
_____

Line Item & Description	UNIT PRICE	X	QUANTITY	=	TOTAL
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
		x		=	$
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	TOTAL COST FOR THIS CHANGE			=	$

Ref - P.O. #_____Ref - CCS W.O.#_____

Signature of Owner_____Date_____

Signature of Contractor_____Date_____

SUBSTITUTION OF MATERIALS & PRODUCTS FORM

To: Cumberland County Schools
Attn: Phillip Perry
Maintenance Director / Project Manager
810 Gillespie Street
Fayetteville, North Carolina 28306
phillipperry@ccs.k12.nc.us

Project Name: _____

The undersigned requests that the following product / materials be considered for substitution in lieu of the specified item in the Project Manual or on the Drawings.

Section_____ Page_____ Paragraph_____ Drawings Page _____Detail_____

Description of Item_____

_____

Proposed Substitution: _____

_____

The undersigned certifies that the following statements are correct, unless modified on an attachment:

1. The proposed substitution is equal to or better in appearance, function and quality to the specified item, in all respects and is suitable for inclusion in the work.

2. Attached is 1 copy of the manufacturers Product Description, Specification, Data Sheets, Test Data & color charts.

3. We will furnish a physical sample if requested by the Owner.

4. Every variation of this product is to be listed and clearly delineated on the submission.

5. This substitution will require no dimensional changes to the drawings and will have no effect on other trades, the construction schedule or warranty requirements.

6. List similar type projects in which product is used.

7. Verification from the manufacturer that product has been in use a minimum of 2 years at similar projects.

Contractor's Signature Date

Approved _____ Disapproved _____

Owner's Signature Date

07.1 10 100 Pressure Cleaning

Part I – Procedures

A. Use clean, fresh water to remove oil, dirt, grease, chalk and other debris.
B. Use power washer unit at pressures of 2,000 to 5,000 psi with flow rates of 4 to 14 gallons per minute.
C. Tip size and distance from surface depends upon amount of contaminants of surface to be cleaned.
D. After use of detergents, surface must be washed with clean water to remove residue.

07.1 10 200 Waterproofing, asphalt emulsion coating, brush applied, per coat.

Part I - Material

A. A cold applied modified asphalt emulsion used as a protective coating on smooth roofing and flashings. Application rate for flashings – 3 gallons per square per coat. For new roof application, 4 gallons per square per coal. Must carry UL/FM approved fire ratings.

Part II – Procedures

A. All areas to receive treatment must be clean, dry and smooth.
B. Coating to be applied a s specified on manufacturer's data sheets and at specified rates.
C. Deliver materials to job site with original labels – legible and intact. Protect from moisture. Damaged containers will not be accepted.

07.1 10 300 Waterproofing, rubberized coating, brush applied, per coat.

Part I – Material

A. Butyl acrylic emulsion used as protective coating.

Part II – Procedures

A. All areas to receive treatment must be clean, dry and smooth.
B. Coating to be applied a s specified on manufacturer's data sheets and at specified rates.
C. Deliver materials to job site with original labels – legible and intact. Protect from moisture. Damaged containers will not be accepted.

07.110 400 Waterproofing, acrylic, brush applied (smooth), per coat

Part I – Material

A. Vinyl / acrylic resin damp-proofing used on masonry surfaces.

Part II – Procedures.

A. All areas to receive treatment must be clean, dry and smooth.
B. Coating to be applied as specified on manufacturer's data sheets and at specified rates.
C. Deliver Materials to jobsite with original labels – legible and intact. Protect from moisture. Damaged containers will not be accepted.

07.1 10 500 Waterproofing, acrylic, brush applied (textured), per coat.

Part I – Materials

A. Vinyl / acrylic resin dam-proofing used on masonry surfaces

Part II – Procedures

A. All areas to receive treatment must be clean, dry and smooth.
B. Coating to be applied a s specified on manufacturer's data sheets and at specified rates.
C. Deliver materials to jobsite with original labels – legible and intact. Protect from moisture. Damaged containers will not be accepted.

07.1 10 600 Waterproofing, non-pigmented alkyltrikosy silane, sprayed on, 1 coat – vertical surfaces

Part I – Material

A. Non-pigmented Alkyltrialkoxy Silane

Part II – Procedures

A. All areas to receive treatment must be clean, dry and smooth.
B. Coating to be applied as specified on manufacturer's data sheets and at specified rates
C. Deliver materials to the job site with original labels – legible and intact. Protect from moisture. Damaged containers will not be accepted.

07.1 10 700 Waterproofing, non-pigmented alkyltrikosy silane, sprayed on, 1 coat – horizontal surfaces

Part I – Material

B. Non-pigmented Alkyltrialkoxy Silane

Part II – Procedures

D. All areas to receive treatment must be clean, dry and smooth.
E. Coating to be applied as specified on manufacturer's data sheets and at specified rates

F. Deliver materials to the job site with original labels – legible and intact. Protect from moisture. Damaged containers will not be accepted.

07.1 20 100 Caulking, remove, existing, clean and prime joint.

Part I – Materials

A. Primer as specified by manufacturer.

Part II – Procedures

A. Remove existing caulk from joints.
B. After joint has been cleaned, prime with primer as specified by manufacturer's specifications.
C. Install specified backer rod to achieve required joint depths.
D. Use Bond Breaker Tape as manufactured by IM or an approved equal, where required.
E. Install sealant in accordance to manufacturer's published Spec Data Sheets in accordance with ASTM C-804, Sealants. Tool joints concave or convex as recommended by caulking manufacturer.
F. Joints are to be free of air pockets, foreign matter, sealed ridges and sags.
G. Adjoining surfaces and joints shall be free of smears and other soiling. Excess caulking will be removed.

07.1 20 300 Caulking, polyurethane, 1 component ¼" x ¼", in place.

Part I – Material

A. Polyurethane base, single component, chemical curing: conforming to FS-TT-S-00230 C and ASTM C-804, Shore hardness A-25 min. – 35 maximum.
B. Color as specified by Work Order

Part II – Procedure

A. Wipe prepared joint free of debris.
B. Make sure joint depth is correct using backer rod as specified by material manufacturer's specifications.
C. Install bond breaker tape where specified.
D. Install caulking into joint and tool convex or concave per manufacturer's specifications.
E. Finish joint to be free of wrinkles, sags, ridges, air pockets, and foreign debris.
F. Clean adjoining surfaces.

07.1 20 400 Caulking, polyurethane, 1 component ½" x ½", in place.

Part I – Material

A. Polyurethane base, single component, chemical curing: conforming to FS-TT-S-00230 C and ASTM c-804, shore hardness A – 25 min. – 35 maximum.
B. Color as specified by Work Order.

Part II – Procedure

A. Wipe prepared joint free of debris.
B. Mase sure joint depth is correct using backer rod as specified by material manufacturer's specifications.
C. Install bond breaker tape where specified.
D. Install caulking into joint and tool convex or concave per manufacturer's specifications
E. Finish joint to be free of wrinkles, sags, ridges, air pockets and foreign debris.
F. Clean adjoining surfaces.

07.1 20 500 Caulking, silicone rubber, ¼" x ½", in place.

Part I – Material

A. Silicone base, single component, chemical curing: conform to FS-T0S-1543, Class A, shore hardness A – 50 maximum.
B. Non-Staining
C. Color as specified by Work Order.

Part II – Procedure

A. Wipe prepared joint free of debris.
B. Make sure joint depth is correct using backer rod as specified by material manufacturer's specifications.
C. Install bond breaker tape where specified.
D. Install caulking into joint and tool convex or concave per manufacturer's specifications.
E. Finish joint to be free of wrinkles, sags, ridges, air pockets and foreign debris.
F. Clean adjoining surfaces.

07.1 30 100 Backer Rod, polyethylene, ¼" diameter. Installed in pre-prepared opening.

Part I – Material

A. Closed cell polyethylene, extruded, round.
B. Lightweight, non-impregnated, non-bleeding, non-staining, odor free.
C. Chemical resistant, with negligible water absorptive characteristics.
D. Meet or exceed ASTM D-994-77.

Part II – Procedures

A. Inspect joint to make sure all preparations are complete.

B. Install backer into joint at depth specified by caulking manufacturer, minimum 25% - maximum Compression.
C. Joint ends to be flush with no gaps.
D. Must be installed same day as caulking.

07.1 30 200 Backer Rod, polyethylene, ½" diameter. Installed in pre-prepared opening.

Part I – Material

A. Closed cell, polyethylene, extruded, round.
B. Lightweight, non-impregnated, non-bleeding, non-staining, odor free.
C. Chemical resistant, with negligible water absorptive characteristics.
D. Meet or exceed ASTM d-994-77.

Part II – Procedures

A. Inspect joint to make sure all preparations are complete.
B. Install backer into joint at depth specified by caulking manufacturer, minimum 25% - maximum Compression.
C. Joint ends to be flush with no gaps.
D. Must be installed same day as caulking.

07.1 30 300 Backer Rod, polyethylene, ¾" diameter. Installed in pre-prepared opening.

Part I – Material

A. Closed cell, polyethylene, extruded, round.
B. Lightweight, non-impregnated, non-bleeding, non-staining, odor free.
C. Chemical resistant, with negligible water absorptive characteristics.
D. Meet or exceed ASTM d-994-77.

Part II – Procedures

A. Inspect joint to make sure all preparations are complete.
B. Install backer into joint at depth specified by caulking manufacturer, minimum 25% - maximum Compression.
C. Joint ends to be flush with no gaps.
D. Must be installed same day as caulking.

07.1 40 100 Building paper, asphalt sheathing paper, 1 ply, 15#, in place.

Part I – Materials

A. 15 lb. inorganic felt to meet or exceed Federal Spec. HH-F-595-B, Type 15A, Style B, ASTM D-226-77, unperforated.

B. Nails are to be hot dipped galvanized 11 or 12 gauge barb shank, with 3/8-inch heads. Sharp pointed of sufficient length to penetrate deck 3/4-inch or 1-inch capped Simplex or Maze nails or approved equal.

Part II – Procedures

A. After deck inspection, nail 15 lb. felt to roof-deck with approved fasteners as specified.
B. Felts to run shingle fashion starting at low point and running to ridge.
C. Side laps to be 2-inches, minimum. End laps 6-inches minimum.
D. Seal penetrations with approved mastic to meet or exceed ASTM D-2822 and Federal Spec. SS C-153, Type I – asbestos free.

07.1 40 200 Building paper, red rosin paper, 5 sq. rolls, 4 lbs. per sq., in place.

Part I – Materials

A. Red rosin paper – weighing 4 lbs. per 100 sq. ft. – meet ASTM D-549-74.
B. Fasteners as specified by manufacturer's specification and deck type.

Part II – Procedures

A. Mechanically fasten red rosin to nailable deck with approved fasteners. Fastening pattern to meet FM I-90 and roofing manufacturer's specification.

07.1 50 100 Vapor retarder or Base Sheet, 1 Ply composite ply, applied in Premium III asphalt, in place.

Part I – Material

A. Asphalt water based primer to meet ASTM D-3960-87.
B. Asphalt, Premium III steep, UL Class A, ASTM D-312-84.
C. Composite ply, ASTM D-228-90a, 36-inch wide.

Part II – Procedure

A. Prime existing with primer at a rate of 150 – 200 sq.ft. per gallon.
B. Install one ply of specified felt in a continuous mopping of specified asphalt at a rate of 30 lbs. per square per ply.
C. Lap edges 4 inches and end laps 6 inches. Broom all plies at application. Extend all plies to top of cant and seal.
D. Glaze coat finished piles with asphalt specified at a rate of 15 lbs. per square.

END OF SECTION 07.1 00 000

07.2 10 100 Demolition of roof insulation, per inch of depth.

Part I – Procedures

A. Remove existing insulation down to roof deck.
B. Remove all debris from job site and dispose of in an approved landfill.
C. Clean all debris from flutes in deck.
D. All work to comply with OSHA, NRCA, EPA, USPS, and local building codes and regulations.
E. Remove all fasteners from decking, if applicable.

07.2 10 200 Demolition of lightweight cementitious fill, per inch of depth.

Part I – Procedures

A. Using mechanical, manual, or other approved means, remove designated fill.
B. Clean sub-deck of all debris.
C. Dispose of all debris in approved dumpsite.
D. Using self-tapping, coated metal deck fastener, reattach laps, seams and loose metal as needed.

07.2 30 100 Roof deck insulation, isocyanurate in 4' x 4' or 4' x 8' sheets, 1" thick, R-5.6, applied in Type III asphalt.

Part I – Material

A. Isocyanurate, HH-I-1972/GEN and HH-I-1972/2 Fire Approval Class I and/or labeled with UL/FM labels.
B. Type III, steep asphalt to meet or exceed ASTM.D312-84 applied at a rate of 30 lbs. per 100 square feet.

Part II – Procedures

A. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following
    a. Hot-applied – adhere insulation to primed deck with continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    b. Cold applied – to thermal barrier with a continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    c. Hot applied to sub-insulation – adhere in continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
B. Insulation must meet UL and FM requirements.

C. Insulation not to have over ¼-inch joints between boards.
D. Joints must be staggered a minimum of 12-inches.
E. All workmanship to comply with NRCA, USPS, FM UL and roofing material manufacturer's specifications and/or guidelines.

07.2 30 200 Roof deck insulation, isocyanurate in 4' x 4' or 4' x 8' sheets, 1-1/2" thick, R-8.4, applied in Type III asphalt.

Part I – Material

A. Isocyanurate, HH-I-1972/GEN and HH-I-1972/2 Fire Approval Class I and/or labeled with UL/FM labels.
B. Type III, steep asphalt to meet or exceed ASTM.D312-84 applied at a rate of 30 lbs. per 100 square feet.

Part II – Procedures

A. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following
    a. Hot-applied – adhere insulation to primed deck with continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    b. Cold applied – to thermal barrier with a continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    c. Hot applied to sub-insulation – adhere in continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
B. Insulation must meet UL and FM requirements.
C. Insulation not to have over ¼-inch joints between boards.
D. Joints must be staggered a minimum of 12-inches.
E. All workmanship to comply with NRCA, USPS, FM UL and roofing material manufacturer's specifications and/or guidelines.

07.2 30 300 Roof deck insulation, isocyanurate in 4' x 4' or 4' x 8' sheets, 1" thick, R-5.6, mechanically fastened.

Part I - Material

A. Isocyanurate, HH-I-1972/GEN and HH-I-1972/2 Fire Approval Class I and/or labeled with UL/FM labels.
B. Fasteners

Part II – Procedures

A. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following:
    a. Mechanically attached – mechanically attach single layer insulation to deck with approved fastener one (1) every 2 square feet, per Work Order.
        i. Install additional fasteners to ensure insulation is firm under foot.
        ii. Fasteners to be flush with top surface of insulation.
        iii. Filler insulation requires two (2) fasteners per piece.
        iv. Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs, minimum bearing surface 1-1/2 inches and do not exceed 35 psi per ASTM C-165. Attachment and flute span will be in accordance with insulation board manufacturer's recommendations and comply with UL, Class "A" and FM I-90 standards as published.
B. Insulation must meet UL and FM requirements.
C. Insulation not to have over ¼-inch joints between boards.
D. Joints must be staggered a minimum of 12-inches.
E. All workmanship to comply with NRCA, USPS, FM UL, and roofing material manufacturer's specification and/or guidelines.

07.2 30 400 Roof deck insulation, isocyanurate in 4' x 4' or 4' x 8' sheets, 1-1/2" thick, R-8.4, mechanically fastened.

Part I - Material

A. Isocyanurate, HH-I-1972/GEN and HH-I-1972/2 Fire Approval Class I and/or labeled with UL/FM labels.
B. Fasteners

Part II – Procedures

A. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following:
    a. Mechanically attached – mechanically attach single layer insulation to deck with approved fastener one (1) every 2 square feet, per Work Order.
        i. Install additional fasteners to ensure insulation is firm under foot.
        ii. Fasteners to be flush with top surface of insulation.
        iii. Filler insulation requires two (2) fasteners per piece.
        iv. Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs, minimum bearing surface 1-1/2 inches and do not exceed 35 psi per ASTM C-165. Attachment and flute span

will be in accordance with insulation board manufacturer's recommendations and comply with UL, Class "A" and FM I-90 standards as published.

B. Insulation must meet UL and FM requirements.
C. Insulation not to have over ¼-inch joints between boards.
D. Joints must be staggered a minimum of 12-inches.
E. All workmanship to comply with NRCA, USPS, FM UL, and roofing material manufacturer's specification and/or guidelines.

07.2 40 100 Roof deck insulation, fiberboard in 4' x4' sheets, 1/2-inch thick, R-1.39, applied in Type III asphalt.

Part I – Material

A. High density fiberboard ASTM C208-72 (1982) HH-I523C for fiberboard with flame spread of 25 maximum. To comply with ASTM D-84. Compressive resistance not more than 35 psi as per ASTM C-165.
B. Type III, steep asphalt to meet or exceed ASTM D312-84 applied at a rate of 30 lbs. per 100 square feet.

Part II – Procedures

A. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by the Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following:
    a. Hot applied – adhere insulation to primed deck with continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    b. Cold applied – to thermal barrier with a continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.

    c. Hot applied to sub-insulation – adhere in continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
        i. Walk down insulation
        ii. Spread bitumen pools. Do not let accumulate on surface of insulation.
    d. Mechanically attached – mechanically attach single layer insulation to deck with approved fastener on (1) every 2 square feet, per Work Order.
        i. Install additional fasteners to ensure insulation is firm under foot.
        ii. Fasteners to be flush with top surface of insulation.
        iii. Filler insulation requires two (2) fasteners per piece.
        iv. Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs, minimum bearing surface – 1-1/2 inches and do not exceed 35 psi per ASTM C-165. Attachment and flute span

will be in accordance with insulation board manufacturer's recommendations and comply with UL, Class "A" and FM I-90 standards as published.

B. Insulation must meet UL and FM requirements
C. Insulation not to have over 1/4-inch joints between boards.
D. Joints must be staggered a minimum of 12-inches.
E. All workmanship to comply with NRCA, USPS, FM, UL, and roofing material manufacturer's specification and/or guidelines.

07.2 40 200 Roof deck insulation, fiberboard in 4' x4' sheets, 1-inch thick, R-2.78, applied in Type III asphalt.

Part I – Material

C. High density fiberboard ASTM C208-72 (1982) HH-I523C for fiberboard with flame spread of 25 maximum. To comply with ASTM D-84. Compressive resistance not more than 35 psi as per ASTM C-165.
D. Type III, steep asphalt to meet or exceed ASTM D312-84 applied at a rate of 30 lbs. per 100 square feet.

Part II – Procedures

F. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by the Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following:
    a. Hot applied – adhere insulation to primed deck with continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    b. Cold applied – to thermal barrier with a continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
    c. Hot applied to sub-insulation – adhere in continuous mopping of steep asphalt at a rate of 30 lbs. per 100 square feet.
        i. Walk down insulation
        ii. Spread bitumen pools. Do not let accumulate on surface of insulation.
    d. Mechanically attached – mechanically attach single layer insulation to deck with approved fastener on (1) every 2 square feet, per Work Order.
        i. Install additional fasteners to ensure insulation is firm under foot.
        ii. Fasteners to be flush with top surface of insulation.
        iii. Filler insulation requires two (2) fasteners per piece.
        iv. Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs, minimum bearing surface – 1-1/2 inches and do not exceed 35 psi per ASTM C-165. Attachment and flute span will be in accordance with insulation board manufacturer's

recommendations and comply with UL, Class "A" and FM I-90 standards as published.

G. Insulation must meet UL and FM requirements
H. Insulation not to have over 1/4-inch joints between boards.
I. Joints must be staggered a minimum of 12-inches.
J. All workmanship to comply with NRCA, USPS, FM, UL, and roofing material manufacturer's specification and/or guidelines.

07.2 40 300 Roof deck insulation, fiberboard in 4' x 4' or 4' x 8' sheets, 1/2" thick, R-1.39, mechanically fastened.

Part I - Material

A. High density fiberboard ASTM C208-72 (1982) HH-I-526C for fiberboard with flame spread of 25 max. To comply with ASTM D-84. Compressive resistance not more than 35 psi as per ASTM C-165.
B. Fasteners

Part II – Procedures

A. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following:
    a. Mechanically attached – mechanically attach single layer insulation to deck with approved fastener one (1) every 2 square feet, per Work Order.
        i. Install additional fasteners to ensure insulation is firm under foot.
        ii. Fasteners to be flush with top surface of insulation.
        iii. Filler insulation requires two (2) fasteners per piece.
        iv. Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs, minimum bearing surface 1-1/2 inches and do not exceed 35 psi per ASTM C-165. Attachment and flute span will be in accordance with insulation board manufacturer's recommendations and comply with UL, Class "A" and FM I-90 standards as published.
B. Insulation must meet UL and FM requirements.
C. Insulation not to have over ¼-inch joints between boards.
D. Joints must be staggered a minimum of 12-inches.
E. All workmanship to comply with NRCA, USPS, FM UL, and roofing material manufacturer's specification and/or guidelines.

07.2 40 400 Roof deck insulation, fiberboard in 4' x 4' or 4' x 8' sheets, 1" thick, R-2.78, mechanically fastened.

Part I - Material

C. High density fiberboard ASTM C208-72 (1982) HH-I-526C for fiberboard with flame spread of 25 max. To comply with ASTM D-84. Compressive resistance not more than 35 psi as per ASTM C-165.
D. Fasteners

Part II – Procedures

F. Furnish equipment, materials, tools and labor to install rigid roof insulation of the type and thickness required by Work Order. Include the adhering of the insulation to the substrate with approved fastening method as noted in the following:
    a. Mechanically attached – mechanically attach single layer insulation to deck with approved fastener one (1) every 2 square feet, per Work Order.
        i. Install additional fasteners to ensure insulation is firm under foot.
        ii. Fasteners to be flush with top surface of insulation.
        iii. Filler insulation requires two (2) fasteners per piece.
        iv. Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs, minimum bearing surface 1-1/2 inches and do not exceed 35 psi per ASTM C-165. Attachment and flute span will be in accordance with insulation board manufacturer's recommendations and comply with UL, Class "A" and FM I-90 standards as published.
G. Insulation must meet UL and FM requirements.
H. Insulation not to have over ¼-inch joints between boards.
I. Joints must be staggered a minimum of 12-inches.
J. All workmanship to comply with NRCA, USPS, FM UL, and roofing material manufacturer's specification and/or guidelines.

07.2 50 100 Roof deck insulation, lightweight cellular concrete fill, R-value depending on thickness, per inch of depth.

Part I – Material

A. Cellular concrete –

Part II – Procedures

A. Install cellular concrete to prepared area, two (2) inches minimum thickness, sloped to existing drains. Slope: 1/8 inch per running foot – minimum.

a. Cover deck with slurry coat. Graduate thickness of insulation from high to low point. Stagger end joints. Butt all joints to moderate contact. Allow slurry coat / insulation to set twenty-four (24) hours.
b. Install top pour of cellular concrete over insulation. Fill all bond holes. Minimum top cover thickness over insulation: Two (2) inches.
c. Use screeds and darbies to attain smooth, even surface.
d. Plan work to minimize cold joints. Scarify cold joints to provide mechanical key.
e. Protect installation from freezing until initial set is attained.
f. Provide reinforcing mesh into all areas where cellular concrete is placed. Butt or space sides not more than four (4) inches. Cut mesh to fit all walls, curbs, and openings. (NOTE): Mesh required if needed to pass FM requirements.

B. Mix and pump cellular concrete into place using personnel and equipment approved by cellular concrete manufacturer. Mixing time shall be sufficient to provide a consistent thorough mix that will flow freely and screed to a smooth surface.
C. Proportion cellular concrete to provide a density at point of placement of forty (40) lbs. Per cubic foot [+ five (5) percent and twenty-eight (28) compressive strength of 160 psi].
D. Place only when air temperatures of 40 F or above are predicted for the first 24 – 48 hours after placement.
E. Provide daily two (2) ply bituminous tie-ins/connections at cellular concrete/roofing termination.
F. Remove embedded gravel from top ply along termination. Width: Eight (8) inches.
G. Install five (5) course felt/mesh bituminous reinforcement; extend membrane at least six (6) inches onto roofing and at least six (6) onto top surface of cellular. Use asphalt mastic or flashing bitumen. Make watertight.
H. At beginning of next day's work, remove tie-in connection.
I. Seal surface cracks with asphalt mastic.
J. Provide spray application of curing compound to entire surface within twenty-four (24) hours after placement.
K. Roofing readiness: Allow cellular concrete to cure to achieve sufficient surface hardness to adequately withstand foot traffic and other light roofing operations without damage (approximately three (3) days). Ensure exposed surface is dry.

07.2 60 200 Roof deck insulation, isocyanurate (black facer only), tapered, ¼" per foot slope, applied in Type III asphalt, per inch of depth.

Part I – Material

A. ¼-inch tapered iso-board (black facer only) to meet or exceed HH-I_1972/GEN and HH-I-1972/2 fire approval Class I and labeled with UL/FM Labels.
B. Type III, steep asphalt to meet or exceed ASTM D312-84 at a rate of 30 lbs. per 100 square feet.

Part II – Procedures

A. Install tapered insulations as outlined on Work Order.
B. Insulation shall have a minimum thickness of 1-inch at any point on deck.
C. Taper to be laid in a manner to eliminate ponding and allow for positive drainage.
D. Set insulation in a continuous mopping of asphalt.
E. Make sure to embed insulation into asphalt, leaving no voids or loose boards. Joint over ¼-inch must be filled.
F. Apply asphalt at a rate of 30 lbs. per 100 square feet.
G. Maximum asphalt temperature will be 500 F.
H. Application temperature range: 100 – 475 F.
I. Must be free of contaminants.
J. Apply in continuous moppings. Do not set boards in cold asphalt.

END OF SECTION 07.2 00 000

07.30 10 100 Remove composition singles and felts to decking.

Part I – Material

A. Felt to be 15 lbs. inorganic to meet ASTM D-22178, Type IV and carry UL labels.

Part II – Procedures

A. Remove roofing as specified by Work Order.
B. Dispose of debris in approved dumpsite.
C. Inspect deck after old roof removal and repair any defects as outlined in Work Order.
D. Unit price includes one layer of 15 lb. felt installed after removal.

07.3 20 200 Shingles, fiberglass, Class A 260/300 lb./square premium laminated multi-layered shingles.

Part I – Material

A. Shingles as specified by Work Order. Color to be chosen by Contracting Officer.
B. Material shall meet or exceed ASTM D-3018, type I and carry UL, Class A and wind uplift labels.
C. Material to meet or exceed Federal spec. SS-S-94a, Type I, SS-S-001534, Class A, Type I.
D. Hip and ridge to be factory pre-cut where applicable.
E. Nails are to be hot galvanized, 11 or 12 gauge, barb shank, 3/8-inch heads, sharp pointed conventional or sufficient length to penetrate at least ¾-inch into decking. Staples are not permitted.
F. Bituminous plastic cement shall meet or exceed Federal Spec. SS-C-153C, Type I, Class A.
G. Felt to be 15 lbs. inorganic to meet ASTM D-22178, Type IV, and carry UL labels.

Part II – Procedures.

A. Inspect deck after old roof removal and repair any defects as per Work Order.
B. Install base felts and valley felts as per Work Order.
C. Install singles per manufacturer's specification as per Work Order.
D. Where roof slopes are less than 4-inches in 12, the installation requires a double layer of 15 lb. asphalt felt prior to application of the shingles. NOTE: The unit price includes one layer of underlayment. If second layer is required, it will be treated as a separate line item on the Work Order.

END OF SECTION 07.3 00 000

NOTE: Refer to and follow individual product manufacturer's technical specifications and recommendations for surface preparation and application and any further details required.

07.4 10 100 Remove built-up roofing, multi-ply with aggregate, non-asbestos.

Part I – Procedures

A. Remove existing roofing down to deck or insulation.
B. Remove all debris from job site and dispose of in an approved landfill.
C. Clean all debris from flutes in deck.
D. All work to comply with OSHA, NRCA, EPA, USPS , and local building codes and regulations.
E. Remove all fasteners from decking, if applicable.

07.4 10 110 Spud embedded aggregate

Part I – Procedure

A. Using roofing spades, Maddox or mechanical device, remove 1 sq.ft. of embedded gravel from roof membrane.

07.4 10 120 Sweep loose aggregate from roof membrane.

Part I – Procedures

A. Remove all loose gravel from roof membrane by power broom.
B. Dispose of in approved dump.

07.4 10 130 Wet vacuum loose aggregate from roof membrane

Part I – Procedures

A. Using mechanical wet-vac system, remove all loose rock and debris from roof membrane as specified by Work Order.

07.4 10 200 Remove single-ply roof, ballast, and membrane only.

Part I – Procedures

A. Remove existing ballast from surface of roof membrane using manual labor, roof vacuum or other mechanical means.
B. Do not pile ballast in piles that would exceed load limit on total roof system.
C. All ballast to be removed by use of closed shoot or mechanically. Do not throw from roof into truck or dumpster.

D. Cut single ply membrane into pieces that are ono larger than can be removed safely.
E. Dispose of single ply membrane in approved dump site.
F. Contractor is responsible to determine what local regulations for disposal are.
G. Do not remove more membrane than can be replaced or dried in daily.

07.4 10 210 Remove single ply roof, membrane (partial or fully adhered).

Part I - Procedures

A. Cut single ply membrane into pieces that are no larger than can be removed from roof safely.
B. Dispose of membrane in approved dumpsite.
C. Contractor is responsible to determine what local regulations for disposal are.
D. Do not remove more membrane than can be replaced or dried in daily.

07.4 10 220 Remove single ply roof, membrane (mechanically attached).

Part I – Procedures

A. Cut single ply membrane into pieces that are no larger than can be removed from the roof safely.
B. Using screw gun or drill motor, remove single ply fasteners.
C. Contractor is responsible to determine what local regulations are for single ply disposal.
D. Do not remove more membrane than can be replaced or dried in daily.

07.4 20 100 3 ply Type IV fiberglass felt, Premium III asphalt.

Part I – Material

A. Asphalt primer – water based. Must meet ASTM D-3960-87.
B. Asphalt, Premium III steep to meet UL, Class A, ASTM, D-312-84.
C. Fiberglass base sheet, Type G2, ASTM D-4601-86.

Part II – Procedures

A. Prime existing surface with primer specified at a rate of 150-200 square feet per gallon.
B. Continuously mop three plies of specified fiberglass with interply asphalt at a rate of 30 lbs. per square per ply. Felts to be installed according to manufacturer's specification and/or NRCA guidelines.

07.4 30 200 Built-up roofing, 4 plies, Type VI Fiberglass felts, Premium III asphalt.

Part I – Material

A. Primer
B. Type VI Fiberglass felts. Must meet or exceed ASTM D-2178-88A Type VI.

C. Asphalt Premium III Steep, UL, Class A, ASTM D-312-84.

Part II – Procedures

A. Starting at low point, install 4 plies of approved Type VI fiberglass felts to substrate. Plies to run shingle fashion.
B. Plies to be adhered with approved asphalt at a rate of 30 lbs. per square per ply.
C. All felts to be broomed at time of application.
D. Fish-mouths, voids, or wrinkles will not be accepted.
E. Extend all plies 1-inch above cant and seal.
F. If required by Work Order, install glaze coat of asphalt at a rate of 15 lbs. per square.
G. Roofing system must be approved by system manufacturer.
H. Top surface as outlined on Work Order.
I. System must carry all UL, Class A, and FM I-90 approvals.

07.4 30 400 Built-up roof, 3 plies, Type G2 fiberglass, cold process adhesive. (Quantity 1-500 sq.ft.)

Part I – Material

A. Fiberglass Base Ply – 33 lb., Type G-2, ASTM D-4601-86 approved by system manufacturer.
B. Cold Asphalt Adhesive, UL approved must meet SCAQMD VIC limits, where applicable. Zero asbestos content per ASTM D-276-87.
C. Surfacing per Work Order.
D. System to comply with UL and FM requirements.

Part II – Procedures

A. Install three plies Type G-2, 33 lb. glass base to approved substrate with cold asphalt adhesive at a rate of 3 gallons per square per ply.
B. Top surface with cold asphalt adhesive and approved finish coat as specified by Work Order. (Gravel or emulsion and reflective coating).
C. Plies to extend to top of cants and nail 8-inches o.c.
D. Wood nailers to provide membrane termination. Nailers per Work Order.
E. System must be approved by manufacturer.

07.4 30 500 Built-up roof, 3 plies Type G-2 fiberglass, cold process adhesive. (Quantity over 500 sq.ft.)

Part I – Material

A. Fiberglass Base Ply – 33 lb., Type G-2, ASTM D-4601-86 approved by system manufacturer.

B. Cold Asphalt Adhesive, UL approved must meet SCAQMD VIC limits, where applicable. Zero asbestos content per ASTM D-276-87.
C. Surfacing per Work Order.
D. System to comply with UL and FM requirements.

Part II – Procedures

A. Install three plies Type G-2, 33 lb. glass base to approved substrate with cold asphalt adhesive at a rate of 3 gallons per square per ply.
B. Top surface with cold asphalt adhesive and approved finish coat as specified by Work Order. (Gravel or emulsion and reflective coating).
C. Plies to extend to top of cants and nail 8-inches o.c.
D. Wood nailers to provide membrane termination. Nailers per Work Order.
E. System must be approved by manufacturer.

07.4 30 600 Built-up roof, 2 plies Type IV fiberglass, 1 ply modified bitumen sheet, Premium III asphalt.

Part I – Material

A. Asphalt, Premium III, UL Class A, ASTM D-312-84 with labels.
B. Type IV Fiberglass felts, ASTM D-2178-88-A, Type IV.
C. Modified bitumen sheet – STS elastomers with reinforcement. Thickness: 0.150 in., ASTM D-751-89. Tensile strength (230 lbf/in. MD-ASTM D-2523-84 @ 0 F (240 lbf/in. XM). Puncture RTMS 101C2031 (Modified).

Part II – Procedures

A. Install roofing plies starting at low point in shingle fashion with asphalt at a rate of 30 lbs. per square per ply.
B. Broom felts at application.
C. Install modified bitumen sheet in hot asphalt at a rate of 30 lbs. per 100 sq. ft. Roll edge to ensure positive bond. Broom out air pockets and voids at application. End laps 12 inches and staggered three feet minimum. Head lap 4 inches.
D. Top Surface to be granule unless noted by line item on Work Order.
E. System to be approved by modified bitumen manufacturer.

07.4 35 100 Build-up roof, surface with cold process adhesive and gravel.

Part I – Material

A. Cold Process Adhesive, UL, Class A, ASTM D-4479-93.
B. Asphalt primer
C. Roof gravel, Size 6 ASTM 1863-86.

Part II – Procedures

A. Prime roof surface with asphalt primer if specified by Work Order.
B. Apply flood coat of Cold Process Adhesive at a rate of 5 gallons per 100 sq. ft.
C. Broadcast roof gravel at a rate of 500 lbs. per square.
D. Roof gravel to be free of fines, sand and debris.

07.4 35 200 Built-up roof, surface with emulsion and granules.

Part I – Material

A. Primer, if specified on Work Order.
B. High performance rubberized emulsion.
C. #1, white ceramic roof granules

Part II – Procedures

A. Prime roof as required by Work Order.
B. Apply high performance rubberized emulsion to roof surface at a rate of 4 gallons per square.
C. Promptly install #1 ceramic roof granules into emulsion at a rate of 80 lbs. per square.

07.4 35 300 Built-up Roof, surface with emulsion and aluminum coating.

Part I – Material

A. Primer, if specified on Work Order.
B. High performance rubberized emulsion
C. Aluminum Reflective coating.

Part II – Procedures

A. Prime roof as required by Work Order.
B. Apply high performance rubberized emulsion at a rate of 4 gallons per 100 sq. ft. and let cure for 30 days.
C. Install aluminum reflective coating to roof surface at a rate of 1 gallon per 150 sq. ft., 2 coats required.

07.4 35 400 Built-up roof, surface coated with emulsion and with 1 ply polyester membrane.

Part I – Material

A. Asphalt primer, if required by Work Order.
B. High Performance Rubberized Emulsion, two coats.
C. One Ply stitched bonded polyester.

D. Aluminum Reflective coating, if required by work order.

Part II – Procedures

A. Prime roof as required by Work Order.
B. Apply high performance rubberized emulsion at a rate of 3.5 gallons per 100 sq. ft. - over and under the polyester mat - for a total of 7 gallons per 100 sq. ft. Let top coat of emulsion cure for 30 days if it is to be aluminized.
C. In first coat of emulsion, promptly roll in polyester mat, lap edges 2 inches with emulsion between laps.
D. Broom polyester mat lightly to wet out and fully embed mat.
E. Apply top coat of emulsion at 3.5 gallons per 100 sq.ft.
F. Install aluminum reflective coating at a rate of 200 sq.ft. per gallon per coat, if required by Work Order.

07.4 35 500 Built-up roof, surface with aluminum coating or paint

Part I – Material

A. Asphalt primer, if required by Work Order.
B. Aluminum reflective coating.

Part II – Procedures

A. Apply asphalt primer, if required by Work Order.
B. Coat roofing and/or flashings with aluminum reflective coating at a rate of 150 sq.ft per gallon, 2 coats.

07.4 35 600 Built-up roof, surface coated with white elastomeric emulsion

Part I – Material

A. Asphalt water based primer per Work Order.
B. Acrylic latex, elastomeric high solids emulsion, fire retardant coating.

Part II – Procedures

A. Prime roof with water based asphalt primer.
B. Apply Acrylic latex elastomeric emulsion at a rate of 4 gallons per 100 sq.ft.
C. Check application rate and apply second coat if light areas are observed.

07.4 40 100 Built-up roofing repairs; fibered asphalt mastic (trowel grade) with fiberglass mesh.

Part I – Material

A. Asphalt mastic.
B. Reinforcement Mesh
C. Primer

Part II – Procedures

A. Apply a 1/8-inch thick layer of mastic over repair area. Brush in reinforcement mesh removing all wrinkles. Apply second layer of mastic, install second layer of mesh extending 1-inch past last layer in all directions.
B. Always install same number of plies as removed (2 minimum).
C. Coat repair per Work Order.

07.4 40 300 Built-up roofing repairs, pitch based mastic with fiberglass mesh.

Part I – Materials

A. Pitch based mastic.
B. Reinforcement mesh.

Part II – Procedures

A. Apply a 1/8-inch thick layer of mastic over repair area. Brush in reinforcement mesh removing all wrinkles. Apply second layer of mastic, install second layer of mesh extending 1-inch past last layer in all directions.
B. Always install same number of plies as removed (2 minimum).
C. Coat repair per Work Order.

07.4 40 400 Built-up roofing repairs, elastomeric mastic with fiberglass mesh.

Part I – Materials

A. Pitch based mastic.
B. Reinforcement mesh.

Part II – Procedures

A. Apply a 1/8-inch thick layer of mastic over repair area. Brush in reinforcement mesh removing all wrinkles. Apply second layer of mastic, install second layer of mesh extending 1-inch past last layer in all directions.
B. Always install same number of plies as removed (2 minimum).
C. Coat repair per Work Order.

07.4 50 100 Built-up roofing, restoration, asphalt primer

Part I – Material

A. Asphalt primer VOC.

Part II – Procedures

A. Make sure surface is prepared as outlined by material manufacturer.
B. Apply primer to surface at a rate of 150 sq. ft. per gallon using sprayer, roller or brush as directed by material manufacturer.
C. Care should be taken to protect surrounding roof areas, cars, exterior of building and personnel from over-spray.

07.4 50 200 Built-up roofing, restoration. (Coal tar pitch roofs)

Part I – Material

A. Mastics per line item on Work Order.
B. Cold applied, penetrating tar base restaurant.
C. ½-inch white river rock, ASTM D-1863-86, size 6.

Part II – Procedures

A. Remove gravel and repair defects as outlined on Work Order.
B. Apply coal tar restaurant at a rate of 8 gallons per square, per manufacturer's specifications.
C. Material is to be spray applied, unless brushing only is specified by the manufacturer. A mechanical pump with a minimum ratio of 11:1 is to be used for material delivery.
D. Material may be warmed for ease of delivery, but the temperature must not exceed 110 F. The material will not be thinned in any manner.
E. Aggregate application – new aggregate, round white river rock ½-inch, shall be spread evenly on the treated mat surface at a rate of approximately 500 lbs. per square. The aggregate shall be clean and new. Crushed coral or slag will not be acceptable.
F. If a portion of roof mat is designated for resaturation, then only the same type and size aggregate will be replaced.

07.4 50 300 Built-up roofing, restoration, odorless. (Coal tar pitch or asphalt).

Part I – Material

A. Mastic per line item on Work Order.
B. Cold applied ecologically safe, odorless base resaturant.
C. ½-inch white river rock, ASTM D-1863-86, size 6.

Part II – Procedures

A. Remove gravel and repair defects as outlined on Work Order.

B. Apply coal tar restaurant at a rate of 8 gallons per square, per manufacturer's specifications.
C. Material is to be spray applied, unless brushing only is specified by the manufacturer. A mechanical pump with a minimum ratio of 11:1 is to be used for material delivery.
D. Material may be warmed for ease of delivery, but the temperature must not exceed 110 F. The material will not be thinned in any manner.
E. Aggregate application – new aggregate, round white river rock ½-inch, shall be spread evenly on the treated mat surface at a rate of approximately 500 lbs. per square. The aggregate shall be clean and new. Crushed coral or slag will not be acceptable.
F. If a portion of roof mat is designated for resaturation, then only the same type and size aggregate will be replaced.

07.4 60 100 Single-ply roof, Evaloy 60 mils reinforced, mechanically fastened.

Part I – Material

A. Evaloy membrane, 60 mil, reinforced with high strength polyester scrim (10 x 10).
B. Clean, solvent Tolulene.
C. Seam adhesive, heat seam and contact adhesive by membrane manufacturer.
D. Flashing adhesive, one part elastomer.
E. Flashing sheet, Elvaloy, 60 mil, reinforced.
F. Mechanical fastener, as specified by membrane manufacturer.

Part II – Procedure

A. Starting at low edge of roof, lay roofing sheet parallel to edge of roof. Outside edge to extend past outside edge of wood nailer 1/2".
B. Install mechanical fasteners and plates at top edge of sheet per manufacturer's specifications.
C. Lay next run of roofing sheet shingle fashion onto roof surface.
D. Each sheet to have 4" lap minimum. Lay all laps shingle fashion to allow for positive drainage.
E. Clean up all laps with approved solvent.
F. Adhere seams and end laps by heat welding or with approved contact adhesive as specified by manufacturer.
G. Roll lap with 2" steel roller to ensure positive adhesion.
H. Install flashing sheet in flashing adhesive to substrate a s specified by membrane manufacturer.

07.4 60 300 Single-ply roof, Evaloy, 60 mils, fully adhered.

Part I – Material

A. 60 mils., Evaloy membrane (white) 5' wide maximum.
B. Clean, solvent: Tolulene.
C. Seam adhesive, heat seam and contact adhesive, by membrane manufacturer.
D. Flashing sheet, 60 mil. Reinforced.
E. Flashing adhesive, one part elastomer.
F. Mechanical fasteners, as specified by manufacturer.

Part II – Procedures

A. Install roofing sheet parallel to roof edge and over nailer – 1/2" minimum.
B. Install mechanical fasteners at top edge of sheet a s specified by membrane manufacturer.
C. C. Laps to be 4" wide minimum.
D. Run all sheets parallel to roof edge to ensure positive drainage.
E. Clean all laps with approved solvent.
F. Adhere seams and end laps by heat weld or with approved contact adhesive as specified by manufacturer. Let dry.
G. Roll laps with 2" steel roller to ensure positive adhesion.
H. Install flashing sheets to substrate using flashing adhesive per manufacturer's specifications.

07.4 70 100 Single-ply roofing, repairs, (CSPE, PVC, EDPM & Evaloy)

Part I – Material

A. Single ply membrane to match existing.
B. Adhesives and mastics to match existing.
C. Sealants to match existing.

Part II – Procedures

A. Clean repair area.
B. Make repair as directed by Work Order.
C. NOTE: All work to conform to existing system manufacturer's specifications.

07.4 80 400 Flashing membrane, 2-ply Composite ply

Part I – Material

A. Composite ply, ASTM D-228-90a.
B. Aluminizer as specified by system manufacturer.

Part II – Procedures

A. Install two-ply flashing in continuous mopping of premium asphalt at a rate of 30 lbs. per square per ply. Not to exceed 12-inches height above roof, minimum height – 8-inches with 4-inches out onto roof from toe to cant.

07.4 80 500 Flashing membrane, CSPE.

Part I – Material

A. Hypalon (CSPE) reinforced 0.045 thick elastomer molded with high strength polyester scrim. To meet the following: ASTM D-751-79; ASTM E96-80; ASTM D-471-79; ASTM D-2136-84; ASTM D-413-82.
B. Flashing adhesive, elastomeric adhesive, one part, to meet ASTM D-276-85; ASTM D-1475-85; ASTM D-2196-81.
C. Asphalt mastic – heavy fibrated mastic with penetrating oils and plasticizing agents. UL approved, to meet ASTM D-276-85, ASTM D-2196-82, ASTM D-1475-85, 105 F, flash point per ASTM D-93-85.
D. Reinforcement mesh – vinyl coated, woven glass scrim, weight 1.32 lb/100 sq.ft. per ASTM D-146-78a (86), tensile strength 75 lbf. Per ASTM D-146-78a (86).

Part II – Procedures

A. Install elastomeric reinforced flashing membrane in a continuous application of elastomeric adhesive at a rate of 15 sq.ft. per gallon.
B. Remove all air, wrinkles and voids.
C. Flashings to extend 4-inches past toe of cant onto roof surface.
D. Strip inner roof edge of flashing sheet with reinforced mesh and asphalt mastic.
E. Flashing to be installed per membrane manufacturer's specification.

07.4 90 200 Copper roofing, 16 oz. standing seam

Part I- Material

A. 15 lb. felt underlayment.
B. Red rosin, ply sheet.
C. 1" Cap nails with 1" cap
D. 16 oz., soft copper, ASTM B 370-81.
E. Solder: ASTM B-4863 alloy 50B.
F. Flux; paste or liquid, FS-O-F-5066

Part II – Applicable Publications Describing material and installation methods for copper sheet roofing.

A. Copper sheet and strip for building construction.
B. "Copper and Common Sense" Design and Techniques by Revere Copper & Brass, Inc.

C. "Architectural Sheet Metal Manual" by the Sheet Metal and Air Conditioning Contractor's Association.

Part III – Procedures.

A. Install one layer red rosin and one layer 15 lb. felt underlayment to roof deck.
B. Install wooden batten straps to roof as specified in "SMACMA" manual.
C. Fabricate and install roof sheets per "SMACNA" Detail and Specification. "SMACNA" will be considered the minimum acceptance.

07.4 90 300 Copper roofing, 16 oz. flat seam.

Part I- Material

A. 15 lb. felt underlayment.
B. Red rosin, ply sheet.
C. 1" Cap nails with 1" cap
D. 16 oz., soft copper, ASTM B 370-81.
E. Sikder: ASTM B-4863 alloy 50B.
F. Flux; paste or liquid, FS-O-F-5066

Part II – Applicable Publications describing material and installation methods for copper sheet roofing.

A. Copper sheet and strip for building construction.
B. "Copper and Common Sense" Design and Techniques by Revere Copper & Brass, Inc.
C. "Architectural Sheet Metal Manual" by the Sheet Metal and Air Conditioning Contractor's Association.

Part III – Procedures.

A. Install one layer red rosin and one layer 15 lb. felt underlayment to roof deck.
B. Install wooden batten straps to roof as specified in "SMACMA" manual.
C. Fabricate and install roof sheets per "SMACNA" Detail and Specification. "SMACNA" will be considered the minimum acceptance.

END OF SECTION 07.4 00 000

07.5 10 200 Brick, remove and reset (quantity over 50 sq.ft.)

Part I – Material

A. Brick – dimension and color to existing. Must conform to ASTM C-216, Grade MW, Type FBX. Common brick – to meet ASTM C62-75A-SW.
B. Portland Cement – Type I of the specification for Portland Cement ASTM designation C150 or Type IA of specification of air-entraining Portland Cement, ASTM C-150.
C. Masonry Cement – ASTM designation C-91.
D. Hydrated Lime – Type S for masonry ASTM C-207.
E. Water- Clean and potable.
F. Color – To match existing.
G. Admixture – shall be integral treatment to reduce water content and shrinkage.
H. Fine aggregate – shall be clean natural sand conforming to ASTM C-144.
I. Mortar mix – shall be 1/2/8 mix made from materials as specified above.

Part II – Procedures

A. Furnish material, labor and equipment to perform work per Work Order.
B. Using chisels, grinders, etc., remove brick and/or joint.
C. Clean all mortar from repair area.
D. Mortar mix shall be 1/2/8 mix made from materials as specified above using a minimum amount of water that will give a workable mix.
E. All units will be laid with properly mortared vertical and horizontal joints. Units will not be moved or shifted once in place. All joints to be worked full with mortar.
F. Joints to match existing, approximately 3/8-inch, neatly concave and tooled.
G. Work shall be cleaned free of loose mortar.
H. Masonry work shall be laid up in a running bond with reinforcement every 16-inches vertically or as per Work Order.

07.5 10 400 Bell tile coping, remove and reset.

Part I – Material

A. Bell tile coping (to match existing).
B. Portland Cement – Type I of the specification for air-entraining Portland Cement, ASTM C-150.
C. Masonry Cement – ASTM designation C-91.
D. Hydrated Lime – Type S for masonry ASTM C-207.
E. Water- Clean and potable.
F. Color – To match existing.

G. Admixture – shall be integral treatment to reduce water content and shrinkage.
H. Fine aggregate – shall be clean natural sand conforming to ASTM C-144.
I. Mortar mix – shall be 1/2/8 mix made from materials as specified above.

Part II – Procedures

A. Cut back any mortar, asphalt mastic and/or caulking from joints.
B. Remove coping from wall being careful not to damage bell tile.
C. Remove all mortar from top of parapet. Protection of roof should be provided before work begins.
D. Apply mortar mix to top of parapet making sure not to contaminate face of building.
E. Set cleaned tile into fresh mortar mix and press into place.
F. Mortar joints in the tile and dress to form a water shed.
G. Waterproof joints after curing or cement (48 hours).

07.5 10 500 Coping stones, remove and reset.

Part I – Material

A. Coping stones to match existing as specified by Work Order.
B. Portland Cement – Type I of the specification for air-entraining Portland Cement, ASTM C-150.
C. Masonry Cement – ASTM designation C-91.
D. Hydrated Lime – Type S for masonry ASTM C-207.
E. Water- Clean and potable.
F. Color – To match existing.
G. Admixture – shall be integral treatment to reduce water content and shrinkage.
H. Fine aggregate – shall be clean natural sand conforming to ASTM C-144.
I. Mortar mix – shall be 1/2/8 mix made from materials as specified above.

Part II – Procedures

A. Cut back any mortar, asphalt mastic and/or caulking from joints.
B. Remove coping stones as required by Work Order, being careful not to damage stones.
C. Remove all mortar from top of parapet. Protection of roof should be provided before work begins.
D. Apply mortar mix to top of parapet making sure not to contaminate face of building.
E. Set cleaned coping stone in place leaving approximately 3/8-inch joint between stones.
F. Waterproof joints and stones as outlined by line item on Work Order.

END OF SECTION 07.5 00 000

07.6 10 100 Remove standard metal decking.

Part I – Procedures

A. Remove deteriorated decking.
B. Area below work must be protected and/or barricaded before deck removal starts.
C. Dispose of old decking in an approved dumpsite.
D. All decking must be replaced and covered daily.

07.6 10 200 Metal deck, installation

Part I – Material

A. Steel galvanized metal deck units; ASTM A-446, Grade A, galvanizing: ASTM A-525, G60 (SDI "Design Manual for Floor Decks and Roof Decks").
B. Coated self-tapping deck screws.
C. Welding per SWA "Structural Welding Code".
D. Rust inhibitive paint.

Part II – Procedures

A. Existing decking will be painted, if required.
B. Install deck units and accessories in accordance with manufacturer's recommendations and final shop drawings and as specified herein.
C. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks.
D. Place deck units in straight alignment for entire length of run of cells and with close alignment between cells at ends of abutting units.
E. Place deck units flat and square, secured to adjacent framing without warp or excessive deflection.
F. Do not place deck units on concrete supporting structure until concrete has cured and is dry.
G. Coordinate and cooperate with structural steel erector in locating decking bundles to prevent overloading of structural members.
H. Fastening Deck Units: fasten roof deck units to steel supporting members by not less than ½-inch diameter fusion welds or elongated welds of equal strength, spaced not more than 12-inches o.c. at supports, and at closer spacing where required for lateral force resistance.
I. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds and methods used in correcting welding work.

J. Use welding washers where recommended by deck manufacturer.
K. Lock side laps of adjacent deck units between supports with screws on 36-inch centers.
L. Provide reinforcement at opening to match existing.

07.6 20 100 Remove metal counter-flashing.

Part I – Procedure

A. Remove existing counter-flashing per Work Order.
B. Dispose of material in an acceptable manner.

07.6 20 200 Counter-flashing, aluminum, .040, 6" wide.

Part I – Material

A. ASTM B209-86.

07.6 20 300 Counter-flashing, copper, 16 oz., 6" wide.

Part I – Material

A. ASTM B370-840.

07.6 30 100 Remove metal edge, gravel stop, eave strip, or coping.

Part I – Material

A. None.

Part II – Procedures

A. Remove metal as specified by Work Order.
B. Dispose of material in an acceptable manner.

07.6 30 200 Metal edge, aluminum, pre-formed, fee floating, mill finish, 4" wide to 8" wide. Includes installed flashing materials.

Part I – Material

A. Metal fascia.
B. Treated wood cant.
C. Approved fasteners.

Part II – Procedures

A. Install fascia to roof edge per Work Order. Installation to comply with fascia manufacturer's published specifications.

B. Flash fascia as specified by manufacturer.

07.6 30 210 Metal edge, aluminum, pre-formed, fee floating, mill finish, 6" wide to 8" wide. Includes installed flashing materials.

Part I – Material

A. Metal fascia.
B. Treated wood cant.
C. Approved fasteners.

Part II – Procedures

A. Install fascia to roof edge per Work Order. Installation to comply with fascia manufacturer's published specifications.
B. Flash fascia as specified by manufacturer.

07.6 30 220 Metal edge, pre-formed corners, aluminum, mill finished.

Part I – Material

A. Metal fascia.
B. Treated wood cant.
C. Approved fasteners.

Part II – Procedures

A. Install fascia to roof edge per Work Order. Installation to comply with fascia manufacturer's published specifications.
B. Flash fascia as specified by manufacturer.

07.6 30 220 Metal edge, pre-formed corners, aluminum, painted.

Part I – Material

A. Metal fascia.
B. Treated wood cant.
C. Approved fasteners.

Part II – Procedures

A. Install fascia to roof edge per Work Order. Installation to comply with fascia manufacturer's published specifications.
B. Flash fascia as specified by manufacturer.

07.6 30 240 Gravel stop, aluminum, .040" thick, painted, 4" high to 6" high.

Part I – Material

A. .040" thick aluminum, painted, Kynar finish.
B. Fasteners, as specified by "SMACNA" manual and FM I-90 design data.

Part II – Procedures

A. Fabricate and install pre-painted, .040" aluminum gravel stop per SMACNA and NRCA. Color to be approved by Contracting Officer.
B. Set flashing in asphalt mastic 3" on center, staggered.
C. Strip flange per roofing manufacturer's specifications.
D. Continuous lock strip to be .050 aluminum.

07.6 40 100 Remove metal gutter.

Part I – Material

A. None.

Part II – Procedures

A. Remove metal gutter as specified by Work Order.
B. Dispose of metal in an acceptable manner.

07.6 40 200 Gutter, aluminum, .050" thick, 5" box or ogee, painted.

Part I – Material

A. .050" thick aluminum, painted, Kynar finish as specified by Work Order.
B. Approved fastener for gutter type.

Part II – Procedures

A. Install gutters where specified by Work Order.
B. Gutter installation to conform to SMACNA manual details, NRCA, and Roofing manufacturer's details.

07.6 50 100 Remove metal downspouts

Part I – Materials

A. None

Part II – Procedures

A. Remove gutter as per Work Order
B. Dispose of in an acceptable manner.

07.6 50 200 Downspouts, aluminum, .024" thick, 3" x 4", painted

Part I – Materials

A. Two coats factory applied baked-on enamel. Finish, color as noted by Contracting Officer.

07.6 60 400 Metal trim, aluminum, .032" thick, painted.

Part I – Material

A. .032" thick aluminum painted, Kynar finish.
B. Fasteners as specified.

Part II – Procedures

A. Fabricate and install metal trim to conform to building as specified by Work Order.
B. Fabrication to conform to SMACNA manual details.

07.6 60 500 Metal storm collar

Part I – Material

A. Aluminum .032, ASTM B-221-82A-.
B. 16 oz. copper, ASTM B-370-81.
C. Stainless steel, 26 gauge, ASTM A-167-82.

Part II – Procedures

A. Install storm collars over all pitch pockets as directed by Work Order. Material to be as specified.
B. Install in con shaped configuration per NRCA.

07.6 60 600 Metal coping, aluminum, .040" thick, standing seam, painted.

Part I – Material

A. .040" thick aluminum, Kynar finished.
B. .050" thick aluminum, lock strap.
C. Fasteners as specified by roofing manufacturer.

Part II – Procedures

A. Fabricate coping cap with standing seams per SMACNA details.

B. Fascia edges to extend past wood a minimum of 1".
C. Fasten face with continuous lock strip.
D. Fasten backside with screws and neoprene washers 30" o.c.

07.6 70 100 Re-solder joints in sheet metal.

Part I – Material

A. Flux.
B. Cleaner.
C. Solder.

Part II – Procedures

A. Wire brush joint.
B. Clean area to be soldered.
C. Apply flux.
D. Solder with appropriate solder per SMACNA specifications.

END OF SECTION 07.6 00 000

07.7 10 100 Demolition of plywood or standard 1" x 6" decking.

Part I – Material

A. None.

Part II – Procedures

A. Area below work must be protected and/or barricaded before deck removal starts.
B. Remove decking.
C. Remove all nails and fasteners.
D. Inspect roof joists for deterioration. Repair or replace as directed by Contracting Officer.
E. All work to comply with USPS, OSHA, EPA, and local building codes and regulations.

07.7 20 200 Demolition of standard 2" x 6" tongue and groove decking.

Part I – Procedures

A. Area below work must be protected and/or barricaded before deck removal starts.
B. Remove decking.
C. Remove all nails and fasteners.
D. Inspect roof joists for deterioration. Repair or replace as directed by Contracting Officer.
E. All work to comply with USPS, OSHA, EPA and local building codes and regulations.

07.7 20 100 Plywood decking, CDX, 1/2" thick.

Part I – Material

A. Plywood panels shall be identified with the American Plywood Association (APA) grade trademark and shall meet the requirements of U.S. Products Standards PS-1 for soft plywood construction.
B. All plywood which has any edge or surface permanently exposed to the weather shall be of the exterior type.
C. Plywood roof decking shall be "Graded C-D or Better" with exterior glue.
D. Fasteners.

Part II – Procedures

A. Verify that surfaces to received decking are prepared and ready to receive decking.

07.7 20 200 Plywood decking 5/8" thick.

Part I – Material

A. Plywood panels shall be identified with the American Plywood Association (APA) grade trademark and shall meet the requirements of U.S. Products Standards PS-1 for soft plywood construction.
B. All plywood which has any edge or surface permanently exposed to the weather shall be of the exterior type.
C. Plywood roof decking shall be "Graded C-D or Better" with exterior glue.
D. Fasteners.

Part II – Procedures

A. Verify that surfaces to received decking are prepared and ready to receive decking.

07.7 20 300 Plywood decking 3/4" thick.

Part I – Material

A. Plywood panels shall be identified with the American Plywood Association (APA) grade trademark and shall meet the requirements of U.S. Products Standards PS-1 for soft plywood construction.
B. All plywood which has any edge or surface permanently exposed to the weather shall be of the exterior type.
C. Plywood roof decking shall be "Graded C-D or Better" with exterior glue.
D. Fasteners.

Part II – Procedures

A. Verify that surfaces to received decking are prepared and ready to receive decking.

07.7 20 400 Standard 1" x 6" decking.

Part I – Material

A. Plywood panels shall be identified with the American Plywood Association (APA) grade trademark and shall meet the requirements of U.S. Products Standards PS-1 for soft plywood construction.
B. All plywood which has any edge or surface permanently exposed to the weather shall be of the exterior type.
C. Plywood roof decking shall be "Graded C-D or Bette" with exterior glue.
D. Fasteners

Part II – Procedures.

A. Verify that surface to receive decking are prepared and ready to receive decking.

07.7 20 500 Standard 2" x 6" tongue and groove decking.

Part I – Material

A. 2 x 6 commercial grade with 15% maximum moisture content. Single tongue and groove edges with FB 1200 psi. Must be stamped with "dry" stamp.
B. Nails – Federal Spec. FF-N-105B common nails, Style 10, cement coated to be used for nailing.

Part II – Procedures

A. Verify that surfaces to receive decking are prepared and ready to receive decking.
B. Install decking continuous over three supports.
C. Drive deck members tight using short block; do not hammer tongue.
D. Nail each member a t support with two 30d common blind and face nail for decking up to 2-1/4-inch thick and 40d common blind and for decking 2-3/4-inch and 3-inches thick.
E. Toe nail groove to tongue at 40 to 50 degree angle starting 1-1/4-inch from groove edge. Nail at each purlin using 8d common nails.

07.7 30 100 Cants, wood fiber, trapezoidal, 1-1/2" x 5-5/8".

Part I – Material

A. Wood fiberboard, ASTM C-208, asphalt impregnated.
B. Type III steep asphalt, ASTM D-312-84, UL Class A.

Part II – Procedures

A. Install wood fiber cants set in a continuous mopping of steep asphalt at a rate of 25 lbs. per 100 s.f.
B. Miter all corners for firm fit.

07.7 30 200 Cants, treated wood, 4" x 4" diagonal.

Part I – Material

A. 4 x 4 treated wood cut on bias to form cant strips. Southern Pin, No. 2 grade, free from warping and decay. Pressure treated with Chromated Copper Arsenate (CCA) to meet AWPB, LP -22, 0.40 retention and marked.
B. Nails – Federal Spec. No FF-N-105-B, common nails, Style 10 coated.

Part II – Procedures

A. Install wood blocking to wood nailer as outlined on Work Order.
B. Cants to be nailed 16-inches o.c. and fastened to walls as required by roofing material manufacturer.

C. Top edge to be flush with wall.
D. Corners to be mitered and fit snug.

07.7 40 100 Nailer, treated wood, 1" x 4".

Part I – Material

A. 1" x 4" treated lumber. Southern Pine, No. 2 grade, free from warping and decay. Pressure treated with Chromated Copper Arsenate (CCA) to meet AWPB, LP-22, 0.40 retention and marked.
B. Nails – Federal Spec. No. FF-N-105-B, common nails, Style 10, cement coated.

Part II – Procedures

A. Install wood blocking to areas as outlined on Work Order.
B. Fasten blocking with approved fasteners in two rows staggered on 24-inch centers.

07.7 40 200 Nailer, treated wood, 2" x 4".

Part I – Material

A. 2" x 4" treated lumber. Southern Pine, No. 2 grade, free from warping and decay. Pressure treated with Chromated Copper Arsenate (CCA) to meet AWPB, LP-22, 0.40 retention and marked.
B. Nails – Federal Spec. No. FF-N-105-B, common nails, Style 10, cement coated.

Part II – Procedures

A. Install wood blocking to areas as outlined on Work Order.
B. Fasten blocking with approved fasteners in two rows staggered on 24-inch centers.

07.7 40 300 Nailer, treated wood, 2" x 6".

Part I – Material

A. 2" x 6" treated lumber. Southern Pine, No. 2 grade, free from warping and decay. Pressure treated with Chromated Copper Arsenate (CCA) to meet AWPB, LP-22, 0.40 retention and marked.
B. Nails – Federal Spec. No. FF-N-105-B, common nails, Style 10, cement coated.

Part II – Procedures

A. Install wood blocking to areas as outlined on Work Order.
B. Fasten blocking with approved fasteners in two rows staggered on 24-inch centers.

07.7 50 100 Curbing, treated wood, 2" x 12".

Part I – Material

A. 2" x 12" treated lumber. Southern Pine, No. 2 grade, free from warping and decay. Pressure treated with Chromated Copper Arsenate (CCA) to meet AWPB, LP-22, 0.40 retention and marked.
B. Nails – Federal Spec. No. FF-N-105-B, common nails, Style 10, cement coated.

Part II – Procedures

A. Prepare area to receive curb per line item applicable and as outlined of Work Order.
B. Fabricate curb to fit opening as outlined on Work Order.
C. Nail or screw curb in place using applicable fastener for deck type and to conform t details (Appendix II: Details).

07.7 60 100 Joist, fir, 2" x 6"

Part I – Material

A. 2" x 6" fir, standard grade or better for light framing, Grade 2 or better for structural framing.
B. B. Nails – Federal Spec. No. FF-N-105-B, common nails 16d, Style 10 coated.
C. Bolts – ASTM A-309 76b, Grade A.
D. Lag screws and bolts FF-561-C, Type II, Hex Head, Grade B.
E. Toggle Bolts – Federal Spec. No FF-B-558-C, Type I, Class A, Style I.

Part II – Procedures

A. Install new joists with crown edge up.
B. Support ends of each member minimum 3-inches of bearing on wood.
C. Lap members framing from opposite side of beams, minimum 4-inches.
D. Support joist alternately at ends with solid blocking, 2-inches thick by depth of joist, between members crossing bearing joint.
E. Bridging – when nominal depth to thickness ratio of joist exceeds 6, install bridging at 8 foot intervals.
F. Double rafters at roof opening to provide headers and trimmers and support with metal hangers per local building codes.

07.7 60 200 Joist, fir, 2" x 10"

Part I – Material

F. 2" x 10" fir, standard grade or better for light framing, Grade 2 or better for structural framing.

G. B. Nails – Federal Spec. No. FF-N-105-B, common nails 16d, Style 10 coated.
H. Bolts – ASTM A-309 76b, Grade A.
I. Lag screws and bolts FF-561-C, Type II, Hex Head, Grade B.
J. Toggle Bolts – Federal Spec. No FF-B-558-C, Type I, Class A, Style I.

Part II – Procedures

G. Install new joists with crown edge up.
H. Support ends of each member minimum 3-inches of bearing on wood.
I. Lap members framing from opposite side of beams, minimum 4-inches.
J. Support joist alternately at ends with solid blocking, 2-inches thick by depth of joist, between members crossing bearing joint.
K. Bridging – when nominal depth to thickness ratio of joist exceeds 6, install bridging at 8 foot intervals.
L. Double rafters at roof opening to provide headers and trimmers and support with metal hangers per local building codes.

END OF SECTION 07.7 00 000

07.8 10 100 Remove roof hatch

Part I – Procedures

A. Remove existing hatch as directed by Work Order.

07.8 10 200 Roof hatch, aluminum, 2'6" x 3'0".

Part I – Material

A. 2'6" x 3'0" in size aluminum hatch, insulation curb and top, Bilco Type "S" or approved equal.

Part II – Procedures

A. Install hatch as direct by Work Order.
B. Located as directed by contracting officer.
C. Hatch to be installed per manufacturer's specification.
D. Flash per line item on Work Order.

07.8 10 300 Roof hatch, aluminum, larger sizes.

Part I – Material

B. Size as specified.

Part II – Procedures

E. Install hatch as direct by Work Order.
F. Located as directed by contracting officer.
G. Hatch to be installed per manufacturer's specification.
H. Flash per line item on Work Order.

07.8 20 100 Remove existing roof drain, except plumbing.

Part I – Material

A. New roof drain as manufactured by Josam or Smith, to match existing.

Part II – Procedures

A. Prepare roof mat in drain area as specified by Work Order.
B. Remove existing roof drain as directed by Contracting Officer.
C. Install new roof drain and flash.
D. Remove existing roof drain specified.

E. Install deck clamp as required by Work Order.

07.8 20 200 Install new roof drain, except plumbing.

Part I – Material

A. 3" Cast iron roof drain with PVC connector as manufactured by Josam or Smith.

Part II – Procedure

A. Per roof manufacturer's details.

07.8 20 300 Reflash roof drain.

Part I – Material

A. Asphalt primer per ASTM D-3960-87 where required, quick drying.
B. 4 lb. sheet lead, ASTM B-29-79 (84).
C. Reinforcement mesh – vinyl coated woven glass scrim, weight 1.32 lb/100 sq. ft. per ASTM D-146-78a (86), tensile strength 75 lbf. Per ASTM D-146-78a (86).
D. Asphalt mastic – heavy fibrated mastic with penetrating oils and plasticizing agents to meet UL and ASTM D-276-85, ASTM D-1475-85, 105 F flash point per ASTM D-93-85.

07.8 20 400 Plumbing stack, 4# lead flashing.

Part I – Material

A. Asphalt primer per ASTM D-3960-87.
B. 4 lb. lead plumbing stack flashing to meet ASTM B-29-79 (84).
C. Asphalt mastic, heavy fibrated mastic with penetrating oils and plasticizing agents to meet UL an dASTM D-276-85, ASTM D-1475-85, 105 F flash point per ASTM D-93-85.

Part II – Procedures

A. Install ne 4 lb. lead plumbing stack flashings as required on Work Order.
B. Prime flashing flange.
C. Flash flange as specified by membrane manufacturer and/or NRCA details.

07.8 20 500 Scupper, copper, 16 oz., match existing configuration.

Part I – Material

A. 16 oz. Copper
B. Solder

C. Flux

Part II – Procedures

A. Remove old scupper.
B. Install new scupper to match existing.
C. Flash per roofing manufacturer's specifications.

07.8 30 100 Remove existing walkway, built-up roofs.

Part I- Material

A. None

Part II – Procedures

A. Furnish locks, equipment and labor to move walkways per Work Order.
B. Do not damage roof.
C. Dispose of in an acceptable manner.

07.8 30 200 Walkway, built-up roofs.

Part I – Material

A. 3 x 5 roof tread, asbestos free. Asphaltic board reinforced with fiberglass and granulated surface to meet or exceed ASTM C-203-85, ASTM D4977-89, ASTM D-3746-85.
B. Adhesive as specified by manufacturer.

Part II – Procedures

A. Install roof treads were specified by Work Order.
B. Adhere treads with tread manufacturer's adhesive as specified by manufacturer's specifications.

07.8 40 100 Roof ventilators. Gravity or Turbo

Part I – Material

A. Install roof ventilator to match existing.

Part II – Procedures

A. Install ventilators per roof manufacturer's specification.

07.8 50 100 Roof ladder, steel, bolted to concrete, up to 20 ft. , without cage.

Part I – Material

A. Fixed ladder with walk-thru handrails. Ladders are designed for applications where safe landing access is required. Ladders are one-piece welded assemblies for use in applications less than 20 feet in vertical height.
B. Side members are 1/4" x 2" x 2" steel angle with 3/4" corrugated steel round climbing rungs on 12" centers. Standoff mounting brackets are 7".
C. Walk-thru handrails extend 42" above landing surface. Mounting brackets included. Gray lacquer finish is standard color.

Part II – Procedures

A. Install roof access ladder where specified by Contracting Officer.
B. All fastening, design and height requirements to comply with Federal, State and local codes for access ladders.

07.8 50 200

Part I – Material

A. Fixed ladder with walk-thru handrails. Ladders are designed for applications where safe landing access is required. Ladders are one-piece welded assemblies for use in applications less than 20 feet in vertical height.
B. Side members are 1/4" x 2" x 2" steel angle with 3/4" corrugated steel round climbing rungs on 12" centers. Standoff mounting brackets are 7".
C. Walk-thru handrails extend 42" above landing surface. Mounting brackets included. Gray lacquer finish is standard color. Safety cages are designed to OSHA specifications with flared bottom opening for easy entry.

Part II – Procedures

A. Install roof access ladder where specified by Contracting Officer.
B. All fastening, design and height requirements to comply with Federal, State and local codes for access ladders.

07.8 50 300 Roof ladder, security ladder guard

Part I – Material

A. Security ladder guard is 6' long and is mounted directly over the ladder climbing rungs to prevent unauthorized use. Ladder guard has a one-piece continuous hinge and a lockable hasp.

Part II – Procedures

A. Mound ladder guard per manufacturer's specifications.

07.8 60 100 Termination bar, aluminum, 1/4" x 1".

Part I – Material

A. 1/4-inch x 1-inch extruded aluminum termination bar with caulking cup to meet ASTM B-2221-85a.
B. Fasteners:
    a. FS FF-N-105B(3), Type II. Style 20, roofing nails; 6061-t913, flat head, diamond point, round, barbed hank to wood curbing.
    b. Lead anchors 1/4 inch diameter by specified length to masonry/concrete to meet ASTM B-29-79 (84).

Part II – Procedures

A. Install 1/4-inch x 1-inch aluminum termination bar to specified area as outlined by Work Order.
B. Fasten termination bar 8-inches on center.

07.8 70 100 Pitch pocket, copper 16 oz., 4" x4", with storm collar.

No information on old spec.

07.8 70 200 Pitch pocket, copper 16 oz., 8" x8", with storm collar.

Part I – Material

A. 16 oz. copper per SMACNA, NRCA details.

Part II – Procedures

A. Install copper pitch pocket and flash per membrane manufacturer's specifications/details.
B. Fasten storm collar and caulk with approved sealant.

07.8 70 300 Pitch pocket, resurface top only.

Part I – Material

A. Asphalt mastic

Part II – Procedures

A. Remove loose material.
B. Fill pitch pocket with mastic, crown 1/2" to shed water, size 4" x4".

07.8 80 100 Expansion joint, butyl or neoprene bellows, copper flange.

Part I – Materials

A. Expansion joint covers with butyl or neoprene bellows and 16 oz. copper flanges.
B. Fasteners – copper nails or screws with neoprene washers.

Part II – Procedures

07.8 80 200 Expansion joint, SCPE reinforced.

Part I – Material

A. CSPE reinforced elastomeric membrane as specified.
B. Adhesives per manufacturer's specification.
C. Flashing components as specified by manufacturer of membrane.

Part II – Procedures

A. Install CSPE reinforced expansion joint as directed by Work Order.
B. Install backer rod, mastics and flashing adhesives and membranes per membrane manufacturer's published specifications.
C. Joint to comply with NRCA details.

07.8 80 300 PVC Support for gas lines and conduit across roof surface, less than 10# per square foot weight support.

Part I – Materials

A. PVC Schedule 40 Pipe 6" minimum diameter 1 foot long.
B. Galvanized U Strap fastens both sides.
C. Walktred set in double pour. 8" x 1'6" minimum.

Part II – Procedures

A. Install walktred in double pour of top coat material.
B. Set PVC pipe on walktred on center.
C. Install conduit or pipe clamping with Galvanized U Strap fastened on both sides.
D. Comply with detail drawings with no more weight than 10 # per support.

END OF SECTION 07.8 00 000

SECTION 07.9 10 100 HydroStop Premium Coat System (HSPCS)

PART 1 – General

A. Description of existing substrates - This specification is intended to outline the requirements for application of the PremiumCoat® system, in conjunction with the appropriate product technical data sheets, over approved roof substrates in acceptable condition. Refer to Quest Construction Products guide specifications for additional details.

B. Description of liquid-applied roofing system - The liquid-applied system consists of a polyester-reinforced elastomeric acrylic system specifically designed for roofing installation. The system is 1) Approved by FMRC (Factory Mutual Research Corporation) according to the complete Standard 4470 for Class 1 Roof Constructions; 2) Classified and subjected to follow-up by UL (Underwriters Laboratories); 3) Accepted by Miami-Dade County; and 4) Manufactured in accordance with ISO 9001:2008 & 14001:2004 regulations.

C. Section includes - Fluid-applied flexible acrylic waterproofing system for use over new or existing roofing. Work shall include the preparation of the roof surface, flashing, detailing, application of the roof system, and cleanup.

D. Related work - Contractor shall review all sections of the project specifications to determine items of work that will interface with the application of this roofing system. Compliance with applicable building codes shall be assured by the specifier or project engineer, while coordination and execution of related sections shall be the responsibility of the approved contractor.

E. References

1. NRCA Roofing and Waterproofing Manual
2. Factory Mutual RoofNav Directory
3. Underwriters Laboratories Building Materials Directory
4. Miami-Dade County Product Control Section, Board and Code Administration
5. ASTM D5034-09(2013) Breaking Strength and Elongation of Textile Fabrics
6. ASTM D3787-07(2011) Bursting Strength of Textiles
7. ASTM D1117-01 Guide for Evaluating Nonwoven Fabric
8. ASTM D1777-96(2011) Thickness of Textile Materials

9. ASTM B117-11 Standard Practice for Operating Salt Spray (Fog) Apparatus
10. ASTM G29-96(2010) Test Methods for Algae Resistance
11. ASTM E108-11 Test Method for Fire Tests of Roof Coverings
12. ASTM D1653-13 Water Vapor Transmission of Organic Coating Films
13. ASTM G155-13 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
14. ASTM D412-06a(2013) Tensile Properties of Vulcanized Rubber & Thermoplastic Elastomers
15. ASTM D6083-05e1 Standard Specification for Liquid Applied Acrylic Coating
16. ASTM C1549-09 Determination of Solar Reflectance at Near Ambient Temperature Using a Portable Solar Reflectometer
17. ASTM C1371-04a(2010)e1 Determination of Emittance of Materials at Near Room Temperature Using Portable Emissometers
18. FM 4470 Standard for Class 1 Spread of Flame, Windstorm Pressure, Windstorm Pull, Hail Damage, Resistance to Foot Traffic, and Susceptibility to Leakage

F. Submittals Review

1. Shop Drawings: Submit a scale drawing illustrating layout of joint reinforcing and all flashing details.
2. Product Data: Provide manufacturer's published technical literature, MSDS, and warranty on products that make up the roofing system, including coatings, reinforcing fabrics, flashing materials, roof drains, fasteners, etc.
3. Installation Instructions: Submit all data sheets available from the manufacturer on the installation of the roofing system applicable to the project.
4. Submit manufacturer's Certificates of Compliance or Analysis that all products meet or exceed project requirements. Contractor to supply samples or mockup, if required.
5. Applicator is responsible for submitting proof of QCP Preferred Contractor Status.
6. Prior to bid, all project specifications, details, and submittals shall be reviewed by manufacturer for pre-approval and to comply with warranty

requirements. Successful bidder should initiate warranty pre-inspection process before commencing work.

G. Qualifications: Applicator Qualifications: The applicator of the roofing material specified herein shall be an approved applicator designated by Quest Construction Products, LLC. Proof of qualification shall be by written certificate from the roofing system manufacturer. Applicator must meet the QCP Preferred Contractor Status Level required for the specified project and warranty requested. 20 year systems warranties are available only to QCP Certified Preferred or Platinum Preferred Contractors. 25 year systems warranties are available only to QCP Platinum Preferred Contractors. Contact Quest Construction Products for applicator's proof of qualifications. Manufacturer Qualifications: Manufacturer shall have minimum twenty (20) years manufacturing experience in the roof coating industry.

H. Quality Control

1. Codes and Standards: The contractor shall become thoroughly familiar with all codes, regulations and standards governing the specified work. Any contradiction between the manufacturer's requirements and these specifications shall be brought to the attention of the manufacturer and the specifier/project engineer.
2. Deviations: There shall not be any deviations from these specifications unless the deviation is submitted in writing to the specifier/project engineer. Any request for deviation must be approved in writing from the roofing manufacturer's technical department delineating the details of the deviation.
3. At least one individual with QCP Preferred Contractor status shall be on site during installation of any HydroStop products. A daily log of application activities and environmental conditions should be maintained and available on-site with copies of technical data/application instructions & MSDS.
4. Manufacturer's Technical Representative: Manufacturer's Technical Representative is available to make site visits as needed. Systems Warranties will receive a final inspection and that final inspection report is available to the building owner upon request.

I. Delivery, Storage and Handling

1. Deliver materials to jobsite in manufacturer's unopened and undamaged containers bearing the following information:
   a. Name and address of manufacturer
   b. Identification of contents, with product code
   c. Net volume of contents
   d. Lot or batch number
   e. VOC content
   f. Storage temperature limits

g. Shelf life expiration date
h. Mixing instructions and proportions of contents
i. Safety information and instructions

2. Store and protect materials from damage and weather in accordance with manufacturer's published instructions.
   a. Ambient temperatures should range between 50 and 90°F (10 to 32°C). Keep out of direct sunlight.
   b. Place stored material containers on pallets and cover with tarpaulin tied to bottom of pallets.

J. Environmental Requirements: Do not apply if ambient temperatures are expected to fall below 50°F (10°C), or if rain or heavy dew is anticipated before liquid coating component has cured.

K. Warranty: Provide Product or Systems warranty in accordance with project specifications. Contractor shall follow written application process in accordance with manufacturer's warranty program. Refer to the following table for surface prep, film thicknesses, and other details.

PART 2 – Products

A. **Manufacturer:**

Quest Construction Products, LLC
1465 Pipefitter Street
North Charleston, SC 29405
Phone: Toll Free: (855) 817-3082
(843) 745-9600
Fax: (843) 745-9602
Web: www.quest-cp.com

B. Membrane Compound Material:

1. Waterproofing Material: **PremiumCoat® System:** three stage, fabric-reinforced, flexible acrylic coating, fluid-applied in successive steps to form a continuous, seamless, watertight membrane; 45 to 60 mils (1,143 to 1,524 micron) minimum cured total system thickness, comprised of the following:

   a. Foundation and Saturation Coats: **PremiumCoat® FoundationCoat** (highly flexible, water-based, 100% pure acrylic polymer resin coatings)
   b. Fabric: PremiumCoat® Fabric (polyester, non-woven, stitch-bonded and heat-set fabric)
   c. FinishCoat**: PremiumCoat® FinishCoat** (ultraviolet light-resistant blend of highly flexible, water-based, 100% pure acrylic

polymer resin coating). Color as selected from manufacturer's standard color chart.

2. Reinforcing Fabric: **PremiumCoat® Fabric** shall be non-woven, 100% polyester, stitch bonded, heat-set fabric.

C. Accessories: (Refer to individual product technical data sheets, which are an integral part of this specification, for properties & installation.)

1. **Cant Strips**: Approved composition materials are EPS (Expanded Polystyrene), ISO (Polyisocyanurate), and wood (Non-Pressure Treated). Cant strips are to be installed at all internal corners, around curbs, and at all 90 degree angles as specified by Quest Construction Products (QCP).
2. **Moisture Breathers/Vents**: Install as recommended by Quest Construction Products (QCP) Technical Representative.
3. **Polyisocyanurate:** 1.5" (3.8 cm) minimum thickness. Max board size: 4' x 8' (1.2 m x 2.4 m) if mechanically fastened or 4' x 4' (1.2 m x 1.2 m) if adhered with Factory Mutual approved roofing adhesive. Closed cell with factory laminated facer. Foam core to have rated flame spread of 25" (63.5 cm) or less and minimum compressive strength of 250 psi (1,724 kPa).
4. **Expanded Polystyrene:** 1.5" (3.8 cm) minimum thickness and a minimum of 1.5 lb./ft³ (24 kg/m³) density. Maximum board size is 4' x 8' (1.2 m x 2.4 m) for mechanically fastened, or 4' x 4' (1.2 m x 1.2 m) if adhered with Factory Mutual approved roofing adhesive.
5. **Plywood:** ¼" (2 cm) minimum thickness, tongue and groove exterior B & C grade. Plywood is to be adhered with sub-floor adhesive and deck fasteners.
6. **Densdeck:** ¼" (6 mm) minimum thickness if used over an approved, smooth existing substrate. The standard thickness recommendation is ½" (1.3 cm).
7. **Tapered ISO or EPS:** 1.5" (3.8 cm) minimum thickness and a minimum of 1.5 lb/ft³ (24.3 kg/m³) density. Maximum board size is 4" x 4" (1.2 m x 1.2 m) with a slope of not less than .25" per foot (2.1 cm/meter).
8. **Adhesive**: Insta-Stick, OlyBond or FM (Factory Mutual) approved polyurethane adhesive, dispensed from pre-pressurized containers. Application guidelines should be dictated by the adhesive manufacturer.
9. **Mechanical Fasteners**: Approved mechanical fasteners with plates. Fastener patterns shall be as recommended by the board manufacturer.
10. **BarrierGuard**: Polymer modified cementitious slurry waterproofing.
11. **Butter Grade**: Single package, high solids acrylic, elastomeric sealant.
12. **HydroFiber**: Bulking material used in conjunction with **PremiumCoat®FoundationCoat** or **BarrierGuard** slurry (as specified by QCP Technical Representative) to fill cracks, voids, or low depressions on various substrates.
13. **HydroCaps**: Fabric reinforcement for sealing metal fasteners.

14. **StableRust Primer**: Water-based, surfactant-free primer used on direct-to-metal applications to stabilize and protect metal surfaces.
15. **CleanAct Primer**: Water-based cleaner used in EPDM surface preparation.
16. **SureBond Primer**: Water-based acrylic primer for sealing masonry, metal, and chalky surfaces.
17. **Unibase Primer**: Penetrating adhesive/primer for saturating fabric and adhering coating.
18. **TrafficCoat**: Durable wear coating to provide additional abrasion resistance and color selection.
19. **SP Primer**: Low viscosity, water-based acrylic primer for TPO & PVC surfaces.

PART 3 – Execution

A. **Examination:**

1. Verify that substrate surfaces are durable, free of frozen matter, dampness, loose particles, cracks, pits, projections, and/or foreign matter detrimental to adhesion or application of waterproofing system.
2. Verify that substrate surfaces are smooth and not detrimental to full contact bond of waterproofing materials.
3. Verify items that penetrate surfaces to receive waterproofing are securely installed and suitably flashed.
4. Verify that substrate areas are adequately supported and firmly fastened in place.
5. Verify that roof deck has a minimum slope of 0.25"/foot (2.1 cm/meter).
6. Verify that roof does not have areas of ponding water.
7. Verify that all contiguous walls are properly waterproofed.

B. **Preparation - General:**

1. Protect adjacent surfaces not designated to receive waterproofing.
2. At a minimum, clean and prepare surfaces to receive waterproofing by removing all dirt, dust, loose and flaking particles, grease and laitance with the use of a stiff bristle push broom and/or washing. Care should be taken not to inject water into the substrate during washing. Allow adequate time for complete drying after the cleaning process. Inspect and make all necessary repairs to substrate. Seal cracks and joints with sealant materials using depth to width ratio as recommended by sealant manufacturer. Contact a QCP Technical Representative for technical assistance.
3. Do not apply waterproofing to surfaces unacceptable to manufacturer, or under inclement environmental conditions.

C. **Application -** Refer to the Quest Construction Products guide specification for preparation and application requirements for specific substrates for premium coat system.

D. **Protection of Finished Work** - Monitor finished system for seven days, sweeping off any birdbaths to allow for full cure.

E. **Cleaning** - Immediately clean surfaces not scheduled to receive waterproofing in accordance with manufacturer's instructions.

END OF SECTION 07.9 00 000

07.10 10 000 – Warranty Requirement: The following warranties shall be provided. (NOTE: The warranty for project sizes less than 10,000 s.f. and greater than or equal to 10,000 s.f. are the same and will be listed under 07.10 10 200). The warranty form is provided at Appendix B.

07.10 10 100 – Roofing Quality Assurance Warranty less than 10,000 square feet.

07.10 10 200 – Roofing Quality Assurance Warranty 10,000 square feet or more.

ROOFING SYSTEM QUALITY ASSURANCE WARRANTY

CUMBERLAND COUNTY SCHOOLS

PERIOD OF COVERAGE: **10 YEARS**

OWNER: CUMBERLAND COUNTY BOARD OF EDUCATION
THE CUMBERLAND COUNTY SCHOOLS
P.O. Box 2357
Fayetteville, NC 28302
(910) 678-2539 FAX – (910) 678-7043

NAME, TYPE OF BUILDING: _____

ADDRESS OF BUILDING: _____

This warranty is confined to the work shown on Contract Documents entitled:

_____ dated _____

Prepared by _____

And in the Form of Contract based on these documents.

THE WARRANTY

The manufacturer of the roof system will repair any leaks in the Roof Assembly as installed by the manufacturer's approved roofing contractor for a period of ten (10) years from the Date of Completion as herein defined. Roof Assembly shall be defined as the weatherproofing assembly and its components as specified, which include the membrane, insulation, flashings and termination details.

In the event leaks occur in the Roof Assembly within the warranty period, the Owner will notify the manufacturer as soon as possible (in no event later than thirty (30) days) after leakage is or should have been discovered. The manufacturer will inspect the Roof Assembly, and if the leak is within coverage of this warranty will at his own expense make or cause to be made all necessary repairs to the Roof assembly to put it in a watertight condition. To the extent any repairs to any part of the building other than the Roof Assembly are required, the liability or expense for such repair, removal or replacement shall be assumed and paid by the Cumberland County Schools. To the extent that the removal or replacement of any traffic surfaces or other appurtenances built over the roof are required in

order to put the Roof Assembly in watertight condition, the liability or expense for their repair, removal or replacement shall also be assumed and paid by the Cumberland County Schools, excluding such traffic surfaces or other appurtenances installed by the approved roofing contractor, whose liability and expense shall remain his. If the leak is not within the warranty coverage, the manufacturer shall so advise the Cumberland County Schools; and the Cumberland country Schools shall have t repairs performed within thirty (30) days, according ot manufacturer's specifications, by a manufacturer-approved applicator. In the event an emergency condition exists which required immediate repair to avoid substantial damage to the building or its contents, the manufacturer may instruct the Cumberland County Schools to make all necessary temporary repairs.

During the first three (3) years of the warranty period, the manufacturer shall remain liable for the total cost of labor and material (The Contract Price). From the fourth (4^{th}) year through the tenth (10^{th})

year, the manufacturer's liability shall be pro-rated on a straight line basis, and shall not exceed such pro-rated amount. The manufacturer shall not be liable for any damages which originate from or are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than the exclusive liability set forth.

The warranty period shall commence from the Date of Completion, herein established to be the date on which the written report of a passed final inspection made by the manufacturer's representative is received by the Cumberland County Schools. During the period of this warranty, the manufacturer will have free access to the roof and related premises during regular business hours, and will retain the right to make core extractions and properly repair such extractions.

The warranty period shall extend ten (10) years. At the conclusion of the warranty period, the Cumberland County Schools shall retain an option, available upon inspection and correction of deficiencies, to renew or extend the warranty for an additional five years for an agreed sum.

EXCLUSIONS

This warranty does not cover any damage to or failure of the Roof Assembly or any part thereof as a result of:

1. Accident by natural disasters, including but not limited to damage caused by lightning, hailstorms, floods, hurricane force winds, tornadoes, earthquakes, fire; and vandalism, animals, or penetration of the membrane or chemical attack by outside agents;
2. Use of material not approved by the roofing manufacturer;
3. Any intentional or negligent act on the part of the warranty Owner or any third party, including but limited to misuse, traffic, or storage of material on roof;
4. Distortion, expansion or contraction of construction;
5. Design of building components including parapet walls, copings, chimneys, skylights, vents or roof deck; or
6. Lack of proper or adequate drainage resulting in ponding water on roof for a period of 48 hours after rain stops.

RESPONSIBILITIES OF THE CUMBERLAND COUNTY SCHOOLS UNDER THE WARRANTY

A. ROUTINE MAINTENANCE

Preventative maintenance is required on Roof Assemblies in order to prevent deterioration or damage and subsequent water entry. One benefit of routine maintenance is recognized to be that the membrane life can be extended, and can continue to perform after the warranty has expired. There are several general precautions which Cumberland County Schools will observe on every roof.

1. Foot traffic will be restricted to the absolute minimum possible.
2. Personnel will avoid stepping on debris, which might puncture the roof membrane.

3. Periodic cleaning of the roof will be performed. Accumulated debris will be removed with caution, as sharp or pointed objects may puncture or gouge the membrane or flashings.
4. Drains, scuppers, and gutters will be kept reasonably clean and free flowing.
5. Areas known to have significant debris and/ or traffic will be examined and serviced on a more frequent basis than the standard of once a year.

B. REPAIRS AND SERVICE TO ROOFTOP EQUIPMENT

Roof-mounted mechanical equipment is not a component of the Roof Assembly, but must be serviced periodically. Access for that service is often across the roof. The costs of protecting the Roof Assembly while these non-roof components are being serviced, and the deterioration of the roof caused by careless service to non-roof components, are not covered by the provisions of this warranty.

The Cumberland County Schools recognize that repairmen are frequently in possession of tools, material or equipment (sheet metal, screwdrivers, utility knives, etc.) which could accidentally cut or damage the roof membrane. Cumberland County Schools' personnel will take the following precautions, which will also be required of contractors working on or near roofs.

1. Repairmen will cover work areas with plywood sheeting to protect the roof surface while equipment repairs are being performed.
2. Repairmen will be routinely reminded, and will be required to agree, to notify the responsible party of any damage to the roof during the equipment repair operation.
3. Cumberland County Schools roofing staff will inspect the completed work and adjacent roof area upon completion of the repairs or service, in the company of the personnel performing the repairs.

C. EMERGENCY REPAIRS

In the event that emergency repairs must be made, Cumberland County Schools will proceed following good roofing practices. The Cumberland county Schools will immediately notify in writing the roofing material company to verify repair procedures and arrange for inspection of repair. Unauthorized and uninspected repairs may invalidate this Warranty.

D. NEW EQUIPMENT INSTALLATIONS

In the event that new rooftop equipment is to be installed, Cumberland County Schools will contact the manufacturer of the system in writing prior to the project so assistance can be provided to insure the roof integrity. Installation of new equipment of any kind on the roof without prior approval may void this Warranty.

E. BI-ANNUAL INSPECTIONS

Cumberland County Schools will conduct Bi-Annual Inspections. Conditions to review will include the following items:

1. Abnormalities in the roof surface, which are to be reported to the manufacturer of the roofing system.
2. Debris left by others or deposited by the elements, which must be removed from the roof.
3. Anything that may impede drainage, which must be corrected.
4. Holes in flashing or other physical damage to roof components, which are to be reported to the manufacturer of the roofing system.
5. Sealant at reglet joints, stacks and equipment, which, being exposed to greater movement, will frequently weather more rapidly than the roof membrane.
6. Clamping bolts at drain rings, which may loosen over time and allow water to enter under the clamping ring. If this is the case, the bolts are to be tightened a s needed.
7. Wall ducts and support structures above the roof line, which can direct moisture into the roof system: these items are to be checked, and the necessary repairs are to be performed.

RESPONSIBILITY OF THE ROOF SYSTEM MANUFACTURER UNDER THIS WARRANTY

Qualified responsible personnel of the manufacturer will perform and annual inspection of the Roof Assembly and its components, including the membrane, insulation, flashings and termination details, for the warranty period of the roof system. Cumberland County Schools will be notified in writing of any observed deficiencies. In addition, written reports following an agreed format will be prepared by the manufacturer during each year identifying conditions and maintenance responsibilities. Copies will be provided immediately to the Cumberland county Schools. Preventative maintenance will be performed on the Roof Assembly by a contractor approved the roofing manufacturer and the Cumberland County schools in order to prevent water entry for the warranty period.

The roofing system manufacturer will respond promptly to request from Cumberland County Schools personnel seeking information on warranted roofs and or/advice on maintenance and modification procedures for the roof areas.

The roofing system manufacturer will furnish an 800 number to the Cumberland County Schools for use in reporting concerns or warranty issues regarding the roof assembly.

FURTHER QUALIFICATIONS TO OR EXCLUSIONS FROM THIS WARRANTY

The Cumberland County Schools and the manufacturer of the roof system agree that no substantive change or amendment to this warranty will be instituted by the attachment hereto of the manufacturer's standard forms(s) of warranty or guarantee. Said attachment(s) hereto is/are acceptable to the Cumberland County Schools under this condition.

IN WITNESS WHEREOF, we have caused this instrument to be duly executed this _____

Day of _____, 20____.

Roof system manufacturer:_____

Address: _____

_____

Telephone:_____ Facsimile:_____ 800 reporting #_____

Roof system manufacturer's assigned warranty number: _____

_____ _____

Authorized Signature Title

Attest:

_____ _____

Secretary or Assistant Secretary Title

(Affix Corporate Seal)

END OF ROOFING SYSTEM QUALITY ASSURANCE WARRANTY

07.10 20 100 – Guarantee Requirement: The following guarantee shall be provided by the contractor. The guarantee form is provided at Appendix A.

ROOFING THREE YEAR GUARANTEE

CUMBERLAND COUNTY SCHOOLS

Know all men by these presents, that we, the undersigned, having installed insulation, roofing, flashings and sheet metal work and have accomplished certain other work on _____ under a contract between our firm and the Cumberland County Board of Education, do warrant to the Cumberland County Board of Education with respect to said work for a period of three (3) years from the date of final acceptance by the Cumberland County Board of Education that the roofing including insulation, roofing membrane, flashings and sheet metal work shall be absolutely watertight and free from all leaks; provided however that the following are excluded from this warranty:

1. Defects or failures resulting from abuse by the Owner;
2. Defects in design involving failure of (a) structural frame, (b) load-bearing walls, (c) or foundations; and
3. Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

We, _____, agree that should any leaks occur in the roofing we will promptly remedy said leaks in a manner to restore the roof to a watertight condition by methods compatible to the system and acceptable under industry standards and general practice.

We, _____, further agree that for a period of three (3) years from date of final acceptance referred to above, we will make repairs at no expense to the Owner to any defects which may develop in the work, including but not limited to blisters, ridges, wrinkles, splits, warped insulation and loose flashings, in a manner compatible to the system and acceptable under industry standards and general practice.

IN WITNESS THEREOF, we have caused this instrument to be duly executed this _____ day of _____, 20____.

This warranty is restricted to work shown on the contract documents entitled _____ dated _____ prepared by _____ _____, and on the Owner/Contractor Agreements based on these documents.

Roofing Company Name _____

Address _____

_____

_____

Phone and Facsimile _____

Signature _____ Title _____

NC License Number _____ _____ (Expiration Date)

Witness _____

Notary: _____ Title _____

END OF ROOFING THREE YEAR GUARANTEE

CONTRACT FOR ROOFING SERVICES

THE NRCA CONSTRUCTION DETAILS

BUR (1-27)
EPDM (1-26)
SP (1-25)
AM (1-16)
ASPH (1-13)
CS-01

DETAILS

A. FLASHING DETAILS

Flashings are subject to some of the most demanding conditions on the roof.

- They are located at the intersection of two different materials, each having different thermal expansion and contraction characteristics, for example, at the intersection of a roof and wall.
- They are exposed to severe weathering
- They are exposed to damage from roof traffic

Many reports of leaking walls, paint failure, masonry efflorescence, and roof failure can be traced back to poor flashing details. An incorrectly designed flashing detail can result in serious damage to both the roof and the building.

In developing the details, the following objectives were given primary consideration:

- Separating the fabric or felt part of the flashing from the metal portion of the flashing system;
- Keeping the metal work above the highest water line on the roof, whenever possible;
- Maintaining positive attachment of the roof membrane and flashing materials to the roof deck, wall or curb;
- Permitting freedom of movement at the intersection of decks and walls and at roof penetrations; and
- Eliminating reliance on caulking or sealant to keep joints watertight.

The details depict job-site fabricated construction. Many manufacturers now offer prefabricated flashing pieces or permit the use of materials other than those that re shown here for flashing purposes. Specifics on these proprietary designs vary greatly; individual manufacturer's specifications for their use should be consulted.

B. METAL FLASHINGS

Because the metals used in flashing systems exhibit thermal expansion and contraction characteristics different from the membrane fabric or felt portion, the resulting differential movement is likely to cause tears or cracks in the roof membrane if not controlled. Light-gauge metal accessory pieces can generally be controlled by nailing or fastening the flashing metal at intervals as close as 3 inches on center. With heavier-gauge metals or extrusions, the metal should be kept above the water line and installed in such a way that it will be free to move independently without causing damage to the fabric or felt parts of the flashing systems. Metal counter flashing must extend low enough to protect the top of the base flashing from wind-driven snow or rain. By extending the counter flashing down across the face of the cant strip, foot abuse to the flashing may be reduced.

C. SURFACINGS

Bituminous flashing materials may be protected from the effects of severe weathering by painting the surface of the flashing with a heat-reflective coating, such as aluminum-pigmented asphalt coating. The use of granule-surfaced or foil-surfaced modified bitumen flashing material is also acceptable. The choice of a flashing material for EPDM and PVC roof membrane systems should take into account the effects of severe weathering.

D. WOOD NAILERS

The details indicate the use of wood nailers at roof edges and other termination points of the insulation. The nailers provide protection for the edge of the insulation and also provide a surface to which the membrane and roof flashing materials can be anchored to help prevent wind-uplift damage to the flashing. To provide an adequate base, the nailers must be securely anchored to the deck system. Bolting is the preferred method for anchoring wood nailers to the deck. Basic wood blocking anchorage recommendations can be found in Factory Mutual Data Sheet 1-49.

Caution should be exercised when considering the use of wood that has been treated with an oil-borne wood preservative. The carriers that are used in many lumber treatments can act as solvents on roofing materials. When wood nailers that have been treated with an oil-borne wood preservative are to be used, the specific precautions of the roofing material manufacturer should be followed.

E. PITCH POCKETS

Pitch pockets (also commonly referred to as pitch pans) are flanged, metal containers placed around columns or other roof penetrations. They are generally filled with asphalt or pitch-plastic cement and top-poured with bitumen or are filled with an elastomeric sealant to seal the opening in the roof membrane created by the penetrating element. Pitch pockets have not been shown in these details for bituminous roofing because, by nature of their design, they are not continuously watertight and require frequent inspection and maintenance. Although pitch pockets are frequently used as a cost compromise, their use is not recommended. Better methods of sealing roof penetrations are available, and details for these methods are provided.

Details for sealant pans have been included for EPDM and PVC roof membranes. Their use, however, should be limited to those occasions where prefabricated boots and other more reliable flashing methods cannot be employed.

F. ROOFTOP EQUIPMENT FLASHING

The roof is often used as the location for heating, ventilating, and air-conditioning units. The roofing contractor and owner frequently encounter roofing-related problems with these units because of the design of the mechanical unit and the lack of clearly defined responsibility for

their installation and weatherproofing units by all involved contractors, material suppliers, and manufacturers.

Most roofing problems related to heating, ventilating and air-conditioning units can be attributed to one or more of the following deficiencies:

- Improper design of the structural steel or the roof deck intended to support the weight of the heating, ventilating and air-conditioning unit, which generally results in excessive roof deflection and subsequent water ponding.
- Improper flashing of pipes, conduits, and drain lines that extend through the roof to service the HVAC units.
- Improper design of the curb for the HVAC unit intended to accept the membrane flashing; prefabricated curbs should be provided without integral metal cants.
- Failure to provide service walkways to and around HVAC units
- Failure to provide adequate metal counter flashing to protect the base flashing from foot traffic and tool damage.

Adequate provisions should be made for the proper flashing of heating, ventilating and air-conditioning units, including their service piping. Access must be provided for the future repair of roofing materials and flashings both around and beneath HVAC units. Units should be placed on roof curbs meeting NRCA criteria.

Raised units, such as solar energy devices, signs and certain air-handling units, should be located high enough above the roof surface to allow proper flashing beneath the unit.

NOTE: The NRCA construction details were developed by NRCA to provide the roofing industry with a set of details that have proven to be effective. NRCA recognizes that modifications to these details and other construction details may be suitable for different geographical areas, depending upon local climatic conditions. Design professionals may wish to consider design details generated by regional or local roofing contractor associations intended to address local conditions.

INDEX OF DETAIL DRAWINGS

Built-Up Roofs

BUR-22	Cable penetration (mop-or cold-or torch applied flashing systems)
BUR-23	Lightening protection terminal (mop-or cold-or torch applied flashing systems)
BUR-24	Roof drain (mop-or cold-or torch applied flashing systems)
BUR-25	Through-wall scupper (mop-or cold-or torch applied flashing systems)
BUR-26	Overflow scupper (mop-or cold-or torch applied flashing systems)
BUR-27	Gutter with perimeter edge metal (mop-or cold-or torch applied flashing systems)

EPDM Roofs

EPDM-1	Base flashing at parapet wall with metal coping
EPDM-2	Raised perimeter edge metal with metal flashing [fascia cap]
EPDM-3	Embedded edge metal flashing [Gravel Stop]
EPDM-4	Base flashing with surface-mounted counter-flashing at concrete wall
EPDM-5	Base flashing with two-piece sheet-metal counter-flashing
EPDM-6	Base flashing at roof-to-wall expansion joint
EPDM-7	Base flashing at expansion joint with metal cover
EPDM-8	Base flashing at expansion joint (non-reinforced EPDM membranes)
EPDM-9	Expansion joint for loose-laid, ballasted systems
EPDM-10	Base flashing at area divider in roof system
EPDM-11	Base flashing at lightweight equipment support curb
EPDM-12	Equipment support stand leg [field wrap]
EPDM-13	Base flashing at wood curb
EPDM-14	Base flashing at structural member through roof deck
EPDM-15	Base flashing at sheet-metal enclosure for piping through roof deck
EPDM-16	Base flashing at stack vent with curb [hot or cold]
EPDM-17	Sheet-metal stack vent [hot or cold]
EPDM-18	Plumbing vent [pre-manufactured boot]
EPDM-19	Plumbing vent [field wrap]
EPDM-20	Penetration pocket—single penetration
EPDM-21	Penetration pocket—double penetration
EPDM-22	Cable Penetration
EPDM-23	Roof Drain
EPDM-24	Base flashing at through-wall scupper
EPDM-25	Base flashing at overflow scupper
EPDM-26	Gutter with perimeter edge metal

Single-Ply Roofs

SP-1	Base flashing at parapet wall with metal coping
SP-2	Raised perimeter edge with metal flashing [fascia cap]

SP-3	Embedded edge-metal flashing [Gravel Stop] with membrane coating
SP-4	Draining perimeter edge metal with membrane coating
SP-5	Draining perimeter edge metal
SP-6	Base flashing with surface-mounted counter-flashing at concrete wall
SP-7	Base flashing with two-piece sheet-metal counter-flashing
SP-8	Base flashing at roof-to-wall expansion joint
SP-9	Base flashing at expansion joint with metal cover
SP-10	Base flashing at expansion joint
SP-11	Equipment support stand leg [field wrap]
SP-12	Base flashing at prefabricated metal curb
SP-13	Base flashing at wood curb
SP-14	Base flashing at structural member through roof deck
SP-15	Base flashing at sheet-metal enclosure for piping through roof deck
SP-16	Plumbing vent [pre-manufactured boot]
SP-17	Plumbing vent [field wrap]
SP-18	Penetration pocket—single penetration
SP-19	Penetration pocket—double penetration
SP-20	Cable Penetration
SP-21	Roof drain
SP-22	Base flashing at through-wall scupper
SP-23	Base flashing at overflow scupper
SP-24	Gutter with membrane coated perimeter edge metal
SP-25	Gutter with perimeter edge metal

Architectural Metal Roofs

AM-1	Eave
AM-2	Eave
AM-3	Eave with gutter
AM-4	Eave with gutter
AM-5	Rake edge flashing
AM-6	Ridge cap flashing
AM-7	Venting ridge cap flashing
AM-8	Hip cap flashing
AM-9	Open metal valley
AM-10	Roof –to-wall (headwall) transition
AM-11	Roof-to-wall (sidewall) flashing
AM-12	Low profile expansion joint
AM-13	Pipe penetration flashing
AM-14	Sheet-metal stack vent [hot or cold]

AM-15	Raised curb for rooftop equipment
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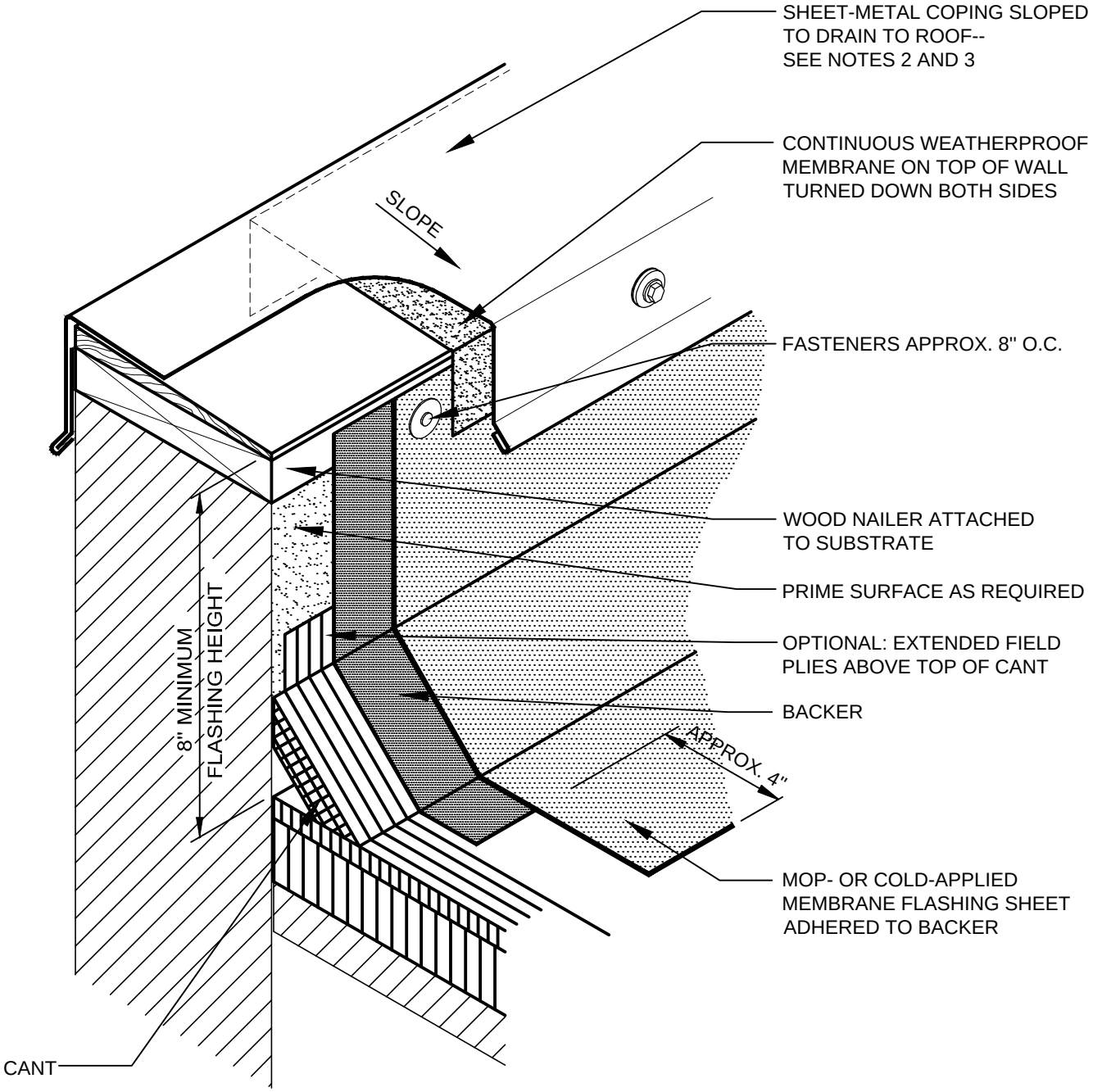
Asphalt Shingle Roofs (Steep Slope Roofs)

ASPH-1	Eave
ASPH-2	Eave with gutter
ASPH-3	Rake
ASPH-4	Non-vented ridge
ASPH-5	Ridge with continuous ridge vent
ASPH-6	Hip
ASPH-7	Open valley
ASPH-8	Closed-cut valley
ASPH-9	Headwall Flashing
ASPH-10	Sidewall flashing with two-piece counter-flashing
ASPH-11	Sidewall flashing with one-piece counter-flashing
ASPH-12	Vent pipe penetration
ASPH-13	Chimney with cricket flashing

Miscellaneous

CS-01	Conduit Supports

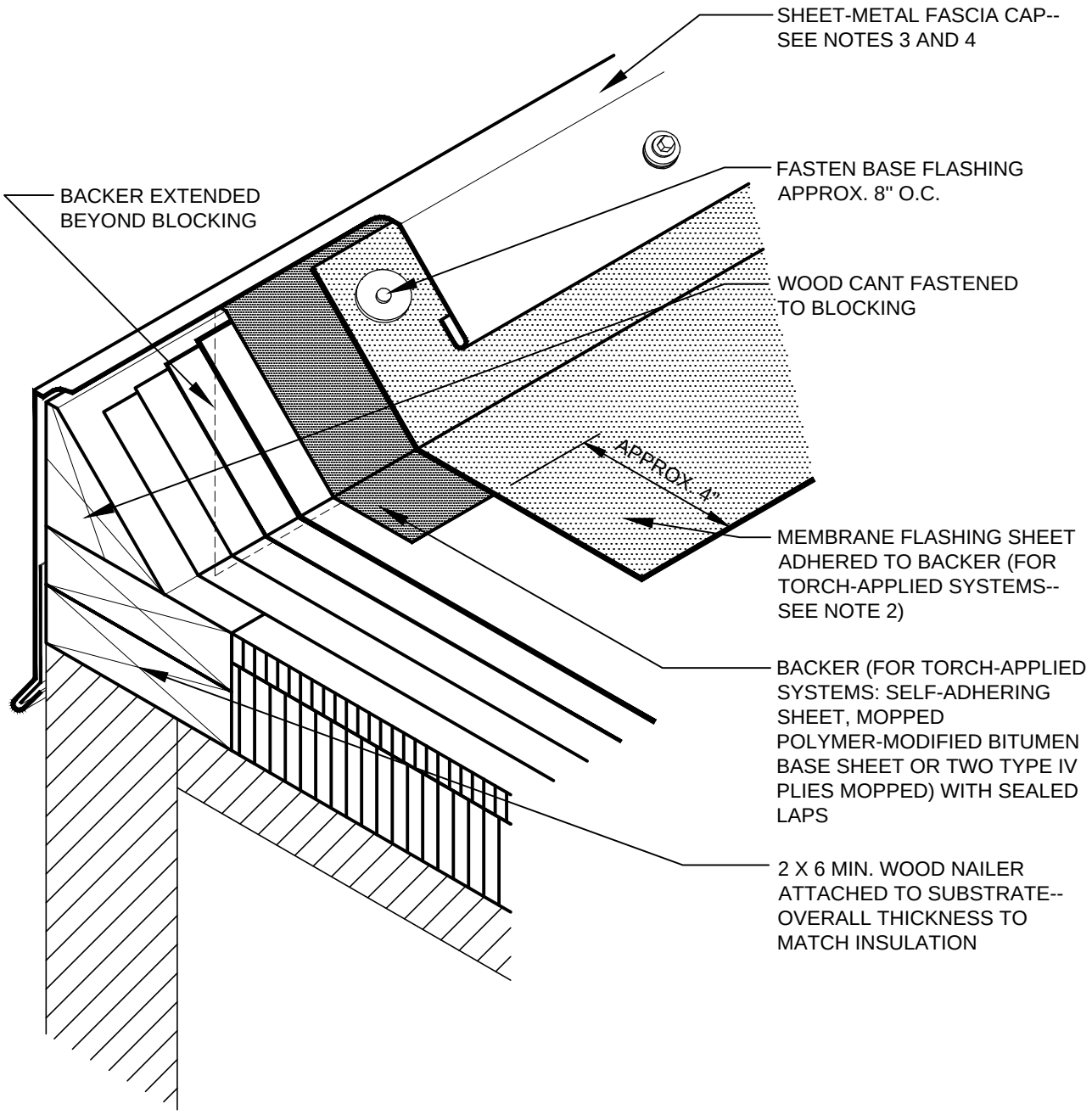


NOTES:

1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL. SEE DETAIL BUR (MC)-7 FOR EXPANSION JOINT AT A DECK-TO-WALL LOCATION.
2. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COPINGS.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT PARAPET WALL WITH METAL COPING (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-1**

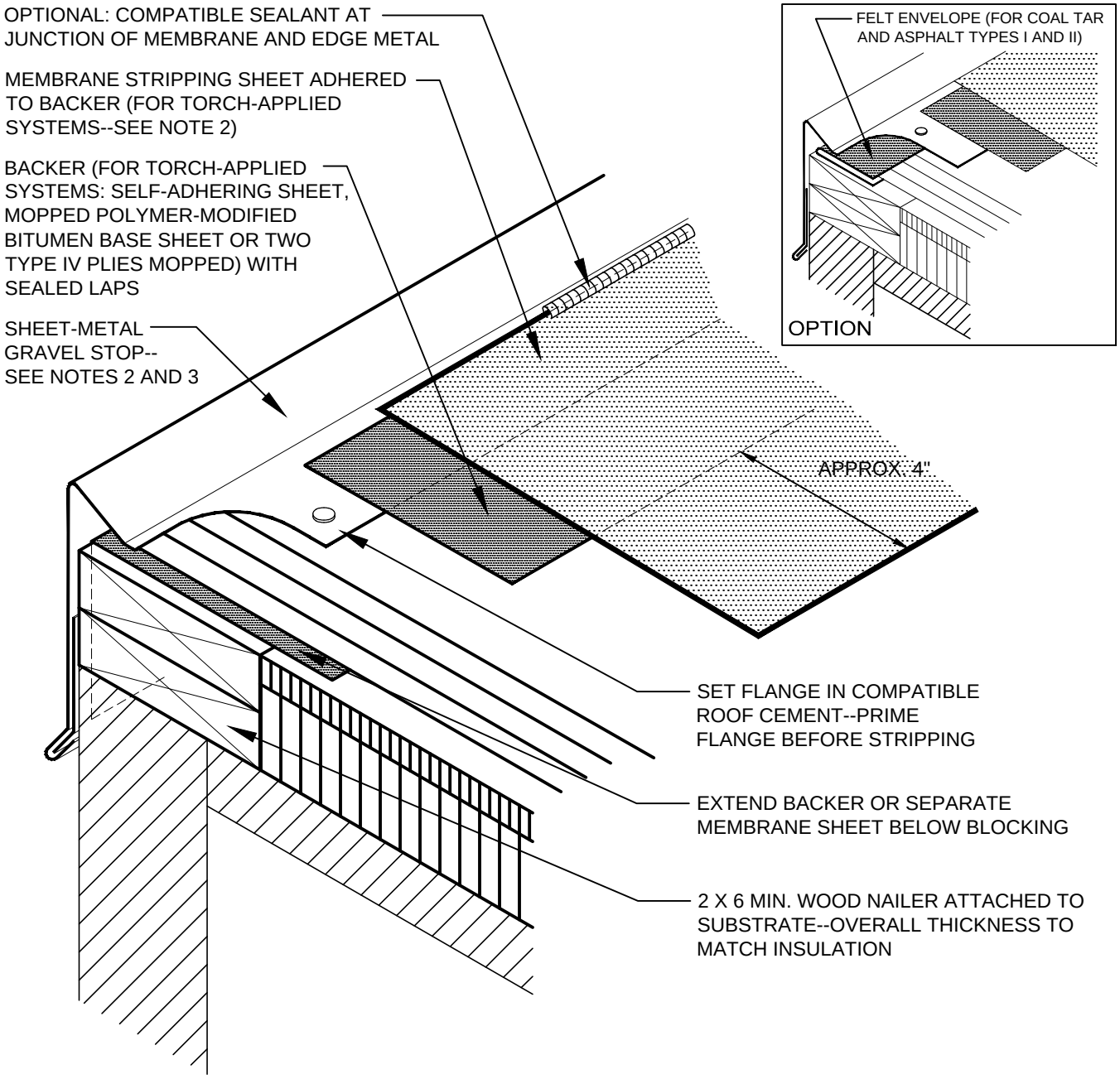


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR FASCIA CAPS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

RAISED PERIMETER EDGE WITH METAL FLASHING [FASCIA CAP] (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-2**

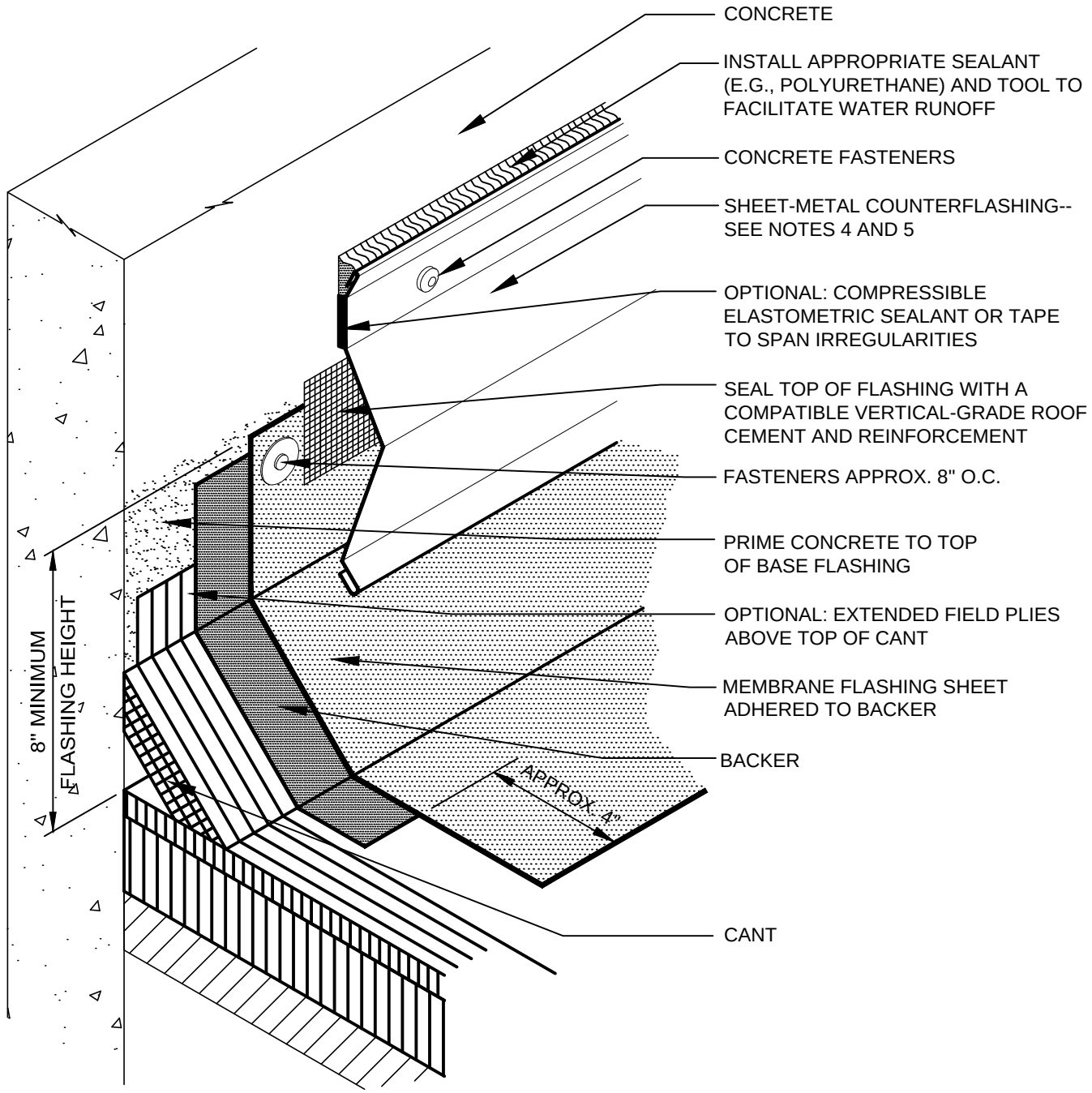


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR GRAVEL STOPS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EMBEDDED EDGE-METAL FLASHING [GRAVEL STOP] (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-3**

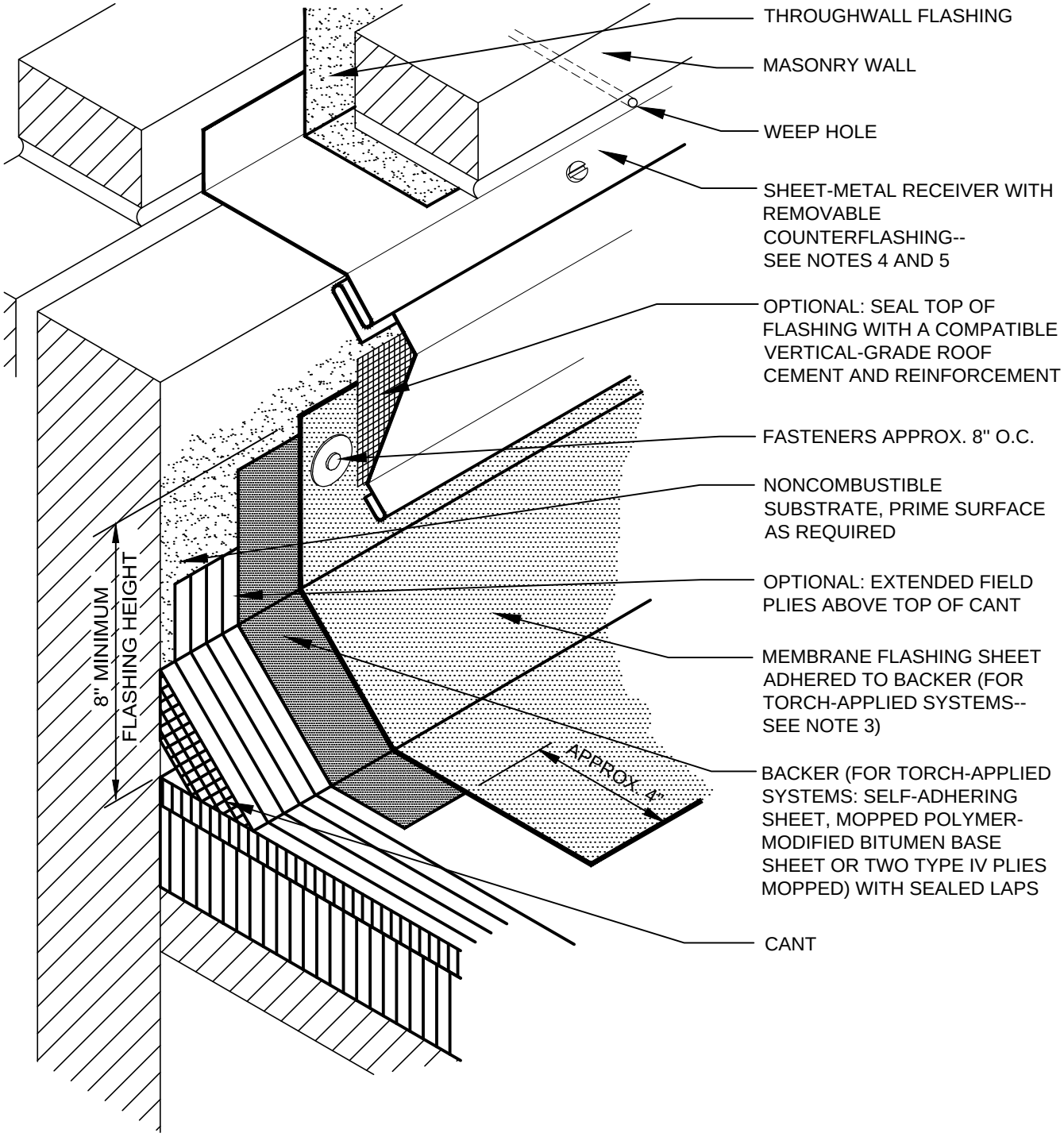


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL. COUNTERFLASHING DETAIL MAY BE A TWO-PIECE REGLET AND COUNTERFLASHING (SEE SECTION 10.1--INFORMATION APPLICABLE TO ALL
3. CONSTRUCTION DETAILS FOR SHEET-METAL COUNTERFLASHING OPTIONS).
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING WITH SURFACE-MOUNTED COUNTERFLASHING AT CONCRETE WALL (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-4**

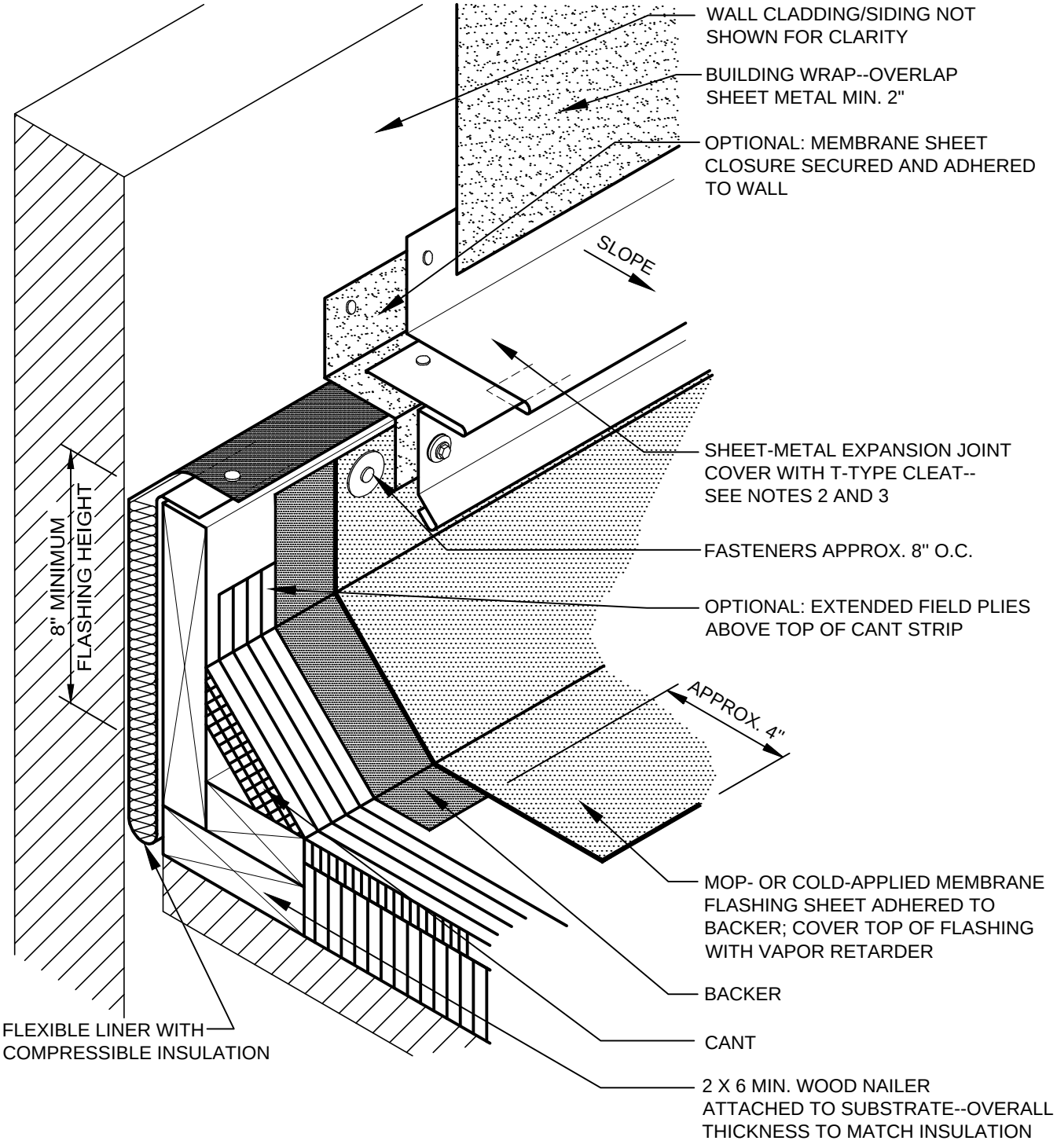


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
3. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING WITH TWO-PIECE SHEET-METAL COUNTERFLASHING (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-5**

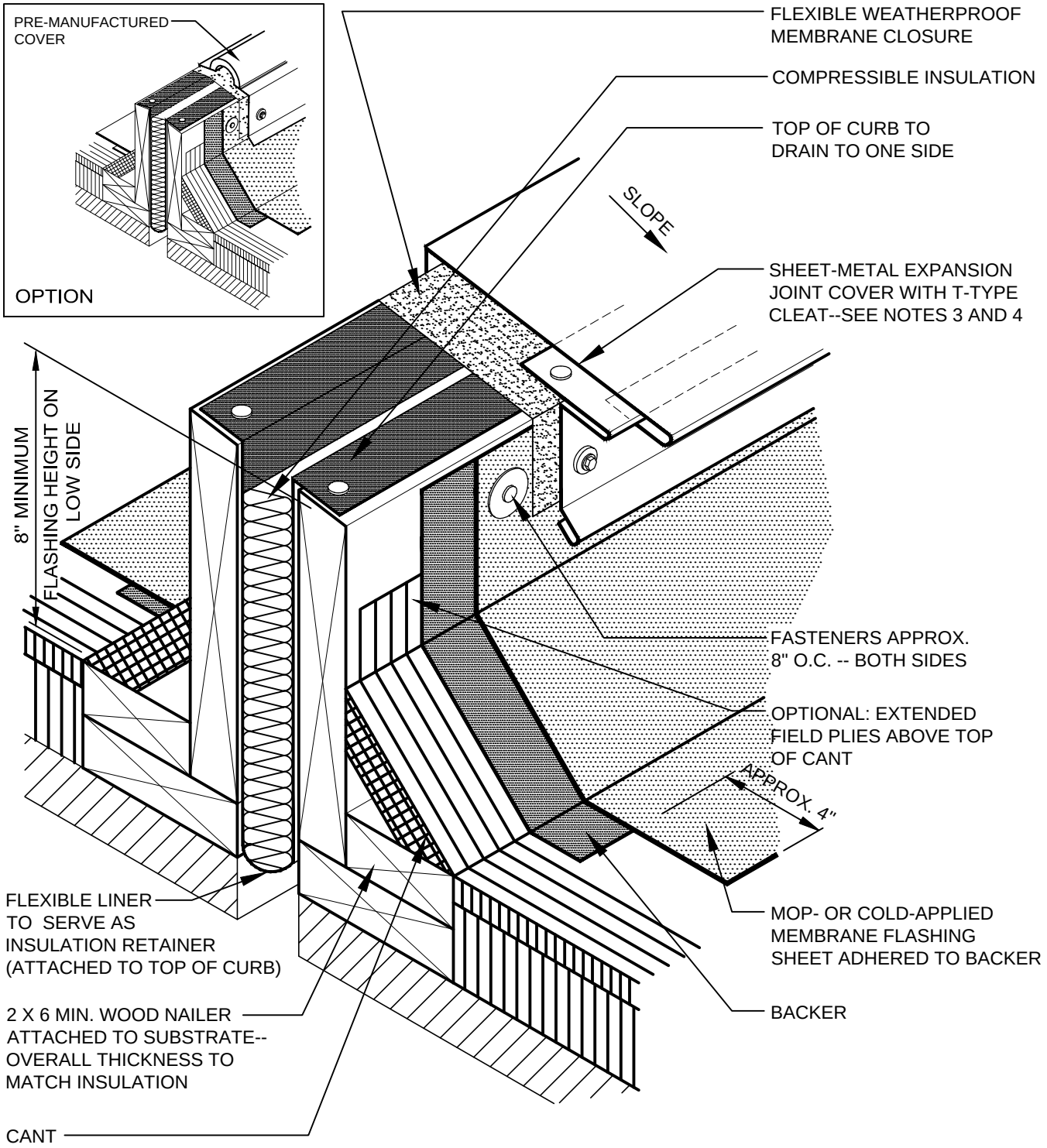


NOTES:

1. THIS DETAIL SHOULD BE USED WHEN THERE IS ANY POSSIBILITY DIFFERENTIAL MOVEMENT WILL OCCUR BETWEEN THE DECK AND WALL. THE WOOD MEMBERS SHOULD NOT BE FASTENED TO THE WALL.
2. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR EXPANSION JOINT COVERS.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT ROOF-TO-WALL EXPANSION JOINT (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-6**

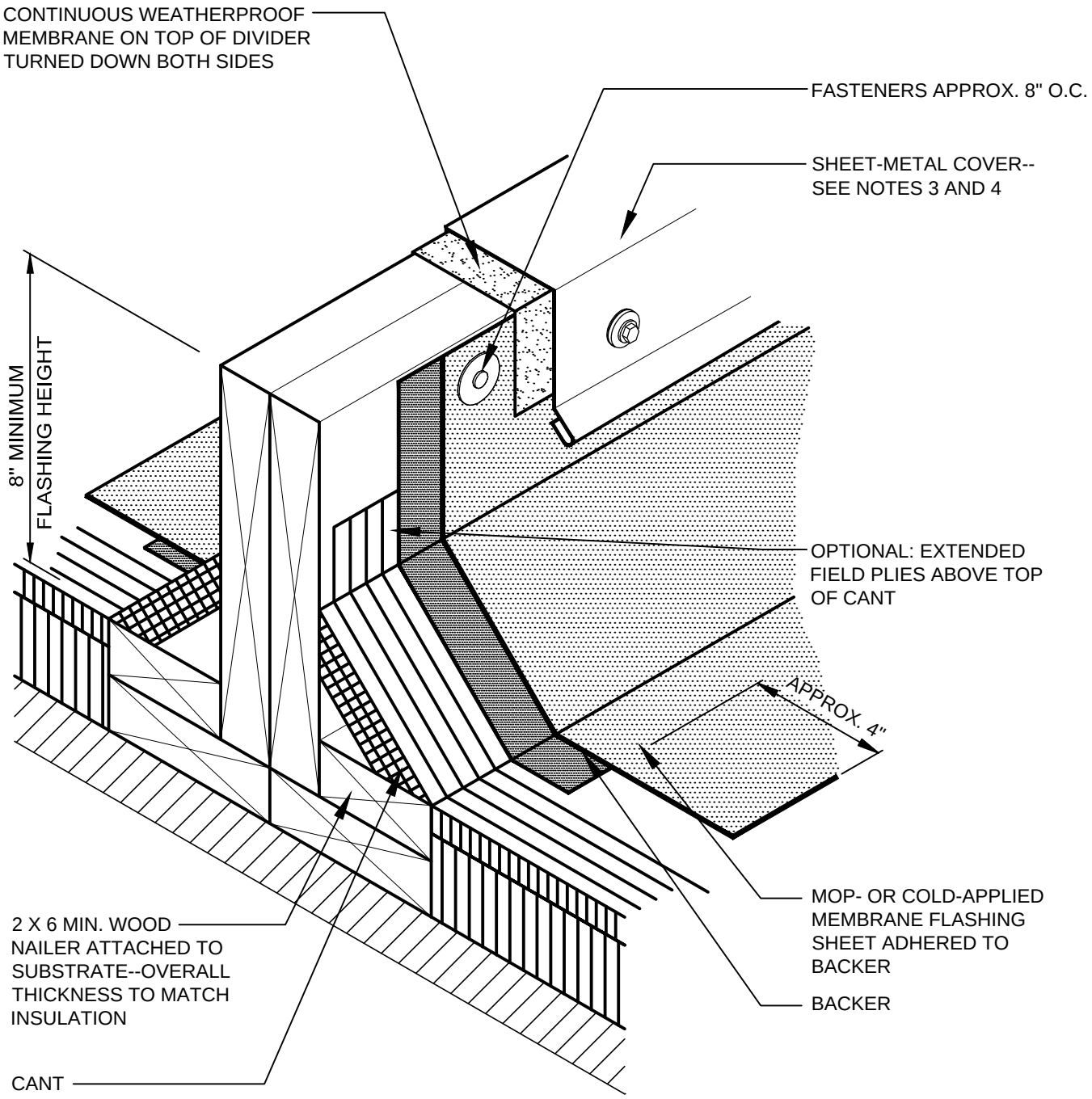


NOTES:

1. THIS DETAIL ALLOWS FOR BUILDING MOVEMENT IN MULTIPLE DIRECTIONS.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF EXPANSION JOINT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR EXPANSION JOINT COVERS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EXPANSION JOINT WITH METAL COVER (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-7**



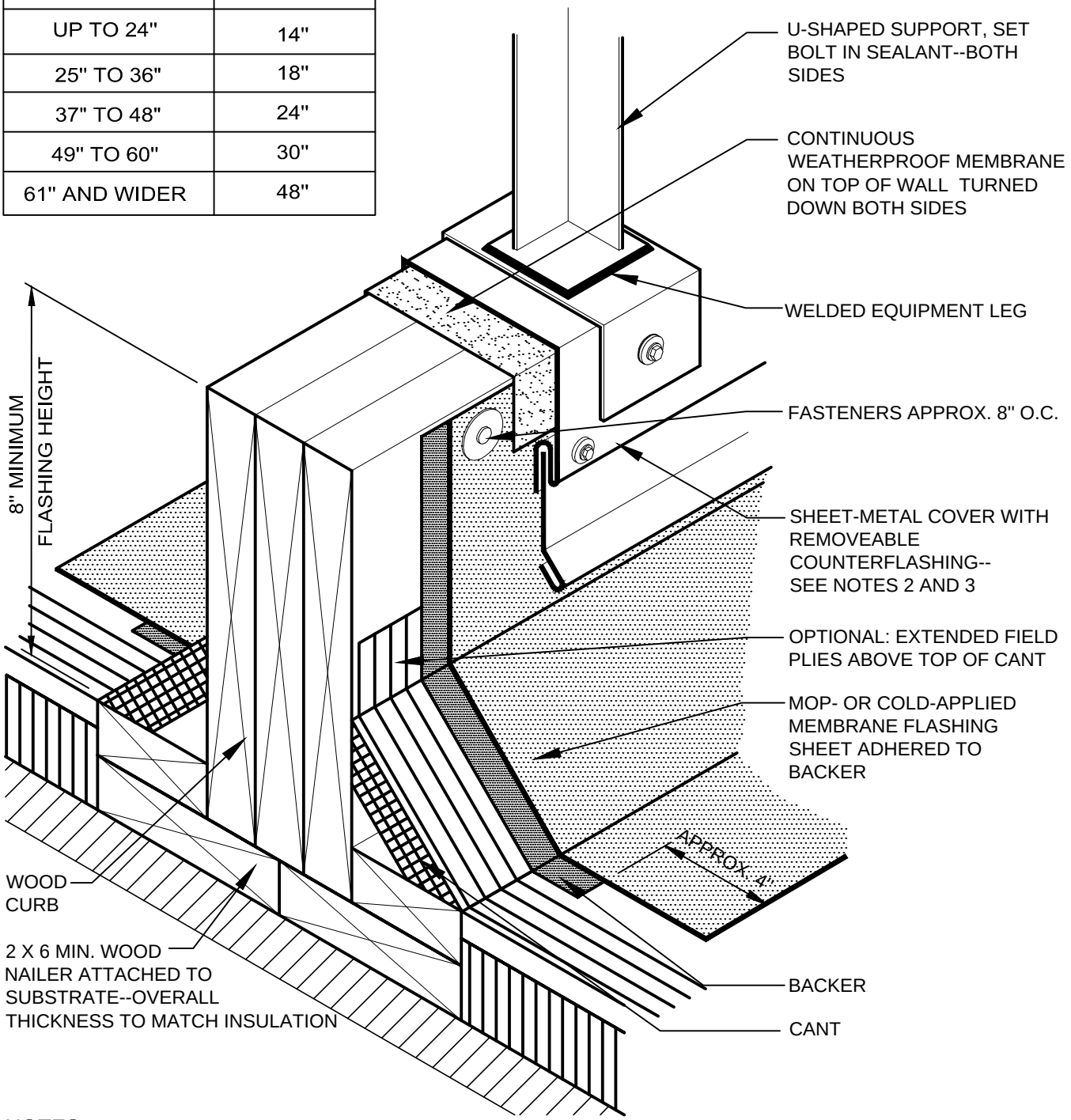
NOTES:

1. AN AREA DIVIDER SHOULD NEVER RESTRICT THE FLOW OF WATER.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF AREA DIVIDER.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SHEET-METAL COVERS.
4. REFER TO SECTION 7.2--BUR AND MB CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT AREA DIVIDER IN ROOF SYSTEM (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-8**

WIDTH OF EQUIPMENT	CLEARANCE [1]
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"



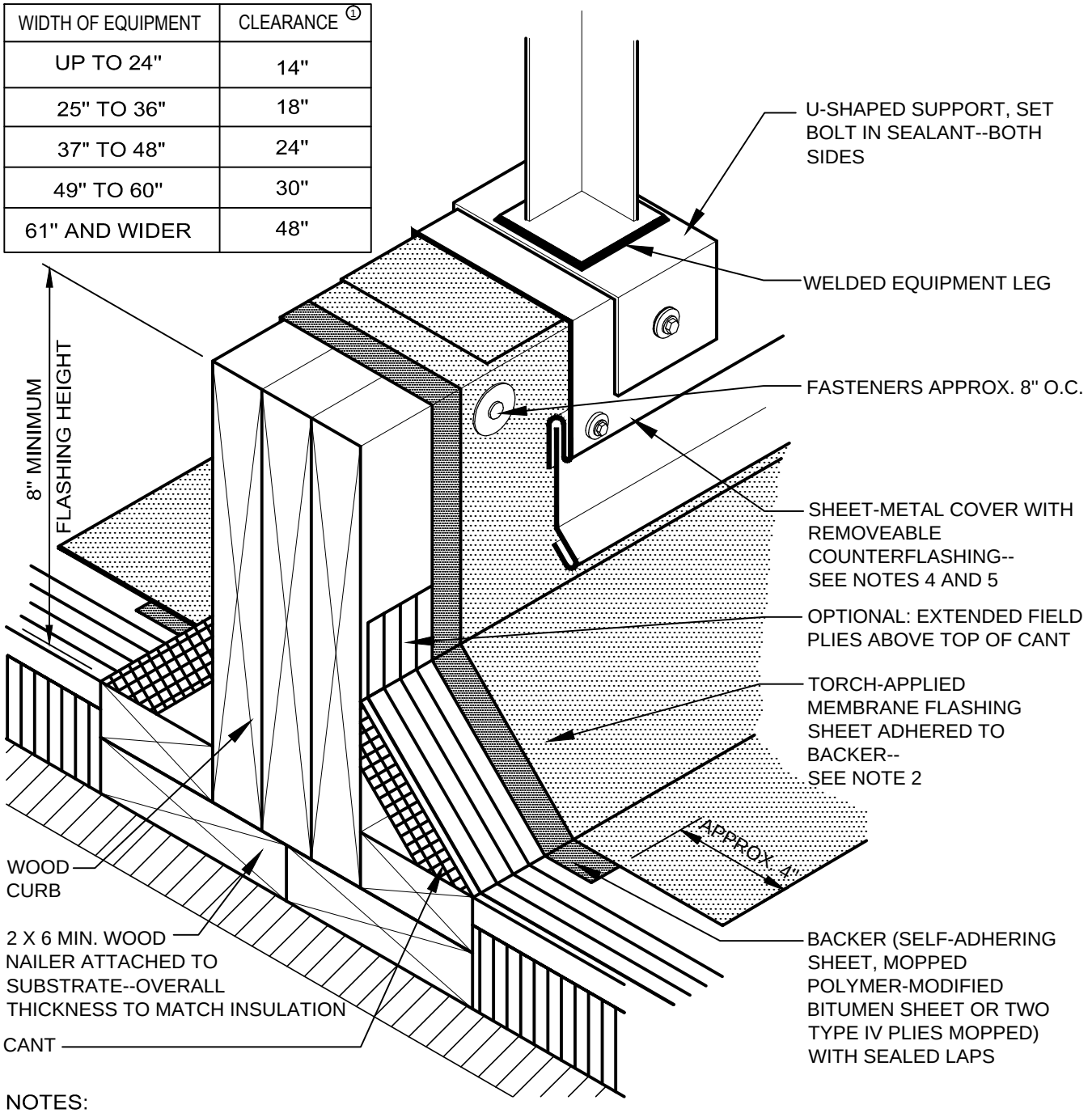
NOTES:

1. THIS DETAIL ALLOWS FOR MEMBRANE MAINTENANCE AROUND THE SUPPORTED EQUIPMENT. THE CONTINUOUS SUPPORT IS PREFERRED IN LIGHTWEIGHT STRUCTURAL SYSTEMS BECAUSE THE EQUIPMENT WEIGHT CAN BE SPREAD ACROSS TWO OR MORE SUPPORTING MEMBERS. WHERE HEAVY STRUCTURAL SYSTEMS ARE USED OR WHERE THE LOAD CAN BE CONCENTRATED OVER A COLUMN, DETAIL BUR-11 MAY BE PREFERRED. A MINIMUM OF 2 FEET OF HORIZONTAL CLEARANCE MUST BE PROVIDED FOR REMOVAL AND REPLACEMENT OF ROOFING AND FLASHING BETWEEN PARALLEL SUPPORTS. REFER TO TABLE ABOVE FOR RECOMMENDATIONS ON VERTICAL CLEARANCE FROM ROOF SURFACE TO BOTTOM OF SUPPORTED EQUIPMENT.
2. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SHEET-METAL COVERS.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EQUIPMENT SUPPORT CURB (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-9**

WIDTH OF EQUIPMENT	CLEARANCE [1]
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"



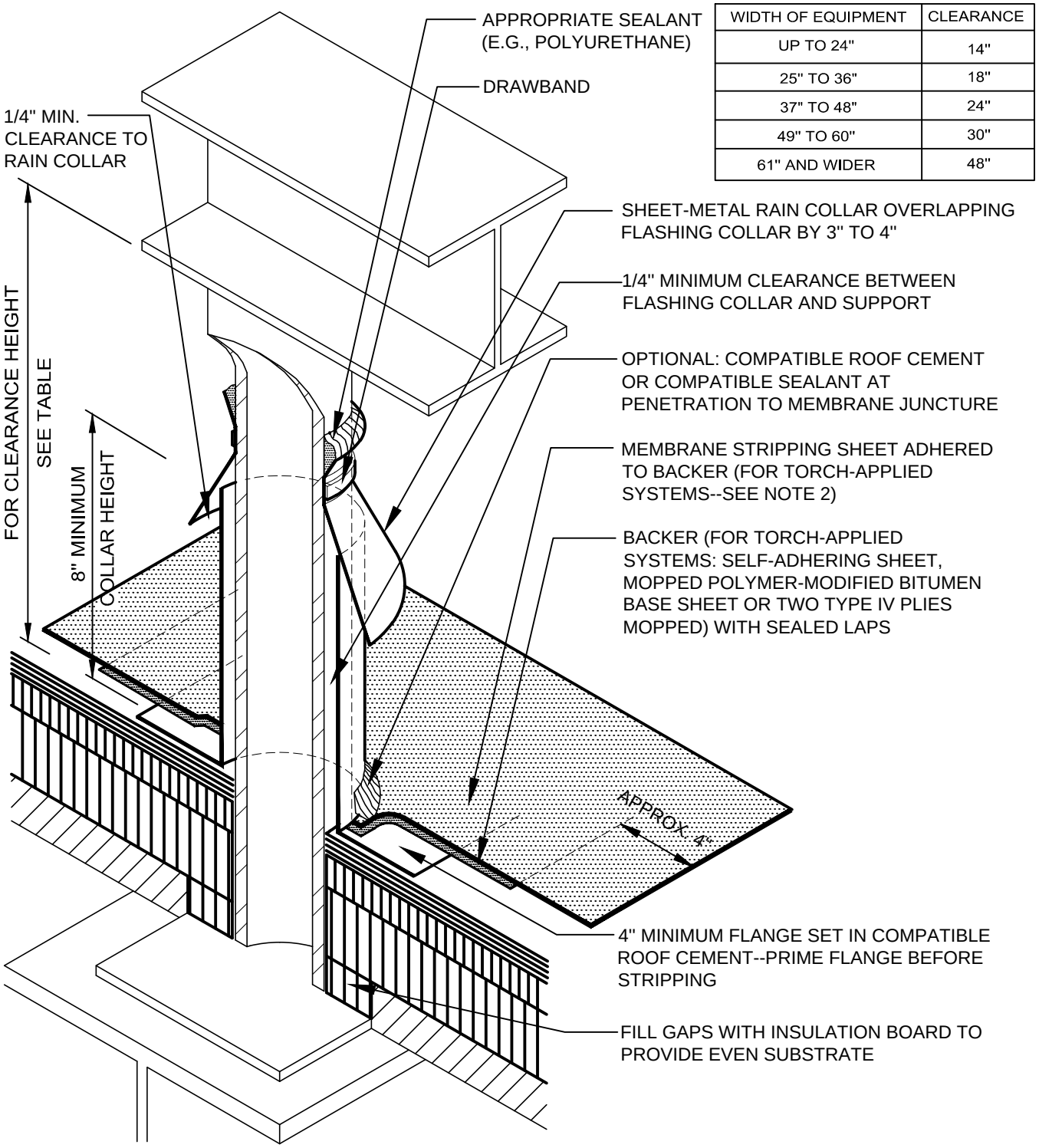
NOTES:

1. THIS DETAIL ALLOWS FOR MEMBRANE MAINTENANCE AROUND THE SUPPORTED EQUIPMENT. THE CONTINUOUS SUPPORT IS PREFERRED IN LIGHTWEIGHT STRUCTURAL SYSTEMS BECAUSE THE EQUIPMENT WEIGHT CAN BE SPREAD ACROSS TWO OR MORE SUPPORTING MEMBERS. WHERE HEAVY STRUCTURAL SYSTEMS ARE USED OR WHERE THE LOAD CAN BE CONCENTRATED OVER A COLUMN, DETAIL BUR-11 MAY BE PREFERRED. A MINIMUM OF 2 FEET OF HORIZONTAL CLEARANCE MUST BE PROVIDED FOR REMOVAL AND REPLACEMENT OF ROOFING AND FLASHING BETWEEN PARALLEL SUPPORTS. REFER TO TABLE ABOVE FOR RECOMMENDATIONS ON VERTICAL CLEARANCE FROM ROOF SURFACE TO BOTTOM OF SUPPORTED EQUIPMENT.
2. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SHEET METAL COVERS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EQUIPMENT SUPPORT CURB (TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-10**

WIDTH OF EQUIPMENT	CLEARANCE
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"



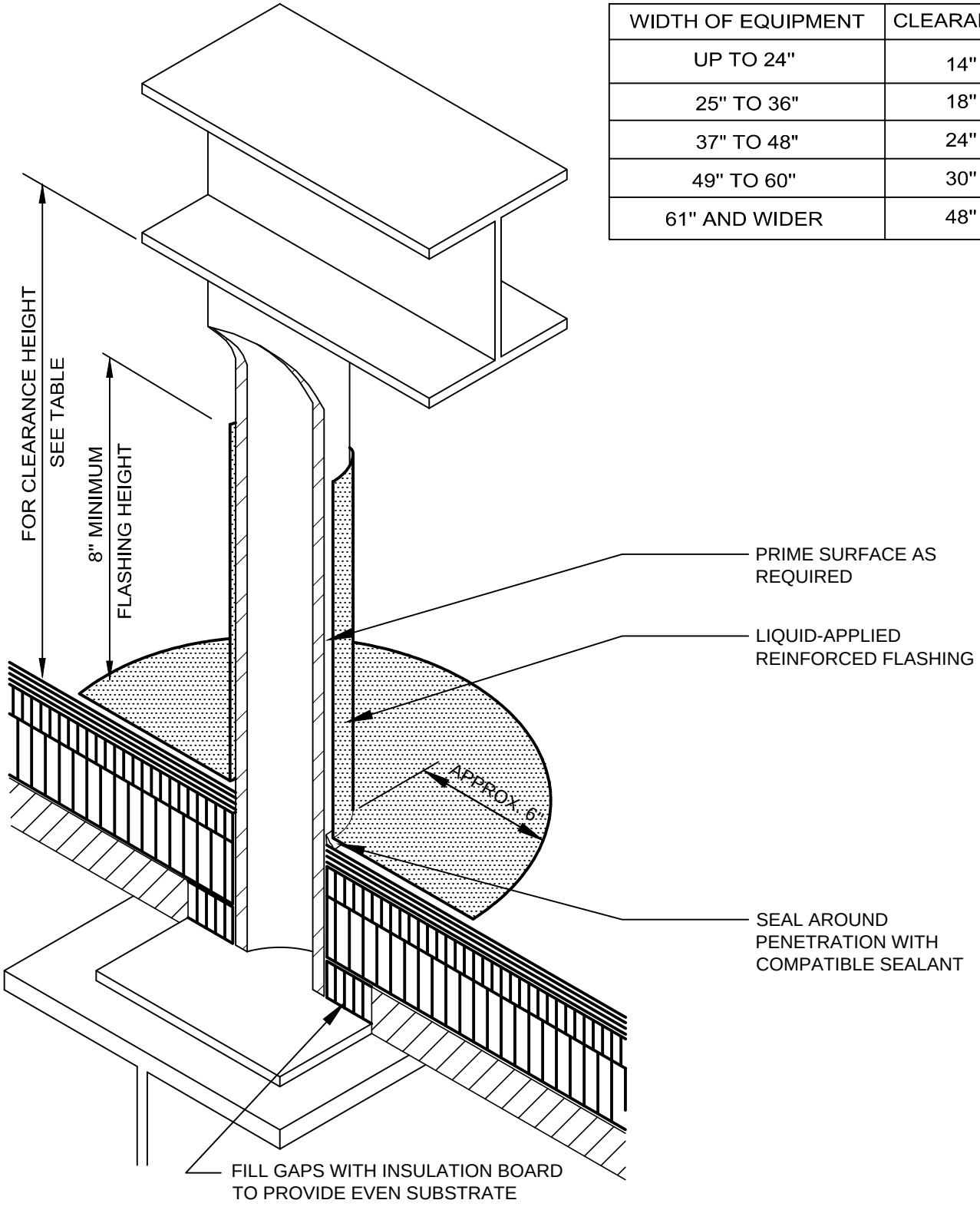
NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EQUIPMENT SUPPORT STAND AND TYPICAL RAIN COLLAR PENETRATION (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-11**

WIDTH OF EQUIPMENT	CLEARANCE
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"

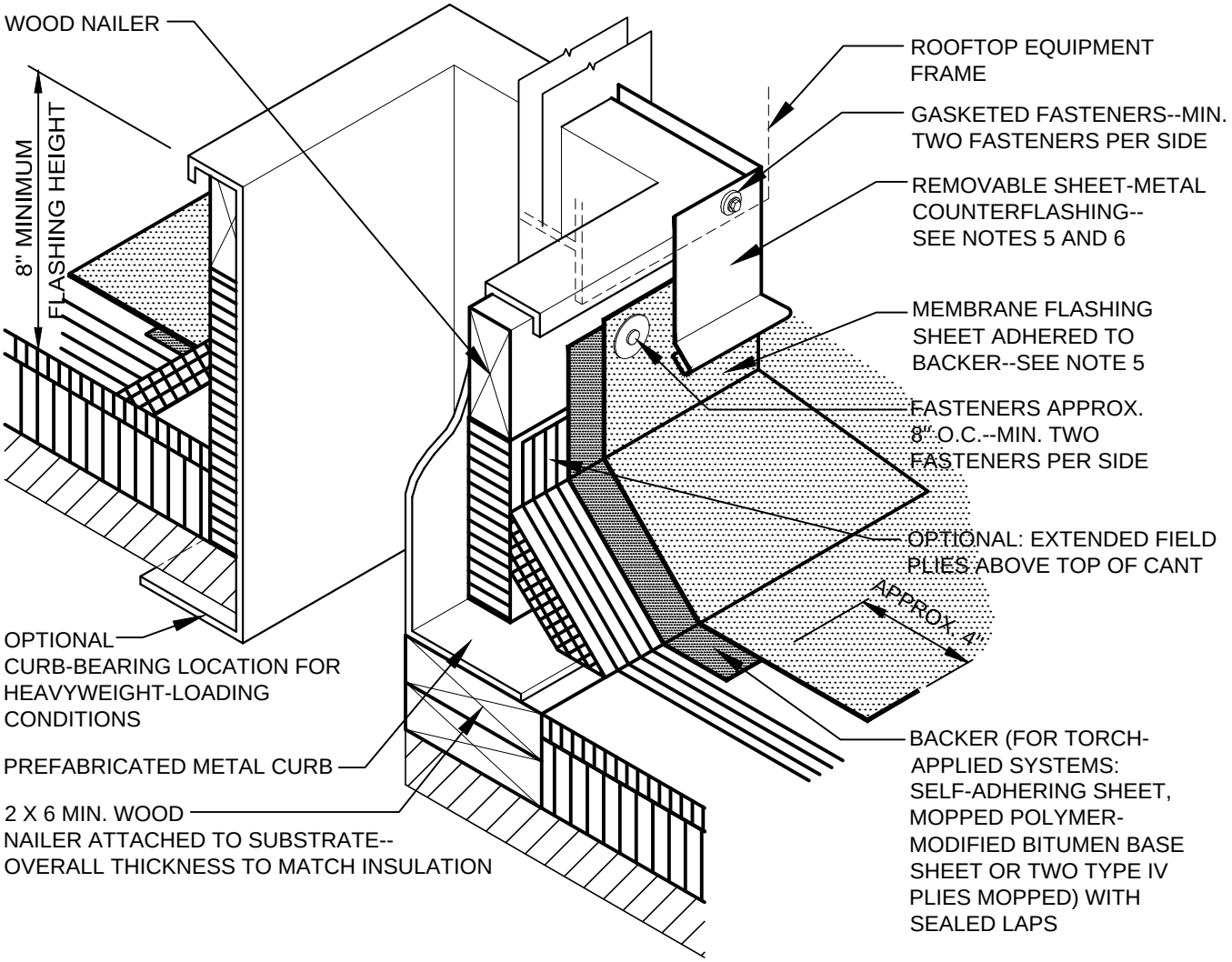


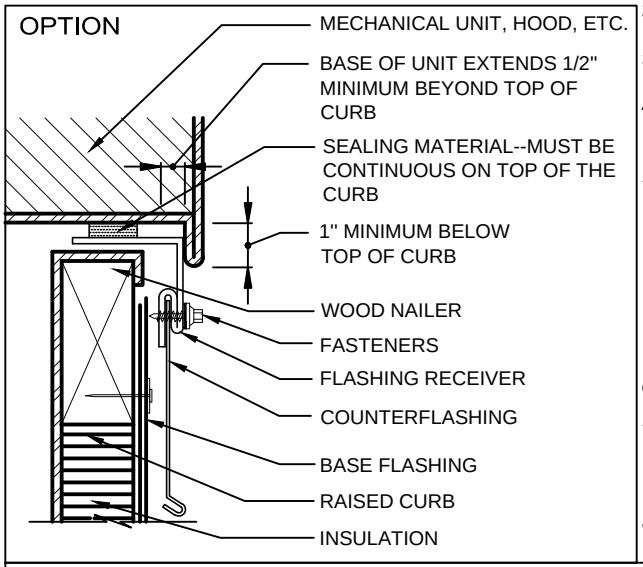
NOTES:

1. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EQUIPMENT SUPPORT STAND LEG (LIQUID-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-12**





NOTES:

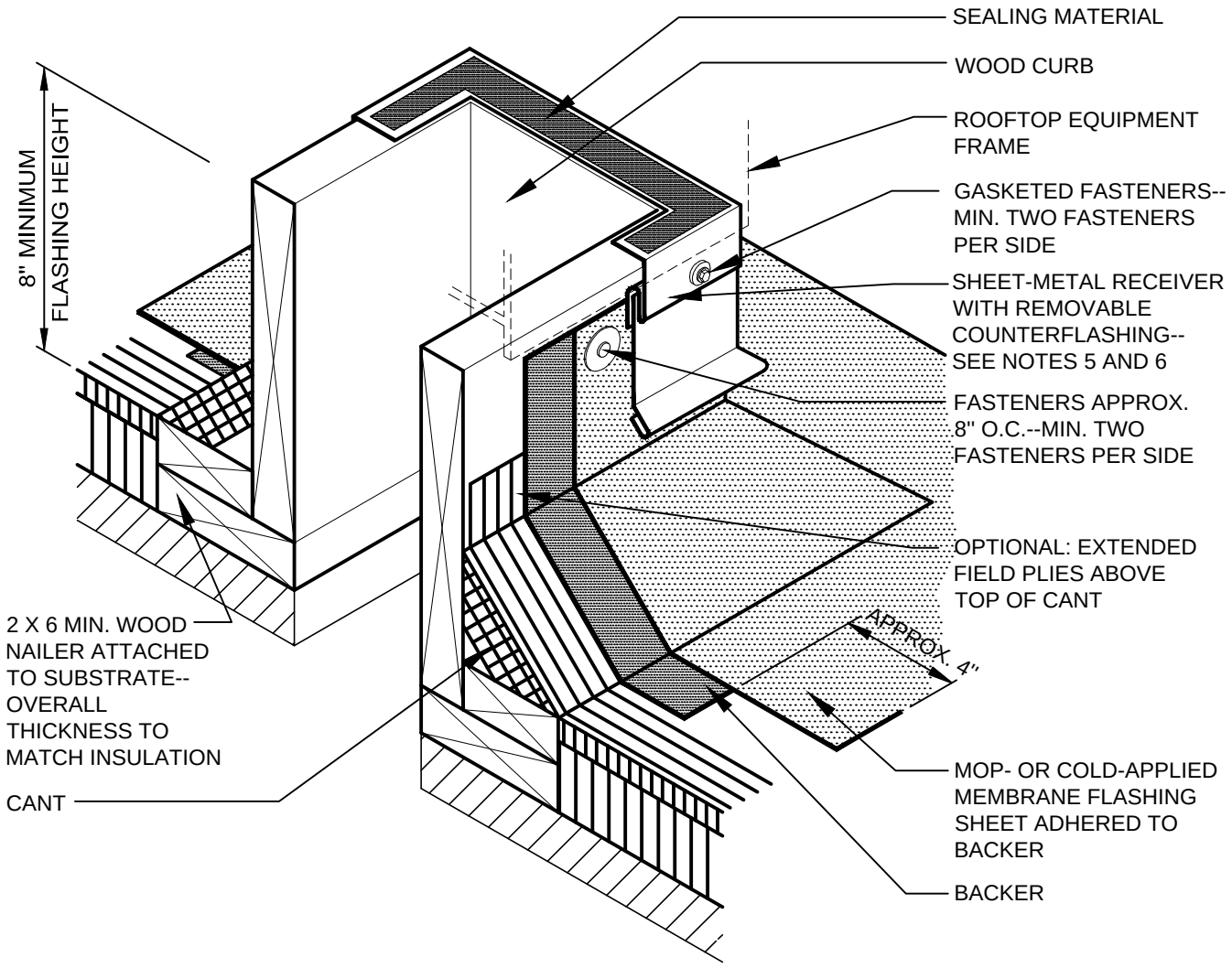
1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. THE CURBS, TOP WOOD NAILER AND SEAL STRIP ARE TO BE SUPPLIED BY THE CURB MANUFACTURER.
3. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
4. WHERE THE SKYLIGHT, SCUTTLE OR SMOKE VENT FRAME OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
5. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
6. NRCA RECOMMENDS DESIGNERS CONSIDER PERMANENT INTERNAL OR EXTERNAL FALL-PROTECTION DEVICES AT ALL SKYLIGHTS.
7. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
8. REFER TO SECTION 7.2--BUR AND MB CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

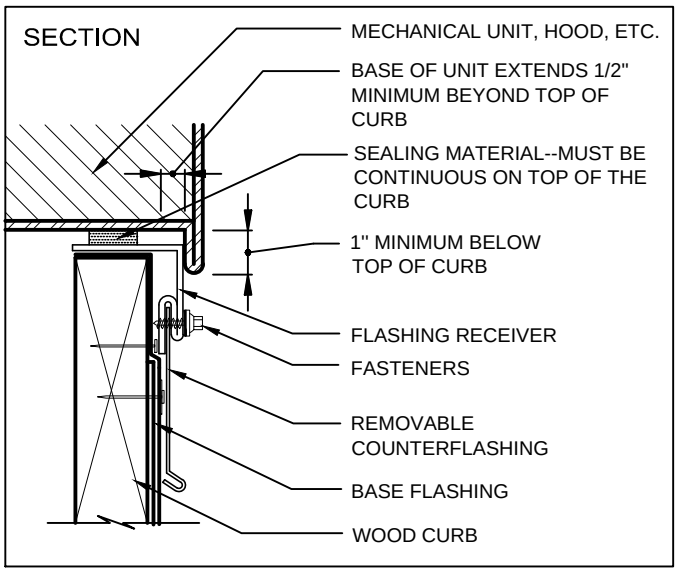
BASE FLASHING AT PREFABRICATED METAL CURB (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011

NOT DRAWN TO SCALE

BUR-13





NOTES:

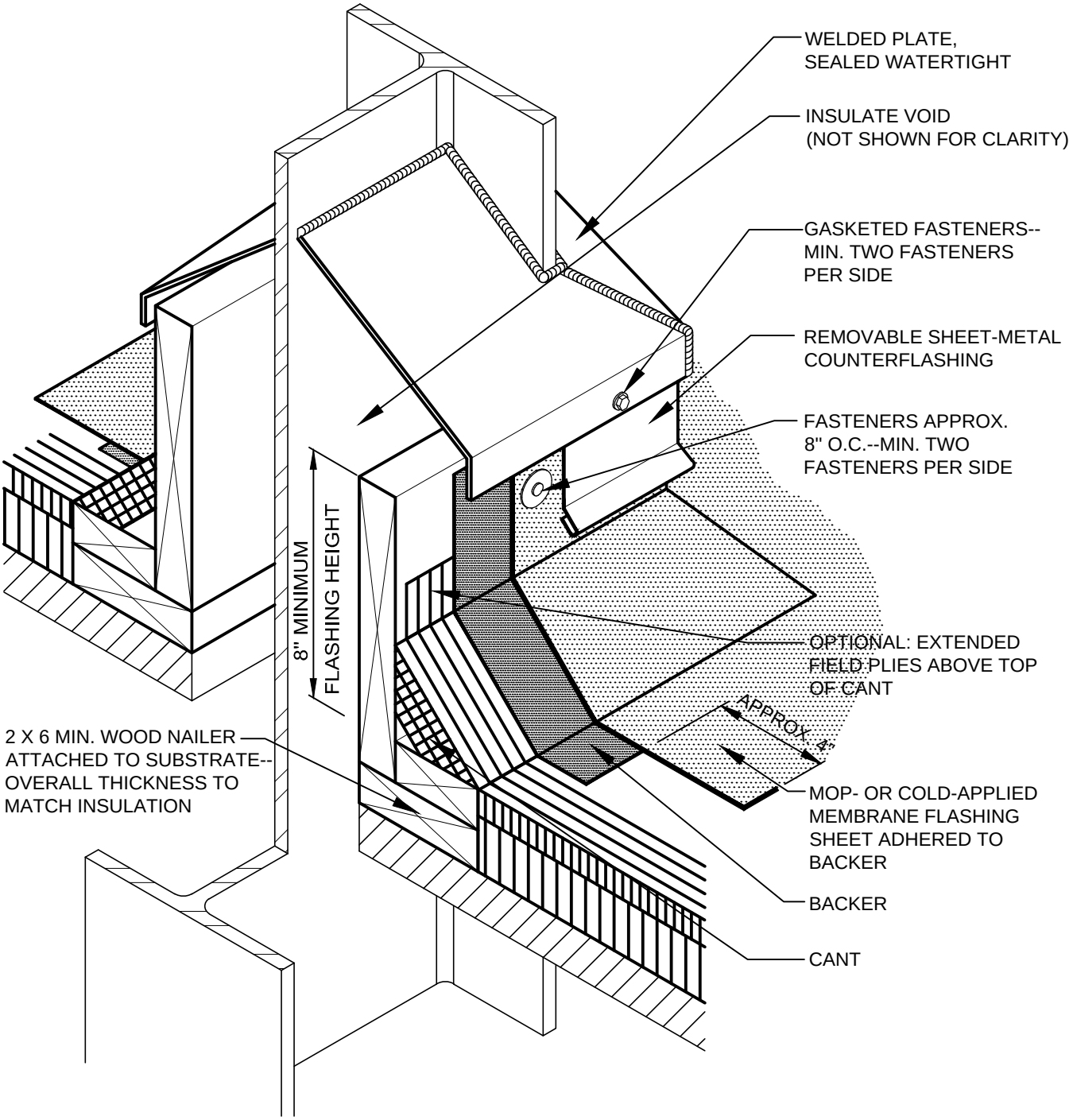
1. THE CURBS, TOP WOOD NAILER AND SEAL STRIP ARE TO BE SUPPLIED BY THE CURB MANUFACTURER.
2. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
3. WHERE THE SKYLIGHT, SCUTTLE OR SMOKE VENT FRAME OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. NRCA RECOMMENDS DESINGERS CONSIDER PERMANENT INTERNAL OR EXTERNAL FALL-PROTECTION DEVICES AT ALL SKYLIGHTS.
5. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT WOOD CURB (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011

NOT DRAWN TO SCALE

BUR-14

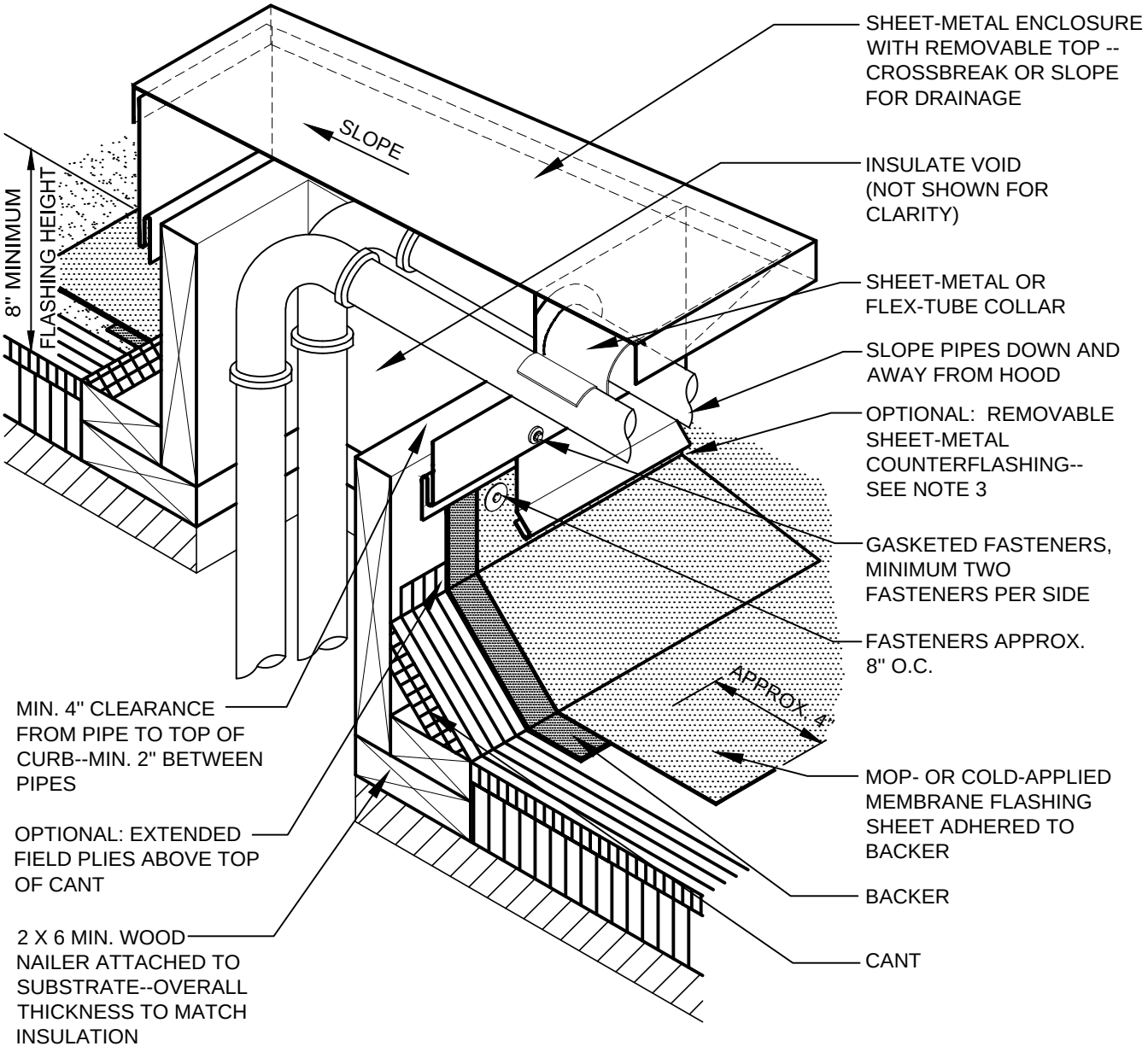


NOTES:

1. THIS DETAIL ILLUSTRATES ONE METHOD OF ELIMINATING PENETRATION POCKETS. THE CURBED SYSTEM ALLOWS FOR MOVEMENT IN THE STRUCTURAL MEMBER WITHOUT DISTURBING THE ROOF SYSTEM.
2. PENETRATIONS USING H, I AND C BEAMS/CHANNELS SHOULD BE AVOIDED. SQUARE OR ROUND TUBES ARE PREFERABLE.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT STRUCTURAL MEMBER THROUGH ROOF DECK (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-15**

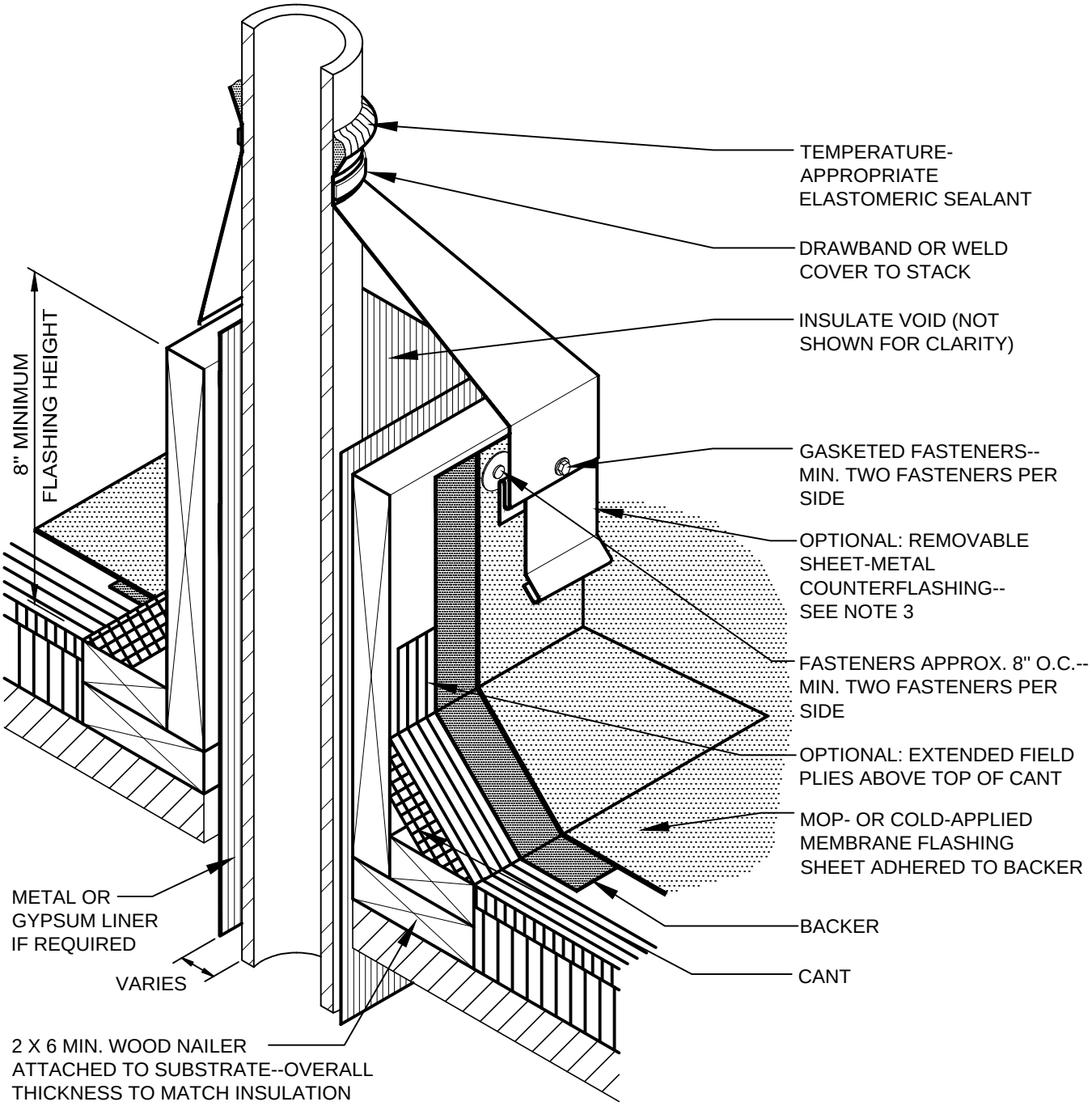


NOTES:

1. THIS DETAIL ILLUSTRATES ANOTHER METHOD OF ELIMINATING PITCH POCKETS AND AN OPTIONAL METHOD OF GROUPING PIPING THAT MUST PENETRATE THE ROOF.
2. MANY MANUFACTURERS OFFER PREFABRICATED BOOTS AND OTHER MATERIALS FOR THIS PURPOSE. SPECIFICS ON THESE PROPRIETARY DESIGNS VARY GREATLY, AND INDIVIDUAL MANUFACTURERS' SPECIFICATIONS SHOULD BE CONSULTED FOR THEIR USE.
3. WHERE THE SHEET-METAL ENCLOSURE OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT SHEET-METAL ENCLOSURE FOR PIPING THROUGH ROOF DECK (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-16**



NOTES:

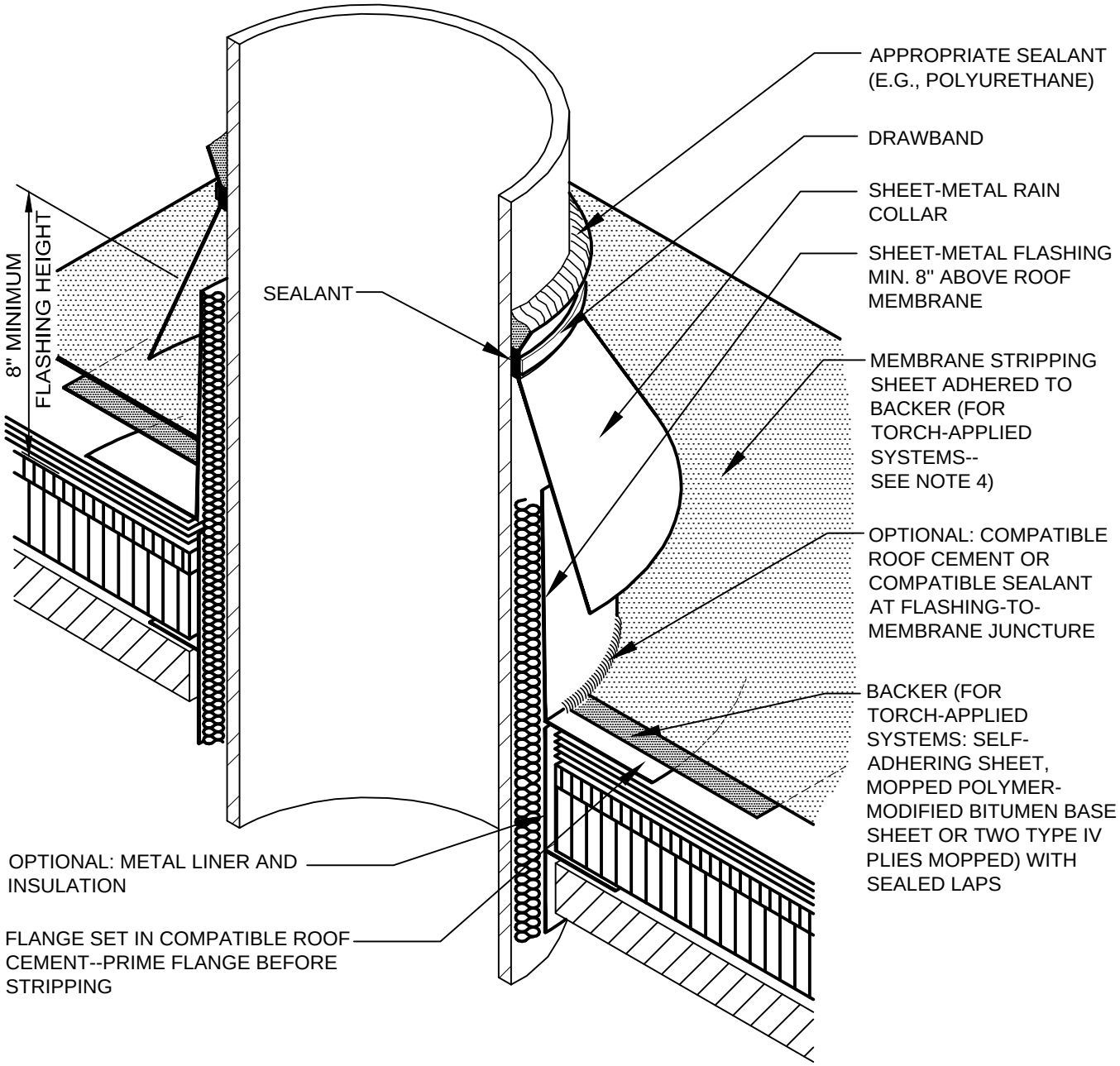
1. THIS DETAIL ALLOWS THE OPENING TO BE COMPLETED BEFORE THE STACK IS PLACED.
2. THE CLEARANCE NECESSARY BETWEEN THE OPTIONAL GYPSUM OR METAL LINER AND THE STACK AND THE NEED FOR INSULATION WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.
3. WHERE THE ISOLATED STACK COVER OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT STACK VENT WITH CURB [HOT OR COLD] (MOP- OR COLD-APPLIED FLASHING SYSTEMS)

2011

NOT DRAWN TO SCALE

BUR-17

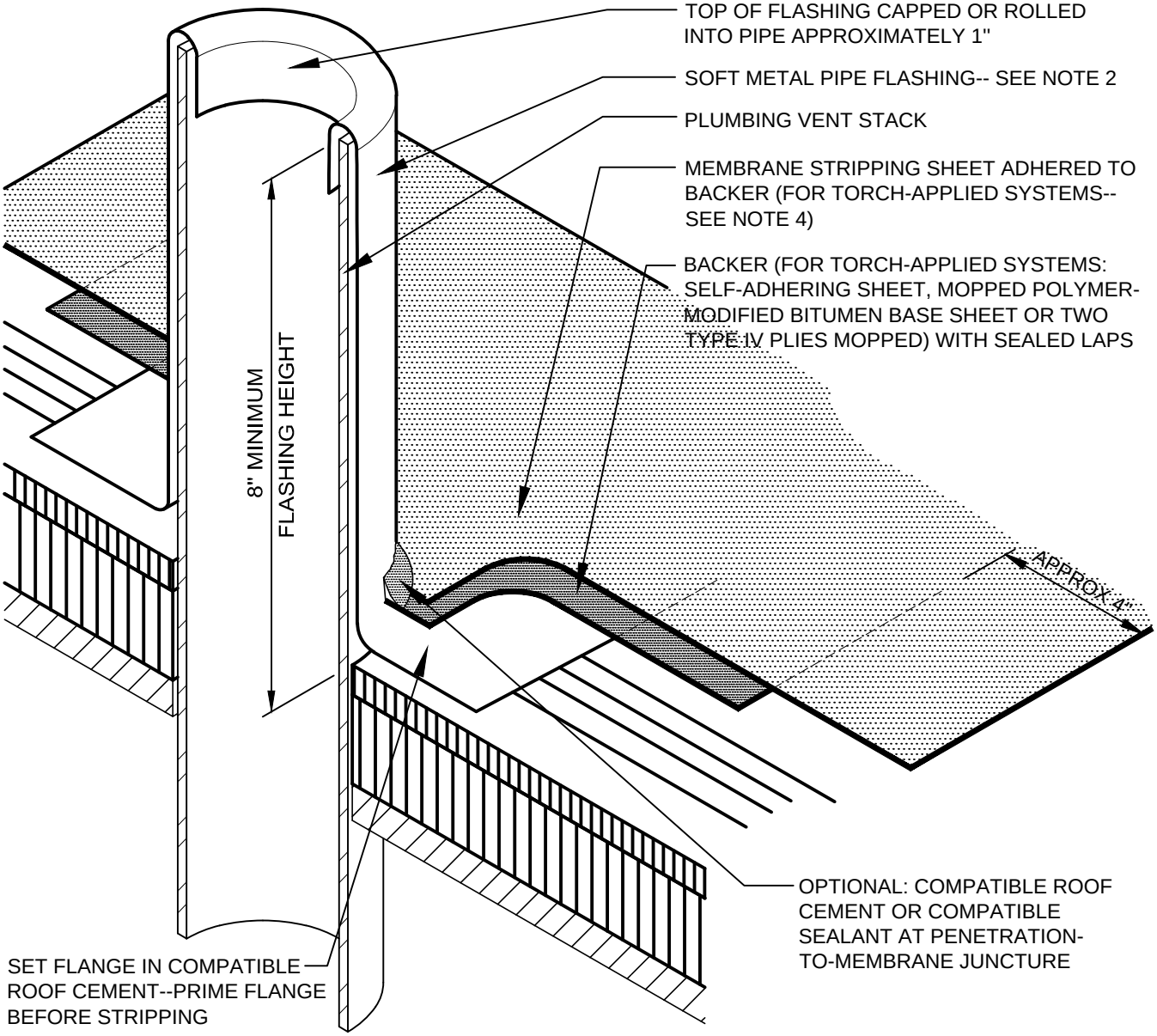


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. THIS DETAIL ALLOWS THE OPENING TO BE COMPLETED BEFORE THE STACK IS PLACED.
3. THE CLEARANCE NECESSARY BETWEEN THE OPTIONAL INSULATION AND METAL LINER AND THE STACK WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.
4. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

SHEET-METAL STACK VENT [HOT OR COLD] (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-18**

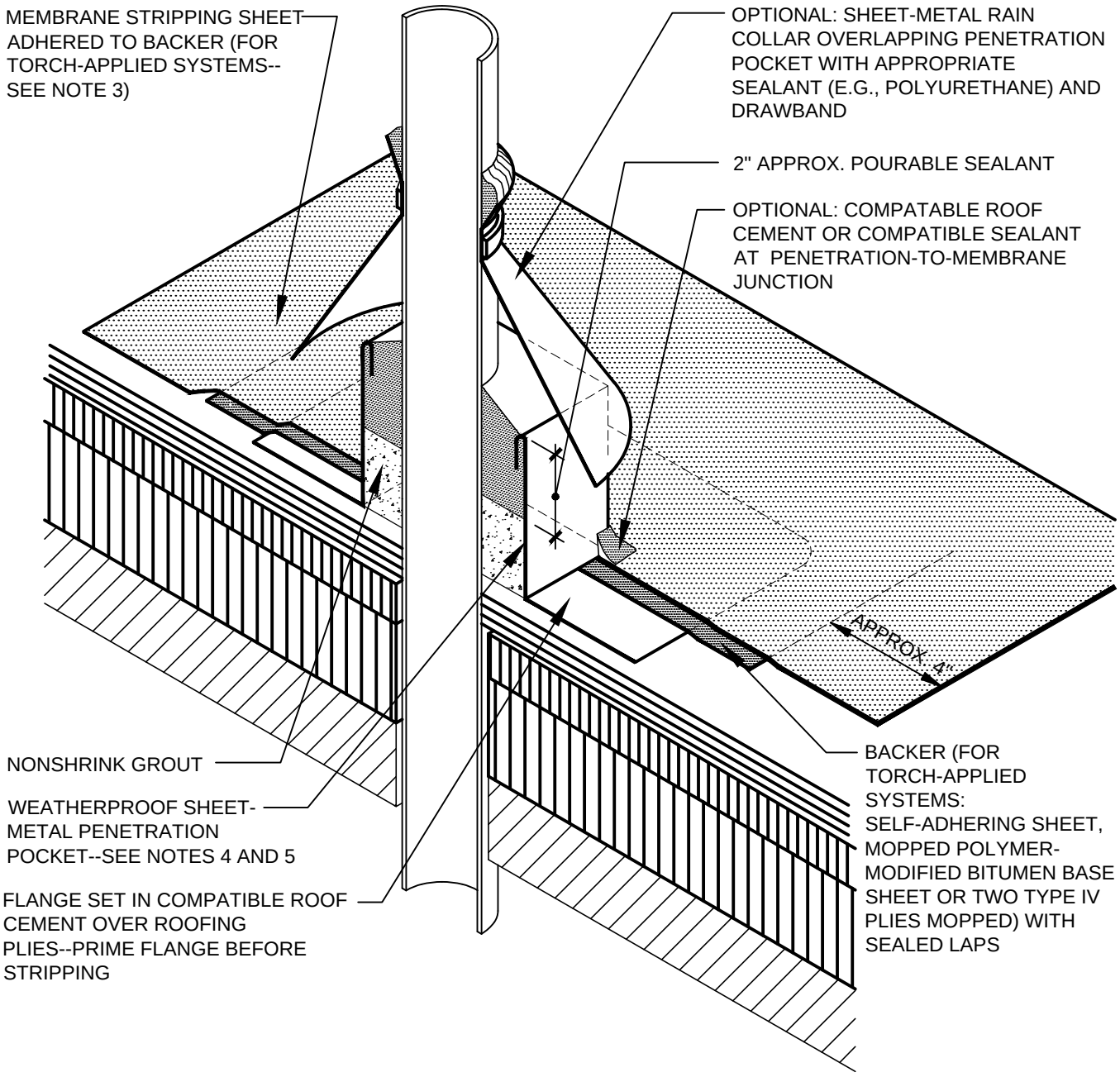


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. SOFT METAL PIPE FLASHING:
   -SHEET LEAD: MINIMUM OF 2 1/2 LB. PER SQUARE FOOT OR
   -SHEET COPPER: MINIMUM 16 OZ.
   PRECAUTIONS SHOULD BE TAKEN NOT TO DAMAGE THE SHEET LEAD WHEN USING HEAT-WELDED APPLICATION.
3. IF USING COPPER FLASHING OVER AN IRON OR STEEL PIPE, INSERT A SEPARATOR SHEET (E.G., ASPHALT- SATURATED ROOFING FELT) WRAPPED AROUND PIPE TO SEPARATE THE COPPER FLASHING FROM DIRECT CONTACT WITH PIPE TO REDUCE GALVANIC ACTION.
4. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. SEE SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
5. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PLUMBING VENT
(MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-19**

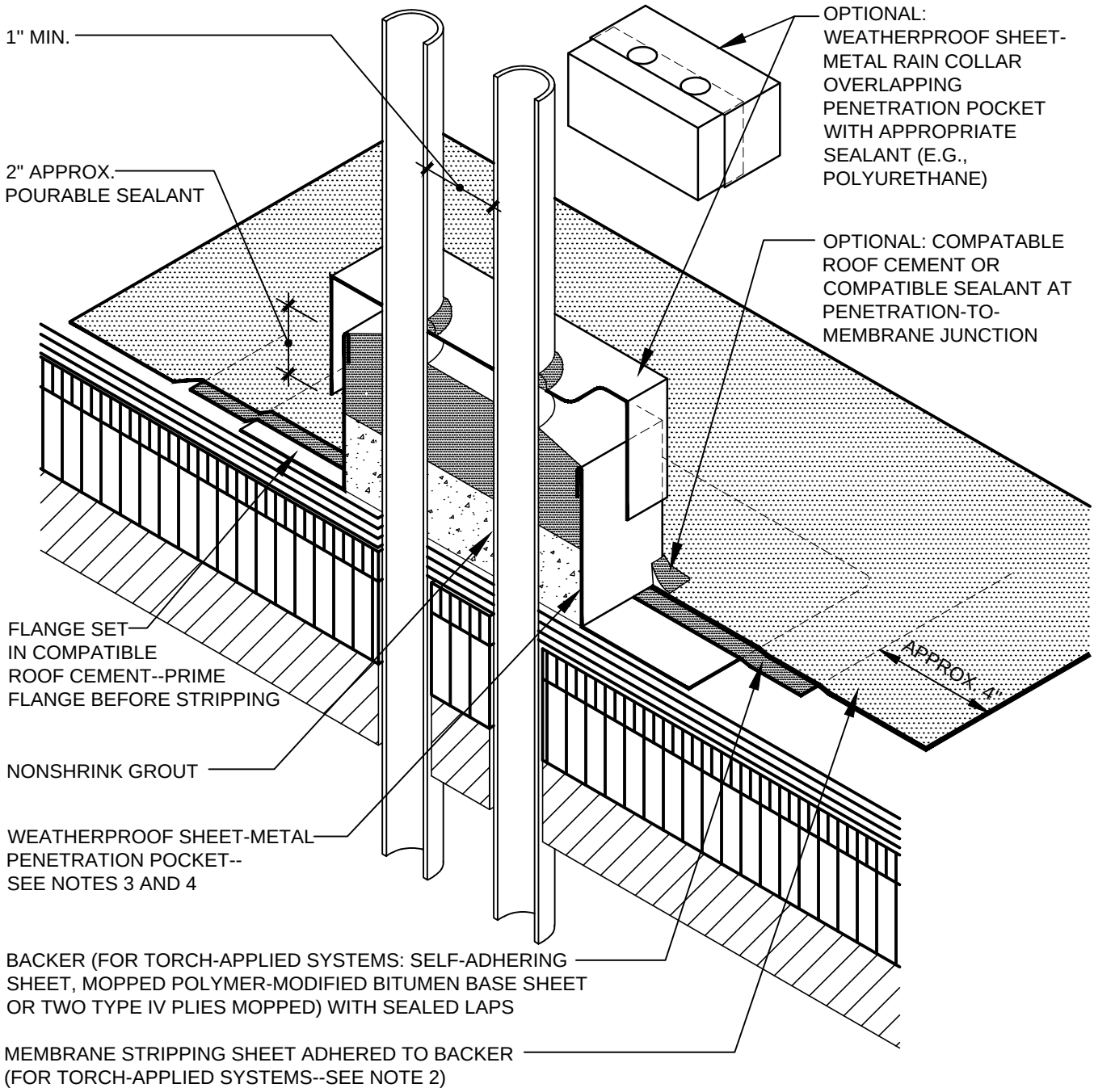


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. PENETRATION POCKETS ARE NOT THE PREFERRED FLASHING METHOD AT THE PENETRATIONS BECAUSE THEY MAY BE A MAINTENANCE PROBLEM.
3. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PENETRATION POCKETS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PENETRATION POCKET--SINGLE PENETRATION (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-20**

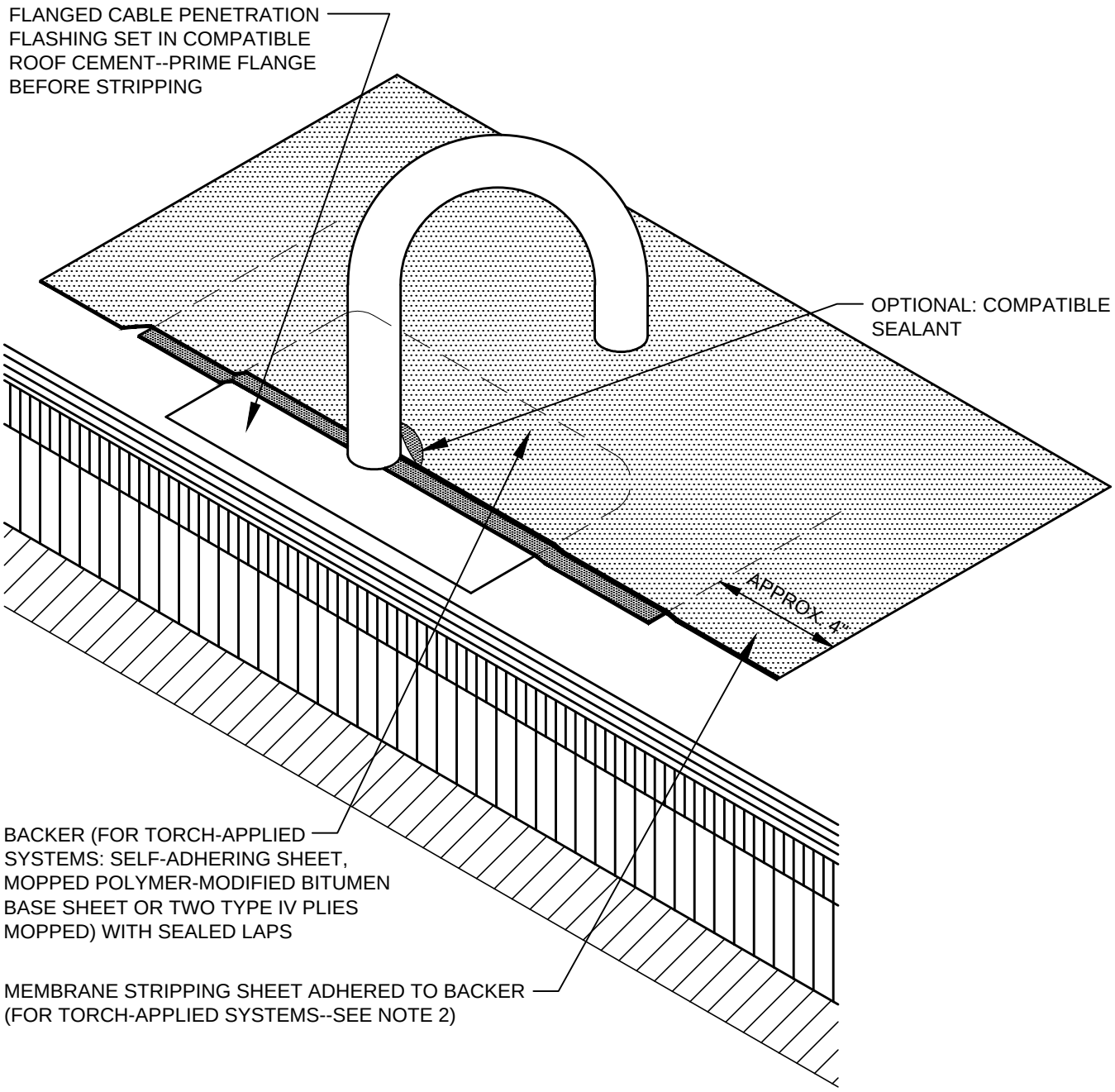


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. PENETRATION POCKETS ARE NOT THE PREFERRED FLASHING METHOD AT THE PENETRATIONS BECAUSE THEY MAY BE A MAINTENANCE PROBLEM.
3. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PENETRATION POCKETS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PENETRATION POCKET--DOUBLE PENETRATION (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-21**

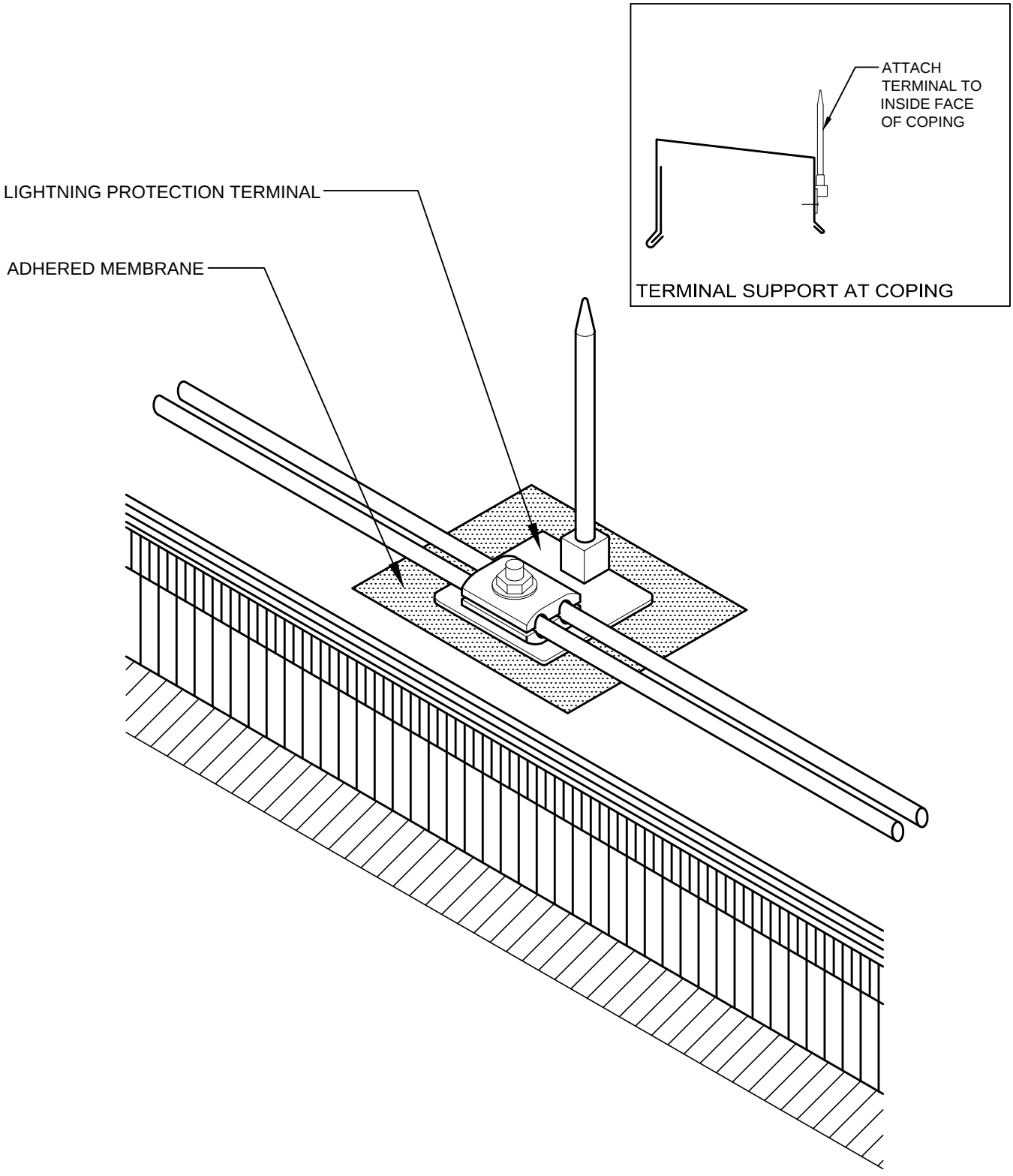


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. DETAIL DEPICTS THE WEATHERPROOFING PROTECTION AND DOES NOT REPRESENT LIGHTNING PROTECTION DESIGN.
3. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

CABLE PENETRATION (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-22**

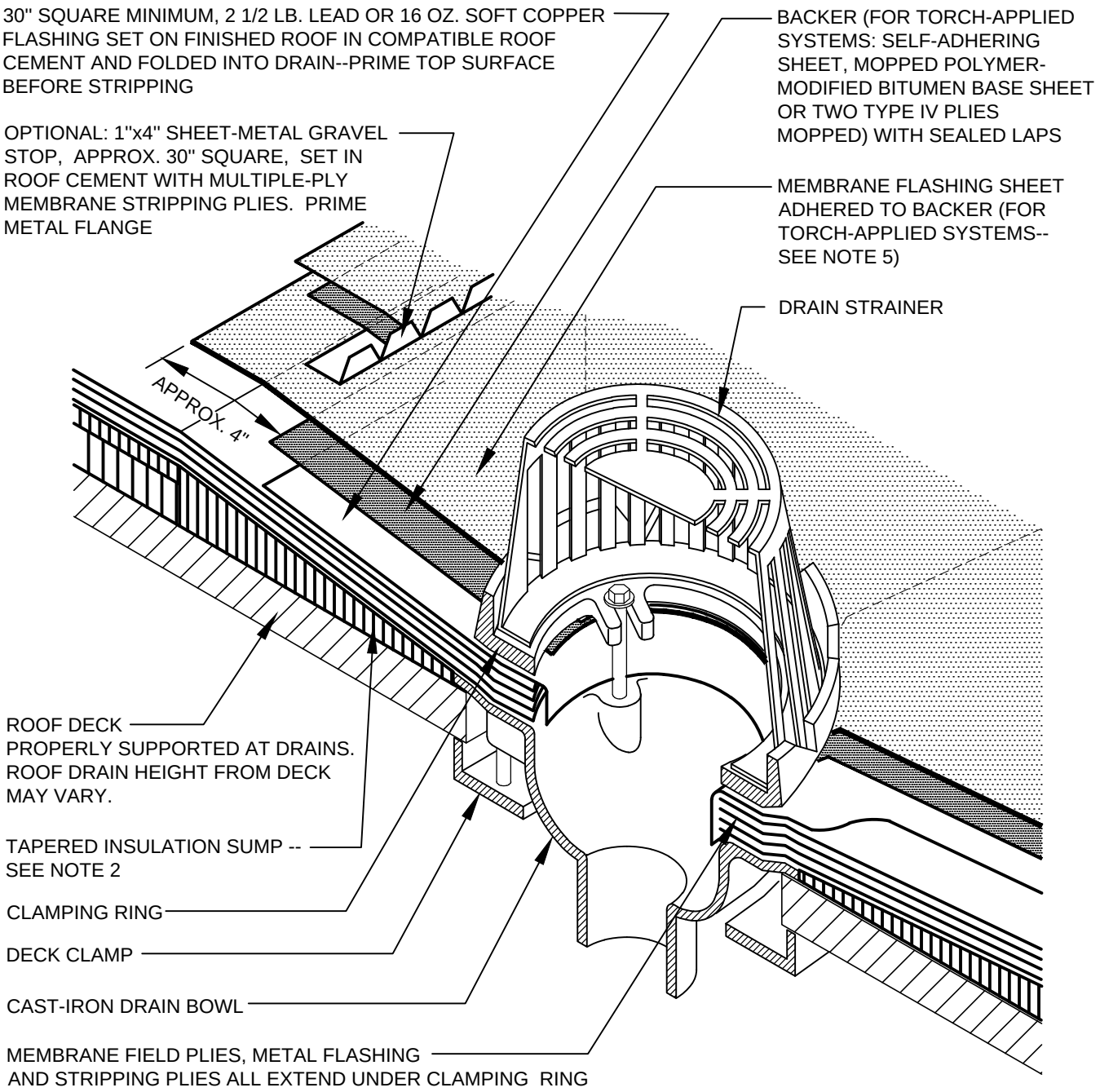


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. DETAIL DEPICTS THE WEATHERPROOFING PROTECTION AND DOES NOT REPRESENT LIGHTNING PROTECTION DESIGN.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

LIGHTNING PROTECTION TERMINAL (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-23**

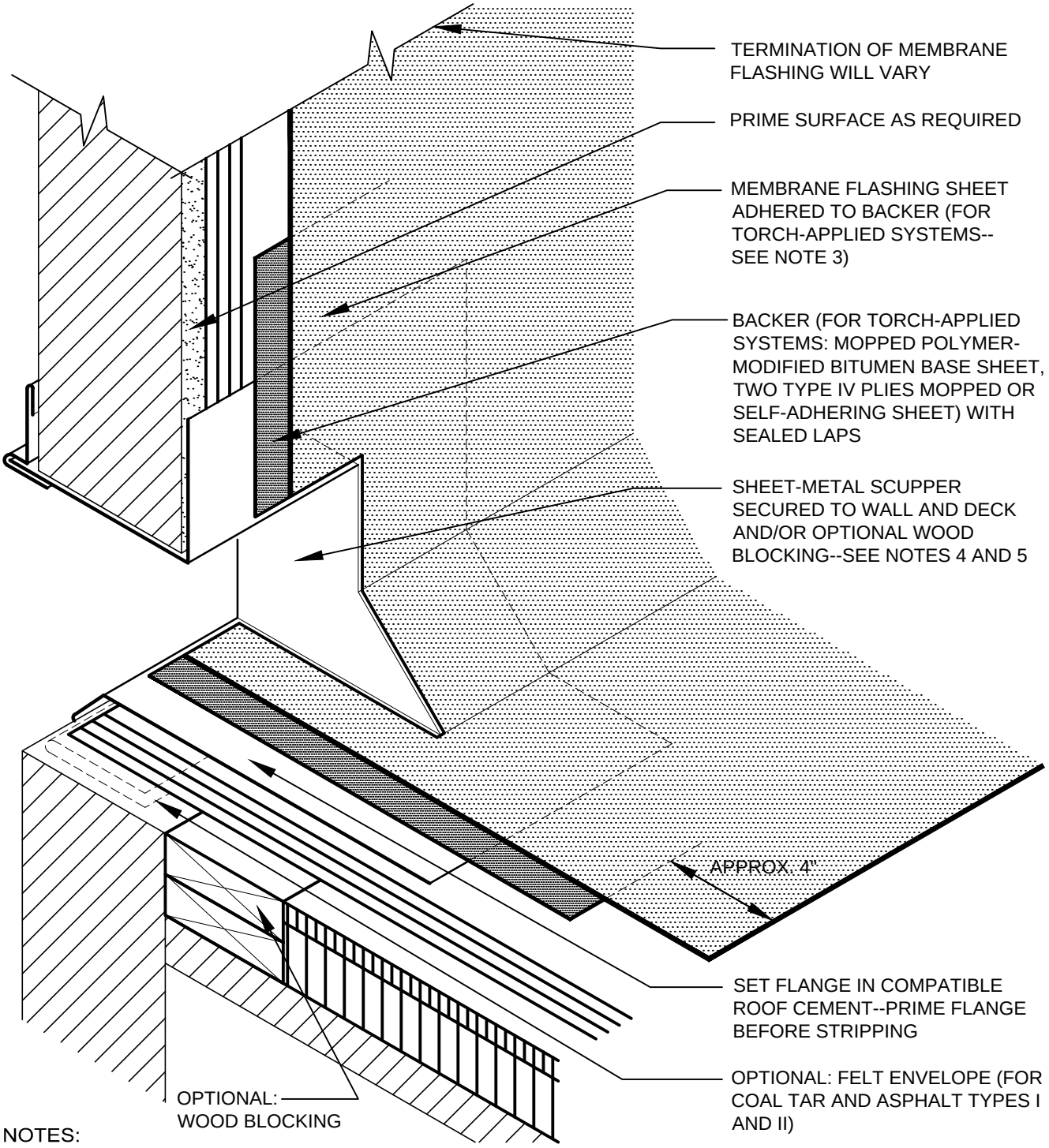


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. THE USE OF A METAL DECK SUMP PAN IS NOT RECOMMENDED. HOWEVER, DRAIN RECEIVER/BEARING PLATES ARE APPLICABLE WITH SOME PROJECTS.
3. DO NOT APPLY COAL TAR OR DEAD-LEVEL ASPHALT INTO DRAIN SUMP.
4. THE DESIGNER SHOULD CONSIDER INSULATING THE DRAIN COMPONENTS BELOW THE DECK TO PREVENT POTENTIAL CONDENSATION.
5. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

ROOF DRAIN
(MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-24**

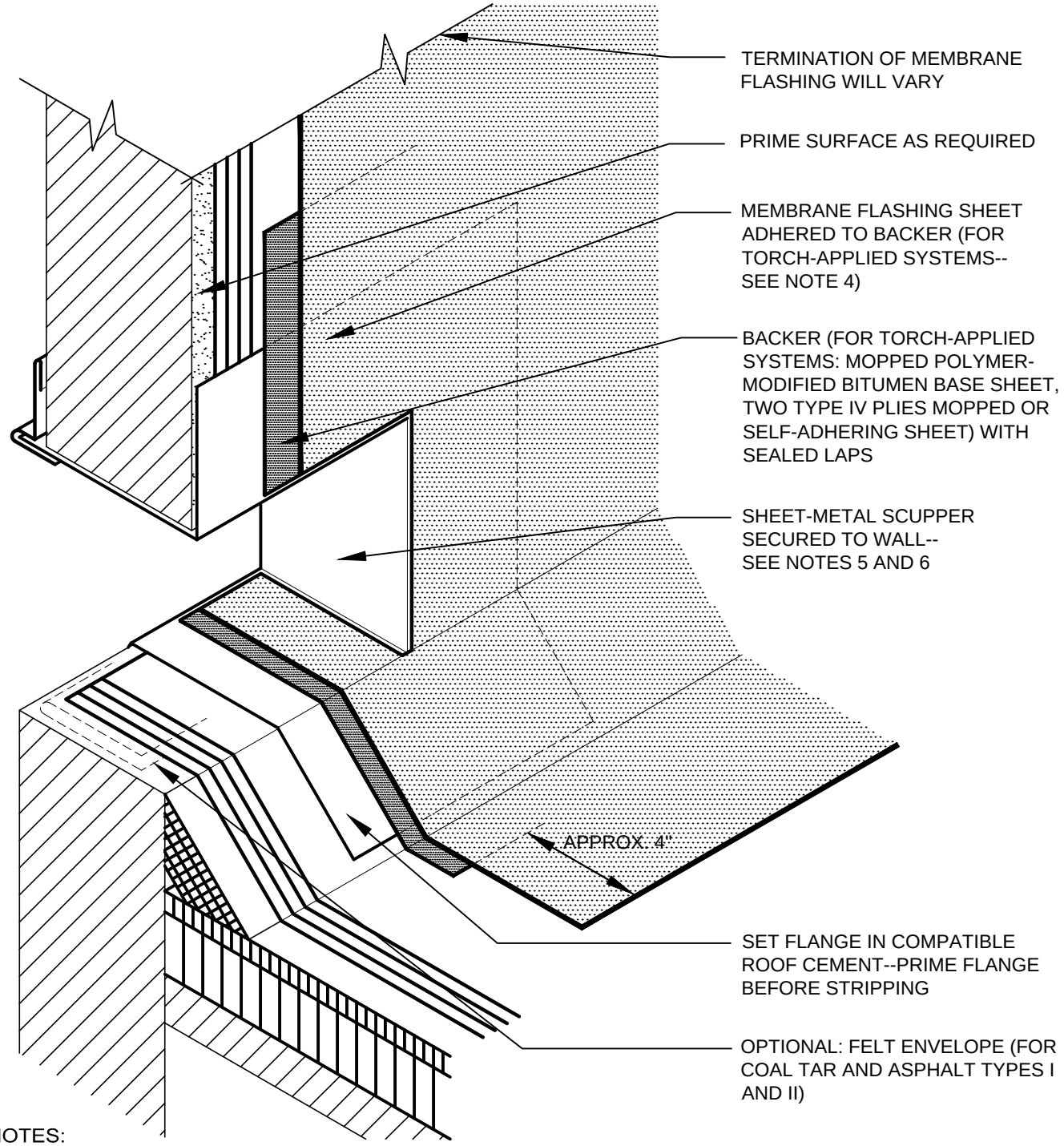


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD OR TORCH-APPLIED FLASHING SYSTEMS.
2. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
3. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SCUPPERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

THROUGH-WALL SCUPPER (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-25**

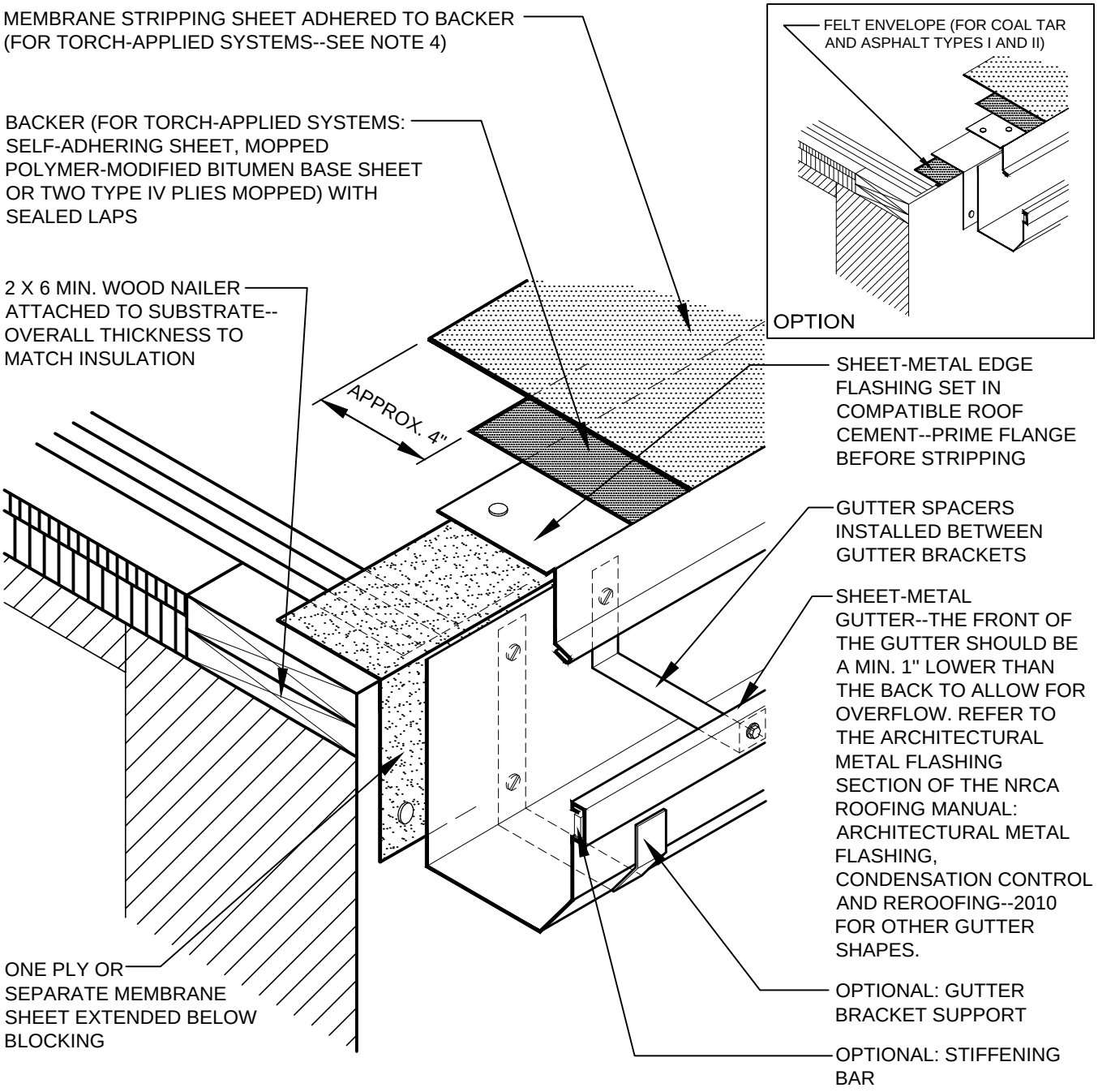


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD OR TORCH-APPLIED FLASHING SYSTEMS.
2. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
3. ELEVATION OF SCUPPER MAY VARY.
4. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
5. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SCUPPERS.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

OVERFLOW SCUPPER (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-26**

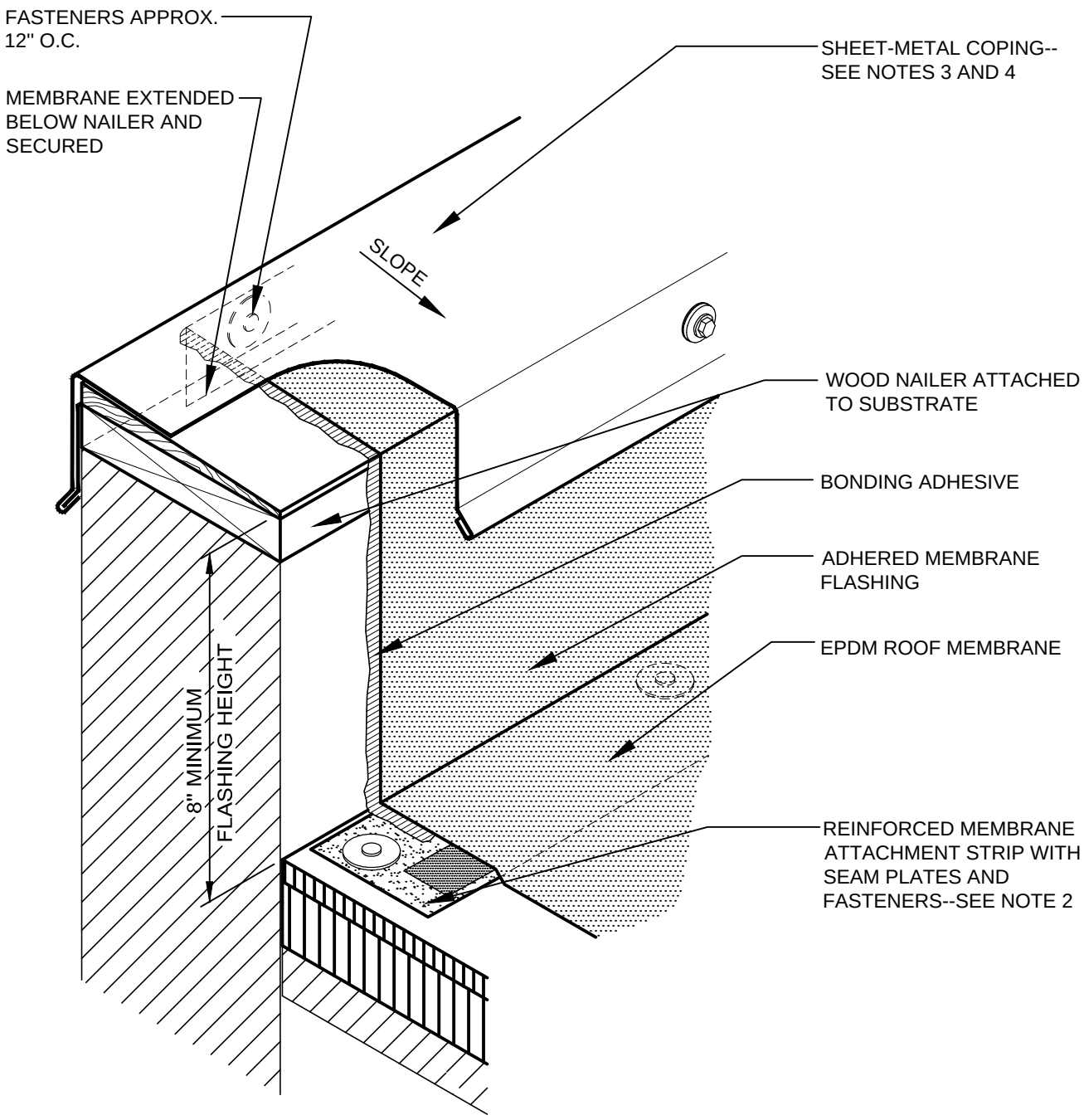


NOTES:

1. THIS DETAIL IS APPLICABLE FOR MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS.
2. IN CLIMATES WHERE THE WINTER TEMPERATURE REMAINS BELOW FREEZING FOR EXTENDED PERIODS OF TIME, NRCA SUGGESTS USING INTERIOR DRAINS TO DRAIN THE ROOF.
3. GUTTER BRACKETS ARE RECOMMENDED TO BE AT LEAST ONE GAUGE HEAVIER THAN GUTTER STOCK.
4. WHEN POTENTIAL FIRE HAZARDS CAN BE MITIGATED, NRCA CONSIDERS IT ACCEPTABLE TO INSTALL TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET OVER THE SPECIFIED BACKER FLASHING USING THE DIRECT TORCHING METHOD PROVIDED LOW OUTPUT (50,000 BTU OUTPUT OR LESS) TORCHING EQUIPMENT IS USED. WHEN POTENTIAL FIRE HAZARDS CANNOT BE ADEQUATELY MITIGATED, TORCH-APPLIED POLYMER-MODIFIED BITUMEN SHEET SHALL BE INSTALLED USING INDIRECT TORCHING METHODS, SUCH AS THE TORCH-AND-FLOP APPLICATION METHOD.
5. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR GUTTERS.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

GUTTER WITH PERIMETER EDGE METAL (MOP-, COLD- OR TORCH-APPLIED FLASHING SYSTEMS)

2011 *NOT DRAWN TO SCALE* **BUR-27**



NOTES:

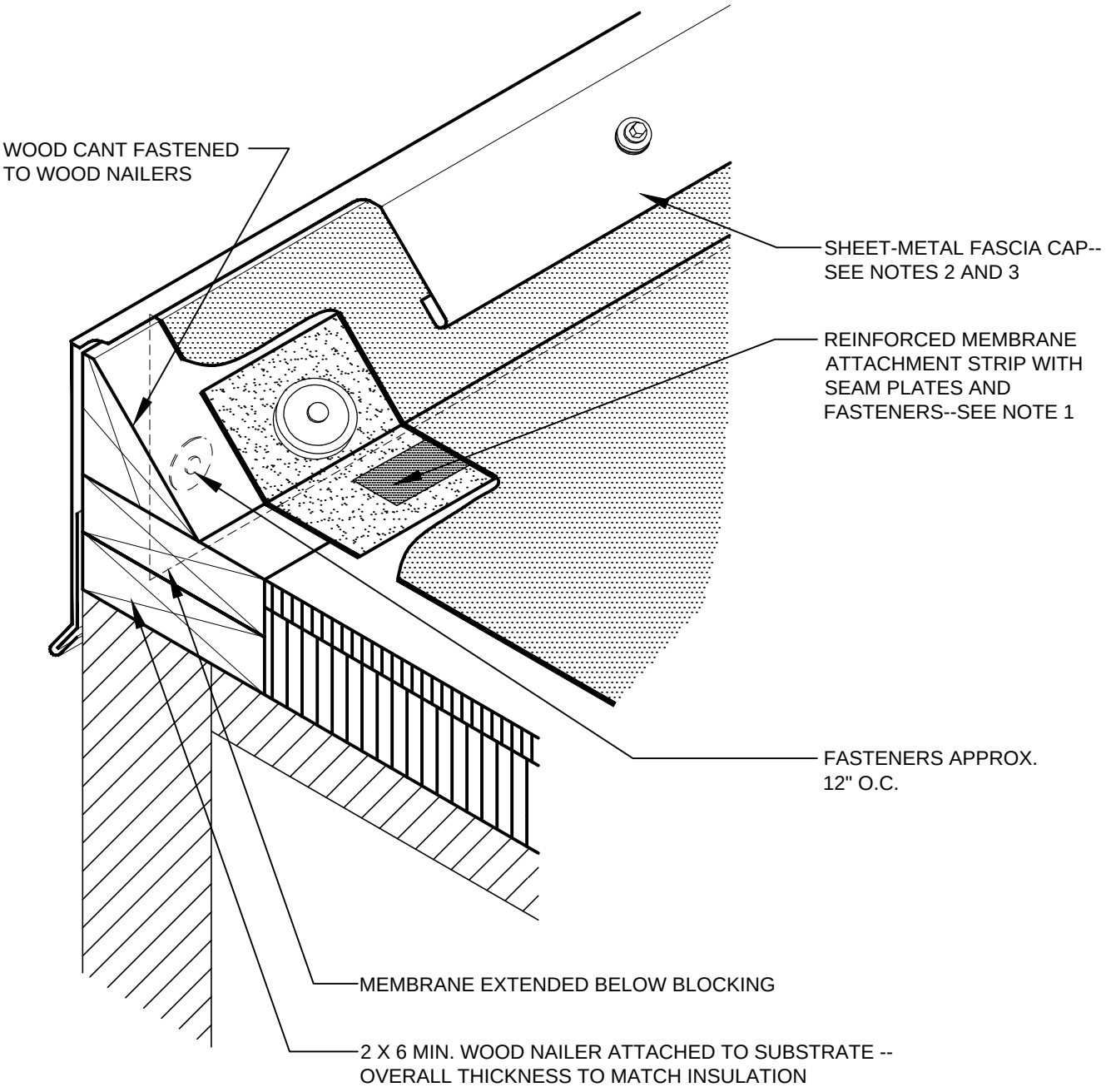
1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL. SEE DETAIL EPDM-7 FOR EXPANSION JOINT AT A DECK-TO-WALL LOCATION.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COPINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT PARAPET WALL WITH METAL COPING

2011

NOT DRAWN TO SCALE

EPDM-1

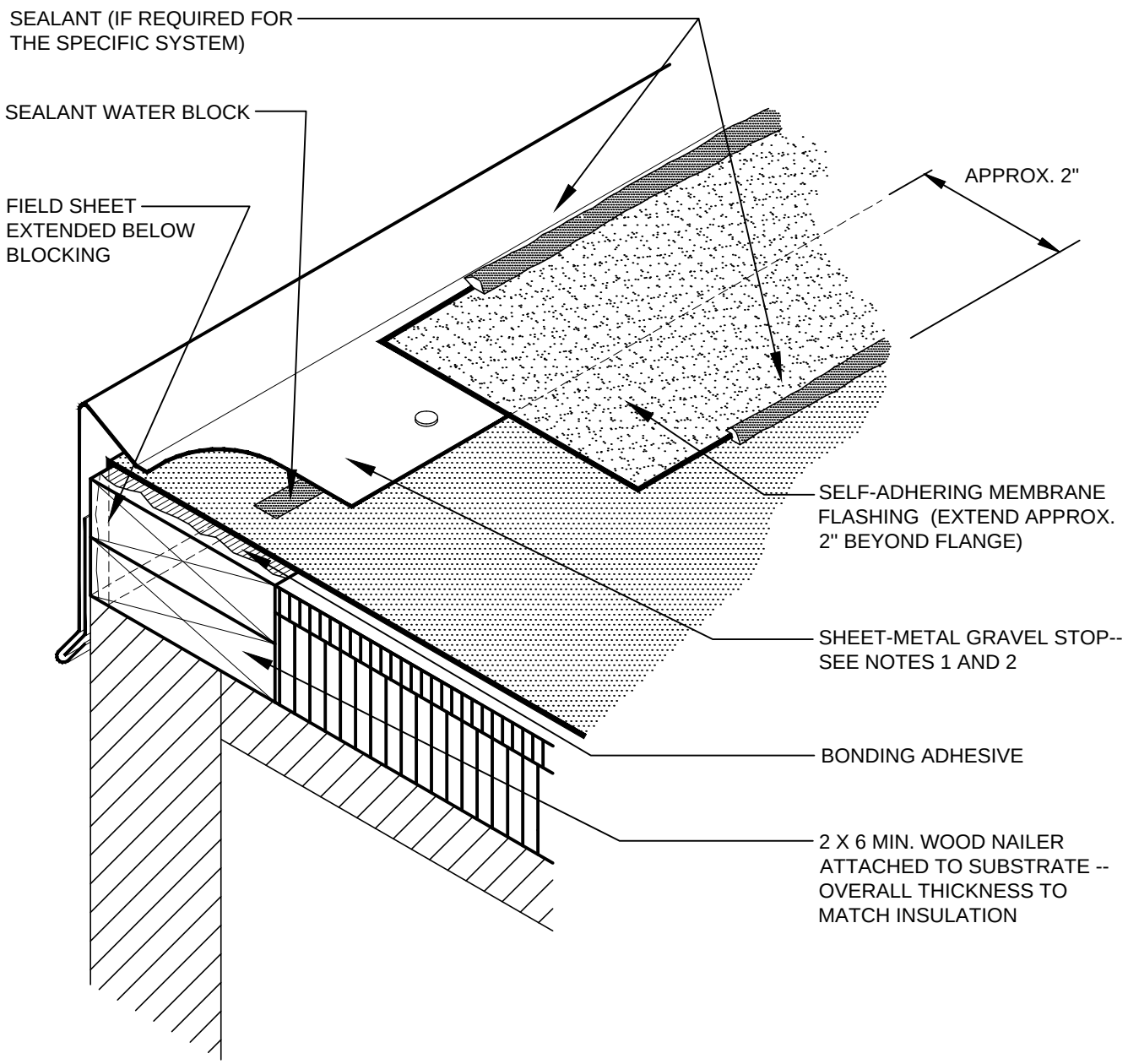


NOTES:

1. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
2. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR FASCIA CAPS.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

RAISED PERIMETER EDGE WITH METAL FLASHING [FASCIA CAP]

2011 *NOT DRAWN TO SCALE* **EPDM-2**

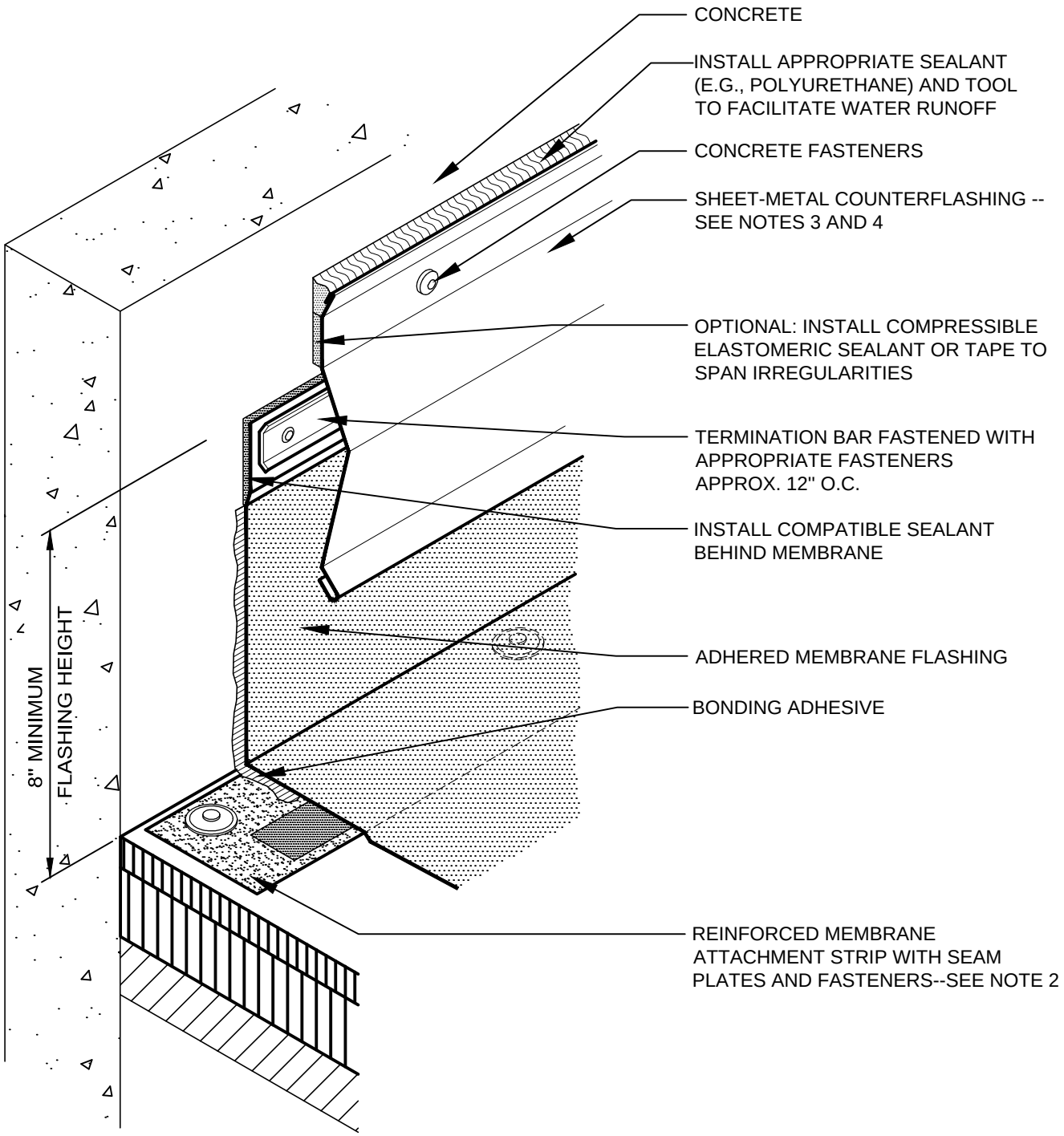


NOTES:

1. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR GRAVEL STOPS.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EMBEDDED EDGE METAL FLASHING [GRAVEL STOP]

2011 *NOT DRAWN TO SCALE* **EPDM-3**

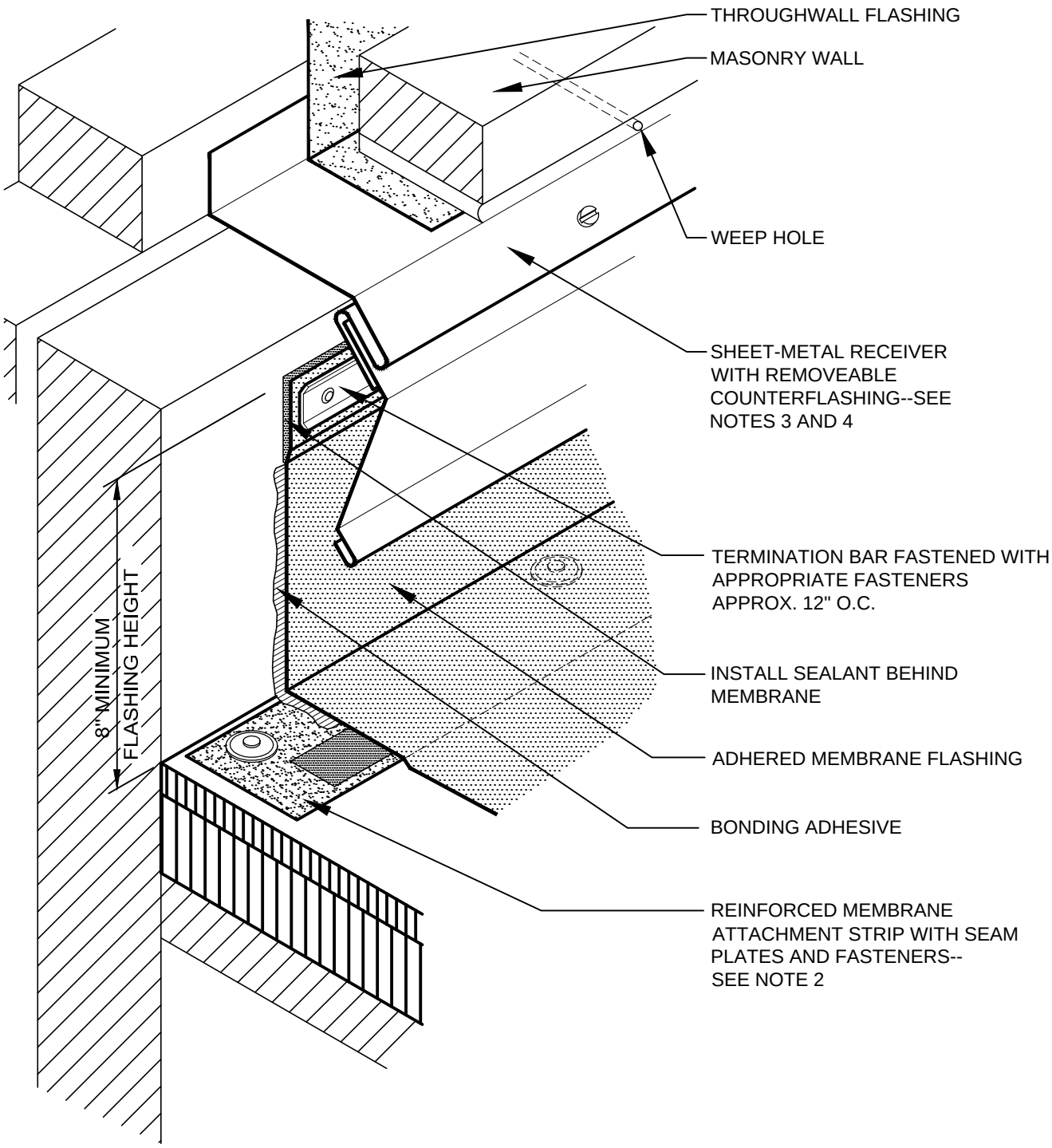


NOTES:

1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING WITH SURFACE-MOUNTED COUNTERFLASHING AT CONCRETE WALL

2011 *NOT DRAWN TO SCALE* **EPDM-4**

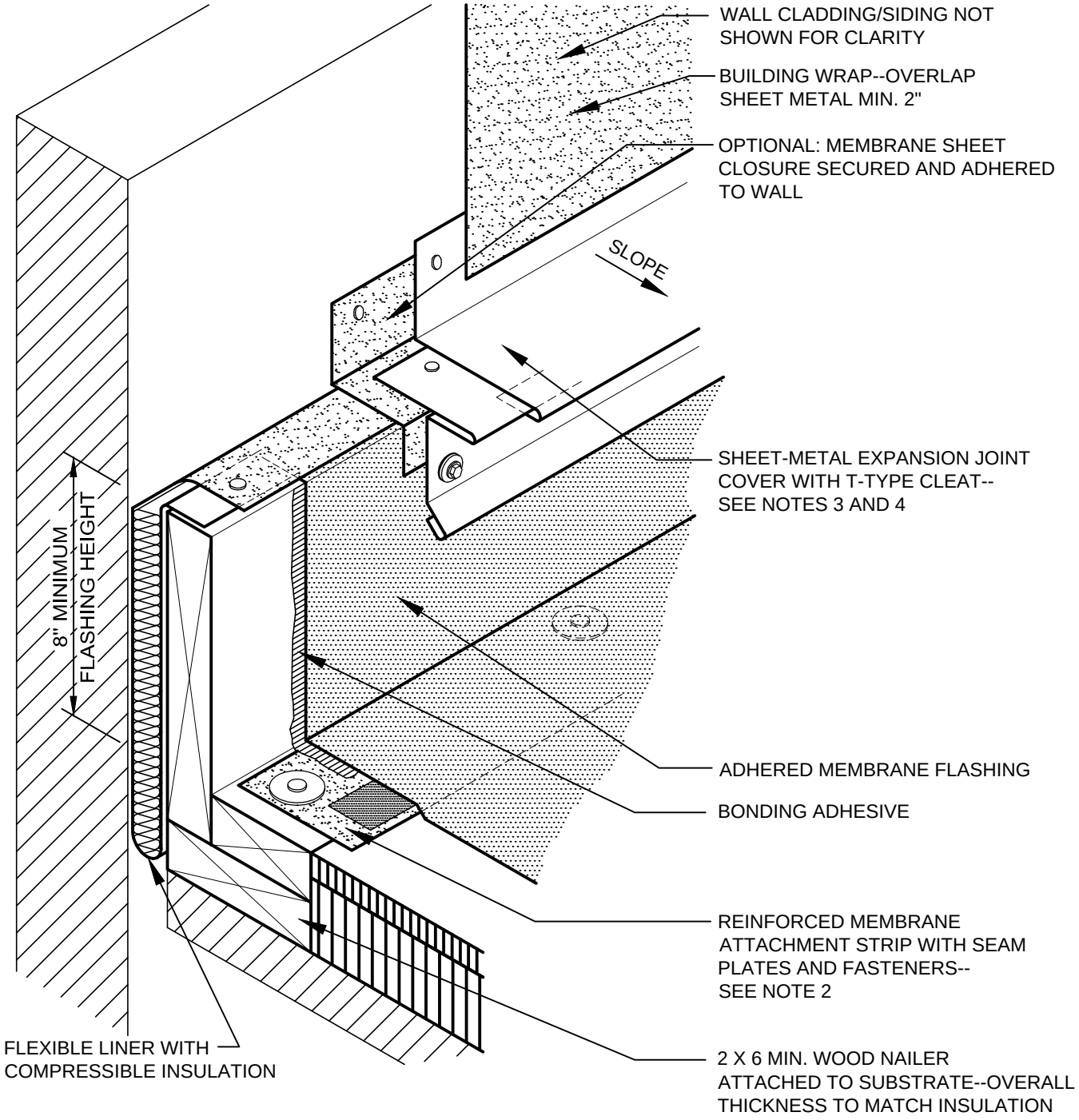


NOTES:

1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING WITH TWO-PIECE SHEET-METAL COUNTERFLASHING

2011 *NOT DRAWN TO SCALE* **EPDM-5**

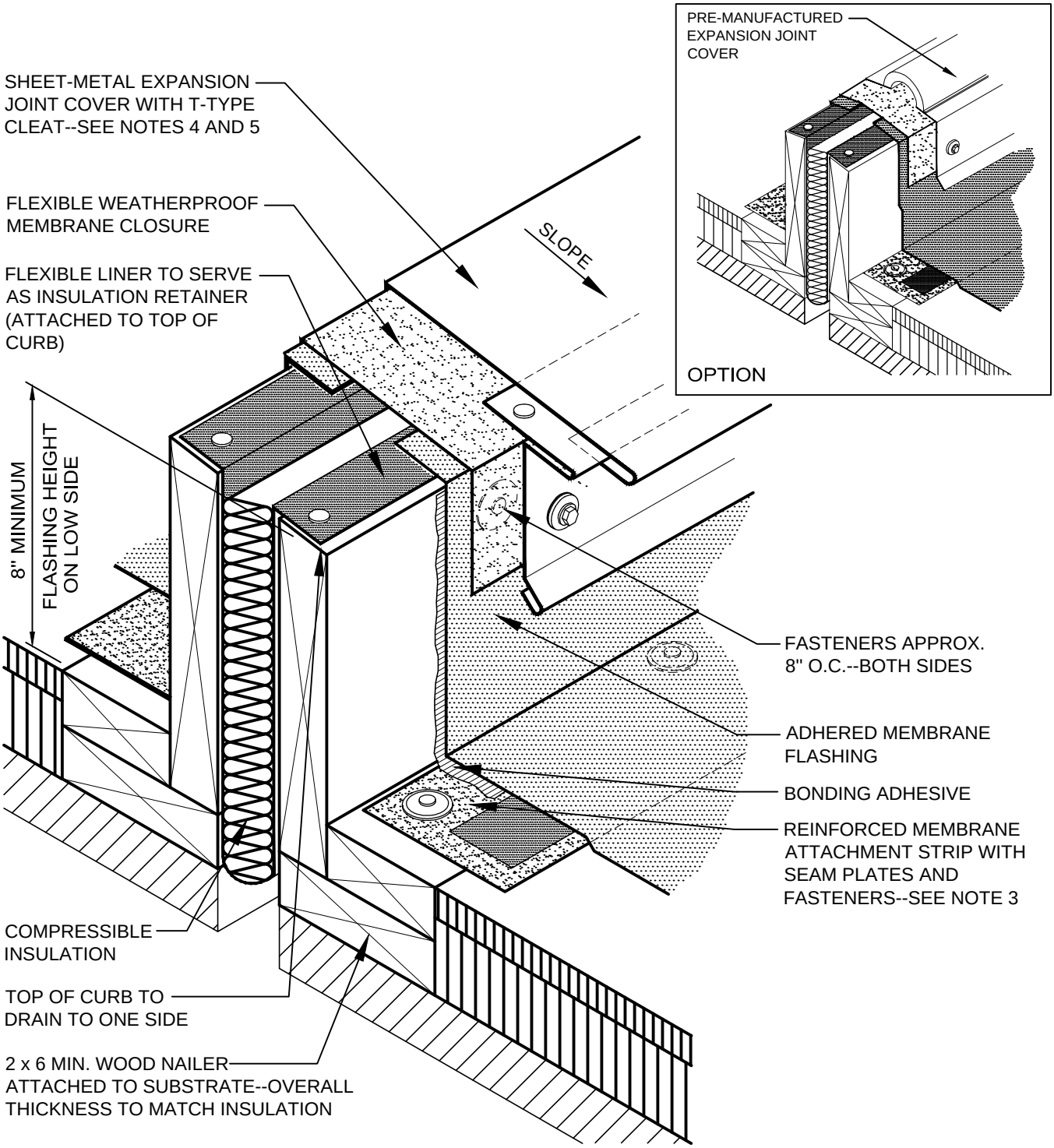


NOTES:

1. THIS DETAIL SHOULD BE USED WHEN THERE IS ANY POSSIBILITY DIFFERENTIAL MOVEMENT WILL OCCUR BETWEEN THE DECK AND WALL. THE WOOD MEMBERS SHOULD NOT BE FASTENED TO THE WALL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT ROOF-TO-WALL EXPANSION JOINT

2011 *NOT DRAWN TO SCALE* **EPDM-6**

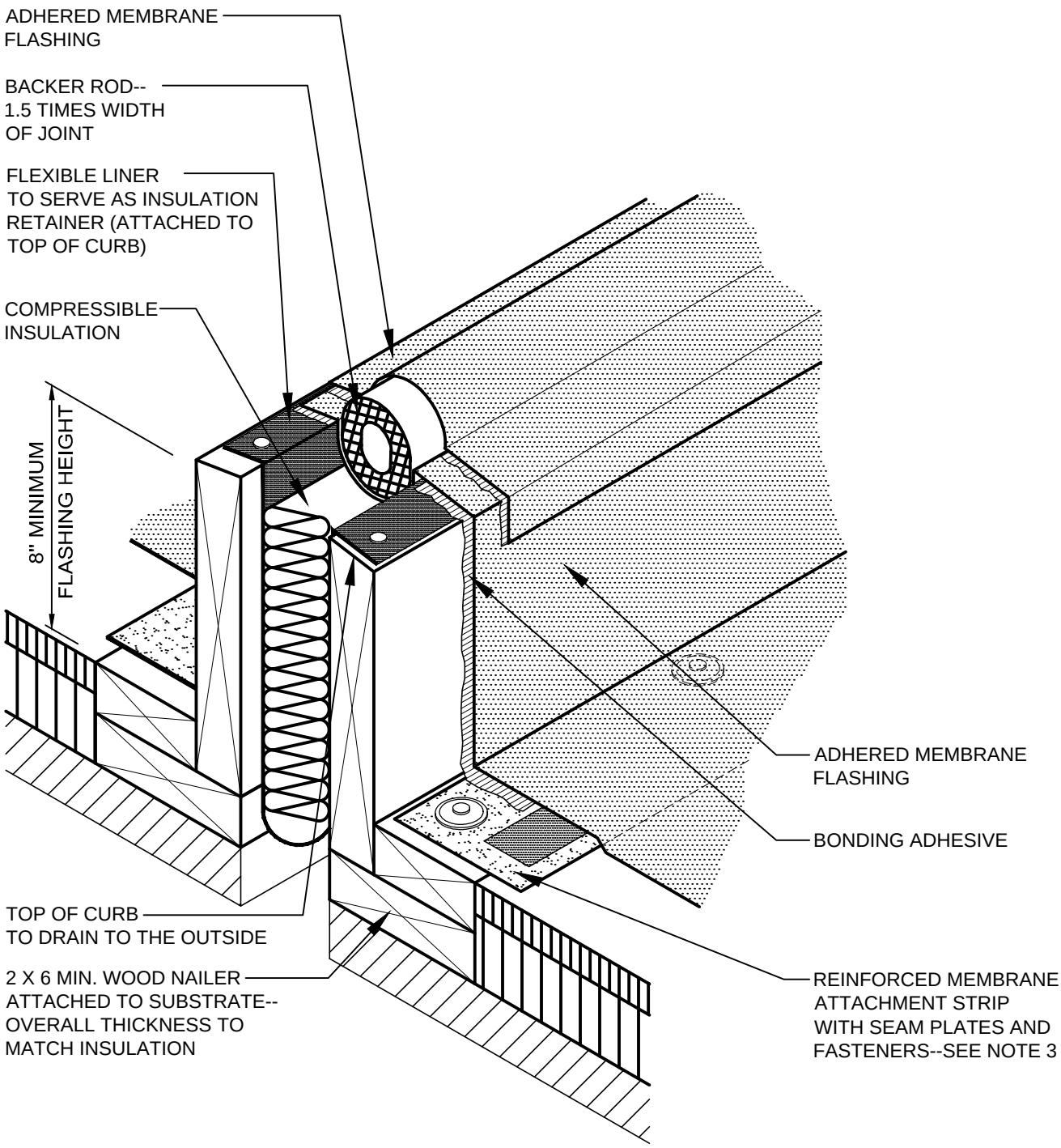


NOTES:

1. THIS DETAIL ALLOWS FOR BUILDING MOVEMENT IN MULTIPLE DIRECTIONS.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF THE EXPANSION JOINT.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR EXPANSION JOINT COVERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EXPANSION JOINT WITH METAL COVER

2011 *NOT DRAWN TO SCALE* **EPDM-7**

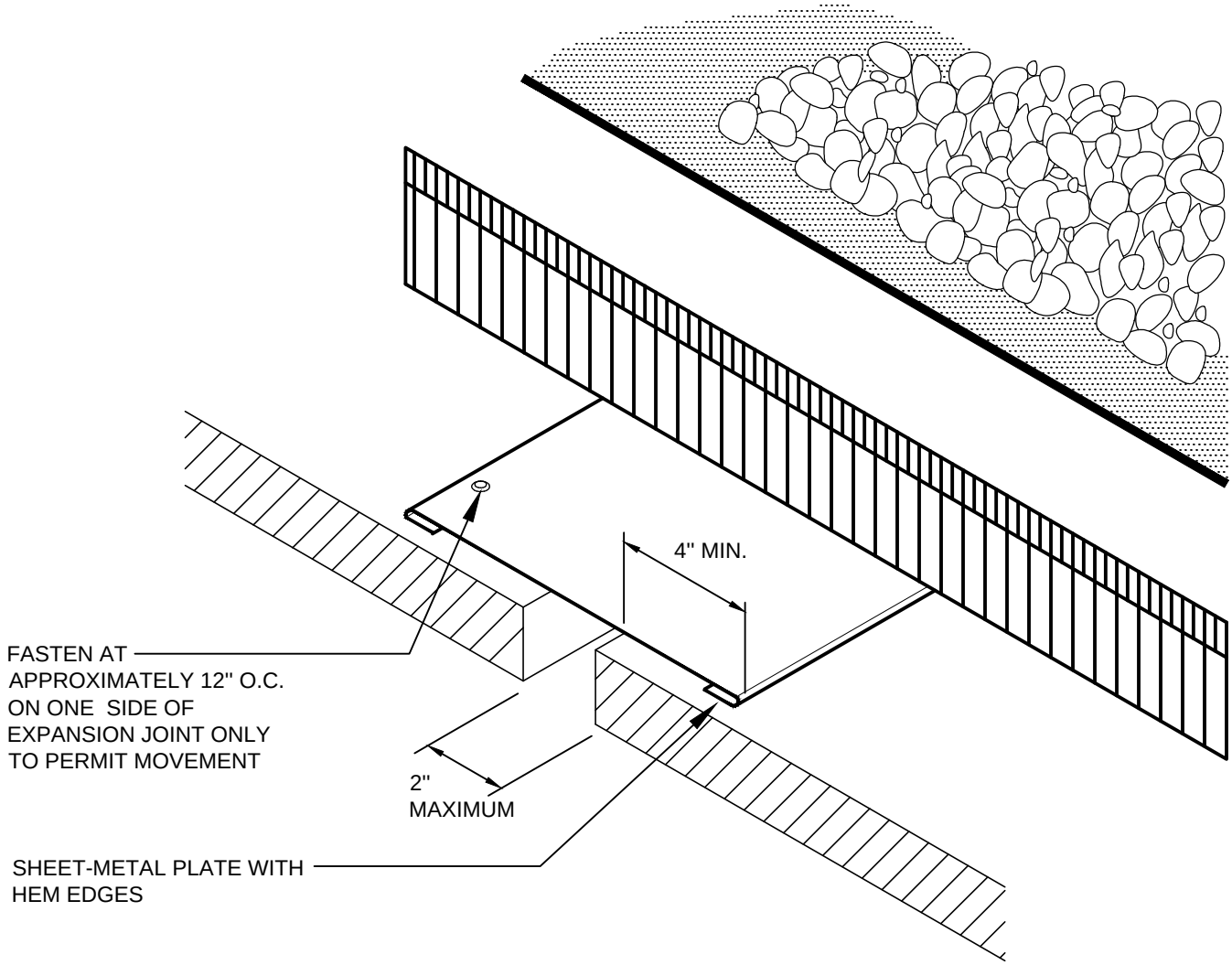


NOTES:

1. THIS DETAIL ALLOWS FOR BUILDING MOVEMENT IN MULTIPLE DIRECTIONS.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF THE EXPANSION JOINT.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EXPANSION JOINT (NONREINFORCED EPDM MEMBRANES)

2011 *NOT DRAWN TO SCALE* **EPDM-8**

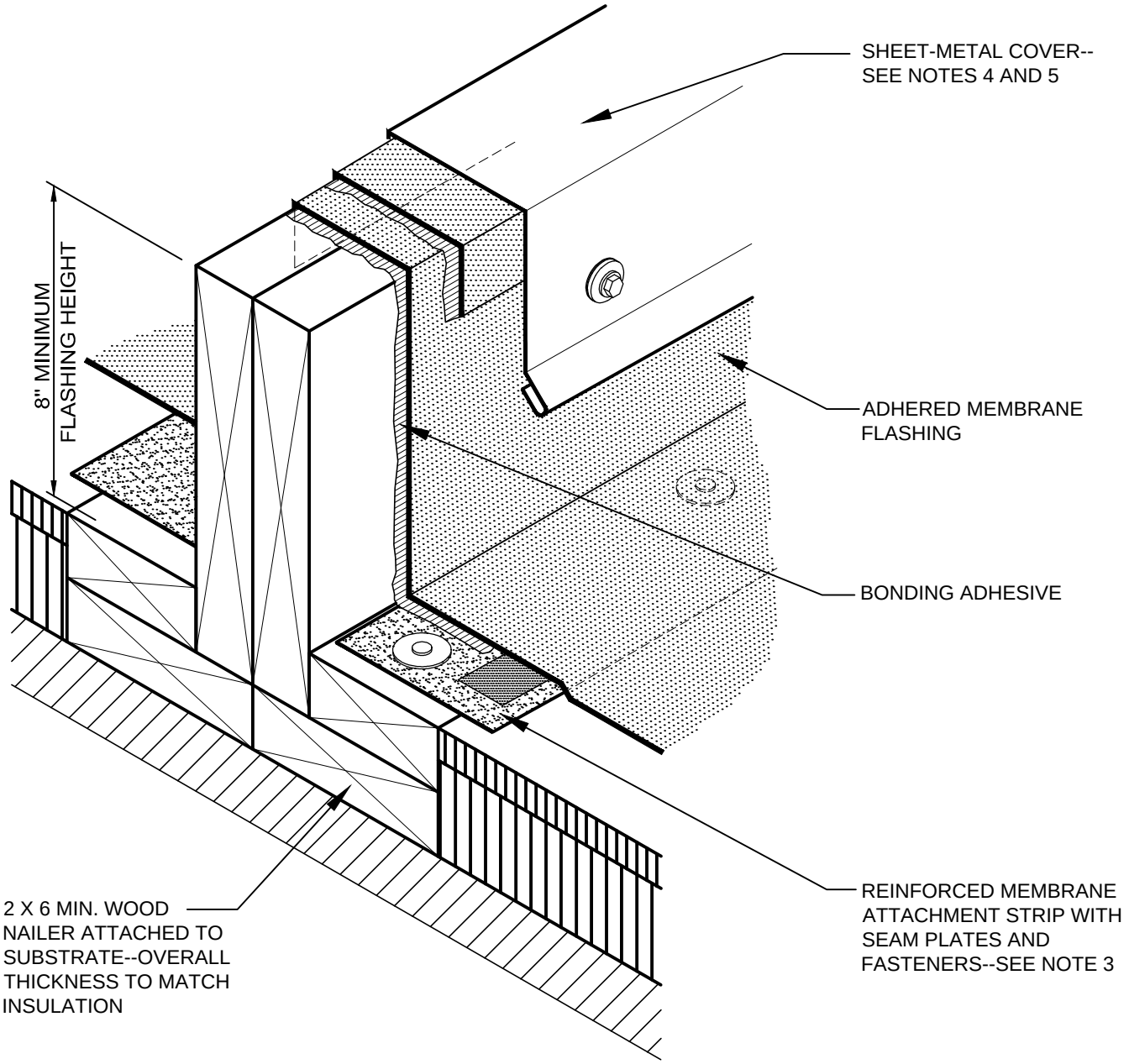


NOTES:

1. THIS DETAIL SHOULD ONLY BE USED WITH NONREINFORCED, LOOSE-LAID, BALLASTED SYSTEMS.
2. IF EXPANSION IS GREATER THAN 2 INCHES, DETAILS EPDM-8 OR EPDM-8A ARE PREFERRED.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EXPANSION JOINT FOR LOOSE-LAID, BALLASTED SYSTEMS

2011 *NOT DRAWN TO SCALE* **EPDM-9**



NOTES:

1. AN AREA DIVIDER SHOULD NEVER RESTRICT THE FLOW OF WATER.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF THE AREA DIVIDER.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SHEET-METAL COVERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

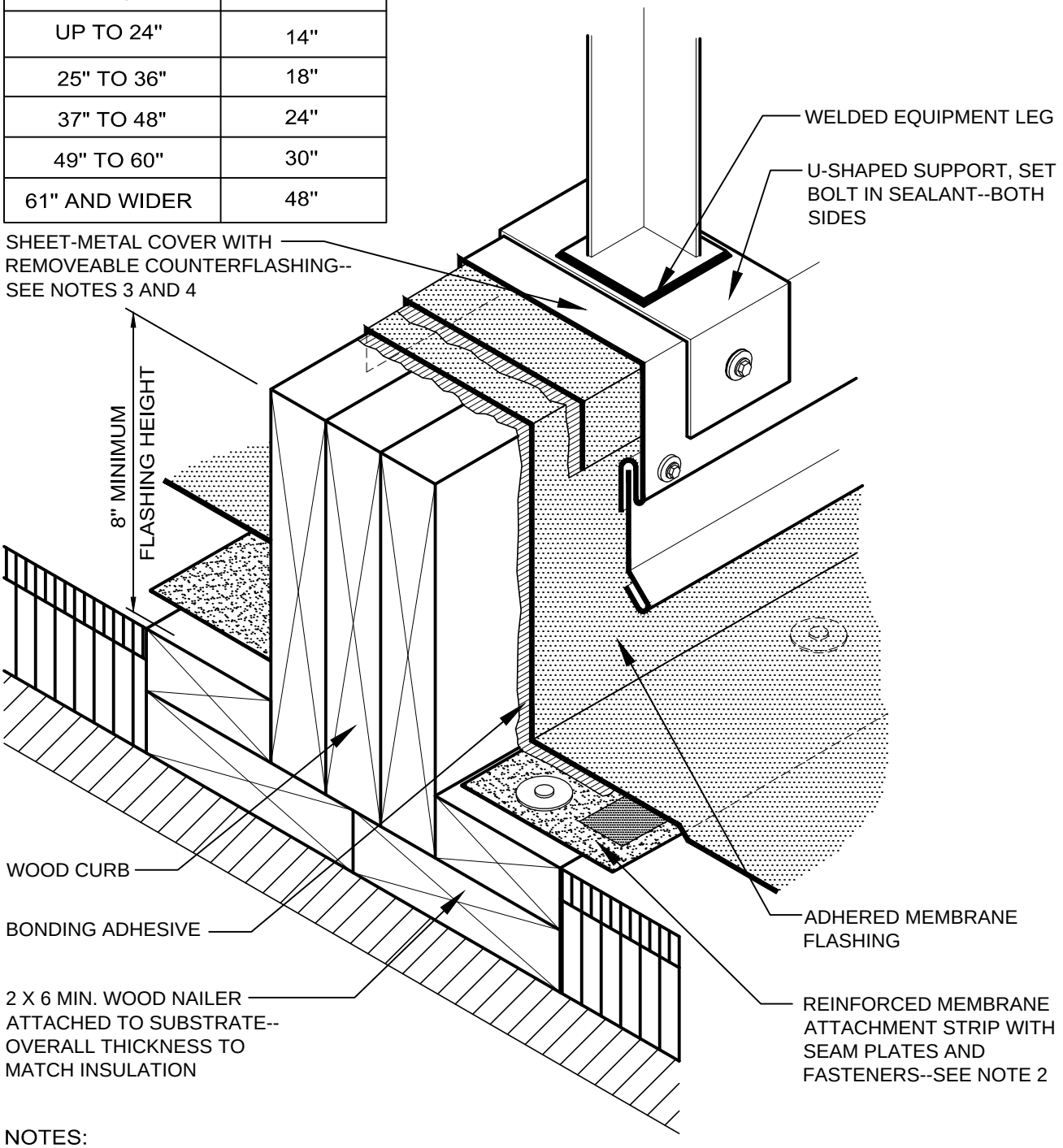
BASE FLASHING AT AREA DIVIDER IN ROOF SYSTEM

2011

NOT DRAWN TO SCALE

EPDM-10

WIDTH OF EQUIPMENT	CLEARANCE [1]
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"



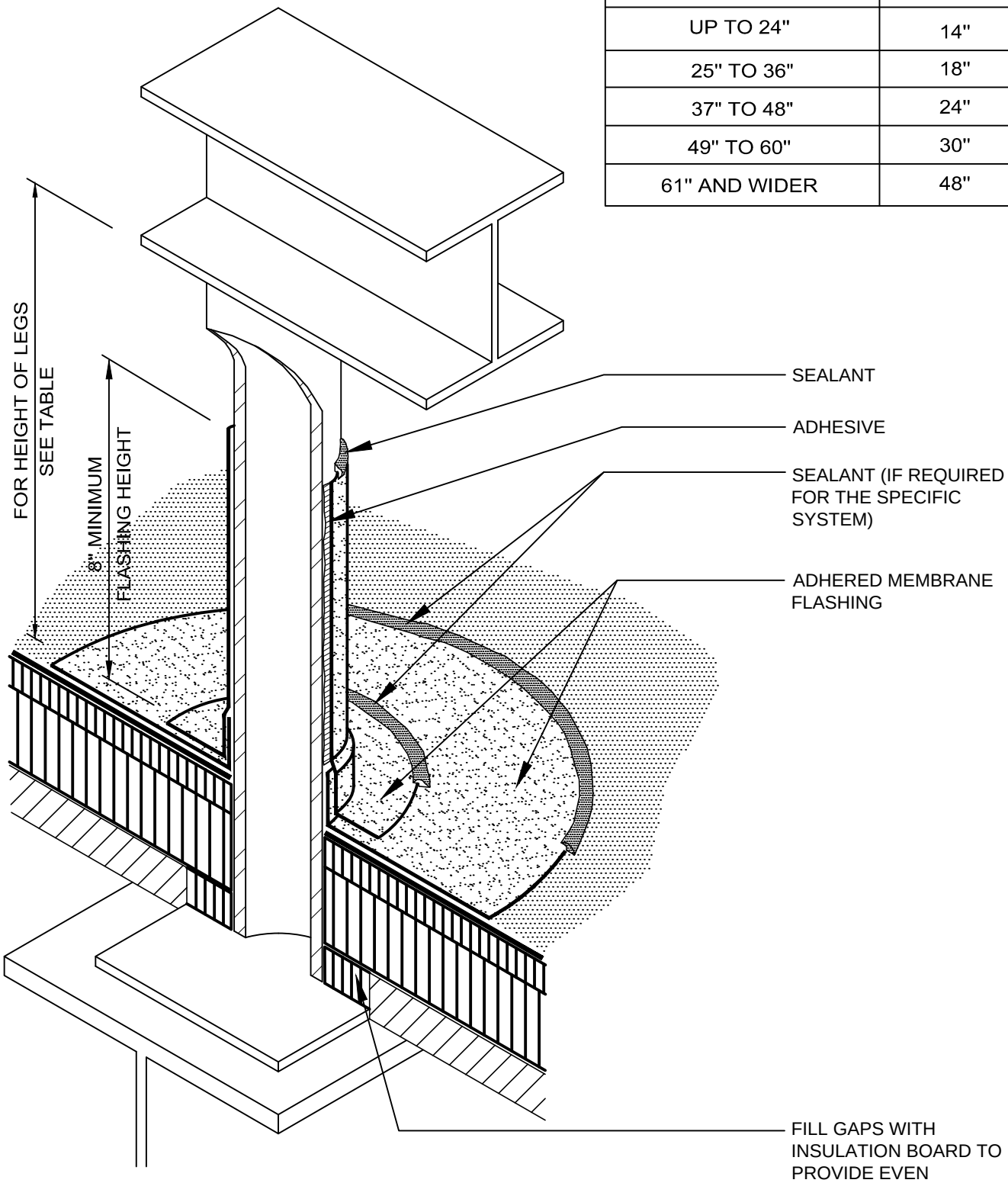
NOTES:

1. THIS DETAIL ALLOWS FOR MEMBRANE MAINTENANCE AROUND THE SUPPORTED EQUIPMENT. THE CONTINUOUS SUPPORT IS PREFERRED IN LIGHTWEIGHT STRUCTURAL SYSTEMS BECAUSE THE EQUIPMENT WEIGHT CAN BE SPREAD ACROSS TWO OR MORE SUPPORTING MEMBERS. WHERE HEAVY STRUCTURAL SYSTEMS ARE USED OR WHERE THE LOAD CAN BE CONCENTRATED OVER A COLUMN, DETAIL EPDM-11 MAY BE PREFERRED. A MINIMUM OF 2 FEET OF HORIZONTAL CLEARANCE MUST BE PROVIDED FOR REMOVAL AND REPLACEMENT OF ROOFING AND FLASHING BETWEEN PARALLEL SUPPORTS. REFER TO THE TABLE FOR RECOMMENDATIONS ON VERTICAL CLEARANCE FROM ROOF SURFACE TO BOTTOM OF SUPPORTED EQUIPMENT.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SHEET-METAL COVERS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT LIGHTWEIGHT EQUIPMENT SUPPORT CURB

2011 *NOT DRAWN TO SCALE* **EPDM-11**

WIDTH OF EQUIPMENT	CLEARANCE
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"



NOTES:

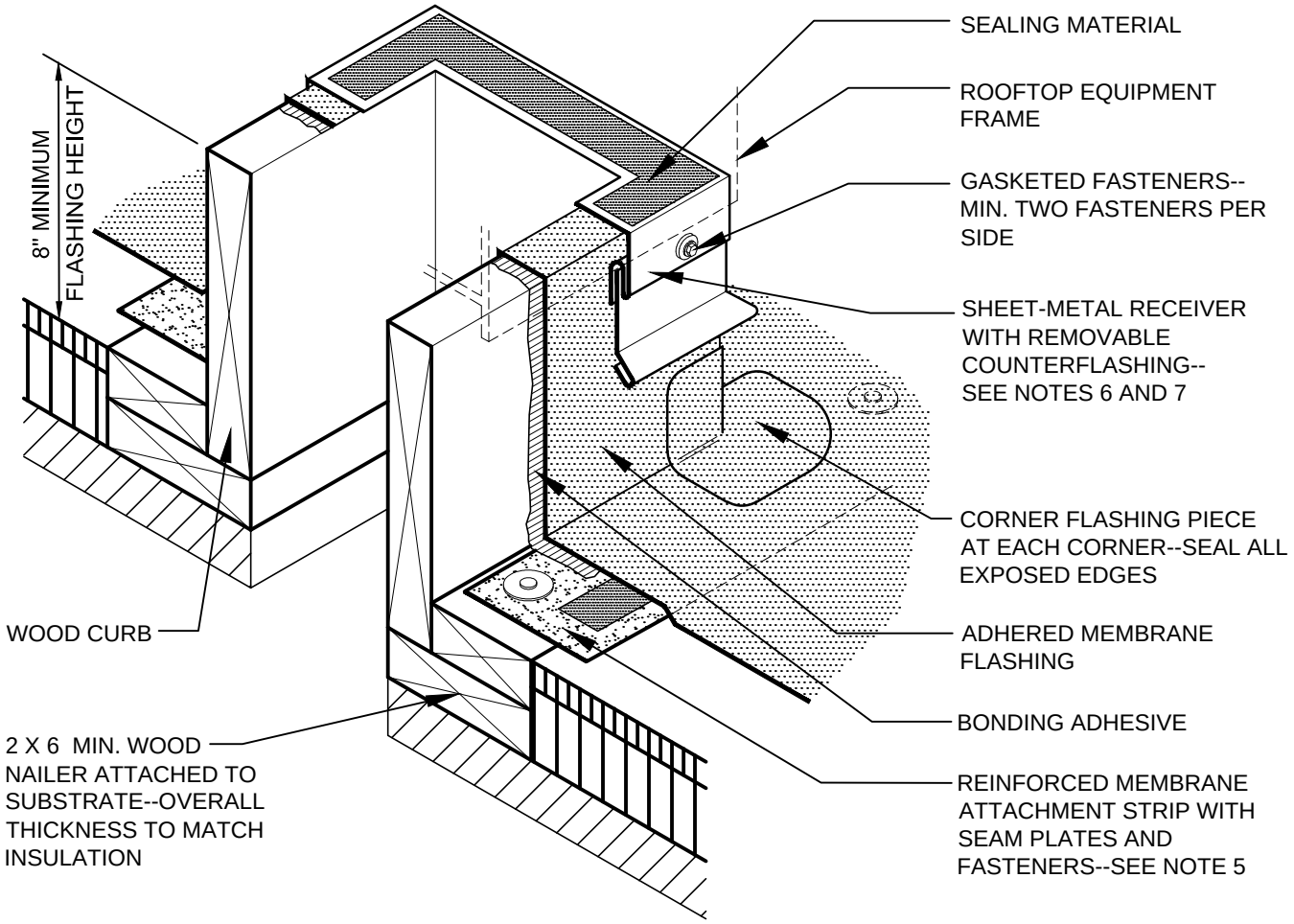
1. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

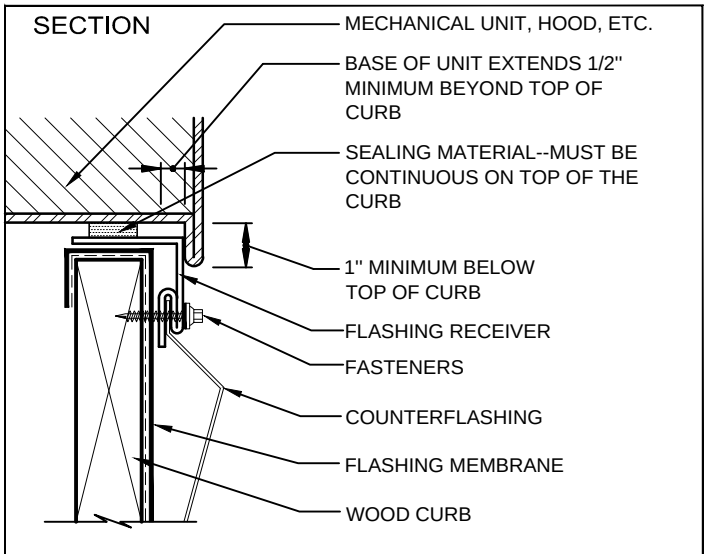
EQUIPMENT SUPPORT STAND LEG [FIELD WRAP]

2011

NOT DRAWN TO SCALE

EPDM-12





NOTES:

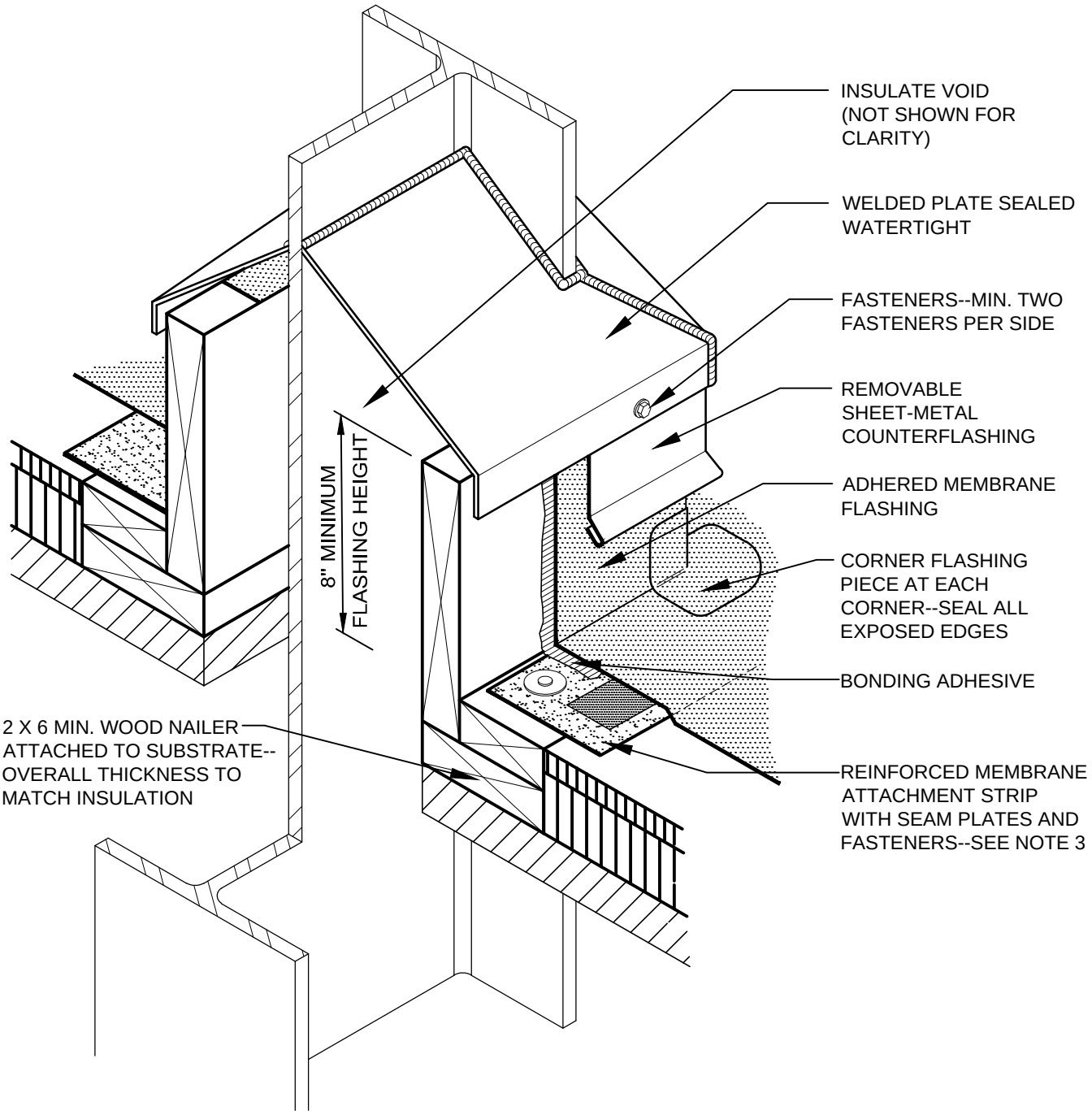
1. THE CURBS, TOP WOOD NAILER AND SEAL STRIP ARE TO BE SUPPLIED BY THE CURB MANUFACTURER.
2. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
3. WHERE THE SKYLIGHT, SCUTTLE OR SMOKE VENT FRAME OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. NRCA RECOMMENDS DESIGNERS CONSIDER PERMANENT INTERNAL OR EXTERNAL FALL-PROTECTION DEVICES AT ALL SKYLIGHTS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
6. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
7. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT WOOD CURB

2011

NOT DRAWN TO SCALE

EPDM-13



NOTES:

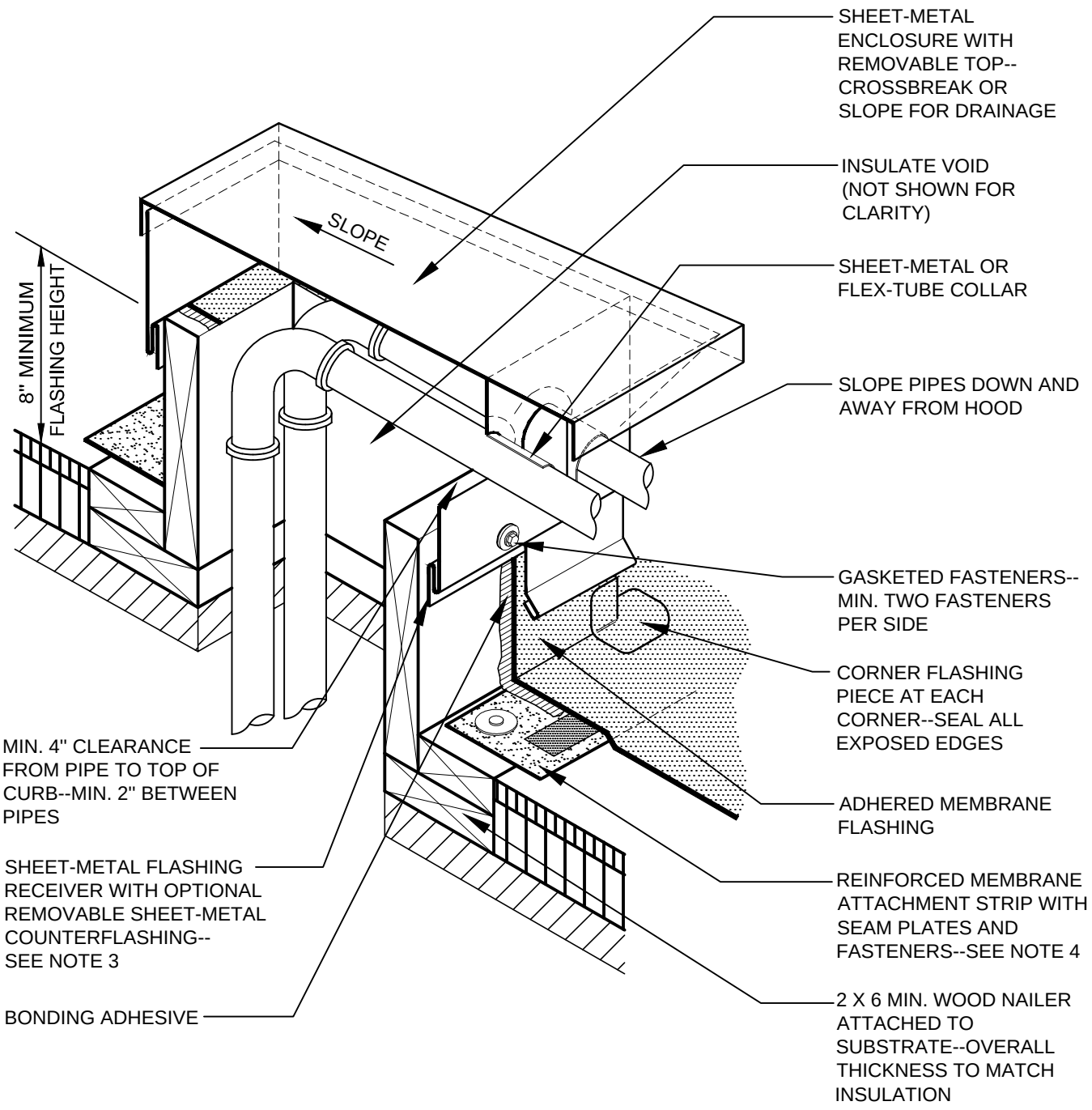
1. THIS DETAIL ILLUSTRATES ONE METHOD OF ELIMINATING PENETRATION POCKETS. THE CURBED SYSTEM ALLOWS FOR MOVEMENT IN THE STRUCTURAL MEMBER WITHOUT DISTURBING THE ROOF SYSTEM.
2. PENETRATIONS USING H, I AND C BEAMS/CHANNELS SHOULD BE AVOIDED. SQUARE AND ROUND TUBES ARE PREFERABLE.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT STRUCTURAL MEMBER THROUGH ROOF DECK

2011

NOT DRAWN TO SCALE

EPDM-14

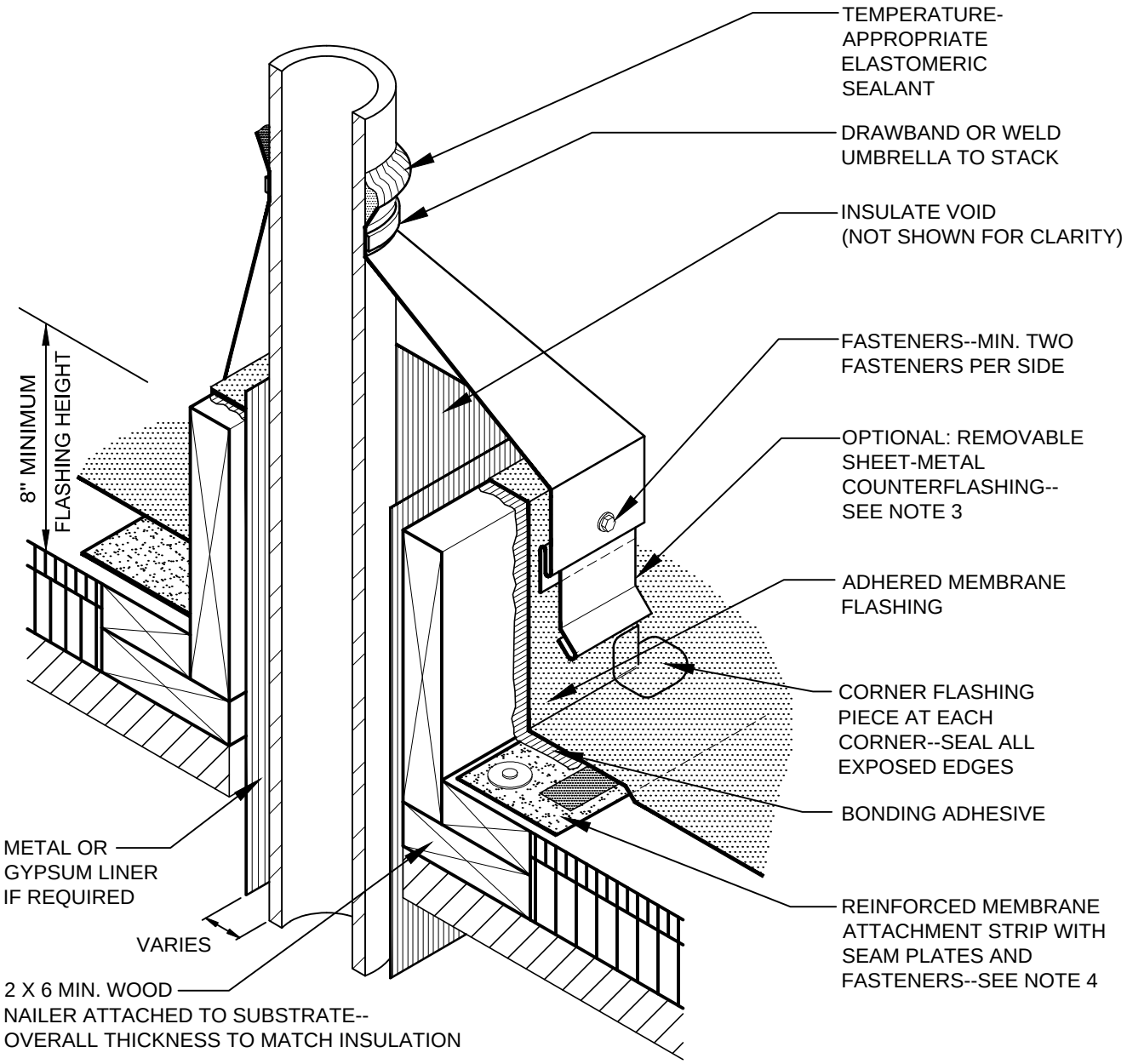


NOTES:

1. THIS DETAIL ILLUSTRATES ANOTHER METHOD OF ELIMINATING PITCH POCKETS AND AN OPTIONAL METHOD OF GROUPING PIPING THAT MUST COME ABOVE THE ROOF SURFACE.
2. MANY MANUFACTURERS OFFER PREFABRICATED BOOTS AND OTHER MATERIALS FOR THIS PURPOSE. SPECIFICS ABOUT THESE PROPRIETARY DESIGNS VARY GREATLY, AND INDIVIDUAL MANUFACTURER'S SPECIFICATIONS SHOULD BE CONSULTED FOR THEIR USE.
3. WHERE THE SHEET-METAL ENCLOSURE OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
5. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT SHEET-METAL ENCLOSURE FOR PIPING THROUGH ROOF DECK

2011 *NOT DRAWN TO SCALE* **EPDM-15**

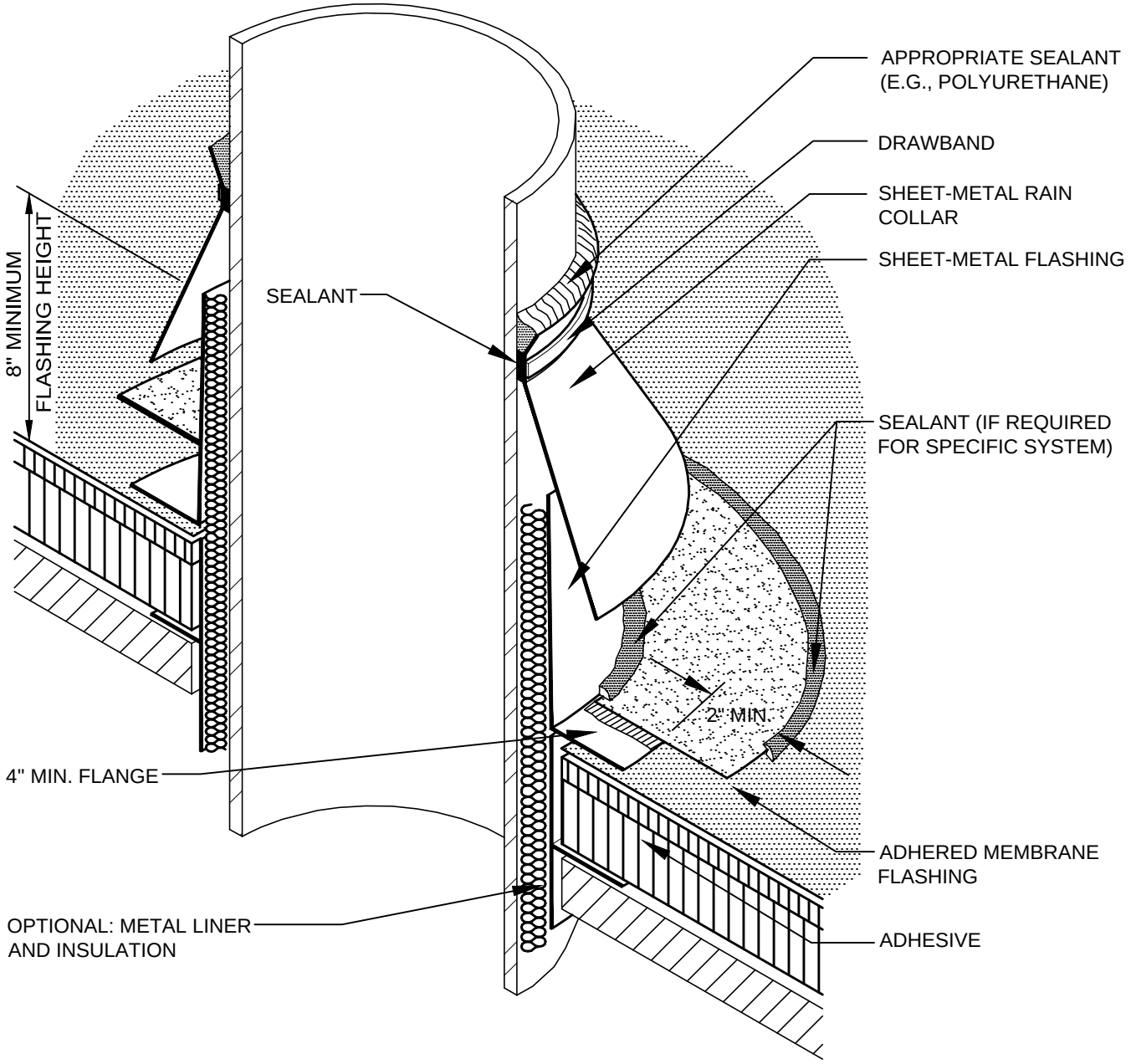


NOTES:

1. THIS DETAIL ALLOWS THE OPENING TO BE COMPLETED BEFORE THE STACK IS PLACED.
2. THE CLEARANCE NECESSARY BETWEEN THE OPTIONAL GYPSUM OR METAL LINER AND THE STACK AND THE NEED FOR INSULATION WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.
3. WHERE THE SHEET-METAL COVER OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
5. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT STACK VENT WITH CURB [HOT OR COLD]

2011 *NOT DRAWN TO SCALE* **EPDM-16**



NOTES:

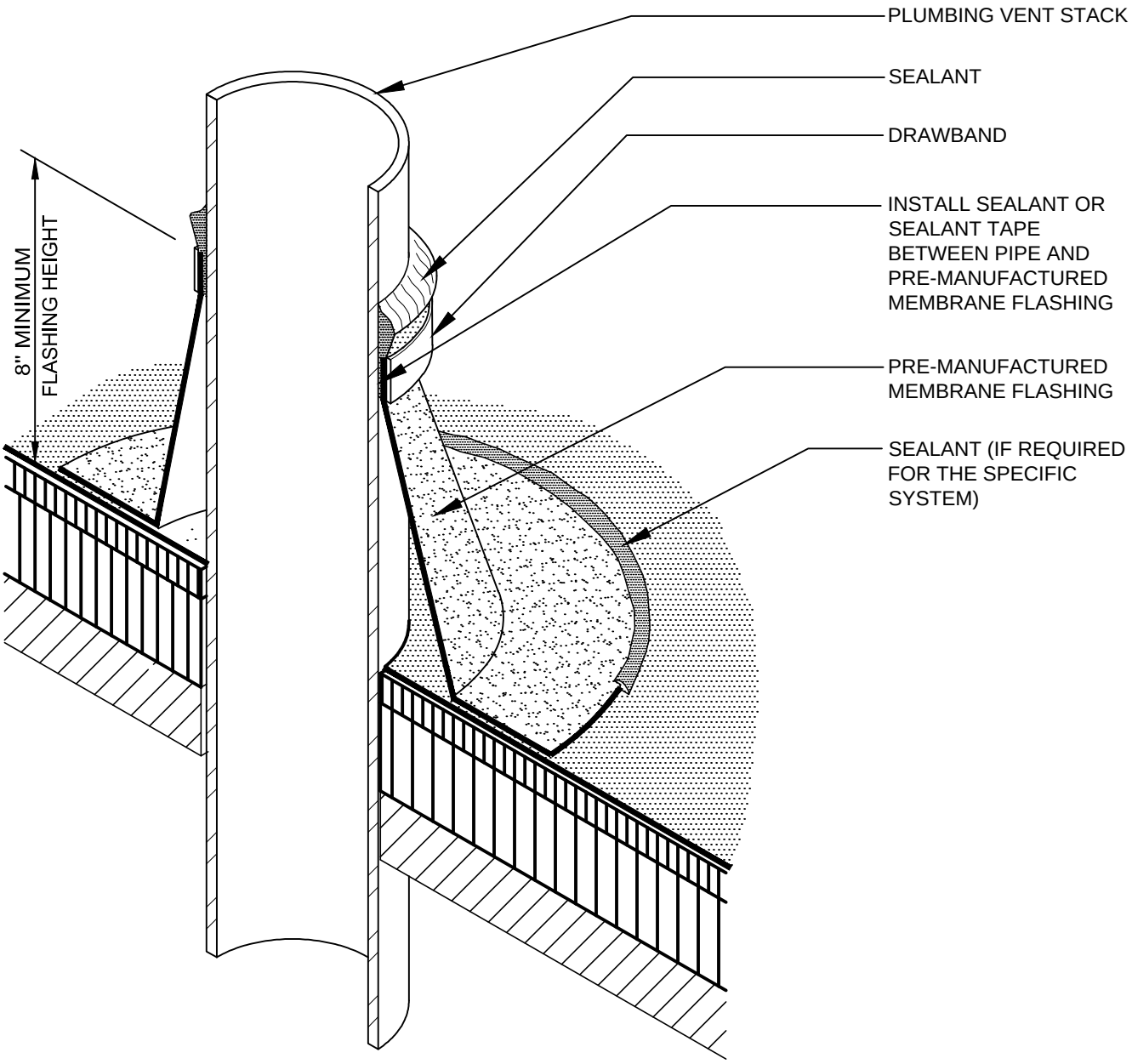
1. THIS DETAIL ALLOWS THE OPENING TO BE COMPLETED BEFORE THE STACK IS PLACED.
2. THE CLEARANCE NECESSARY BETWEEN THE OPTIONAL INSULATION AND METAL LINER AND THE STACK WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

SHEET-METAL STACK VENT [HOT OR COLD]

2011

NOT DRAWN TO SCALE

EPDM-17

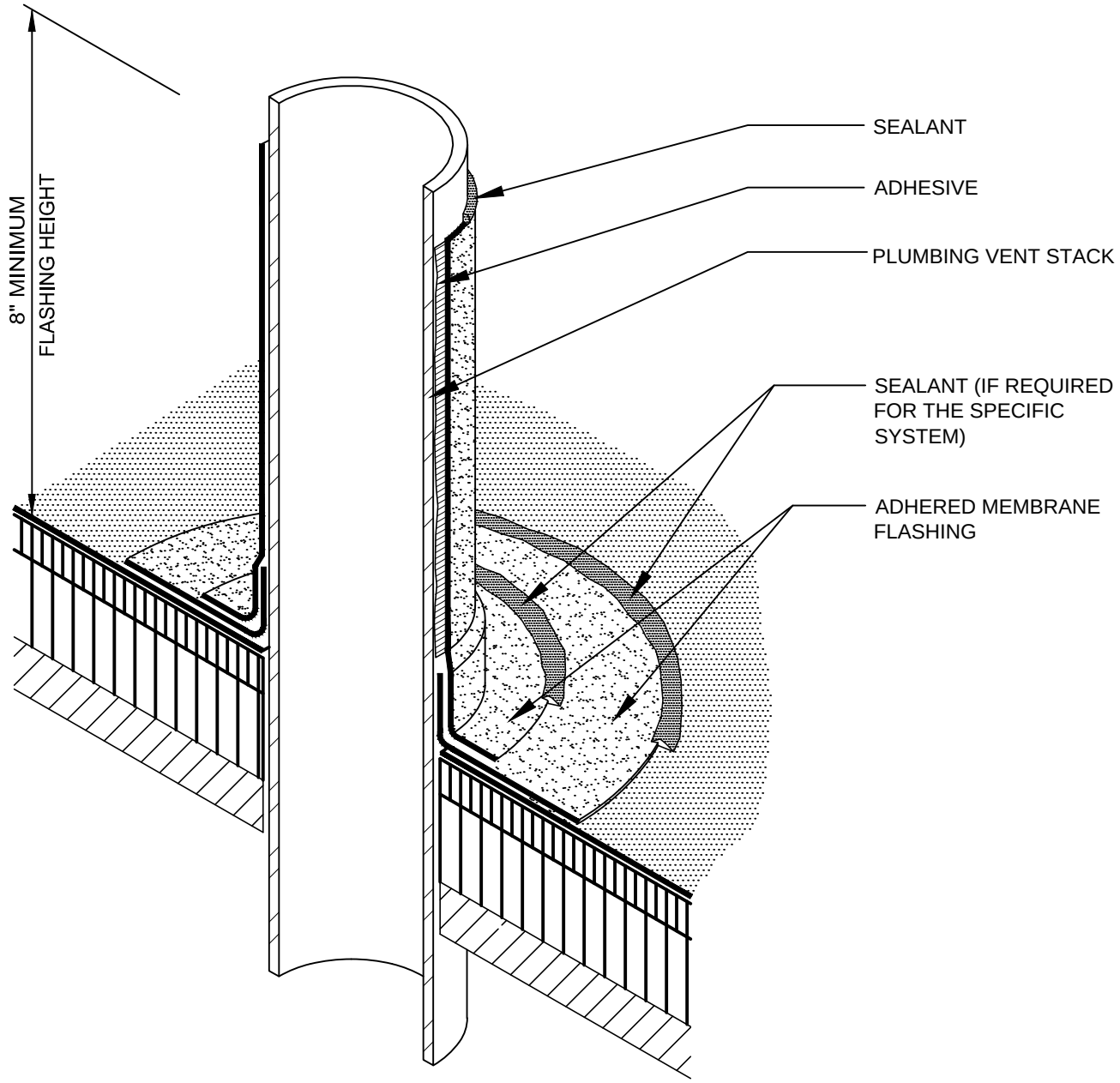


NOTES:

1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. SEE SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
2. NRCA RECOMMENDS FLASHINGS BE 8 INCHES HIGH; HOWEVER, NRCA IS AWARE PRE-MANUFACTURED BOOT FLASHINGS GENERALLY WILL NOT MEET THE HEIGHT REQUIREMENT.
3. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PLUMBING VENT [PRE-MANUFACTURED BOOT]

2011 *NOT DRAWN TO SCALE* **EPDM-18**



NOTES:

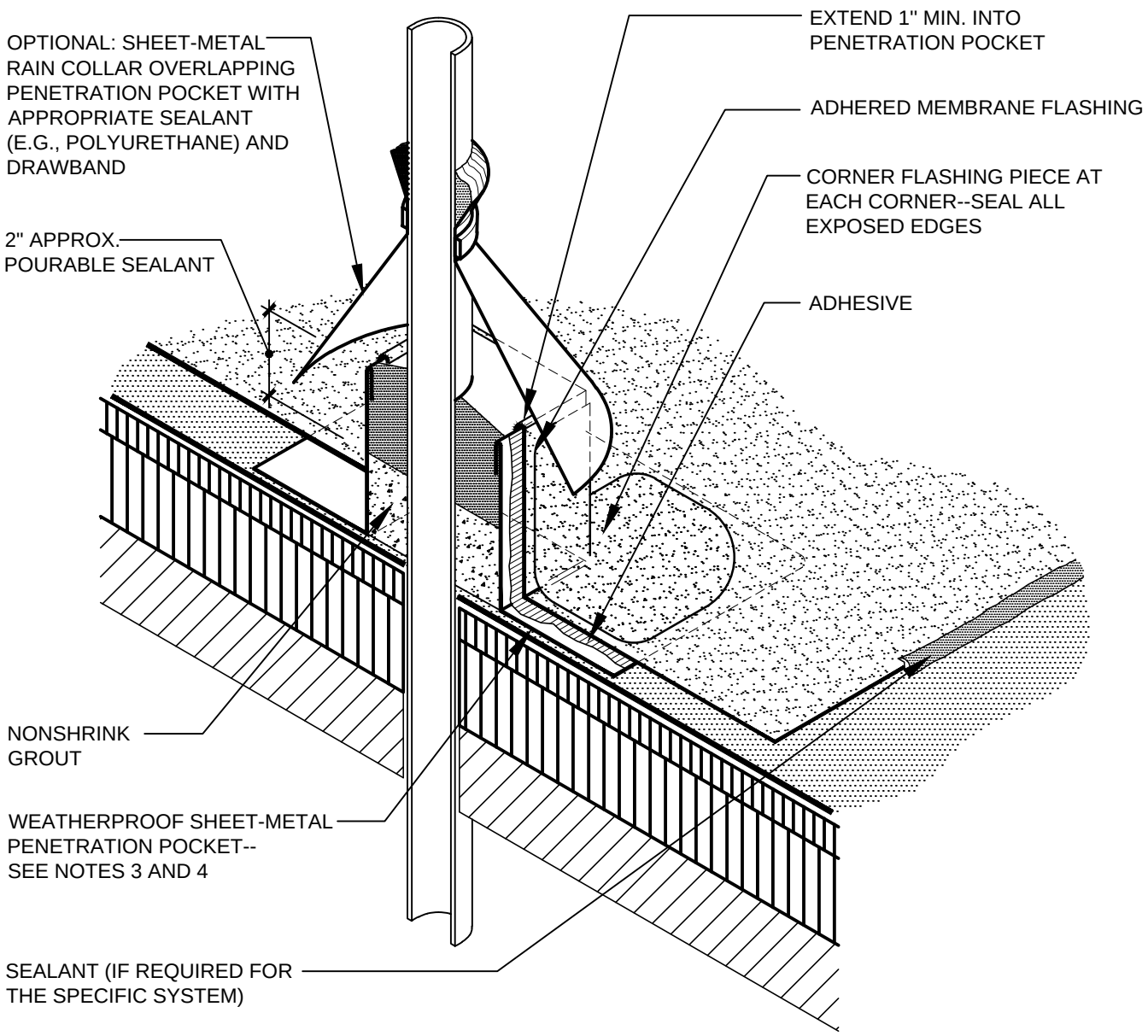
1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. SEE SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
2. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PLUMBING VENT [FIELD WRAP]

2011

NOT DRAWN TO SCALE

EPDM-19

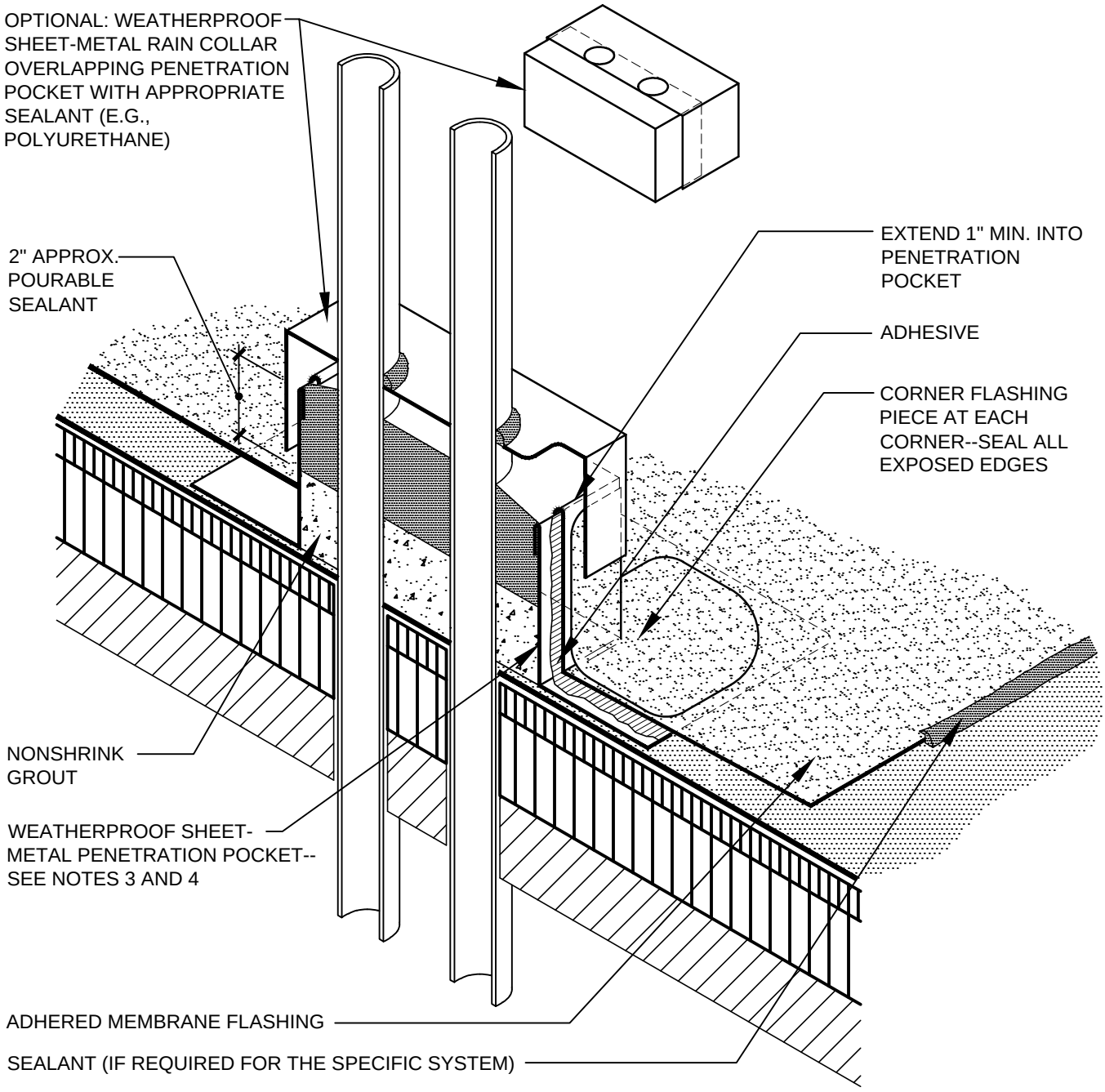


NOTES:

1. PENETRATION POCKETS ARE NOT THE PREFERRED FLASHING METHOD AT PENETRATIONS BECAUSE THEY MAY BE A MAINTENANCE PROBLEM.
2. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PENETRATION POCKETS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PENETRATION POCKET--SINGLE PENETRATION

2011 *NOT DRAWN TO SCALE* **EPDM-20**

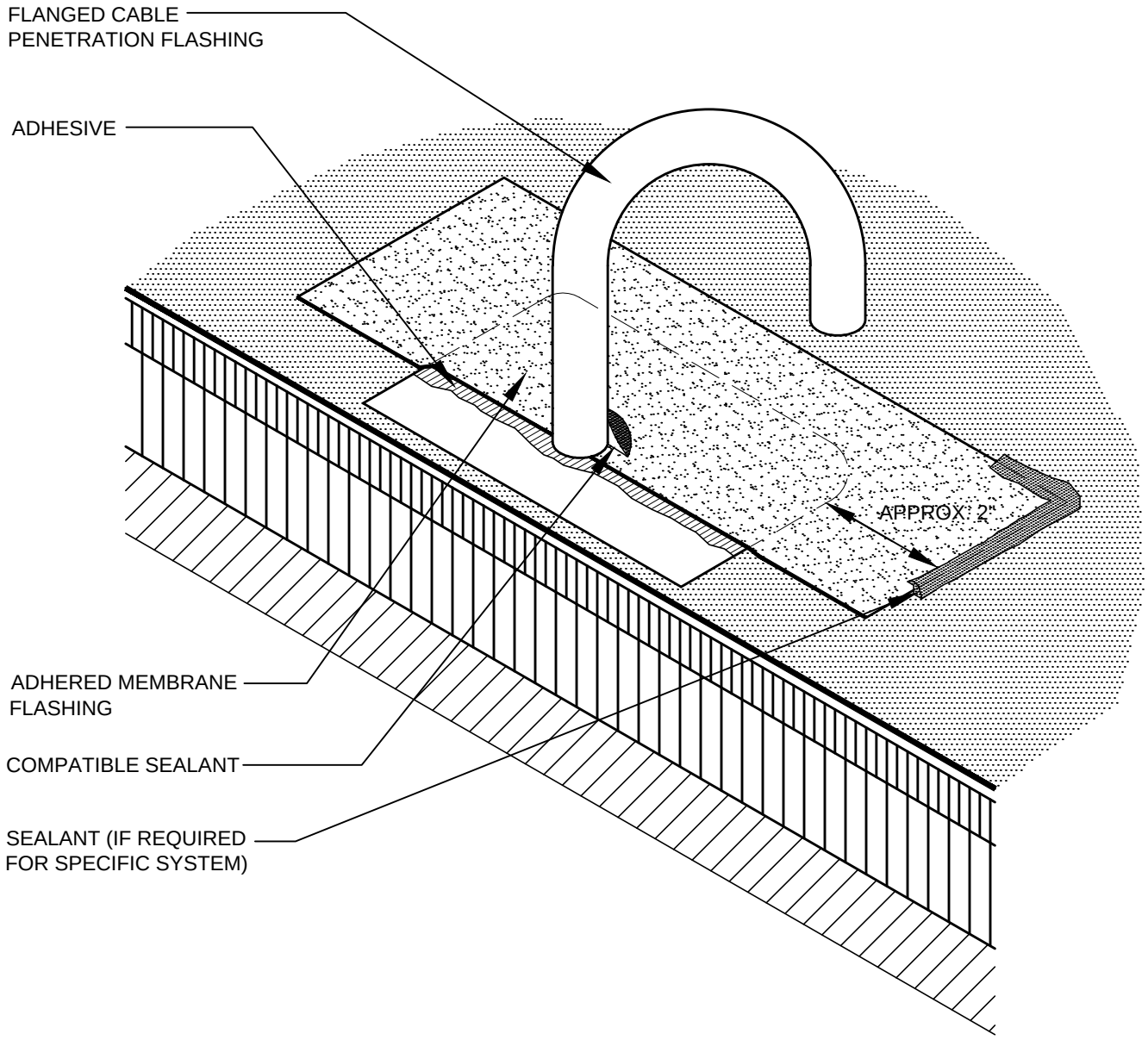


NOTES:

1. PENETRATION POCKETS ARE NOT THE PREFERRED FLASHING METHOD AT PENETRATIONS BECAUSE THEY MAY BE A MAINTENANCE PROBLEM.
2. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PENETRATION POCKETS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PENETRATION POCKET--DOUBLE PENETRATION

2011 *NOT DRAWN TO SCALE* **EPDM-21**



NOTES:

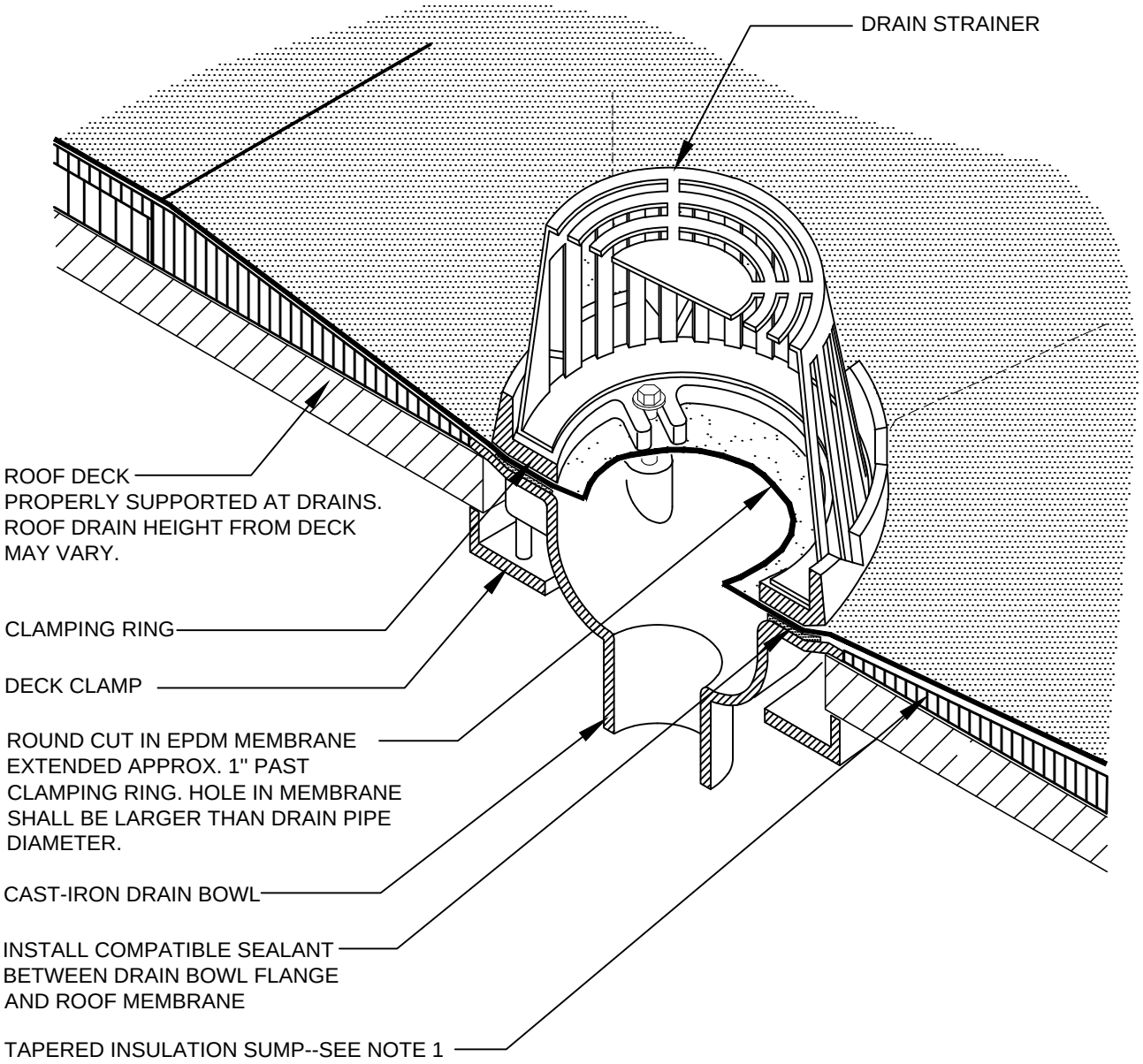
1. DETAIL DEPICTS THE WEATHERPROOFING PROTECTION AND DOES NOT REPRESENT LIGHTNING PROTECTION DESIGN.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

CABLE PENETRATION

2011

NOT DRAWN TO SCALE

EPDM-22



NOTES:

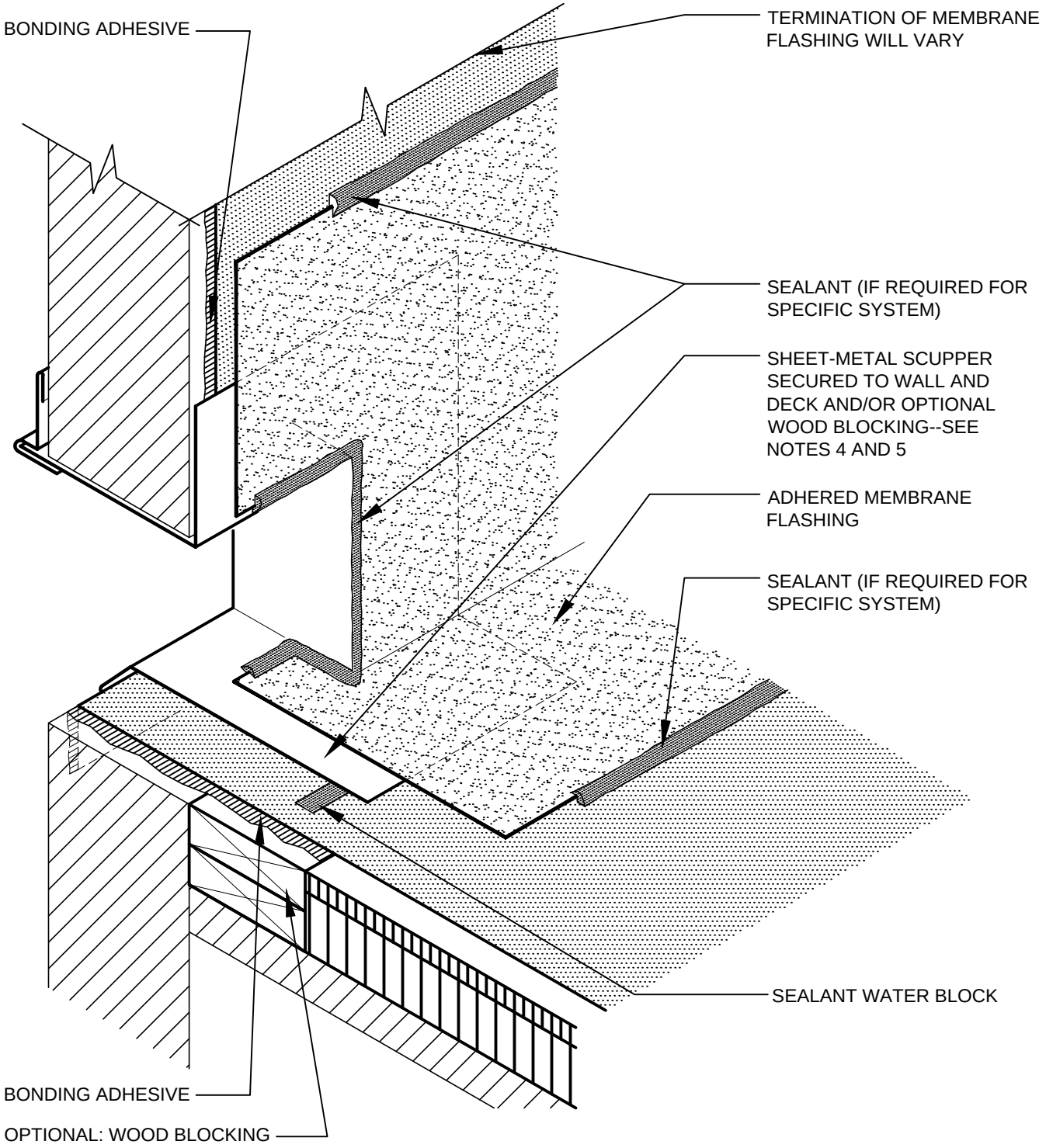
1. THE USE OF A METAL DECK SUMP PAN IS NOT RECOMMENDED. HOWEVER, DRAIN RECEIVER/BEARING PLATES ARE APPLICABLE WITH SOME PROJECTS.
2. THE DESIGNER SHOULD CONSIDER INSULATING THE DRAIN COMPONENTS BELOW THE DECK TO PREVENT POTENTIAL CONDENSATION.
3. MEMBRANE SEAMS SHOULD NOT INTERSECT DRAIN CLAMPING RING. SEAMS THAT FALL WITHIN DRAIN SUMP SHOULD BE STRIPPED IN.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

ROOF DRAIN

2011

NOT DRAWN TO SCALE

EPDM-23



NOTES:

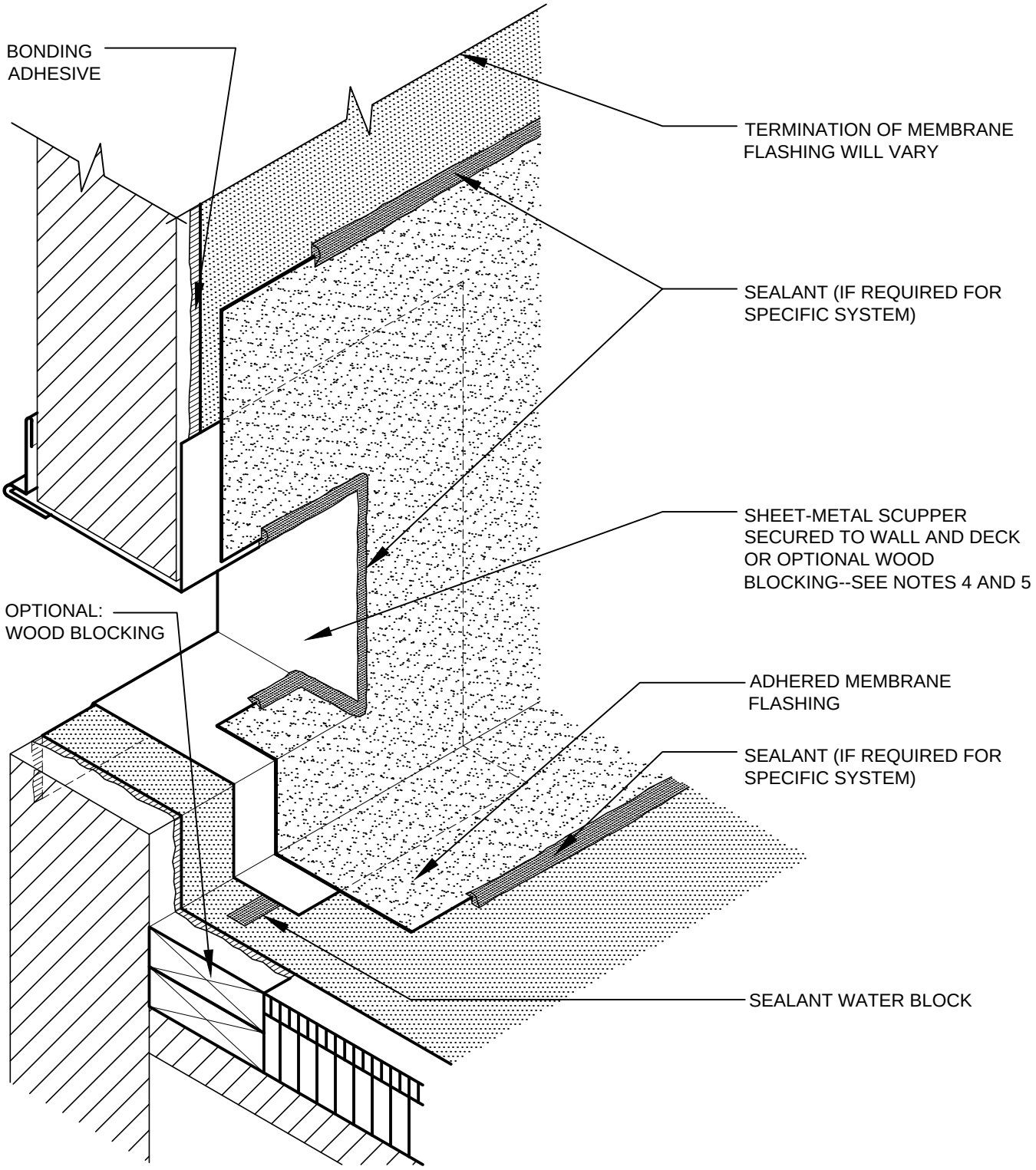
1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. CONDUCTOR HEAD TO BE 1 INCH MINIMUM BELOW BOTTOM OF THROUGH-WALL SCUPPER.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SCUPPERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT THROUGH-WALL SCUPPER

2011

NOT DRAWN TO SCALE

EPDM-24



NOTES:

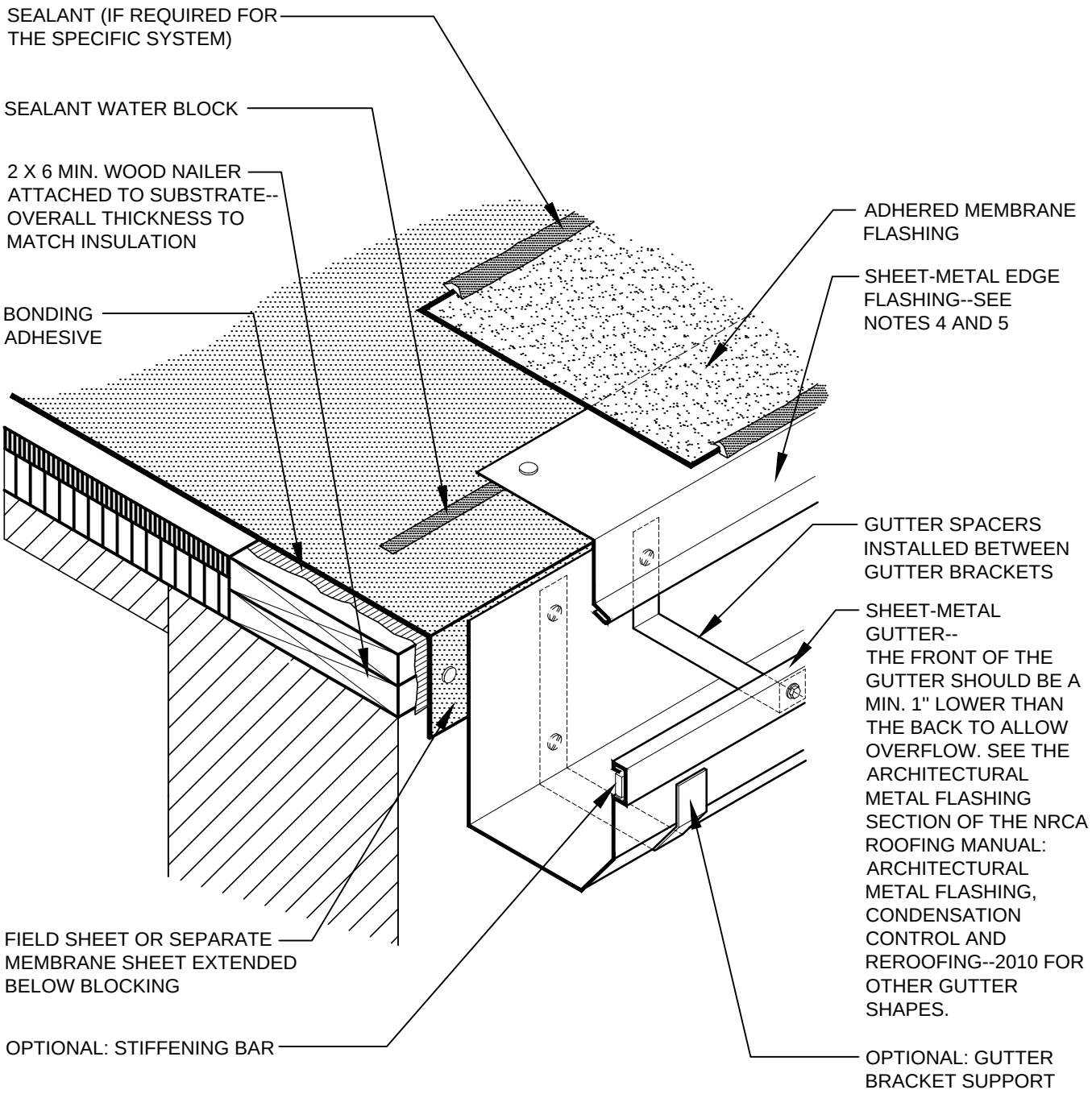
1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. ELEVATION OF SCUPPER MAY VARY.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SCUPPERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT OVERFLOW SCUPPER

2011

NOT DRAWN TO SCALE

EPDM-25



NOTES:

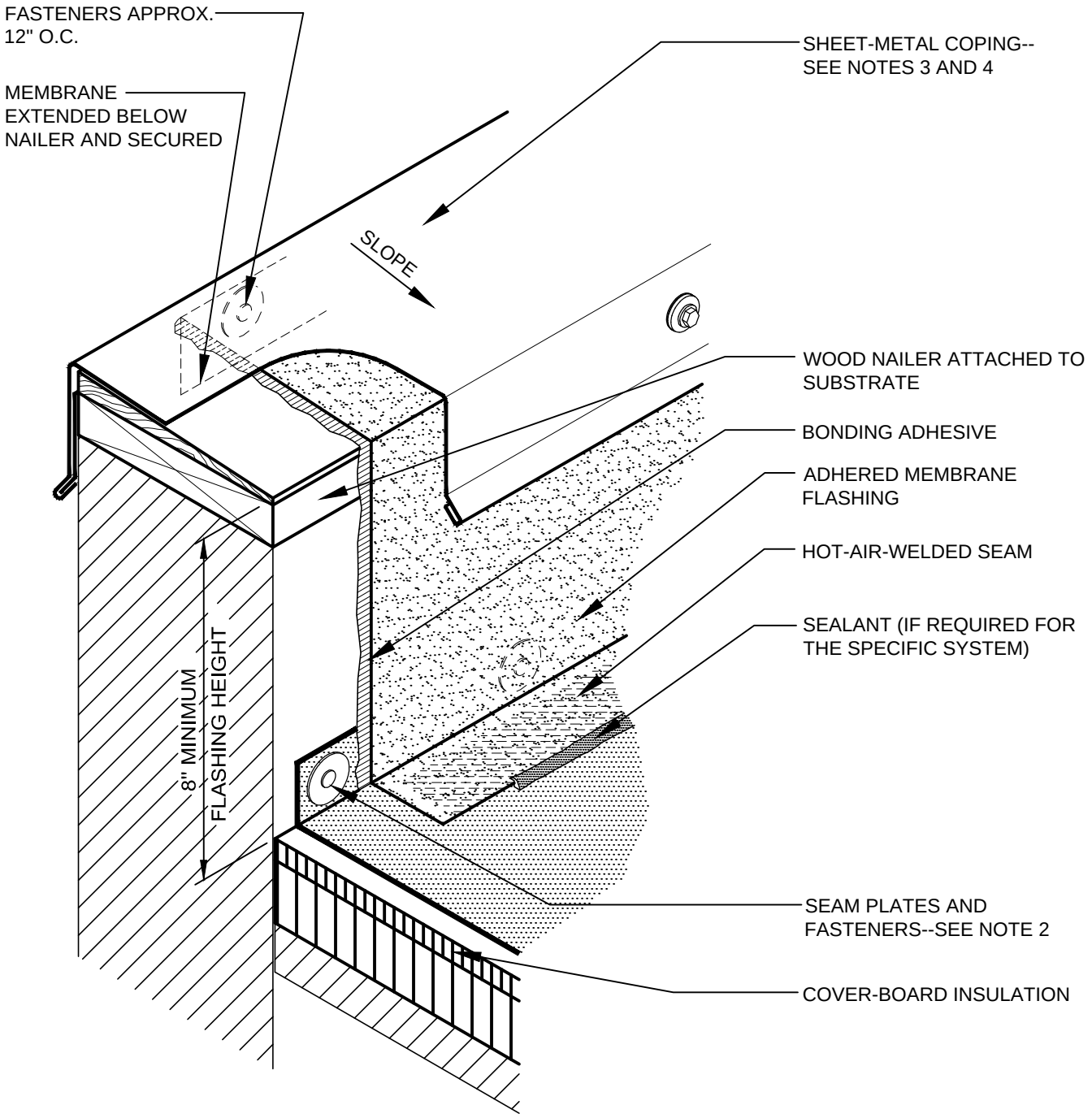
1. IN CLIMATES WHERE THE WINTER TEMPERATURE REMAINS BELOW FREEZING FOR EXTENDED PERIODS OF TIME, NRCA SUGGESTS INTERIOR DRAINS TO DRAIN THE ROOF.
2. GUTTER BRACKETS ARE RECOMMENDED TO BE AT LEAST ONE GAUGE HEAVIER THAN GUTTER STOCK.
3. ON BALLASTED SYSTEMS, A DRAINAGE BAR TO RETAIN BALLAST IS REQUIRED.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PERIMETER EDGE METAL.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

GUTTER WITH PERIMETER EDGE METAL

2011

NOT DRAWN TO SCALE

EPDM-26



NOTES:

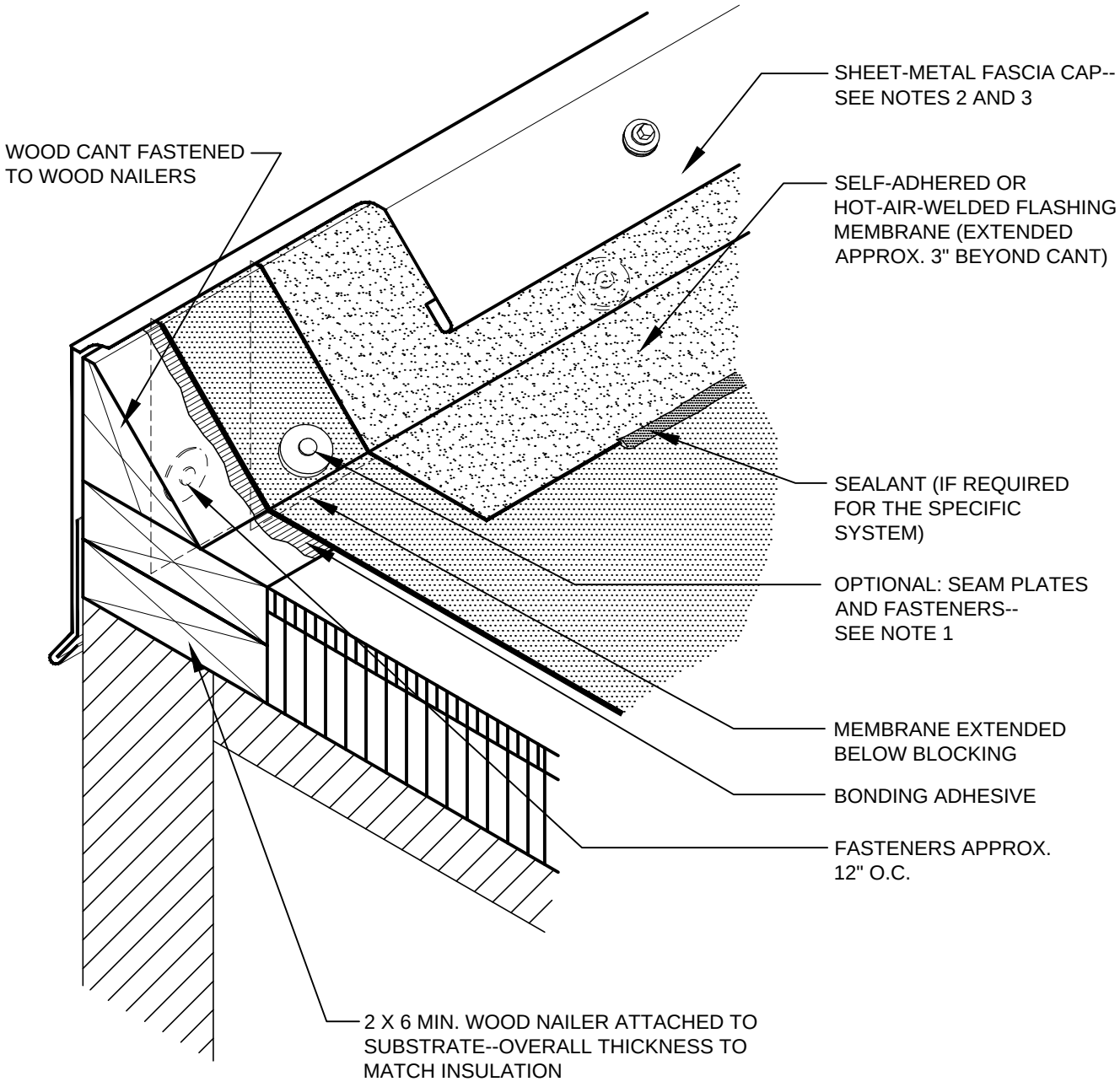
1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL. SEE DETAIL SP-7 FOR EXPANSION JOINT AT A DECK-TO-WALL LOCATION.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COPINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT PARAPET WALL WITH METAL COPING

2011

NOT DRAWN TO SCALE

SP-1

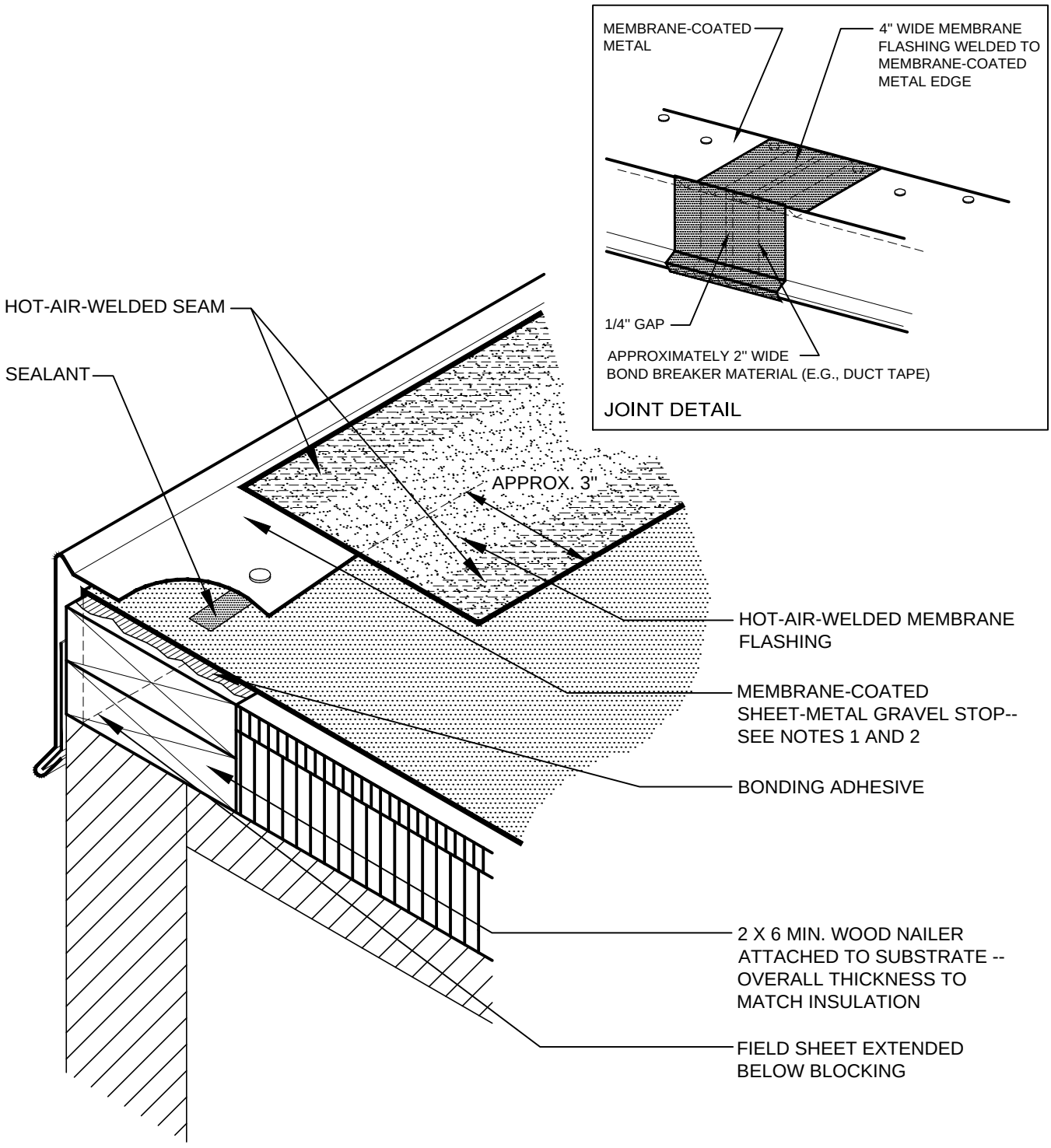


NOTES:

1. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
2. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR FASCIA CAPS.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

RAISED PERIMETER EDGE WITH METAL FLASHING [FASCIA CAP]

2011 *NOT DRAWN TO SCALE* **SP-2**

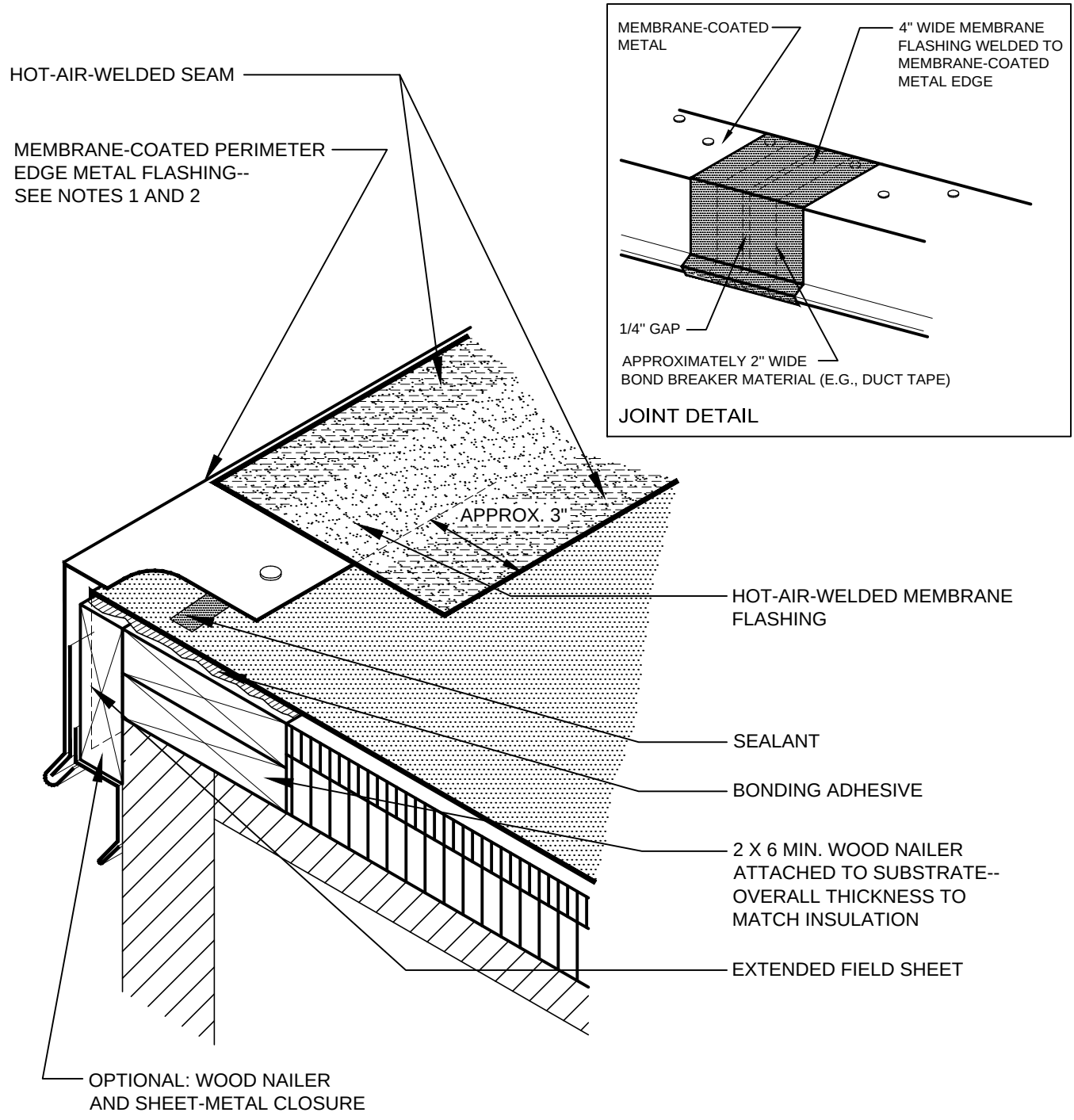


NOTES:

1. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR GRAVEL STOPS.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EMBEDDED EDGE-METAL FLASHING [GRAVEL STOP] WITH MEMBRANE COATING

2011 *NOT DRAWN TO SCALE* **SP-3**

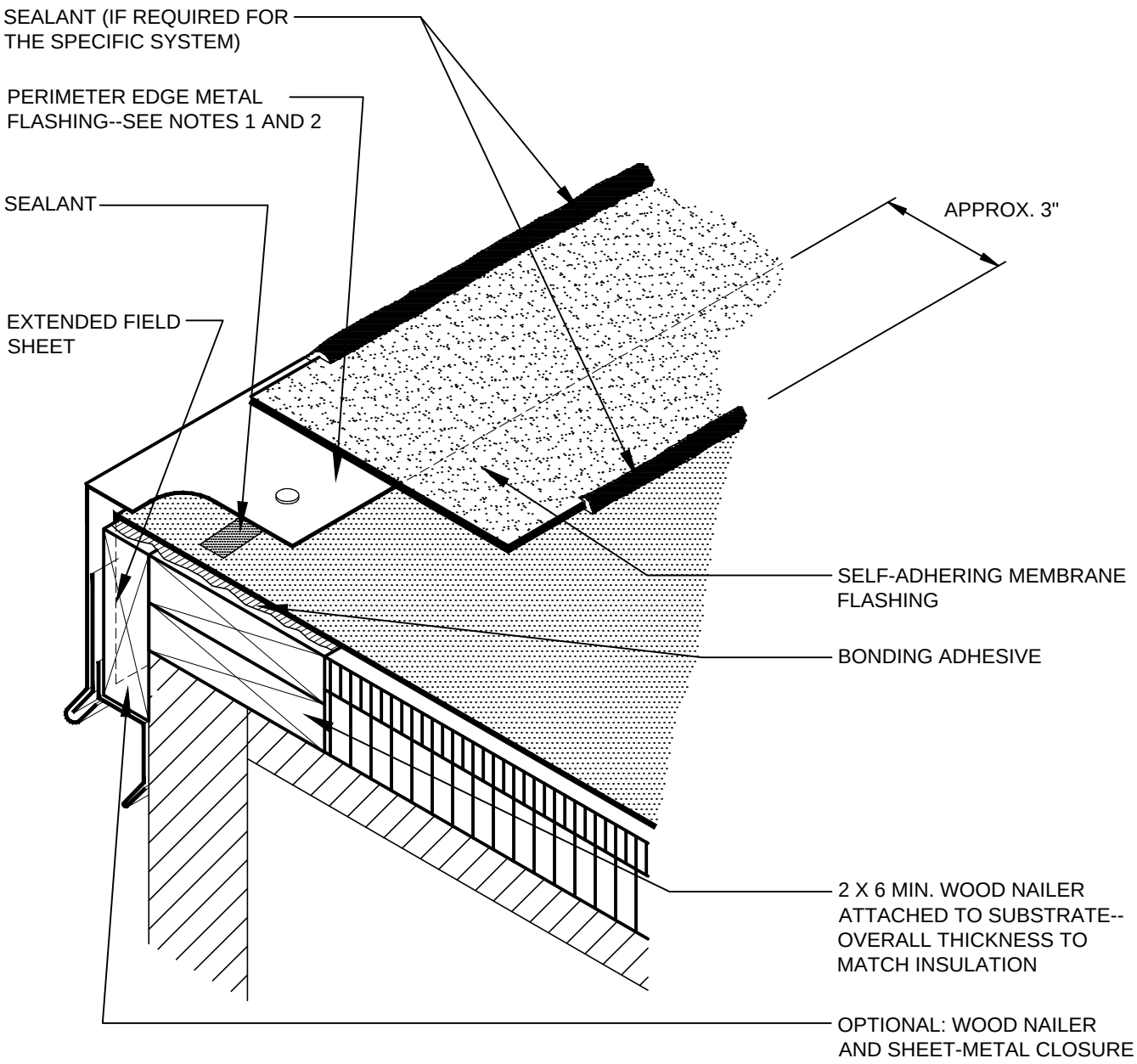


NOTES:

1. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PERIMETER EDGE METAL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

DRAINING PERIMETER EDGE METAL WITH MEMBRANE COATING

2011 *NOT DRAWN TO SCALE* **SP-4**

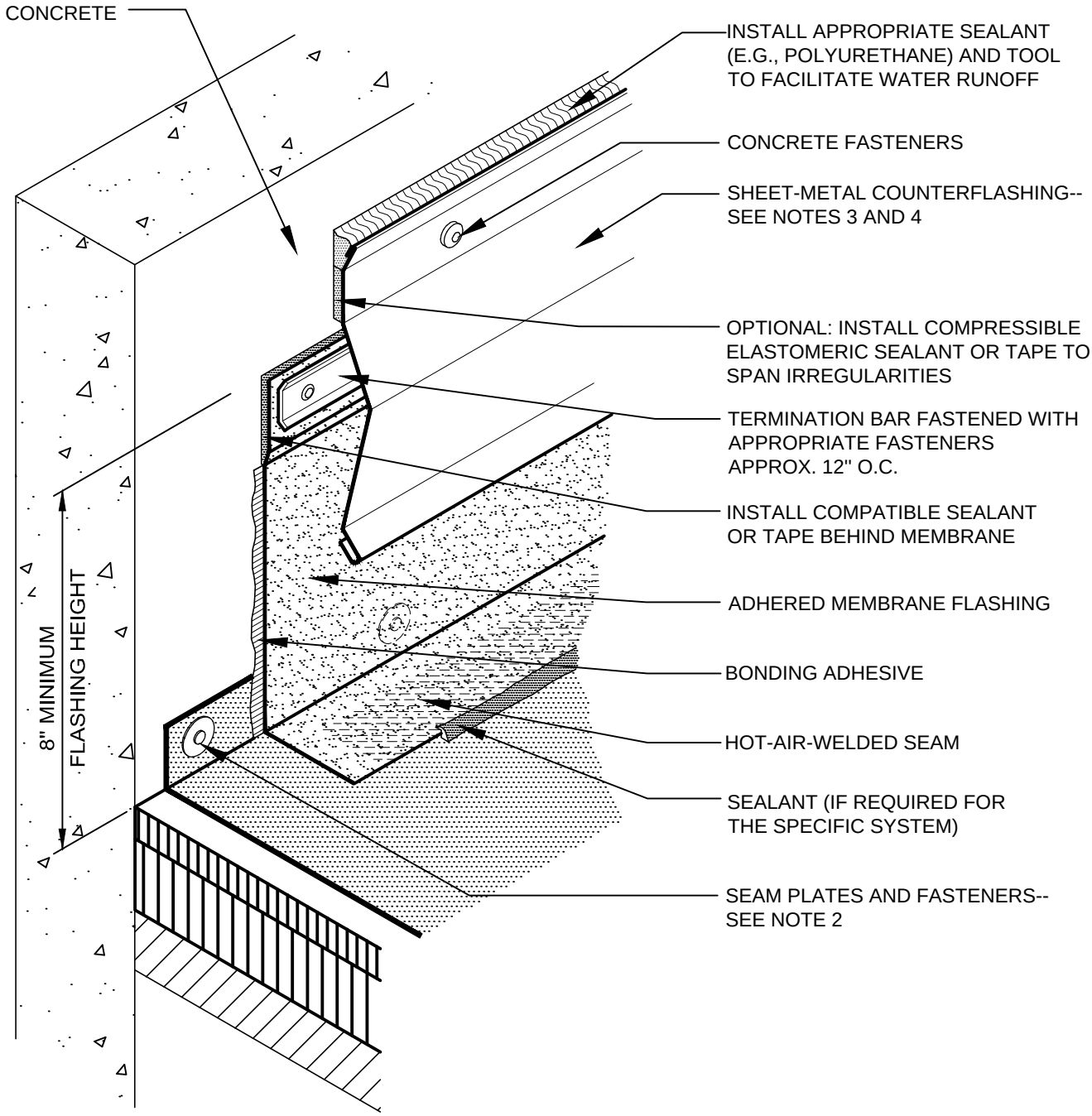


NOTES:

1. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PERIMETER EDGE METAL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

DRAINING PERIMETER EDGE METAL

2011 *NOT DRAWN TO SCALE* **SP-5**

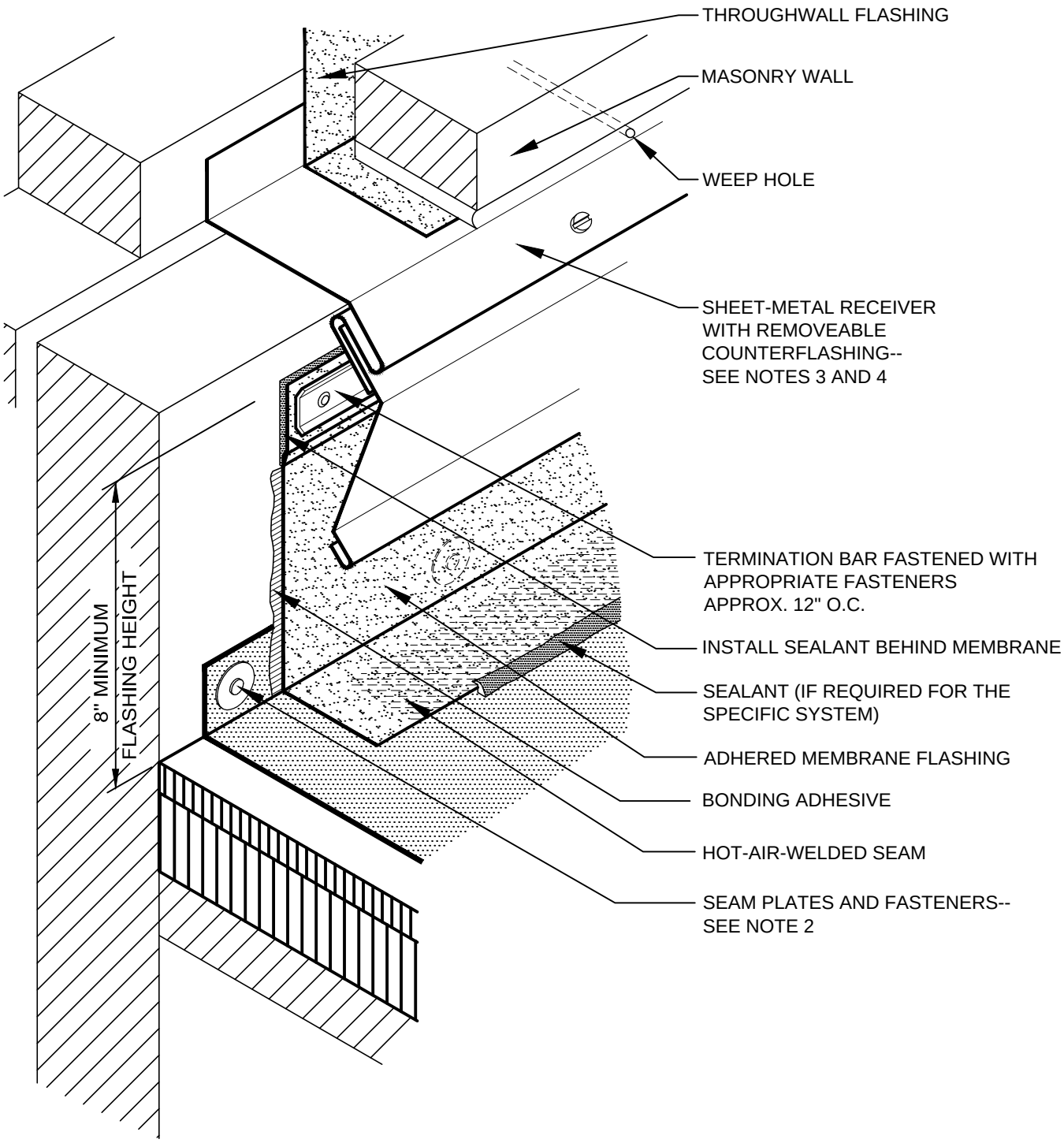


NOTES:

1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING WITH SURFACE-MOUNTED COUNTERFLASHING AT CONCRETE WALL

2011 *NOT DRAWN TO SCALE* **SP-6**

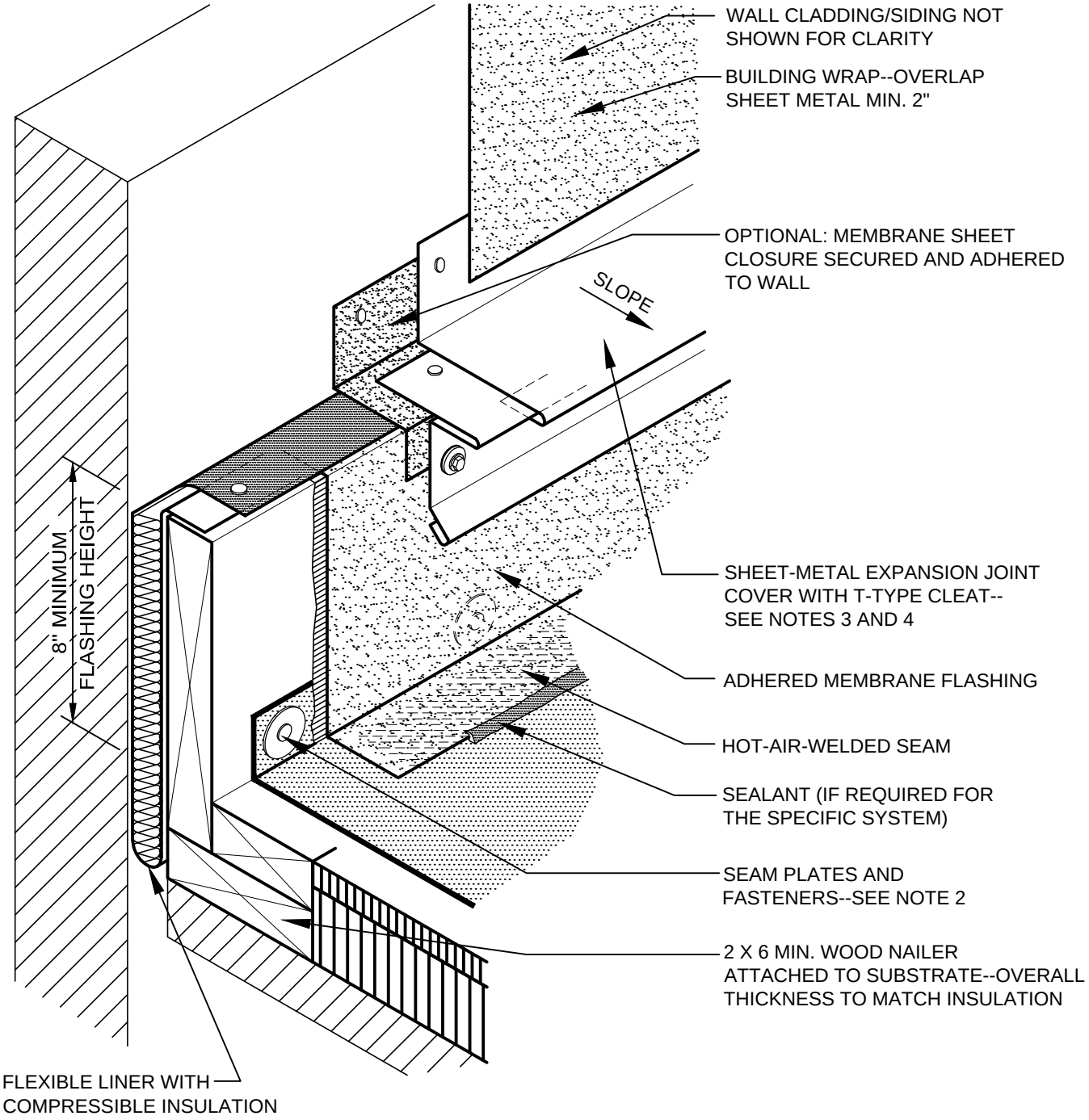


NOTES:

1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING WITH TWO-PIECE SHEET-METAL COUNTERFLASHING

2011 *NOT DRAWN TO SCALE* **SP-7**

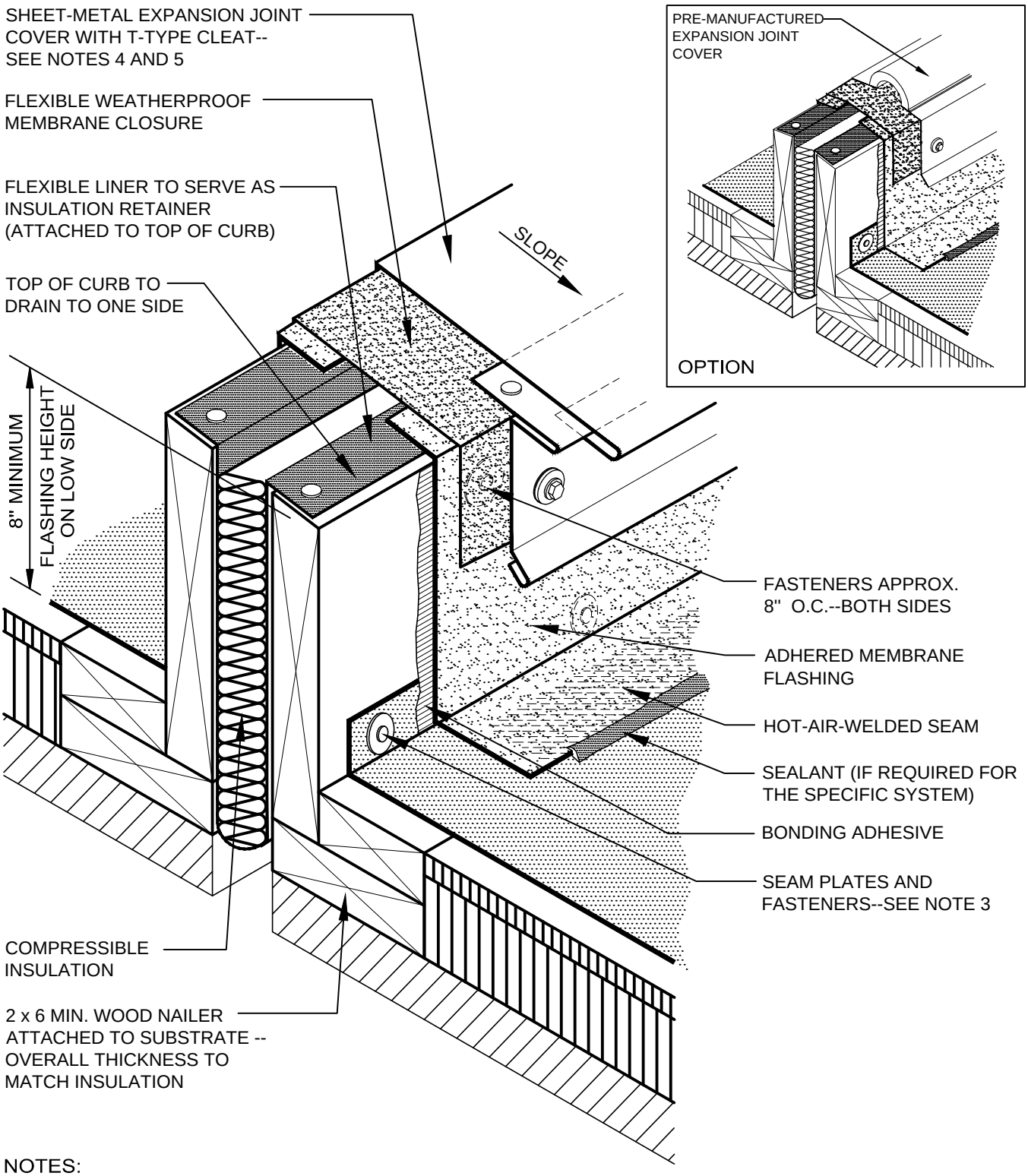


NOTES:

1. THIS DETAIL SHOULD BE USED WHEN THERE IS ANY POSSIBILITY DIFFERENTIAL MOVEMENT WILL OCCUR BETWEEN THE DECK AND WALL. THE WOOD MEMBERS SHOULD NOT BE FASTENED TO THE WALL.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT ROOF-TO-WALL EXPANSION JOINT

2011 *NOT DRAWN TO SCALE* **SP-8**



NOTES:

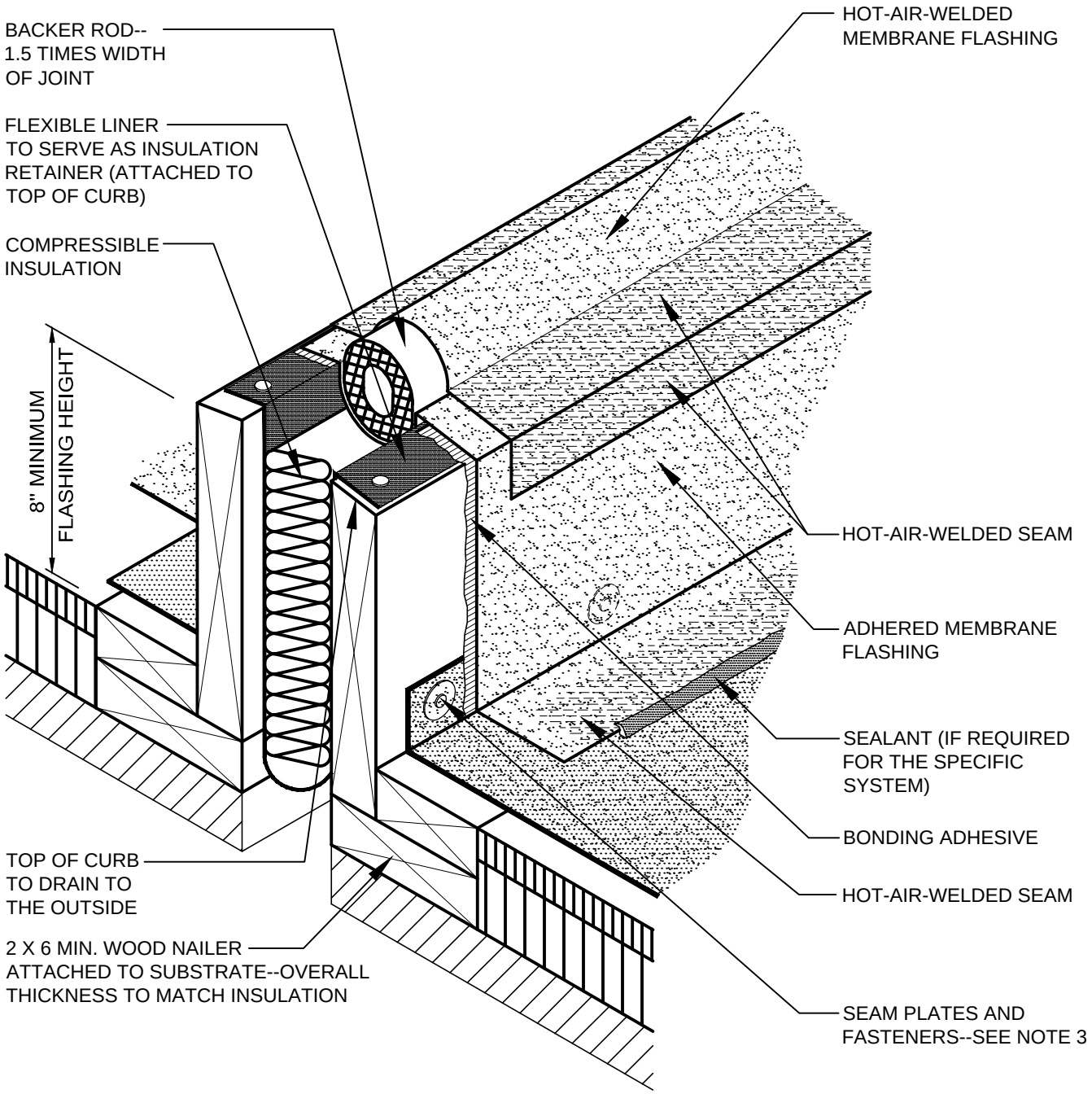
1. THIS DETAIL ALLOWS FOR BUILDING MOVEMENT IN MULTIPLE DIRECTIONS.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF THE EXPANSION JOINT.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR EXPANSION JOINT COVERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EXPANSION JOINT WITH METAL COVER

2011

NOT DRAWN TO SCALE

SP-9



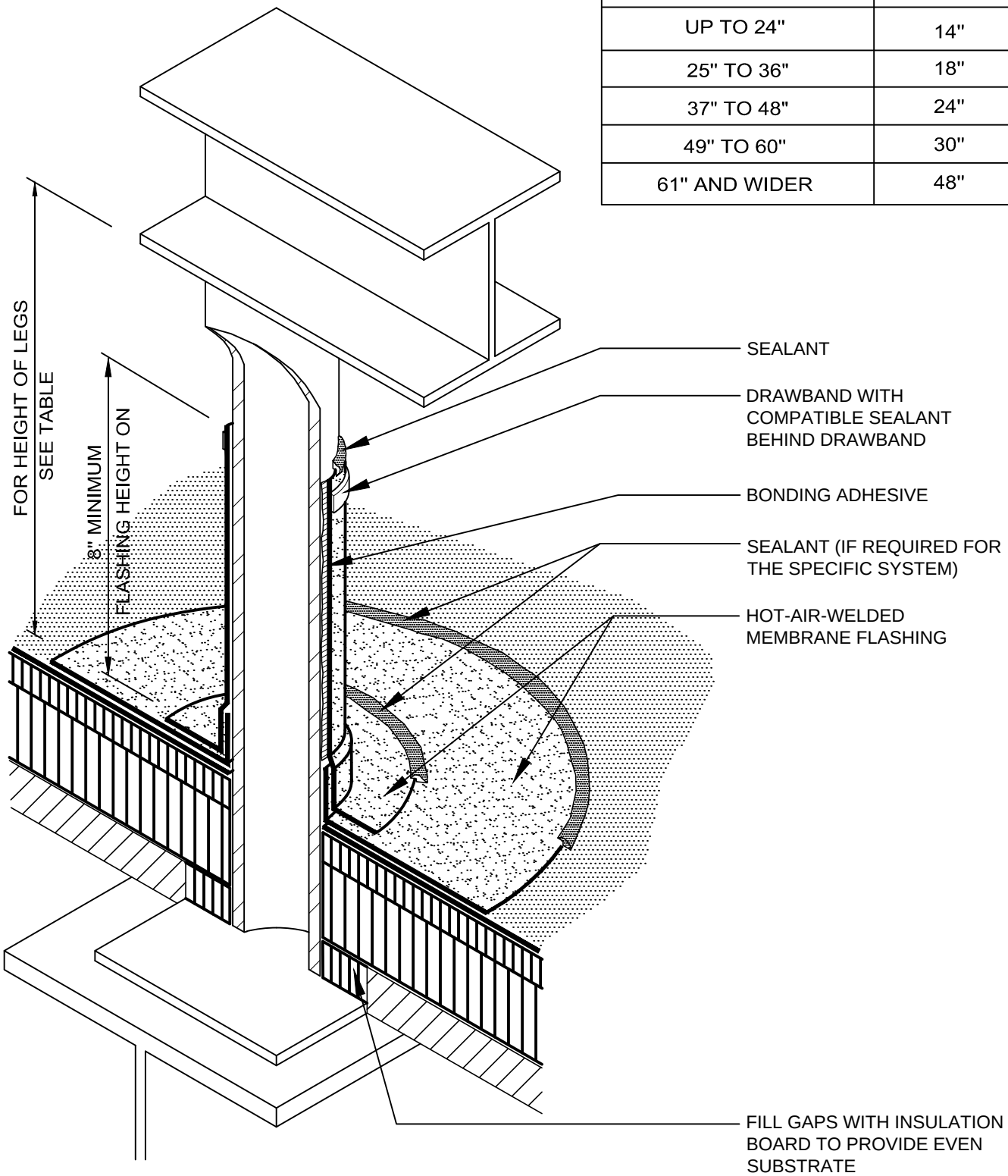
NOTES:

1. THIS DETAIL ALLOWS FOR BUILDING MOVEMENT IN MULTIPLE DIRECTIONS.
2. FLASHING REQUIREMENTS ARE TYPICAL FOR BOTH SIDES OF THE EXPANSION JOINT.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT EXPANSION JOINT

2011 *NOT DRAWN TO SCALE* **SP-10**

WIDTH OF EQUIPMENT	CLEARANCE
UP TO 24"	14"
25" TO 36"	18"
37" TO 48"	24"
49" TO 60"	30"
61" AND WIDER	48"

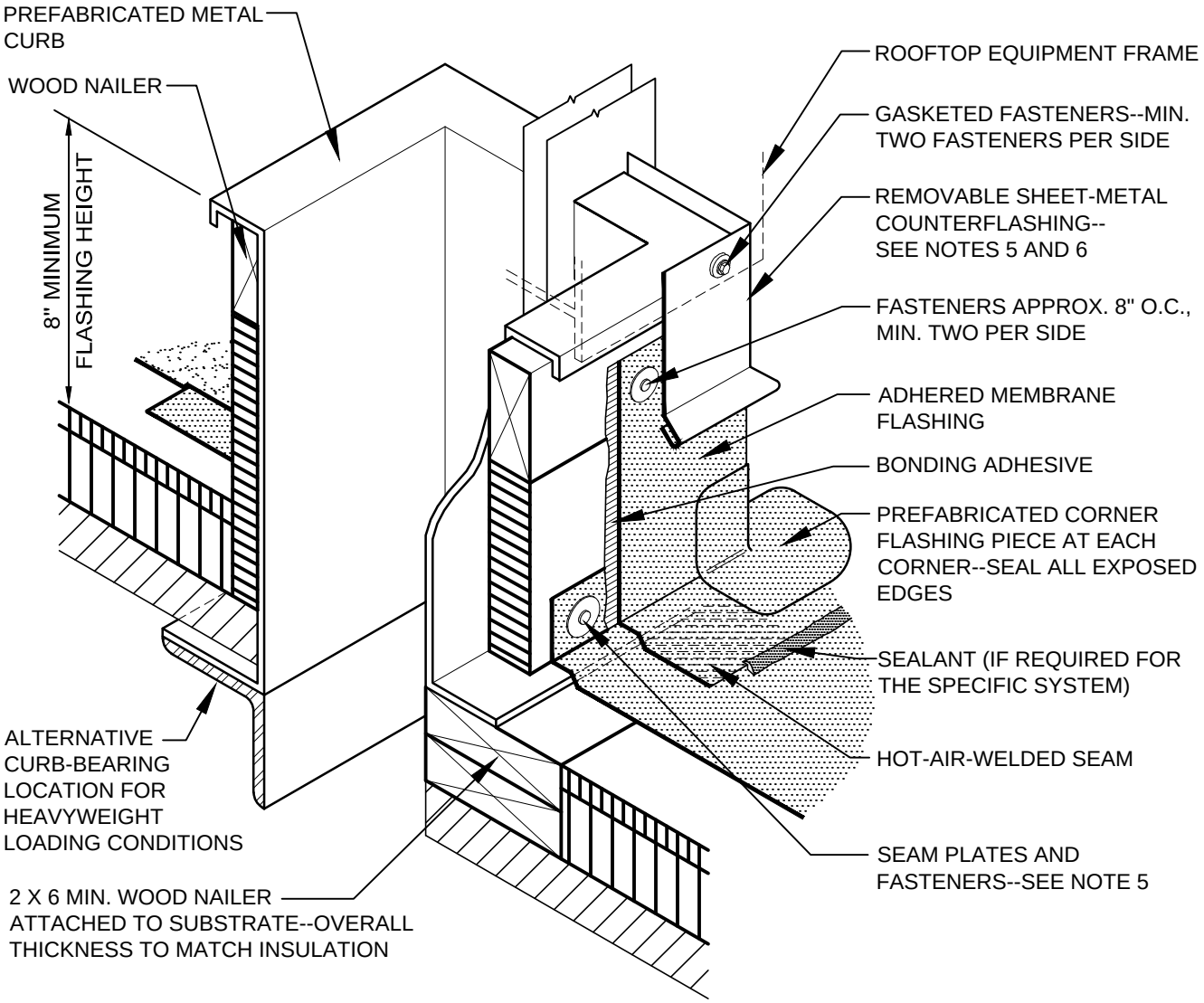


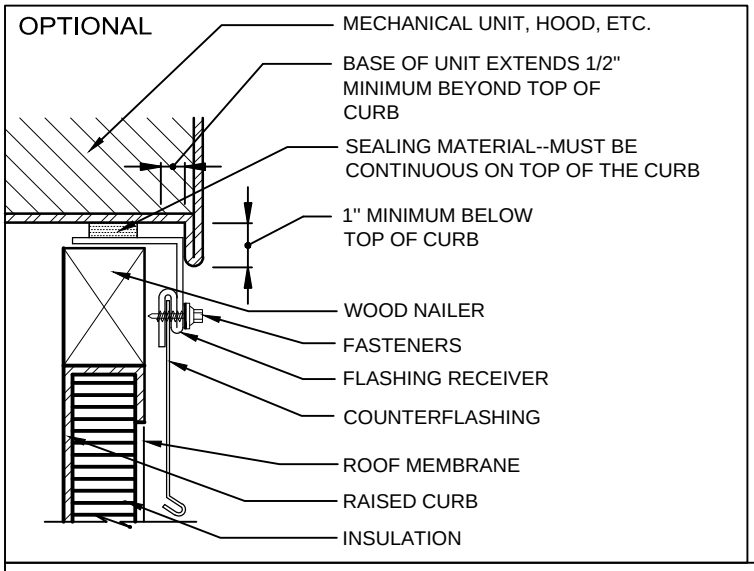
NOTES:

1. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EQUIPMENT SUPPORT STAND LEG [FIELD WRAP]

2011 *NOT DRAWN TO SCALE* **SP-11**





NOTES:

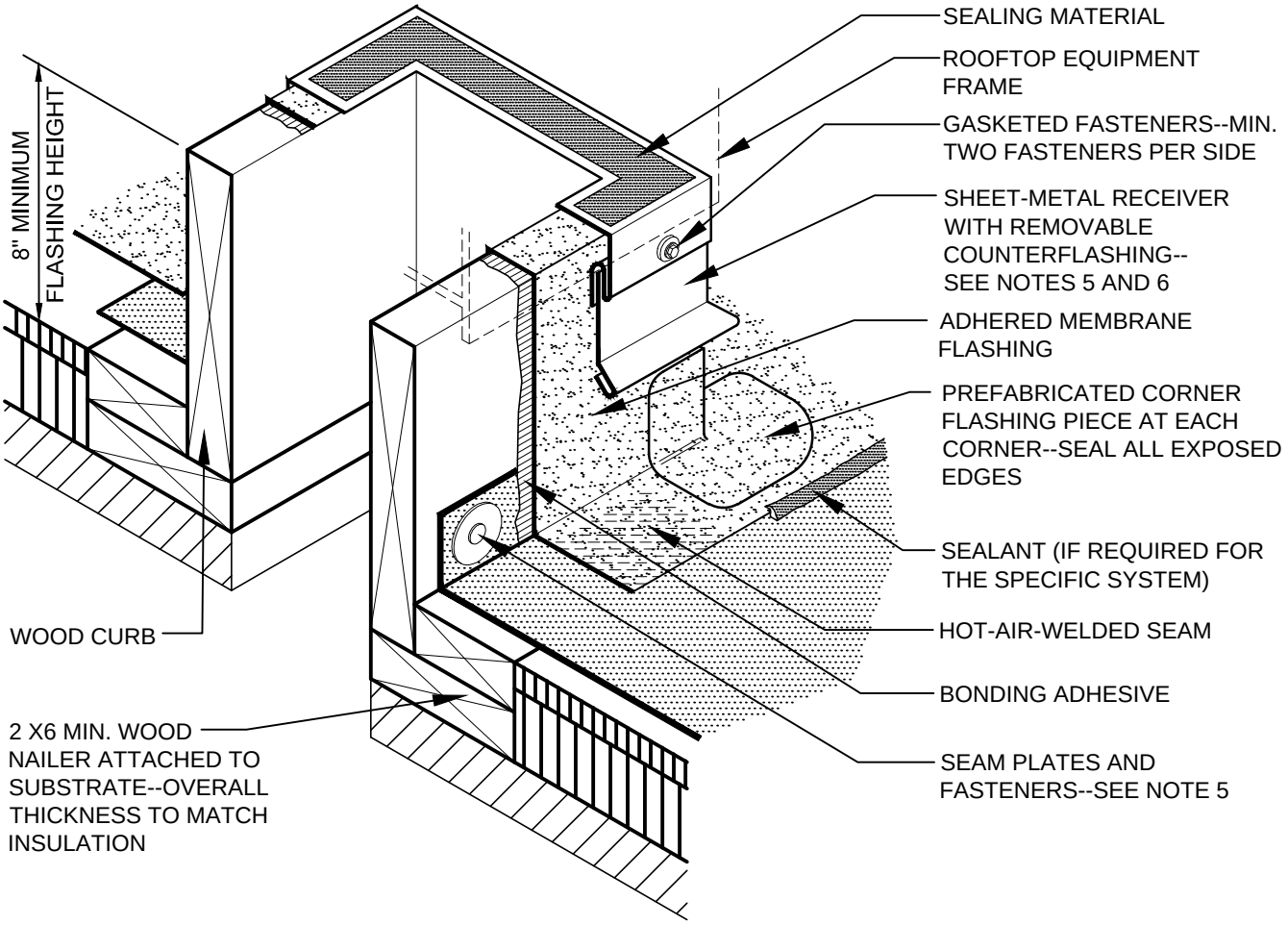
1. THE CURBS, TOP WOOD NAILER AND SEAL STRIP ARE TO BE SUPPLIED BY THE CURB MANUFACTURER.
2. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
3. WHERE THE SKYLIGHT, SCUTTLE OR SMOKE VENT FRAME OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. NRCA RECOMMENDS DESIGNERS CONSIDER PERMANENT INTERNAL OR EXTERNAL FALL-PROTECTION DEVICES AT ALL SKYLIGHTS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
6. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
7. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

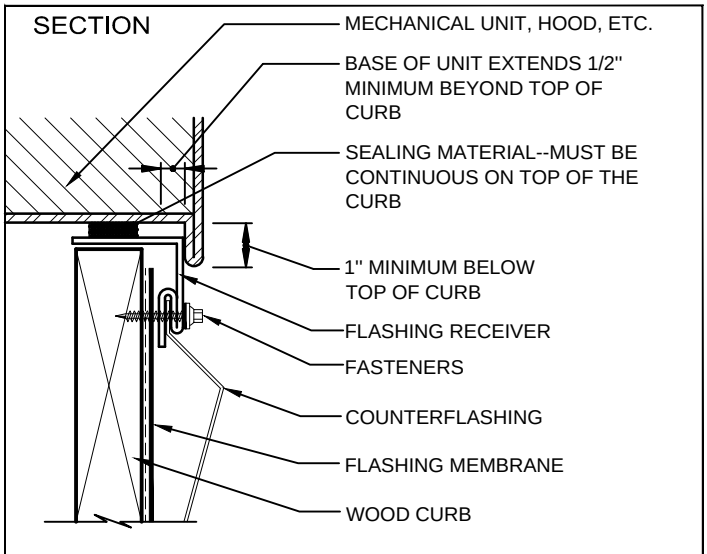
BASE FLASHING AT PREFABRICATED METAL CURB

2011

NOT DRAWN TO SCALE

SP-12





NOTES:

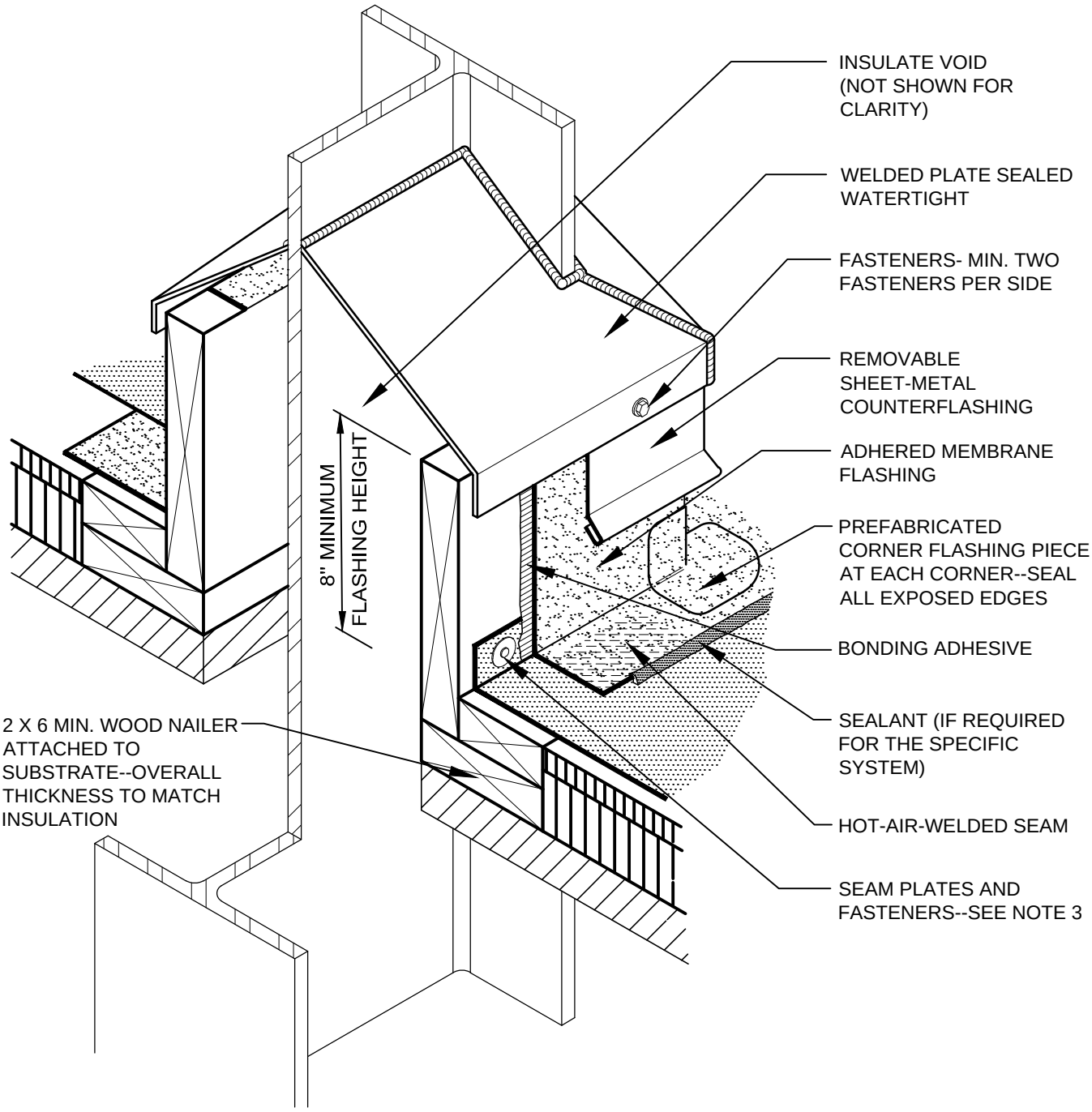
1. THE CURBS, TOP WOOD NAILER AND SEAL STRIP ARE TO BE SUPPLIED BY THE CURB MANUFACTURER.
2. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
3. WHERE THE SKYLIGHT, SCUTTLE OR SMOKE VENT FRAME OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. NRCA RECOMMENDS DESIGNERS CONSIDER PERMANENT INTERNAL OR EXTERNAL FALL-PROTECTION DEVICES AT ALL SKYLIGHTS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
6. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
7. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT WOOD CURB

2011

NOT DRAWN TO SCALE

SP-13



NOTES:

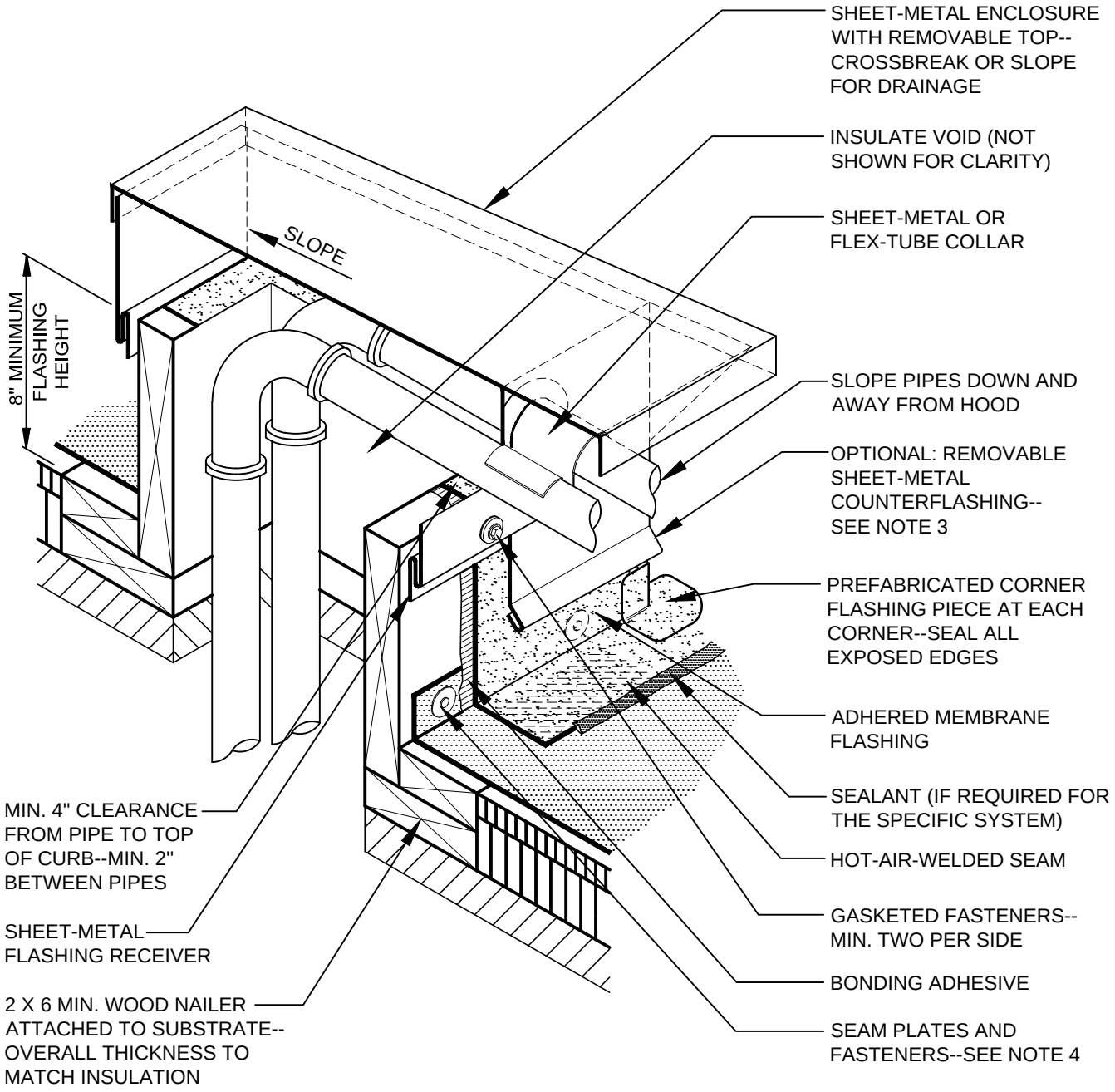
1. THIS DETAIL ILLUSTRATES ONE METHOD OF ELIMINATING PENETRATION POCKETS. THE CURBED SYSTEM ALLOWS FOR MOVEMENT IN THE STRUCTURAL MEMBER WITHOUT DISTURBING THE ROOF SYSTEM.
2. PENETRATIONS USING H, I AND C BEAMS/CHANNELS SHOULD BE AVOIDED. SQUARE AND ROUND TUBES ARE PREFERABLE.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT STRUCTURAL MEMBER THROUGH ROOF DECK

2011

NOT DRAWN TO SCALE

SP-14

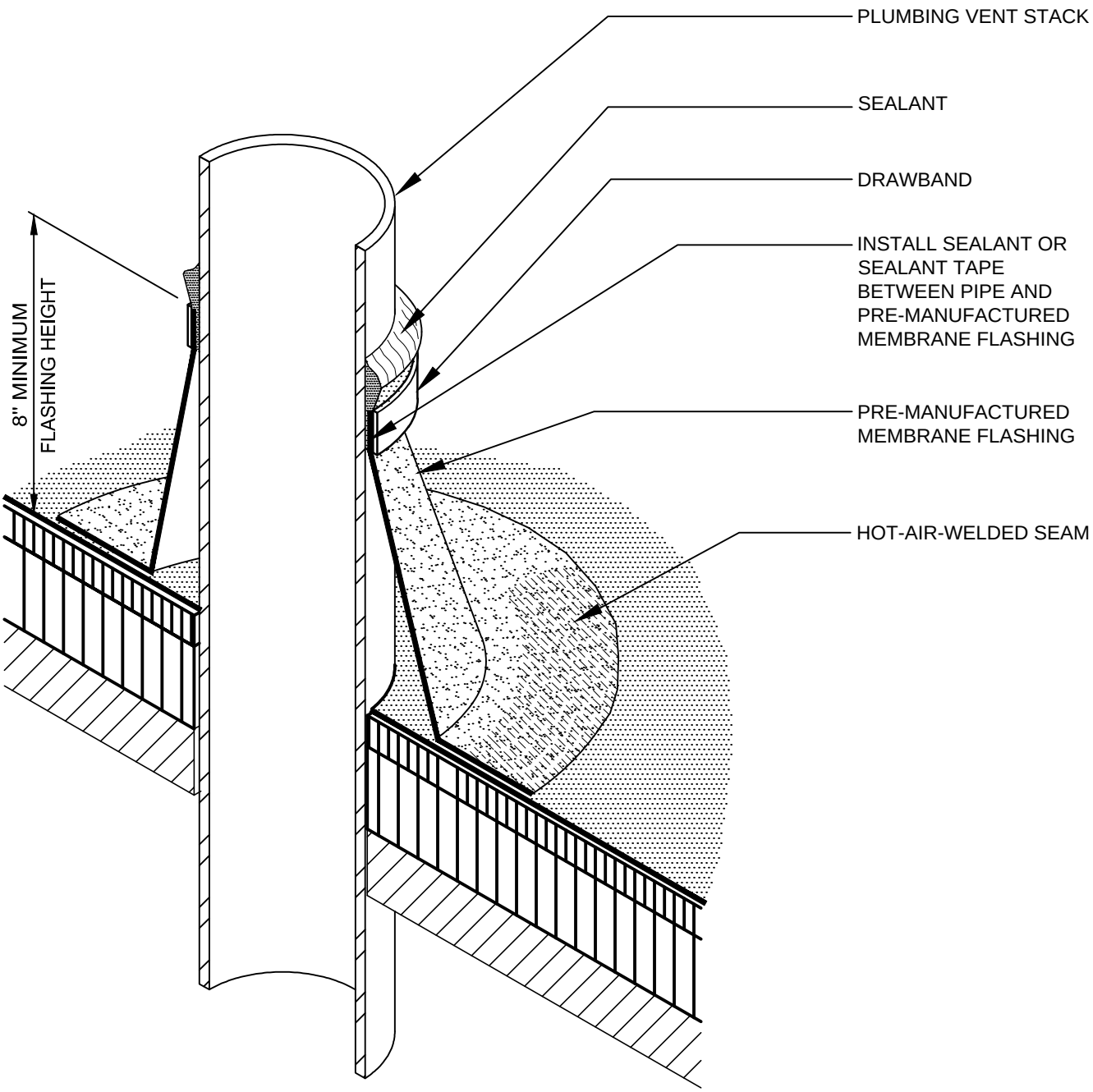


NOTES:

1. THIS DETAIL ILLUSTRATES ANOTHER METHOD OF ELIMINATING PITCH POCKETS AND AN OPTIONAL METHOD OF GROUPING PIPING THAT MUST COME ABOVE THE ROOF SURFACE.
2. MANY MANUFACTURERS OFFER PREFABRICATED BOOTS AND OTHER MATERIALS FOR THIS PURPOSE. SPECIFICS ABOUT THESE PROPRIETARY DESIGNS VARY GREATLY, AND INDIVIDUAL MANUFACTURER'S SPECIFICATIONS SHOULD BE CONSULTED FOR THEIR USE.
3. WHERE THE SHEET-METAL ENCLOSURE OVERLAPS THE BASE FLASHING AT LEAST 3 INCHES, THE REMOVABLE SHEET-METAL COUNTERFLASHING IS NOT REQUIRED.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
5. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR COUNTERFLASHINGS.
6. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT SHEET-METAL ENCLOSURE FOR PIPING THROUGH ROOF DECK

2011 *NOT DRAWN TO SCALE* **SP-15**



NOTES:

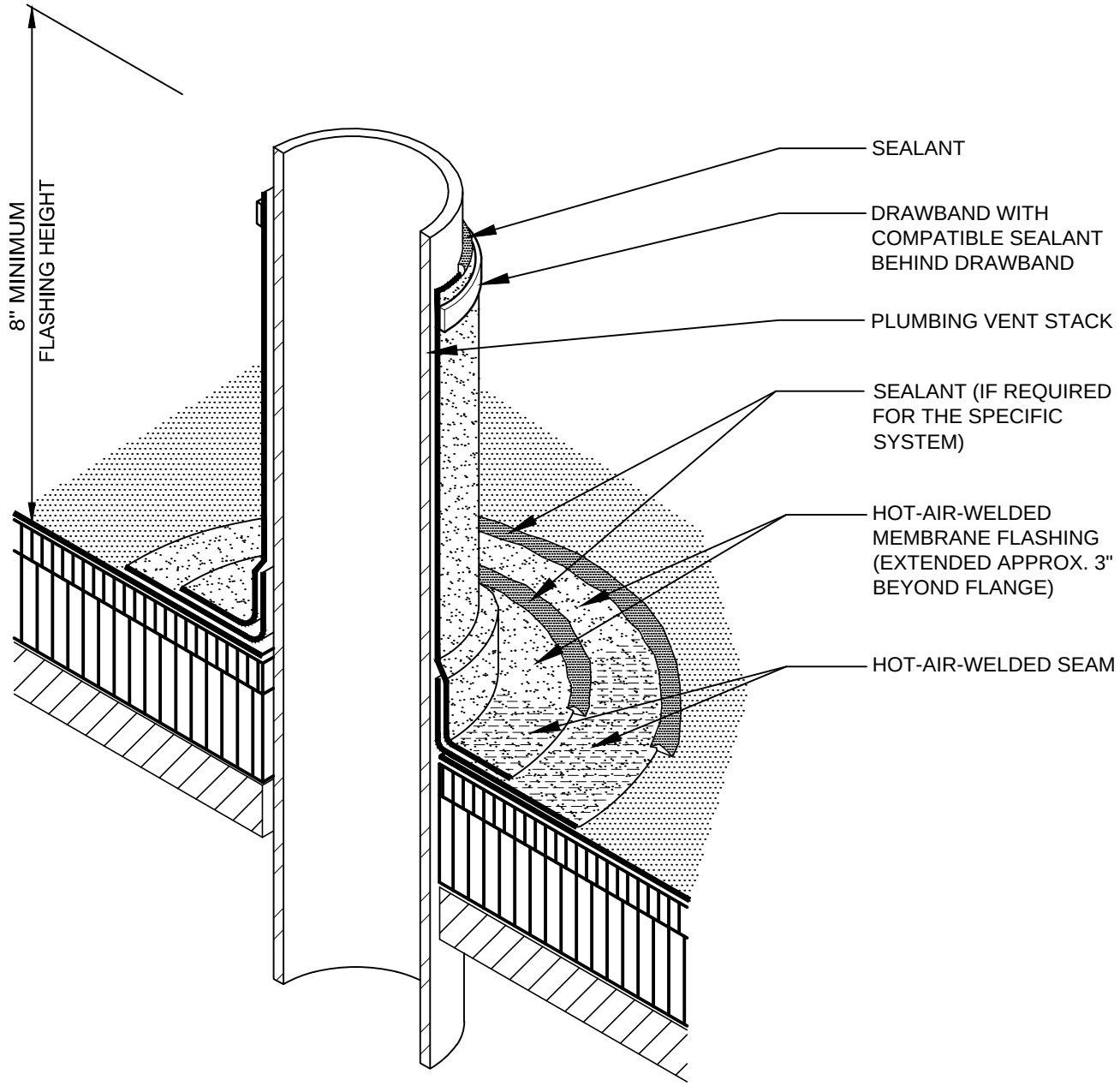
1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. SEE THE INTRODUCTION TO THE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
2. NRCA RECOMMENDS FLASHINGS BE 8 INCHES HIGH; HOWEVER, NRCA IS AWARE PRE-MANUFACTURED BOOT FLASHINGS GENERALLY WILL NOT MEET THE HEIGHT REQUIREMENT.
3. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PLUMBING VENT [PRE-MANUFACTURED BOOT]

2011

NOT DRAWN TO SCALE

SP-16



NOTES:

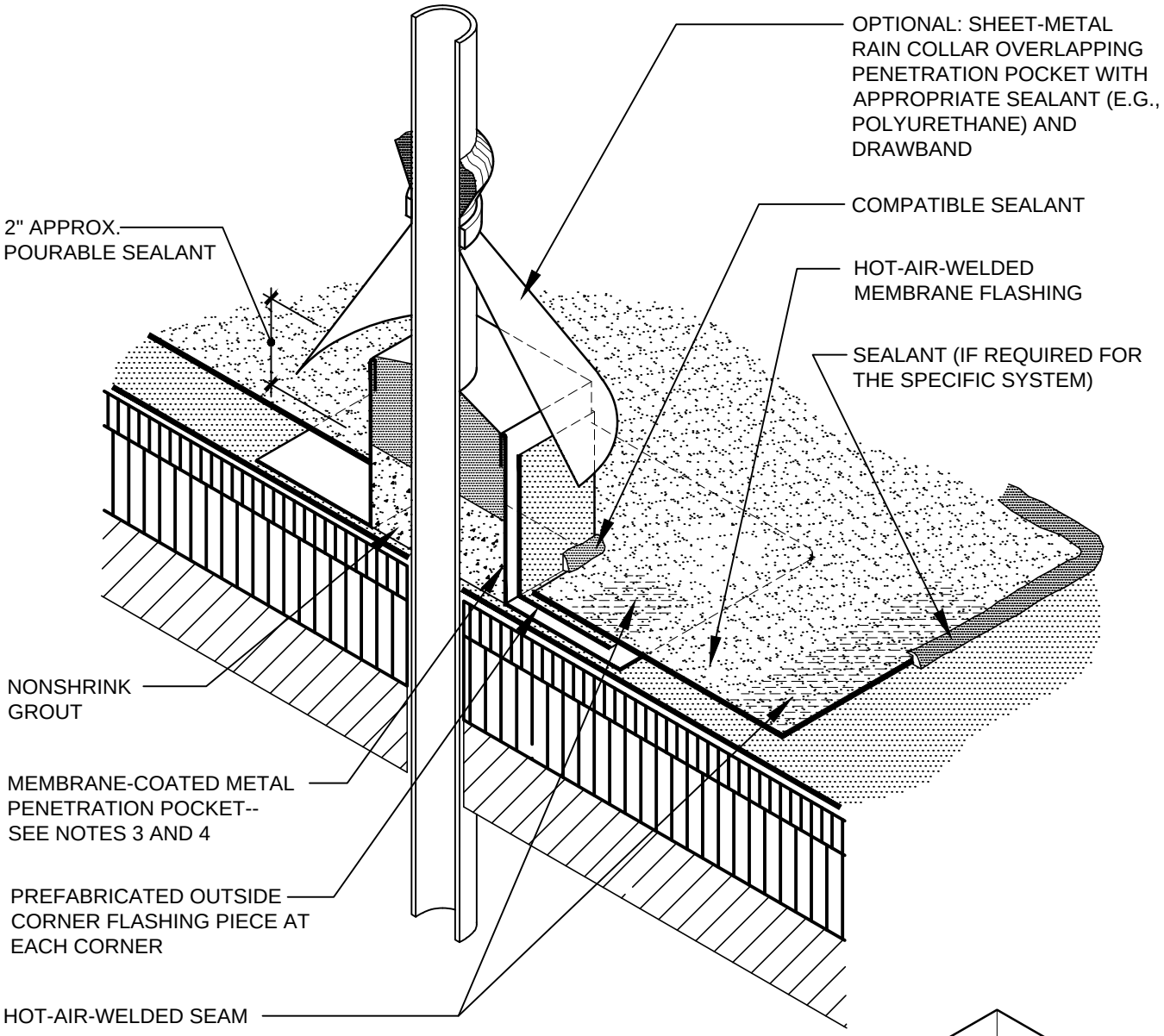
1. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM OF 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING. SEE THE INTRODUCTION TO THE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
2. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

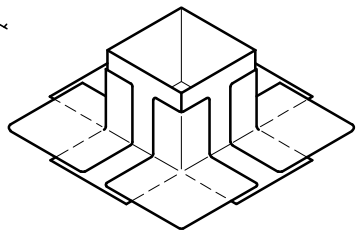
PLUMBING VENT [FIELD WRAP]

2011

NOT DRAWN TO SCALE

SP-17





PREFABRICATED OUTSIDE CORNERS

NOTES:

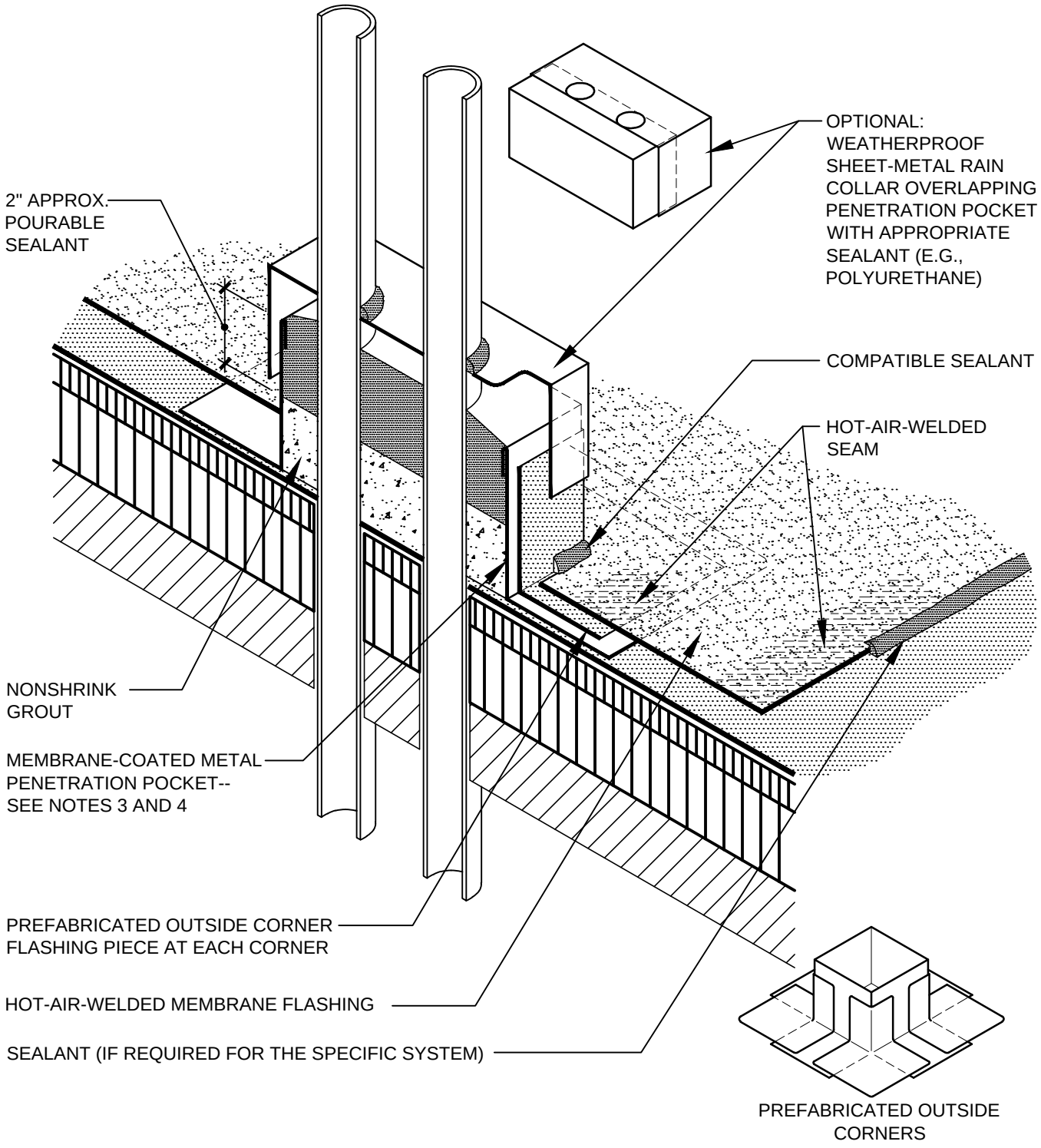
1. PENETRATION POCKETS ARE NOT THE PREFERRED FLASHING METHOD AT PENETRATIONS BECAUSE THEY MAY BE A MAINTENANCE PROBLEM.
2. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PENETRATION POCKETS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PENETRATION POCKET--SINGLE PENETRATION

2011

NOT DRAWN TO SCALE

SP-18



NOTES:

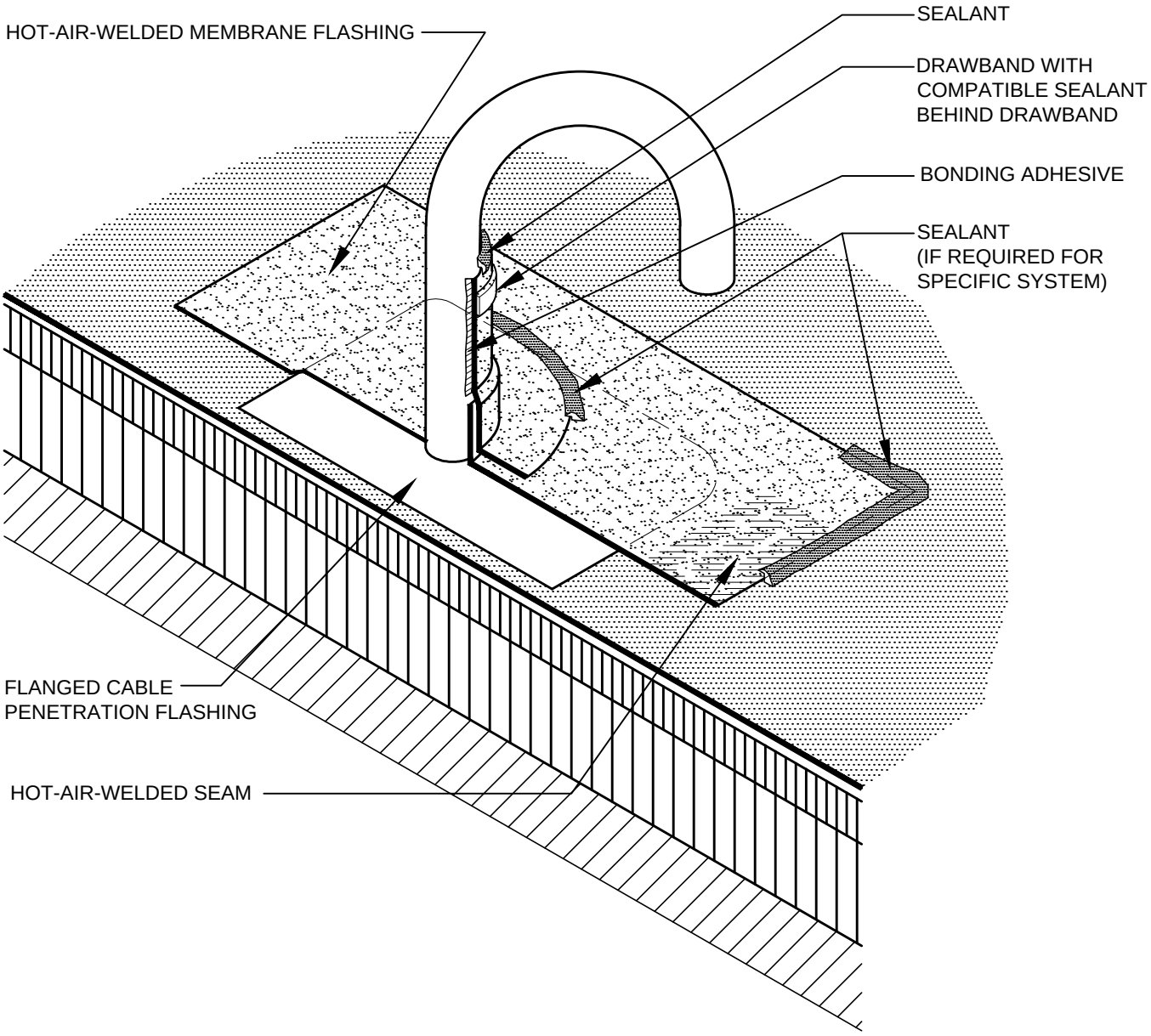
1. PENETRATION POCKETS ARE NOT THE PREFERRED FLASHING METHOD AT PENETRATIONS BECAUSE THEY MAY BE A MAINTENANCE PROBLEM.
2. REFER TO MANUFACTURERS' SPECIFICATIONS FOR SPECIFIC REQUIREMENTS FOR BASE MEMBRANE ATTACHMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PENETRATION POCKETS.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PENETRATION POCKET--DOUBLE PENETRATION

2011

NOT DRAWN TO SCALE

SP-19

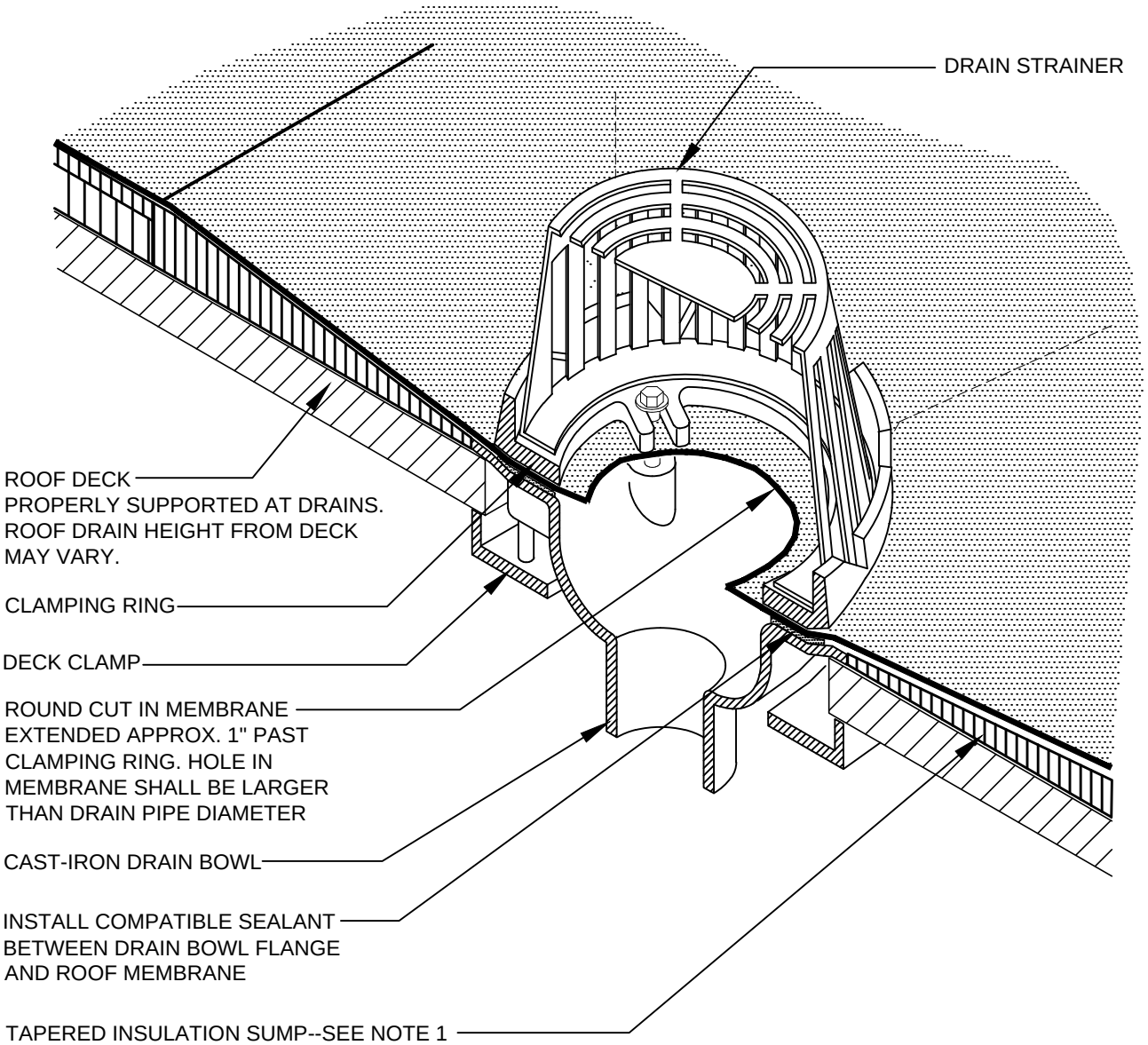


NOTES:

1. DETAIL DEPICTS THE WEATHERPROOFING PROTECTION AND DOES NOT REPRESENT LIGHTNING PROTECTION DESIGN.
2. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

CABLE PENETRATION

2011 *NOT DRAWN TO SCALE* **SP-20**



NOTES:

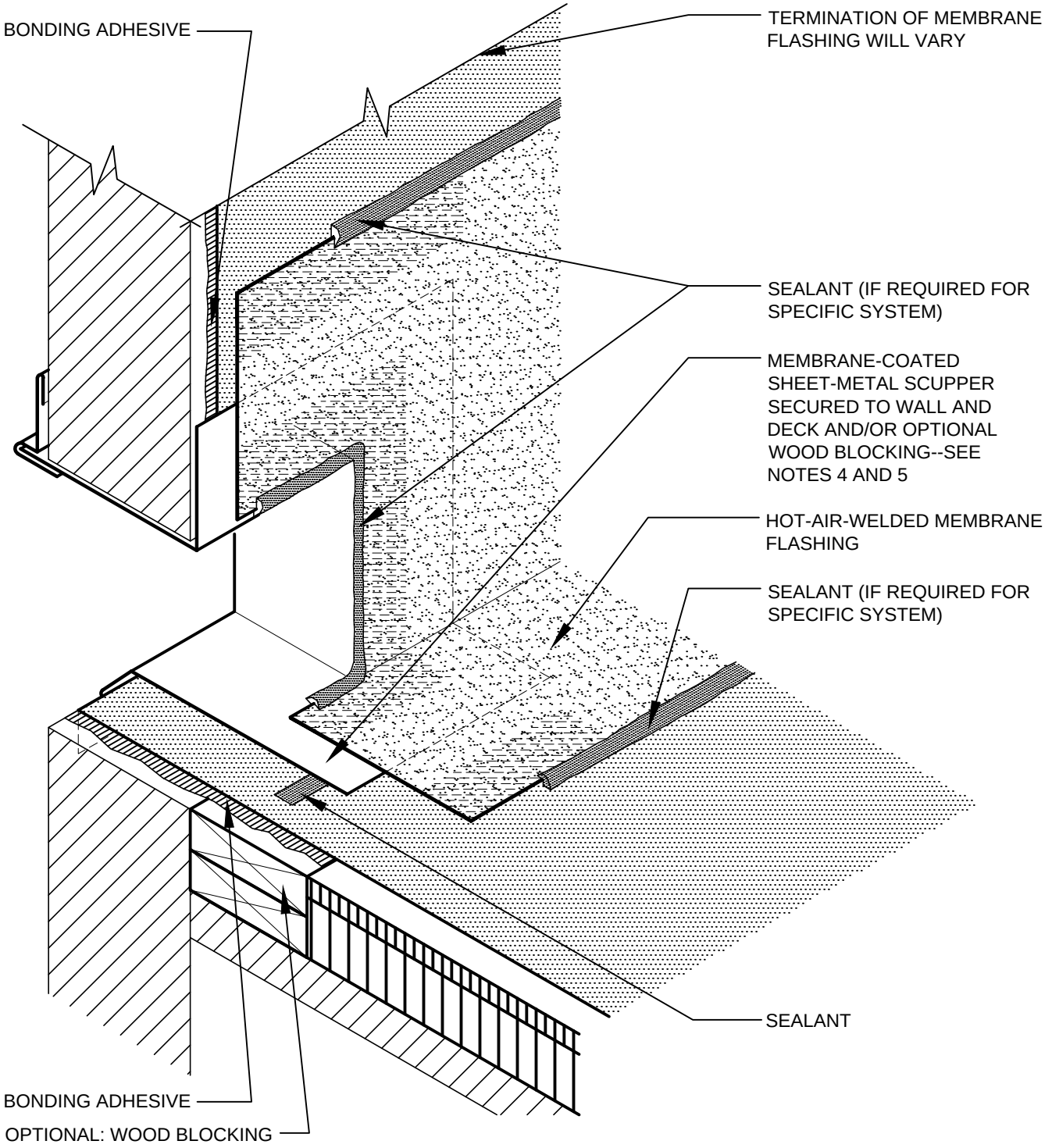
1. THE USE OF A METAL DECK SUMP PAN IS NOT RECOMMENDED. HOWEVER, DRAIN RECEIVER/BEARING PLATES ARE APPLICABLE WITH SOME PROJECTS.
2. THE DESIGNER SHOULD CONSIDER INSULATING THE DRAIN COMPONENTS BELOW THE DECK TO PREVENT POTENTIAL CONDENSATION.
3. MEMBRANE SEAMS SHOULD NOT INTERSECT DRAIN CLAMPING RING. SEAMS THAT FALL WITHIN DRAIN SUMP SHOULD BE STRIPPED IN.
4. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

ROOF DRAIN

2011

NOT DRAWN TO SCALE

SP-21

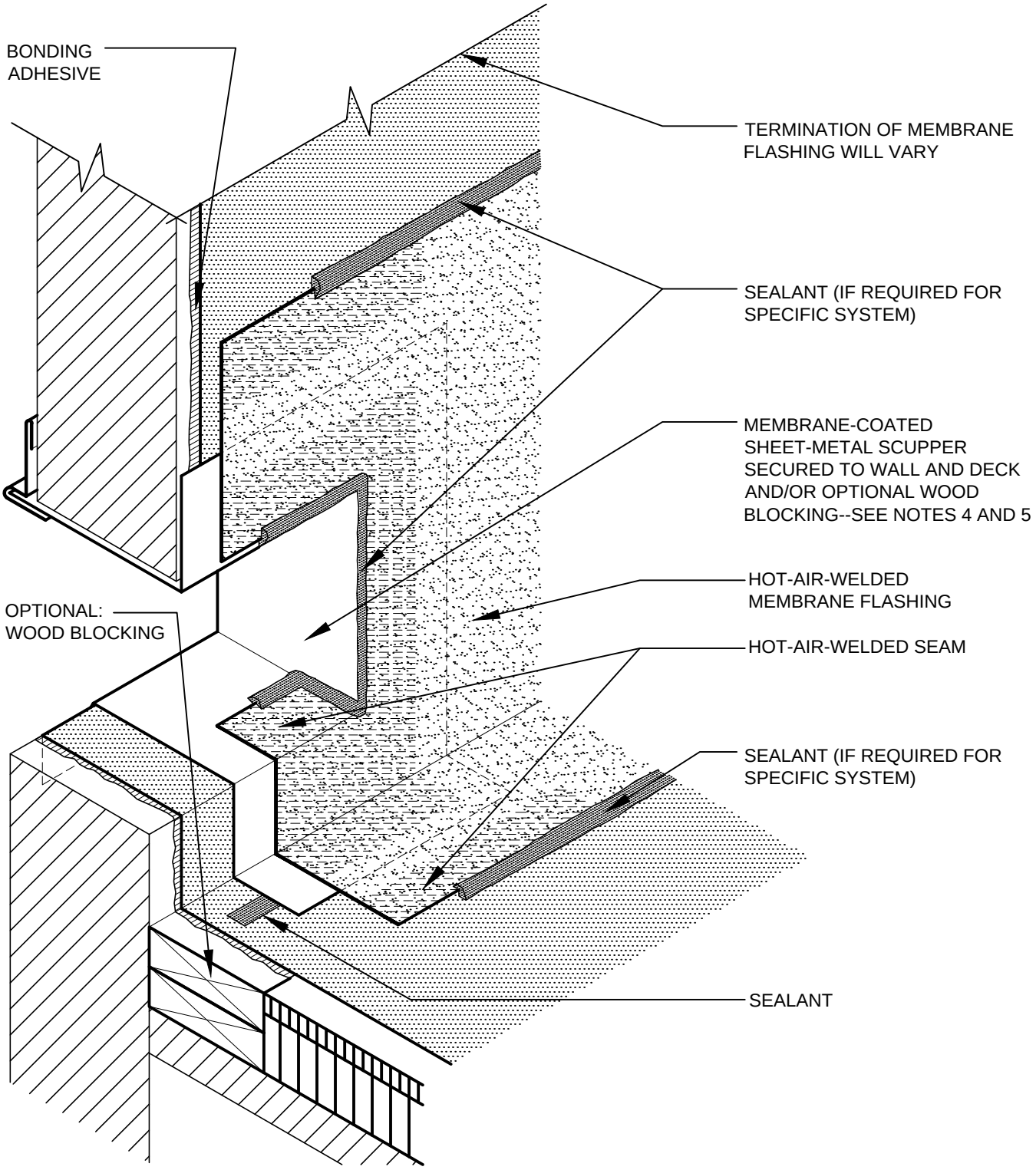


NOTES:

1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. CONDUCTOR HEAD TO BE 1 INCH MINIMUM BELOW BOTTOM OF THROUGH-WALL SCUPPER.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SCUPPERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT THROUGH-WALL SCUPPER

2011 *NOT DRAWN TO SCALE* **SP-22**



NOTES:

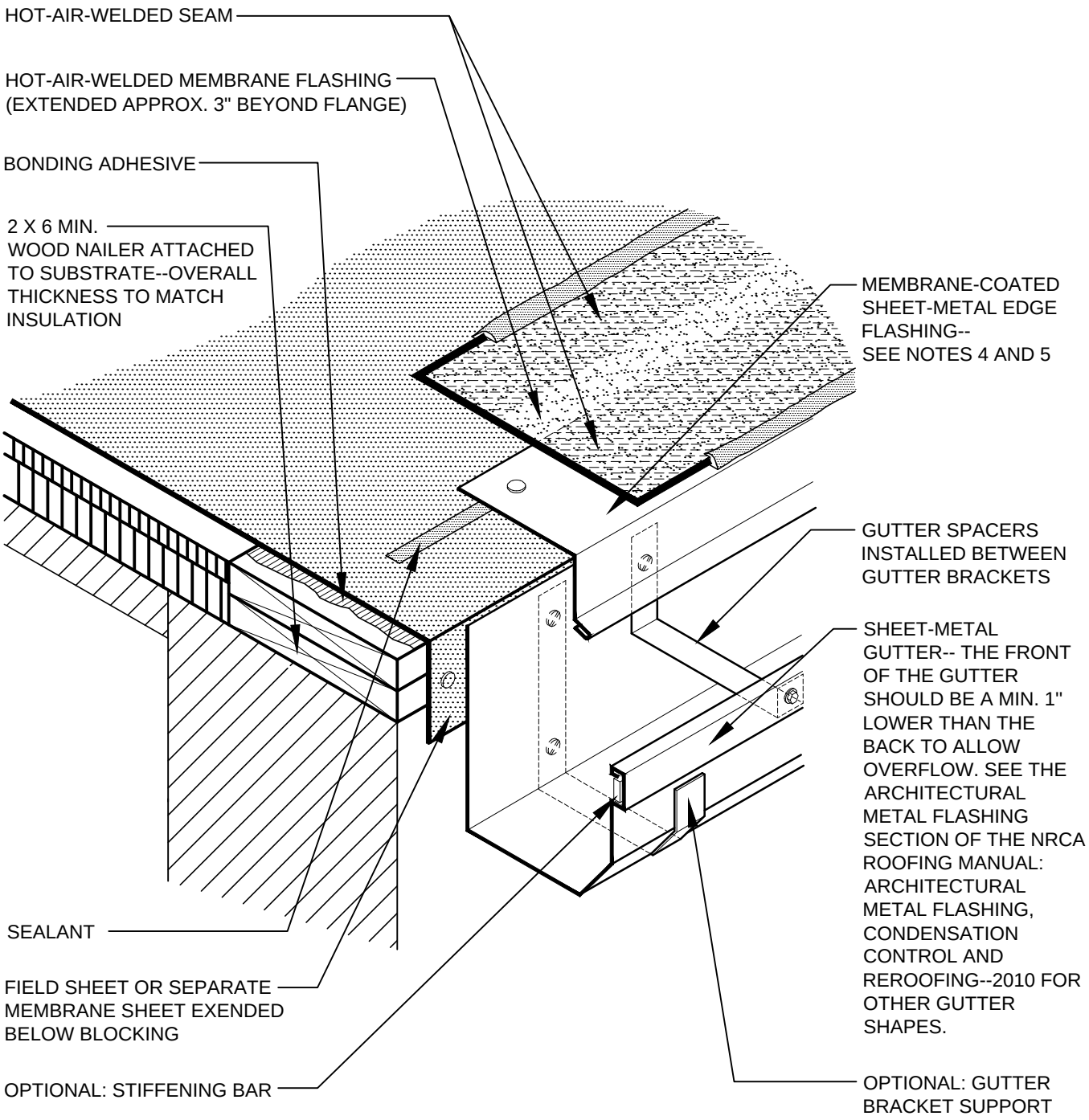
1. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
2. ELEVATION OF SCUPPER MAY VARY.
3. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ALTERNATIVE BASE SECUREMENT OPTIONS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR SCUPPERS.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

BASE FLASHING AT OVERFLOW SCUPPER

2011

NOT DRAWN TO SCALE

SP-23

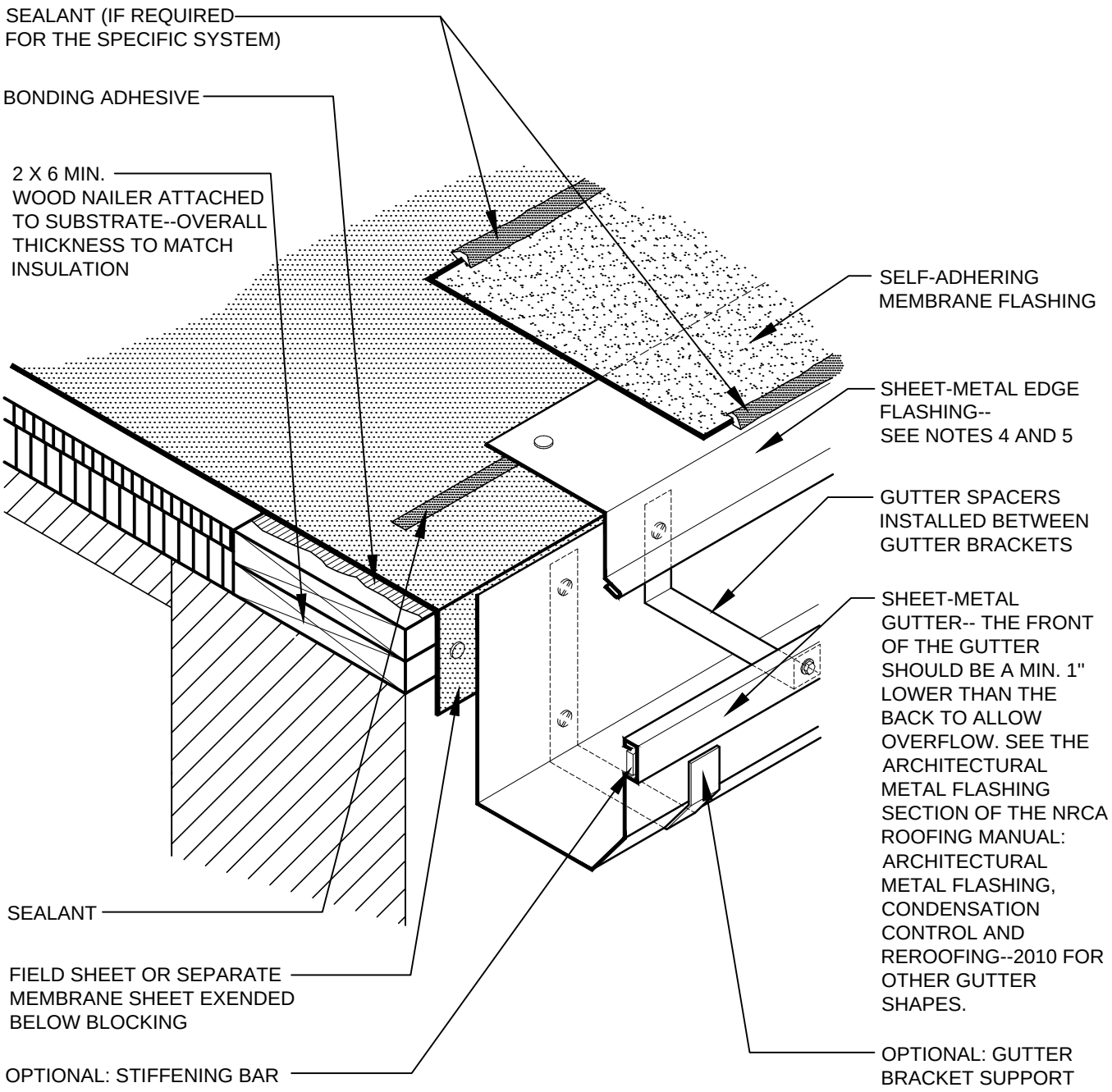


NOTES:

1. IN CLIMATES WHERE THE WINTER TEMPERATURE REMAINS BELOW FREEZING FOR EXTENDED PERIODS OF TIME, NRCA SUGGESTS INTERIOR DRAINS TO DRAIN THE ROOF.
2. GUTTER BRACKETS ARE RECOMMENDED TO BE AT LEAST ONE GAUGE HEAVIER THAN GUTTER STOCK.
3. ON BALLASTED SYSTEMS, A DRAINAGE BAR TO RETAIN BALLAST IS REQUIRED.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PERIMETER EDGE METAL.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

GUTTER WITH MEMBRANE-COATED PERIMETER EDGE METAL

2011 *NOT DRAWN TO SCALE* **SP-24**



NOTES:

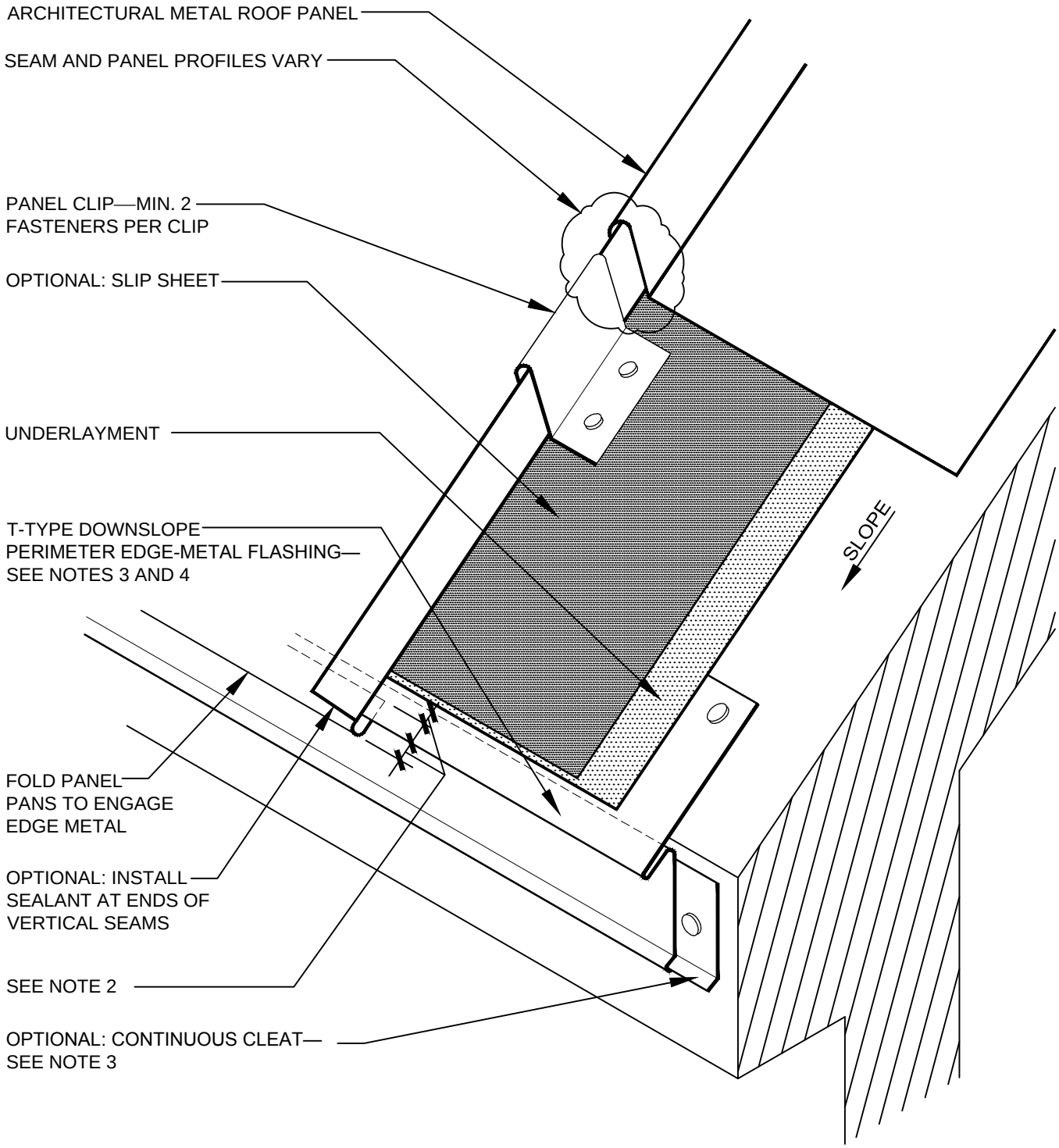
1. IN CLIMATES WHERE THE WINTER TEMPERATURE REMAINS BELOW FREEZING FOR EXTENDED PERIODS OF TIME, NRCA SUGGESTS INTERIOR DRAINS TO DRAIN THE ROOF.
2. GUTTER BRACKETS ARE RECOMMENDED TO BE AT LEAST ONE GAUGE HEAVIER THAN GUTTER STOCK.
3. ON BALLASTED SYSTEMS, A DRAINAGE BAR TO RETAIN BALLAST IS REQUIRED.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING--2010 FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR PERIMETER EDGE METAL.
5. REFER TO SECTION 10.1--INFORMATION APPLICABLE TO ALL CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

GUTTER WITH PERIMETER EDGE METAL

2011

NOT DRAWN TO SCALE

SP-25



NOTES:

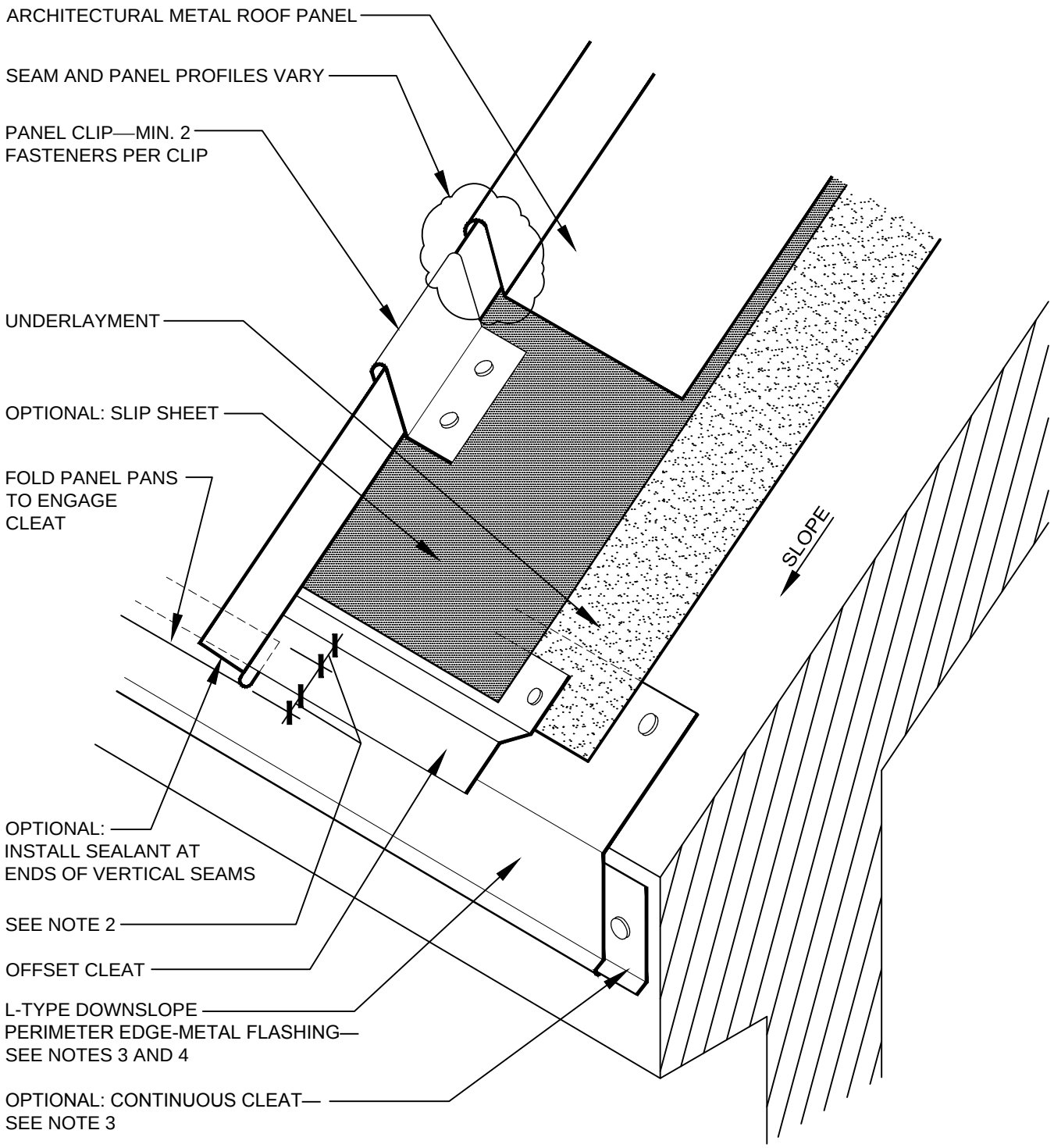
1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR PERIMETER EDGE-METAL THICKNESS AND CLEAT RECOMMENDATIONS.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EAVE

2012

NOT DRAWN TO SCALE

AM-1

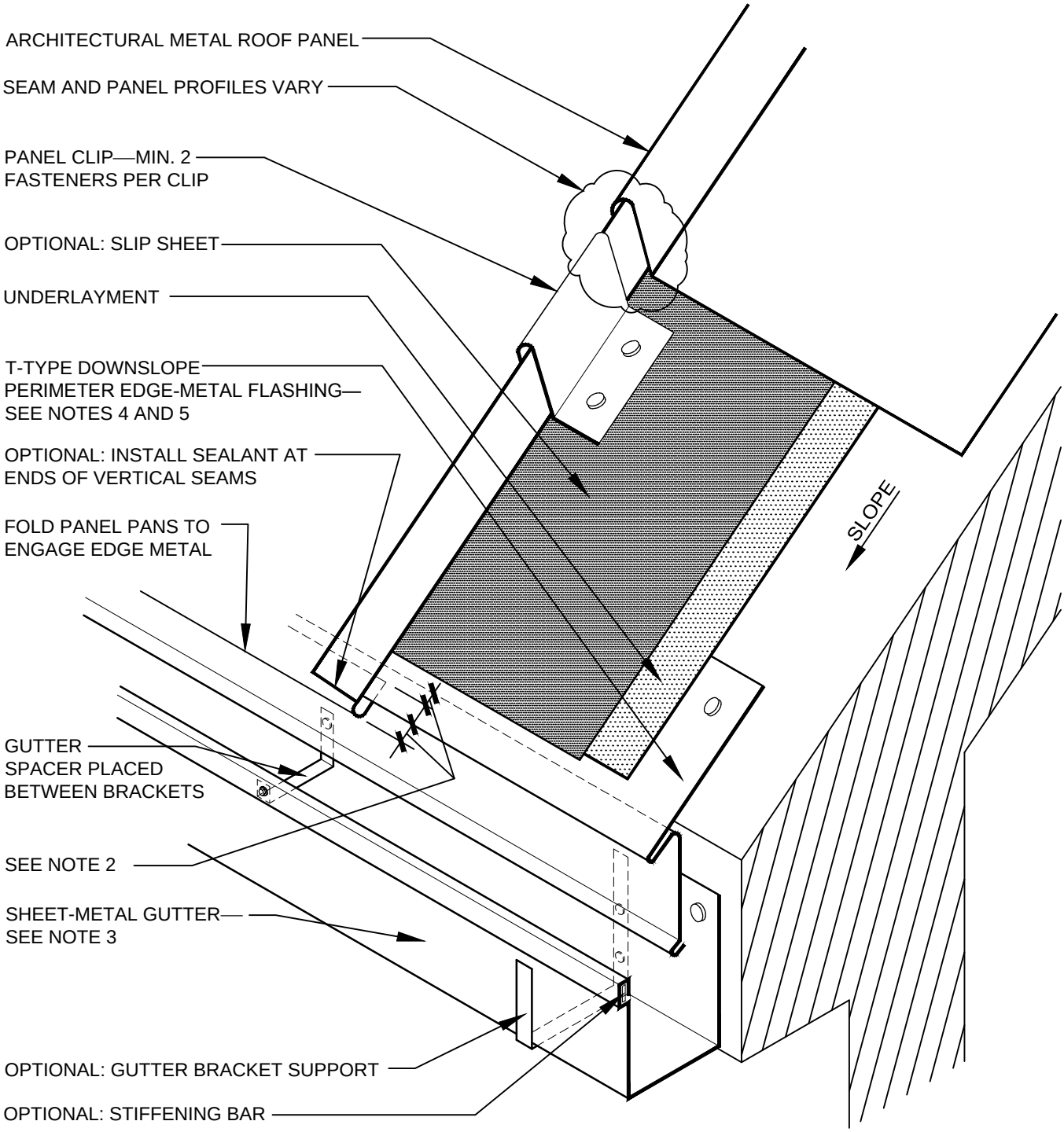


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR PERIMETER EDGE-METAL THICKNESS AND CLEAT RECOMMENDATIONS.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EAVE

2012 *NOT DRAWN TO SCALE* **AM-2**

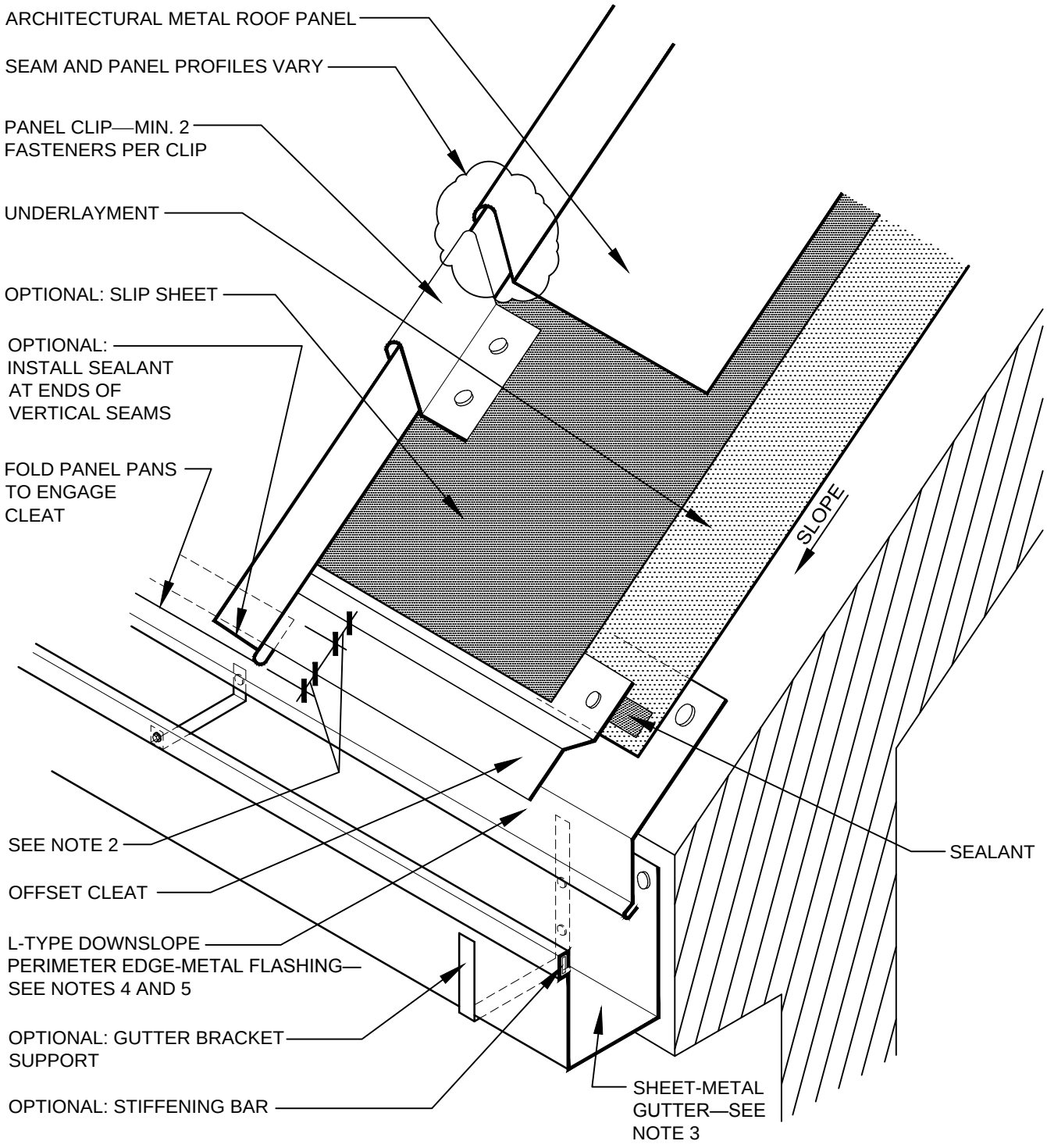


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR MORE INFORMATION ON GUTTERS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR PERIMETER EDGE-METAL THICKNESS AND CLEAT RECOMMENDATIONS.
5. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EAVE WITH GUTTER

2012 *NOT DRAWN TO SCALE* **AM-3**

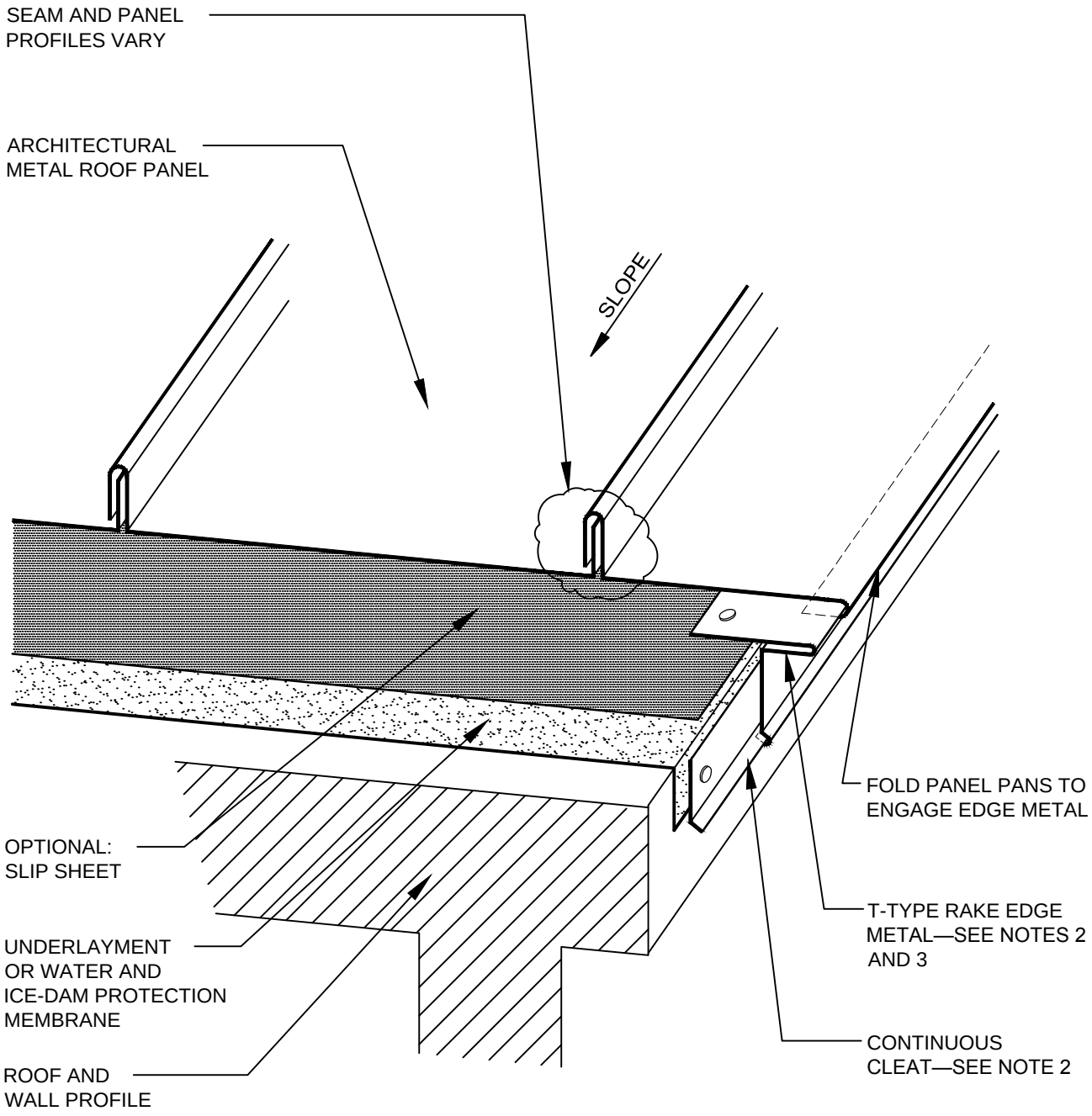


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR MORE INFORMATION ON GUTTERS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR PERIMETER EDGE-METAL THICKNESS AND CLEAT RECOMMENDATIONS.
5. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

EAVE WITH GUTTER

2012 *NOT DRAWN TO SCALE* **AM-4**



NOTES:

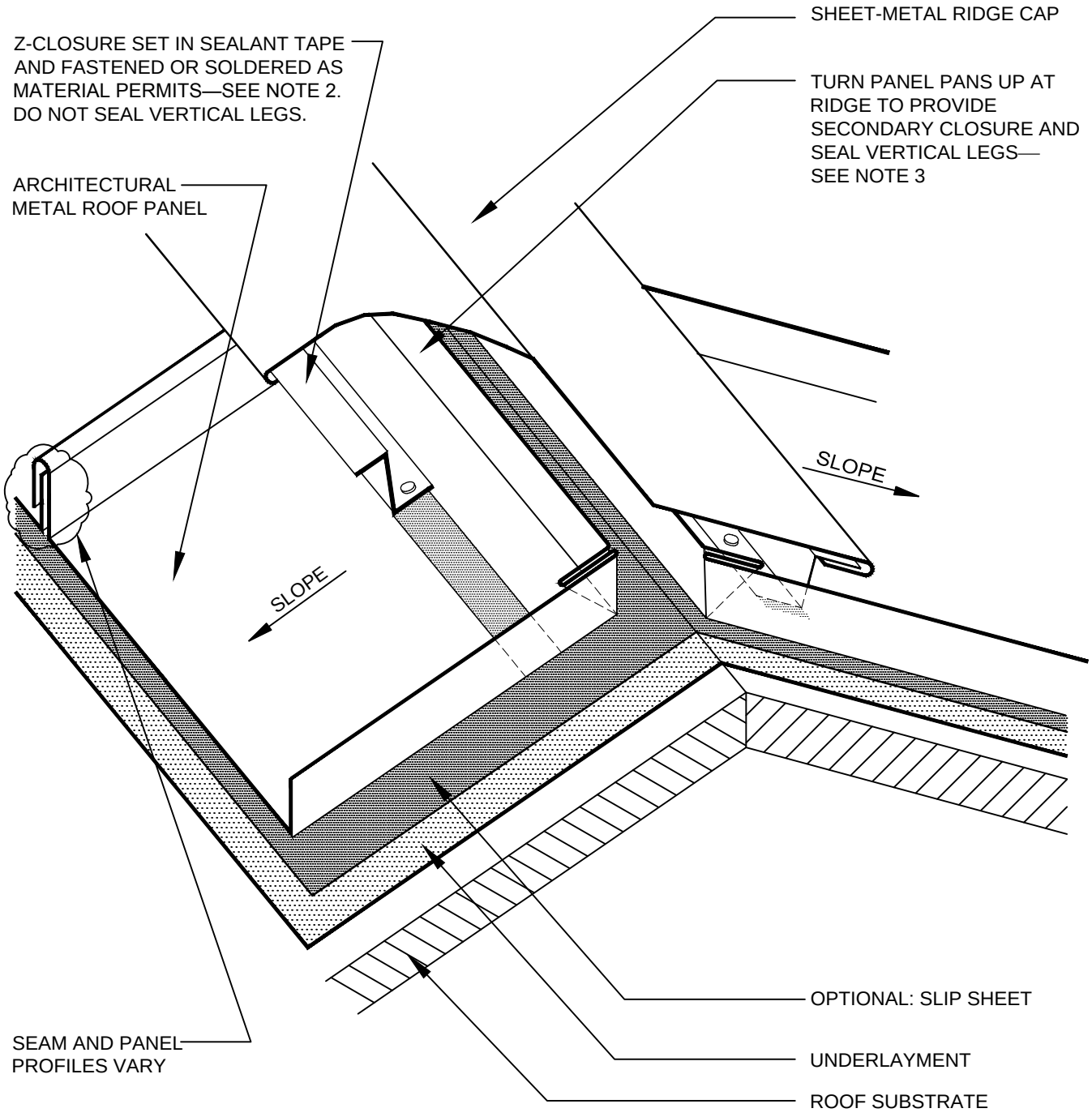
1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR PERIMETER EDGE-METAL THICKNESS AND CLEAT RECOMMENDATIONS.
3. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

RAKE EDGE FLASHING

2012

NOT DRAWN TO SCALE

AM-5

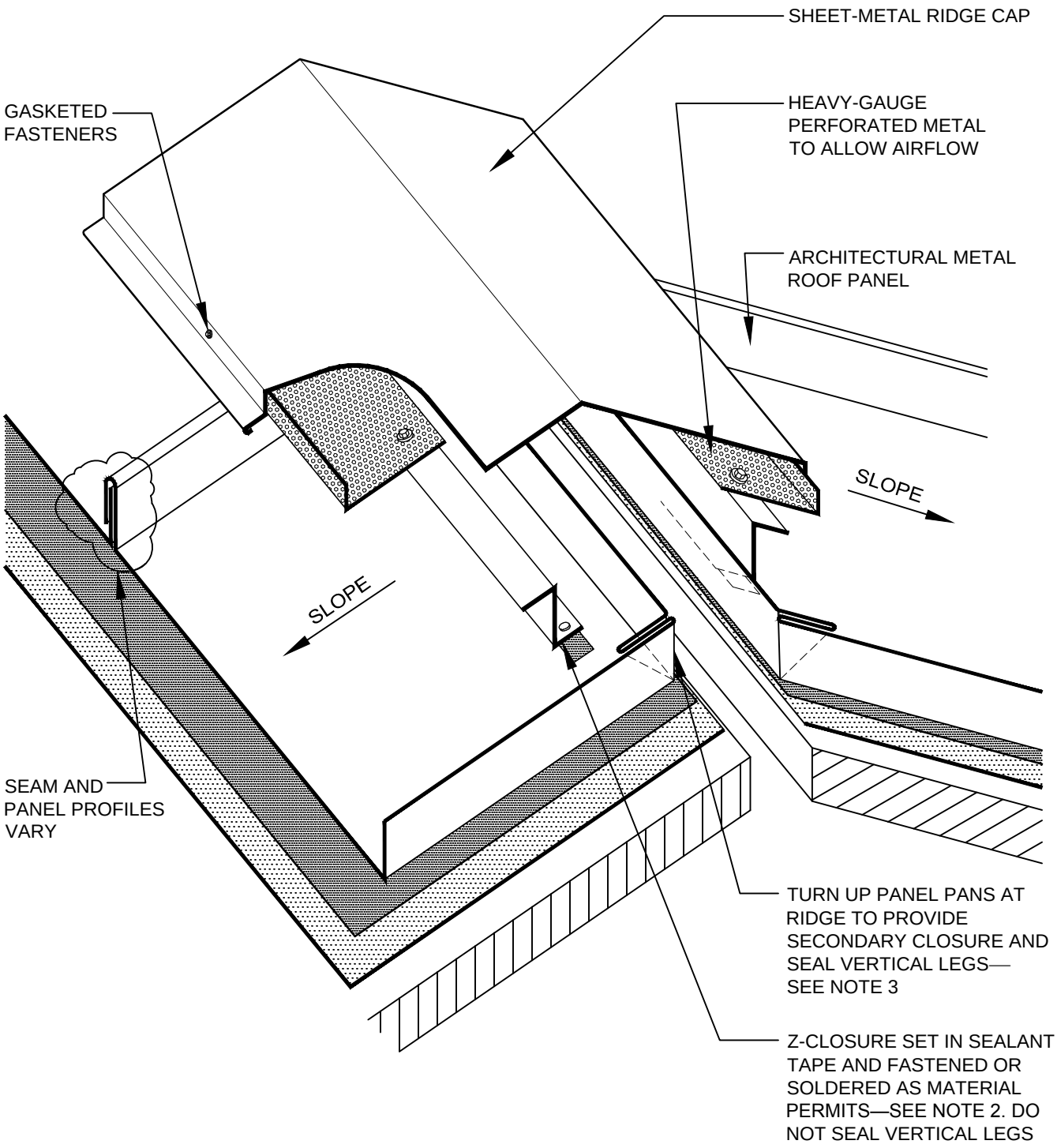


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. IF THE Z-CLOSURE IS FASTENED THROUGH THE ROOF DECK, THE PANELS ARE FIXED ALONG THE RIDGE. IF THE Z-CLOSURE IS FASTENED TO THE PANELS WITH POP RIVETS OR SOLDERED, THE PANELS ARE NOT FIXED AT THE RIDGE (I.E., FLOATING).
3. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

RIDGE CAP FLASHING

2012 *NOT DRAWN TO SCALE* **AM-6**

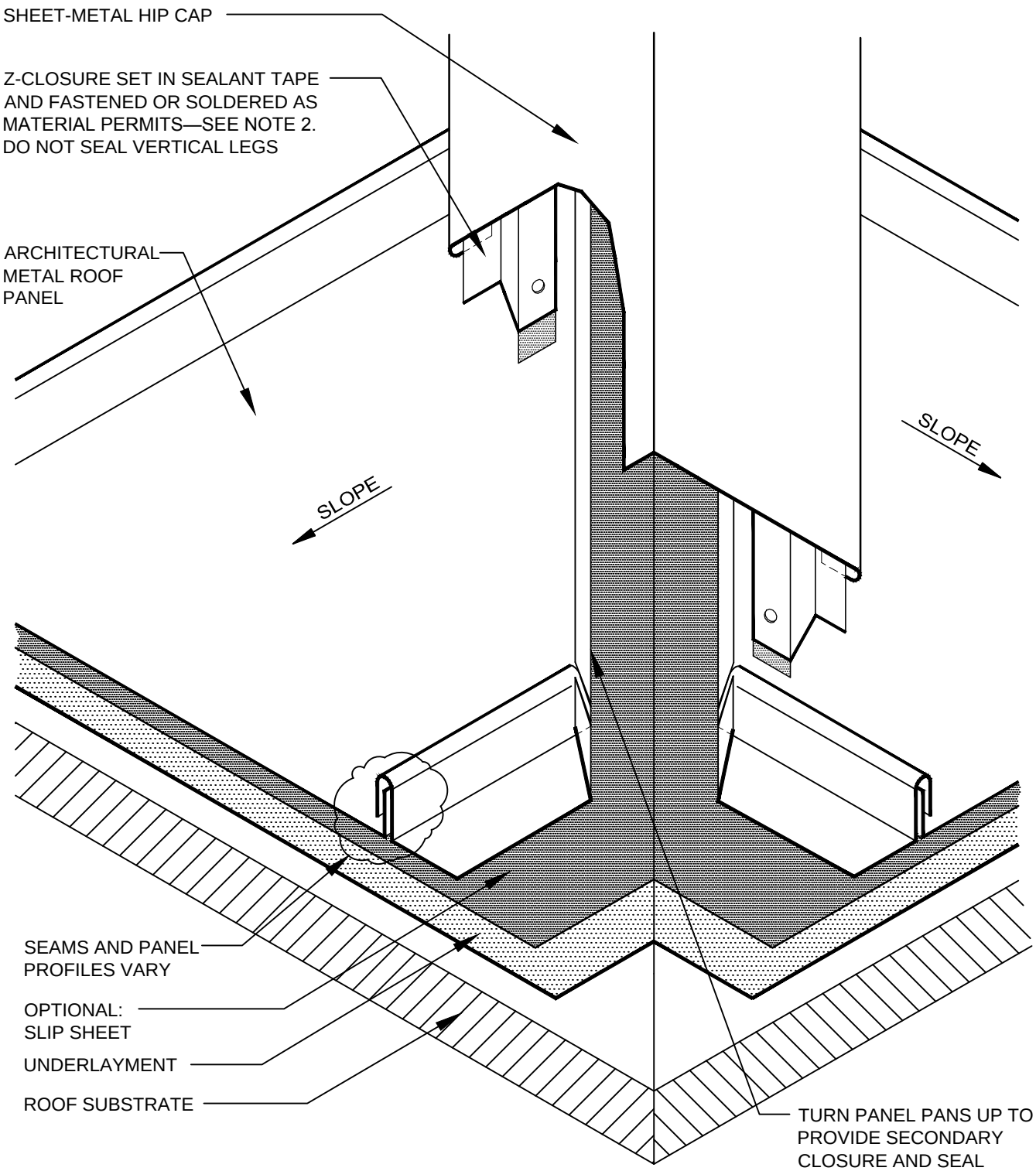


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. IF THE Z-CLOSURE IS FASTENED THROUGH THE ROOF DECK, THE PANELS ARE FIXED ALONG THE RIDGE. IF THE Z-CLOSURE IS FASTENED TO THE PANELS WITH POP RIVETS OR SOLDERED, THE PANELS ARE NOT FIXED AT THE RIDGE (I.E., FLOATING).
3. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

VENTING RIDGE CAP FLASHING

2012 *NOT DRAWN TO SCALE* **AM-7**



NOTES:

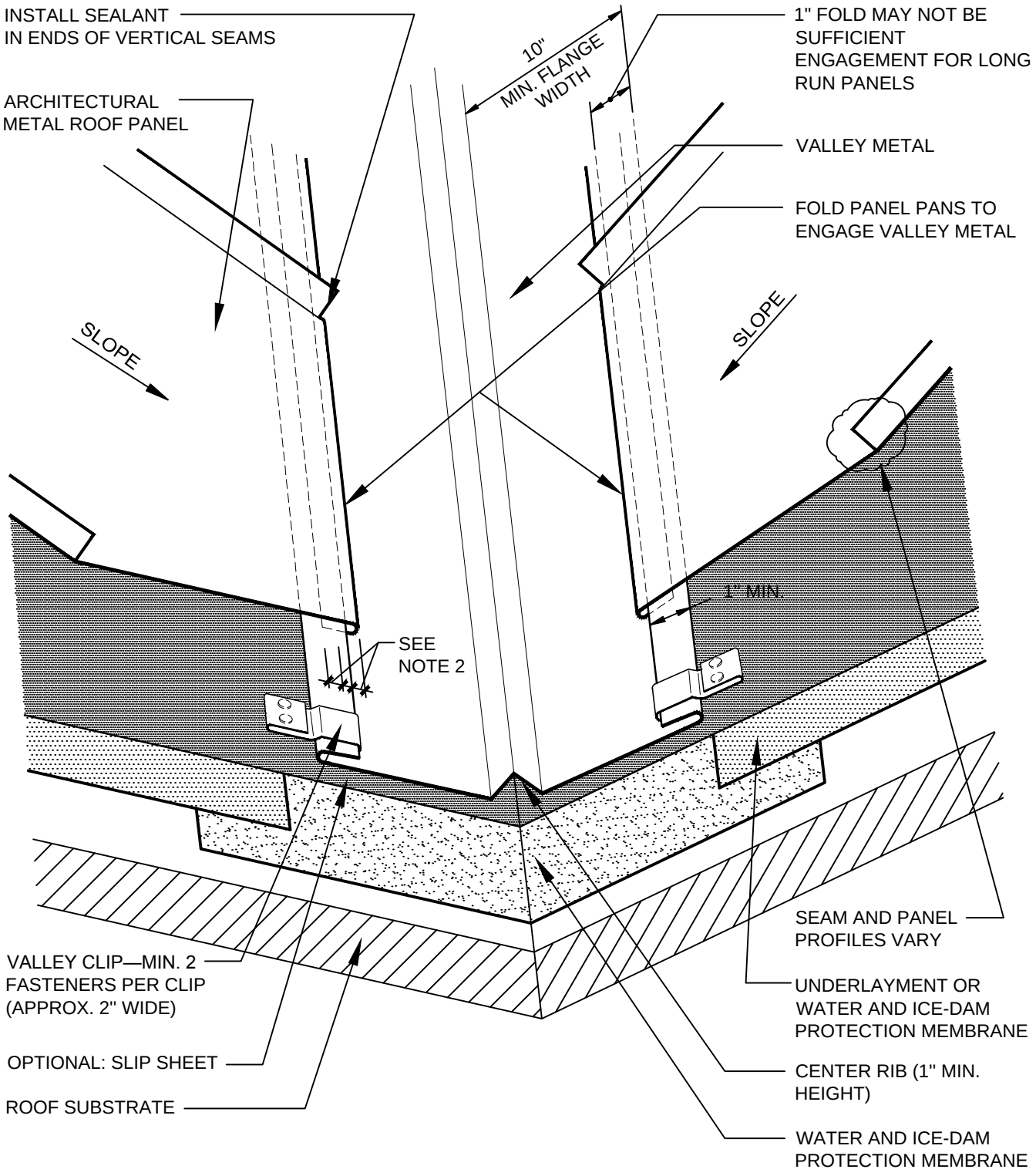
1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. IF THE Z-CLOSURE IS FASTENED THROUGH THE ROOF DECK, THE PANELS ARE FIXED ALONG THE HIP. IF THE Z-CLOSURE IS FASTENED TO THE PANELS WITH POP RIVETS OR SOLDERED, THE PANELS ARE NOT FIXED AT THE HIP (I.E., FLOATING).
3. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

HIP CAP FLASHING

2012

NOT DRAWN TO SCALE

AM-8

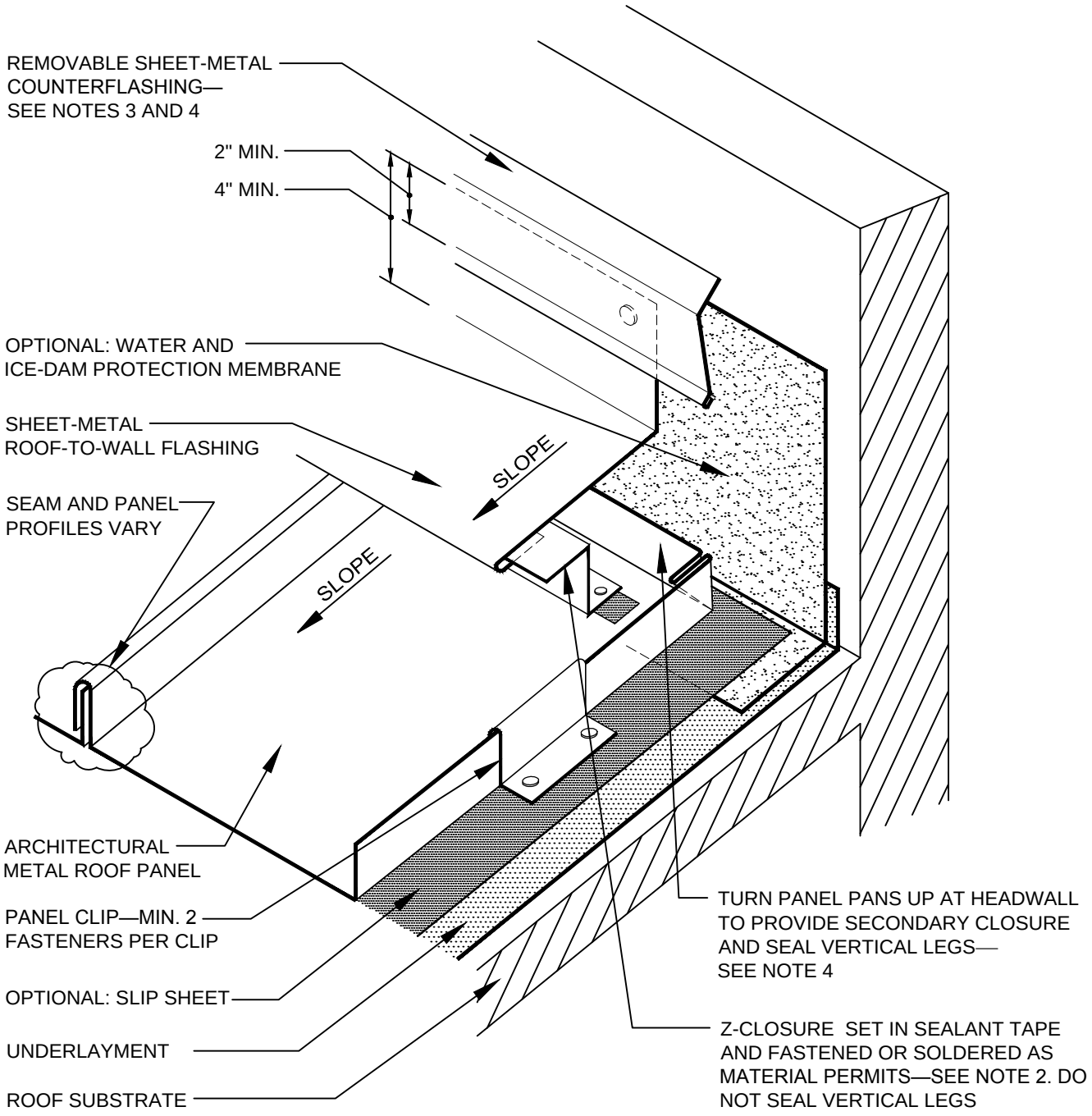


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
3. DIMENSIONS FOR VALLEY METAL WIDTH VARY ACCORDING TO PANEL LENGTHS AND GEOGRAPHIC CONSIDERATION.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

OPEN METAL VALLEY

2012 *NOT DRAWN TO SCALE* **AM-9**

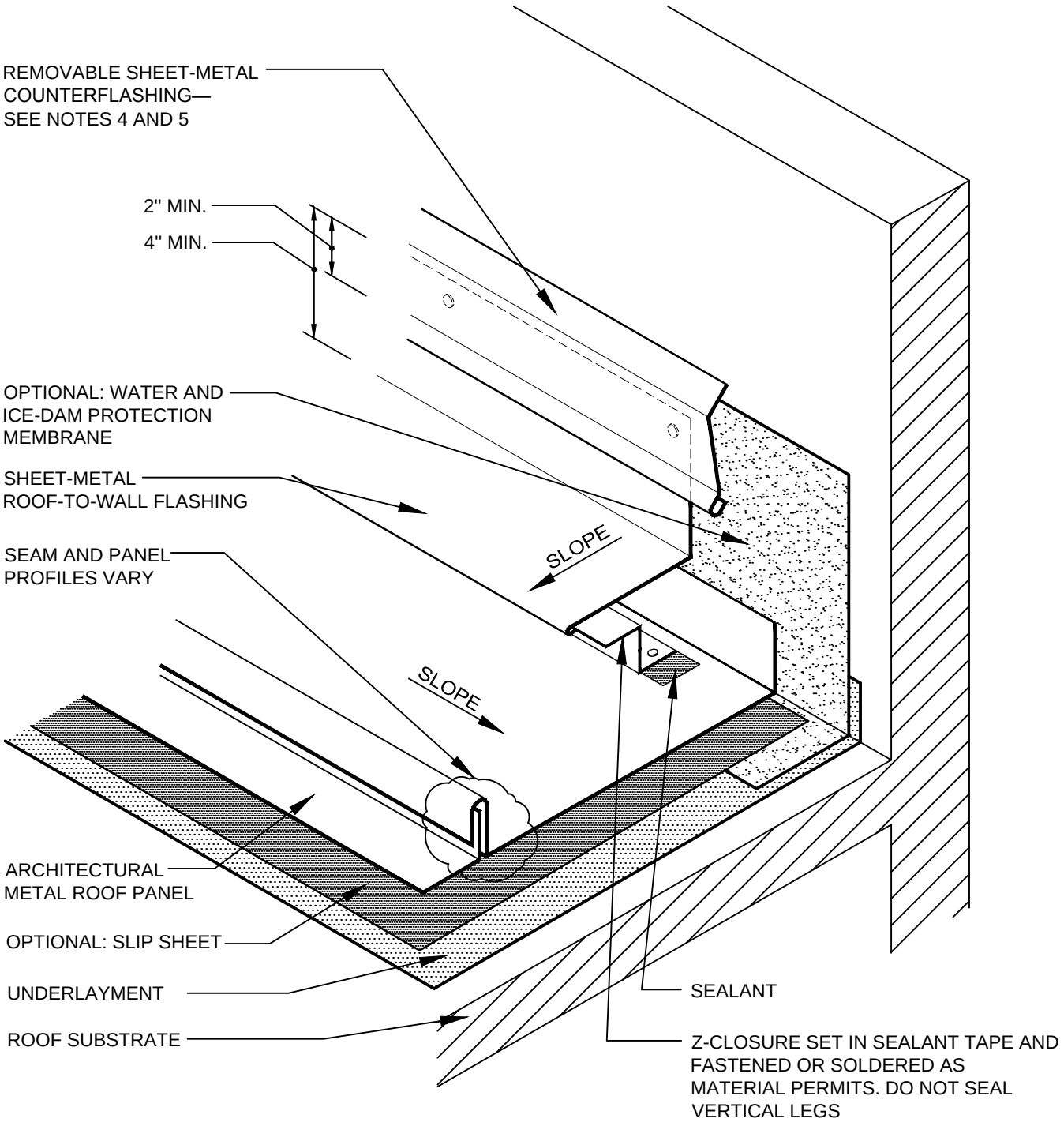


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. IF THE Z-CLOSURE IS FASTENED THROUGH THE ROOF DECK, THE PANELS ARE FIXED ALONG THE HEADWALL. IF THE Z-CLOSURE IS FASTENED TO THE PANELS WITH POP RIVETS OR SOLDERED, THE PANELS ARE NOT FIXED AT THE HEADWALL (I.E., FLOATING).
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR COUNTERFLASHING OPTIONS.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

ROOF-TO-WALL (HEADWALL) TRANSITION

2012 *NOT DRAWN TO SCALE* **AM-10**



NOTES:

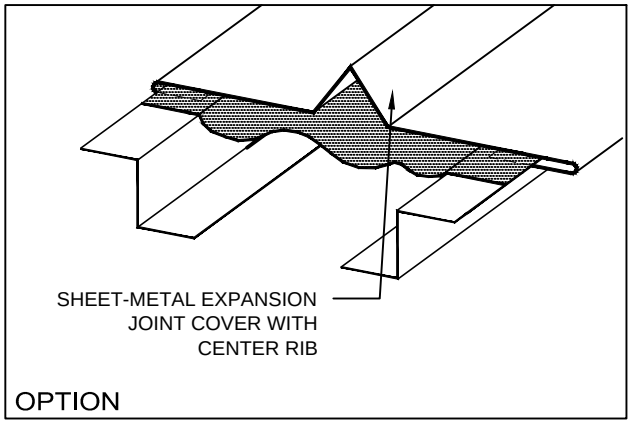
1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. THIS DETAIL DOES NOT ALLOW FOR DIFFERENTIAL MOVEMENT BETWEEN THE DECK AND WALL.
3. THIS DETAIL MAY BE USED WITH "STARTER" AND "END" PANELS.
4. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR COUNTERFLASHING OPTIONS.
5. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

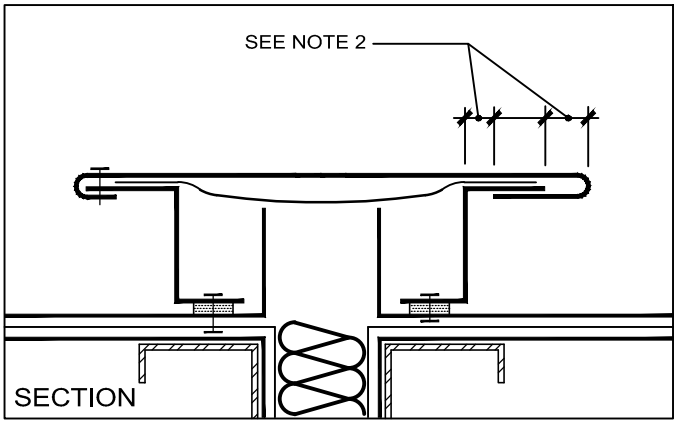
ROOF-TO-WALL (SIDEWALL) TRANSITION

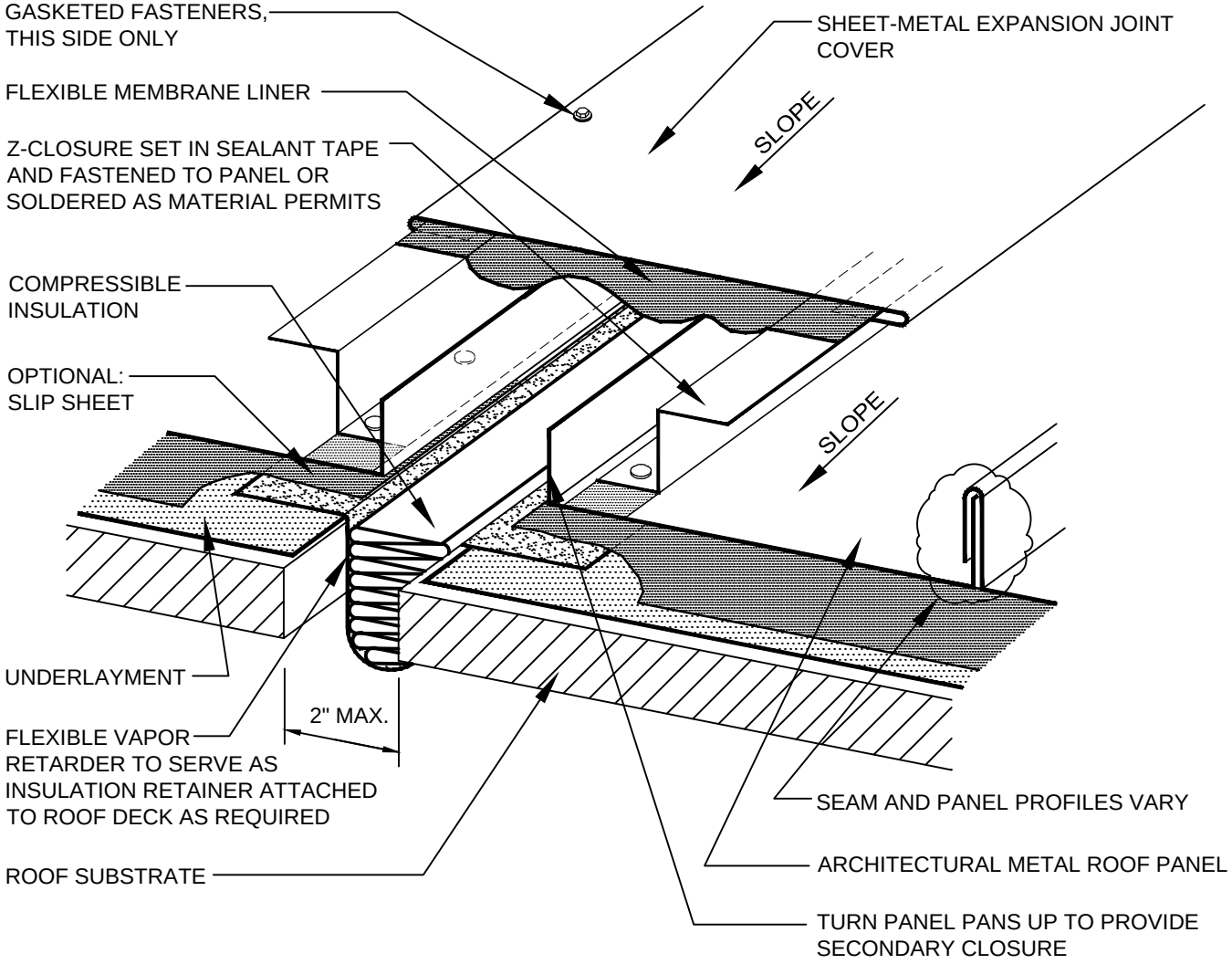
2012

NOT DRAWN TO SCALE

AM-11





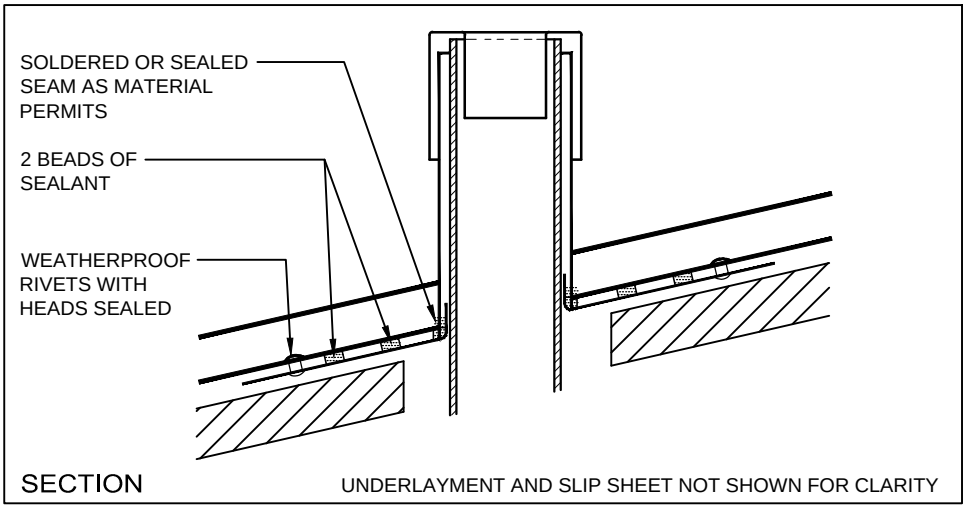


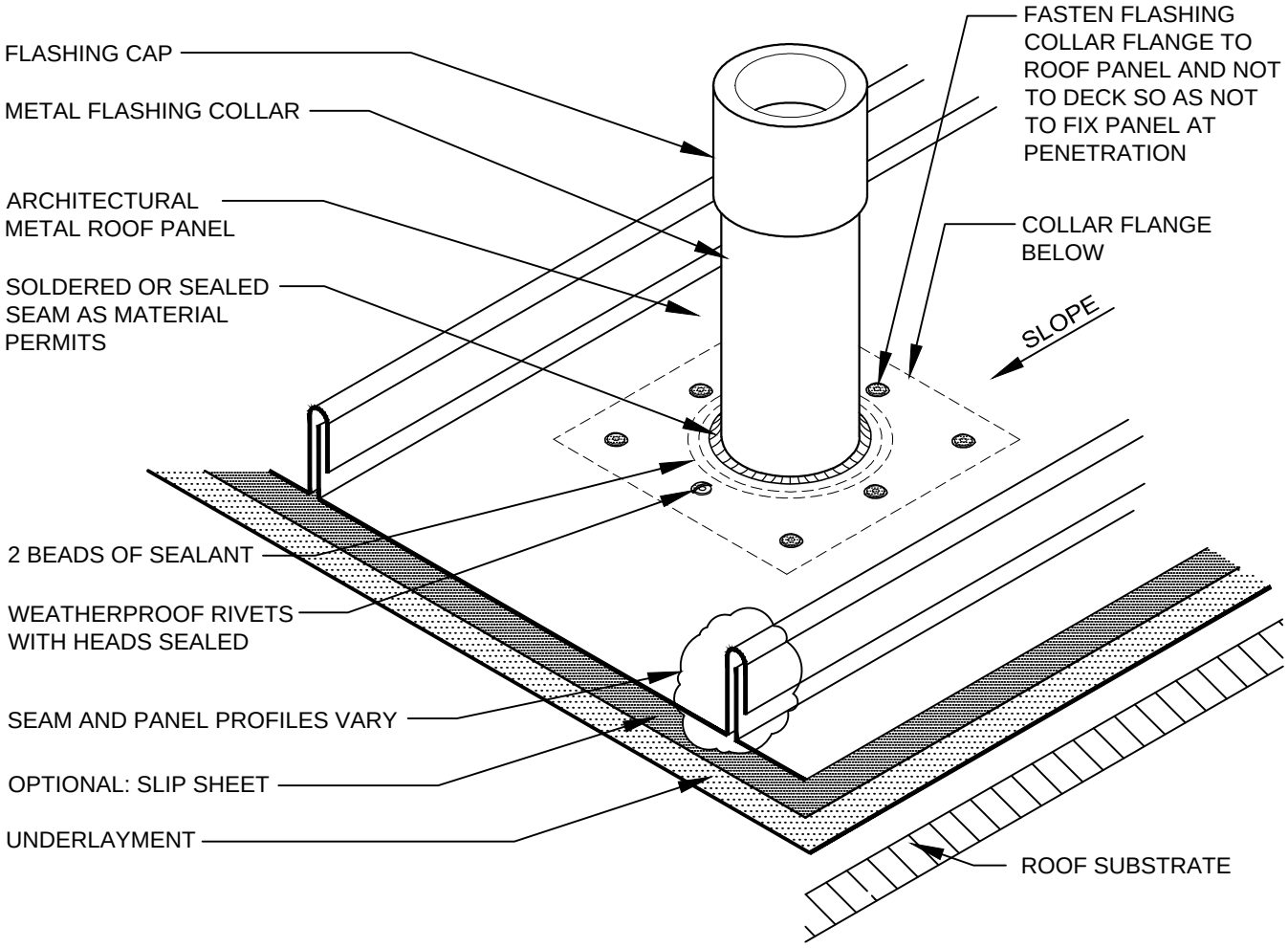
NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
3. REFER TO THE ARCHITECTURAL METAL FLASHING SECTION OF THE NRCA MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING FOR DESIGN, JOINERY AND SECUREMENT OPTIONS FOR EXPANSION JOINT COVERS.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

LOW PROFILE EXPANSION JOINT

2012 *NOT DRAWN TO SCALE* **AM-12**



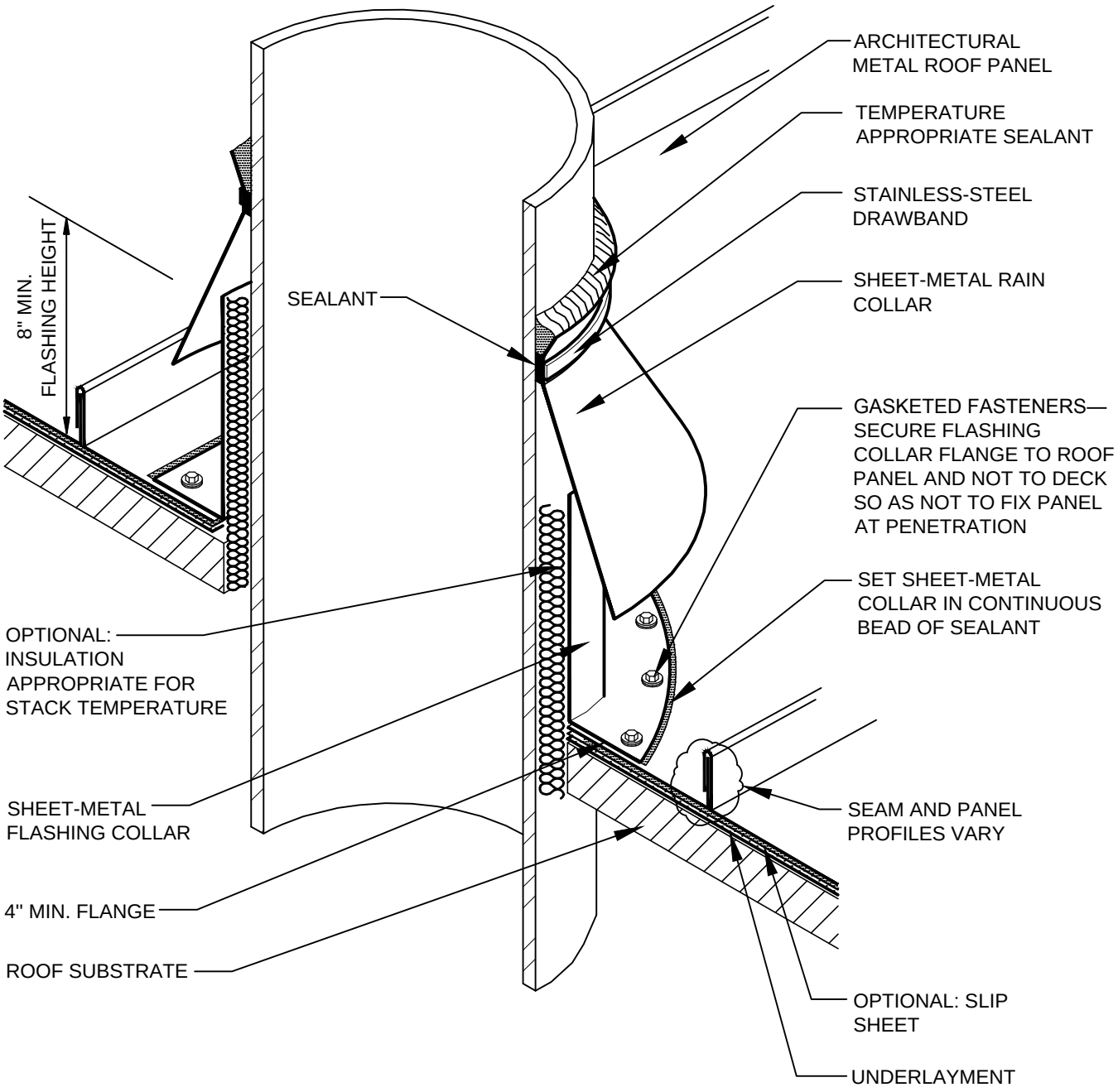


NOTES:

1. NRCA STRONGLY RECOMMENDS PENETRATIONS SHOULD NOT INTERFERE WITH PANEL SEAMS OR OCCUR AT TRANSVERSE SEAMS.
2. VENT STACKS AND OTHER PIPES SHOULD HAVE A MINIMUM 12 INCHES OF CLEARANCE ON ALL SIDES FROM WALLS, CURBS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING.
3. FOR HOT PIPES, SPECIFIC HIGH-TEMPERATURE BOOTS SHOULD BE USED.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

PIPE PENETRATION FLASHING

2012 *NOT DRAWN TO SCALE* **AM-13**

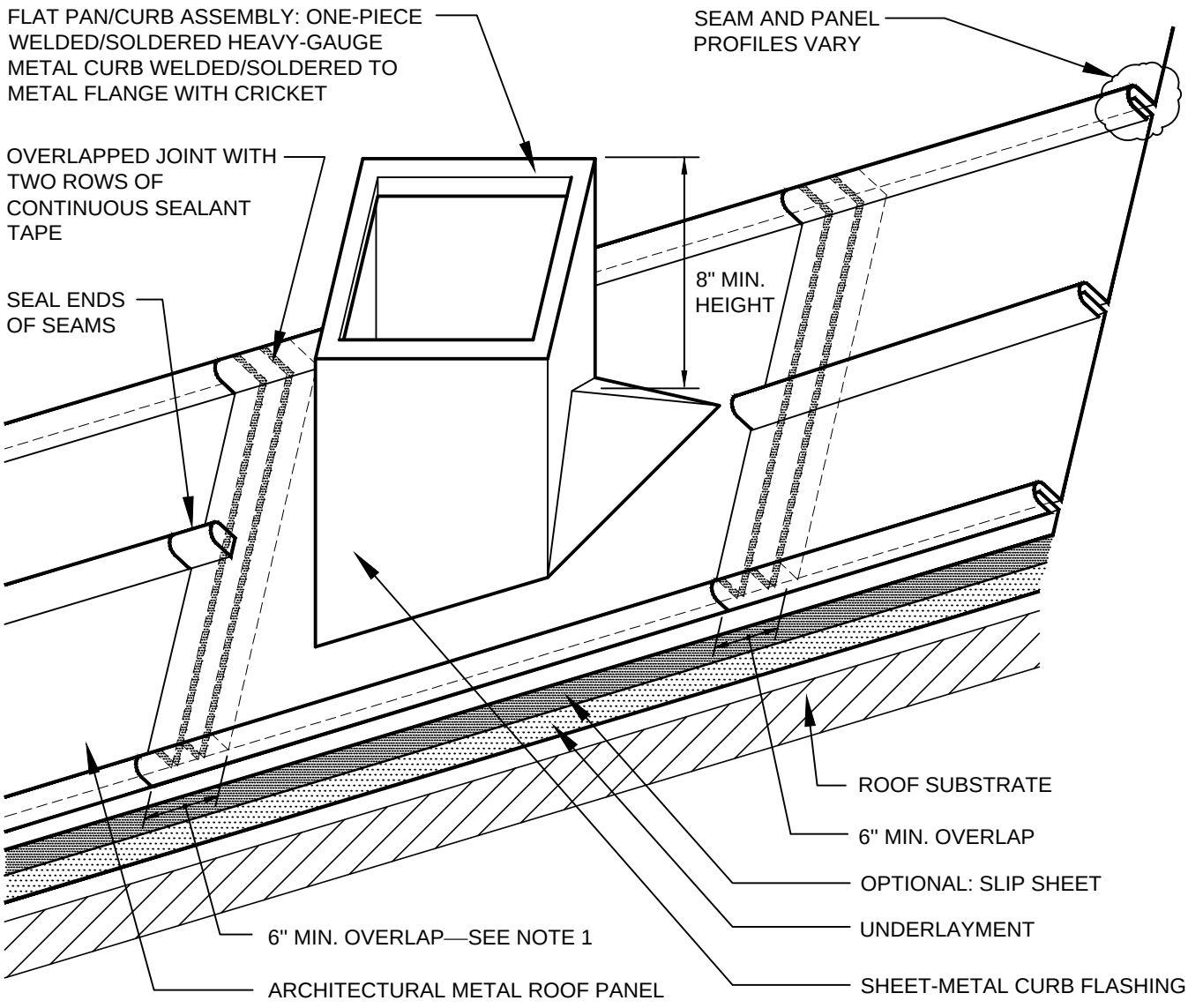


NOTES:

1. NRCA STRONGLY RECOMMENDS PENETRATIONS SHOULD NOT INTERFERE WITH PANEL SEAMS OR OCCUR AT TRANSVERSE SEAMS.
2. VENT STACKS AND OTHER PIPES SHOULD HAVE ADEQUATE CLEARANCE ON ALL SIDES FROM WALLS AND OTHER PROJECTIONS TO FACILITATE PROPER FLASHING AND PANEL DRAINAGE.
3. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

SHEET-METAL STACK VENT [HOT OR COLD]

2012 *NOT DRAWN TO SCALE* **AM-14**

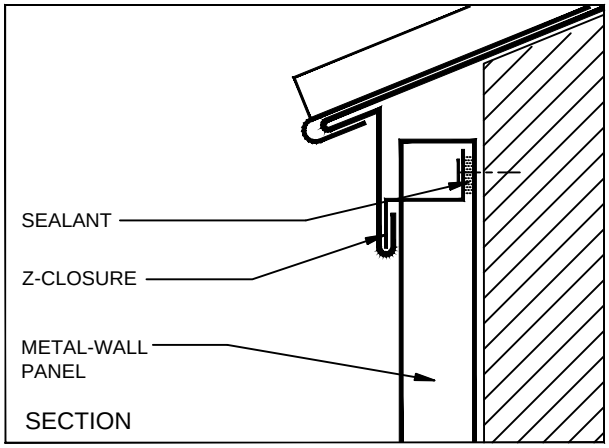


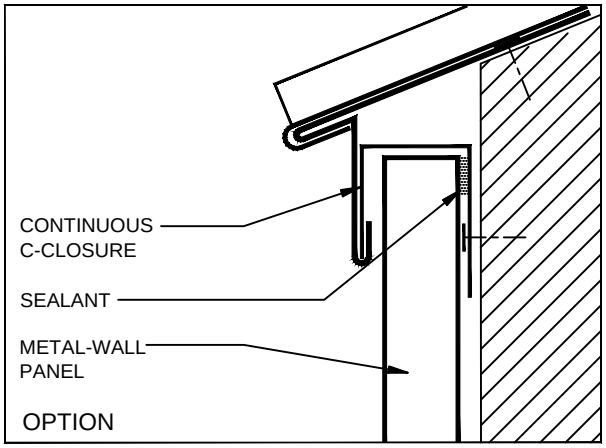
NOTES:

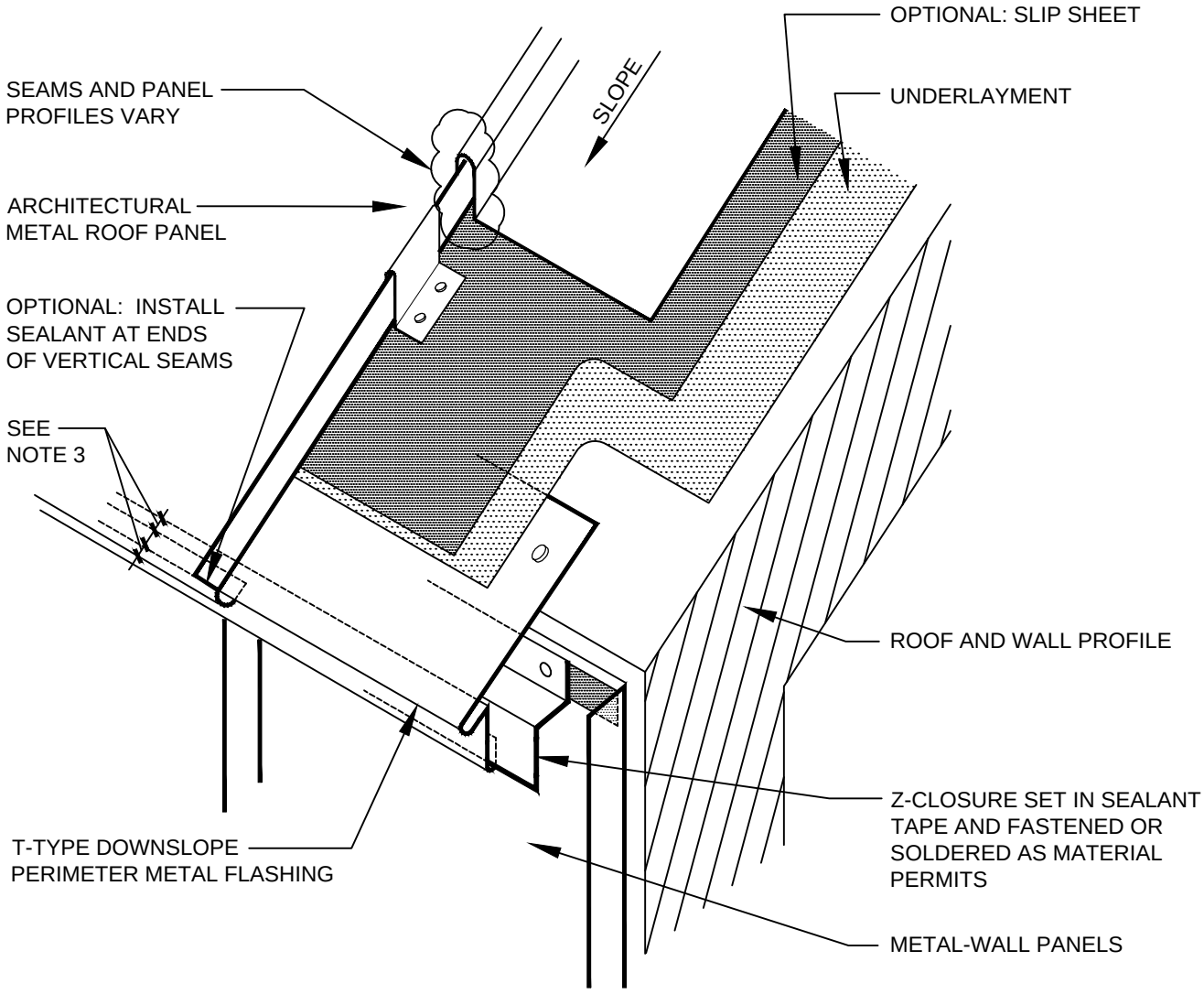
1. PROPER STRUCTURAL SUPPORT AND ATTACHMENT IS REQUIRED UNDER ALL SIDES OF RAISED CURB.
2. CURB-MOUNTED EQUIPMENT SHOULD BE WEATHERPROOF AND HAVE A WEATHERPROOF INTERLOCK OR SUFFICIENT OVERLAP WITH THE CURB.
3. PRE-MANUFACTURED CURBS ARE AVAILABLE.
4. THIS DETAIL FIXES THE RAISED CURB TO THE ARCHITECTURAL METAL PANELS.
5. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

RAISED CURB FOR ROOFTOP EQUIPMENT

2012 *NOT DRAWN TO SCALE* **AM-15**





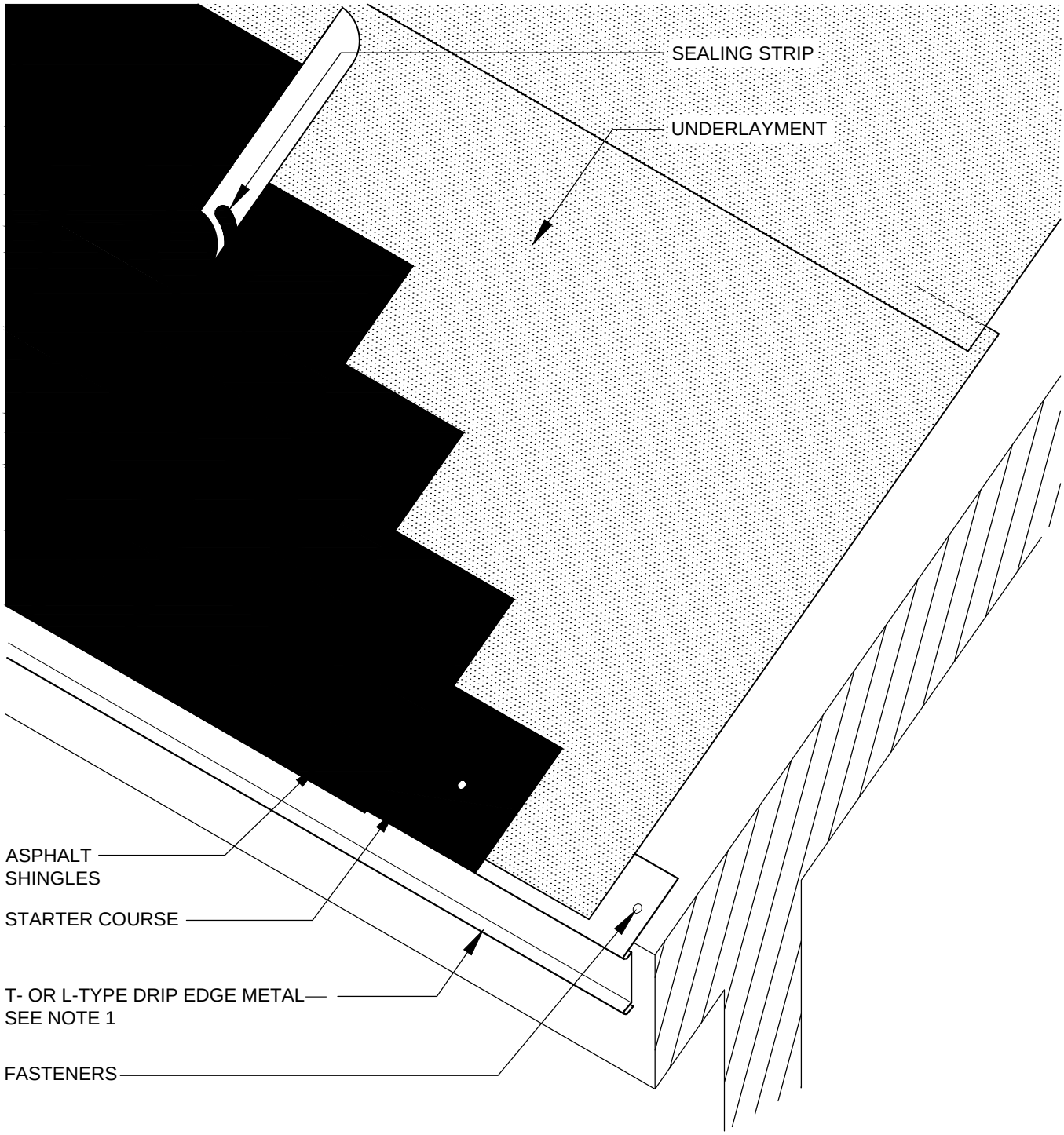


NOTES:

1. SPECIFIC FASTENING REQUIREMENTS ARE NOT INDICATED AS THEY VARY FROM SYSTEM TO SYSTEM DEPENDING ON PANEL MANUFACTURER'S REQUIREMENTS, WIND ZONE AND BUILDING CODE.
2. THIS DETAIL OF FLASHING FIXES THE WALL PANELS IF THE Z-CLOSURE IS FASTENED THROUGH THE WALL.
3. DIMENSIONS SHOULD ACCOMMODATE EXPECTED MOVEMENT.
4. REFER TO THE INTRODUCTION IN CHAPTER 10—CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

METAL-ROOF-TO-METAL-WALL TRANSITION

2012 *NOT DRAWN TO SCALE* **AM-16**



NOTES:

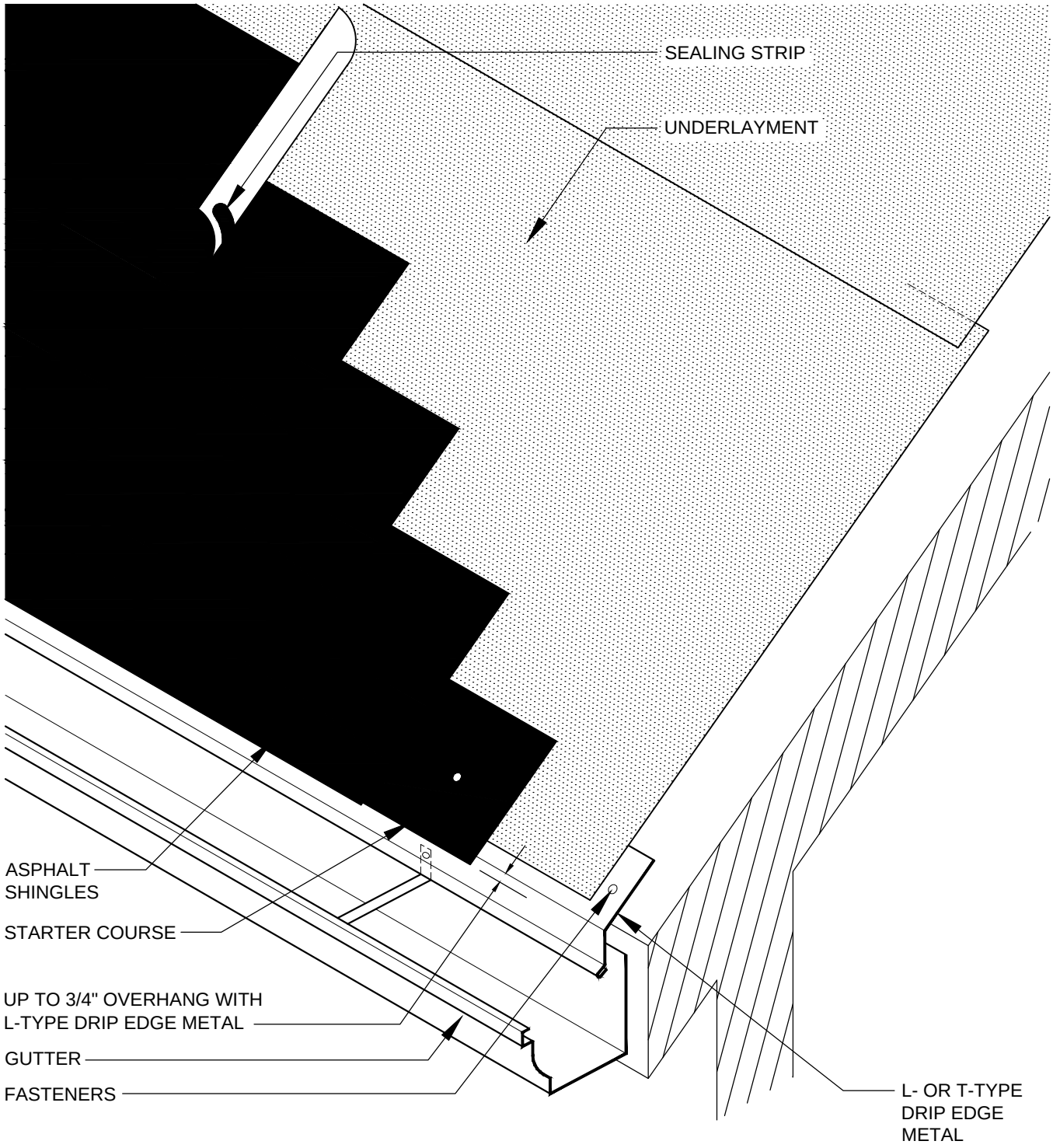
1. FOR L-TYPE DRIP EDGE METAL, STARTER COURSE EXTENDS UP TO 3/4" BEYOND THE PERIMETER EDGE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

EAVE

2013

NOT DRAWN TO SCALE

ASPH-1



NOTES:

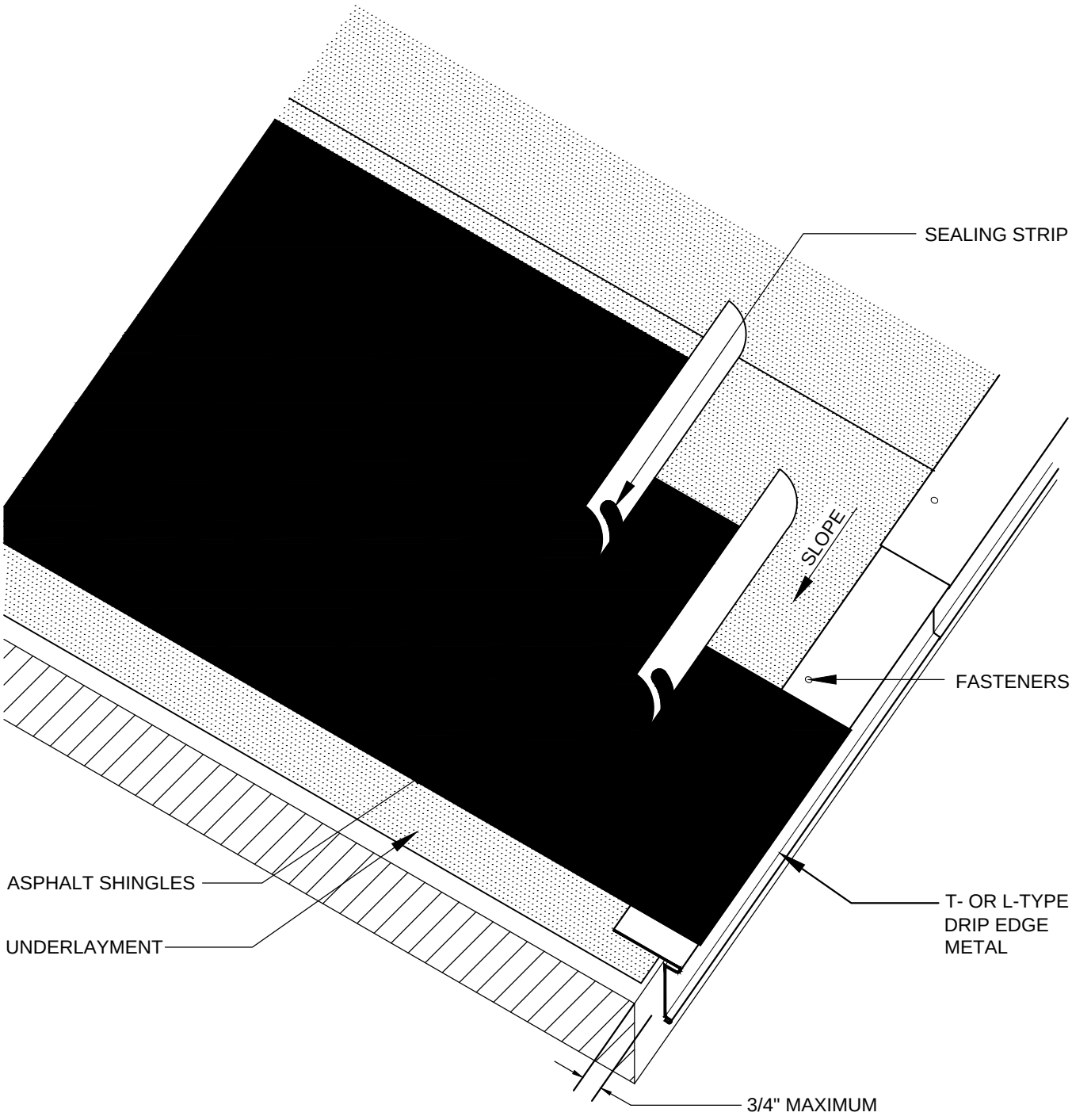
1. THIS DETAIL SHOWS ONE TYPE OF GUTTER SUPPORT. GUTTER SECUREMENT AND SUPPORT OPTIONS VARY.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

EAVE WITH GUTTER

2013

NOT DRAWN TO SCALE

ASPH-2



NOTE:

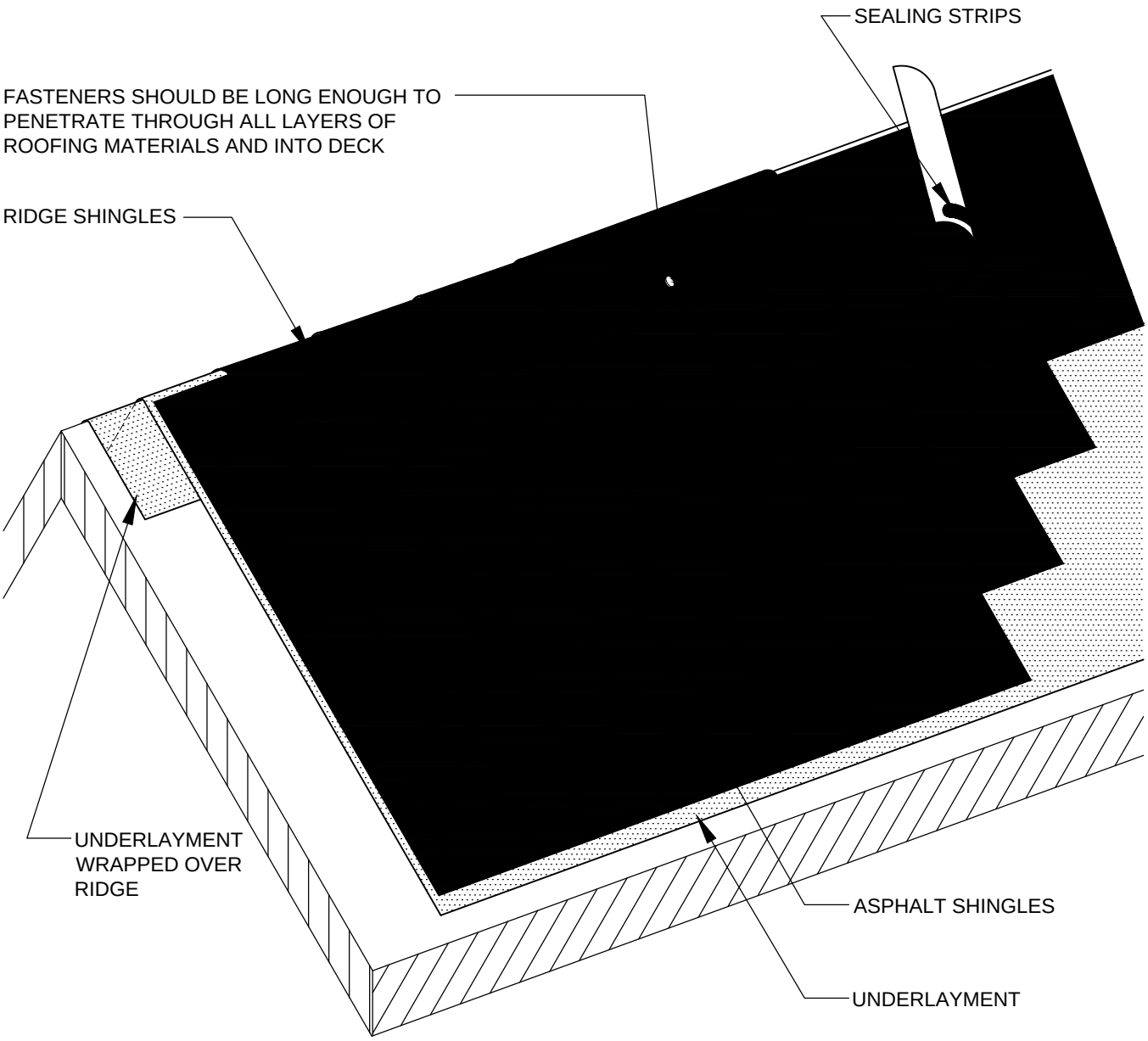
1. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

RAKE

2013

NOT DRAWN TO SCALE

ASPH-3



NOTES:

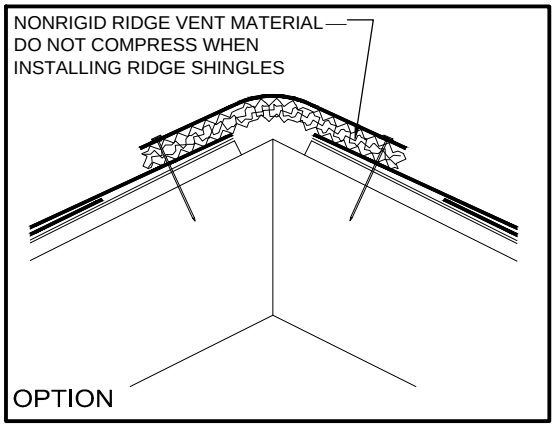
1. MOST MANUFACTURERS SUPPLY SPECIAL RIDGE SHINGLES. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

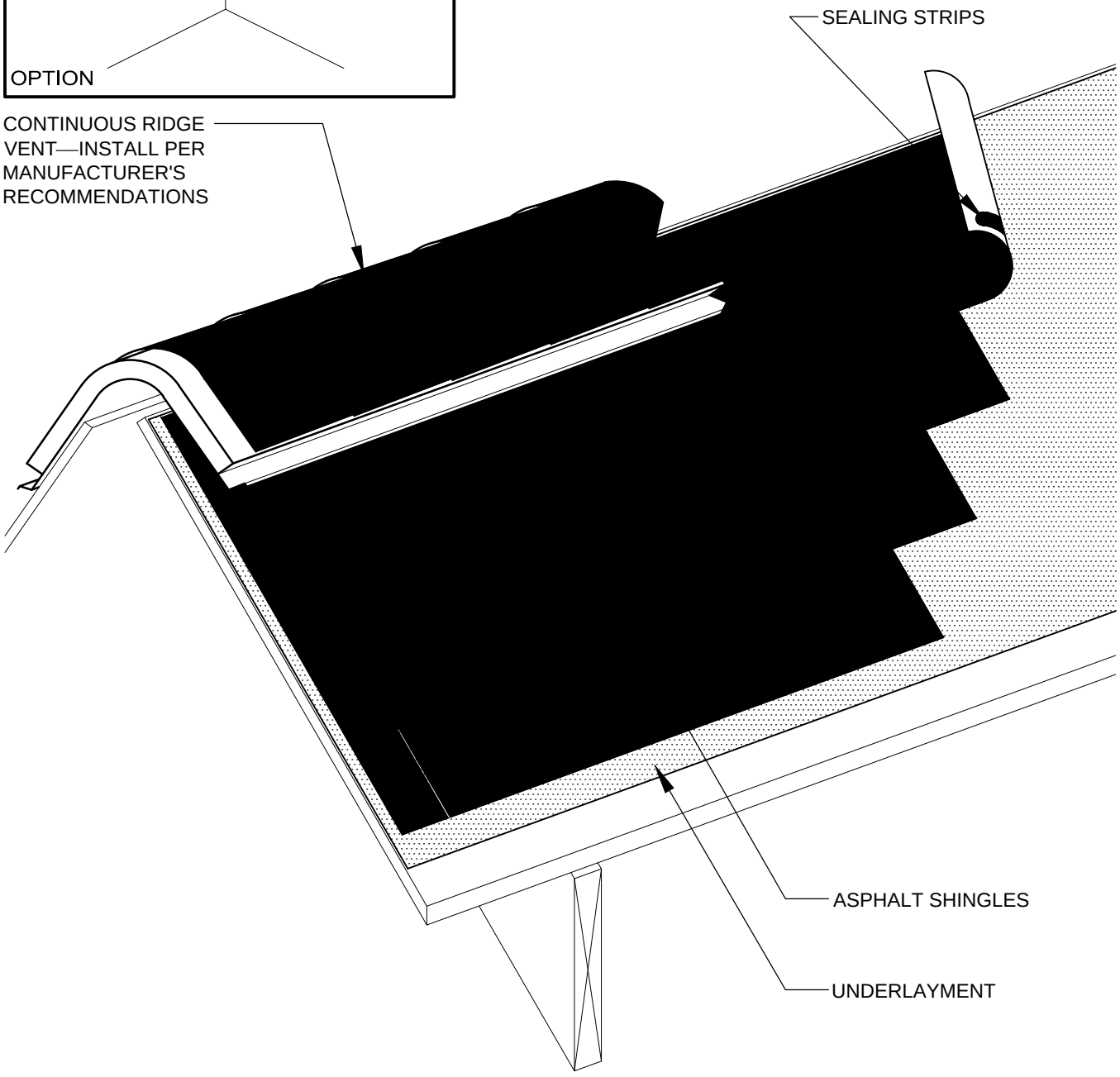
NON-VENTED RIDGE

2013

NOT DRAWN TO SCALE

ASPH-4



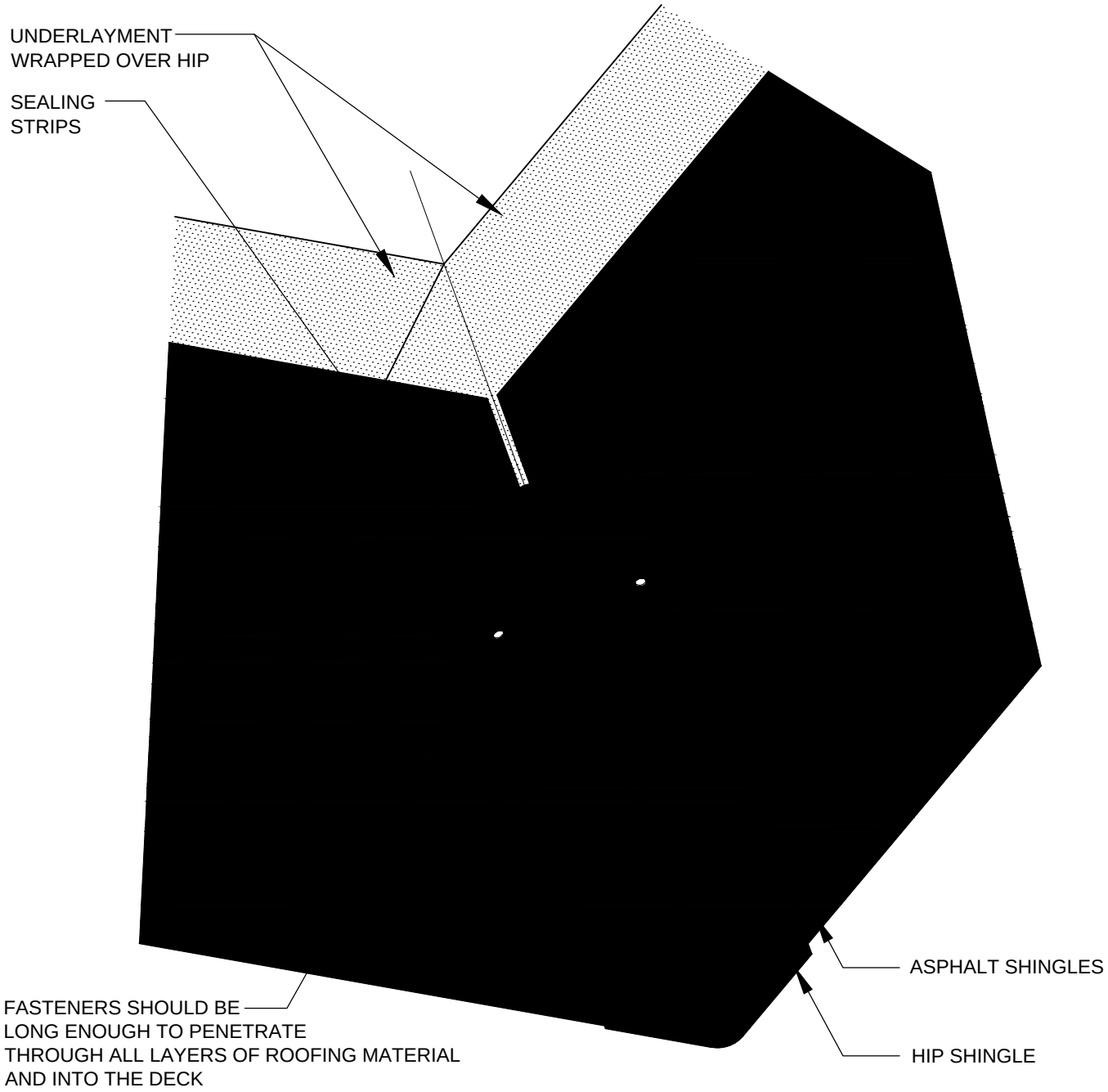


NOTES:

1. RIDGE VENT TYPES VARY. FOLLOW MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

RIDGE WITH CONTINUOUS RIDGE VENT

2013 *NOT DRAWN TO SCALE* **ASPH-5**

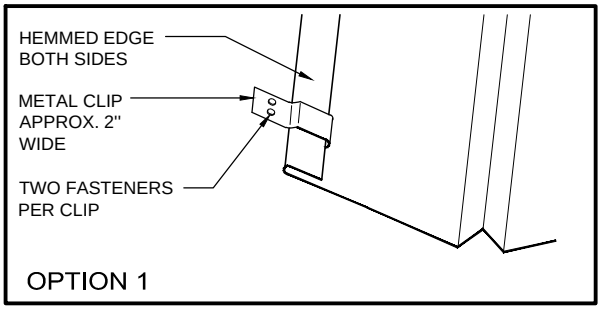


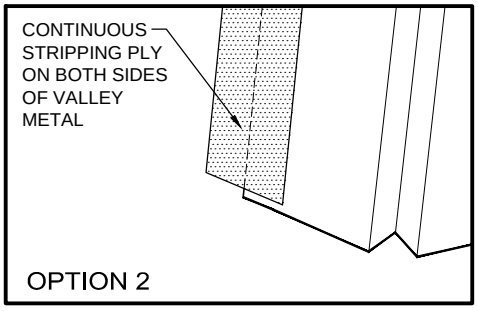
NOTES:

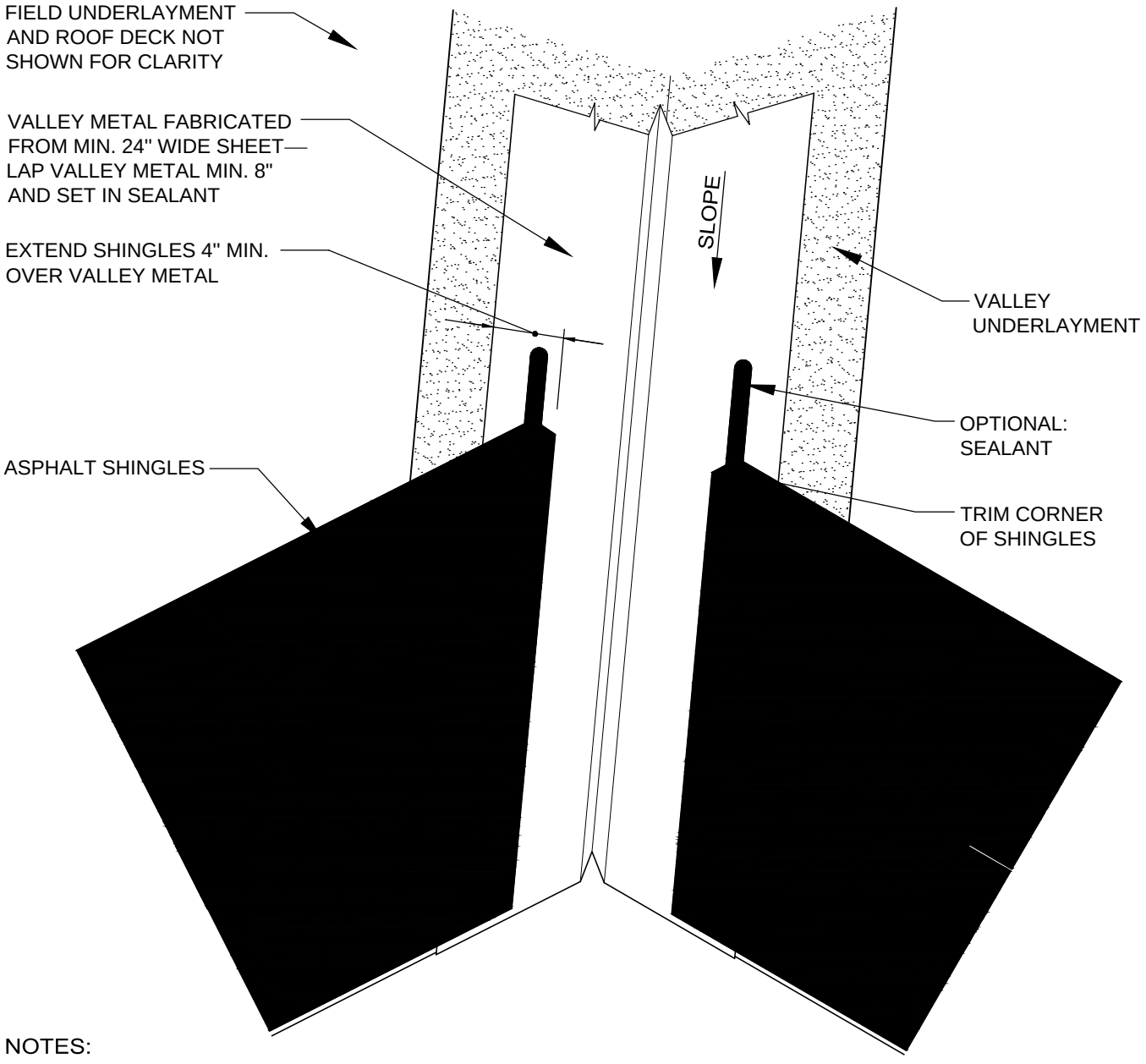
1. MOST MANUFACTURERS SUPPLY SPECIAL HIP SHINGLES. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

HIP

2013 *NOT DRAWN TO SCALE* **ASPH-6**







NOTES:

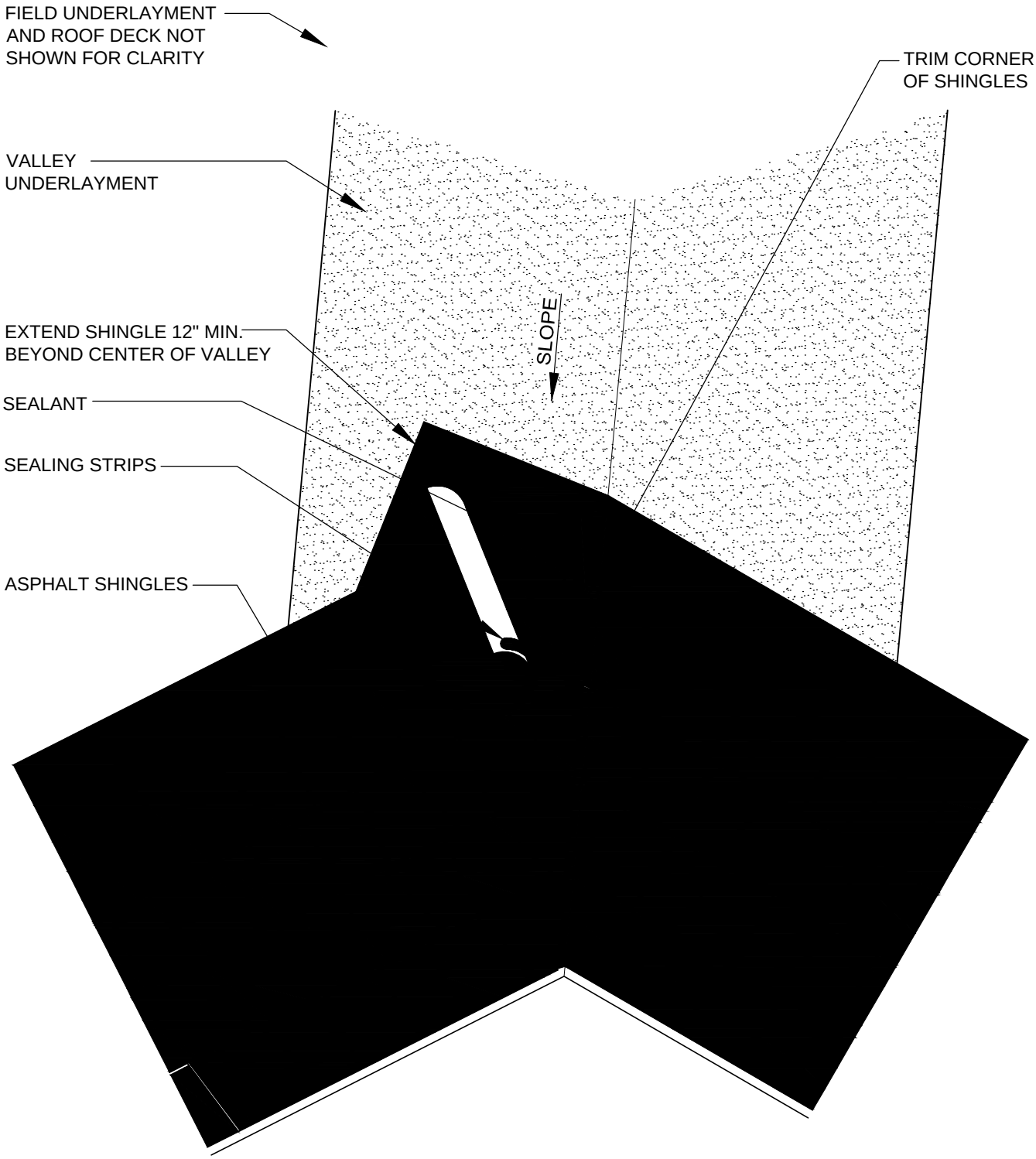
1. VALLEY UNDERLAYMENT TYPE AND NECESSITY MAY VARY DEPENDING ON CLIMATIC CONDITIONS.
2. FOR CLIPPED VALLEY DETAIL (OPTION 1), HEAVIER WEIGHT SHINGLES MUST BE USED.
3. VALLEY METAL WITHOUT RIB OR SPLASH DIVERTER MAY BE ACCEPTABLE.
4. SEALANT IS NOT REQUIRED FOR OPTIONS 1 AND 2.
5. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

OPEN VALLEY

2013

NOT DRAWN TO SCALE

ASPH-7



NOTES:

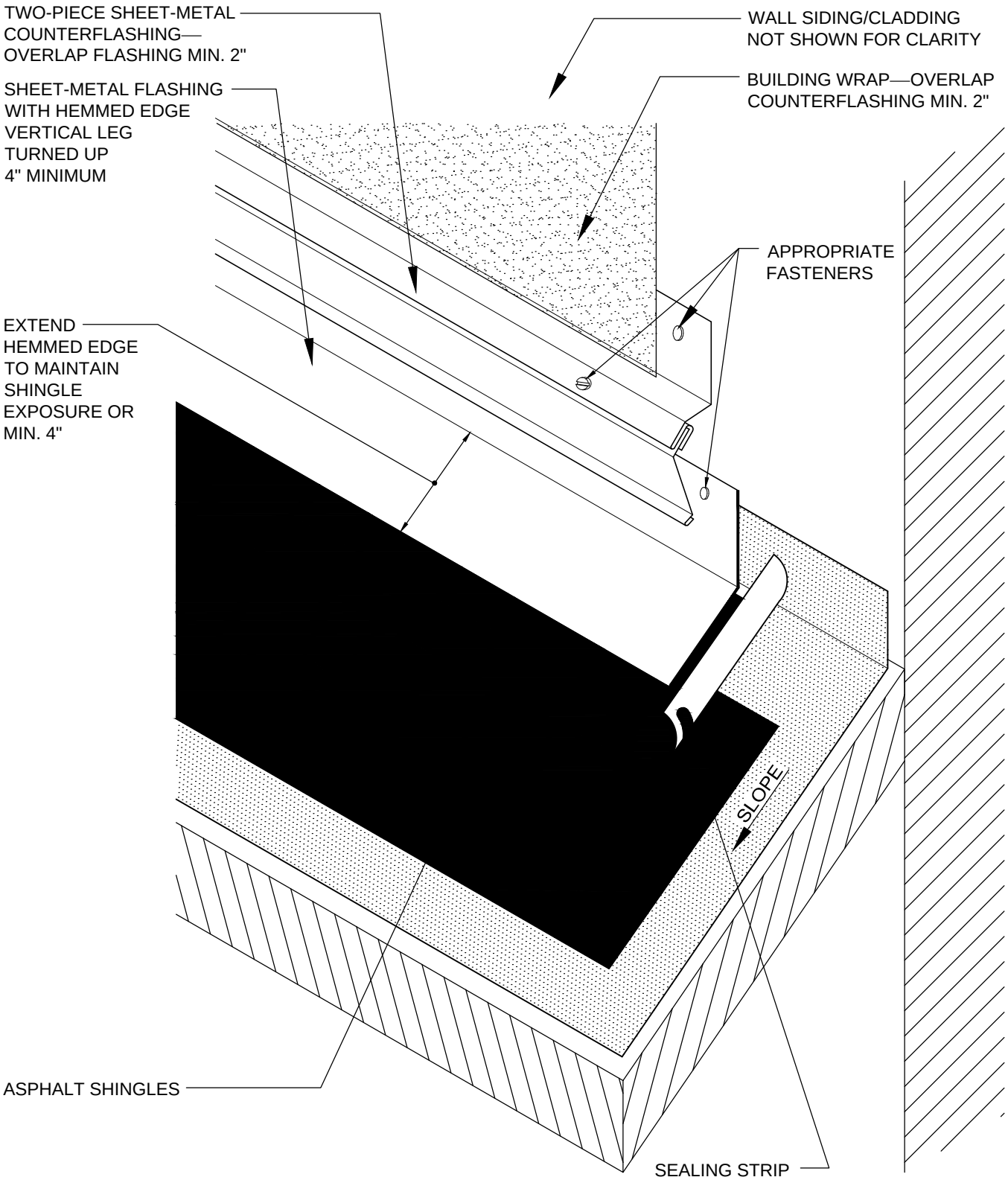
1. VALLEY UNDERLAYMENT TYPE AND NECESSITY MAY VARY DEPENDING ON CLIMATIC CONDITIONS.
2. NO FASTENERS WITHIN 6 INCHES OF VALLEY CENTER.
3. THE CUT SIDE OF THE VALLEY SHOULD BE ON THE SIDE WITH THE GREATEST ROOF AREA.
4. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

CLOSED-CUT VALLEY

2013

NOT DRAWN TO SCALE

ASPH-8



NOTES:

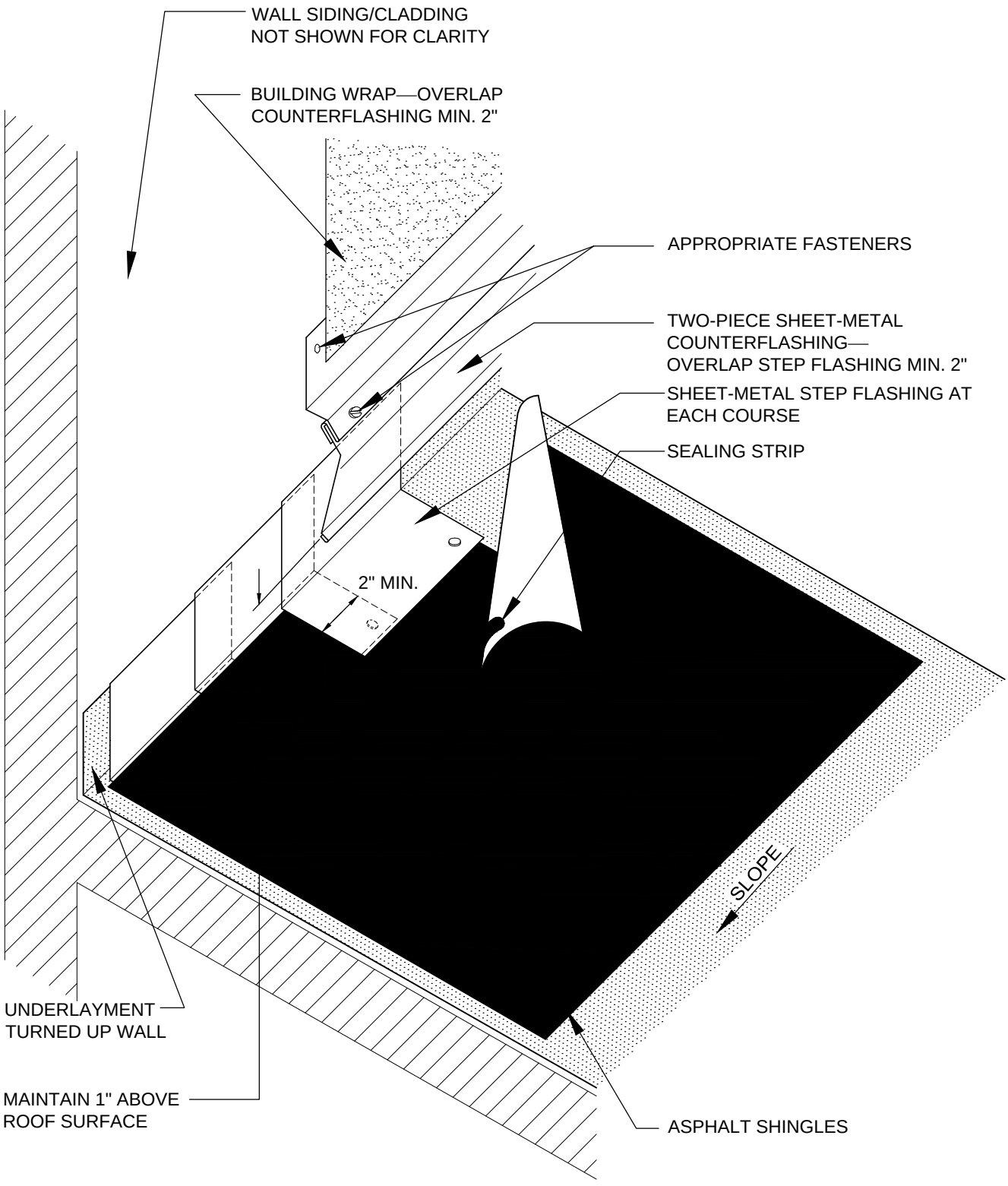
1. FOR SECUREMENT AND JOINERY OPTIONS FOR SHEET METAL AND COUNTERFLASHING OPTIONS, REFER TO THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

HEADWALL FLASHING

2013

NOT DRAWN TO SCALE

ASPH-09

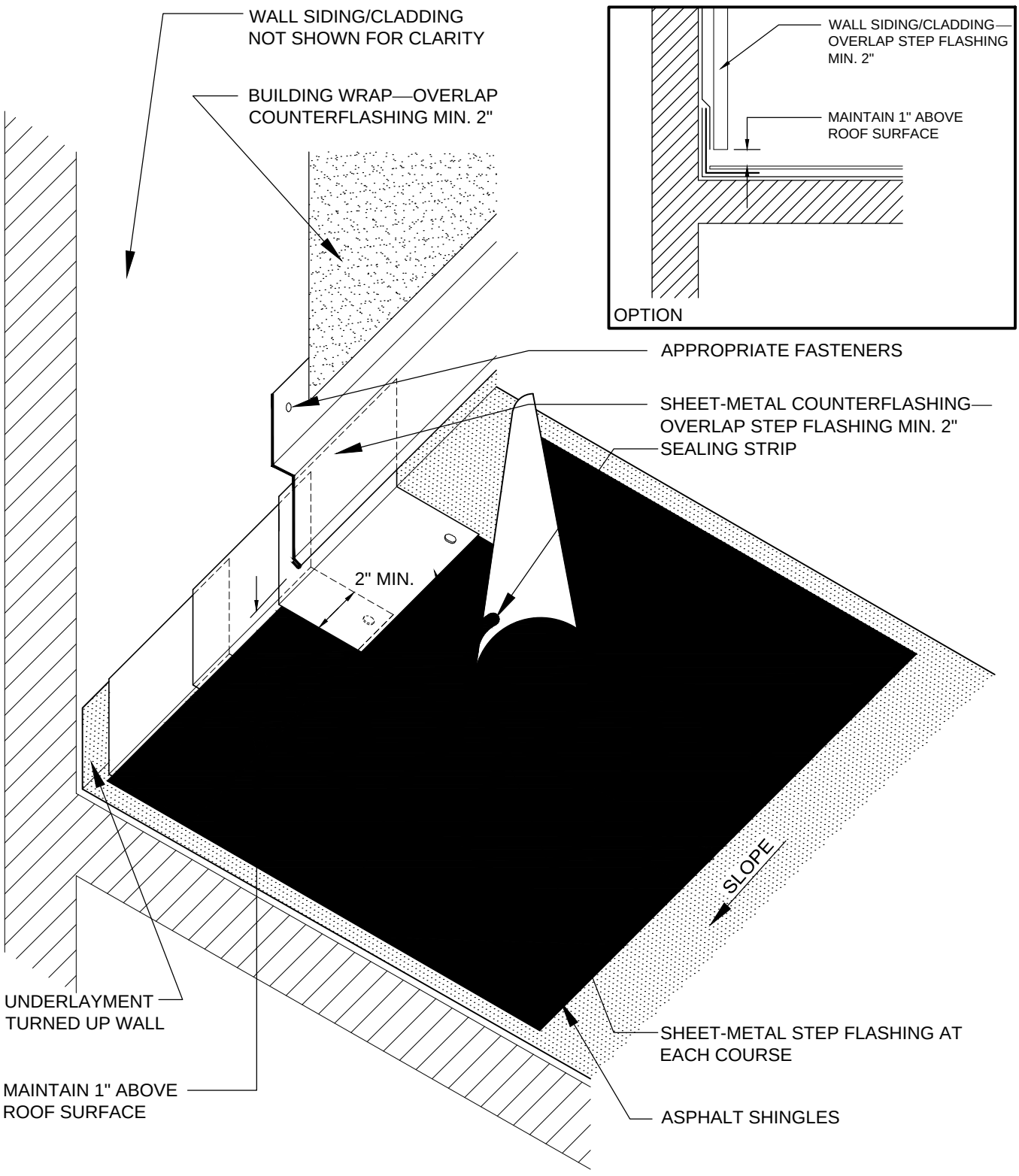


NOTES:

1. FOR SECUREMENT AND JOINERY OPTIONS FOR SHEET METAL AND COUNTERFLASHING OPTIONS, REFER TO THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

SIDEWALL FLASHING WITH TWO-PIECE COUNTERFLASHING

2013 *NOT DRAWN TO SCALE* **ASPH-10**

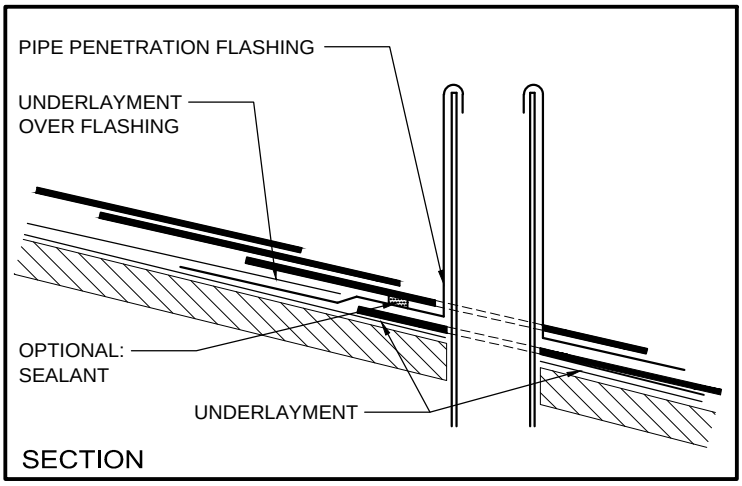


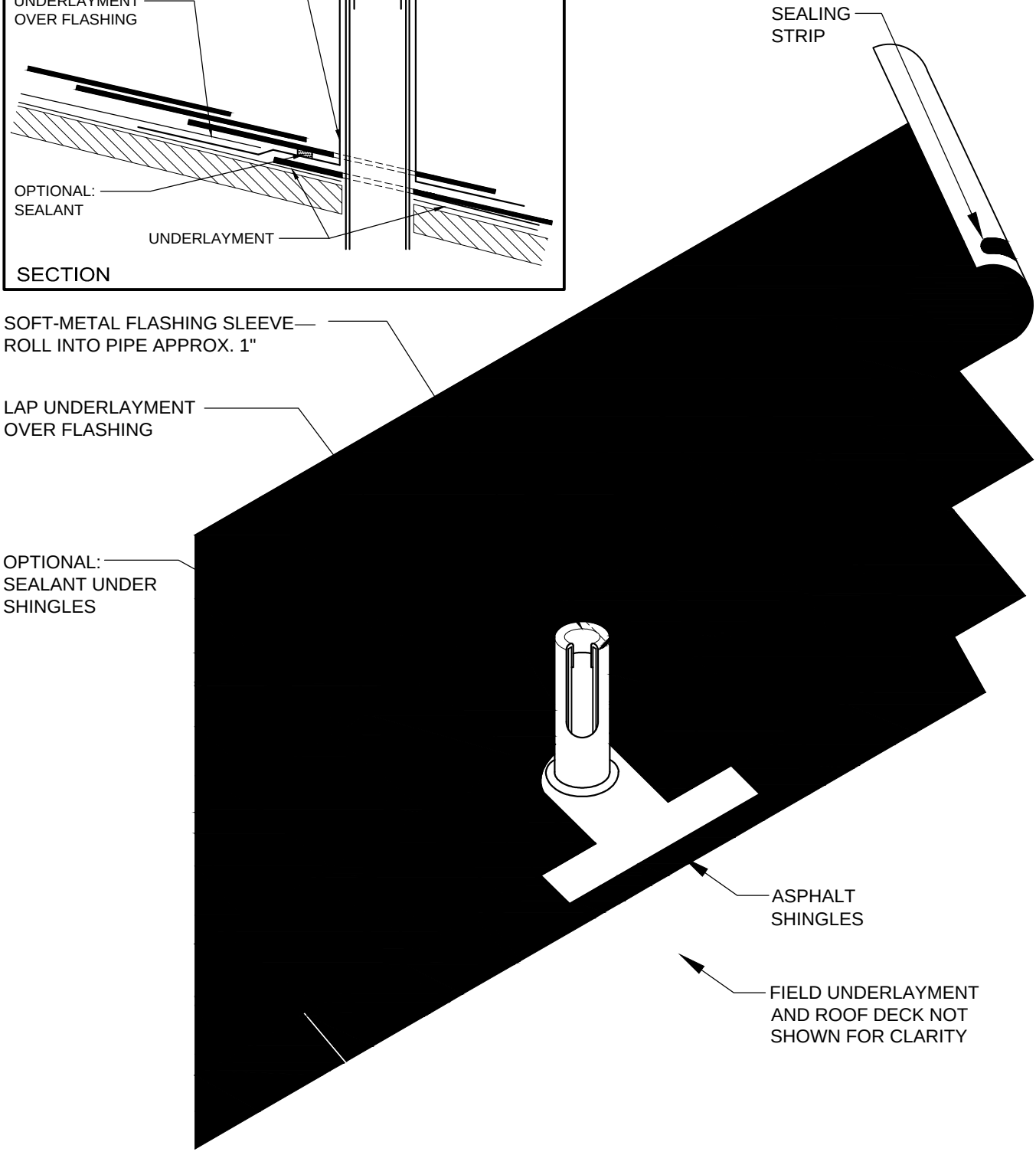
NOTES:

1. FOR SECUREMENT AND JOINERY OPTIONS FOR SHEET METAL AND COUNTERFLASHING OPTIONS, REFER TO THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING.
2. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

SIDEWALL FLASHING WITH ONE-PIECE COUNTERFLASHING

2013 *NOT DRAWN TO SCALE* **ASPH-11**





NOTE:

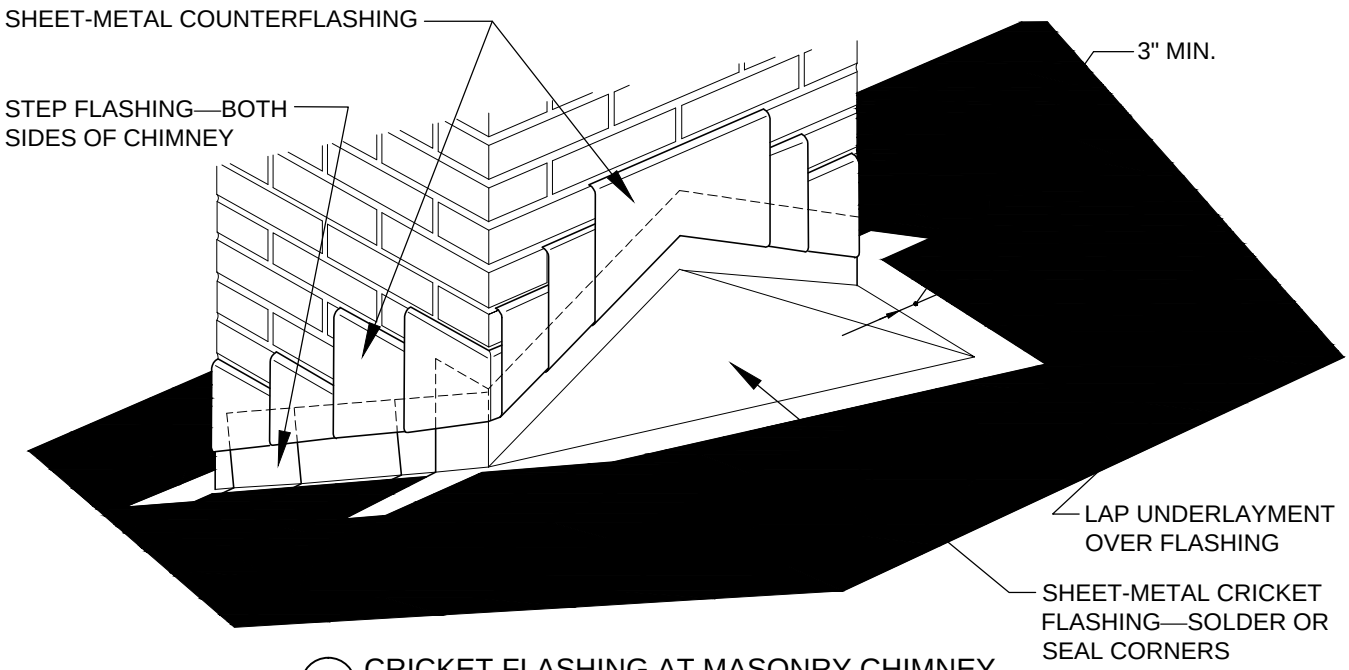
1. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

VENT PIPE PENETRATION

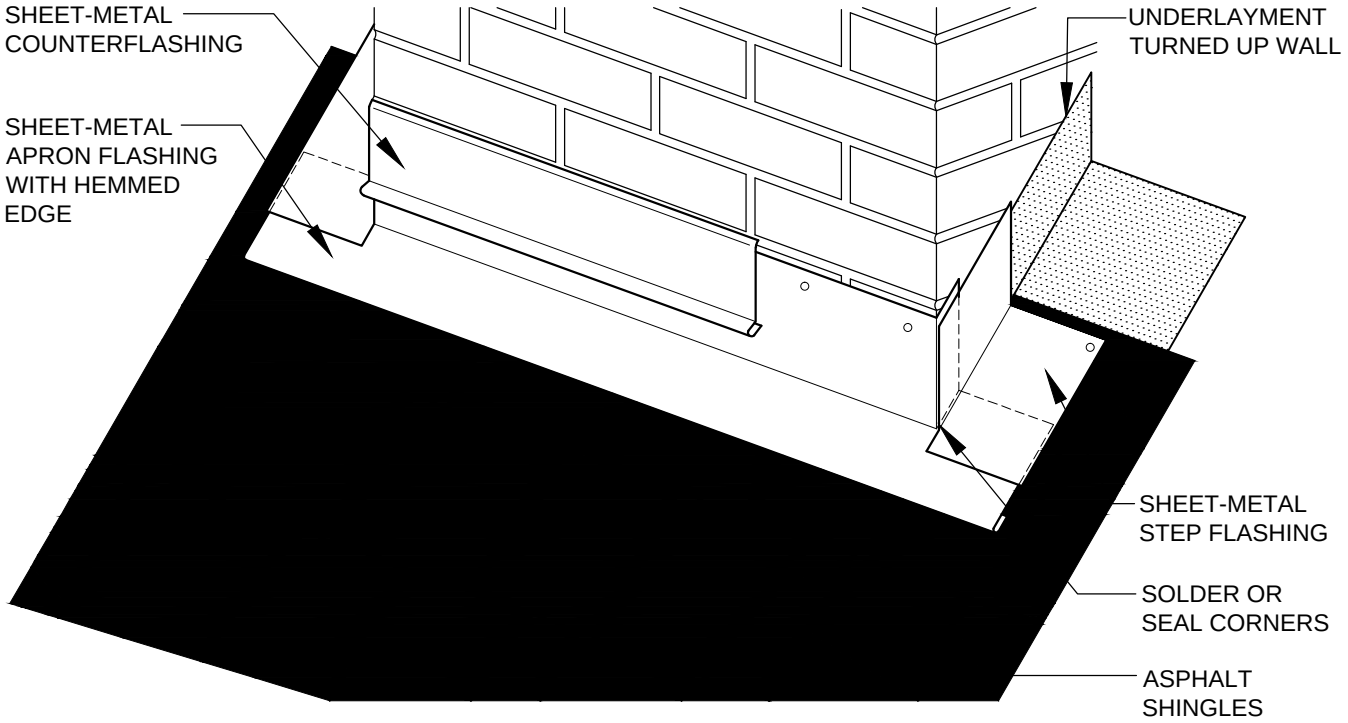
2013

NOT DRAWN TO SCALE

ASPH-12



A CRICKET FLASHING AT MASONRY CHIMNEY



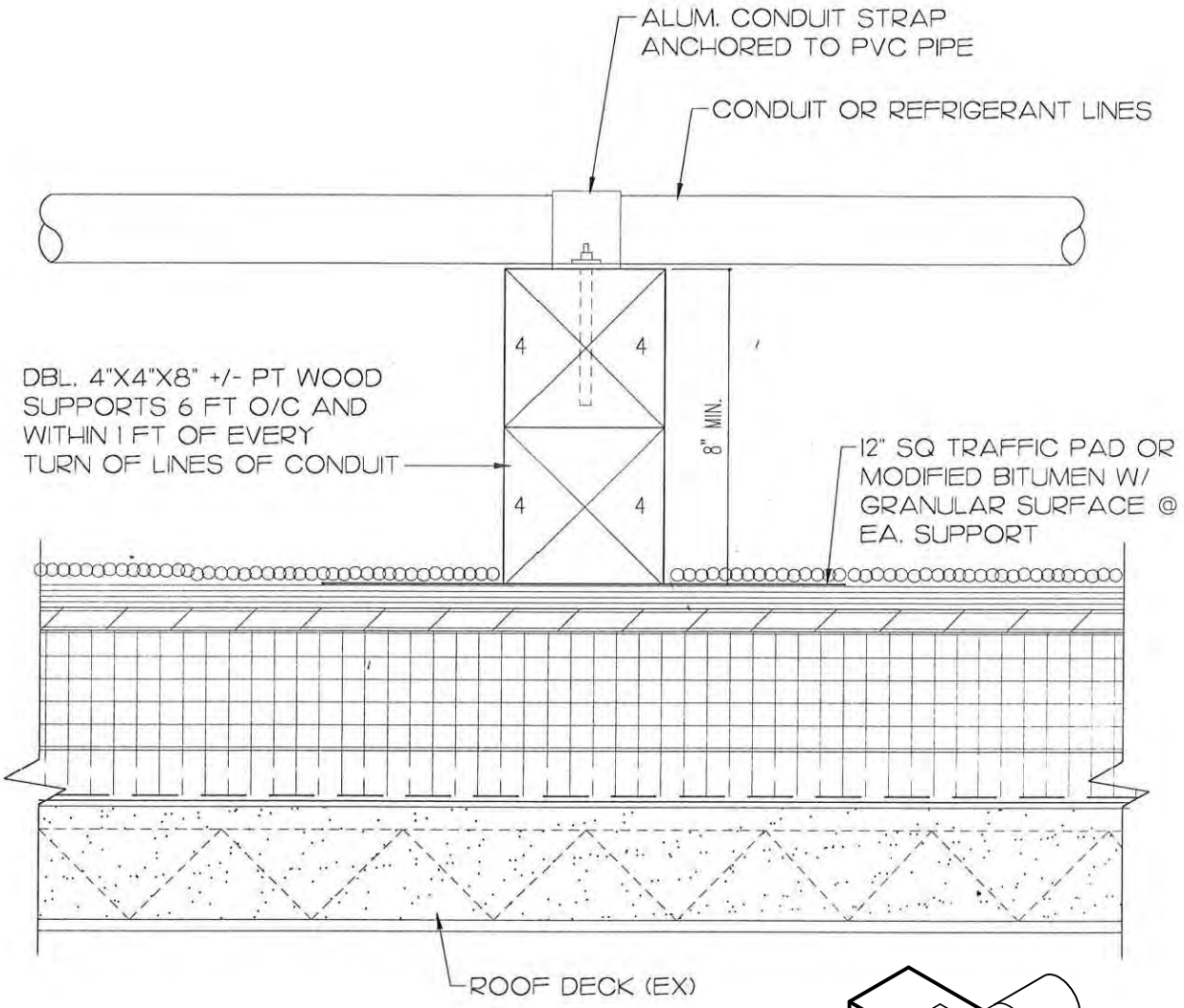
B APRON FLASHING AT MASONRY CHIMNEY

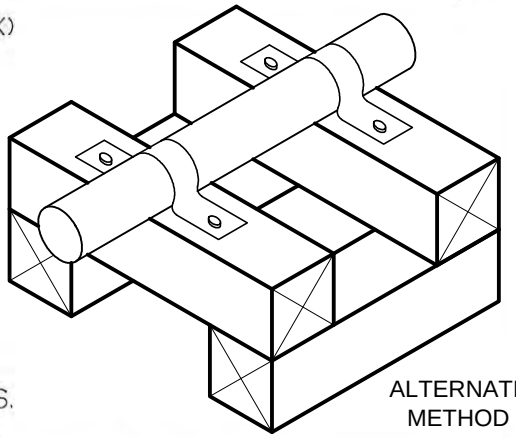
NOTES:

1. THIS DETAIL APPLIES TO CHIMNEYS THAT ARE WIDER THAN 24 INCHES.
2. FOR SECUREMENT AND JOINERY OPTIONS FOR SHEET METAL AND COUNTERFLASHING OPTIONS, REFER TO THE NRCA ROOFING MANUAL: ARCHITECTURAL METAL FLASHING, CONDENSATION CONTROL AND REROOFING.
3. REFER TO THE INTRODUCTION OF THE CONSTRUCTION DETAILS CHAPTER FOR ADDITIONAL INFORMATION.

CHIMNEY WITH CRICKET FLASHING

2013 *NOT DRAWN TO SCALE* **ASPH-13**





ALTERNATE METHOD

NOTE:
1. REFER TO DETAIL 01 FOR ROOF COMPOSITION.
2. REFER TO ROOF PLAN FOR CONDUIT LOCATIONS.
3. CONDUIT LINES TO RECEIVE ALUMINUM COATING.

NOT DRAWN TO SCALE	CONDUIT SUPPORTS	CS-01

APPENDIX A – ROOFING THREE YEAR GUARANTEE

CUMBERLAND COUNTY SCHOOLS

Know all men by these presents, that we, the undersigned, having installed insulation, roofing, flashings and sheet metal work and have accomplished certain other work on _____ under a contract between our firm and the Cumberland County Board of Education, do warrant to the Cumberland County Board of Education with respect to said work for a period of three (3) years from the date of final acceptance by the Cumberland County Board of Education that the roofing including insulation, roofing membrane, flashings and sheet metal work shall be absolutely watertight and free from all leaks; provided however that the following are excluded from this warranty:

1. Defects or failures resulting from abuse by the Owner;
2. Defects in design involving failure of (a) structural frame, (b) load-bearing walls, (c) or foundations; and
3. Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

We, _____, agree that should any leaks occur in the roofing we will promptly remedy said leaks in a manner to restore the roof to a watertight condition by methods compatible to the system and acceptable under industry standards and general practice.

We, _____, further agree that for a period of three (3) years from date of final acceptance referred to above, we will make repairs at no expense to the Owner to any defects which may develop in the work, including but not limited to blisters, ridges, wrinkles, splits, warped insulation and loose flashings, in a manner compatible to the system and acceptable under industry standards and general practice.

IN WITNESS THEREOF, we have caused this instrument to be duly executed this _____ day of _____, 20____.

This warranty is restricted to work shown on the contract documents entitled _____dated_____ prepared by _____ _____, and on the Owner/Contractor Agreements based on these documents.

Roofing Company Name _____

Address _____

_____

_____

Phone and Facsimile _____

Signature _____ Title_____

NC License Number _____ _____
(Expiration Date)

Witness _____

Notary: _____ Title_____

END OF ROOFING THREE YEAR GUARANTEE

APPENDIX B – ROOFING SYSTEM QUALITY ASSURANCE WARRANTY
CUMBERLAND COUNTY SCHOOLS

PERIOD OF COVERAGE: **10 YEARS**
OWNER: CUMBERLAND COUNTY BOARD OF EDUCATION
THE CUMBERLAND COUNTY SCHOOLS
P.O. Box 2357
Fayetteville, NC 28302
(910) 678-2551 phillipperry@ccs.k12.nc.us

NAME, TYPE OF BUILDING: _____

ADDRESS OF BUILDING: _____

This warranty is confined to the work shown on Contract Documents entitled:

_____ dated _____

Prepared by _____

And in the Form of Contract based on these documents.

THE WARRANTY

The manufacturer of the roof system will repair any leaks in the Roof Assembly as installed by the manufacturer's approved roofing contractor for a period of ten (10) years from the Date of Completion as herein defined. Roof Assembly shall be defined as the weatherproofing assembly and its components as specified, which include the membrane, insulation, flashings and termination details.

In the event leaks occur in the Roof Assembly within the warranty period, the Owner will notify the manufacturer as soon as possible (in no event later than thirty (30) days) after leakage is or should have been discovered. The manufacturer will inspect the Roof Assembly, and if the leak is within coverage of this warranty will at his own expense make or cause to be made all necessary repairs to the Roof assembly to put it in a watertight condition. To the extent any repairs to any part of the building other than the Roof Assembly are required, the liability or expense for such repair, removal or replacement shall be assumed and paid by the Cumberland County Schools. To the extent that the removal or replacement of any traffic surfaces or other appurtenances built over the roof are required in order to put the Roof Assembly in watertight condition, the liability or expense for their repair, removal or replacement shall also be assumed and paid by the Cumberland County Schools, excluding such traffic surfaces or other appurtenances installed by the approved roofing contractor, whose liability and expense shall remain his. If the leak is not within the warranty coverage, the manufacturer shall so advise the Cumberland County Schools; and the Cumberland country Schools shall have t repairs performed within thirty (30) days, according ot manufacturer's specifications, by a manufacturer-approved applicator. In the event an emergency condition exists which required immediate repair to avoid substantial damage to the building or its contents, the manufacturer may instruct the Cumberland County Schools to make all necessary temporary repairs.

During the first three (3) years of the warranty period, the manufacturer shall remain liable for the total cost of labor and material (The Contract Price). From the fourth (4^{th}) year through the tenth (10^{th})

year, the manufacturer's liability shall be pro-rated on a straight line basis, and shall not exceed such pro-

rated amount. The manufacturer shall not be liable for any damages which originate from or are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than the exclusive liability set forth.

The warranty period shall commence from the Date of Completion, herein established to be the date on which the written report of a passed final inspection made by the manufacturer's representative is received by the Cumberland County Schools. During the period of this warranty, the manufacturer will have free access to the roof and related premises during regular business hours, and will retain the right to make core extractions and properly repair such extractions.

The warranty period shall extend ten (10) years. At the conclusion of the warranty period, the Cumberland County Schools shall retain an option, available upon inspection and correction of deficiencies, to renew or extend the warranty for an additional five years for an agreed sum.

EXCLUSIONS

This warranty does not cover any damage to or failure of the Roof Assembly or any part thereof as a result of:

1. Accident by natural disasters, including but not limited to damage caused by lightning, hailstorms, floods, hurricane force winds, tornadoes, earthquakes, fire; and vandalism, animals, or penetration of the membrane or chemical attack by outside agents;
2. Use of material not approved by the roofing manufacturer;
3. Any intentional or negligent act on the part of the warranty Owner or any third party, including but limited to misuse, traffic, or storage of material on roof;
4. Distortion, expansion or contraction of construction;
5. Design of building components including parapet walls, copings, chimneys, skylights, vents or roof deck; or
6. Lack of proper or adequate drainage resulting in ponding water on roof for a period of 48 hours after rain stops.

RESPONSIBILITIES OF THE CUMBERLAND COUNTY SCHOOLS UNDER THE WARRANTY

A. ROUTINE MAINTENANCE

Preventative maintenance is required on Roof Assemblies in order to prevent deterioration or damage and subsequent water entry. One benefit of routine maintenance is recognized to be that the membrane life can be extended, and can continue to perform after the warranty has expired. There are several general precautions which Cumberland County Schools will observe on every roof.

1. Foot traffic will be restricted to the absolute minimum possible.
2. Personnel will avoid stepping on debris, which might puncture the roof membrane.
3. Periodic cleaning of the roof will be performed. Accumulated debris will be removed with caution, as sharp or pointed objects may puncture or gouge the membrane or flashings.
4. Drains, scuppers, and gutters will be kept reasonably clean and free flowing.
5. Areas known to have significant debris and/ or traffic will be examined and serviced on a more frequent basis than the standard of once a year.

B. REPAIRS AND SERVICE TO ROOFTOP EQUIPMENT

Roof-mounted mechanical equipment is not a component of the Roof Assembly, but must be serviced periodically. Access for that service is often across the roof. The costs of protecting the Roof Assembly while these non-roof components are being serviced, and the deterioration of the roof caused by careless service to non-roof components, are not covered by the provisions of this warranty.

The Cumberland County Schools recognize that repairmen are frequently in possession of tools, material or equipment (sheet metal, screwdrivers, utility knives, etc.) which could accidentally cut or

damage the roof membrane. Cumberland County Schools' personnel will take the following precautions, which will also be required of contractors working on or near roofs.

1. Repairmen will cover work areas with plywood sheeting to protect the roof surface while equipment repairs are being performed.
2. Repairmen will be routinely reminded, and will be required to agree, to notify the responsible party of any damage to the roof during the equipment repair operation.
3. Cumberland County Schools roofing staff will inspect the completed work and adjacent roof area upon completion of the repairs or service, in the company of the personnel performing the repairs.

C. EMERGENCY REPAIRS

In the event that emergency repairs must be made, Cumberland County Schools will proceed following good roofing practices. The Cumberland county Schools will immediately notify in writing the roofing material company to verify repair procedures and arrange for inspection of repair. Unauthorized and uninspected repairs may invalidate this Warranty.

D. NEW EQUIPMENT INSTALLATIONS

In the event that new rooftop equipment is to be installed, Cumberland County Schools will contact the manufacturer of the system in writing prior to the project so assistance can be provided to insure the roof integrity. Installation of new equipment of any kind on the roof without prior approval may void this Warranty.

E. BI-ANNUAL INSPECTIONS

Cumberland County Schools will conduct Bi-Annual Inspections. Conditions to review will include the following items:

1. Abnormalities in the roof surface, which are to be reported to the manufacturer of the roofing system.
2. Debris left by others or deposited by the elements, which must be removed from the roof.
3. Anything that may impede drainage, which must be corrected.
4. Holes in flashing or other physical damage to roof components, which are to be reported to the manufacturer of the roofing system.
5. Sealant at reglet joints, stacks and equipment, which, being exposed to greater movement, will frequently weather more rapidly than the roof membrane.
6. Clamping bolts at drain rings, which may loosen over time and allow water to enter under the clamping ring. If this is the case, the bolts are to be tightened a s needed.
7. Wall ducts and support structures above the roof line, which can direct moisture into the roof system: these items are to be checked, and the necessary repairs are to be performed.

RESPONSIBILITY OF THE ROOF SYSTEM MANUFACTURER UNDER THIS WARRANTY

Qualified responsible personnel of the manufacturer will perform and annual inspection of the Roof Assembly and its components, including the membrane, insulation, flashings and termination details, for the warranty period of the roof system. Cumberland County Schools will be notified in writing of any observed deficiencies. In addition, written reports following an agreed format will be prepared by the manufacturer during each year identifying conditions and maintenance responsibilities. Copies will be provided immediately to the Cumberland county Schools. Preventative maintenance will be performed on the Roof Assembly by a contractor approved the roofing manufacturer and the Cumberland County schools in order to prevent water entry for the warranty period.

The roofing system manufacturer will respond promptly to request from Cumberland County Schools personnel seeking information on warranted roofs and or/advice on maintenance and modification procedures for the roof areas.

The roofing system manufacturer will furnish an 800 number to the Cumberland County Schools for use in reporting concerns or warranty issues regarding the roof assembly.

FURTHER QUALIFICATIONS TO OR EXCLUSIONS FROM THIS WARRANTY

The Cumberland County Schools and the manufacturer of the roof system agree that no substantive change or amendment to this warranty will be instituted by the attachment hereto of the manufacturer's standard forms(s) of warranty or guarantee. Said attachment(s) hereto is/are acceptable to the Cumberland County Schools under this condition.

IN WITNESS WHEREOF, we have caused this instrument to be duly executed this _____

Day of _____, 20_____.

Roof system manufacturer:_____

Address: _____

_____

Telephone:_____ Facsimile:_____ 800 reporting #_____

Roof system manufacturer's assigned warranty number: _____

_____ _____
Authorized Signature Title

Attest:

_____ _____
Secretary or Assistant Secretary Title

(Affix Corporate Seal)

END OF ROOFING SYSTEM QUALITY ASSURANCE WARRANTY

Appendix C - Hot Work Policy and Procedure

Policy

This policy was developed to ensure that the Hot Work will be managed and proper actions are taken to prevent loss due to fire caused by Hot Work (cutting, soldering & welding, explosion or any other activity that involves an open flame). All affected employees and contractors will receive instruction as to the expectations of them to ensure compliance with this policy.

Scope

The provisions set out in this policy apply to any work done on site using a welder, torch, or any other facsimile and is to be strictly adhered to by all parties. The use of a Hot Work Permit when that hot work takes place away from a designated hot work area is mandatory.

Responsibilities

Management

- To ensure that all employees involved in the Hot Work Process are trained (including Permit Authorizing Individual, Hot Work Operator and Fire Watch).
- Conduct periodic audits to ensure compliance with this policy.
- CCS Safety & Security are to communicate any changes to this policy with respect to regulation and interpretation.
- CCS Safety & Security will endure that the policy is reviewed annually and is current with all applicable regulations.

PAI (Permit Authorizing Individual)

- Assess the work area and sign the Hot Work Permit PRIOR to work commencing.
- Post one part of permit at job site and place top copy of permit at the site designated area. (i.e. permit board, administrative office).
- Have a designated Fire Watch during Hot Work. This could be anyone who has been trained as Fire Watch.
- If applicable, ensure sprinkler systems are in working order monitoring once per hour for minimum of 3 hours or longer as determined.
- After completion of Hot Work ensure continuous monitoring for minimum of 30 minutes or longer as determined by the PAI. This function may be performed by a designated Fire Watch, or maintenance person.

See Attached for Sample Hot Work Permit

Person Performing Hot Work

The person doing the Hot Work must verify that a hot work permit is in place before starting Hot Work. The permit is issued for one location only and is valid for no longer than 24 hours. It may become invalid if conditions change (i.e. adverse environmental condition).

The person doing the Hot Work is responsible for complying with all rules and regulations concerning safe work practices and all requirements stated on the permit.

The Fire Watch

- Assist Hot Work Operator in preparation and clean up of Hot Work area.
- Wet down surrounding areas including lower floors and beams if applicable.
- Assess 35' radius for potential fire hazards.
- Be alert to any changes and identify changes or concerns to Hot Work Operator.

Monitor

- At the end of the monitoring period, the completed forms are picked up and filed in accordance with the insurance underwriter's requirements.

Outside Contractors

- Will be trained and held to the same Hot Work Standards as the company employees. The supervisor who hires the contractor will ensure that this training has taken place prior to starting Hot Work and audits the process.

Appendices

1. Hot Work Permit
2. Impairment Handling Program
3. Impairment Handling Report Form

HOT WORK PERMIT

CAN THIS JOB BE DONE WITHOUT HOT WORK, OR IN THE SHOP?
IF NOT, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE SPRINKLERS ARE IN SERVICE AND FIRE EXTINGUISHERS ARE READILY AVAILABLE!

This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks.
This includes, but is not limited to, Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch-Applied Roofing, and Welding.

Note: The Required Precautions are not optional. They are required for fire-safe hot work. Please explain all "No" responses below.

Instructions

The Permit-Authorizing Individual must:

a) Verify precautions listed at right (or do not proceed with the work)
b) Complete and retain this page
c) Give the second page to the person doing the work.

Who, When, and Where?

Hot Work Being Done By

☐ Employee
☐ Contractor

Date	**Job/Work Order No.**

Location/Building and Floor

Nature of Job/Object

Name of Person(s) Doing Hot Work

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for work.

Signature of Permit-Authorizing Individual

Permit Expiration

Expiration Date	**Expiration Time**	☐ **AM** ☐ **PM**

Name of Assigned Fire Watch

THIS PERMIT IS GOOD FOR 24 HOURS ONLY!

Required Precautions Checklist

☐ Available Sprinklers in Normal Automatic mode and valve open.
☐ Hot Work equipment in good repair.

Assess 35 ft radial "sphere" of work for potential fire hazards:

☐ Floors, work level and below, cleaned or protected.
☐ All other combustibles removed or shielded from sparks.
- Clean horizontal surfaces (e.g. building structures, equipment, ducts, cable trays, etc.) above and below where possible.
- Remove flammable liquids, dust, lint, combustible waste, oil deposits, etc., where possible.
- If removal/cleaning is impractical, protect with fire-retardant covers, or shield with fire-retardant guards and/or curtains.

☐ Transmission or conveying of sparks to adjacent areas eliminated or protected.
- Tightly cover wall/floor openings with fire-retardant material.
- Where openings cannot be sealed, suspend fire-retardant tarpaulins to help protect areas beneath.
- Isolate or shut down fans and conveyors to prevent the capturing and conveying sparks to other areas.

☐ Explosive atmosphere eliminated or potential not present.

Work on walls, ceilings or enclosed equipment:

☐ Construction materials verified as noncombustible and without combustible covering or insulation.
☐ Combustibles on other side of walls relocated or protected.
☐ Enclosed equipment cleaned and protected from all combustibles.
☐ Containers purged of flammable liquids/vapors.

Fire watch/hot work area monitoring requirements:

☐ Continuous fire watch provided during and for *at least 30 minutes* after hot work, including all breaks.
☐ Fire watch supplied with suitable extinguishers/hoses.
☐ Fire watch trained in the use of fire equipment and sounding alarm.
☐ Area to be monitored hourly for a *minimum 6 hours* after job is completed, or longer if required.

Other precautions that may be required:

☐ Fire watch provided for adjoining areas, above, or below.
☐ Confined Space or Lock-Out-Tag-Out required/used.
☐ Area smoke or heat detection disabled to eliminate false trip.

Other: _____

Comments:

_____

_____

_____

HOT WORK PERMIT

WARNING! HOT WORK IN PROGRESS WATCH FOR FIRE!

Instructions

1. **Person doing hot work**: Indicate time started and post permit at hot work location. After hot work, indicate time completed and leave permit posted for Fire Watch.
2. **Fire Watch**: Prior to leaving area, do final inspection, sign, leave permit posted and notify Permit-Authorizing Individual.
3. **Monitor**: After 6 hours, do final inspection, sign, and return to designated area.

Who, When, and Where?

Hot Work Being Done By
☐ Employee
☐ Contractor

Date	**Job/Work Order No.**

Location/Building and Floor

Nature of Job/Object

Name of Person(s) Doing Hot Work

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for work.

Signature of Permit-Authorizing Individual

Time Started ☐ AM ☐ PM	**Time Finished** ☐ AM ☐ PM
Expiration Date	**Expiration Time** ☐ AM ☐ PM

Work area and all adjacent areas to which sparks and heat might have spread were inspected during the fire watch period and were found fire safe.

Signature of Fire Watch **Time**

Work area was monitored for a minimum of 6 hours following hot work and found fire safe.

Signature of Monitor **Time**

Required Precautions Checklist
(must be retained as record of hot work activity for 6 months minimum)

☐ Available Sprinklers in Normal Automatic mode and valve open.
☐ Hot Work equipment in good repair.

Assess 35 ft radial "sphere" of work for potential fire hazards:
☐ Floors, work level and below, cleaned or protected.
☐ All other combustibles removed or shielded from sparks.
- Clean horizontal surfaces (e.g. building structures, equipment, ducts, cable trays, etc.) above and below where possible.
- Remove flammable liquids, dust, lint, combustible waste, oil deposits, etc., where possible.
- If removal/cleaning is impractical, protect with fire-retardant covers, or shield with fire-retardant guards and/or curtains.

☐ Transmission or conveying of sparks to adjacent areas eliminated or protected.
- Tightly cover wall/floor openings with fire-retardant material.
- Where openings cannot be sealed, suspend fire-retardant tarpaulins to help protect areas beneath.
- Isolate or shut down fans and conveyors to prevent the capturing and conveying sparks to other areas.

☐ Explosive atmosphere eliminated or potential not present.

Work on walls, ceilings or enclosed equipment:
☐ Construction materials verified as noncombustible and without combustible covering or insulation.
☐ Combustibles on other side of walls relocated or protected.
☐ Enclosed equipment cleaned and protected from all combustibles.
☐ Containers purged of flammable liquids/vapors.

Fire watch/hot work area monitoring requirements:
☐ Continuous fire watch provided during and for *at least 30 minutes* after hot work, including all breaks.
☐ Fire watch supplied with suitable extinguishers/hoses.
☐ Fire watch trained in the use of fire equipment and sounding alarm.
☐ Area to be monitored hourly for a *minimum 6 hours* after job is completed, or longer if required.

Other precautions that may be required:
☐ Fire watch provided for adjoining areas, above, or below.
☐ Confined Space or Lock-Out-Tag-Out required/used.
☐ Area smoke or heat detection disabled to eliminate false trip.

Other: _____

Comments:

_____

_____

_____

WARNING!

HOT WORK IN PROGRESS
WATCH FOR FIRE!

IN CASE OF EMERGENCY:

CALL: _____

AT: _____

_____

_____

WARNING!

FIRE WATCH/MONITOR RECORD

Checked by (initials)	Date	Time	Checked by (initials)	Date	Time

Appendix #2

Fire Protection Systems Impairment Program

1. Telephone or email the CCS dispatch office. Efforts should be made to notify the dispatcher at least 48 hours in advance of the impairment, whenever possible.

   Telephone: 910-678-2560

   Email: Justinhall@ccs.k12.nc.us

2. Dispatcher will notify the appropriate fire department when fire protection will be shut off so they can plan accordingly.
3. Dispatcher will contact Holmes Security regarding system shut off.

   When notifying the dispatcher, provide location, nature of work, and estimated duration of impairment.

Appendix #3

Impairment

CCS Location		
Address		
Phone Number		
Reported by (Name/Title)		
Nature of Impairment	Automatic Sprinklers	
	Water Supply	
	Fire Alarm System	
	Security System	
	Electrical System	
	Other	
Describe the Impairment		

Start Time/Date		Restoration Time/Date	
Notify Fire Department	Yes/No	Notify Safety & Security	Yes/No
Notify Security Alarm Company	Yes/No	Notify Dispatch	Yes/No
Continued Hot Works Assignment	Yes/No	Maintained Fire Watch	Yes/No

NCDOR

12-16

E-589CI
Affidavit of Capital Improvement

Form E-589CI, Affidavit of Capital Improvement, is generally required to substantiate that a contract, or a portion of work to be performed to fulfill a contract, is to be taxed for sales and use tax purposes as a real property contract with respect to a capital improvement to real property.

- This affidavit may not be used to purchase building materials, other tangible personal property, or digital property to fulfill a real property contract exempt from sales and use tax.
- A person who willfully attempts, or a person who aids or abets a person to attempt in any manner, to evade or defeat a tax imposed by the Sales and Use Tax Laws, or the payment thereof, shall be guilty of a Class H felony. If there is a deficiency or delinquency in payment of any tax due to fraud with intent to evade the tax, there shall be assessed a penalty equal to 50% of the total deficiency.

Section I. Single Use *(Complete this section to issue the affidavit for a single capital improvement.)*

(A) **Owner, Tenant, or Real Property Contractor**

Address

City **State** **Zip Code**

(B) **Real Property Contractor** *(General Contractor or Subcontractor)* *Hired to perform capital improvement*

Address

City **State** **Zip Code**

Describe capital improvement to be performed:

Project Name

Project Address (where the work is to be performed) **City** **State** **Zip Code**

I certify that, to the best of my knowledge, this affidavit is accurate and complete and that the transaction described to be performed by the Real Property Contractor (General Contractor or Subcontractor identified in box "B") shall be treated as a real property contract with respect to a capital improvement to real property for sales and use tax purposes.

Signature of Authorized Person: _____ Title: _____ Date: _____

Section II. Blanket Use *(Complete this section execute a blanket affidavit.)*

(C) **Real Property Contractor**

Address

City **State** **Zip Code**

(D) **Real Property Contractor or Subcontractor** *Hired to perform capital improvement*

Address

City **State** **Zip Code**

To be completed by the Real Property Contractor identified in Box C.

I certify that I am a Real Property Contractor who performs capital improvements to real property and all transactions with the real property contractor (subcontractor) identified in box "D" shall be treated as real property contracts with respect to capital improvements for real property for sales and use tax purposes.

Signature of Authorized Person: _____ Title: _____ Date: _____

Affidavit of Capital Improvement Instructions

Form E-589CI, Affidavit of Capital Improvement, is generally required to be issued (see exceptions below) to substantiate that a contract, or a portion of work performed to fulfill a contract, is to be taxed for sales and use tax purposes as a real property contract with respect to a capital improvement to real property.

- Form E-589CI is not an affidavit of tax paid on building materials, other tangible personal property, or digital property purchased or used to fulfill a real property contract.
- Form E-589CI is not to be used to purchase building materials, other tangible personal property, or digital property purchased or used to fulfill a real property contract exempt from sales and use tax.
- A person that issues Form E-589CI in error is liable for use tax on the sales price of or the gross receipts derived from the transaction if it is determined that the contract is not a capital improvement to real property.

A person who willfully attempts, or a person who aids or abets a person to attempt in any manner, to evade or defeat a tax imposed by the Sales and Use Tax Laws, or the payment thereof, shall be guilty of a Class H felony. If there is a deficiency or delinquency in payment of any tax due to fraud with intent to evade the tax, there shall be assessed a penalty equal to 50% of the total deficiency.

Exceptions to the Requirement to Issue Form E-589CI
The following are exceptions for transactions where Form E-589CI is not required to be issued to substantiate that the transaction is taxed, as applicable, for sales and use tax purposes as a real property contract with respect to a capital improvement to real property.

- Painting or wallpapering real property, or parts thereof.
- Landscaping service.

Form E-589CI is not required to be issued by the specific person for a transaction noted below. The exceptions do not apply to transactions between a general contractor hired to oversee the entire contract and one of its subcontractors (See "Blanket Use" of Form E-589CI (Section II) for possible exceptions.). **The following exceptions do not apply to remodeling.**

- A real property owner or other person hires a general contractor to oversee the entire contract and the contract is for "new construction" as defined in N.C. Gen. Stat. § 105-164.4H(e)(2).
- A real property owner or other person hires a general contractor to oversee the entire contract and the contract is to rebuild or construct again a prior existing permanent building, structure, or fixture on land (reconstruction as defined in N.C. Gen. Stat. § 105-164.4H(e)(3)).
- A general contractor that purchases all tangible personal property and digital property to fulfill the real property contract and provides the employee labor to fulfill the real property contract.

Section I. Single Use Instructions
A person must complete "Section I - Single Use" of the form for a one time use to substantiate that a transaction that otherwise meets the definition of repair, maintenance, or installation services to real property is taxed for sales and use tax purposes as a real property contract with respect to a single capital improvement for real property. When a real property contractor hires a subcontractor to perform a portion of the overall contract and there is not a recurring business relationship between the two parties, "Section I – Single Use" of Form E-589CI shall be completed and the form issued to each subcontractor as notice that the transaction is subject to tax as a real property contract with respect to a capital improvement for sales and use tax purposes.

A property owner oversees the entire activity that is a real property contract with respect to a capital improvement for real property and hires various subcontractors to complete the real property contract:

- **Box A - Owner, Tenant or Real Property Contractor:** Enter property owner's name and address.
- **Box B - Real Property Contractor** *(General Contractor or Subcontractor)*: Enter general contractor's or subcontractor's name and address.
- Property owner listed in Box A must describe real property contract with respect to capital improvement to be performed.
- Authorized Person (typically property owner) signs, enters title (owner), and enters the date.

A general contractor hires a subcontractor to perform a real property contract with respect to a capital improvement, or portion thereof:

- **Box A - Owner, Tenant or Real Property Contractor:** Enter general contractor's name and address.
- **Box B - Real Property Contractor** *(General Contractor or Subcontractor)*: Enter subcontractor's name and address.
- General contractor listed in Box A describes real property contract with respect to capital improvement to be performed.
- Authorized Person (typically general contractor) signs, enters title (general contractor), and enters the date.

A lessee or tenant hires a general contractor (or subcontractor) to perform a real property contract with respect to a capital improvement for real property; provided the capital improvement is intended to become a permanent installation and title to it vests in the owner or lessor of the real property immediately upon installation:

- **Box A - Owner, Tenant or Real Property Contractor:** Enter lessee or tenant's name and address.
- **Box B - Real Property Contractor** *(General Contractor or Subcontractor)*: Enter general contractor's or subcontractor's name and address.
- General contractor must describe capital improvement for real property to be performed.
- Authorized Person (typically lessee or tenant) signs, enters title, and enters the date.

Section II. Blanket Use Instructions
A real property contractor may complete "Section II – Blanket Use" and issue the form to a real property contractor (subcontractor) who is used **exclusively** to perform part, or all, of real property contracts with respect to capital improvements to real property, where the person and the real property contractor have a recurring business relationship. A blanket use affidavit continues in force so long as the real property contractor named in "Box C" and the real property contractor (subcontractor) named in "Box D" maintain a recurring business relationship (when a period of no more than twelve months elapse between transactions between two parties) or until withdrawn or otherwise notified by the issuer of the form. The blanket use will generally apply for the following: (1) a builder who hires the same contractor(s) only for new construction; (2) a real property contractor who hires the same subcontractor(s) only for reconstruction; (3) a real property contractor who hires the same subcontractor(s) for remodeling and the activities performed by the subcontractor(s) are never repair, maintenance, and installation services for real property; and (4) a real property contractor who exclusively hires the same subcontractor(s) to perform part, or all, of its real property contracts with respect to capital improvements for real properties.

A general contractor or subcontractor hires a subcontractor to perform a capital improvement, or portion thereof:

- **Box C - Real Property Contractor:** Enter the hiring real property contractor's name and address.
- **Box D - Real Property Contractor** *(General Contractor or Subcontractor)*: Enter subcontractor's name and address. Authorized person listed in Box C signs, enters title, and dates.

DOCUMENT 00901 - APPLICATION AND CERTIFICATE FOR PAYMENT

TO CUMBERLAND COUNTY SCHOOLS
CUMBERLAND COUNTY BOARD OF EDUCATION
P. O. BOX 2357
FAYETTEVILLE, NORTH CAROLINA 28302

FROM (CONTRACTOR):

PROJECT:

VIA (ARCHITECT):

APPLICATION NO:

PERIOD TO:

ARCHITECT'S PROJECT NO:

Distribution to:
☐ OWNER
☐ ARCHITECT
☐ CONTRACTOR
☐
☐

CONTRACT FOR:

CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY			
Change Orders approved in previous months by Owner TOTAL		ADDITIONS	DEDUCTIONS
Approved this Month			
Number	Date Approved		
TOTALS			
Net change by Changes Orders			

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

Application is made for Payment, as shown below, in connection with the Contract.
Continuation Sheet, , is attached.

1. **ORIGINAL CONTRACT SUM** ..... $ _____
2. **Net change by Change Orders** ..... $ _____
3. **CONTRACT SUM TO DATE** (Line 1 ± 2) ..... $ _____
4. **TOTAL COMPLETED & STORED TO DATE** ..... $ _____
   (Column G on 901A)
5. **RETAINAGE:**
   a. ____ % of Completed Work $ _____
   (Column D + E on 901A)
   b. ____ % of Stored Material $ _____
   (Column F on 901A)
   Total Retainage (Line 5a + 5b or
   Total in Column I of 901A) ..... $ _____
6. **TOTAL EARNED LESS RETAINAGE** ..... $ _____
   (Line 4 less Line 5 Total)
7. **LESS PREVIOUS CERTIFICATES FOR PAYMENT** (Line 6 from prior Certificate) ..... $ _____
8. **CURRENT PAYMENT DUE** ..... $ _____
9. **BALANCE TO FINISH, PLUS RETAINAGE** ..... $ _____
   (Line 3 less Line 6)

State of: County of:
Subscribed and sworn to before me this day of ,19
Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... $ _____
(Attach explanation if amount certified differs from the amount applied for.)
ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CONTINUATION SHEET DOCUMENT 00901 - A - APPLICATION AND CERTIFICATE FOR PAYMENT

PAGE OF PAGES

DOCUMENT 00901 , APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NUMBER:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C – G)	RETAINAGE
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					

Print Form

CONTRACTOR | CONTRACTOR NUMBER AND/OR JOB DESCRIPTION

SALES/USE TAX CERTIFICATE

Sales and/or Use Tax Regulation Number 42 requires that the Cumberland County Schools in the County of Cumberland secure from each contractor certified statement(s) setting forth the cost of the materials and supplies manufactured or purchased by you and and consumed in construction. This form is provided for you to list the materials consumed in construction. Please complete this form by inserting the information required below. If heeded, attach additional sheets.

INVOICE NO. OR QUANTITY	DATE PURCHASED OR MANUFACTURED	TYPE OF MATERIAL	INVOICE AMOUNT LESS TAX	STATE SALES/USE TAX AMOUNT	COUNTY SALES/USE TAX AMOUNT	NAME OF COUNTY SALES/USE TAX PAID TO
						20.00

TOTALS $ | $ | $

AFFIDAVIT

This is to certify that sales/use tax was paid as stated above on materials and supplies purchased or manufactured for the Cumberland County Schools in the County of Cumberland, North Carolina , for the above mentioned project during the period _____ .

Report submitted this _____ day of _____ , 20 _____

Contractor: _____

Authorized Signature: _____

Address and Telephone Number: _____

SUBMIT WITH EACH PAY APPLICATION

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments to be made to minority business contractors on this project for the above-mentioned period.

Firm Name	*Minority Category	Payment Amount	Owner Use Only

*Minority categories: Black (**B**), Hispanic (**H**), Asian American (**AA**), American Indian (**AI**), White Female (**F**), Socially and Economically Disadvantaged (**SED**), Disabled (**D**)

Date: _____ Approved/Certified By: _____

Name

` _____

Title

_____

Signature

****THIS DOCUMENT MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT****