



**PROJECT MANUAL
FOR
ROOF REPLACEMENT
AT
POINT OF HONOR
THE LYNCHBURG MUSEUM SYSTEM**

City of Lynchburg Project #: BR033
AP Project No. 14148

September 5, 2014



Architect

ARCHITECTURAL PARTNERS, PC
10 Ninth Street
LYNCHBURG, VIRGINIA 24504

Owner

CITY OF LYNCHBURG

SECTION 000110

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SECTION 01-1000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: The Lynchburg Museum- Point of Honor Roof Replacement.
- B. Owner's Name: City of Lynchburg.
- C. Architect's Name: Architectural Partners, PC.
- D. The Project consists of the replacement of approximately 4000 square feet of wood shingle roof and 250 linear feet of semi-circular gutter. Building is listed on the U.S. National Register of Historic Places and the Virginia Landmarks Register.
 - 1. Building is 1815 Federal style architecture on a highly maintained site.
 - 2. Site has extensive landscaping features that must be protected and preserved. Special care will be required of the contractor to maintain and preserve the present conditions.
 - 3. The interior of the historic home contains museum quality artifacts, finishes and furnishings. Contractor will be required to maintain complete weather tightness of the building envelope throughout project duration.
 - 4. Due to scheduled public events, the work sequence of contractor will need to be scheduled and monitored in detail.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in agreement.

1.03 OWNER OCCUPANCY

- A. Owner intends to continue to occupy portions of the existing building during the entire construction period.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.04 CONTRACTOR USE OF SITE

- A. Arrange use of site to allow:
 - 1. Owner occupancy.
 - 2. For minor disturbance of landscape.

END OF SECTION

**SECTION 01-2300
ALTERNATES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of alternates.
- B. Procedures for pricing alternates.
- C. Documentation of changes to Contract Price and Contract Time.

1.02 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.03 SCHEDULE OF ALTERNATES

- A. Alternate No. 1 - Yellow Cedar Roof Shingles: Delete Old Growth Redwood Shingles and install Yellow Cedar as specified in Section 07-3129.
- B. Alternate No. 2 - Western Red Cedar Roof Shingles: Delete Old Growth Redwood Shingles and install Yellow Cedar as specified in Section 07-3129.
- C. Alternate No. 3 - Zinc gutters and hangers: Delete Lead-coated copper gutters and lead coated copper hangers and install zinc gutters and hangers as specified in Section 07-7123.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
 - 4. Requests for Interpretation (RFIs).

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different sections that depend on each other for proper installation, connection, and operation.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Provide to Owner supervisory personnel names/emergency phone numbers.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Owner, Architect, Contractor and its superintendent; major subcontractors shall attend the conference.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Designation of key personnel and their duties.
 - c. Procedures for processing field decisions and Change Orders.
 - d. Procedures for RFIs.
 - e. Procedures for processing Applications for Payment.
 - f. Submittal procedures.

- g. Preparation of Record Documents.
- h. Use of the premises and existing building.
- i. Work restrictions.
- j. Owner's occupancy requirements.
- k. Responsibility for temporary facilities and controls.
- l. Parking availability.
- m. Office, work, and storage areas.
- n. Equipment deliveries and priorities.
- o. First aid.
- p. Security.
- q. Progress cleaning.
- r. Working hours.

3. Minutes: Contractor to record and distribute meeting minutes.

C. Progress Meetings: Conduct progress meetings at bi-weekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Minutes: Contractor shall record and distribute the meeting minutes.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

- 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
- 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- 3. Identify each RFI with a sequential number and page numbers
- 4. Keep a RFI register and notify Architect of date required of the response.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 01-5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

1.02 TEMPORARY UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power , consisting of connection to existing facilities.
 - 2. Water supply, consisting of connection to existing facilities.

1.03 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.04 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations .
- B. Provide protection for plants designated to remain. Replace damaged plants.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 SECURITY

- A. Coordinate with Owner's security program.

1.06 VEHICULAR ACCESS AND PARKING

- A. Existing parking areas may be used for construction parking.

1.07 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

1.08 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 07-3129
WOOD SHINGLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood shingles.
- B. Installation on roofs.
- C. Flexible sheet membranes for eave protection, underlayment, valley protection, and ridge/hips.
- D. Air Space Fabric
- E. Associated metal flashings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07-7123 - Manufactured gutters.

1.03 REFERENCE STANDARDS

- A. CSSB (RMAN) - New Roof Construction Manual; 2011.
- B. CSSB (WEB) - [Grade Standards as posted at www.cedarbureau.org]; Cedar Shake and Shingle Bureau; current edition.

1.04 SUBMITTALS

- A. Product Data: Provide data indicating material characteristics, performance criteria, and limitations.
- B. Manufacturer's Instructions: Indicate installation criteria and procedures.

1.05 MOCK-UP

- A. Provide mock-up of 50 sq ft, including underlayment.
- B. Mock-up may remain as part of the Work.

PART 2 PRODUCTS

2.01 SHINGLES

- A. Base Bid: Roof Shingles: Old Growth Redwood, (lumber from storm damaged, diseased, burned or stump is accepted), No. 1 Grade; 18 inches long, standard straight butt style.
 - 1. Manufacturer:
 - a. Majestic Redwood, Ltd.
 - b. 8920 Royal Gate Way
 - c. Elk Grove, CA. 95624
 - d. Phone: 916-687-1125
 - e. www.majesticredwood.com
 - 2. Manufacturer:
 - a. Equal Manufacturer/Supplier
- B. Alternate No. 1: Roof Shingles: Yellow cedar (*Chamaecyparis nootkatensis*), CSSB No. 1 Grade; 18 inches long, standard straight butt style.
 - 1. Preservative: Provide shingles pressure treated with preservative in accordance with AWPA U1, Use Category UC3B.
 - 2. Provide CSSB labels in packaging.
- C. Alternate No. 2: Roof Shingles: Western red cedar (*Thuja plicata*), CSSB No. 1 Grade; 18 inches long, standard straight butt style.
 - 1. Preservative: Provide shingles pressure treated with preservative in accordance with AWPA U1, Use Category UC3B.
 - 2. Provide CSSB labels in packaging.

2.02 SHEET MATERIALS

- A. Air Space Fabric

1. Cedar Breather as manufactured by Benjamin Obdyke Incorporated.
 - a. Telephone: (800) 523-5261; website: www.benjaminobdyke.com
- B. Underlayment Sheet
 1. SlopeShield SA as manufactured by VaproShield LLC.; Website: www.vaproshield.com.

2.03 ACCESSORIES

- A. Nails: Standard round wire shingle type, of 304 Stainless, of sufficient length to penetrate through roof sheathing or 3/4 inch into roof sheathing or decking.
- B. Preservative Treatment: Dip type, water-based, clear, water repellent, fungus resistant, decay resistant.

2.04 METAL FLASHINGS

- A. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, and other flashing indicated.
 1. Form flashings to protect roofing materials from physical damage and shed water.
 2. Hem exposed edges of flashings minimum 1/4 inch on underside.
- B. Lead Coated Copper: ASTM B101, 20 ounce-weight of bare copper, H00 (cold-rolled) temper.
- C. Stainless Steel: ASTM A666 Type 304, soft temper, 0.015 inch thick; smooth No. 4 finish.(at concealed locations)

PART 3 EXECUTION

3.01 GENERAL

- A. Install in accordance with this specification and the following, whichever is more stringent:
 1. Applicable building code(s).
 2. CSSB New Roof Construction Manual.
 3. Manufacturer's instructions.

3.02 EXAMINATION

- A. Verify existing conditions prior to beginning work.
- B. Repair damaged sheathing boards. This is additional work and will be based on labor and material rates.

3.03 INSTALLATION - UNDERLAYMENT AND AIR SPACE FABRIC

- A. Install underlayment and air space fabric per manufacturers instructions.

3.04 INSTALLATION - METAL FLASHING AND ACCESSORIES

- A. Install flashings in accordance with CSSB New Roof Construction Manual.
- B. Install as per notes and drawings.

3.05 INSTALLATION - SHINGLES

- A. Install using not less than 2 fasteners each.
- B. Install to produce straight coursing pattern with 5.5 inch weather exposure to produce triple thickness.
- C. Install with double course at eaves.
- D. Project first roofing course 1-1/2 inches beyond face of fascia boards.
- E. Install hip and ridge caps on hips, maintaining 5 inch weather exposure. Place to avoid exposed nails. Inter-lay stainless steel sheet of flashing under the shingles concealed to shed water to exterior.
- F. Apply dip type preservative treatment by brush after installation; apply two coat to exposed surfaces.

END OF SECTION



**DIVISION 7
THERMAL & MOISTURE PROTECTION
SECTION 07 72 00: ROOF ACCESSORIES
ROOF VENTILATION UNDERLAYMENT**

CEDAR BREATHER® - ROOF VENTILATION UNDERLAYMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Underlayment for Wood Shingle & Shake Construction.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Add section numbers and titles as necessary and in the absence of related sections, delete paragraph below.

B. Related Sections

1. Division 6 Section: Rough Carpentry (06 10 00), Finish Carpentry (06 20 00).
2. Division 7 Section: Roofing and Siding Panels (07 40 00), Exterior Insulation and Finish Systems (07 24 00), Fiber-Reinforced Cementitious Panels (07 46 46), Weather Barriers (07 25 00).

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.02 REFERENCES

Specifier Note: List standards referenced in this section with all referenced designations and titles. Please note, this article does not require compliance with standards; however, the testing standards used are listed below.

- A. ASTM C 165-00: Standard Test Method for Measuring Compressive Properties of Thermal Insulations
- B. ASTM D 6818: Standard Test Method for Ultimate Tensile Properties of Rolled Erosion Control Products
- C. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials

1.03 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Samples: Submit selection and verification samples.
- D. Closeout Submittals: Submit the following:
 1. Warranty documents specified herein.

Specifier Note: Article below should include statements of prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

Specifier Note: Retain paragraph below if mock-up is required.

BENJAMIN OBDYKE INCORPORATED

400 BABYLON ROAD, SUITE A · HORSHAM, PA 19044 · TOLL FREE: (877) 647-8368 · FAX: (215) 672-5204
SALES: (800) 523-5261 · FAX: (215) 672-3731

WWW.BENJAMINOBDYKE.COM



**DIVISION 7
THERMAL & MOISTURE PROTECTION
SECTION 07 72 00: ROOF ACCESSORIES
ROOF VENTILATION UNDERLAYMENT**

- B. Mock-Ups: [Specify requirements for mock-up].
1. Subject to acceptance by owner, mock-up may be retained as part of finish work.
 2. If mock-up is not retained, remove and properly dispose of mock-up.

Specifier Note: Retain paragraph below if pre-installation meeting is required.

- C. Pre-installation Meetings: [Specify requirements for meeting].

Specifier Note: Article below should include specific protection and environmental conditions required during storage. Coordinate article below with Division 1 Product Requirements Section.

1.05 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

1.06 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

Specifier Note: Coordinate subparagraph below with manufacturer's warranty requirements.

1. Warranty Period: 50 years, beginning with date of substantial completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes and performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 UNDERLAYMENT

Specifier Note: Retain or delete paragraph(s) below per project requirements and specifier's practice.

- A. Manufacturer: Benjamin Obdyke Incorporated.
 1. Contact: 400 Babylon Road, Suite A, Horsham, PA 19044; Telephone: (800) 523-5261; Fax: (215) 672-3731; E-mail: info@benjaminobdyke.com; website: www.benjaminobdyke.com.)
- B. Proprietary Products/Systems: Rainscreen, including the following:
 1. Cedar Breather®:

BENJAMIN OBDYKE INCORPORATED

400 BABYLON ROAD, SUITE A · HORSHAM, PA 19044 · TOLL FREE: (877) 647-8368 · FAX: (215) 672-5204

SALES: (800) 523-5261 · FAX: (215) 672-3731

WWW.BENJAMINOBDYKE.COM

- a. Description: Three-dimensional matrix in roll form.
- b. Color: Black
- c. Material: Nylon
- d. Width: 39.37 inches (1 m).
- e. Length: 46 1/2 feet (14.2 m).
- f. Coverage Area: 200 ft² (18.58 m²)
- g. Thickness: 0.277 inches (7.04 mm).
- h. Weight: 9.7 lbs/roll
- i. Fire Rating: A

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

Specifier Note: Specify subordinate or secondary items that aid and assist primary products specified above or are necessary for preparation or installation of those items.

2.03 ACCESSORIES

- A. Provide the following accessories:
1. [Roofing Felt] [Building Wrap]:
 - a. Material: [30lb (14kg) asphalt saturated felt] [Synthetic roof underlayment] [Specify material.].
 - b. Material Standard: [Specify material standard.].
 - c. Manufacturer: [Acceptable to manufacturer of rainscreen] [Specify manufacturer.].
 2. Fasteners:

Specifier Note: Specify only blunt-tipped, ring shank stainless steel nails for any wood cladding product.

- a. Type: [Nails] [Blunt-tipped, ring shank stainless steel nails] [Staples].
- b. Material: Corrosion protected steel.
- c. Material Standard: [Specify material standard.].
- d. Manufacturer: [Acceptable to manufacturer of underlayment] [Specify manufacturer.].
- e. Size: Suitable for project application.

PART 3 EXECUTION

Specifier Note: Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the underlayment manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

3.02 EXAMINATION

- A. Site Verification of Conditions:
1. Verify that site conditions are acceptable for installation of the underlayment.
 2. Do not proceed with installation of rainscreen until unacceptable conditions are corrected.

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements.

3.03 INSTALLATION

- A. Cedar Shingle Installation
- a. Install plywood deck onto roof framing as specified in related section
 - b. Install 30lb (14kg) roofing felt over entire roof deck. Extend felt 1/4" (6.4mm) beyond edge of roof deck. Overlap layers at least 4" (102mm) working toward the ridge.
 - c. Tack down underlayment with 1 tack (or nail) approximately every 3 square feet.
 - d. Install underlayment with dimples down to present the flat side as the nailing surface.
 - e. Butt each course of underlayment against previous course. Do not overlap layers of underlayment.
 - f. Work from fascia to ridge while installing shingles to avoid walking directly on underlayment.
 - g. Install cedar shingles per manufacturer's instructions. Use a nail of sufficient length to allow for 3/4" (19.1mm) penetration into sheathing. Allow 1/4" (6.4mm) for underlayment thickness.
- B. Cedar Shake Installation
- a. Install plywood sheathing onto roof framing.
 - b. Install 36" (914mm) of 30lb (14kg) roofing felt for eave protection extending 1/4" (6.4mm) beyond edge of roof deck.
 - c. Tack down underlayment with 1 tack (or nail) approximately every 3 square feet.
 - d. Install underlayment with dimples down to present the flat side as the nailing surface.
 - e. Butt each course of underlayment against previous course. Do not lap layers of underlayment.
 - f. Work from fascia to ridge just ahead of shake and felt installation to avoid walking directly on the underlayment.
 - g. Install an 18" (457mm) wide strip of 30lb (14kg) roofing felt over the top portion of the shakes and extend onto the underlayment. Position the bottom edge of the felt above the butt of the shake at a distance equal to twice the weather exposure in compliance with manufacturer's installation instructions. Use a nail of sufficient length to allow for 3/4" (19.1mm) penetration into the sheathing.

Specifier Note: Specify provisions for protecting work after installation but prior to acceptance by the owner. Coordinate article below with Division 1 Execution Requirements Section.

3.04 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION

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**CEDAR
BREATHER®**
UNDERLAYMENT
FOR WOOD ROOFING

Installation Under Cedar Shingles

Note: Recommended on a 3/12 roof slope or greater. Shingle installation can be used with 3-ply tapersawn shake application.

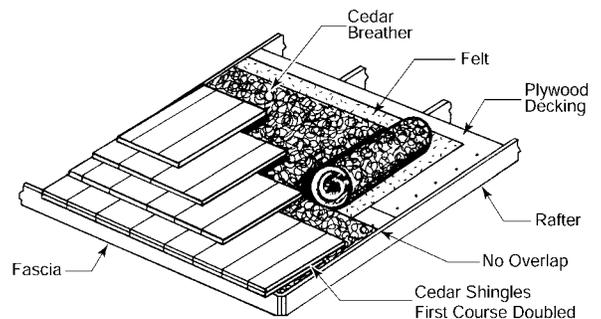
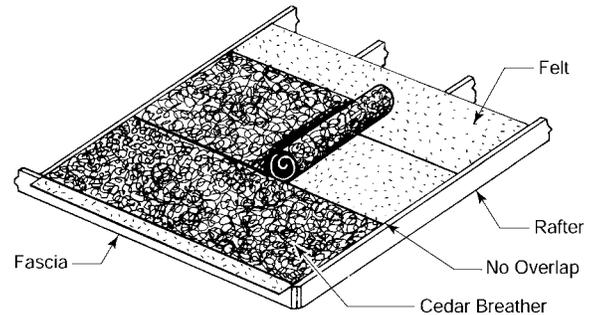
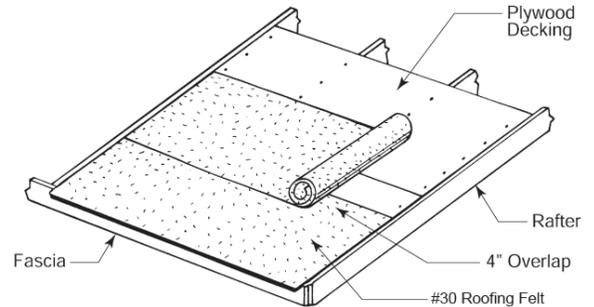
1. Install plywood deck onto roof rafters.
2. Install roofing felt over entire roof deck. Felt should extend 1/4" beyond edge of roof deck. Overlap layers at least 4" working toward the ridge.
3. Tack down Cedar Breather. One tack (or nail) approximately every 3 square feet is adequate. Install with dimples down to present the flat side as the nailing surface.

Do not lap layers of Cedar Breather. Each course should butt against previous course.

Work from fascia to ridge while installing shingles to avoid walking directly on Cedar Breather (may be slippery, especially when wet).

4. Install cedar shingles per manufacturer's instructions. Utilize a nail length that will allow for 3/4" penetration into sheathing or completely through sheathing. Allow 1/4" for Cedar Breather thickness.

Best Practice Tip: We recommend installing Cedar Breather with Rapid Ridge 7. Even without cutting a slot for ridge ventilation, this continuous ventilation from roof edge to peak will help to maximize the effects of Cedar Breather and increase drying potential of the shingles.



Installation Under Cedar Shakes

Note: Recommended on a 4/12 roof slope or greater.

1. Install plywood deck onto roof rafters.
2. Install 36" of roofing felt for eave protection extending 1/4" beyond edge of roof deck.
3. Tack down Cedar Breather. One tack (or nail) approximately every 3 square feet is adequate. Install with dimples down to present the flat side as the nailing surface.

Do not lap layers of Cedar Breather. Each course should butt against previous course.

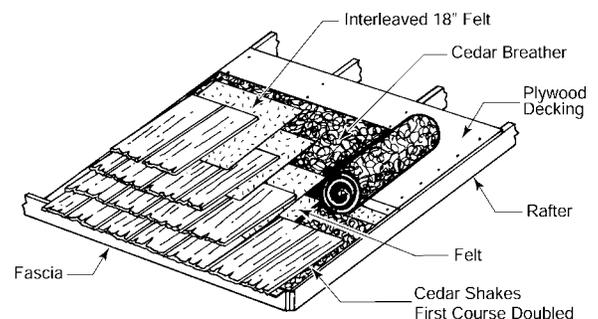
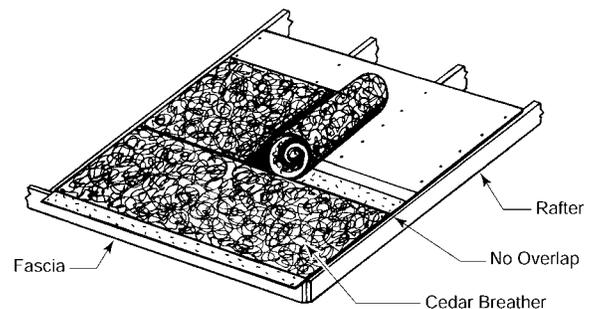
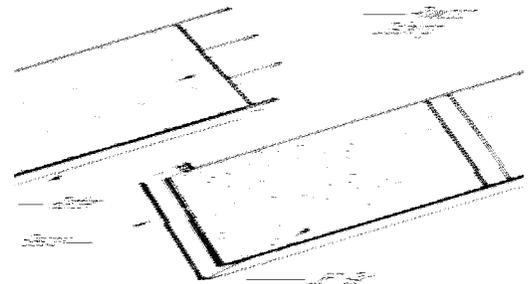
Work from fascia to ridge just ahead of shake and felt installation to avoid walking directly on Cedar Breather (may be slippery, especially when wet).

4. An 18" wide strip of #30 roofing felt should be laid over the top portion of the shakes and extend onto the Cedar Breather.

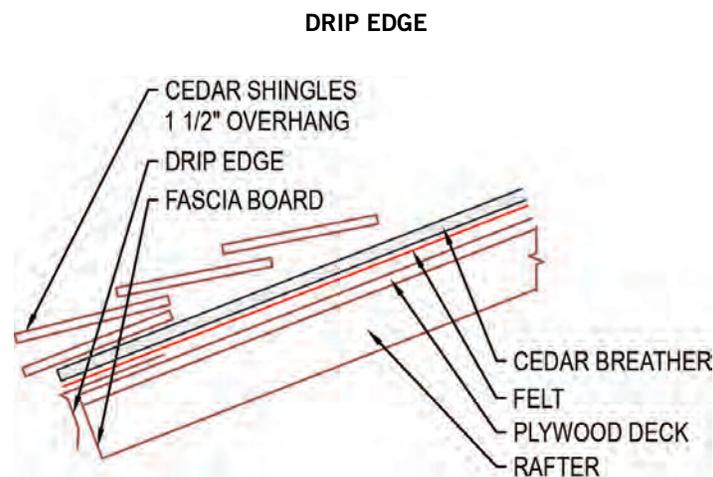
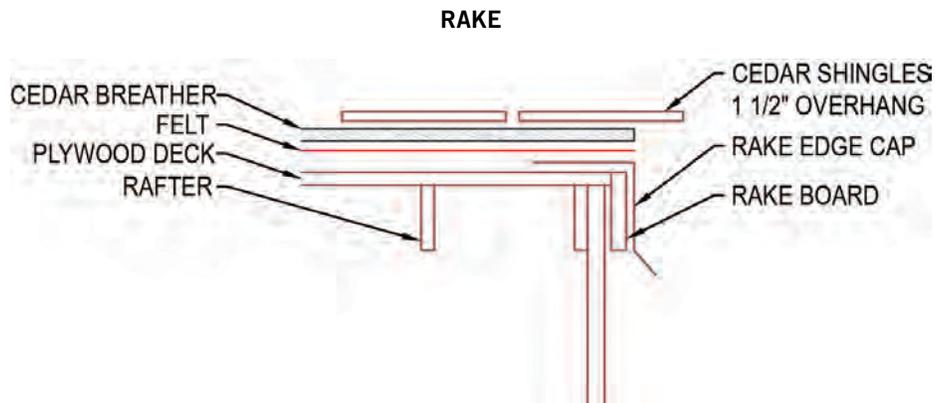
The bottom edge of the felt should be positioned above the butt of the shake at a distance equal to twice the weather exposure per manufacturer's installation instructions.

Utilize a nail length that will allow for 3/4" penetration into sheathing or completely through sheathing. Allow 1/4" for Cedar Breather thickness.

Best Practice Tip: We recommend installing Cedar Breather with Rapid Ridge 7. Even without cutting a slot for ridge ventilation, this continuous ventilation from roof edge to peak will help to maximize the effects of Cedar Breather and increase drying potential of the shingles.



Rake & Drip Edge Shingles Detail



Installation Note:

*Note: if not installing drip edge, felt must overhang fascia board by a minimum of 1/2".

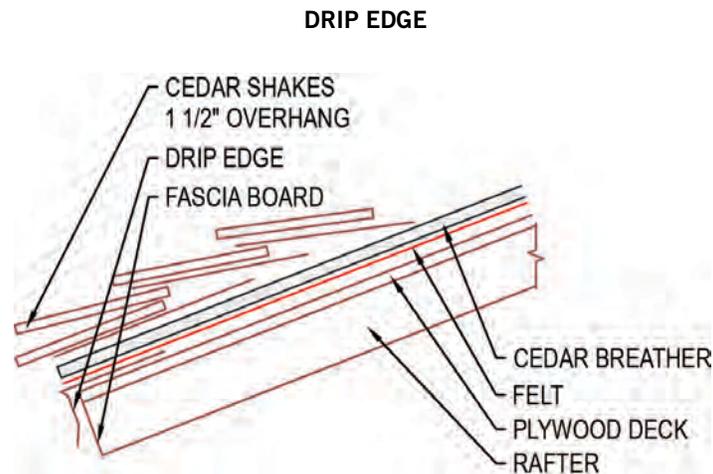
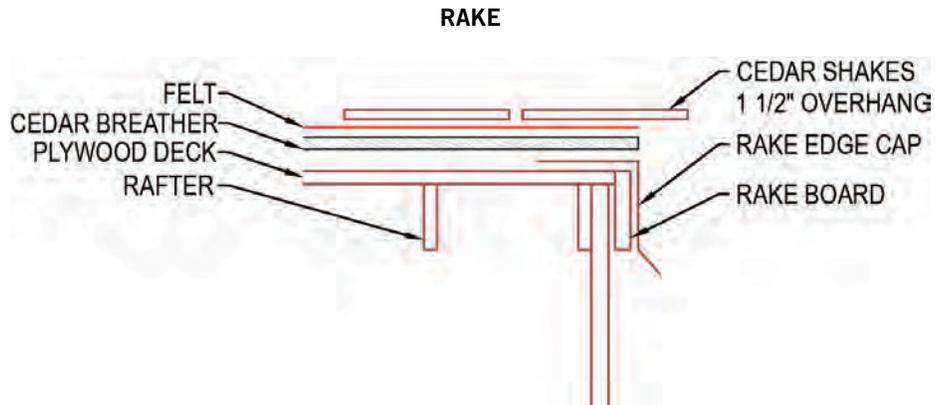
When using a rake edge cap or drip edge, install edging pieces so that they are directly on top of the deck.

1. Install prepainted aluminum or galvanized rake edge cap or drip edge on top of deck.
2. Install felt and Cedar Breather onto roof deck per instructions.
3. Install shingles per manufacturer's instructions.

Best Practice Tip: We recommend installing Cedar Breather with Rapid Ridge 7. Even without cutting a slot for ridge ventilation, this continuous ventilation from roof edge to peak will help to maximize the effects of Cedar Breather and increase drying potential of the shingles.

Alternative installation: For severe wind driven rain concerns, Cedar Breather can be installed held off the rake edge by up to 1". Cedar shingles can be nailed tightly to the roof deck at the rake edges to provide additional protection. Please note, while air can move through the spaces between the cedar shingles, air flow won't be maximized when ventilation at the rake is restricted.

Rake & Drip Edge Shakes Detail



Installation Note:

*Note: if not installing drip edge, felt must overhang fascia board by a minimum of 1/2".

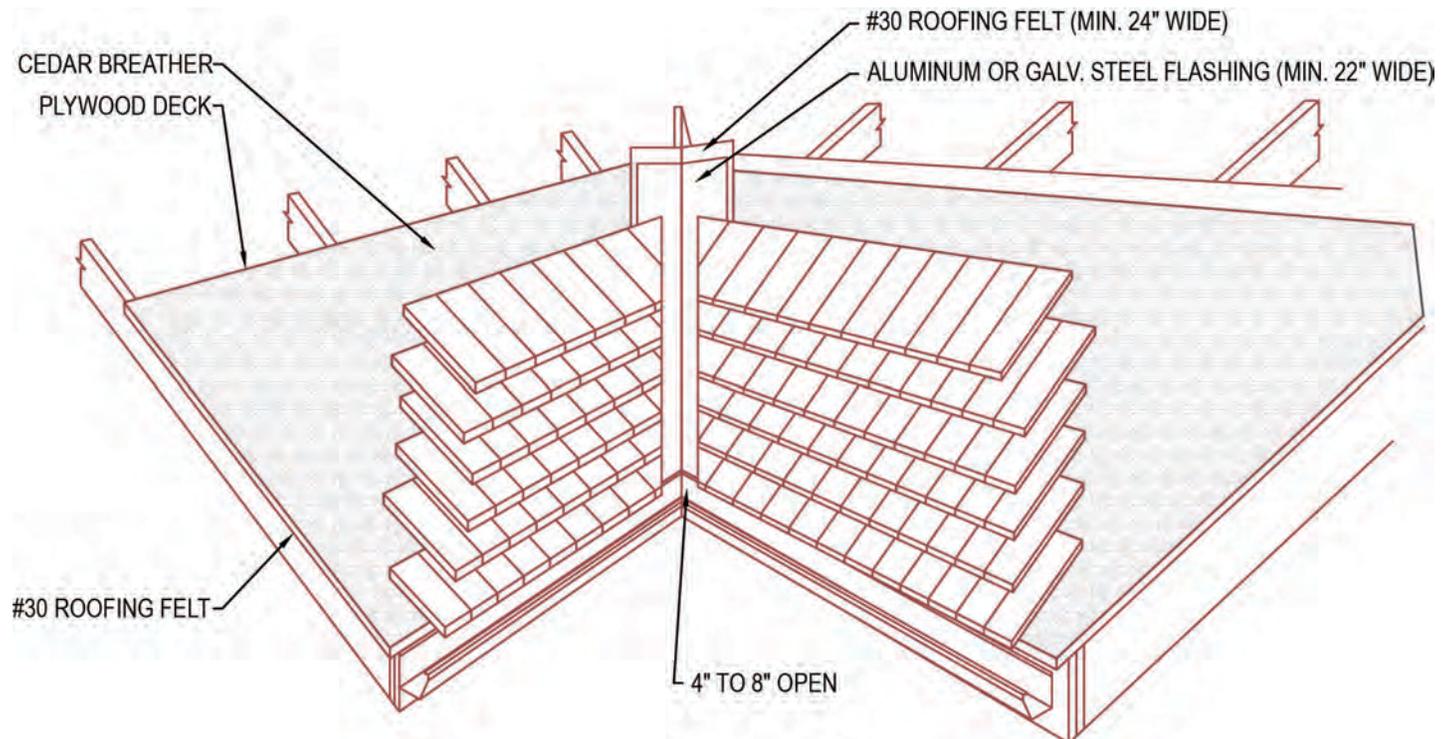
When using a rake edge cap or drip edge, install edging pieces so that they are directly on top of the deck.

1. Install prepainted aluminum or galvanized rake edge cap or drip edge on top of deck.
2. Install felt and Cedar Breather onto roof deck per instructions.
3. Install shakes per manufacturer's instructions.

Best Practice Tip: We recommend installing Cedar Breather with Rapid Ridge 7. Even without cutting a slot for ridge ventilation, this continuous ventilation from roof edge to peak will help to maximize the effects of Cedar Breather and increase drying potential of the shingles.

Alternative installation: For severe wind driven rain concerns, Cedar Breather can be installed held off the rake edge by up to 1". Cedar shingles can be nailed tightly to the roof deck at the rake edges to provide additional protection. Please note, while air can move through the spaces between the cedar shingles, air flow won't be maximized when ventilation at the rake is restricted.

Valley Flashing



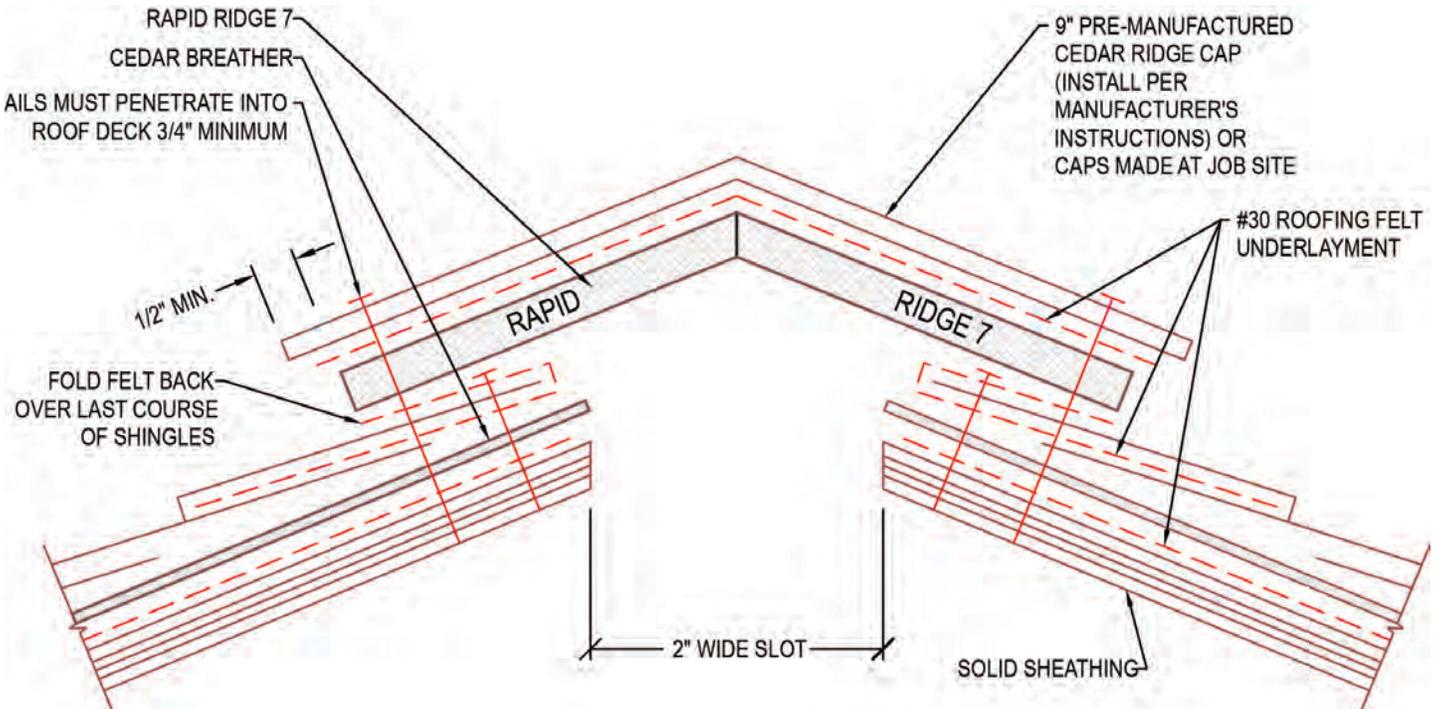
Installation Note:

*Shingle Installation Shown

When flashing a valley on a cedar roof utilizing Cedar Breather, the flashing should be applied so that it is in direct contact with the underside of the shingle or shake/interleaved felt and on top of the Cedar Breather and felt.

1. At valley, install a 24" wide strip of #30 roofing felt on top of Cedar Breather.
2. Install center-crimped metal valley flashing made of aluminum or galvanized steel, 22" wide (8" min. each side for shingles, 11" min. each side for shakes).
3. Install shingles or shakes leaving open valley width of 4" to 8" depending on anticipated water volume. Shingles or shakes should not be applied with grain parallel to valley centerline and those extending into the valley should be cut at the correct angle. Joints between shingles or shakes must not break into the valley.

Integration with Rapid Ridge 7 Ridge Vent



Installation Note:

Install with continuous soffit ventilation at each eave equivalent to 7 sq. in. per linear foot.

Cedar cap must overhang Rapid Ridge 7 by 1/2" minimum each side. Ridge cap must overhang Rapid Ridge 7 by 1" minimum at each gable end.

On Cedar Shingle application, apply #30 roofing felt onto roof followed by Cedar Breather and singles.

On Cedar Shake application, apply Cedar Breather directly onto plywood and apply felt per shake-manufacturer's installation instructions.

SECTION 07 30 05.01

SELF-ADHERED WATER-RESISTIVE ROOF UNDERLAYMENT

SPEC WRITERS NOTE: This specification includes materials and installation procedures for **SlopeShield SA[®]** Self-Adhered Water-Resistive Vapor Permeable Roof Underlayment; a fully adhered water-resistive sheet underlayment membrane used as a secondary rain barrier under sloped roofing systems. With a vapor permeance rating of 59 perms (3392ng/Pa.s.m²) **SlopeShield SA[®]** Self-Adhered Water-Resistive Vapor Permeable Roof Underlayment stops water intrusion and allows the roof **assembly to breathe or 'dry-out' as necessary to meet the conditions of seasonal changes for each climate zone.** This guide specification should be adapted to suit the requirements of individual projects. It is prepared in CSI Master Format and should be included as a separate section under Division 7 - Thermal and Moisture Protection.

PART 1 - GENERAL

- 1.01 GENERAL REQUIREMENTS
- A. This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.
- 1.02 SYSTEM DESCRIPTION
- A. Supply labor, materials and equipment for the installation of a fully adhered water-resistive vapor permeable roof underlayment membrane.
- B. Complete Work as shown on the Drawings and specified herein to bridge gaps and seal the water-resistive vapor permeable roof underlayment membrane against water intrusion.
- C. Install self-adhered water-resistive vapor permeable roof underlayment membrane, weather barrier flashing, lap seam tapes, metal flashings, ventilation strips, roof finish system complete with clips, metal valley flashings and accessories.
- 1.03 RELATED SECTIONS
- A. Related Sections may include the following:
1. Division 6: Rough Carpentry
 2. Division 7: Clay Tile Roofing Systems
 3. Division 7: Wood Shakes and Shingles Roofing Systems
 4. Division 7: Pre-Finished Metal Roofing Systems
 5. Division 13: Pre-Engineered Buildings for metal siding and roofing
- 1.04 REFERENCE STANDARDS
- A. ASTM D 1682 Standard Test Methods for Breaking Load and Elongation of Textile Fabrics
- B. ASTM E 96/E 96M - Test Methods for Water Vapor Transmission of Materials
- C. AC 48 Acceptance Criteria for Roof Underlayments for use in severe climate areas
- D. AC 207 Acceptance Criteria for Polypropylene Roof Underlayments
- E. ASTM E 2178 - Standard Test Method for Air Permeance of Building Materials
- 1.05 SUBMITTALS
- A. Submit manufacturer's current product data sheets, details and installation instructions for the water-resistive vapor permeable roof underlayment membrane components and accessories.
- B. Submit samples of the following:
1. Manufacturer's sample warranty
 2. Self-adhered water-resistive vapor permeable roof underlayment sheet, minimum 8 by 10 inches (203 by 254 mm)
 3. Components, minimum 12-inch (305-mm) lengths
 4. Membrane flashings and lap seam tapes
 5. Clips and fastener accessories
 6. Sealants
- 1.06 QUALITY ASSURANCE
- A. Single Source: Self-adhered water-resistive vapor permeable roof underlayment membrane components and accessories must be obtained as a single-source membrane system to ensure total system compatibility and integrity.
- B. Manufacturer Qualifications

1. Manufacturer of specified products listed in this Section to have minimum 8 years of continued experience in the manufacture and supply of water-resistive vapor permeable roof underlayment membrane products successfully installed in similar project applications.
2. Manufacturer of specified products listed in this Section to have experienced in-house technical and field observation personal qualified to provide expert technical support.

1.07 PRE-INSTALLATION CONFERENCE

- A. Contractor shall convene [one] week prior to commencing Work of this section, under provisions of Section 01 31 19 – Project Meetings.
- B. Ensure all contractors responsible for creating a continuous plane of water tightness are present.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Refer to current Product MSDS for proper storage and handling.
- B. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- C. Store roll materials vertically on end, in original packaging. Protect rolls from direct sunlight and inclement weather until ready for use.
- D. Wasted Management and Disposal
 1. Separate and recycle waste materials in accordance with Section [01355 - Waste Management and Disposal], and with the Waste Reduction Work Plan.

1.09 ALTERNATES

- A. Submit request for alternates in accordance with Section 01 25 00 – Substitution Procedures.
- B. Submit requests for alternates a minimum of ten (10) working days prior to bid date.
- C. Alternate submission to include:
 1. Evidence that alternate materials meet or exceed performance characteristics of specified Product requirements as well as documentation from an approved independent testing laboratory certifying the minimum physical dimensions, tensile strength, fire burning characteristics, vapor permeance and air leakage rates of the self-adhered water-resistive vapor permeable roof underlayment membrane without the aid of primers or surface conditioners.
 2. **Manufacturer’s complete set of details** for self-adhered water-resistive vapor permeable roof underlayment membrane system showing a continuous plane of water and air tightness over the building enclosure.
 3. Manufacturer of alternate materials has experienced in-house technical and field observation personal qualified to provide expert technical support
- D. Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to bid date shall not be permitted for use on this project.

SPEC WRITERS NOTE: SlopeShield SA will remain stable for up to 4 months of direct UV exposure. However, SlopeShield SA is not intended to be the primary liquid water hold out system or temporary roof covering to remain watertight when exposed to extreme weather conditions. Recommend to cover SlopeShield SA with permanent roof cladding as soon as practical.

1.10 WARRANTY

- A. **Provide manufacturer’s standard material warranty** in which manufacturer agrees to provide replacement material for self-adhered water-resistive vapor permeable roof underlayment sheets installed in accordance with manufacturer’s instructions that fails due to material defects within 20 years from the date of purchase.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Primary self-adhered water-resistive vapor permeable roof underlayment membrane, components and accessories must be obtained as a single-source to ensure total system compatibility and integrity.
 1. Self-adhered water-resistive vapor permeable roof underlayment membrane by VaproShield LLC., Gig Harbor, WA, Ph (866) 731-7663, Email: info@VaproShield.com, Website: www.vaproshield.com.

- B. SELF-ADHERED WATER-RESISTIVE VAPOR PERMEABLE ROOF UNDERLAYMENT (Basis of Design)
1. Primary self-adhered roof underlayment membrane shall be SlopeShield SA[®] Self-Adhered Water-Resistive Roof Underlayment by VaproShield, a zero VOC fully adhered vapor permeable water-resistive sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having the following properties:
 - a. Color: Red
 - b. Application Temperature: Ambient temperature must be above 20 degrees F
 - c. Physical Properties: 0.020 inches thick and 5.01 oz./ sq. yd.
 - d. Water Vapor Permeance tested to ASTM E 96 Method B: 59 perms (3392ng/Pa.s.m²)
 - e. Water Resistance tested (Ponding): AC 48, Pass, no leakage
 - f. Tensile Strength tested to ASTM D 1682: Pass
 - g. Liquid Water Transmission to ASTM D4869: Pass
- C. WATER-RESISTIVE FLASHING MEMBRANE AND TAPE
1. Self-adhered underlayment flashing membrane shall be VaproFlashing SA[™] by VaproShield, a zero VOC self-adhered vapor permeable water-resistive sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having properties equal to the primary self-adhered water resistive underlayment membrane.
 - a. **VaproFlashing SA[™] Orange:** 11-1/2 inches or 19 inches wide x 164 feet long
 2. Tapes shall be VaproTape by VaproShield: UV stable, double/single sided, moisture-resistant flexible tape with adhesive backing having the following properties:
 - a. VaproTape (Single-Sided): 20 mil thick by 3 inches (76 mm) wide penetration seam tape
 - b. VaproTape UV-Resistant Black: 35 mil thick by 4 inches (102 mm) wide penetration seam tape
 - c. VaproAlumaTape: 20 mil thick by 4.5 inches (114 mm) and 9 inches (229 mm) wide, foil faced, UV stable, moisture-resistant flashing and membrane transition tape for use with silicone sealants

2.02 PENETRATION SEALANT

1. Water-resistive roof underlayment sealant compatible with sheet membrane shall be Dow Corning[®] 758, a modified silicon-based Sealant tested for compatibility with VaproShield products.

PART 3 EXECUTION

3.01 GENERAL

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify [engineer] [architect] [consultant] in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.
- B. All surfaces must be dry, sound, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the self-adhered roof underlayment membrane. Fill voids, gaps in substrate to provide an even surface.
- C. Ensure all preparatory Work, including installation of mechanical and electrical penetrations and fixtures are complete and secured in-place prior to applying self-adhered roof underlayment membrane.
- D. Mechanical fasteners used to secure sheathing boards, insulation or penetrate roof deck shall be set flush with surface and fastened into solid backing.
- E. Minimum application temperature for self-adhered membranes shall be above 20 degrees F (minus 6.0 degrees C).
- F. Install self-adhered roof underlayment membrane in overlapping shingle format. Provide minimum lap seams and tape subject to roof slope and penetrations as follows:
 1. For roof slopes of 1:12 up to 2:12; provide minimum 12 inch lap seams, used only as slip sheet under metal roof, will not act as a secondary barrier
 2. For roof slopes of >2:12 up to 3:12; provide minimum 12 inch horizontal and vertical lap seams, provide tape or sealants under clips and at other similar penetrations
 3. For roof slopes of >3:12 up to 4:12; provide minimum 12 inch horizontal and vertical lap seams, provide tape or sealants under clips and at other similar penetrations
 4. For roof slopes of 4:12 and greater; provide minimum 6 inch horizontal and vertical lap seams

- 3.02 COORDINATION OF WATER-RESISTIVE VAPOR PERMEABLE ROOF UNDERLAYMENT MEMBRANE INSTALLATION
- A. Complete installation of flashing membrane and seals around roof connections, up-turn details, stack and vent pipes and other junctures or penetrations of the roof system prior to the installations of the field applications.
 - B. Install primary self-adhered water-resistive vapor permeable roof underlayment membrane over the surface of roof sheathing board, insulation or roof deck as detailed.
 - C. Self-adhered water-resistive roof underlayment membrane may be installed over roof substrates parallel or perpendicular to eaves. See 3.04 and 3.05 respectively.
- 3.03 MEMBRANE APPLICATIONS AT PENETRATIONS, UP-TURN FLASHINGS AND VALLEY FLASHINGS
- A. Install flashing membrane and seal roof connections, up-turn details, stack and vent pipes and other junctures or penetrations of the roof system with specified self-adhered flashing membranes.
 - B. Install pre-manufactured penetration sleeves around mechanical and electrical penetrations as per Mechanical/Electrical Division and manufacturer's written instructions.
 - C. Install double-sided flashing tape across the top and sides of pre-manufactured penetration sleeves, pre-measure and fit water-resistive vapor permeable roof underlayment membrane over and around sleeves and press into double sided tapes against the sleeves as appropriate to form a weather tight connection.
 - D. Provide sealant around all exposed terminations.
 - E. Install pre-manufactured curbs as per approved shop drawings for curb and roof system installations.
 - F. Extend the water-resistive vapor permeable roof underlayment membrane over curbs and seal to corners with sealants as appropriate to form a weather tight connection.
 - G. Prepare valley substrates so as to provide continuous uniform surface, install full width sheets of water-resistive vapor permeable roof underlayment membrane centered in valley.
 - H. Measure and pre-cut into manageable sized sheets to suit the application conditions. Start at lowest point of roof; install water-resistive roof underlayment membrane in the direction of the roof slope in overlapping shingle format. Roll installed applications of self-adhered roof underlayment to ensure positive contact with substrates.
 - I. Install second-ply of water-resistive roof underlayment membrane on each side of valley, place membrane in the direction of the roof slope.
 - J. Roll installed applications of self-adhered roof underlayment to ensure positive contact with substrates.
- 3.04 APPLICATIONS PARALLEL TO EAVE
- A. For applications parallel (horizontal) with eaves, align sheets and begin installation of self-adhered water-resistive roof underlayment membrane at lowest point of roof and parallel to eaves.
 - B. Measure and pre-cut into manageable sized sheets to suit the application conditions.
 - C. Place sheets over substrates and allow to hang down over to lowest point of fascia or as detailed. Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces as may be detailed.
 - D. Align and position self-adhered membrane, remove release film and press firmly into place. Subject to roof slope provide minimum 12 inch overlap.
 - E. Continue to remove release film and apply pressure to ensure positive contact onto roof substrate.
 - F. Install subsequent sheets of self-adhered water-resistive roof underlayment sheets in overlapping shingle format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.
 - G. Wrap membrane down fascia and provide fasteners at 2 feet o/c along underside of fascia or as detailed to protect the water-resistive roof underlayment membrane from tearing due to wind.
- 3.05 APPLICATIONS PERPENDICULAR TO EAVE
- A. For applications perpendicular (vertical) to eaves, align sheets and begin installation of self-adhered water-resistive roof underlayment membrane starting at roof ridge or rake to avoid wrinkles and misalignment of subsequent applications.
 - B. Measure and pre-cut into manageable sized sheets to suit the application conditions.
 - C. Extend sheets over roof rake and extend down roof fascia or as detailed. Allow for excess material at bottom of fascia to accommodate tie-ins and connections to adjacent surfaces as may be detailed.
 - D. Align and position self-adhered membrane, remove release film and press firmly into place. Subject to roof slope provide minimum 12 inch overlap.
 - E. Continue to remove release film and apply pressure to ensure positive contact onto roof substrate. Roll installed applications of self-adhered roof underlayment to ensure positive contact with substrates.

- F. Install subsequent sheets of self-adhered water-resistive roof underlayment sheets in overlapping shingle format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.
- H. Wrap membrane down fascia and provide fasteners at 2 feet o/c along underside of fascia or as detailed to protect the water-resistive roof underlayment membrane from tearing due to wind.

3.06 APPLICATIONS OVER ROOF RIDGE, EAVES AND RAKE

- A. Install self-adhered water-resistive roof underlayment membrane applications over the roof ridge, along roof eave and rake in overlapping shingle format to shed water down the roof.
- B. Reverse lap seams are not acceptable.
- C. Measure and pre-cut into manageable sized sheets to suit the application conditions.
- D. Align and position self-adhered membrane over ridge, eave or rake, remove release film and press firmly into place. Provide minimum 12 inch overlap.
- E. Continue to remove release film and apply pressure to ensure positive contact onto roof substrate. Roll installed applications of self-adhered roof underlayment to ensure positive contact with substrates.
- F. Install subsequent sheets of self-adhered water-resistive roof underlayment sheets in overlapping shingle format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.

3.07 FIELD QUALITY CONTROL

- A. [Owner will engage] [Engage] an independent inspector to observe substrate and installation. Inspector shall provide a written, sign-off log, on all penetrations before the underlayment is placed against them. Form of log shall be approved by Architect before contract with inspection service is approved.

3.08 PROTECTING AND CLEANING

- A. Protect completed installations of self-adhered water-resistive roof underlayment membrane from damage due to extreme weather conditions, physical abuse and other subtrades.
- B. Cover membrane as soon as practical.
- C. Repair damaged water-resistive roof underlayment membrane. Measure and pre-cut roof underlayment membrane to cover damaged area with minimum 12 inch overlap to the sides and bottom. Roll membrane to ensure positive contact. Provide sealant over exposed leading edge of membrane terminations.
- D. Remove and replace roof underlayment membrane affected by chemical spills or surfactants.

END OF SECTION



1. Product Name

SlopeShield SA® Self-Adhered Water-Resistive Vapor-Permeable Roof Underlayment Sheet Membrane

2. Manufacturer

VaproShield, LLC.
 915 26th Avenue, NW #C5
 Gig Harbor, WA 98335
 Phone: (866) 731-7663
 Phone: (253) 851-8286
 Fax: (253) 858-3297
 Email: info@vaprosshield.com
 Web: www.vaprosshield.com

3. Product Description

BASIC USE AND APPLICATIONS

SlopeShield SA membrane is a self-adhering water resistive vapor permeable sheet intended to be used as a roof underlayment membrane over sloped roof applications. SlopeShield SA Self-Adhered membrane is designed to be applied over most common construction substrates including plywood, gypsum, steel deck and rigid insulation. Acceptable roof cladding systems include most Metal Roofing systems, Slate, Tile and Cedar Shakes.

BENEFITS

SlopeShield SA Self-Adhered membrane is a no VOC, non-asphaltic fully adhered water resistant roofing underlayment with excellent liquid water holdout capabilities, a high degree of vapor permeability and is designed to bond to roofing substrates without the use of a primer or surface conditioner. SlopeShield SA Self-Adhered membrane is UV stable, tear and puncture resistant and controls air leakage when installed as a continuous membrane over the roof.

SlopeShield SA Self-Adhered membrane can be installed in temperatures as low as 20 degrees F (-6C).

The strong durable textured surface of SlopeShield SA Self-Adhered membrane aids with slip resistance, cinches around fasteners to prevent water penetration and can remain exposed for up to 4 months.

MATERIAL

SlopeShield SA Self-Adhered membrane is a triple layer sheet membrane consisting of a front and back

carrier sheets with a middle layer of spun-bonded polypropylene fabric engineered to resist liquid water penetration and has a micro-porous film laminate with a proprietary acrylic vapor permeable pressures sensitive adhesive fully applied to the back sheet.

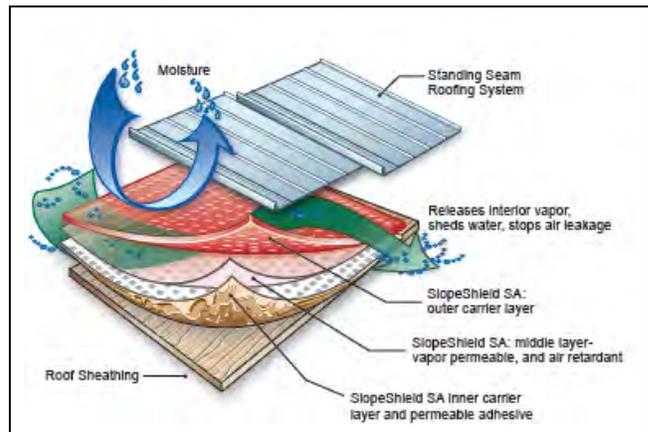
ACCESSORIES

Compatible accessories intended to be used in conjunction with SlopeShield SA Self-Adhered membrane include:

- VaproFlashing SA™ a zero VOC self-adhered vapor permeable water-resistive sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having the following properties equal to the primary self-adhered water resistive underlayment membrane. Available in sizes 11-3/4 inches x 164 feet (298.4mm x 50m) or 19-2/3 inches x 164 feet (499.6mm x 50m).
- VaproTape™ (Single-Sided): 20 mil thick by 3 inches (76 mm) wide lap seam and edge tape
- VaproAluma™ Tape: 20 mil thick by 4.5 inches (114 mm) and 9 inches (229 mm) wide, foil faced, UV stable, moisture-resistant, self-priming flashing and membrane transition tape.

SIZES:

SlopeShield SA Self-Adhered Water-Resistive Vapor-Permeable Roof Underlayment Sheet Membrane is supplied in rolls measuring 59 inches by 164 feet (1500 mm by 50 m).



4. Technical Data

- ASTM D 1682 Standard Test Methods for Breaking Load and Elongation of Textile Fabrics
- ASTM E 96/E 96M - Test Methods for Water Vapor Transmission of Materials
- AC 48 Acceptance Criteria for Roof Underlayments for use in severe climate areas
- AC 207 Acceptance Criteria for Polypropylene Roof Underlayments

PRODUCT DATA SHEET

- AAMA 711- ASTM D3330 - Peel Adhesion
- ASTM E 2178 - Standard Test Method for Air Permeance of Building Materials

PHYSICAL/CHEMICAL PORPERTIES

- Water Vapor Permeance tested to ASTM E 96 Method B: 59 perms
- Water Resistance tested (Ponding): AC 48, Pass No leakage
- Tensile Strength tested to ASTM D 1682: Pass
- Liquid Water Transmission: ASTM D4869, Pass
- Allowable UV Exposure Time: 120 days
- Thickness: 0.020 inches thick
- Weight: 5.01 oz per sq. yd.

SUSTAINABLE DESIGN BENEFITS

SlopeShield SA Self-Adhered Water-Resistive Vapor-Permeable Roof Underlayment Sheet Membrane protects against water intrusion but allows building materials that may have become wet during the construction phase to dry out, reducing the risk of wood rot, deterioration or corrosion.

The strong non-woven spun-bonded polypropylene membrane cinches around screw fasteners without tearing or stretching which allows for movement of the roof fastener attachment.

RELATED LEED CREDITS

SlopeShield SA Self-Adhered membrane contributes to LEED points, is 100 percent recyclable and is free of urea-formaldehyde constituents.

- IEQ Credit 3.1: Construction Indoor Air Quality Management Plan-During Construction
- EA Credit 1: Optimize Energy Performance

5. Installation

STORAGE AND HANDLING

Store and handle products according to manufacturer's written recommendations. Store rolled materials vertically on end in original packaging at temperatures between 40°F and 120° F. Protect materials from direct sunlight and inclement weather until ready for use.

PREPARATION

- Verify that all surfaces are clean and dry to the touch and in "as new condition," sound, and free of oil, grease, dirt, or other contaminants detrimental to the adhesion of the membrane.
- Ensure all preparatory work, including installation of mechanical and electrical penetrations and fixtures are complete and secured in-place prior to applying SlopeShield SA Self-Adhered membrane. See recommendations below.

07 30 05.1 Self-Adhered Roof Underlayment

- Mechanical fasteners used to secure sheathing boards, insulation or penetrate roof deck shall be set flush with surface and fastened into solid backing.
- Do not install SlopeShield SA Self-Adhered membrane when ambient temperatures are below 20° F.
- Prior to installation and removing release paper, unroll and allow material to adjust to the ambient temperature.
- Plan the installation and layout of SlopeShield SA Self-Adhered membrane PRIOR to application, to minimize waste.

GENERAL

Install SlopeShield SA Self-Adhered membrane and related accessories according to manufacturer's separate written installation instructions.

PENETRATIONS, UP-TURN FLASHINGS AND VALLEY FLASHINGS

- Install VaproFlashing SA™ Self-Adhered flashing membrane along eaves and rake, and seal roof connections, up-turn details, stack and vent pipes and other junctures or penetrations of the roof system.
- Allow flashing membrane to hang down over to lowest point of fascia to accommodate adjacent surface tie-ins and connections or as detailed.
- Wrap flashing membrane down fascia and provide fasteners at 2' o/c (on center) along underside of fascia or as detailed to secure and protect the membrane from tearing due to wind.
- Install pre-manufactured penetration sleeves around mechanical and electrical penetrations as per Mechanical / Electrical Division.
- Install double-sided VaproTape across the top and sides of pre-manufactured penetration sleeves, pre-measured and fit water-resistive vapor permeable roof underlayment membrane over and around sleeves and press into double-sided tapes against the sleeves as appropriate to form a weather tight connection.

PRE-MANUFACTURED CURBS

- Install pre-manufactured curbs as per approved shop drawings for curb and roof system installations.
- Extend SlopeShield SA Self-Adhered membrane over curbs.
- Seal to corners with VaproTape as appropriate, forming a weather tight connection.

VALLEY SUBSTRATES

- **Prepare valley substrates**
- **Provide continuous uniform surface**

PRODUCT DATA SHEET

- Install full width sheets of SlopeShield SA Self-Adhered membrane **centered in valley**
- **Measure and pre-cut** SlopeShield SA Self-Adhered membrane **into manageably sized sheets to suit the application conditions**
- **Start at lowest point of roof**
- **Install** SlopeShield SA Self-Adhered membrane **in roof slope direction and in overlapping shingle format**
- **Install second-ply of water-resistive roof underlayment membrane on each side of valley**
- **Place membrane in the roof slope direction in overlapping shingle format**
- **Roll installed applications of SlopeShield SA Self-Adhered membrane, ensuring positive contact with substrate**

ROOF UNDERLAYMENT MEMBRANE

- Measure and pre-cut SlopeShield SA Self-Adhered membrane into manageable size sheets to suit application conditions.
- Begin installation of SlopeShield SA Self-Adhered membrane starting at the lowest point of roof.
- Align and position SlopeShield SA Self-Adhered membrane.
- Place sheets over roof deck substrate and provide min 3 inch lap over VaproFlashings.
- Remove release paper and press firmly into place.
- Subject to roof slope provide minimum 12 inch overlap as per the attached table.
- Apply pressure to ensure positive contact onto roof deck substrate.
- Install subsequent sheets of SlopeShield SA Self-Adhered membrane in overlapping shingle format.
- Ensure sheets lay smooth and flat to surfaces.
- Roll membrane and lap seams with roller to ensure contact and adhesion.

PENETRATION SEALANTS

- Seal penetrations, lap seams around pipe penetrations or reverse laps with Butyl based sealants and Dow 758
- Detail penetrations prior to the installation of the field membrane
- Always ensure overlapping shingle format result

LIMITATIONS

SlopeShield SA Self-Adhered Water-Resistive Vapor-Permeable Roof Underlayment Sheet Membrane is not intended to be a temporary roof system.

PROTECTION DURING INSTALLATION

- Cover membrane as soon as practical.

07 30 05.1 Self-Adhered Roof Underlayment

- SlopeShield SA Self-Adhered membrane may remain exposed for up to 4 months.
- SlopeShield SA Self-Adhered membrane is not intended to be a temporary roof system.
- Protect uncompleted installations of SlopeShield SA Self-Adhered membrane from damage due to extreme weather conditions, physical abuse and other sub-trades.
- Protect exposed membrane to prevent damage from rainwater runoff draining off upper roofs to lower roofs such as overhangs, \neq eaves, \neq or valleys onto SlopeShield SA Self-Adhered membrane.
- Cover SlopeShield SA Self-Adhered membrane with permanent roof covering as soon as practical.

6. Availability

VaproShield products are available from qualified representatives throughout North America; contact VaproShield or go to www.vaproshield.com for local contact information.

7. Warranty

VaproShield will provide replacement of Self-Adhered Water-Resistive Vapor-Permeable Roof Underlayment materials if original material, handled and installed in accordance with manufacturer's separate written installation instructions, fails due to material defects within 20 years of date of purchase. This material warranty does not include labor for installation. Details of warranty terms and conditions are available from VaproShield.

8. Maintenance

SlopeShield SA Self-Adhered membrane is concealed by the roofing product following installation and requires no maintenance. The SlopeShield SA Self-Adhered membrane should not be subjected to asphaltic materials, chemicals, surfactants, or cleaning compounds that could affect the water resistance of the fabric surface; if exposed, replace affected fabric.

9. Technical Services

Detailed information including product literature, test reports, installation instructions, and information on special applications is available through VaproShield.

10. Available Resources

- ICC-ES Report and related independent test reports are available from VaproShield.

**SECTION 07-7123
MANUFACTURED GUTTERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Semi-circular gutters.
- B. Gutter hangers and transitions.
- C. Debris guard.

1.02 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on prefabricated components.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Base Bid: Lead Coated Copper - 16 oz, bare metal gutters and lead coated copper hangers- see data sheet at end of this section for type.
- B. Alternate No. 3: Zinc gutters and hangers.

2.02 COMPONENTS

- A. Gutters: SMACNA semi-circular style profile.
- B. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Gutter Supports: Brackets and adjustable hanger to match existing
- C. Fasteners: Stainless steel .

2.03 ACCESSORIES

- A. Debris Guard: 316 Stainless Steel micro-mesh filter.
 - 1. Manufacturer: Gutterglove Inc, www.gutterglove.com ; Phone 916-624-5000
 - 2. Manufacturer: Mastershield, www.mastershield.com; Phone 877-532-3627
 - 3. Or equal as approved by architect.

2.04 FABRICATION

- A. Form gutters to 6 inch semi-circular shape.
- B. Fabricate with required connection pieces to fit into existing downspouts.

PART 3 EXECUTION

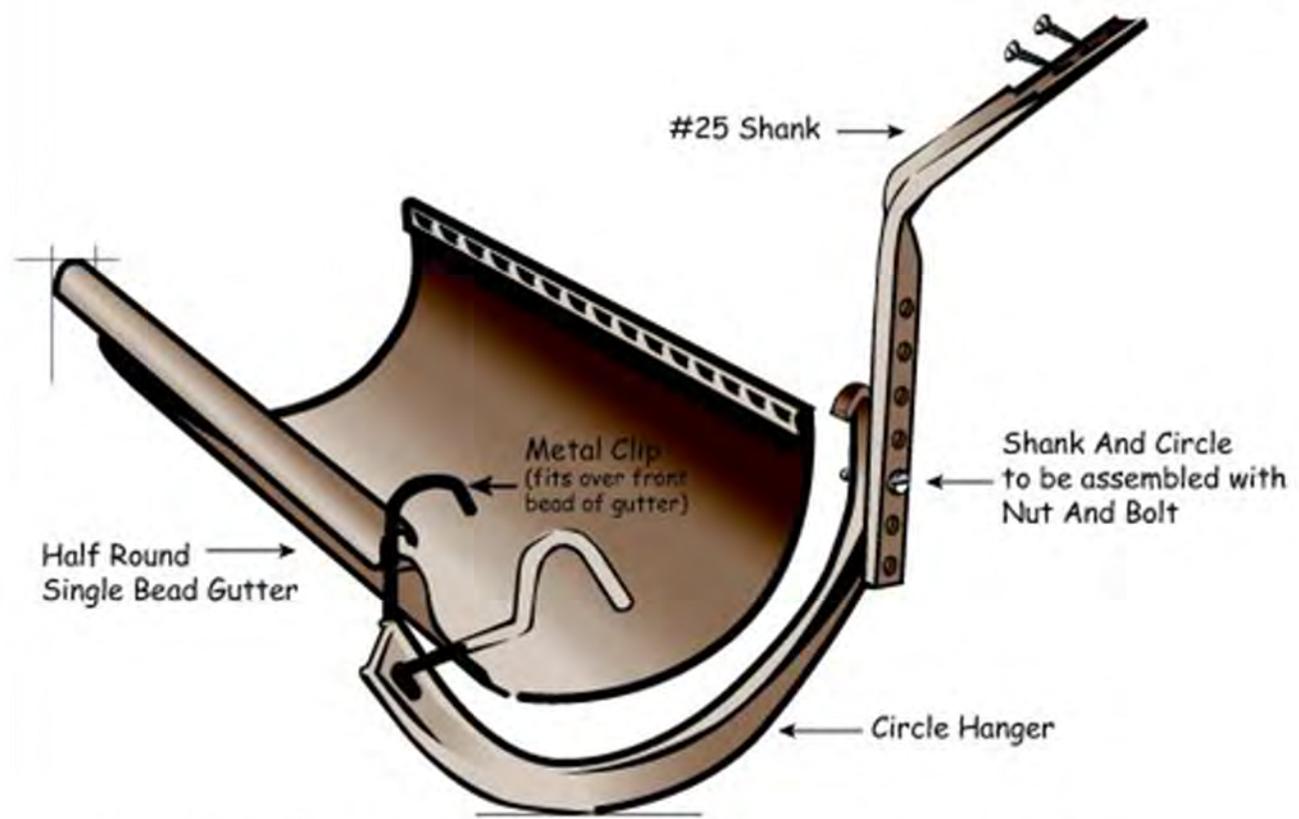
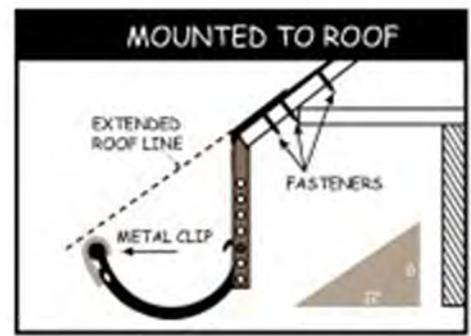
3.01 INSTALLATION

- A. Install gutters with miters, transitions to suit roof edge.
- B. Install hangers at 24 inches.
- C. Slope gutters to drains for positive water flow.
- D. Install debris guard per manufacturers directions.

END OF SECTION

#25 Shank
Roof Mount for 6/12 Pitch Roof

Available Metals:
Copper, Aluminum, Galvanized Steel
and Lead-Coated Copper



Only one hole on shank and circle will line up for nut and bolt. The flange on the circle hanger will act as a guide to stabilize the two parts together. Position nuts and bolts in lower holes of shanks to provide proper pitch in gutter.

SECTION 07 9005

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing at wood joints and at masonry.

1.02 SUBMITTALS

- A. Product Data: Provide data indicating sealant performance criteria, substrate preparation, and color availability.

1.03 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Polyurethane Sealants:
 1. Pecora Corporation; Product Pecora Dynatrol II: www.pecora.com.
 2. Chemrex Sonneborn NP11
 3. Tremco Dymeric 240
 4. Sherwin-Williams Company; Stampede-1/-TX Polyurethane Sealant: www.sherwin-williams.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Install bond breaker where joint backing is not used.
- C. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- D. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- E. Tool joints concave.

END OF SECTION

TAB 1



Point of Honor Roof

General Notes:

1. Main house, porches (except front porch) and kitchen roof and flashings are to be replaced.
2. Remove and re-install lighting cable and terminals.
3. Existing copper downspouts to remain. Any repairs will be performed as additional work.
4. Replace all gutters and hangers.
5. Replace all flashings.
6. All painting will be under a separate contract.
7. All existing wood sheathing and framing replacement will be performed as additional work.
8. Culled shingles will be quantified by contractor and considered as a reimbursed expense by owner at completion of project. Contractor will not be responsible for defective shingles from mill.
9. Carriage house roof is Not-in-Contract.

Photos:

- Photo 1, 2, 4: At chimneys, remove step, base and saddle flashings and sealant. Install new lead-coated copper flashing w/lead wedges at brick joints and apply sealant. Typical all chimneys.
- Photo 3, 7: Reuse exist chimney cap. Remove steel nails and replace w/lead gasketed copper fasteners or hemmed copper cleat.
- Photo 6: Reuse existing lead pipe flashing – field verify flange is acceptable.
- Photo 13, 19: Replace gutters and gutter hangers w/ new 6" semi-circular gutter and hangers. Hangers at 24" o. c.
- Photo 14, 15, 16, 17, 22: Coping tie-in wall to be replaced w/new. See Detail A, Detail B, and Detail C.
- Photo 18: Install lead-coated copper diverter flashing at ½" per foot slope to channel water away from corner.
- Photo 21: Replace all flashings. Use concealed cleats at 12" o.c. and hem into flashing.
- Photo 23, 24, 25: Existing downspouts and drain boots to have repairs performed as additional work, N. I. C.
- Photo 29: Note to owner – surplus moldings stored under porch if required for roof molding replacement.
- Photo 30: Remove lighting cable and terminals as required for new work and re-install in same location.
- Photo 31: Kitchen eave and rake. Match overhang for new shingle replacement.

Photo 32-39, 43-55: Photos of sheathing boards in main house attic. Sheathing replacements will be additional work and negotiated on a materials and labor basis. Boards are approximately 1 x 10's.

Photo 40: Approximately 4 bundles of white oak shingles in storage.

Photo 41, 42: Photo of sheathing boards in servant quarters attic.

Point of Honor Roof Replacement



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

Point of Honor Roof Replacement



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12

Point of Honor Roof Replacement



Photo 13

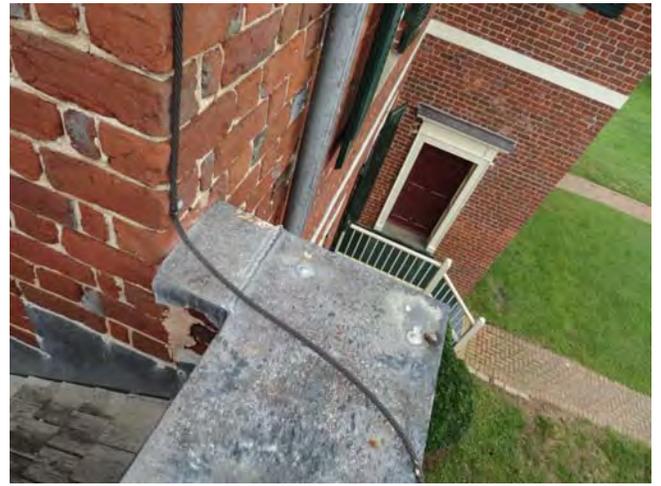


Photo 14



Photo 15



Photo 16



Photo 17

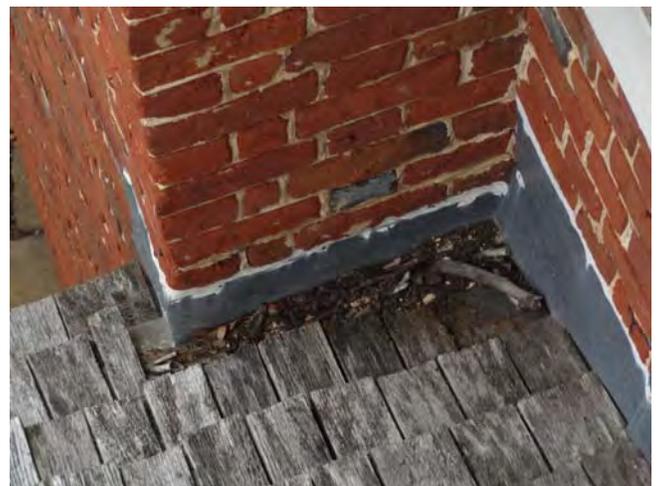


Photo 18

Point of Honor Roof Replacement



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24

Point of Honor Roof Replacement



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29



Photo 30

Point of Honor Roof Replacement



Photo 31



Photo 32



Photo 33



Photo 34



Photo 35



Photo 36

Point of Honor Roof Replacement



Photo 37



Photo 38



Photo 39



Photo 40



Photo 41



Photo 42

Point of Honor Roof Replacement



Photo 43



Photo 44



Photo 45



Photo 46



Photo 47



Photo 48

Point of Honor Roof Replacement



Photo 49



Photo 50



Photo 51



Photo 52



Photo 53



Photo 54

Point of Honor Roof Replacement



Photo 55



Photo A



Photo B



Photo C



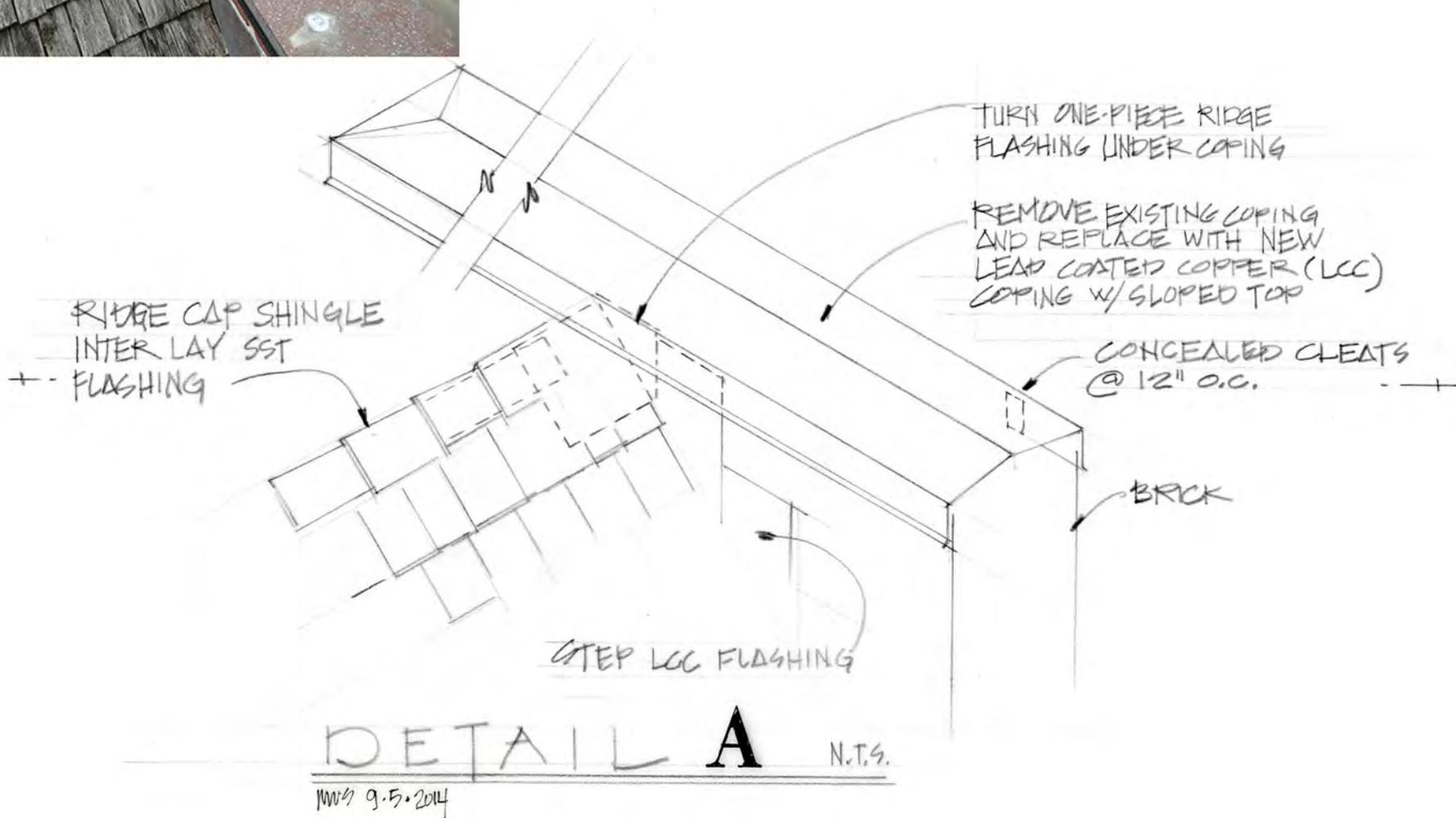
Photo D



Photo E

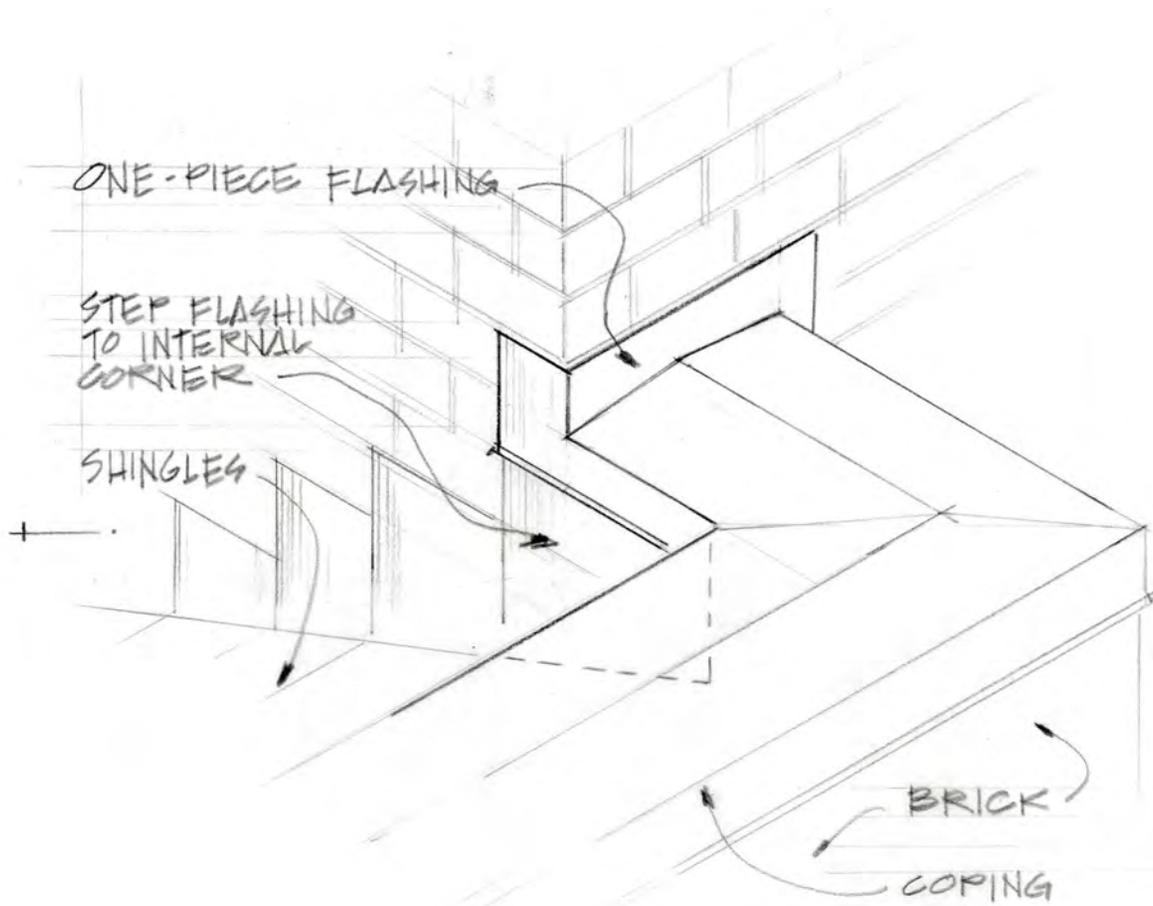


ARCHITECTURAL
PARTNERS



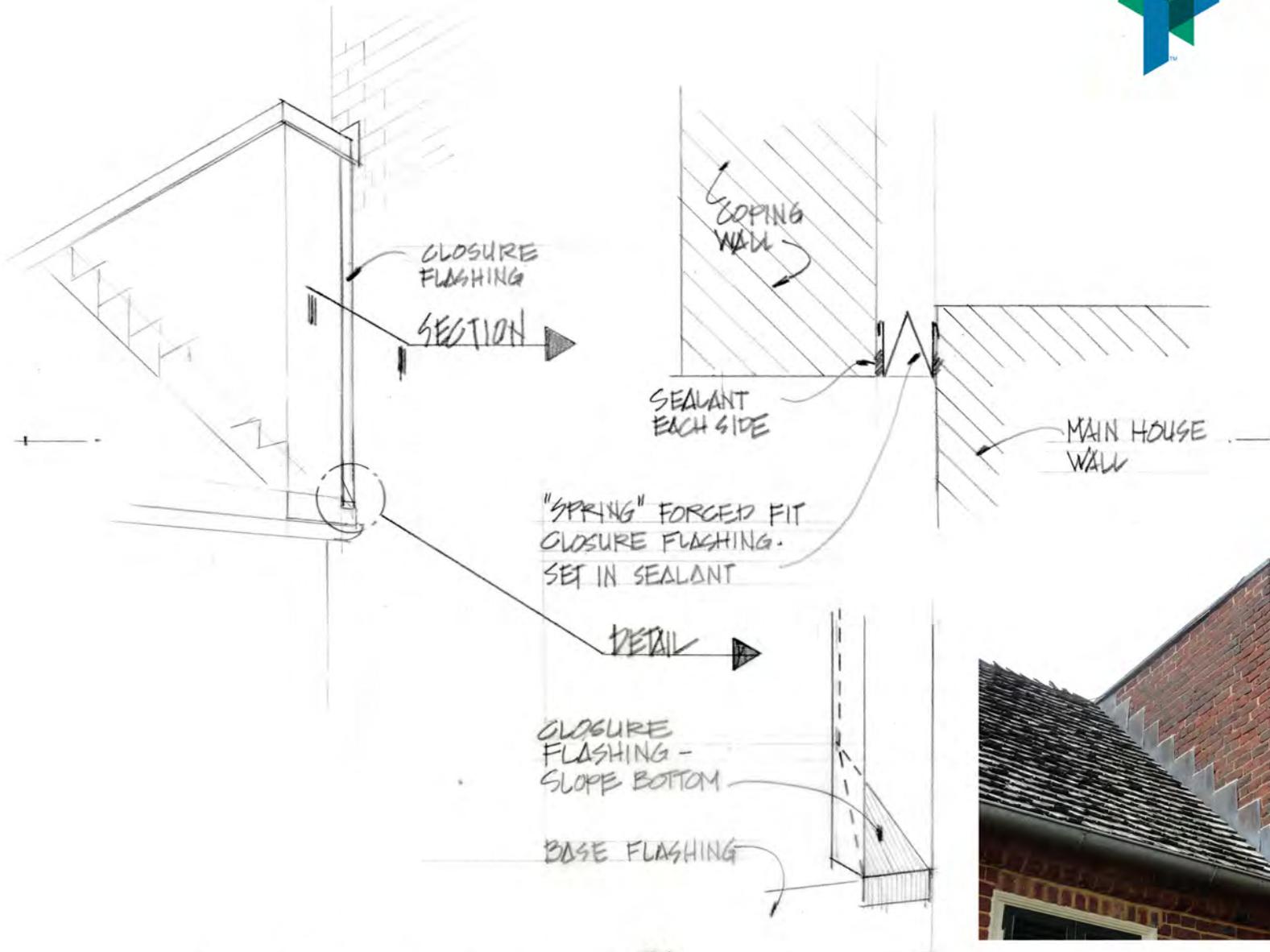


ARCHITECTURAL
PARTNERS



DETAIL **B** N.T.S.

MWS 9.5.2014



DETAIL C

N.T.S.

MWC1 - 9-5-2014

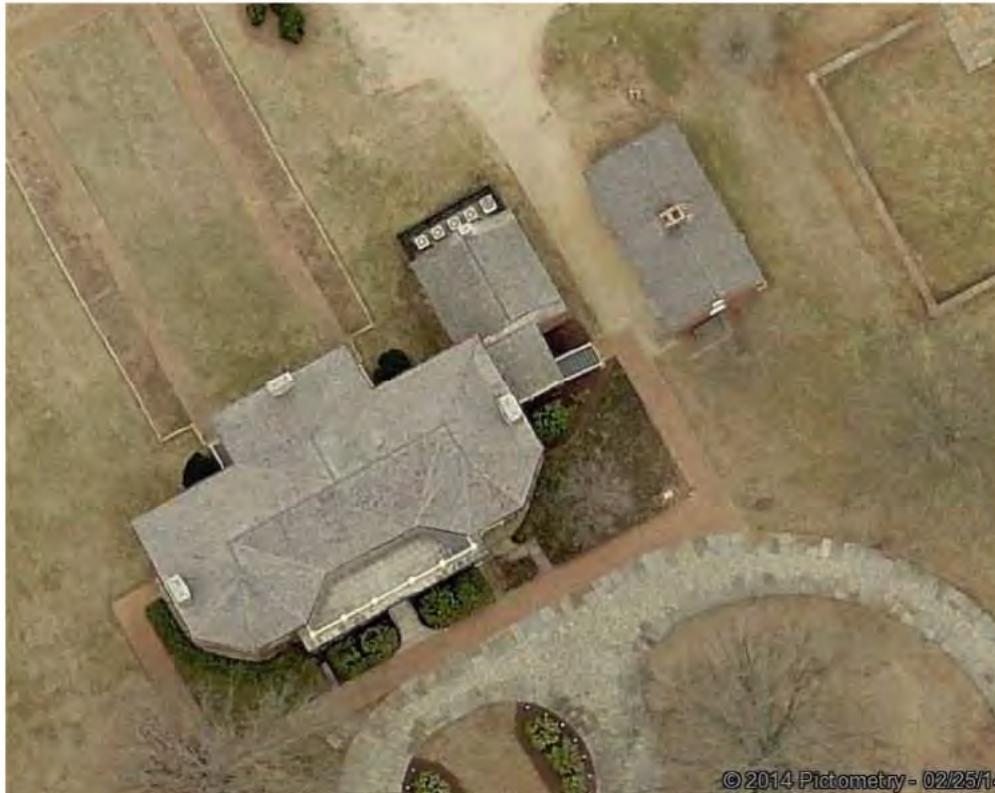
TAB 2

AP

REFERENCE:

CLAIM:

7/29/2014



AP

REFERENCE:

CLAIM:

37.4206488, -79.1438295

7/29/2014

REPORT DETAILS: INTRODUCTION

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:

Reference:

Report #: 9123628





NAME	TOTAL
Roofing	4,006 sqft
Unset	N/A ft
Ridge	112 ft
Hip	213 ft
Valley	78 ft
Eave	341 ft
Rake	117 ft
Step Flashing	13 ft
TOTAL PLANES:	21

PITCH (TOP 7)	TOTAL	%
8	1392.8 sqft	34.8%
7	1310.6 sqft	32.7%
11	1302.6 sqft	32.5%

Top row is predominant pitch

WASTE	10%	12%	15%	17%	20%	22%	25%
Area (SqFt)	4,407	4,487	4,607	4,687	4,807	4,887	5,008
Squares	44.1	44.9	46.1	46.9	48.1	48.9	50.1

The Waste Factor Table takes into account Total Square Footage only--linear measurements are not included.

HAIL INFORMATION

REPORT DETAILS: OVERVIEW

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:
Reference:
Report #: 9123628



NORTH



SOUTH



REPORT DETAILS: NORTH/SOUTH

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:

Reference:

Report #: 9123628



EAST



WEST



REPORT DETAILS: EAST/WEST

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:

Reference:

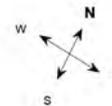
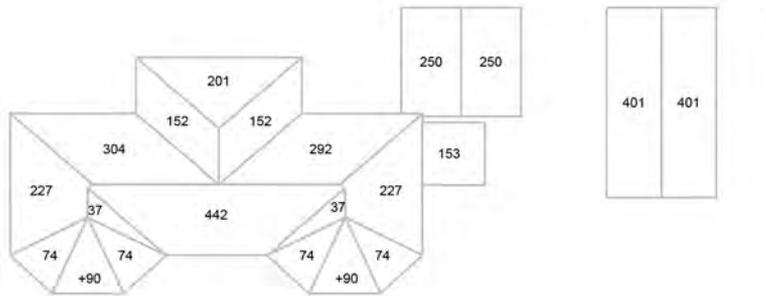
Report #: 9123628



AREA

PITCH	TOTAL	%
8	1392.8 sqft	34.8%
7	1310.6 sqft	32.7%
11	1302.6 sqft	32.5%
Roofing	4,006 sqft	

Top row is predominant pitch



REPORT DETAILS: AREA

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:

Reference:

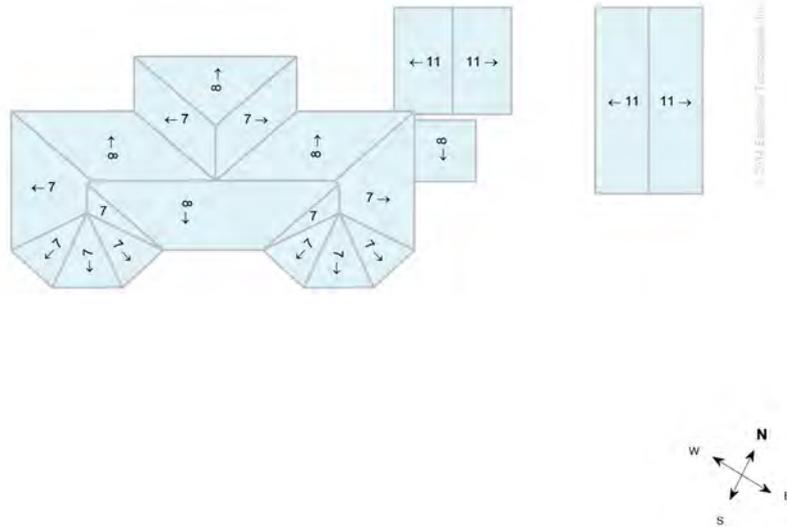
Report #: 9123628



PITCH

PITCH	TOTAL	%
8	1392.8 sqft	34.8%
7	1310.6 sqft	32.7%
11	1302.6 sqft	32.5%
Roofing	4,006 sqft	

Top row is predominant pitch



REPORT DETAILS: PITCH

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

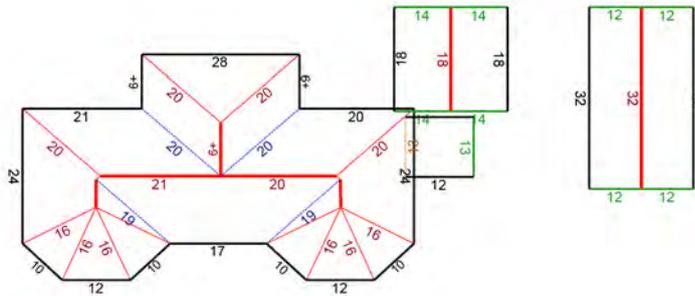
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Reference:

Report #: 9123628

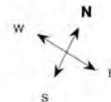


EDGES



	COLOR	TOTAL
Unset		N/A ft
Ridge		112 ft
Hip		213 ft
Valley		78 ft
Eave		341 ft
Rake		117 ft
Step Flashing		13 ft

Edges that do not fall under any of the above categories are shown as dotted gray lines and are not included in any line length totals.



REPORT DETAILS: EDGES

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

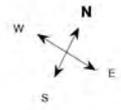
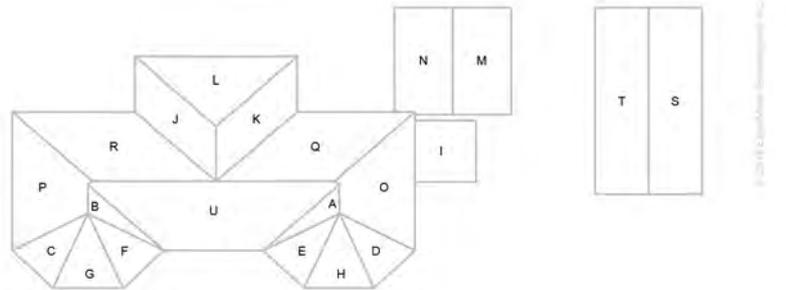
Claim #:

Reference:

Report #: 9123628



NOTES



REPORT DETAILS: NOTES

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:

Reference:

Report #: 9123628



PLANE	AREA (SQFT)	PITCH	AZIMUTH
U	441.9	8	151.3°
T	401.1	11	241.3°
S	401.1	11	61.3°
R	304.3	8	331.3°
Q	292.4	8	331.3°
P	227.3	7	242.1°
O	227.3	7	60.5°
N	250.2	11	241.3°
M	250.2	11	61.3°
L	200.7	8	331.3°
K	152.5	7	61.3°
J	152.5	7	241.3°
I	153.5	8	151.3°
H	89.8	7	151.3°
G	89.8	7	151.3°
F	74.3	7	108.4°
E	74.3	7	194.2°
D	73.9	7	108.4°
C	73.9	7	194.2°
B	37.5	7	62.1°
A	37.5	7	240.5°
Total	4006.00	--	--

RIDGE (FT)	HIP (FT)	VALLEY (FT)	EAVE (FT)	RAKE (FT)	STEP FLASHING (FT)
41.6	2.0	37.8	17.0	0.0	0.0
32.2	0.0	0.0	32.2	24.8	0.0
0.0	0.0	0.0	32.2	24.8	0.0
0.0	19.9	20.0	21.0	0.0	0.0
0.0	19.9	20.0	20.2	0.0	0.0
4.9	16.3	0.0	24.0	0.0	0.0
4.9	16.3	0.0	24.0	0.0	0.0
18.4	0.0	0.0	18.4	27.2	0.0
0.0	0.0	0.0	18.4	27.2	0.0
0.0	40.0	0.0	27.8	0.0	0.0
9.5	0.0	0.0	9.5	0.0	0.0
0.0	0.0	0.0	9.5	0.0	0.0
0.0	0.0	0.0	24.0	12.8	12.8
0.0	32.3	0.0	12.0	0.0	0.0
0.0	32.3	0.0	12.0	0.0	0.0
0.0	16.6	0.0	9.6	0.0	0.0
0.0	16.6	0.0	9.6	0.0	0.0
0.0	0.0	0.0	9.6	0.0	0.0
0.0	0.0	0.0	9.6	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
111.5	212.2	77.8	340.6	116.8	12.8

REPORT DETAILS: TABLES

SITE LOCATION

10 9th St
Lynchburg VA, 24504-1425

Claim #:

Reference:

Report #: 9123628



