

1.5" Mechanical Lock

Recommended Details, Specifications and Trims

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RECOMMENDED SPECIFICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preformed, prefinished metal roofing and flashings.
- B. Miscellaneous trim, flashing, closures, drip flashing, and accessories.
- C. Sealant
- D. Fastening devices.

1.02 RELATED SECTIONS

- A. Section 05120: Structural Steel Framing.
- B. Section 05500: Miscellaneous Metal Fabrication.
- C. Section 06100: Rough Carpentry.
- D. Section 07631: Flashing and Sheet Metal Gutters.
- E. Section 07900: Sealants.

1.03 REFERENCES

- A. American Iron & Steel Institute (AISI) Specification for the Design of Coldformed Steel Structural Members.
- B. ASTM A-525 Steel Sheet, Zinc-Coated (Galvanized)
- C. ASTM E-283-84
- D. ASTM E-331-86
- E. ASTM E-1592
- F. Spec Data Sheet - Galvalume Sheet Metal by Bethlehem Corp.
- G. Building Materials Directory - Underwriter's Laboratories, Test Procedure 580.

1.04 ASSEMBLY DESCRIPTION

- A. The roofing assembly includes preformed sheet metal panels, related accessories, valleys, hips, ridges, eaves, corners, rakes, miscellaneous flashing and attaching devices.

1.05 SUBMITTALS

- A. Submit detailed drawings showing layout of panels, anchoring details, joint details, trim, flashing, and accessories. Show details of weatherproofing, terminations, and penetrations of metal work.
- B. Submit a sample of each type of roof panel, complete with factory finish.
- C. Submit results indicating compliance with minimum requirements of the following performance tests:
 - 1. Air Infiltration ASTM E 283-84
 - 2. Water Infiltration ASTM E 331-86
 - 3. Wind Uplift - UL90
- D. Submit calculations with registered engineer seal, verifying roof panel and attachment method resists wind pressures imposed on it pursuant to applicable building codes.

1.06 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in Architectural Sheet Metal Products with five (5) years minimum experience.
- B. No product substitutions shall be permitted without meeting specifications.
- C. Substitutions shall be submitted 10 Days prior to Bid Date and acceptance put forth in an addendum.
- D. No substitutions shall be made after the Bid Date.

1.07 FABRICATION, STORAGE AND HANDLING

- A. Upon fabrication of panels and other materials, installer shall examine the shipment for damage and completeness.
- B. Panels should be stored in a clean, dry place. One end should be elevated to allow moisture to run off.
- C. Panels with strippable film must not be stored in the open, exposed to the sun.
- D. Stack all materials to prevent damage and to allow for adequate ventilation.

1.08 WARRANTY

- A. Paint finish shall have a twenty year guarantee against cracking, peeling and fade (not to exceed 5 N.B.S. units).
- B. Galvalume material shall have a twenty year guarantee against failure due to corrosion, rupture or perforation.
- C. Applicator shall furnish guarantee covering watertightness of the roofing system for the period of two (2) years from the date of substantial completion.

PART 2 PRODUCT

2.01 ACCEPTABLE MANUFACTURERS

- A. Metalforming, Incorporated of Peachtree City, Georgia
- B. Substitutions shall fully comply with specified requirements.

2.02 SHEET MATERIALS

- A. Prefinished Metal shall be Hot-Dipped Galvanized - ASTM A446-85 Grade C G90 Coating A525-86 24 Gauge core steel or prefinished Galvalume - ASTM 792-86 AZ-55.
- B. Unfinished Metal shall be Grade C Galvalume ASTM 792-86, AZ 55, "Satin Finish".
- C. Finish shall be [full strength Kynar 500 Fluoropolymer coating] [Copper-Cote][Lead-Cote] [Champagne] coating, applied by the manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat, to provide a total dry film thickness of 0.95 to 1.25 mil. Bottom side shall be coated with primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500 finish supplier.
- D. Strippable film shall be applied to the top side of the painted coil to protect the finish during fabrication, shipping and field handling. This strippable film must be removed before installation.

2.03 ACCESSORY MATERIALS

- A. Fasteners: [Galvanized Steel] [Stainless Steel] [Cadmium Plated Steel] with washers where required.
- B. Anchor Clips: Two-piece sliding clip consisting of a 16 gage G90 galvanized steel base and a 22 gage G90 galvanized steel tab.
- C. Sealant: As specified in Section 07900 [] Type.

2.04 FABRICATION

- A. All exposed adjacent flashing shall be of the same material and finish as the roof panels.
- B. Hem all exposed edges of flashing on underside, 1/2 inch.

2.05 METALFORMING, INC. 1.5" MECHANICAL LOCK

- A. Panels shall have [6" to 25 7/8"] on-center seam spacing with a seam height of 1 1/2".
- B. Panels shall be site-formed with the Schlebach Quadro Plus Roll Former in continuous lengths from eave to ridge or factory fabricated to 40' max.
- C. Concealed anchor clips shall be spaced as required to meet uplift loads (maximum of 36" on center).
- D. When required, Panel assembly shall bear Underwriter's Laboratories Label UL90, pursuant to Construction Number 5.
- E. Certification shall be submitted, based on independent testing laboratory, indicating no measurable water penetration or air leakage beyond allowable tolerances through the system when tested in accordance with ASTM E-331-86 and E-283-84.

PART 3 EXECUTION

3.01 INSPECTION

A. Substrate:

1. Examine plywood or metal deck to ensure proper attachment to framing.
2. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves or projections, level to +/- 1/4" in 20', and properly sloped to [valleys] (or) [eaves].
3. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
4. Verify deck is dry and free of snow or ice. [Flutes in steel deck to be clean and dry] or [joints in wood deck to be solidly supported and nailed].

B. Felting:

1. Verify #30 unperforated asphalt saturated roofing felt underlayment has been installed over solid sheathing and fastened in place.
2. Felt to be installed horizontally, starting at eave to ridge with a 6" minimum overlap and 18" endlaps.
3. Nail heads to be totally flush with the substrate. Nails shall be galvanized Ring-Shank.

3.02 INSTALLATION

- A. Comply with manufacturers standard instructions and conform to standards set forth in the manufacturers standard literature, in order to achieve a watertight installation.
- B. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.
- C. Install starter and edge trim before installing roof panels.
- D. Remove protective strippable film prior to installation of roof panels.
- E. Attach anchor clips with (2) #10-12 x 1" hex head wood screws, spaced in accordance with approved shop drawings.
- F. Install sealants for preformed roofing panels as approved on shop drawings.
- G. Do not allow panels or trim to come into contact with dissimilar materials.
- H. Do not allow traffic on completed roof. If required, provide cushioned walk boards.
- I. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
- J. Remove and replace any panels or components which are damaged beyond successful repair.

3.03 CLEANING

- A. Clean any grease, finger marks or stains from the panels per manufacturer's recommendations.
- B. Remove all scrap and construction debris from the site.

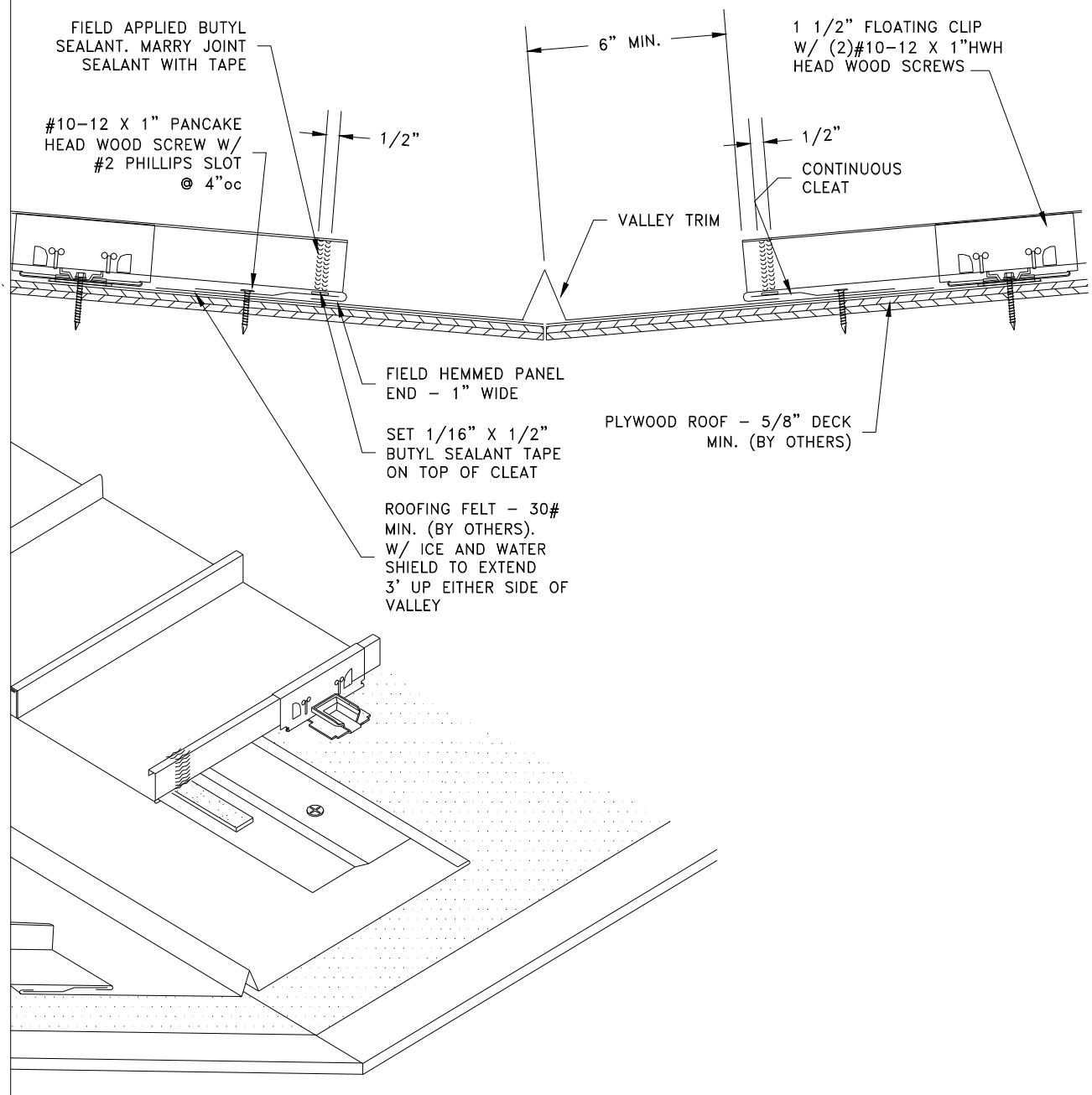
3.04 FINAL INSPECTION

- A. Final inspection will be performed by a firm appointed and paid for by the owner in accordance with section 01410.

END OF SECTION

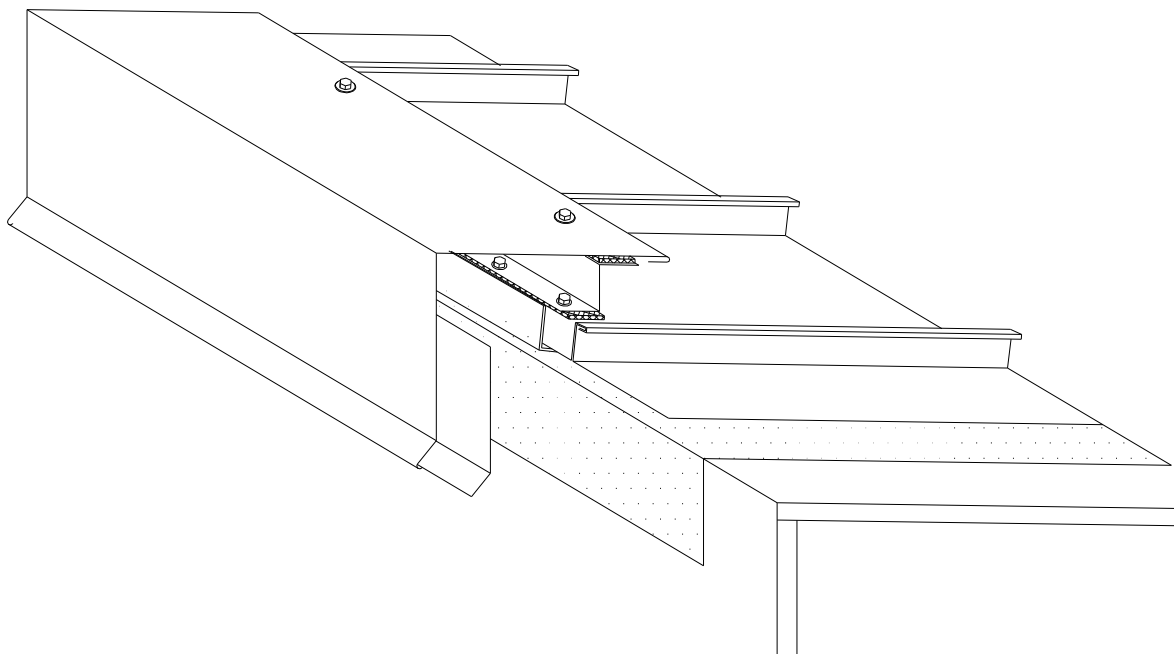
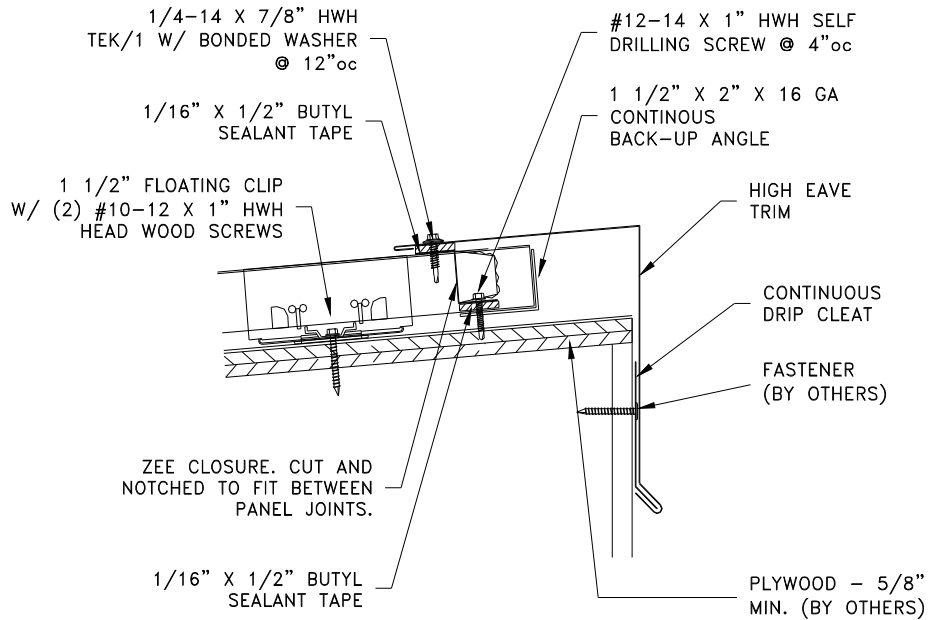
VALLEY

- 1.) Temporarily attach valley trim at ends w/ #10-12 x 1" pancake head wood screws.
- 2.) Attach cleat w/ #10-12 x 1" pancake head wood screws @ 4"oc.
- 3.) Apply a continuous strip of butyl sealant tape across the top of the cleat.
- 4.) Install panels so that the cleat is engaged into the field applied hem.



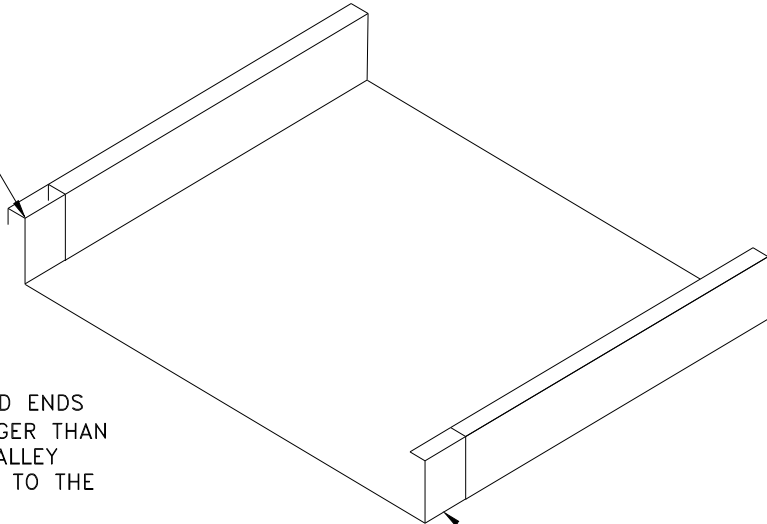
HIGH EAVE

- 1.) Determine location of zee closure. Apply sealant tape to flat of panel.
- 2.) Place closure on top of sealant tape. Clamp back-up angle to bottom of panel. Secure through tape and panel with #12-14 x 1" HWH Tek/3 fastener @ 4"oc. Seal the tab of the closure to the side joints with butyl sealant.
- 3.) Apply a continuous strip of sealant tape to the top of the zee closure. Seal between ends of tape with butyl sealant.
- 4.) Install the high eave trim. Secure to closure zee with 1/4-14 x 7/8" HWH Tek/1 fasteners at 12"oc.



FIELD HEMMED PANEL END

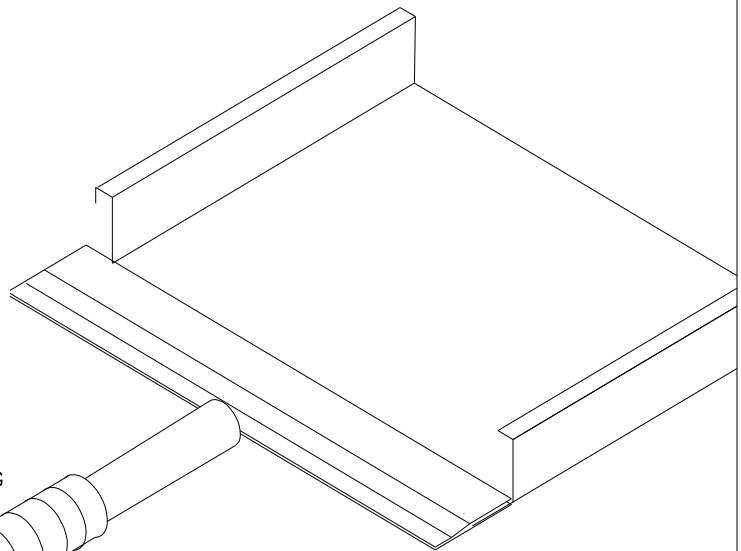
CUT FEMALE END
BACK 1"



1. PANELS REQUIRING FIELD HEMMED ENDS SHOULD BE FABRICATED 1" LONGER THAN THE FINISHED PANEL LENGTH. VALLEY CONDITIONS MUST BE FIELD CUT TO THE APPROPRIATE ANGLE

2. CUT BACK PANEL JOINTS 1"

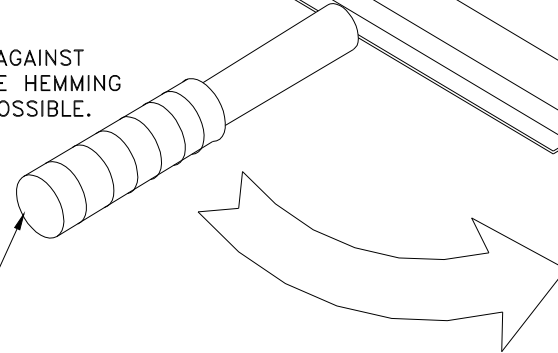
CUT MALE END
BACK 1"



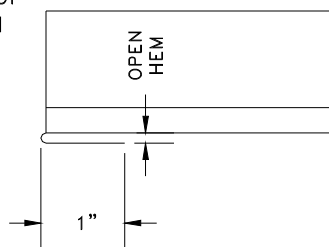
3. PLACE PROTRUDING PAN INTO THE PANEL HEMMING TOOL. THE FRONT EDGE OF THE TOOL MUST REST AGAINST THE NOTCHED JOINT LEGS ON BOTH SIDES.

4. WHILE MAINTAINING PRESSURE AGAINST THE PANEL JOINTS, ROTATE THE HEMMING TOOL AS CLOSE TO 180° AS POSSIBLE.

PANEL HEMMING TOOL

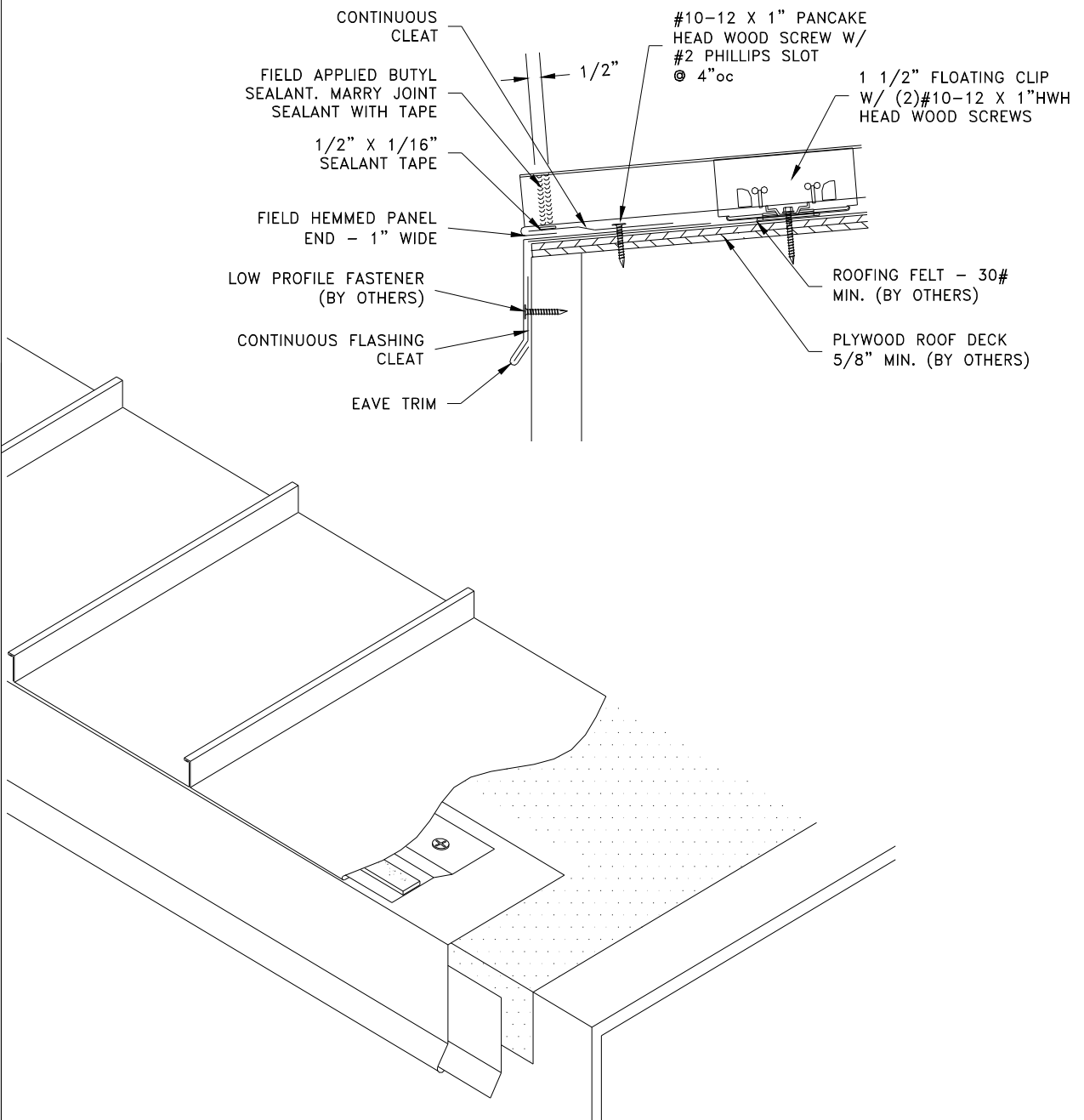


5. INSPECT COMPLETED HEM TO INSURE THAT THE HEM IS OPENED AND CAPABLE OF RECEIVING THE CLEAT (SEE ERECTION DETAILS).



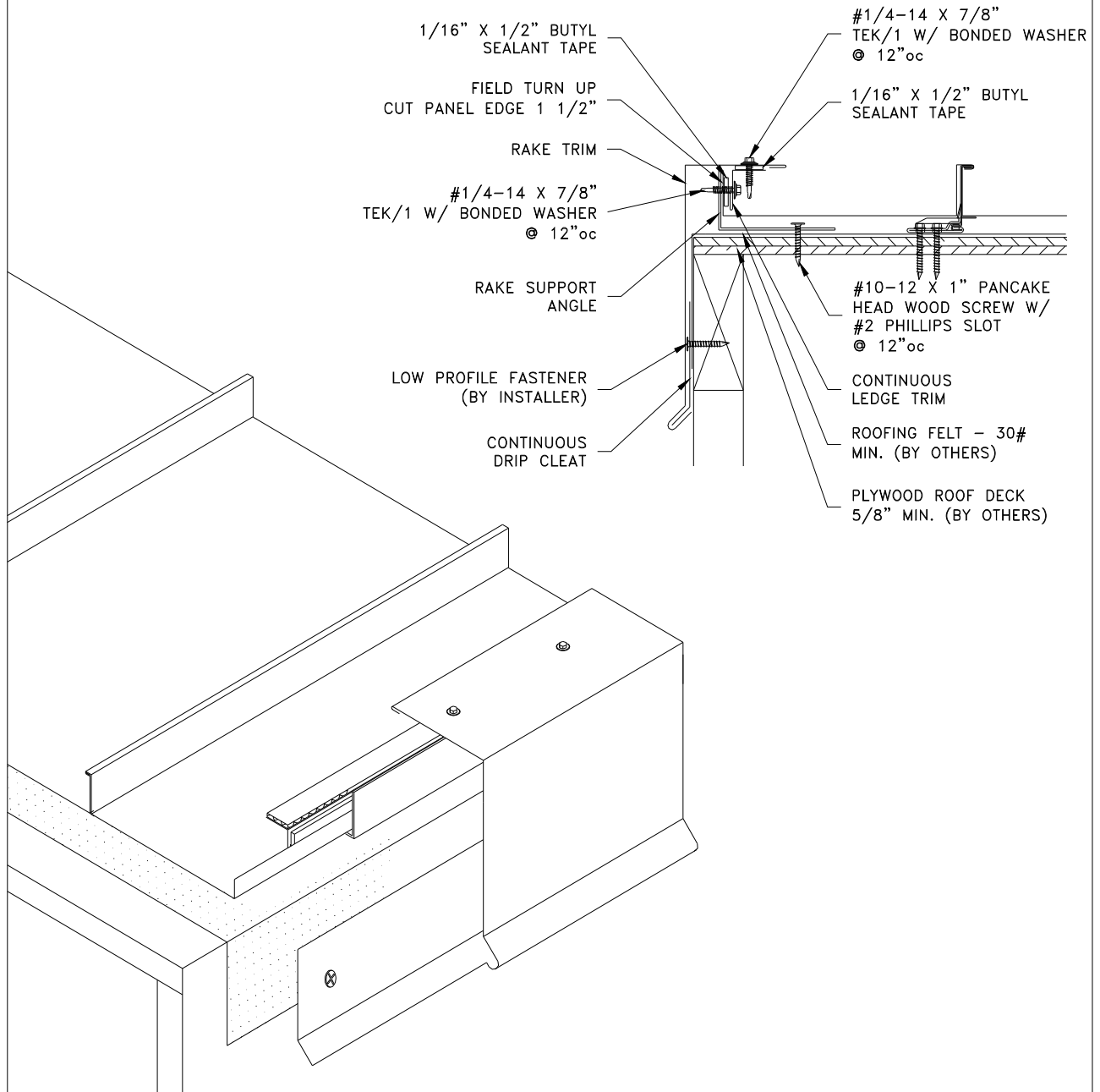
LOW EAVE

- 1.) Temporarily attach eave trim at ends w/ #10-12 x 1" pancake head wood screws.
- 2.) Attach cleat through eave trim w/ #10-12 x 1" pancake head wood screws @ 4"oc.
- 4.) Apply a row of butyl sealant tape across the top of the cleat.
- 5.) Install panels so that the cleat is engaged into the field applied hem.



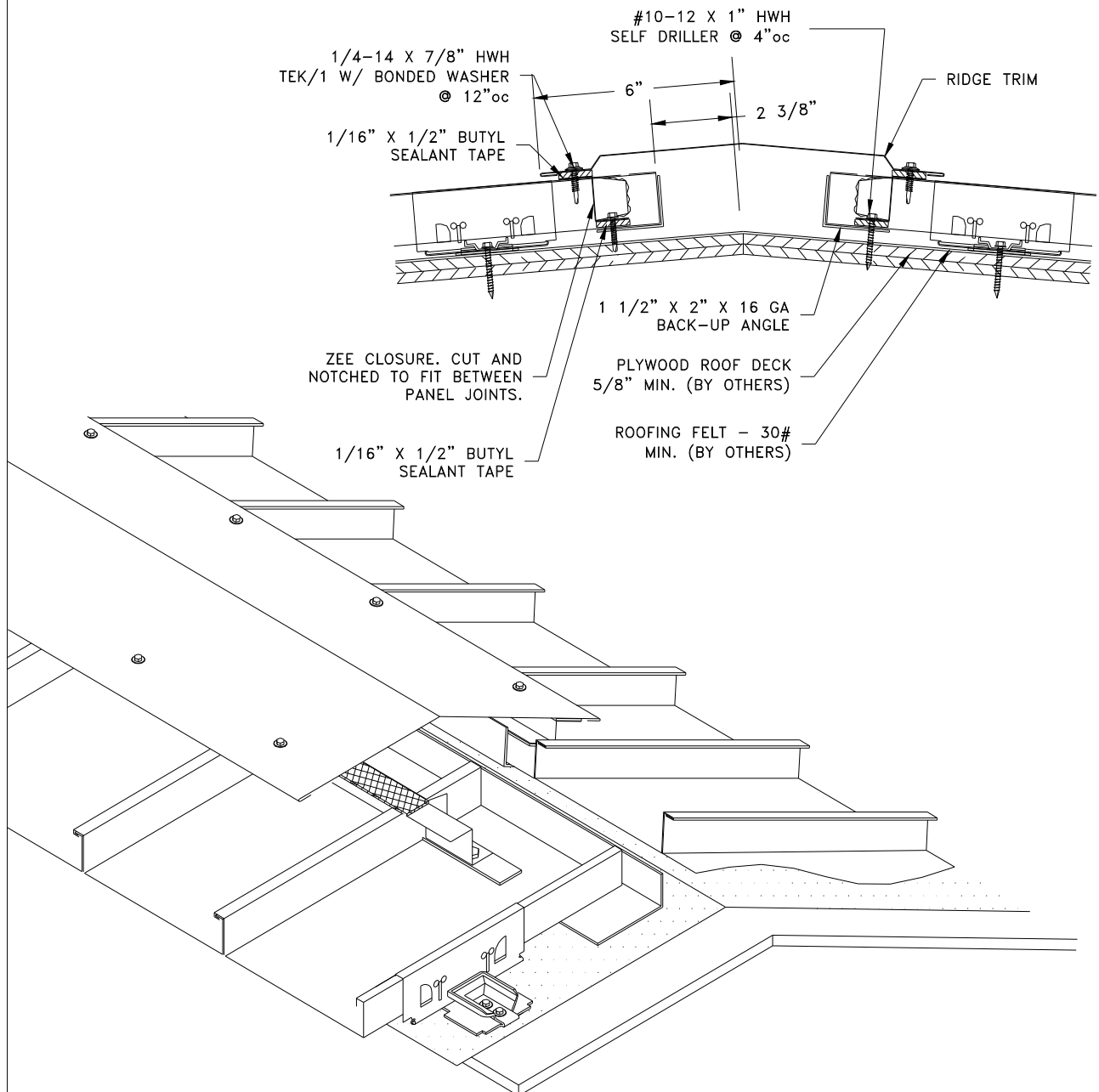
HIGH PROFILE RAKE

- 1.) Secure rake support angle through slots w/ #10-12 x 1" pancake head wood screw @ 4"oc.
- 2.) Turn panel edge up 1 1/2".
- 3.) Apply a continuous strip of sealant tape to the inside leg of the upturned edge
- 4.) Set ledge trim on sealant tape, and secure with 1/4-14 x 7/8" HWH Tek/1 @ 12"oc.
- 5.) Apply a continuous strip of sealant tape to the top of the ledge trim.
- 6.) Install the rake trim. Secure to ledge trim with 1/4-14 x 7/8" HWH Tek/1 fasteners at 12"oc.



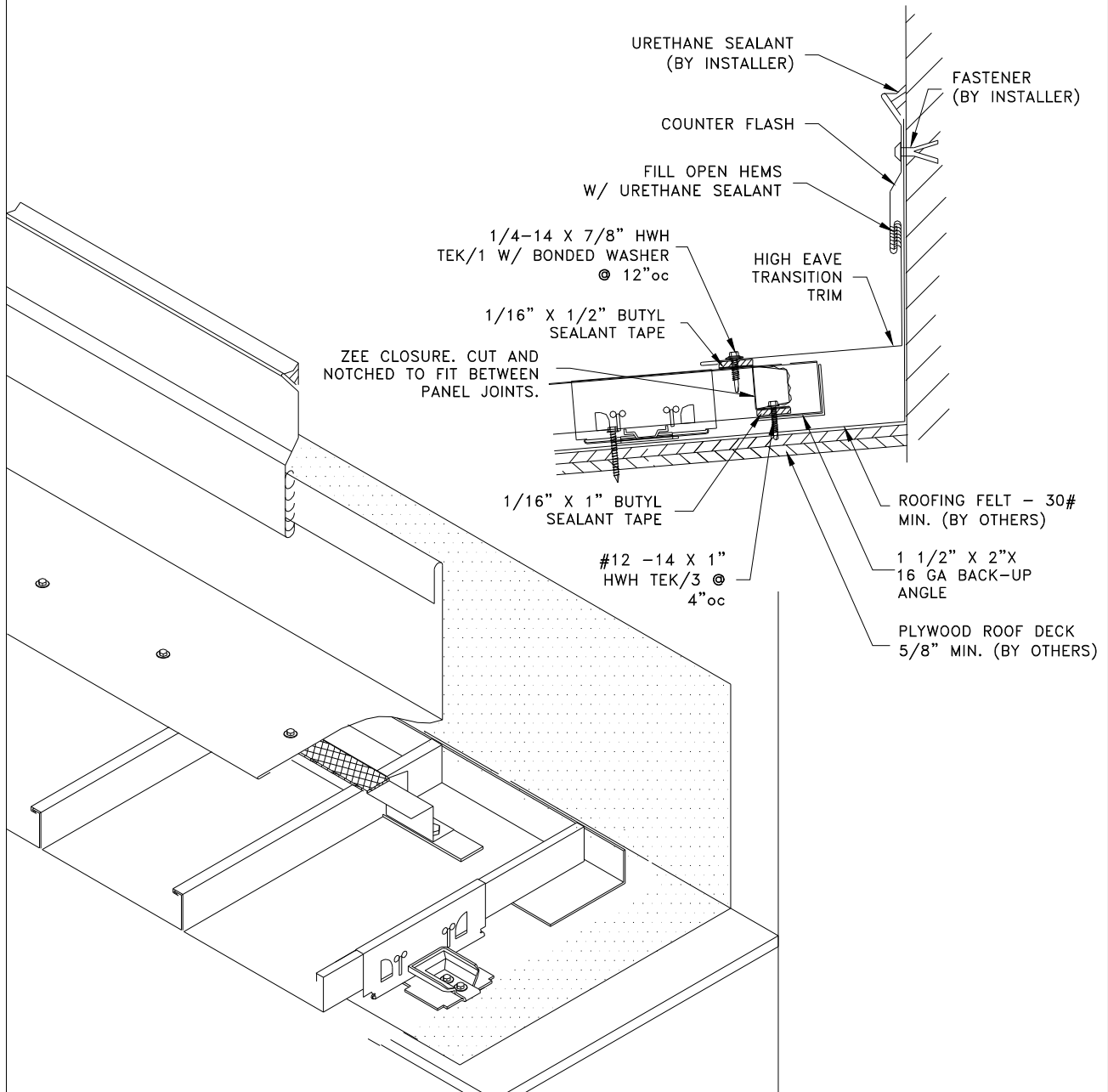
RIDGE / HIP

- 1.) Determine location of zee closure. Apply sealant tape to flat of panel.
- 2.) Place closure on top of sealant tape. Clamp back-up angle to bottom of panel. Secure through tape and panel with #12-14 x 1" HWH Tek/3 fastener @ 4"oc. Seal the tab of the closure to the side joints with butyl sealant.
- 3.) Apply a continuous strip of sealant tape to the top of the zee closure. Seal between ends of tape with butyl sealant.
- 4.) Install the ridge trim. Secure to closure zee with 1/4-14 x 7/8" HWH Tek/1 fasteners at 12"oc.



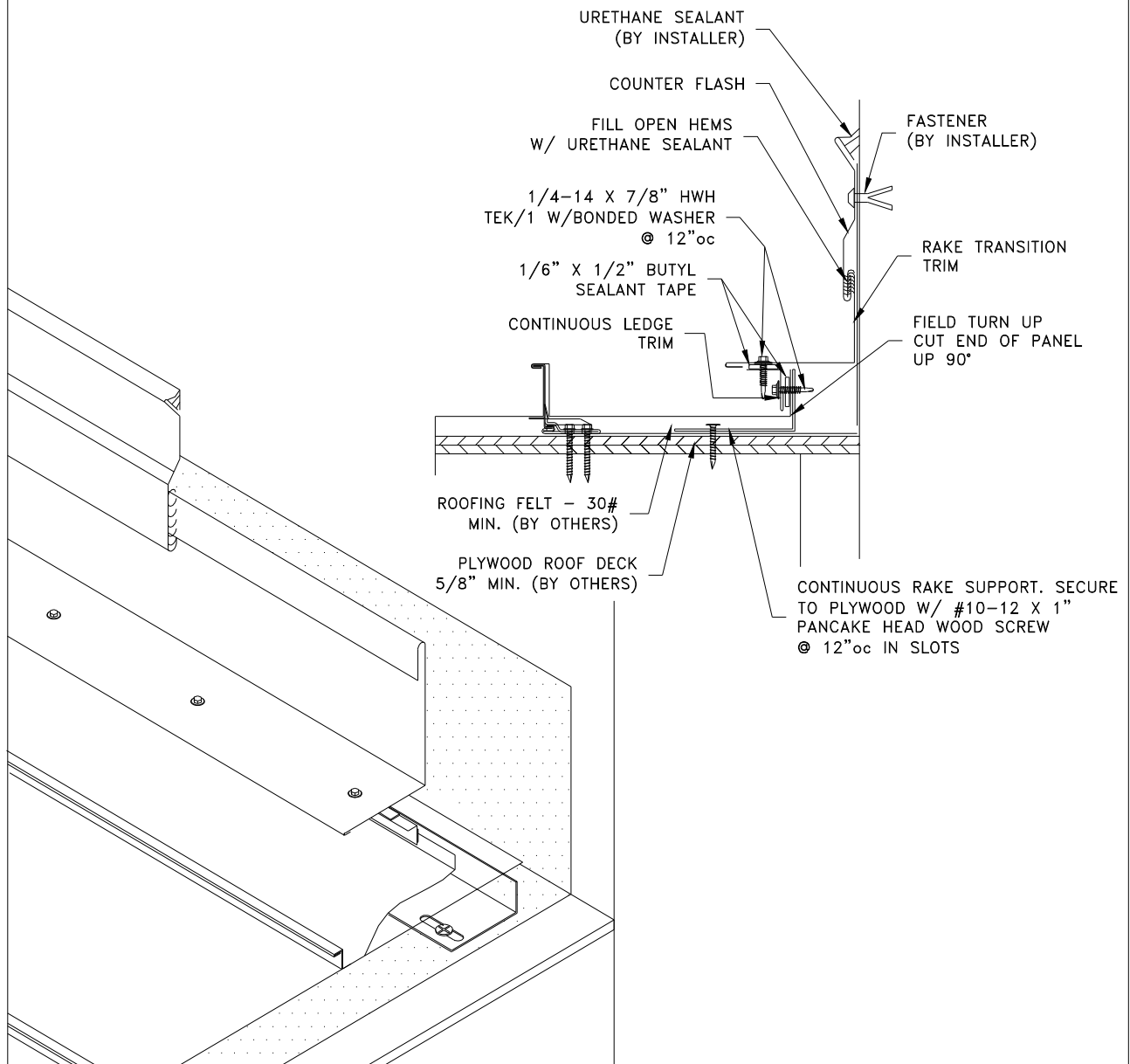
HIGH EAVE TRANSITION

- 1.) Determine location of zee closure. Apply sealant tape to flat of panel.
- 2.) Place closure on top of sealant tape. Clamp back-up angle to bottom of panel. Secure through tape and panel with #12-14 x 1" HWH Tek/3 fastener @ 4"oc. Seal the tab of the closure to the side joints with butyl sealant.
- 3.) Apply a continuous strip of sealant tape to the top of the zee closure. Seal between ends of tape with butyl sealant.
- 4.) Install the transition trim. Secure to closure zee with 1/4-14 x 7/8" HWH Tek/1 fasteners at 12"oc.
- 5.) Fill open hem of counter flash with urethane sealant. Interlock the two trims and secure counter flash to wall with the appropriate fastener.

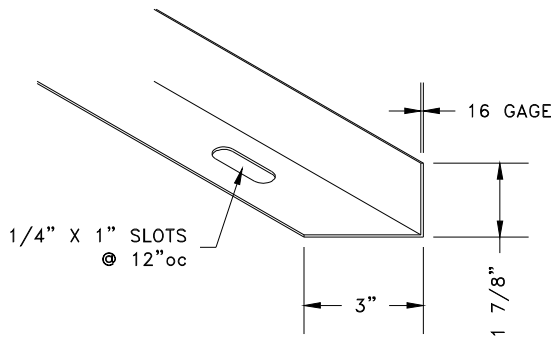


RAKE WALL TRANSITION

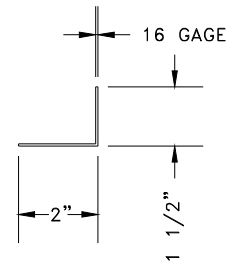
- 1.) Secure rake support angle through slots w/ #10-12 x 1" pancake head wood screw @ 4"oc.
- 2.) Turn panel edge up 1 1/2".
- 3.) Apply a continuous strip of sealant tape to the inside leg of the upturned edge
- 4.) Set ledge trim on sealant tape, and secure with 1/4-14 x 7/8" HWH Tek/1 @ 12"oc.
- 5.) Apply a continuous strip of sealant tape to the top of the ledge trim.
- 7.) Install the transition trim. Secure to closure zee with 1/4-14 x 7/8" HWH Tek/1 fasteners at 12"oc.
- 6.) Fill open hem of counter flash with urethane sealant. Interlock the two trims and secure counter flash to wall with the appropriate fastener.



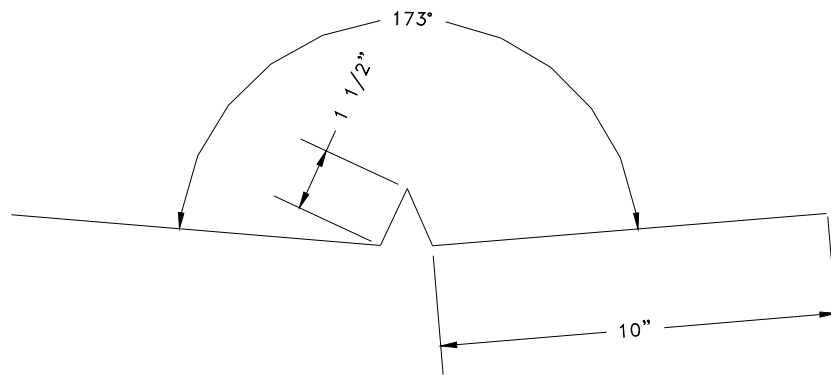
TRIMS



RAKE SUPPORT ANGLE

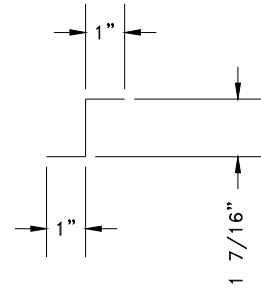


BACK-UP ANGLE

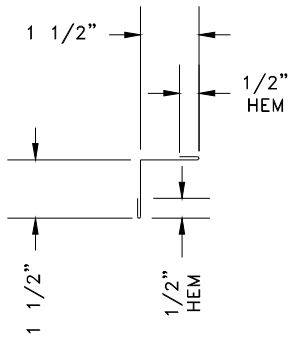


VALLEY

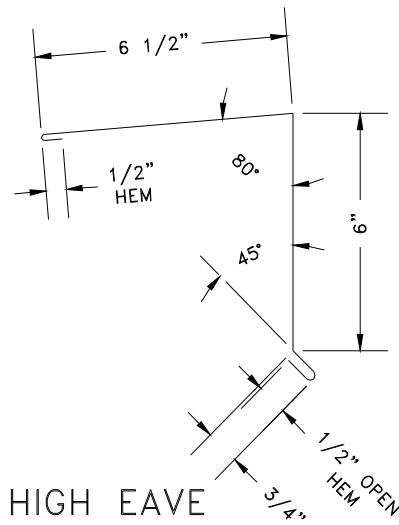
TRIMS



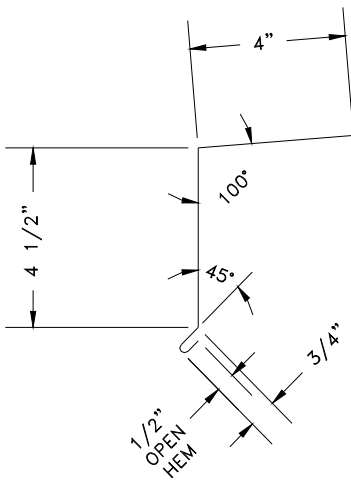
ZEE CLOSURE



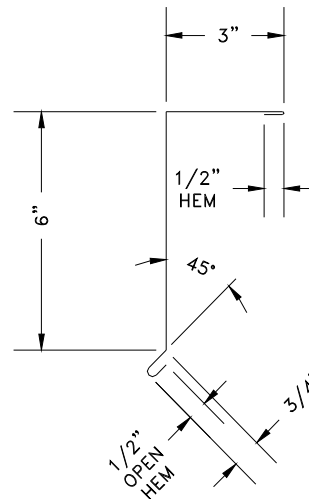
LEDGE TRIM



HIGH EAVE

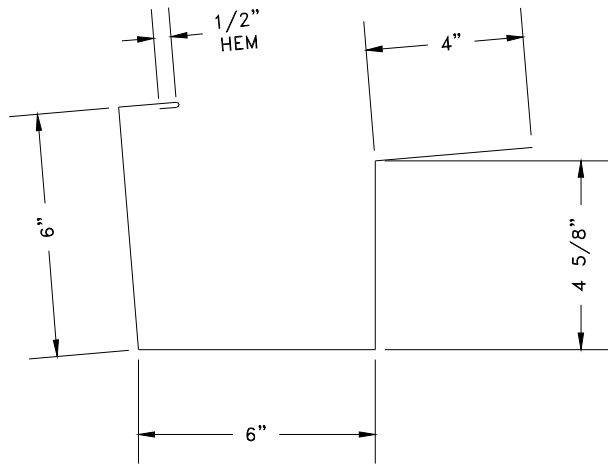


EAVE

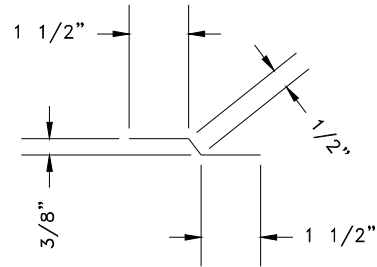


HIGH PROFILE RAKE

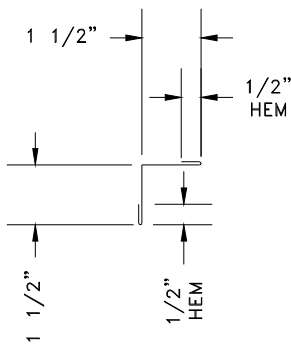
TRIMS



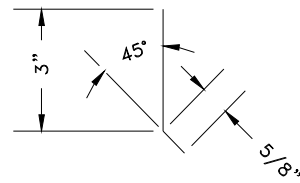
GUTTER



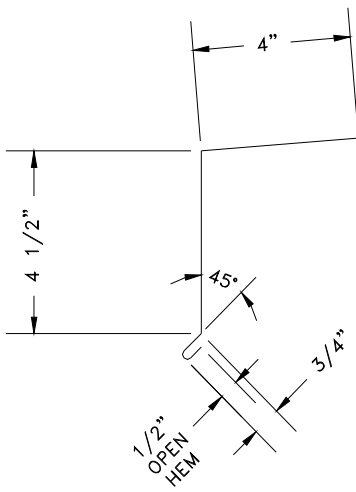
CLEAT



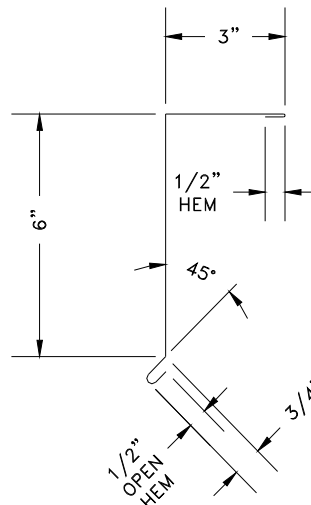
LEDGE TRIM



DRIP CLEAT

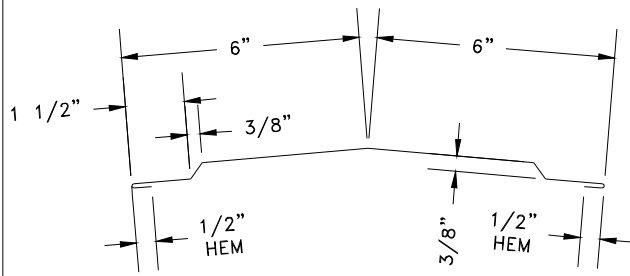


EAVE

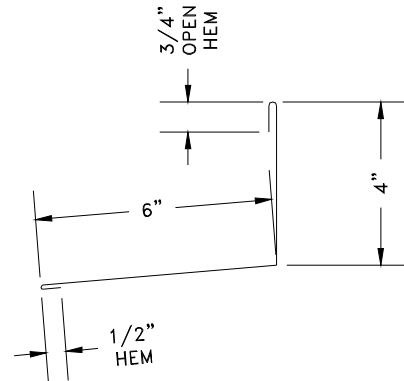


HIGH PROFILE RAKE

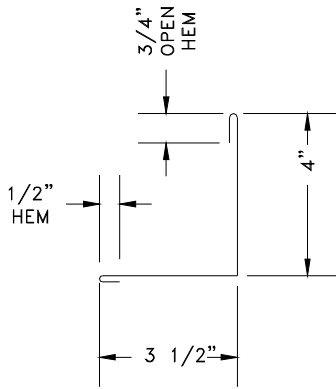
TRIMS



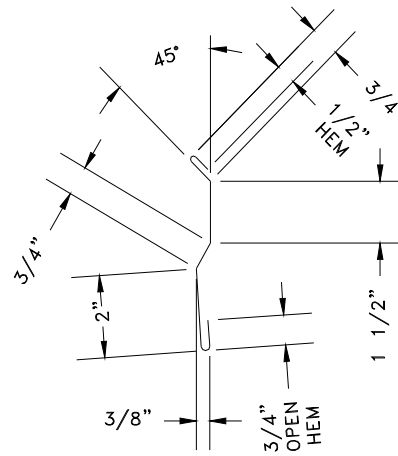
RIDGE / HIP



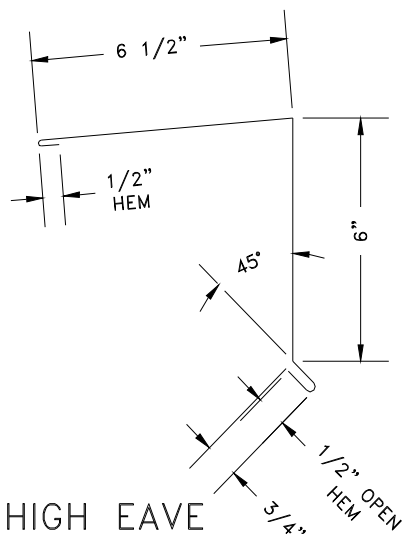
HIGH EAVE TRANSITION



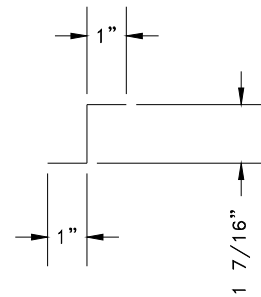
RAKE TRANSITION



COUNTER FLASH



HIGH EAVE



ZEE CLOSURE