



**Delta Rib™, Delta Rib™ III, Nor-Clad®,  
Strata-Rib® & 2½" Corrugated**  
Installation Guide

## **Metal Roofing Panels**

*Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated*

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## Metal Roofing Panels

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### Introduction

ASC Building Products' Metal Roofing not only prioritizes weather tightness, durability, aesthetic appeal, and affordability but also emphasizes ease of installation. This guide aims to assist installers in achieving top-quality results. Feel free to reach out to an ASC Building Products representative for any additional assistance you may need.

**Important Notice:** Be sure to review this manual in its entirety before beginning installation.

This manual is provided to the customers of ASC Building Products as a guide to assist in the installation of metal roofing. Use for any other purpose is prohibited. This manual remains the property of ASC Building Products.

These instructions contain suggested application procedures only and cannot replace the need for good common sense and experience. Responsibility for conformance to state and local building codes, as well as any other applicable requirements rests with the installer, as does the responsibility to observe reasonable safety procedures.

ASC Building Products assumes no responsibility for any problems which might arise as a result of improper installation or any personal injury or property damage that may occur with the product's use.

#### Notes:

- It is recommended that metal roofing be installed on roofs with a minimum slope of 3:12.
- The details contained in this guide are shown over a plywood substrate. Details remain essentially the same for either a solid substrate (plywood/OSB or steel decking), spaced framing or intermittent support conditions with only the fastener size & type changing. Where spaced framing is used, perimeter supports for flashings must be considered.
- Each flashing part in this guide has been assigned a part number. Each part number contains one or two letters followed by one or two numbers, for example 'EW17'. These part numbers have been added to make referencing these parts easy.

### Minimum Recommended Tools & Equipment

**Screws/Screw bits:** Clutch type screw gun with depth locating nose piece allowing variable torque settings is recommended to insure proper installation of the screws. The following bits will be required: 1/4" hex and No. 2 Phillips screwdriver bit.

**Snips:** For miscellaneous panel and flashing cutting requirements. Three pairs will be required for left edge, right edge, and centerline cuts.

**Electrical Metal Shears or Nibblers:** Used for general metal cutting, such as at the hips and valleys.

**Chalk Line:** Used to assist in the alignment of panels, flashings, etc.

**Caulking Gun:** For miscellaneous caulking and sealing to inhibit water infiltration.

**Rivet Tool:** Used for miscellaneous flashing and trim applications.

**Turn-Up Tool:** Available from ASC Building Products, the tool is used to hand brake the ends of the panels as indicated within the installation details.

**Marking Tools:** Indelible marker or scratching tools.  
**Scratch Awl:** Used to mark the steel.

**Utility Knife:** Used for miscellaneous cutting.

**Electric Drill:** Used to drill holes such as those required for rivet installation.

**String Line:** Used for general alignment and measuring.

**Tape Measure:** 25 ft. minimum (another 50 ft. handy).

**Locking Pliers:** Standard and "Duckbill" style for miscellaneous clamping and bending of parts.

**Hammer:** Used with roofing nails to fasten flashings.

**Note:** Some installers prefer to use circular power saws with metal cutting abrasive blades. While the use of power saws may be faster, there are some disadvantages that must be considered: (1) The edges of metal that have been saw cut are jagged and unsightly, and are more likely to rust than sheared edges. (2) Saw cutting will leave small particles of metal on the panel surface that will rust and damage the panel finish if not completely removed.

## Delivery, Handling and Storage

- Always check the shipment upon delivery. Check for damage and check material quantities against the shipping list. Note any damaged material or shortages at the time of delivery.
- Handle panel bundles and individual panels with care to avoid damage. Longer bundles and panels may require two or more “pick points,” spaced no farther than 10’ apart, to avoid damage that can result from buckling and/or bending of the panels.
- Store the panels and other materials in a dry, well ventilated area and away from traffic. Elevate one end of the bundle so that any moisture that may have accumulated during shipping can run off. Be sure that air will be able to circulate freely around the bundles to avoid the build-up of moisture. Never store materials in direct contact with the ground.

Note: Excessive storage periods or poor storage conditions often result in water intrusion. Prolonged exposure to wet conditions can cause paint blistering and galvanized substrate corrosion or staining in as little as two weeks.

- Painted panels are shipped with a protective plastic sheeting or a strippable film coating between all panels. Remove any strippable film coating prior to installation and in any case, do not allow the strippable film coating to remain on the panels in extreme heat, cold, or in direct sunlight or other UV source.
- Wear clean cotton gloves when handling unpainted bare panels or flashings to avoid discoloration. Roll forming die marks (which appear black), particularly at bends, will be visible.
- Wear clean, non-marking, soft soled shoes when walking on the panels to avoid shoe marks or damage to the finish. Do not step on the panel seams or ribs. Step only in the flat area of the panel.

### Safety Considerations

- Never use unsecured or partially installed panels as a working platform.  
Do not walk on panels until they are in place on the roof and all of the fasteners attaching the panels to the roof have been installed.

- Metal roofing panels are slippery when wet, dusty, frosty or oily.  
Do not walk on a metal roof when any of these conditions are present. Wearing soft soled shoes will help minimize slipping and help prevent damage to the painted surfaces.
- Do not walk on the panel seams.  
When walking on the fully installed roof panels, be sure to step only in the flat areas of the panels.
- Always be aware of your position on the roof relative to your surroundings.  
Take note of the locations of roof openings, roof edges, equipment, co-workers, etc.
- Always wear proper clothing and safety attire.  
Wear proper clothing when working with sheet metal in order to minimize the potential for cuts, abrasions, and other injuries. ASC Building Products recommends safety glasses and gloves.
- Use care when operating electrical and other power equipment.  
Observe all manufacturer’s safety recommendations.
- Roof installation on windy days can be dangerous.  
Avoid working with sheet metal products on windy days.

### Roof Preparation

ASC Building Products metal roofing can be used in both new construction and retrofit roofing applications. We recommend installing metal roofing over a continuous rigid substrate such as plywood/OSB, or over spaced supports. Contact ASC Building Products for additional information.

The following steps need to be taken to prepare the roof for installation of metal roofing panels:

#### New Roofs:

- Make sure there are no nails or other objects protruding from the substrates that might puncture the underlayment or the roof panels. Clean all debris from the roof.
- Check all details for possible roof penetrations which must be added to the deck prior to roof panel installation.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Roof Preparation, cont.

- Cover the entire roof deck with a minimum of 30 lb asphalt-saturated felt paper. Many synthetic underlayments may be used in place of felt with ASC Building Products' roofing. Installer must ensure the underlayment manufacturer has certified their synthetic underlayment for use with metal roofing. For applications over spaced framing, other underlayments/barriers may be required. For Class A fire resistance, see notes below.

For installation, begin at the eave and roll the underlayment horizontally (parallel to the eave). Allow each consecutive course to overlap the previous one 3 inches. Overlap the ends a minimum of 6" (see Figure #1). Areas of underlayment that have torn should be replaced or repaired prior to installation of the metal roof.

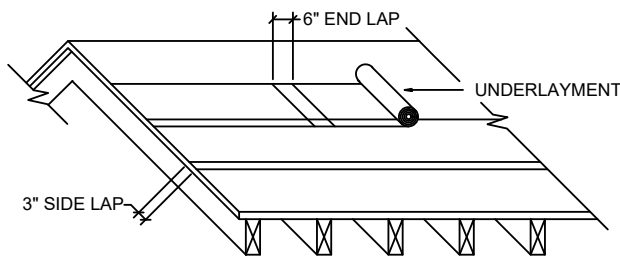


Figure 1

### Constructions Requiring Class 'A' Fire Resistance:

Panel: ASC Building Products' steel roof panels.

Barrier Sheet (one of the following):

- GAF VersaShield® Underlayment
- Polyglass Polystick XFR®
- Georgia-Pacific DensDeck Roofboard

Additional Ply Sheet (optional):

Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15, 20 or 30 felt or UL Classified Prepared Roofing Accessory (TGDY) or ASC Building Products' "AEP Span Underlayment HT".

Substrate: 15/32" min. plywood or 7/16" min. OSB.

Notes:

- Obey all local code requirements.
- Class A assembly requirements noted above per UL listing TGFU.R21182.

Refer to UL listing for specific construction limitations.

- Place an alignment line along the gable end where the first roof panel will be installed. This line must be parallel to the gable edge of the roof deck and square with the eave line. Check the roof for squareness by making a 3' line across the eave. (see Figure #2). Completing the 3' x 4' x 5' triangle should place the 4' edge of the triangle parallel with the gable. The first roof panel will be placed parallel with this line. Slight variations or out-of-square conditions can be covered by the gable trims. Refer to Gable detail.

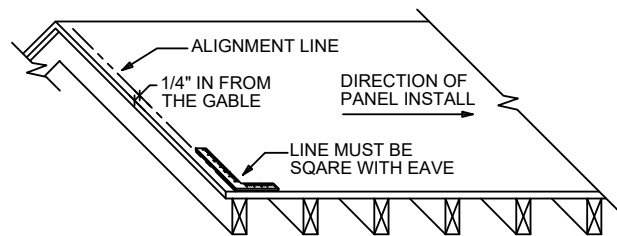


Figure 2

- It is very important to measure the entire length of the roof from gable to gable. Correct placement of the panels will allow the panel's ribs on each side to be covered by the gable flashing. This will create a symmetrical appearance on both ends of the roof. Should this be impractical, the Adjustable Gable detail can be used.

Note: In areas where snow, ice, and/or heavy rain conditions exist, a high temperature cold-applied rubberized underlayment, like AEP Underlayment HT, should be used in lieu of felt in the valleys. Felt on the remainder of the roof will lap over the membrane where the two meet. See Valley detail.

Existing Roofing: Some jurisdictions will allow reroofing over existing roofing without the need for tearoff. Check with your local codes or building department for your specific requirements.

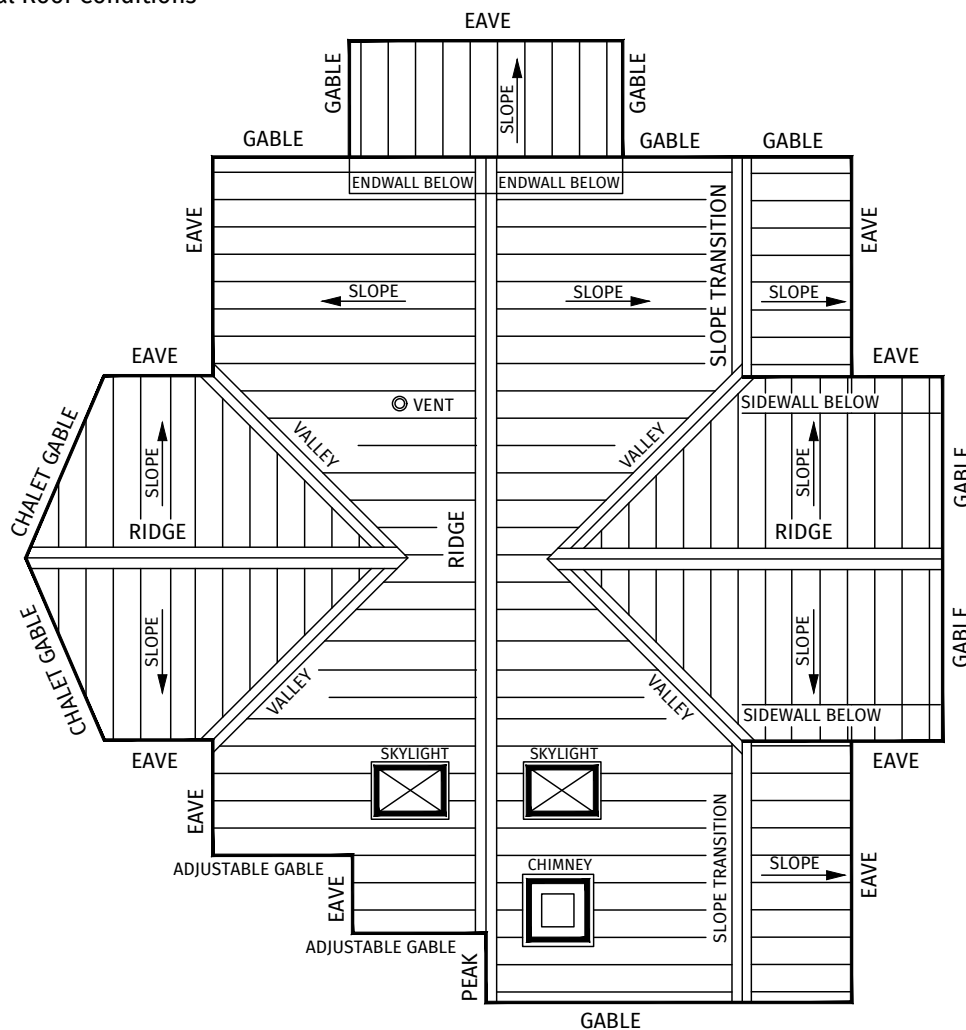
For best results, roofing requires a relatively smooth and flat substrate. Application over rough and/or uneven surfaces is not recommended, ie, wood shingles. If the roof is to be stripped down to the existing decking (strongly recommended), follow the procedures for new roofs on the previous page. Be sure to check the existing roof and repair any damaged areas prior to installation of the new roof system.

Note: Do not apply metal roofing over roofs with structural damage or trapped moisture.

The following steps should be taken when installing ASC Building Products' Metal Roofing over existing roofing:

- Inspect the roof for damage and make any necessary repairs to achieve a flat plane for the metal roof panels. Wood shingles should be removed.
- Secure any warped or loose roofing material.
- Ensure that there are no nails or other objects protruding from the roof that might puncture the new underlayment or damage the new roof panels.
- Remove all moss and other debris from the roof.
- Cut off any overhanging roofing flush with the edges of the roof deck and remove all hips, ridge caps, and penetration flashings.
- Metal debris/shavings should be removed from the roof progressively and daily to prevent immediate corrosion and scratching of the metal panel's top coat.
- Follow the directions on page 3 for roof preparation.

### Map of Typical Roof Conditions




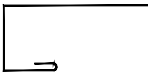
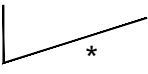

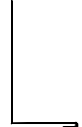
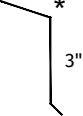
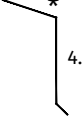




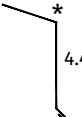



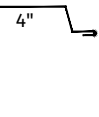
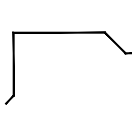
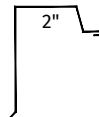
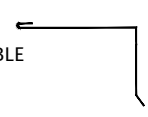
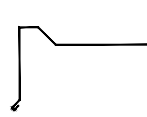
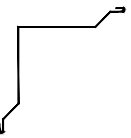
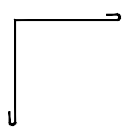
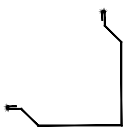
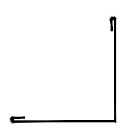
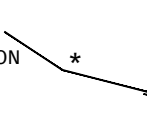
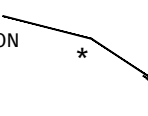
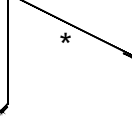
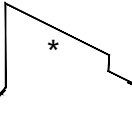

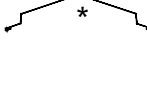
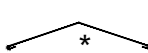
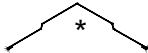
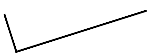

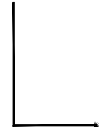

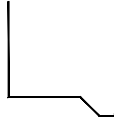
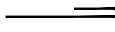
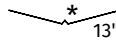

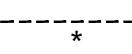
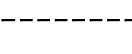
| Detail           | Page(s) | Detail   | Page(s) | Detail           | Page(s) |
|------------------|---------|----------|---------|------------------|---------|
| Adjustable Gable | 32      | Gable    | 20      | Skylight         | 35-39   |
| Chalet Gable     | 31      | Peak     | 24-25   | Slope Transition | 29-30   |
| Chimney          | 40-43   | Ridge    | 10-14   | Valley           | 15-16   |
| Eave             | 17-19   | Sidewall | 26      | Vent             | 33-34   |
| Endwall          | 27-28   |          |         |                  |         |

# Metal Roofing Panels

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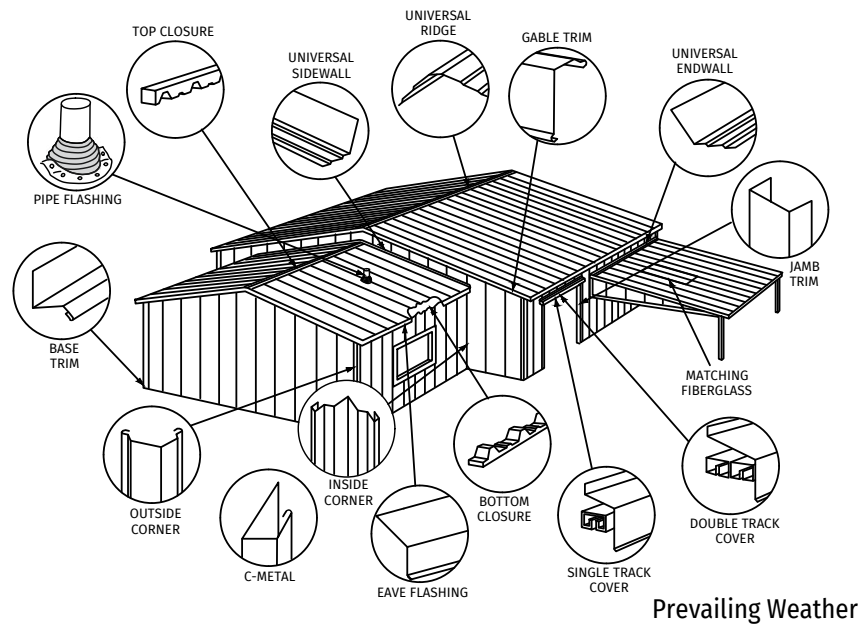
## Flashing Summary

Flashings contained within this installation guide.

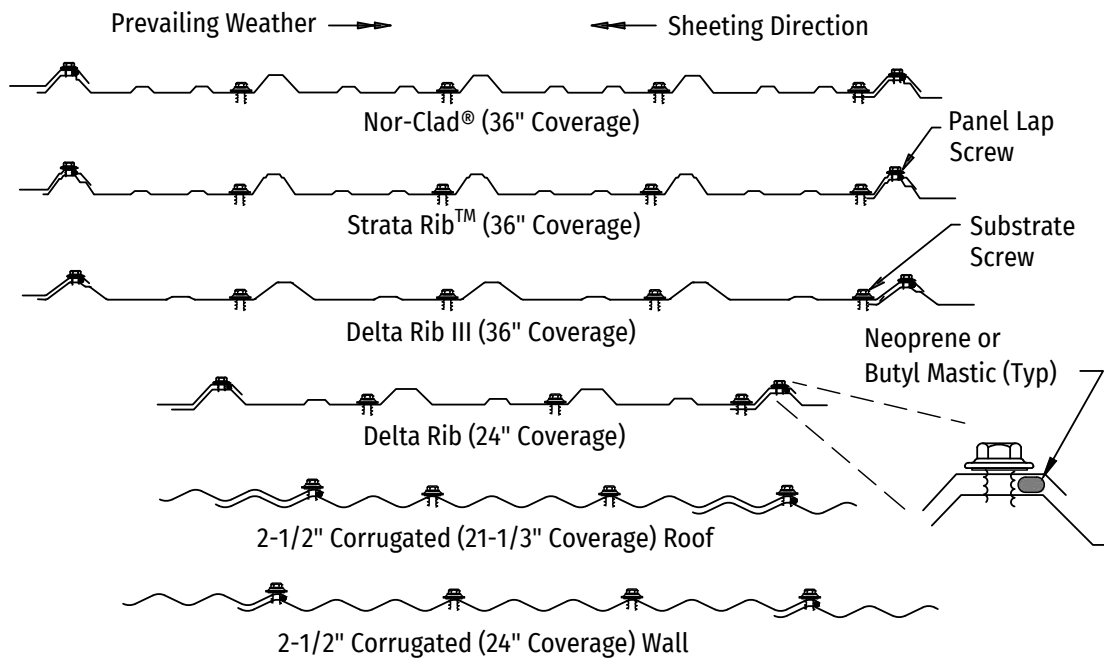
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|---|---|--|--|--|
| <b>B1</b><br>BASE<br><br>pgs: 47,48              | <b>C1</b><br>'C' TRIM<br><br>pgs: 12,25,28,47,48 | <b>CH16</b><br>UPHILL TRIM<br><br>pgs: 42       | <b>CH17</b><br>DOWNHILL TRIM<br><br>pgs: 43       | <b>CH18</b><br>SIDE FLASHING<br><br>pgs: 41     |
| <b>E1</b><br>EAVE<br><br>pgs: 17                 | <b>E2</b><br>EAVE<br><br>pgs: 17                 | <b>E3</b><br>EAVE<br><br>pgs: 17,19             | <b>E4</b><br>EAVE<br><br>pgs: 17                  | <b>E5</b><br>EAVE<br><br>pgs: 17                |
| <b>ER1</b><br>EAVE<br><br>pgs: 17                | <b>ER2</b><br>EAVE<br><br>pgs: 17                | <b>EW1</b><br>ENDWALL<br><br>pgs: 27            | <b>EW2</b><br>ENDWALL<br><br>pgs: 27              | <b>EW17</b><br>VENTED ENDWALL<br><br>pgs: 28    |
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| <b>R3</b><br>RIDGE CAP<br><br>pgs: 10          | <b>R4</b><br>RIDGE CAP<br><br>pgs: 10          | <b>SK16</b><br>SKYLIGHT UPHILL<br><br>pgs: 36 | <b>SK17</b><br>SKYLIGHT DOWNHILL<br><br>pgs: 37 | <b>SK18</b><br>SKYLIGHT SIDE<br><br>pgs: 35   |
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| <b>VS1</b><br>VENT STRIP<br><br>pgs: 12,28     | <b>VS43</b><br>VENT STRIP<br><br>pgs: 25       |  |  |  |

\* - ROOF PITCH REQUIRED WHEN ORDERING

## Trim Locations



## Fastener Placement




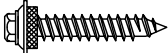
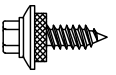





### Notes:

- 36" maximum recommended fastener row spacing. Panel lap screws should be placed at 18" O.C. maximum. Refer to IAPMO-UES Building Code Compliance Report #ER-0550 for a more complete list of panel attachments and performance data. More efficient panel attachment patterns may be available.
- Lap panels away from prevailing weather.
- Use only accessories specifically designed for use with these particular products.
- Isolate roofing and flashings from contact with dissimilar metals.
- Fastener selection will vary based upon installation conditions - see chart on following page.
- The use of neoprene or butyl mastic tape along the sidelaps as shown above is always recommended for roof installations.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

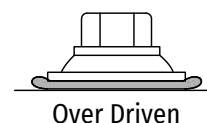
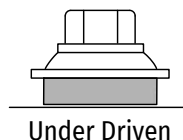
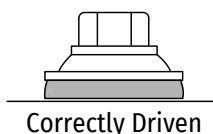
### Fastener Selection

| Fastener Locator | Description   | Length(s)                      | Use   |
|------------------|---|--------------------------------|---|
| 1                |  #9 Hex Head Wood Screw (1/4" Drive) with Sealing Washer                         | 1", 1-1/2"<br>2", 2-1/2"<br>3" | Panel to dimensional lumber attachments. Color matched.   |
| 2                |  #14 Hex Head Wood Screw (5/16" Drive) with Sealing Washer                       | 1"<br>1-1/2"                   | Panel to plywood/OSB attachments (7/16" minimum thickness). Color matched.  |
| 3                |  #12 Stitch Screw (1/4" Hex Drive) with Sealing Washer                           | 3/4"                           | Exposed trim and panel lap attachments. Visible head size matches Item #1 wood screw. Color matched.                |
| 4                |  #14 Lap Self Driller (5/16" Hex Drive) with Sealing Washer                      | 7/8"                           | Exposed trim and panel lap attachments. Visible head size matches Item #2 wood screw. Color matched.                |
| 5                |  1/8" Diameter Stainless Steel Rivet | 1/8" Max Grip Length           | Trim to trim, or trim to panel attachments. Color matched.  |
| 6                |  #12 Hex Head Wood Screw (1/4" Drive)  | 1", 1-1/2"<br>2", 2-1/2"       | Panel to steel deck or steel framing attachment. Color matched.   |
| 7                |  #8 Modified Truss Head Screw  | 1"                             | For non-exposed trim to wood substrate attachments.   |
| 8                |  Roofing Nail (Not from ASC)   | Varies                         | Typically used to temporarily hold a flashing in place prior to installing panels over top. Not available from ASC. |

#### Notes:

- The table above shows the fasteners commonly required for ASC Building Product's roofing panels. Refer to the panel installation details within this guide for specific fastener usage.
- Details shown within this installation guide are based on installations over plywood. Other installations may require different fasteners.
- Panel attachment screws must be long enough to fully penetrate through plywood/OSB at least 3/8", or penetrate into solid lumber by at least one inch.
- All screws must be coated to provide protection against corrosion.
- Exposed fasteners must have sealing washers and should be the same color as the parts they attach.
- Roofing nails are also required, but are not furnished by ASC Building Products.
- Screws must be properly driven to ensure proper seal and holding strength. Do not underdrive or overdrive the screws.
- Stainless steel rivets are not watertight.

#### Proper Installation of Fasteners with Sealing Washers



## Panel Installation

### Procedure:

- Before installing the roof panels, install any underlying trims, such as eave trims, valley flashings, pre-hung gutters, etc. Refer to individual installation details for clarification.
- Align the first panel along the gable eave, using the alignment line marked along the starting gable (see Figure 2). Ensure the desired eave overhang and correct ridge setback are maintained.
- Install the inside panel closure at the eave end of the panel.
- Fasten the panel to the substrate according to the guidelines provided on page 7. See page 8 for recommended fastener types.
- Continue installing panels across the roof, maintaining proper alignment and squareness to avoid a sawtooth effect along the eave.

- Once all panels are in place, complete the installation by adding final trims over the panel edges, including gable trims, ridge caps, and other finishing components. Refer to the installation details throughout this guide for more information.

### Notes:

- Details shown within this installation guide are based on installations over plywood substrates. Installations over alternate materials (lumber, metal framing, etc) will require some adjustments. Ensure proper fasteners are used for each alternate installation method.
- Metal debris and shavings should be removed from the roof frequently, as they can cause corrosion stains and damage the panel's painted coating almost immediately.

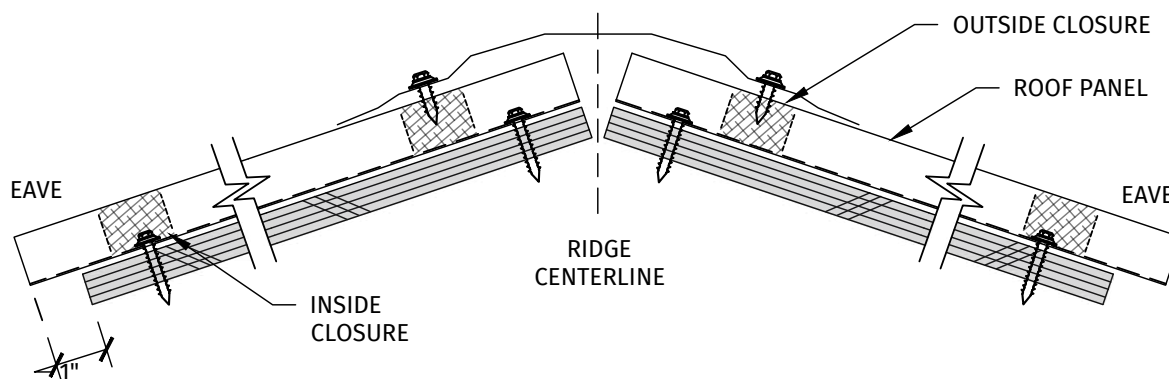


Figure 3

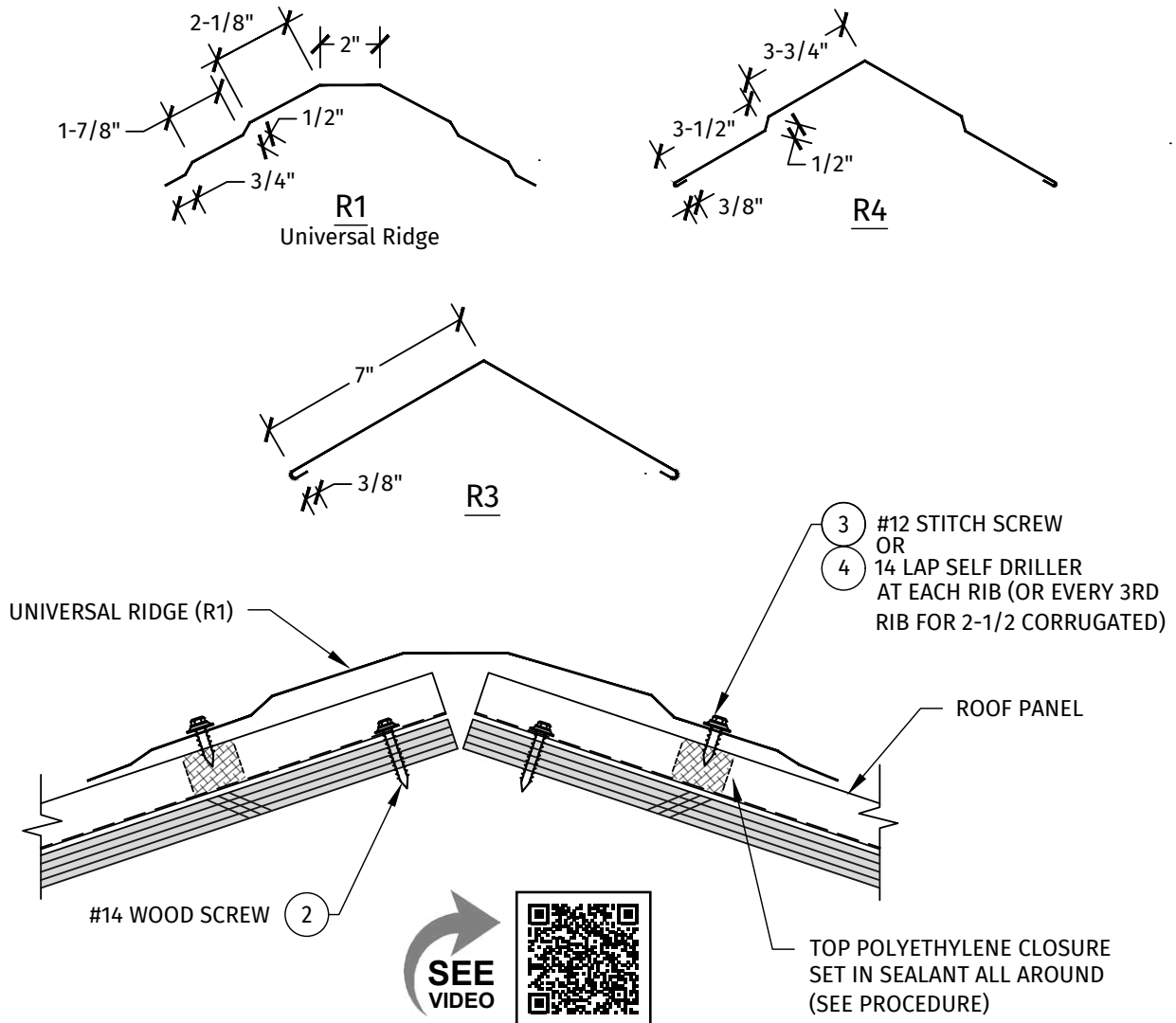
ASC BUILDING  
PRODUCTS' BUILDING  
CODE COMPLIANCE  
REPORT #ER-0550:



## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Hip/Ridge Flashing



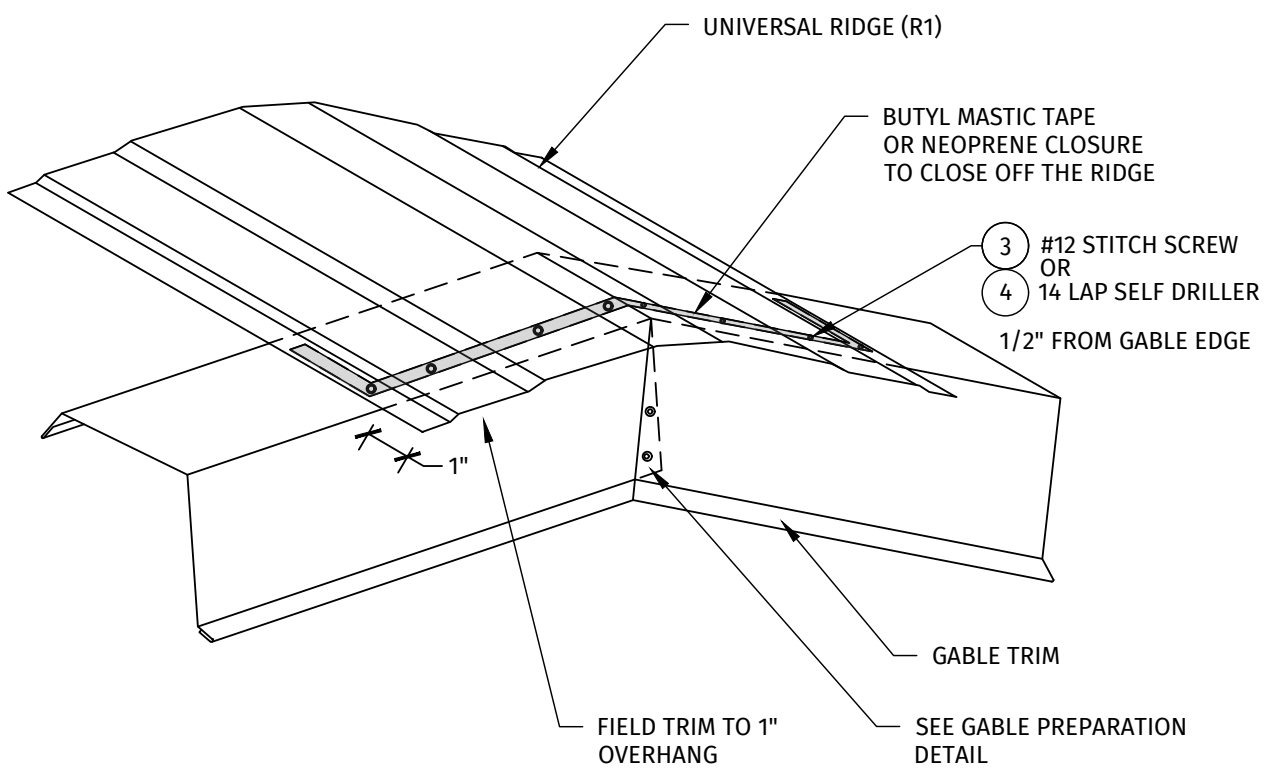
#### Procedure:

- Caulk the bottom of the polyethylene closure. Set the closure as shown and caulk the top.
- Fasten the ridge cap using stitch screws at each rib or 8" O.C. for 2-1/2" Corrugated.
- Trim ends of ridge cap to 1" overhang (refer to following page).
- Caulk, lap and rivet sequential ridge flashings (see Appendix).

#### Notes:

- The gable flashing must be installed prior to the installation of the ridge cap.
- R1 is a universal hip/ridge. A standard hip/ridge, R3 and R4 is also available.

# Universal Ridge Termination

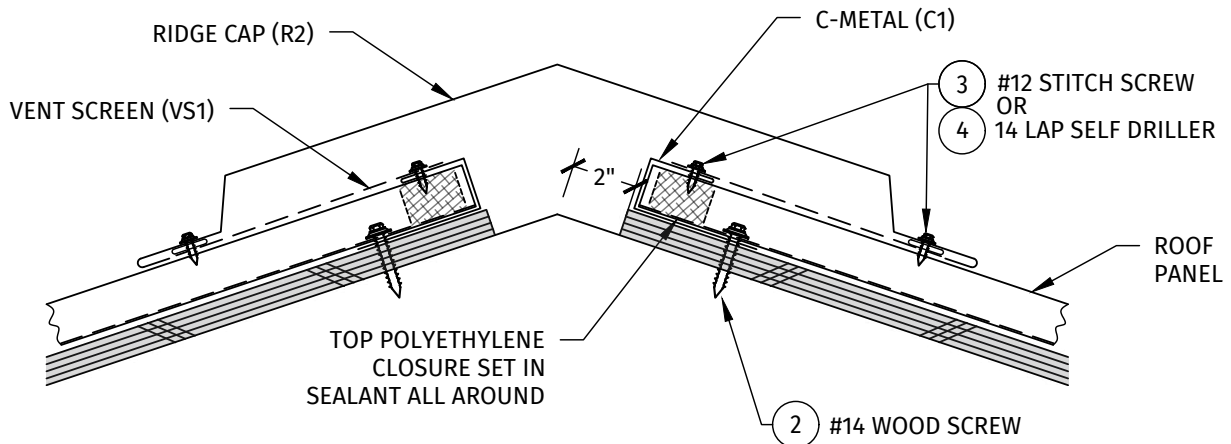
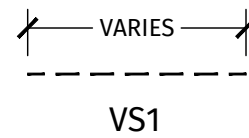
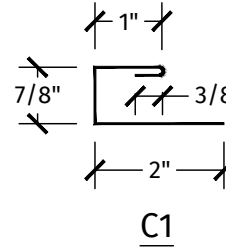
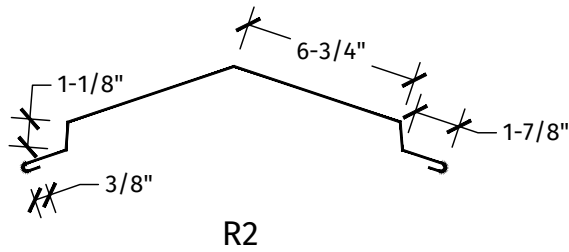


## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Vented Ridge/Hip Flashing

THIS DETAIL MEETS WILDFIRE  
CODE REQUIREMENTS (IWUIC & CA SFM)



#### Procedure:

- Substrate should be held back 2" from each side of the ridge.
- Locate the roof panels as shown. Check overhang/alignment at the eave. Review eave details for additional information.
- Position C-Metal over top end of panels and attach panel and C-Metal to upper end of substrate.
- Caulk bottom of outside closure and set closure into place as shown.
- Attach uphill end of vent screen to C-Metal, positioning so that ridge cap will cover when installation is complete.
- Secure ridge cap to top of each panel rib (or every 3rd

rib for 2-1/2" Corrugated) using #12 or #14 lap screws. Pre-drilling pilot holes may be required to ease installation.

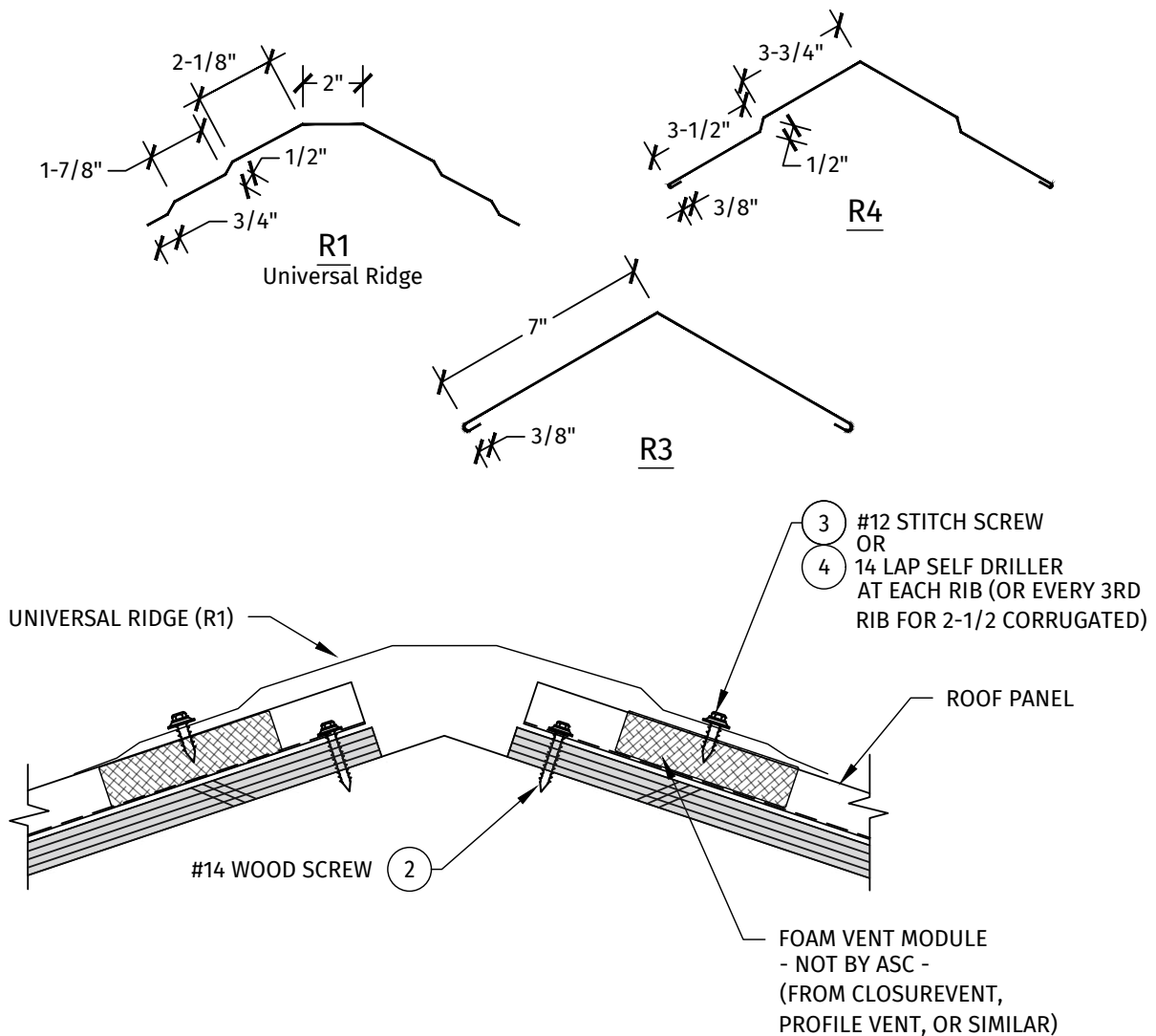
- Caulk, lap and rivet sequential flashings (see appendix).
- Close the ends of the ridge cap by cutting and folding material at each end. Fasten with rivets and caulking joints (see page 14).
- For alternate, non-wildfire rated ridge venting solution see following page.

#### Notes:

- The gable flashing must be installed prior to the ridge cap.

## Ridge/Hip Flashing

QUICK INSTALL, NON-WILDFIRE RATED  
INSTALLATION DETAIL



### Procedure:

- Install the vented foam closure per manufacturer's recommended installation instructions. Additional caulking along top and/or bottom vent material surfaces may be desired to prevent vent material from shifting during high wind events.
- Fasten the ridge cap using stitch screw at each rib or 8" O.C. for 2-1/2" Corrugated.
- Trim ends of ridge cap to 1" overhang (refer to page 11).

- Caulk, lap and rivet sequential ridge flashings (see Appendix).

### Notes:

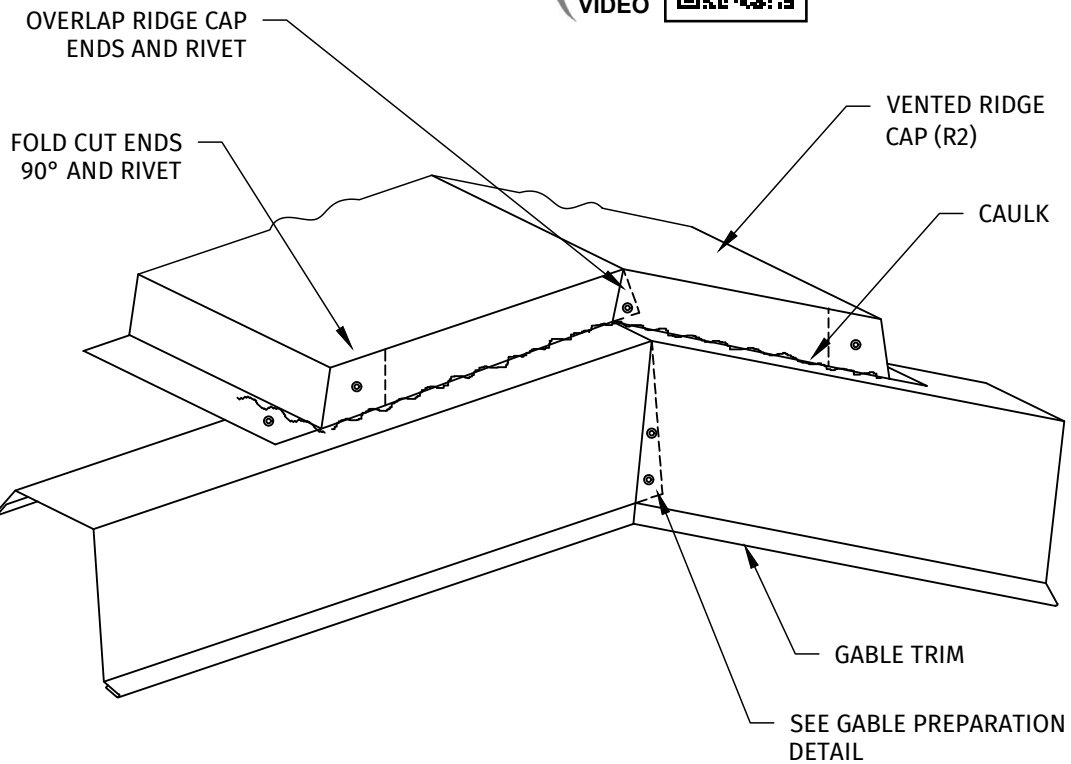
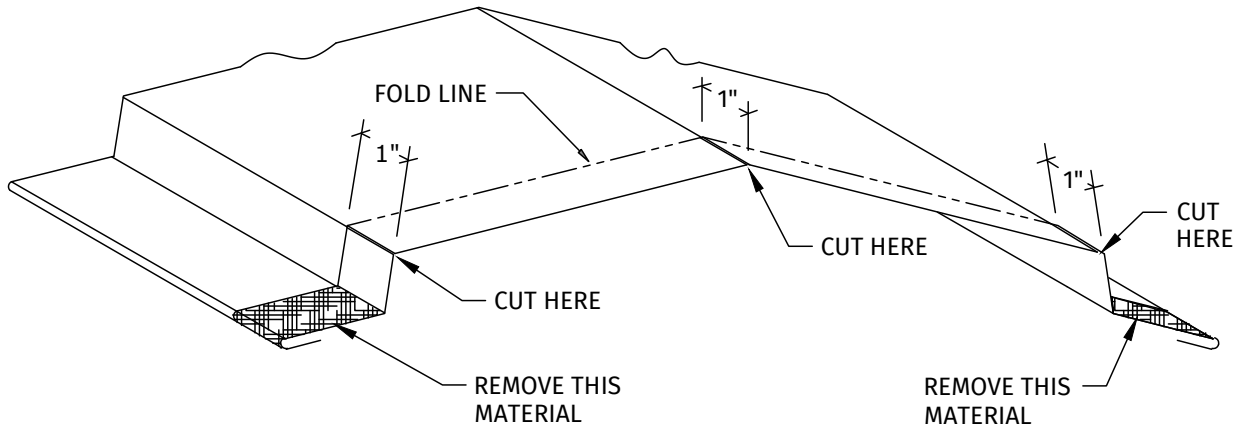
- The gable flashing must be installed prior to the installation of the ridge.
- "R1" is a universal ridge/hip. A standard ridge/hip, R3 and R4 is also available.

# Metal Roofing Panels

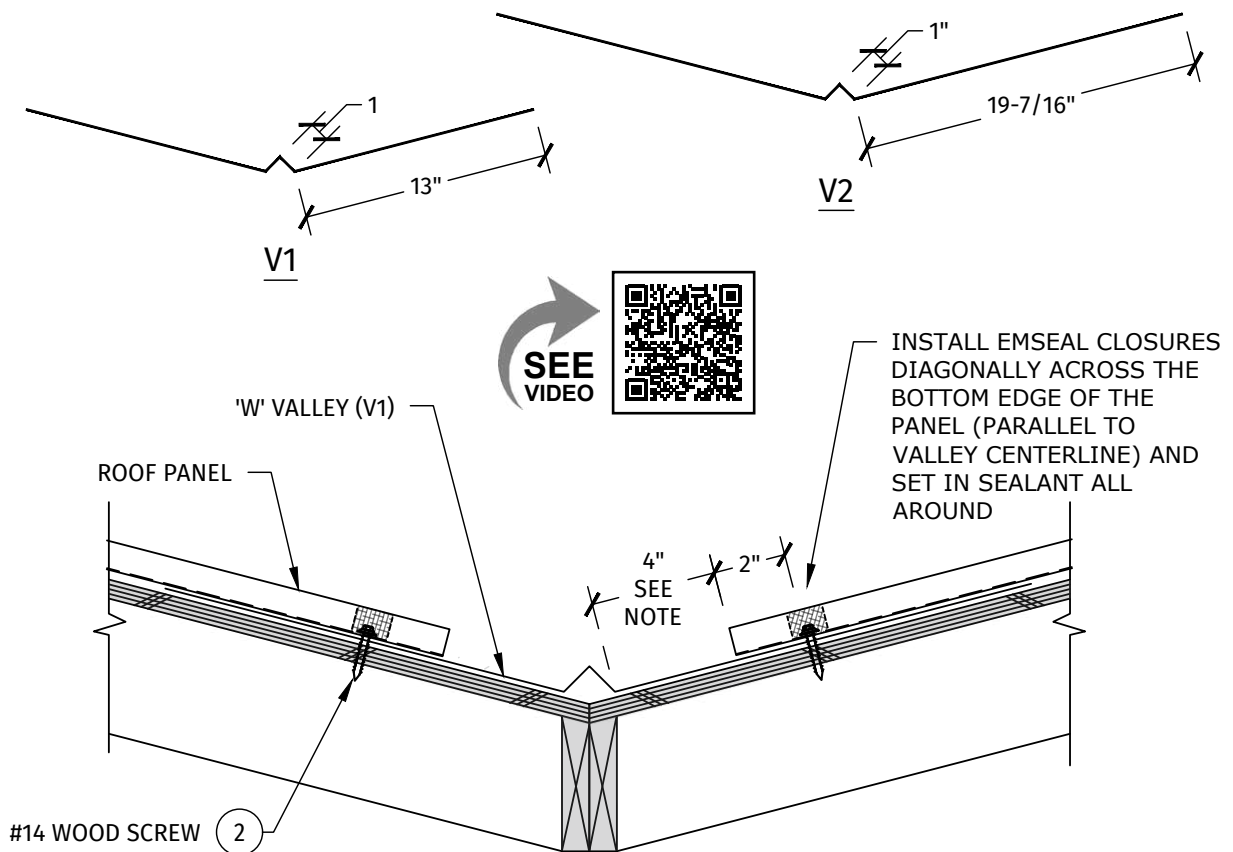
Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

## Vented Ridge/Hip Termination

For R2 Ridge Cap



## Valley Flashing



### Procedure:

- Place a second layer of 36" roof underlayment in the valley center line with 18" of roof underlayment on each side.
- Starting at the low end, trim and place the valley flashing so it overhangs the eaves 1" (see next page).
- Caulk and lap the subsequent uphill valley flashings a minimum of 8".
- Typical polyethylene closures cannot be installed diagonally across a miter cut panel. At mitre cuts, use universal Emseal closures parallel to the center of the valley.
- Field cut the panels holding a minimum of 4" back from the valley as shown. Larger valleys without the center "V" may be required in snow country installations.
- Install the panels over the valley flashing using #14 wood screws through the Emseal closure strip.

Space panel fasteners no further apart than as shown in Fastener Placement section.

- When valleys are required, install sidelap neoprene or butyl mastic tape inside the sidelap a minimum of 10" up from the panel edge.

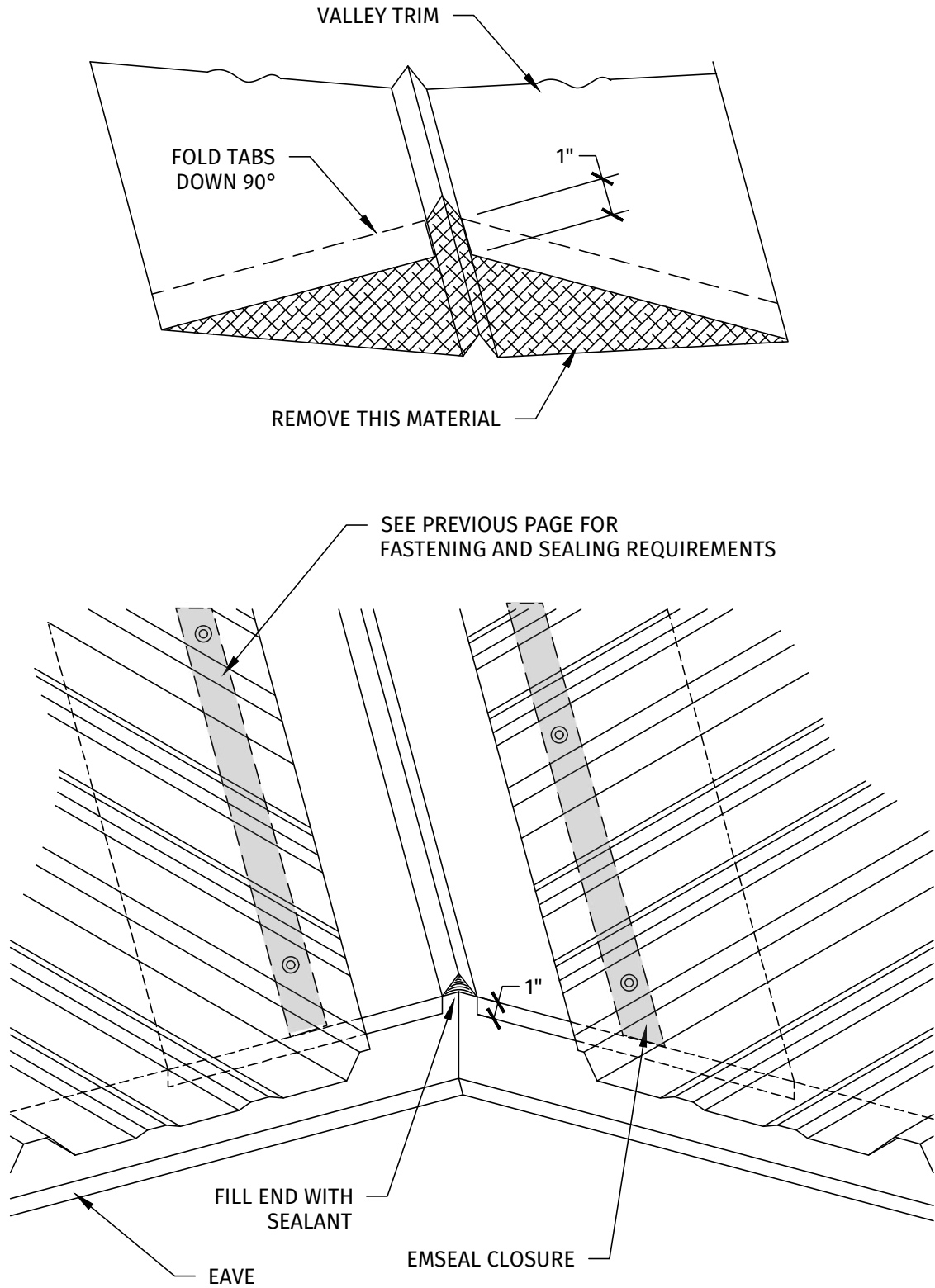
### Notes:

- In areas where snow, ice and heavy rain conditions exist, panels may need to be held back more than 4" and the valley flashing overall width must be increased. A high temperature cold-applied rubberized underlayment should be used extending at least 3' up from the center of the valley on each side.
- Refer to applicable building codes to ensure roof valley construction meets code requirements. Certain jurisdictions, like wildfire prone areas, may require different construction methods or materials.

## Metal Roofing Panels

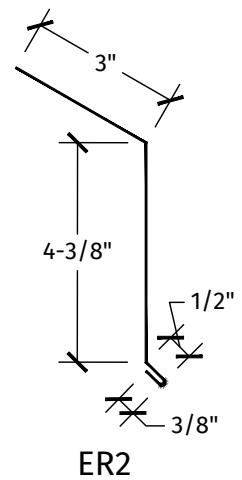
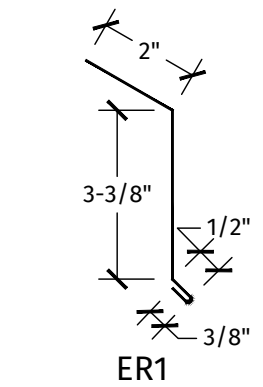
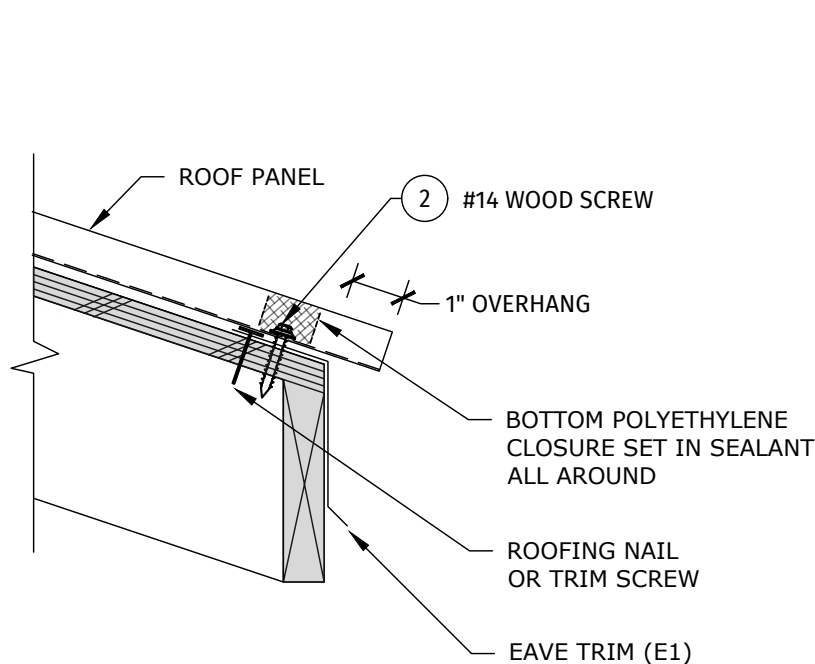
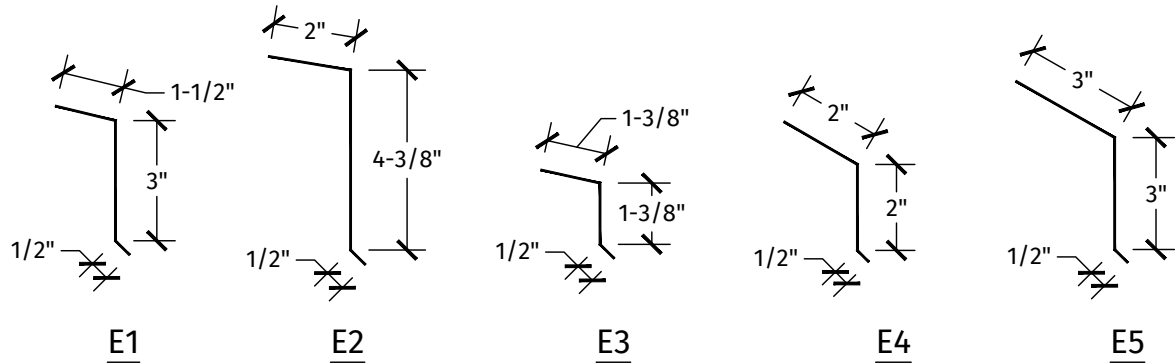
Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Valley Termination



## Eave Flashing

This flashing must be installed prior to the panels.



### Procedure:

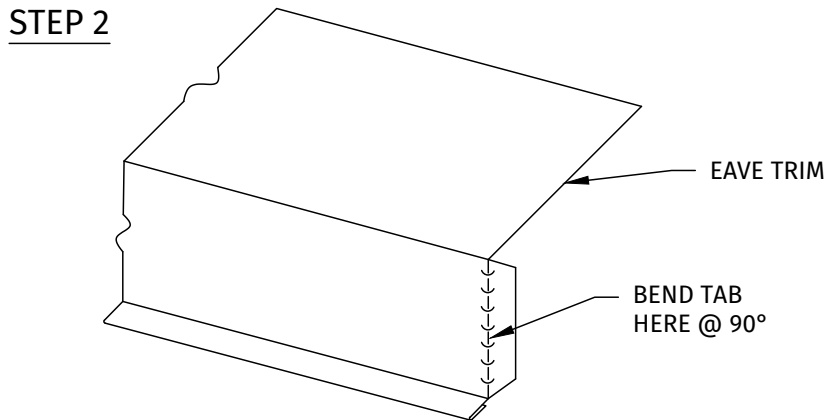
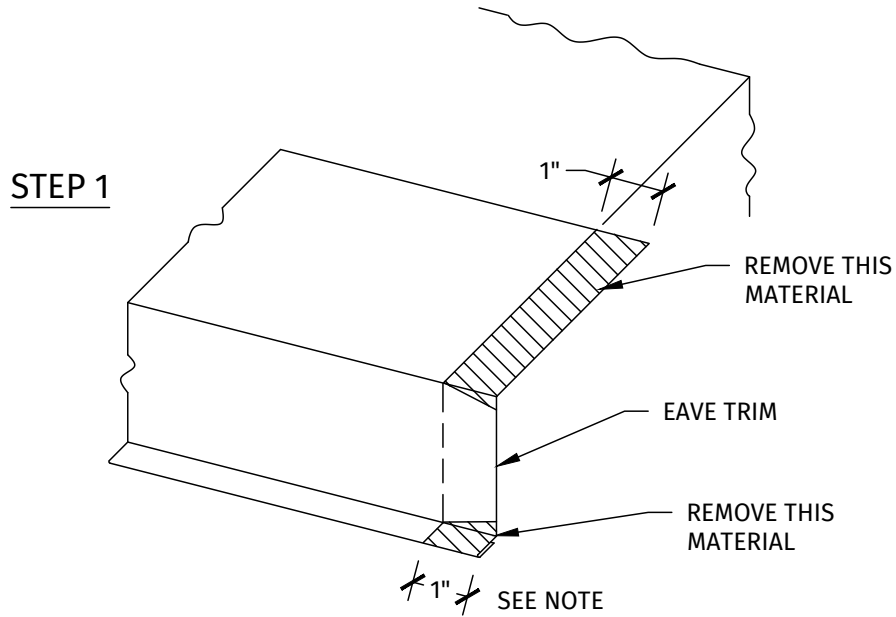
- Attach the eave flashing using roofing nails or trim screws evenly spaced on the top flange to temporarily secure flashing prior to installing panels.
- Caulk and lap the flashing a minimum of 3" (see appendix).
- Panels should overhang the eave 1" minimum.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Eave Flashing Preparation

Use this detail where eave meets gable

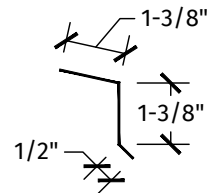


**Note:**

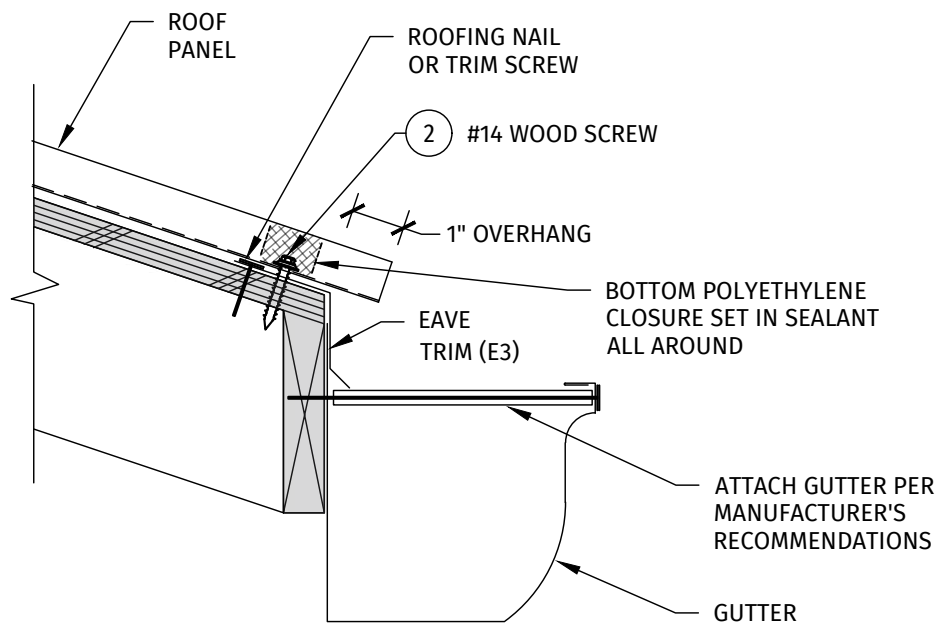
- Length of eave trim must allow for 1" of material to extend past gable fascia.

## Eave With Gutter

This flashing must be installed prior to the panels.



E3



### Procedure:

- Temporarily attach eave flashing using roofing nails or trim screws to top flange to secure flashing prior to installing panels.
- Caulk and lap sequential flashings a minimum of 3" (see appendix).
- Install underlayment, overlapping eave trims.

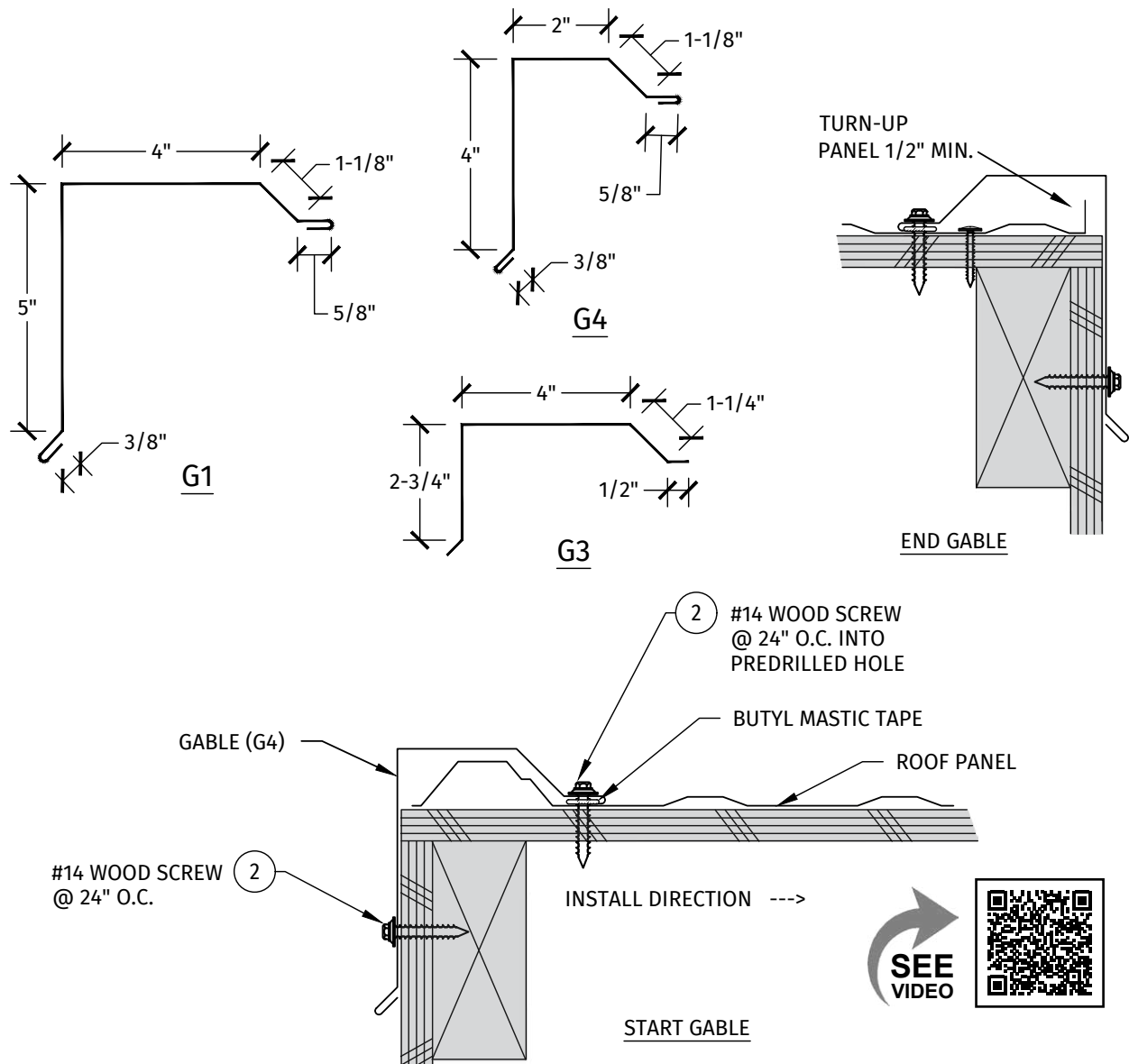
### Notes:

- Underlayment should be installed over top of eave flashings (underlayment not shown). This is to ensure that any moisture that may get behind panels does not get directed under eave flashings.
- It is recommended that a licensed gutter contractor install gutters.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Gable Flashing



#### Procedure:

- Place the first roof panel according to the instructions on page 4.
- Place butyl mastic tape along flange of the gable trim as shown.
- Install the gable flashing by placing it firmly over the panel. Use color matched wood screws at 24" O.C. max. to attach gable trim to the panel and substrate.
- Pre-drill screw holes as needed to ease trim fastener installation.
- Caulk and lap the flashing a minimum of 3" (see appendix).

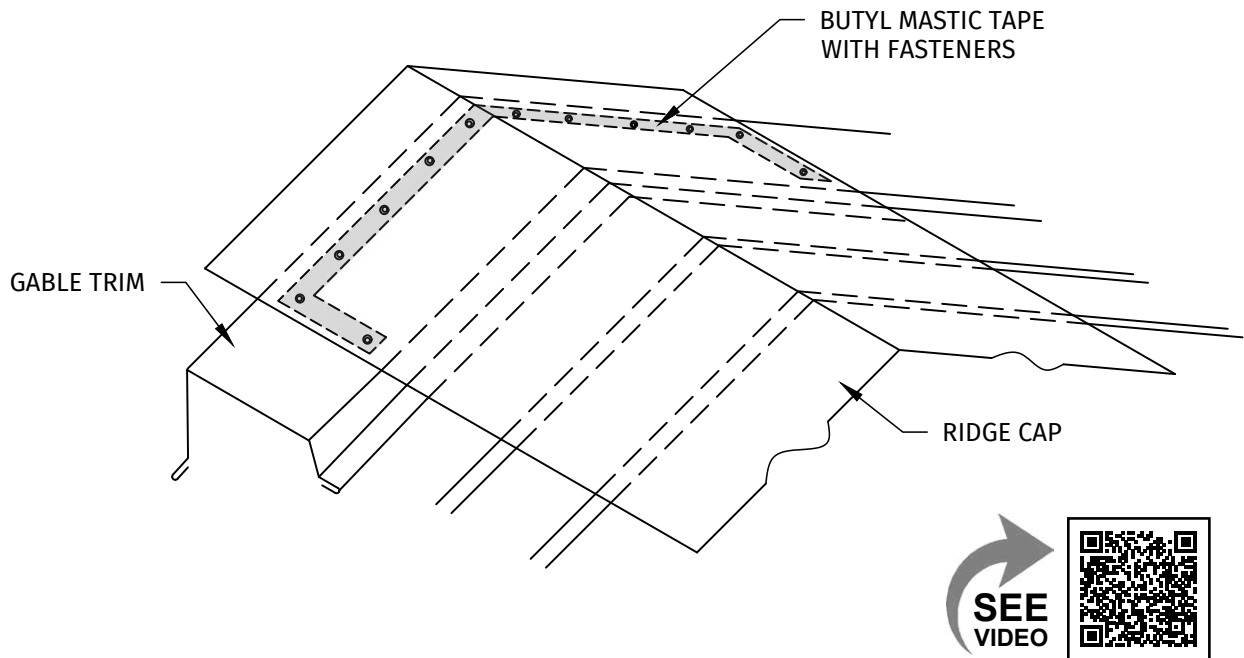
- Miter cut the gable flashing at the ridge to join each side (see Gable Flashing Preparation at Ridge detail).
- Snip and fold the gable at the eave to close the end. Use rivets to fasten (see Gable Flashing Preparation at Eave detail).

#### Note:

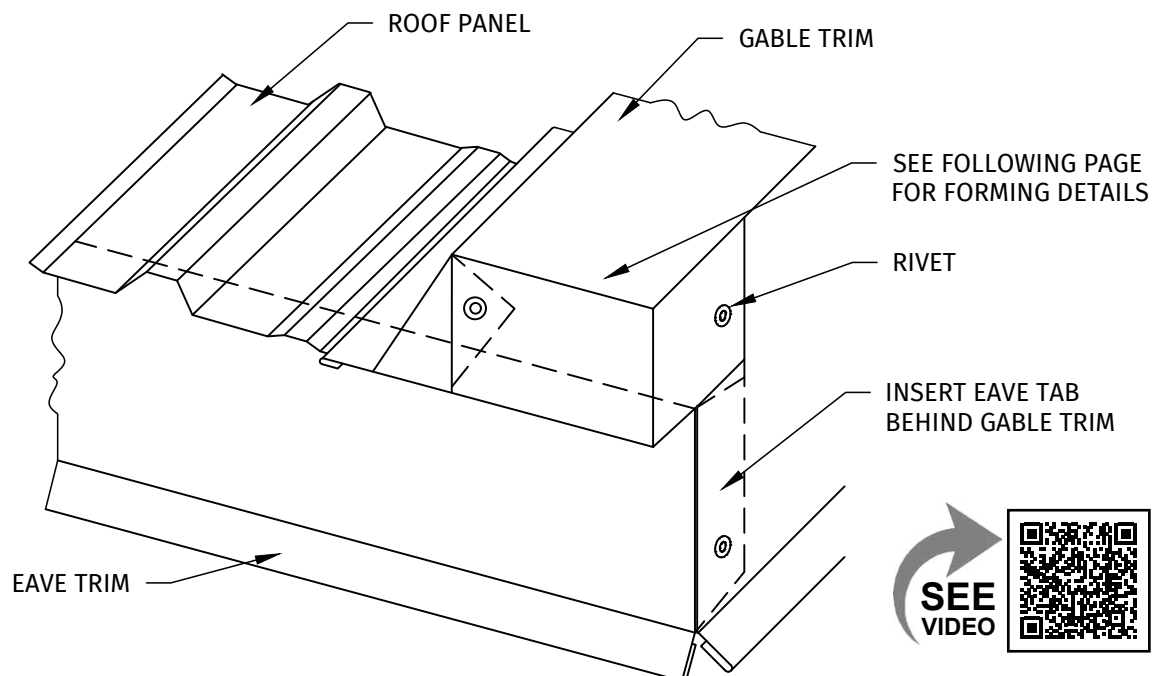
- "G1" is a standard gable trim. Narrower gables, "G3" and "G4" are also available.

## Gable/Ridge Transition

This detail applies to R1, R3, and R4 ridge caps.



## Gable Corner at Eave



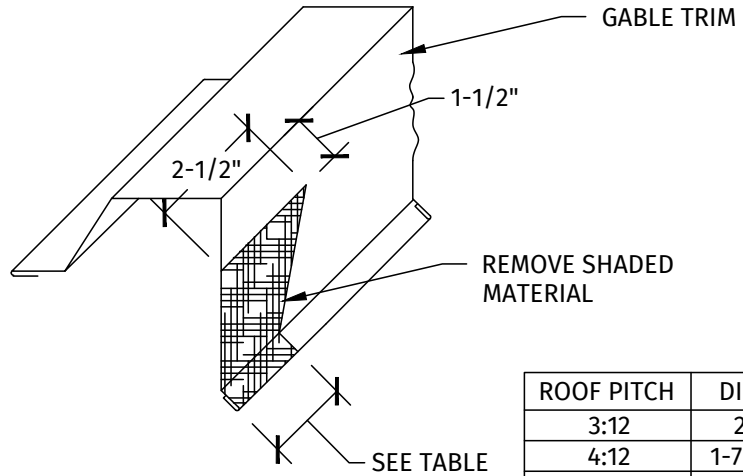
## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

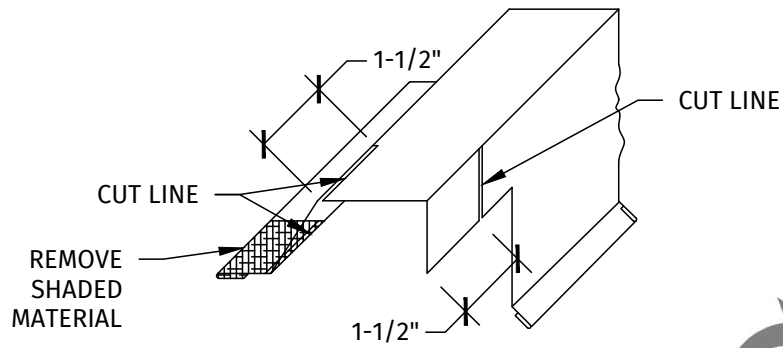
### Gable Flashing Preparation at Eave

#### Step One

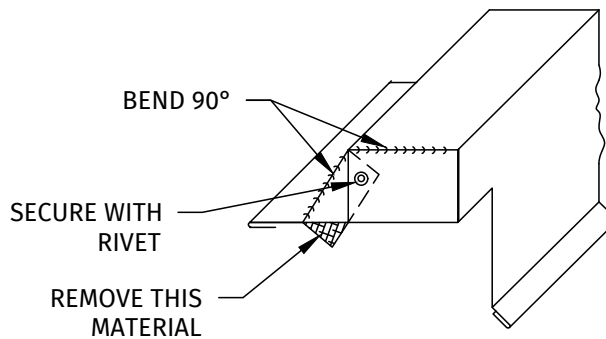
Note: Length of Gable must extend 2-1/2" past face of Eave trim.



#### Step Two



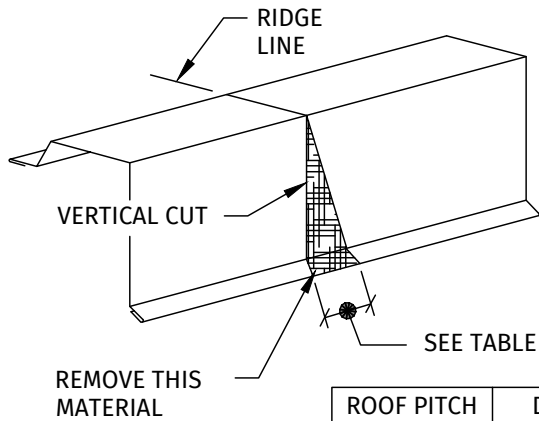
#### Step Three



## Gable Flashing Preparation at Ridge

### Step One

Remove a pie-shaped piece from the gable flashing as shown below.

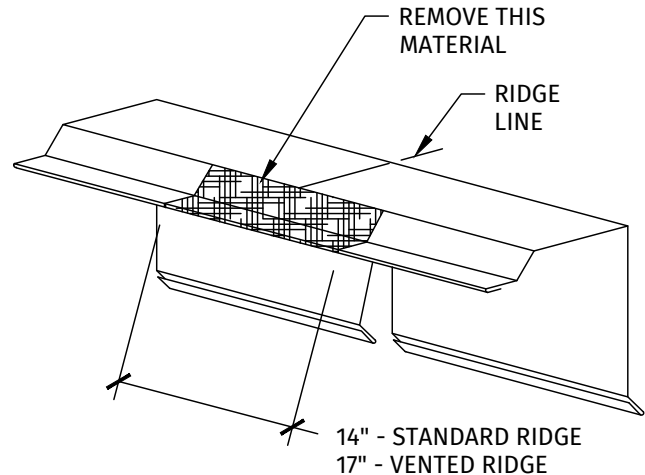


| ROOF PITCH | DIM.    |
|------------|---------|
| 3:12       | 1-1/16" |
| 3.5:12     | 1-1/4"  |
| 4:12       | 1-7/16" |
| 5:12       | 1-3/4"  |
| 6:12       | 2-3/16" |
| 12:12      | 4-7/16" |

\* Dimensions only apply to G4 Gable Flashing

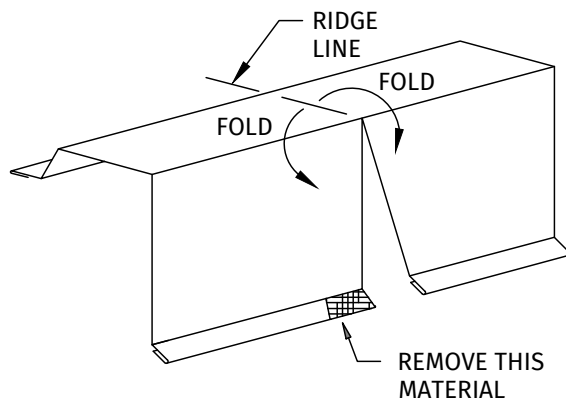
### Step Two

Notch out the downturn leg on the gable as shown below.



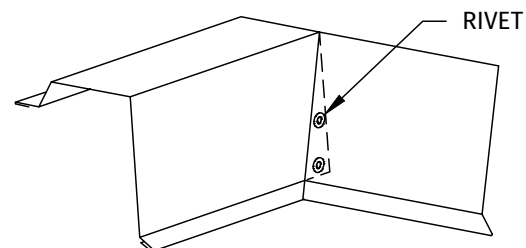
### Step Three

Center the flashing on the ridge at the gable and bend to roof pitch



### Step Four

Reference pg. 14 for final installation view and interface with ridge.



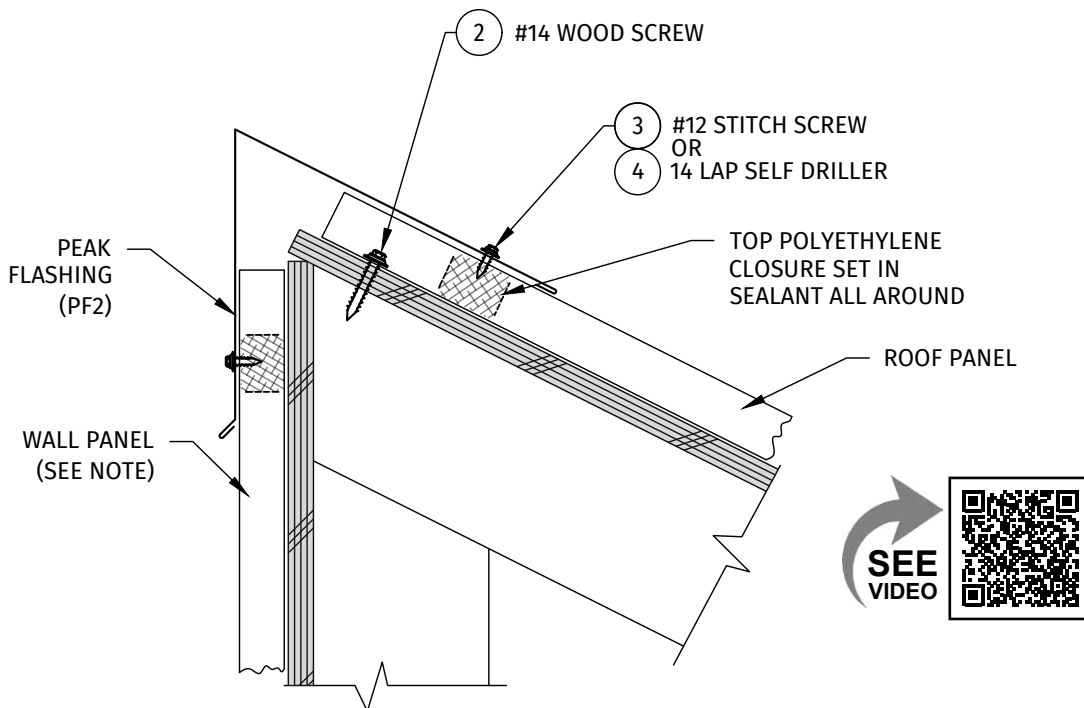
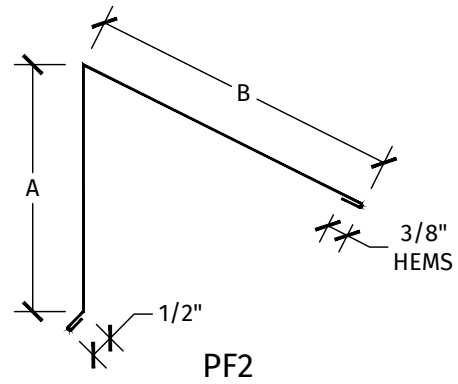
## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Peak Flashing

PF2

| Roof Pitch  | Dimension 'A' | Dimension 'B' |
|-------------|---------------|---------------|
| 3:12-5:12   | 5-3/8"        | 5-1/4"        |
| 6:12-8:12   | 6"            | 5-3/4"        |
| 9:12-10:12  | 6-1/2"        | 6-1/4"        |
| 11:12-12:12 | 7-1/8"        | 6-5/8"        |



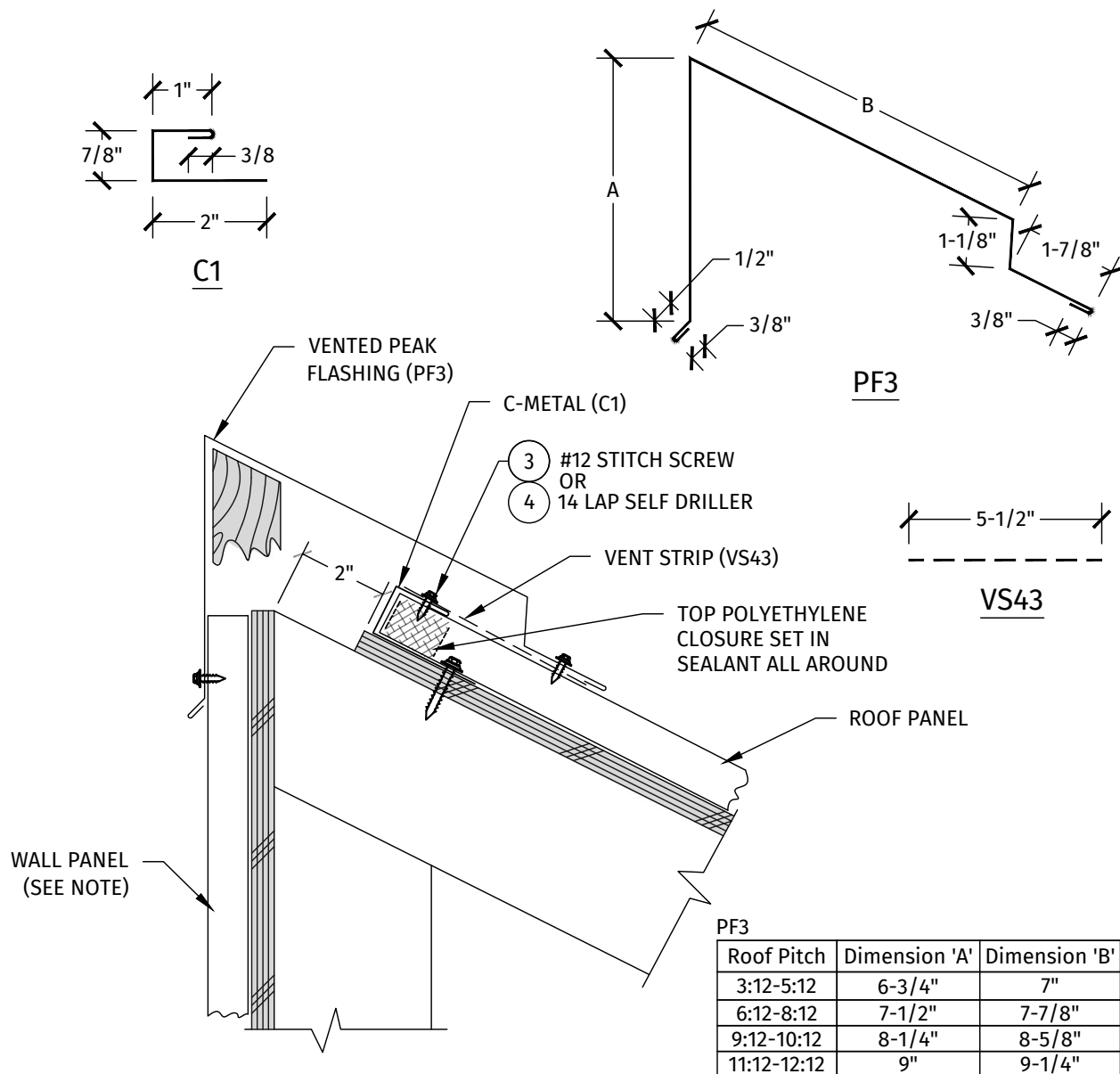
#### Procedure:

- Locate the roof panels as shown. Check overhang/alignment at the eave. Review eave details for additional information.
- Caulk the bottom of the polyethylene closure. Set the closure as shown and caulk the top.
- Secure peak flashing to top of each panel rib (or every 3rd rib for 2-1/2" Corrugated) using #12 or #14 lap screws.
- Caulk, lap and rivet sequential flashings (see appendix).

#### Notes:

- Peak flashing dimensions noted on this installation detail based on nominal 1" thick wall facing. Different wall panel thicknesses may require some adjustments to peak flashing dimensions and/or positioning of roof assembly components.

## Vented Peak Flashing



### Procedure:

- Locate the roof panels as shown. Check overhang/alignment at the eave. Review eave details for additional information.
- Install C-metal onto top end of panel and fasten both into place.
- Apply sealant to top closure and insert into C-metal.
- Attach upper end of vent screen at each rib location, or every 3rd rib for 2-1/2" Corrugated. Ensure screen is pulled tight to avoid sagging.
- Secure peak flashing to top of each panel rib (or every 3rd rib for 2-1/2" Corrugated) using #12 or #14

lap screws. Pre-drilling pilot holes may be required to ease installation.

- Caulk, lap and rivet sequential flashings (see appendix).

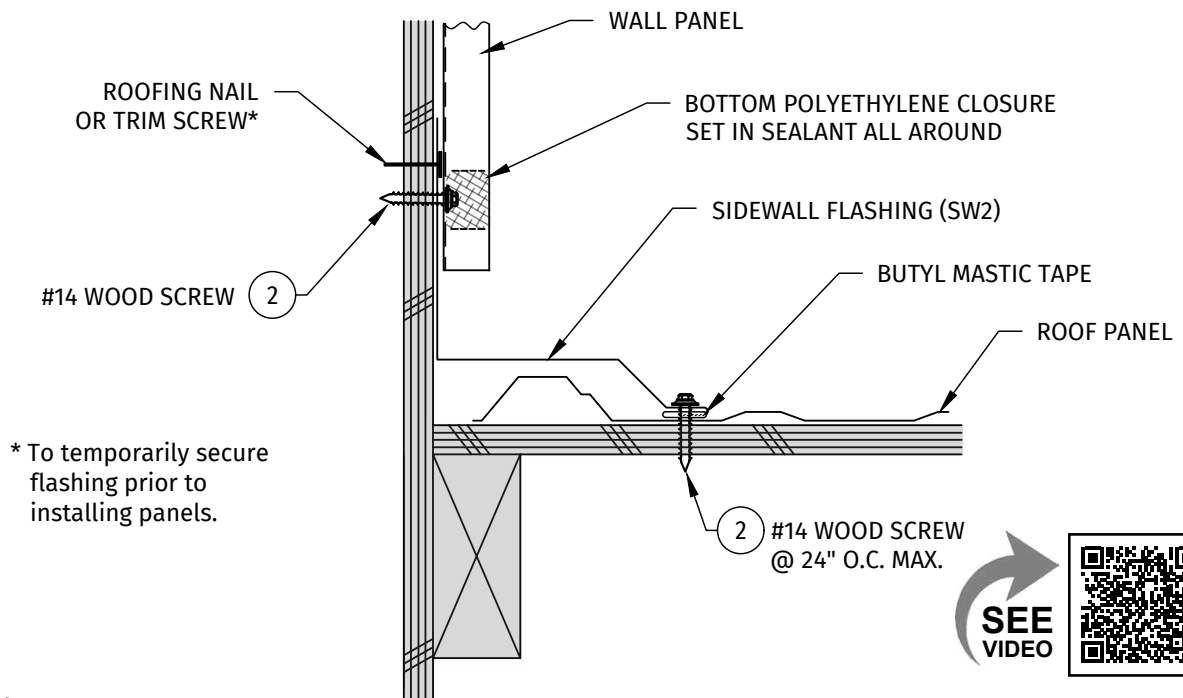
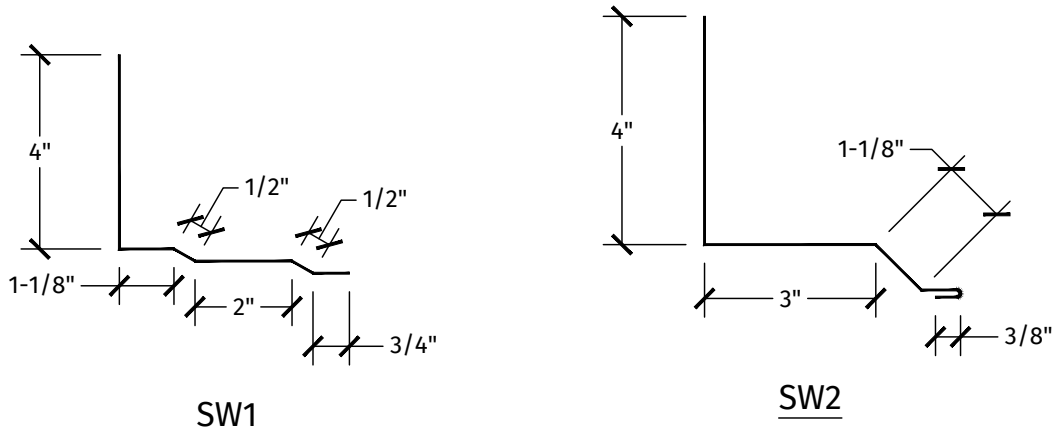
### Notes:

- Peak flashing dimensions noted on this installation detail based on nominal 1" thick wall facing. Different wall panel thicknesses may require some adjustments to peak flashing dimensions and/or positioning of roof assembly components.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Sidewall Flashing



#### Procedure:

- Locate the roof panels as shown. Check overhang/alignment at the eave. Review eave install detail for additional information.
- Place butyl mastic tape along the bottom of the sidewall flashing as shown. Carefully position over panel and set into place.
- Fasten the sidewall flashing to the wall with roofing nails or trim screws to temporarily secure flashing prior to installing wall panels.
- Secure sidewall flashing to the top of the panel with screws spaced a maximum of 24" apart.

- Caulk, lap and rivet sequential flashings (see appendix).

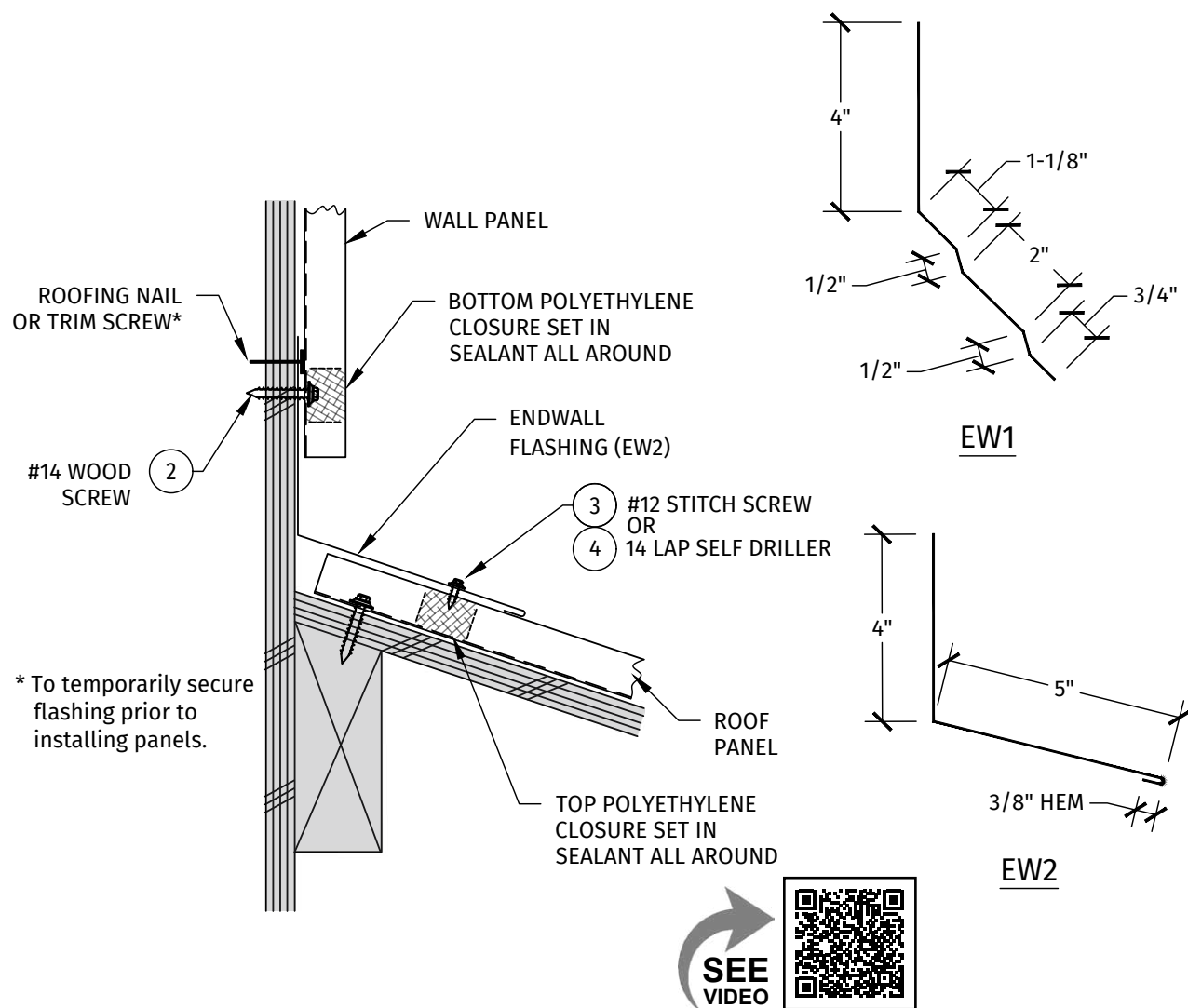
#### Wall panels:

- Caulk top and bottom of inside closure and set closure into place as shown in view.
- Attach wall panels to substrate with appropriate fasteners.

#### Notes:

- The roof panels should be installed prior to the wall panels.

## Endwall Flashing



### Procedure:

- Locate the roof panels as shown. Check overhang/alignment at the eave. Review eave details for additional information.
- Caulk the bottom of the polyethylene closure. Set the closure as shown and caulk the top.
- Fasten the endwall flashing to the wall with roofing nails or trim screws to temporarily secure flashing prior to installing wall panels.
- Secure endwall flashing to top of each panel rib (or every 3rd rib for 2-1/2" Corrugated) using #12 or #14 lap screws.

- Caulk, lap and rivet sequential flashings (see appendix).

### Wall panels

- Caulk top and bottom of inside closure and set closure into place as shown in view.
- Attach wall panels to substrate with appropriate screws.

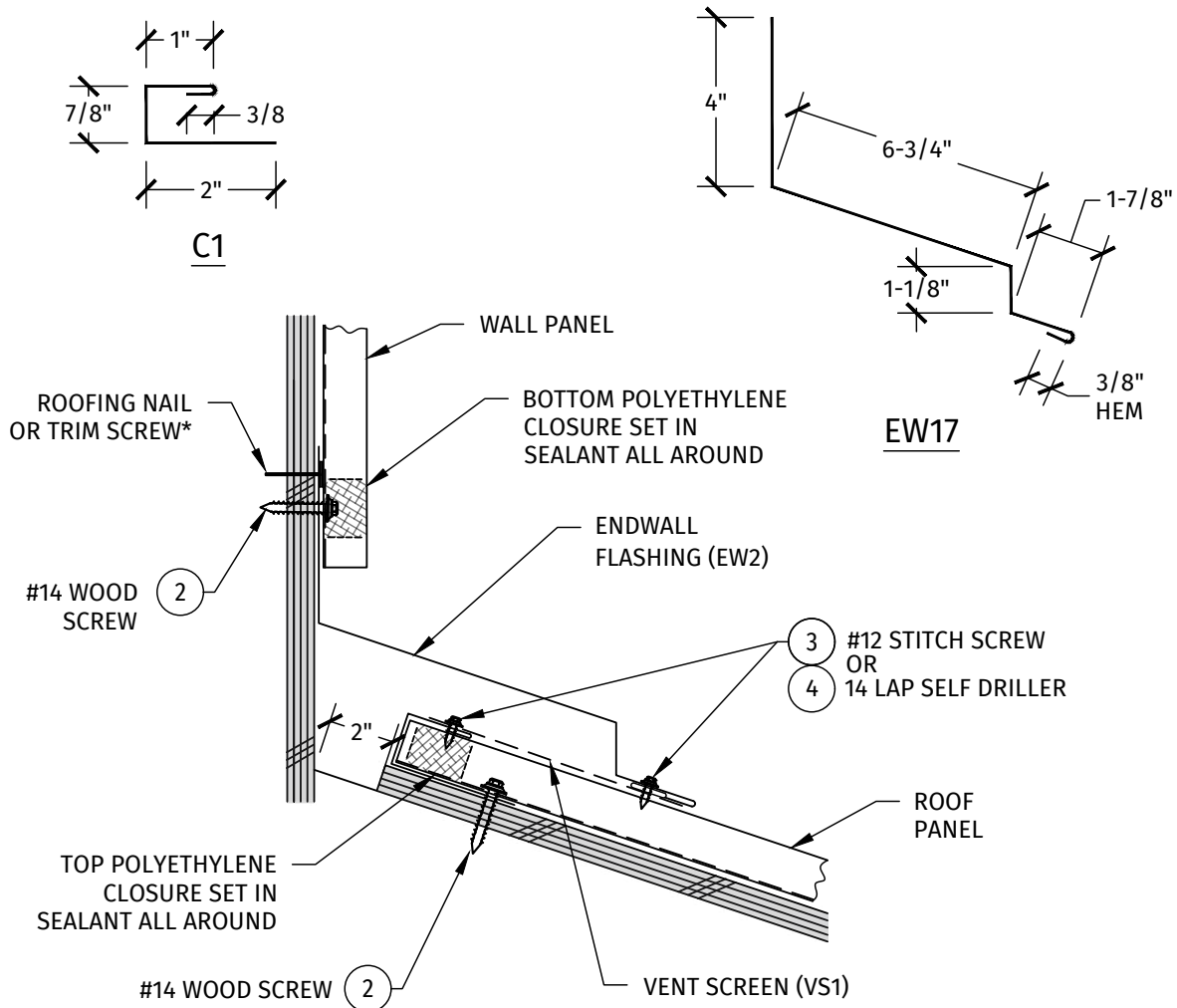
### Notes:

- The roof panels should be installed prior to the wall panels.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Vented End Wall Flashing



#### Procedure:

- Locate the roof panels as shown. Check overhang/alignment at the eave. Review eave details for additional information.
- Position C-Metal over top end of panels and attach panel and C-Metal to upper end of substrate.
- Apply sealant to top closure and insert into C-metal.
- Attach uphill end of vent screen to the C-Metal, positioning so that the lower end of the endwall flashing will cover the vent screen when installation is complete.
- Fasten the endwall flashing to the wall with roofing nails or trim screws to temporarily secure flashing prior to installing wall panels.
- Secure endwall flashing to top of each panel rib (or

every 3rd rib for 2-1/2" Corrugated) using #12 or #14 lap screws. Pre-drilling pilot holes may be required to ease installation.

- Caulk, lap and rivet sequential flashings (see appendix).

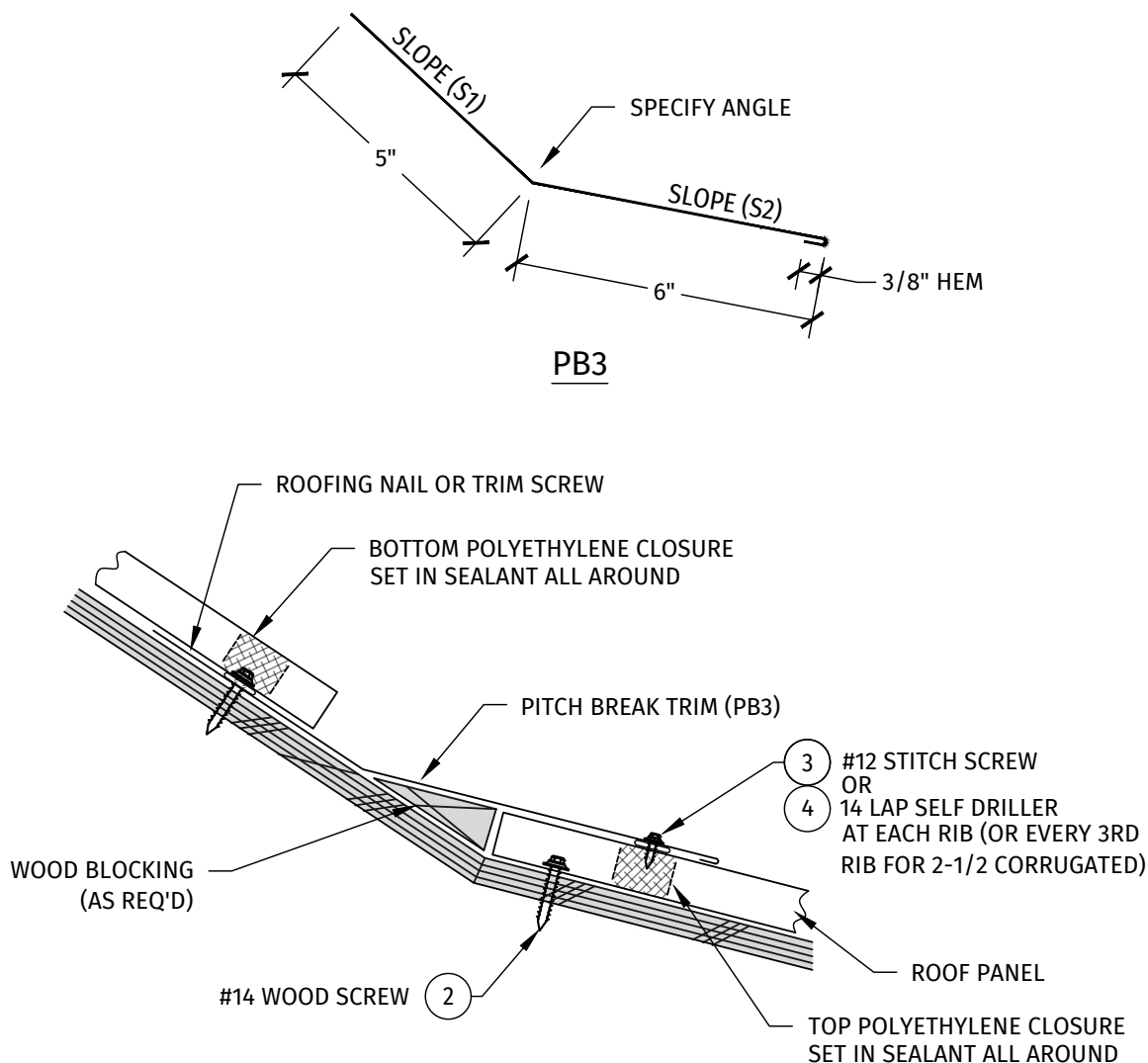
#### Wall panels

- Caulk top and bottom of inside closure and set closure into place as shown in view.
- Attach wall panels to substrate with appropriate screws.

#### Notes:

- The roof panels should be installed prior to the wall panels.

## Slope Transition - High Slope to Low Slope



### Procedure:

- Locate the lower slope roof panels as shown. Check overhang/ alignment at the eave. Review eave details for additional information.
- Caulk the bottom of the polyethylene closure. Set the closure as shown and caulk the top.
- Fasten the transition flashing to the upper roof slope with roofing nails or trim screws to temporarily secure flashing prior to installing panels.
- Secure transition flashing to top of each lower panel rib (or every 3rd rib for 2-1/2" Corrugated) using #12 or #14 lap screws.
- Caulk, lap and rivet sequential flashings (see appendix).

### Upper slope panels:

- Caulk top and bottom of inside closure and set closure into place as shown in view.
- Attach upper slope panels to substrate with appropriate screws.

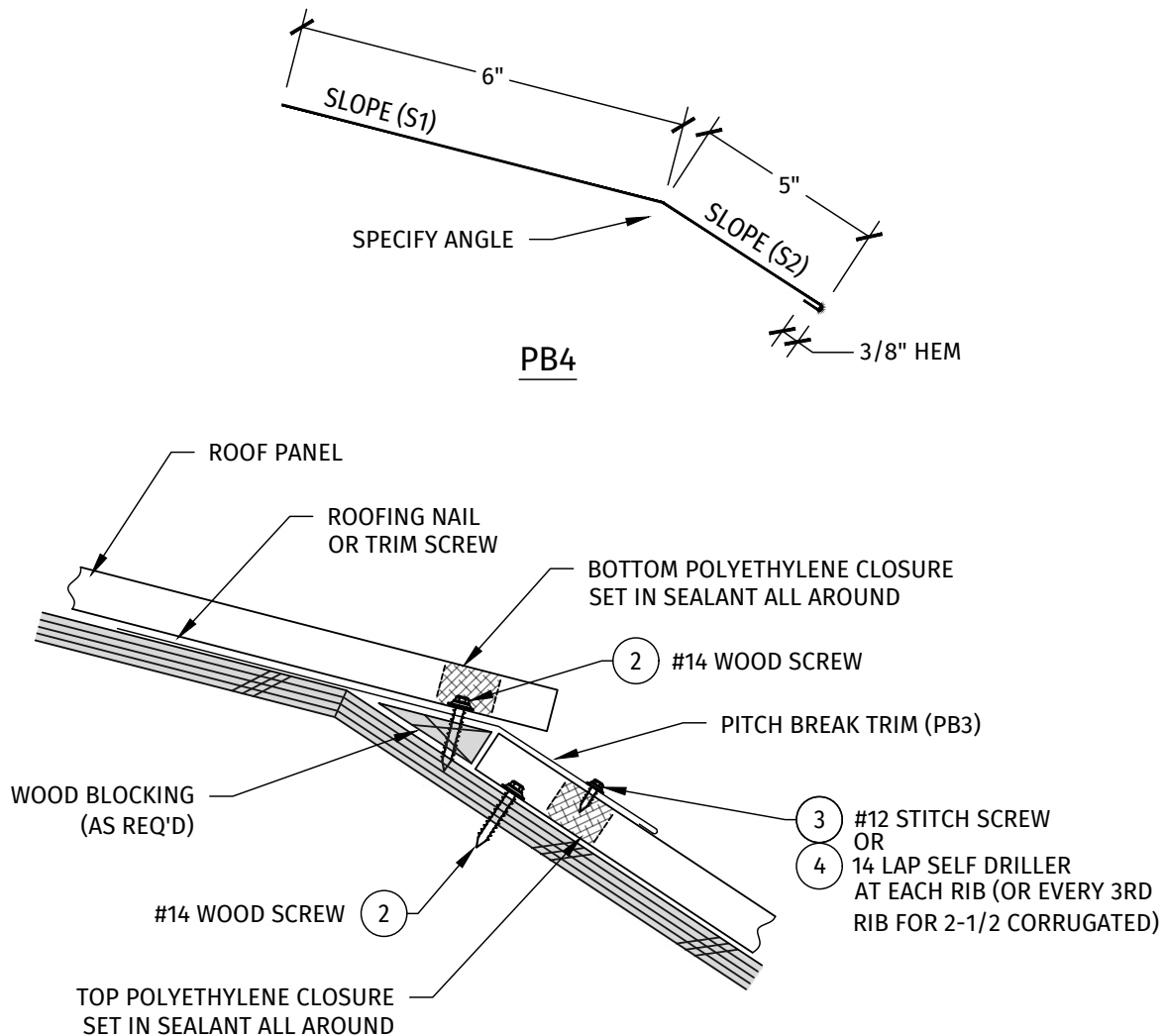
### Notes:

- Install wood blocking as required to support transition flashing.
- This flashing must be installed prior to placement of uphill panels.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Slope Transition - Low Slope to High Slope



#### Procedure:

- Locate the lower slope roof panels as shown. Check overhang/ alignment at the eave. Review eave details for additional information.
- Caulk the bottom of the polyethylene closure. Set the closure as shown and caulk the top.
- Fasten the transition flashing to the upper slope with roofing nails or trim screws to temporarily secure flashing prior to installing upper slope panels.
- Secure transition flashing to top of each lower panel rib (or every 3rd rib for 2-1/2" Corrugated) using #12 or #14 lap screws.
- Caulk, lap and rivet sequential flashings (see appendix).

#### Upper slope panels:

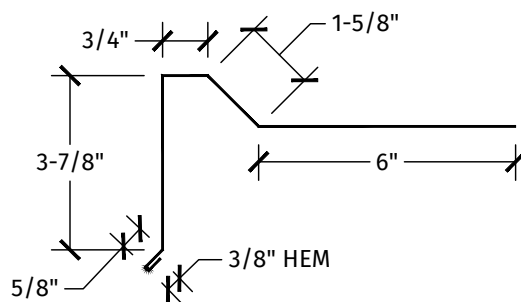
- Caulk top and bottom of inside closure and set closure into place as shown in view.
- Attach upper slope panels to substrate with appropriate screws.

#### Notes:

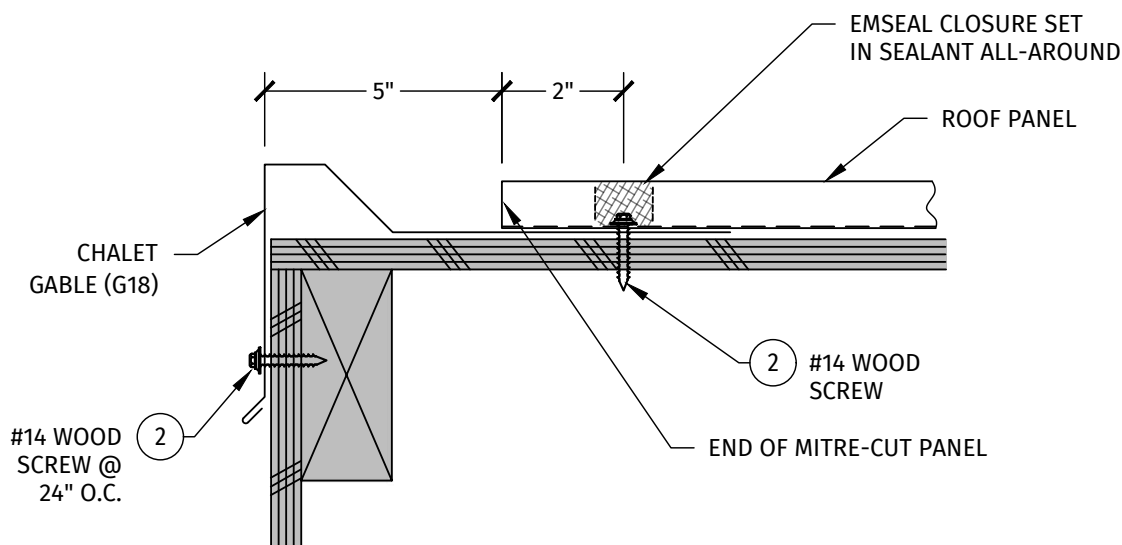
- Install wood blocking as required to support transition flashing.
- This flashing must be installed prior to uphill panels.

## Chalet Gable Flashing

\* THIS DETAIL IS ALSO KNOWN AS  
A "PROW" OR "DUTCH" GABLE ROOF.



**G18**



### Procedure:

- Attach the chalet flashing along the side using color matched wood screws spaced at 24" O.C.
- Field cut the roof panels 5" back from the face of the flashing as shown.
- Standard polyethylene closures cannot be installed diagonally across a miter cut roof panel (they don't fit). At miter cuts, use universal Emseal closures inset 2" from cut panel ends.

- Attach the panels to the roof along the bottom edge using #14 wood screws evenly spaced at 4" O.C. and approximately 2" from panel ends at closure location.
- Chalet gable to be used with standard eave "E1".

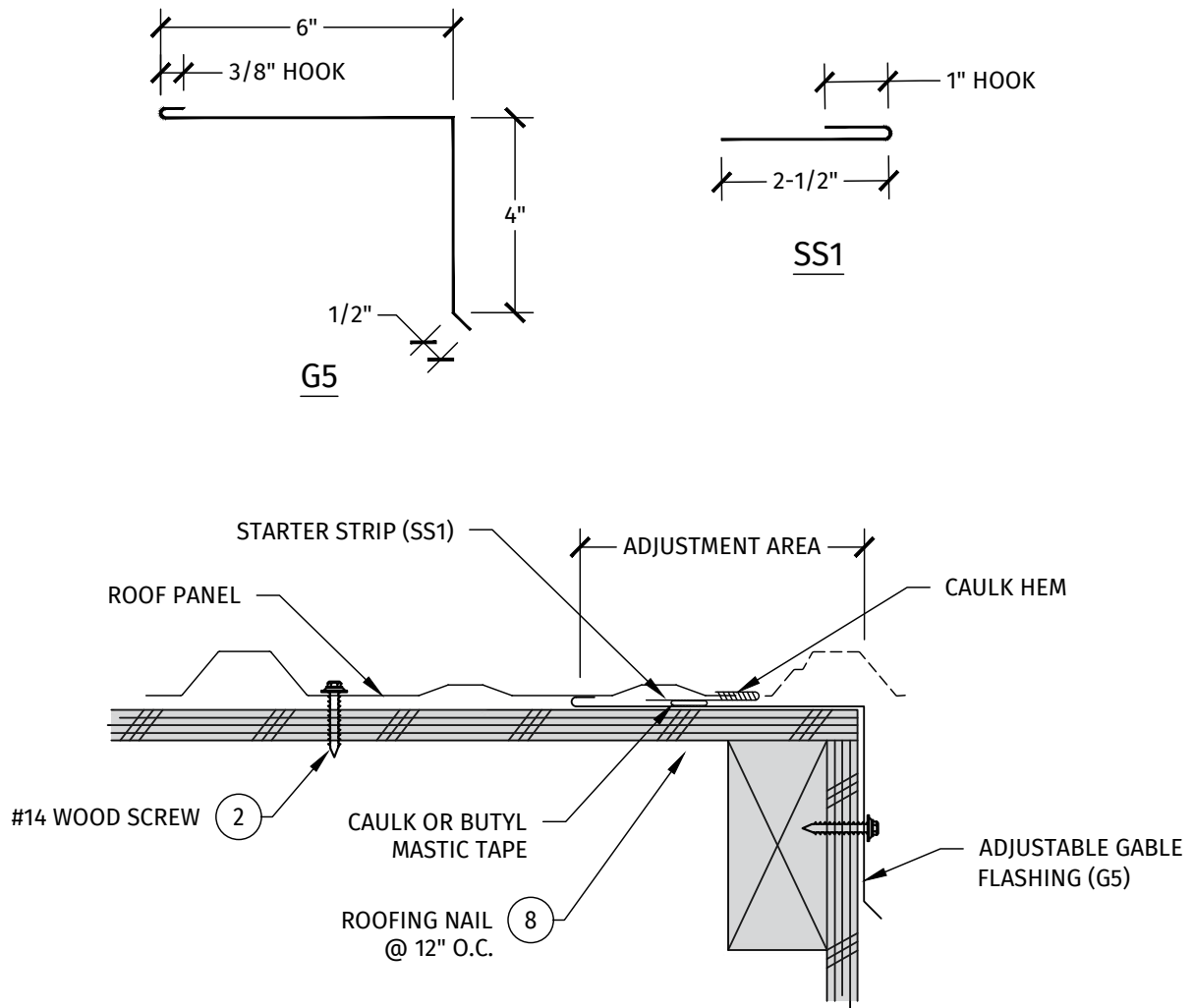
### Note:

- This flashing must be installed prior to the panels.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Adjustable Gable Flashing



#### Procedure:

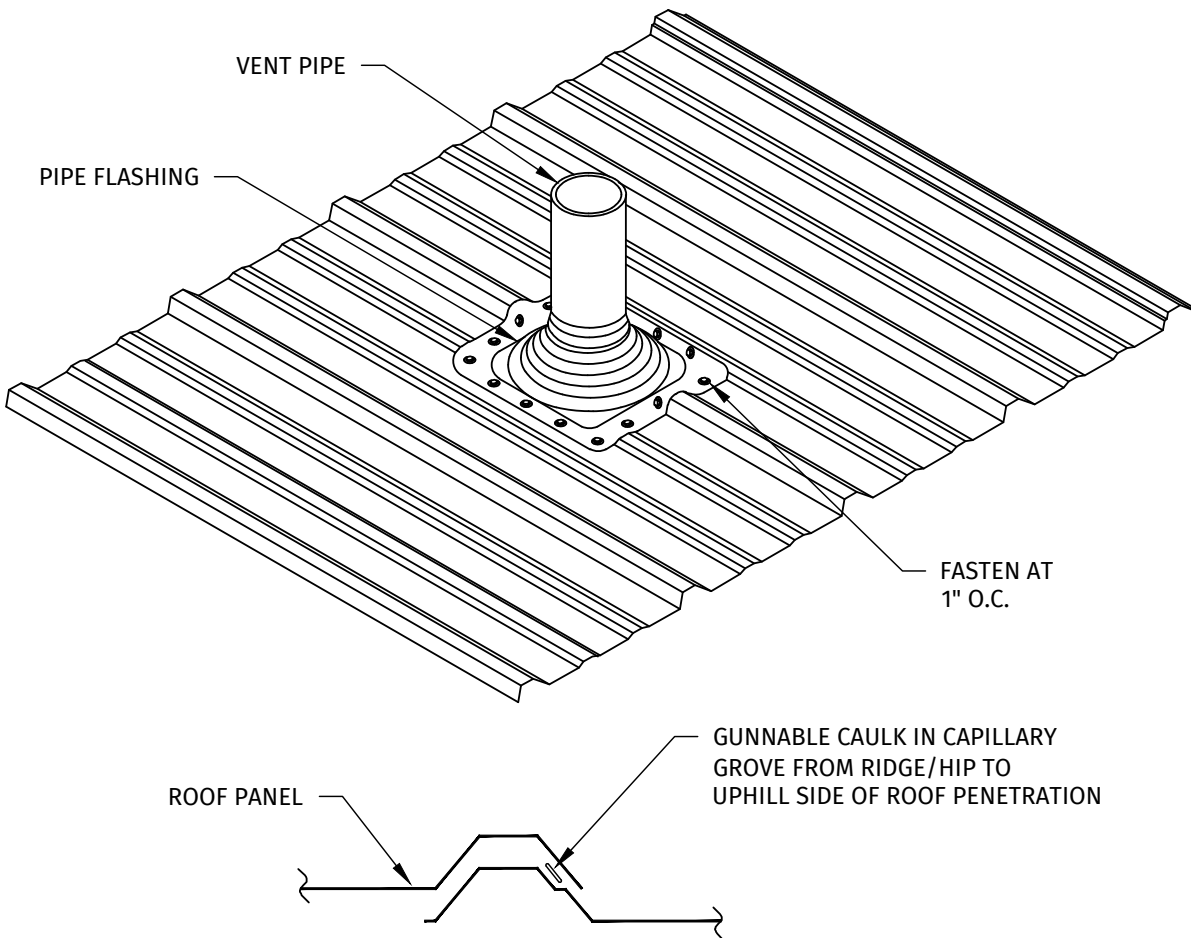
- Attach the adjustable gable "G5" using #14 wood screws spaced at 24" O.C.
- Place one row of butyl mastic tape between adjustable gable "G5" and starter strip "SS1".
- Fasten starter strip "SS1" with trim screws or roofing nails at 12" O.C.
- Caulk inside of the starter strip open hem.
- Caulk and lap sequential flashings a minimum of 3" O.C. hooking the hem (see appendix).

- Field cut, caulk, and attach the panels and fasten using #14 wood screws at 24" O.C.

#### Notes:

- Adjustable gable "G5" is to be used with standard eave "E19".
- This flashing must be installed prior to installing panels.

## Vent Flashing



### Procedure:

- Trim the opening in the pipe flashing to 20% smaller than the pipe diameter.
- Slide the flashing down over the pipe.
- Seal between the vent flashing and the roof panel with gunnable caulk and set the flashing.
- Form the flashing flange to fit the profile of the roof.
- Fasten the flashing to the roof with fasteners at 1" O.C. spacing.
- Penetrations occurring over spaced supports may require additional support framing.
- A stainless steel band clamp should be installed at the top of the vent/pipe flashing.

### Notes:

- A minimum drainage clearance of 2" should be maintained between both sides of the flexible vent/pipe flashing base and the roof panels' major ribs.
- When a penetration occurs through a panel sidelap, gunnable caulk needs to be installed in the capillary groove from the penetration to the ridge. This will prevent water from running downhill in the capillary groove and into the roof opening. Refer to detail above.
- When a square-based pipe flashing is used, point one corner of the flashing base uphill to better shed water downhill (rotate flashing 45° from what is shown above).

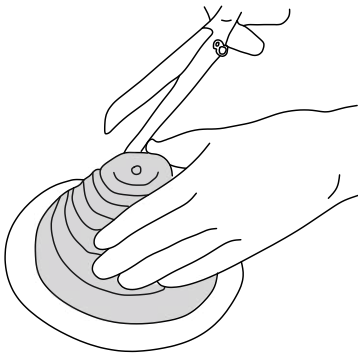
## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Vent/Pipe Flashing Installation Procedure

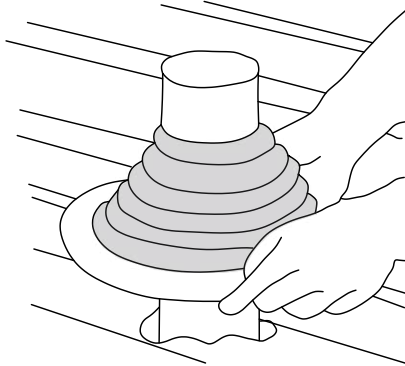
#### STEP 1: Cut

Cut to pipe diameter marked on flasher (this is approximately 20% smaller than the diameter of the pipe).



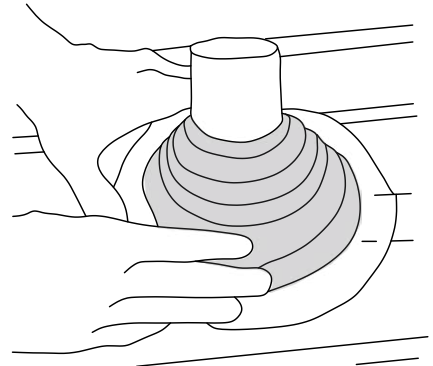
#### STEP 2: Slide

Slide the flasher down the pipe, using water to lubricate if necessary.



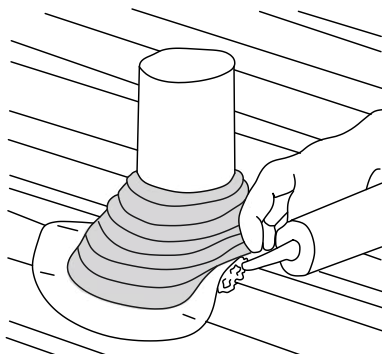
#### STEP 3: Form

Form and bend the aluminum base of the flasher to fit the surface of the roof.



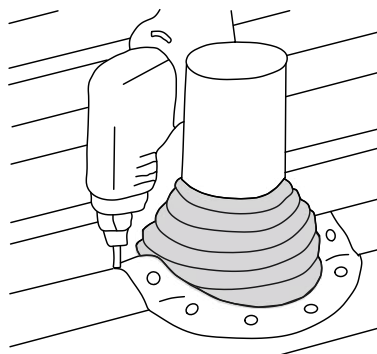
#### STEP 4: Seal

Seal the flasher by applying urethane/silicone sealant between the flasher and the roof. Use a large slotted screwdriver to press the base down tightly.



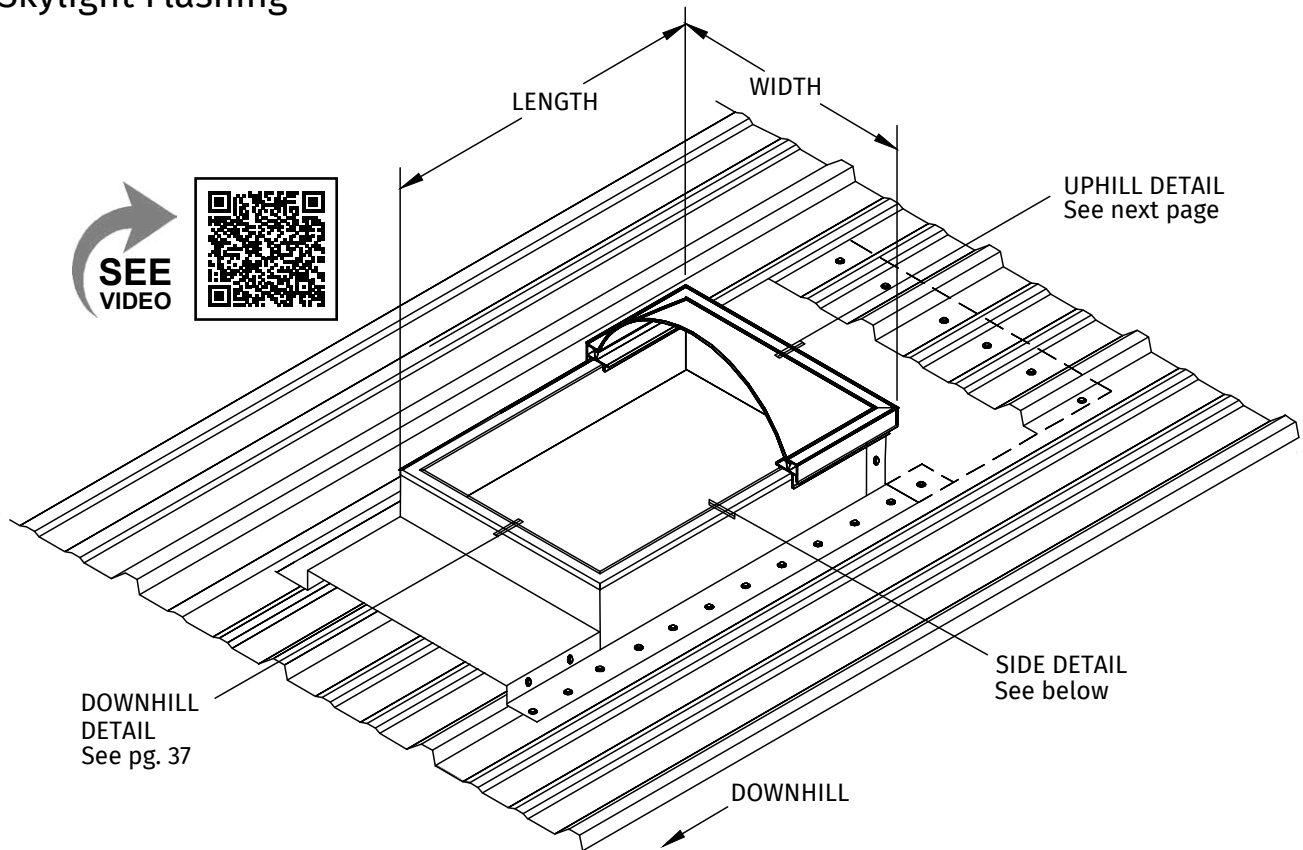
#### STEP 5: Fasten

Fasten the flasher with weather-resistant fasteners to complete the seal.



Note: For the best drainage when a square-based pipe flashing is used, one corner of the flexible pipe flashing should be oriented to the high-side of the roof.

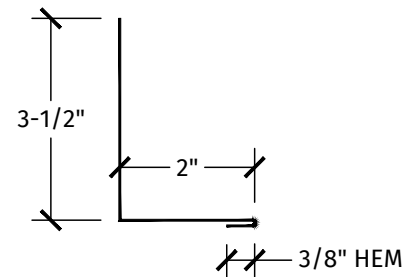
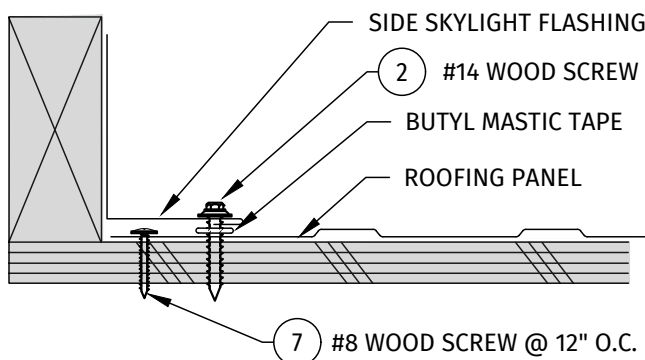
## Skylight Flashing



Whenever possible, position the skylight curb so the ribs of the roof panels do not interfere with the flashing. Cut the metal roof panels as close to the left, right and downhill sides of the curb as possible. Cut the uphill side of the panels 6" up from the curb as indicated above.

Note: Do not fasten down the roof panels within 24" uphill of the skylight until the uphill penetration flashing is installed.

## Skylight Flashing (Side)

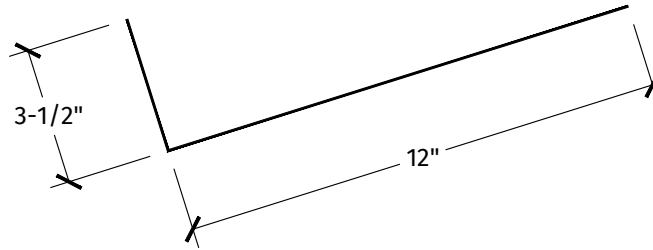


**SK18**

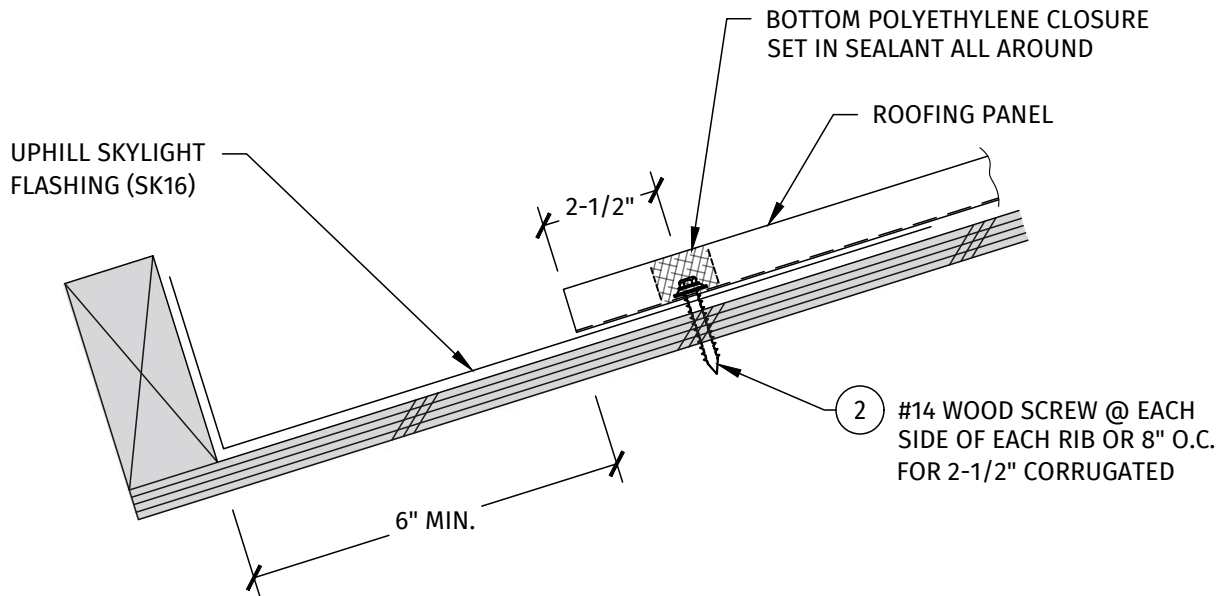
## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

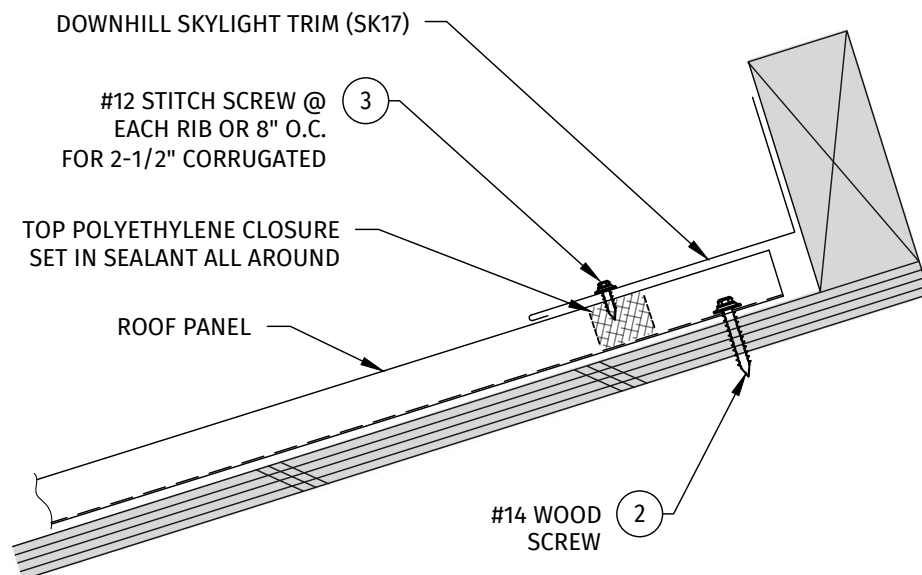
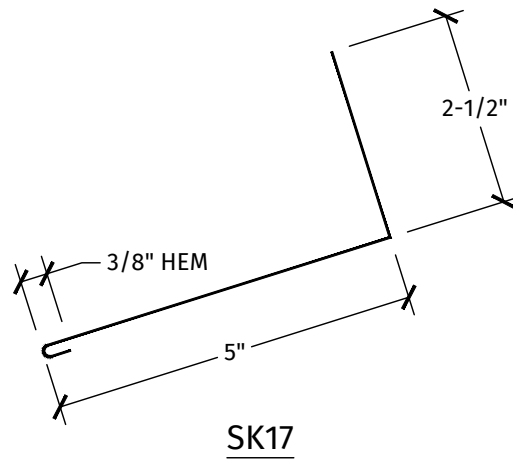
### Skylight Flashing (Uphill Side)



SK16



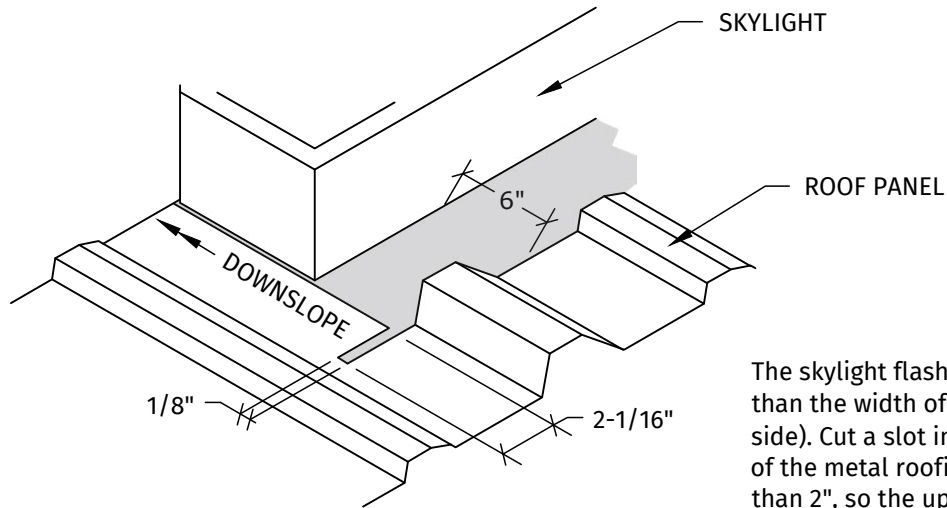
## Skylight Flashing (Downhill Side)



## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

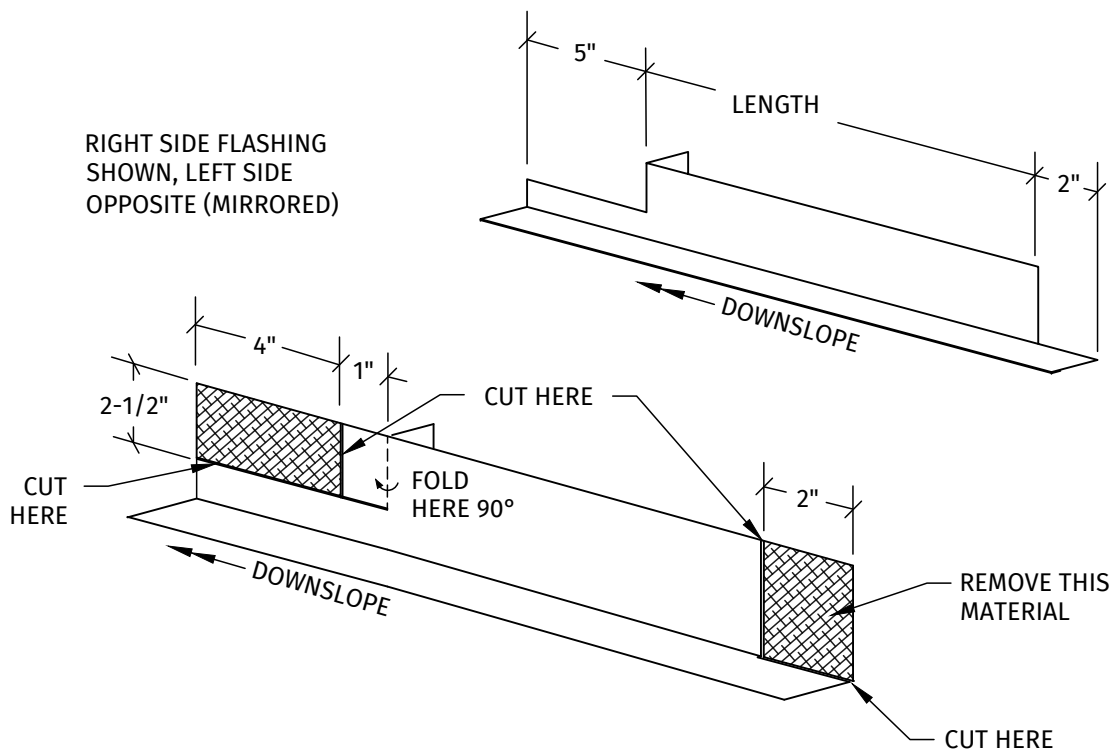
### Procedure for the Installation of Skylight Flashings



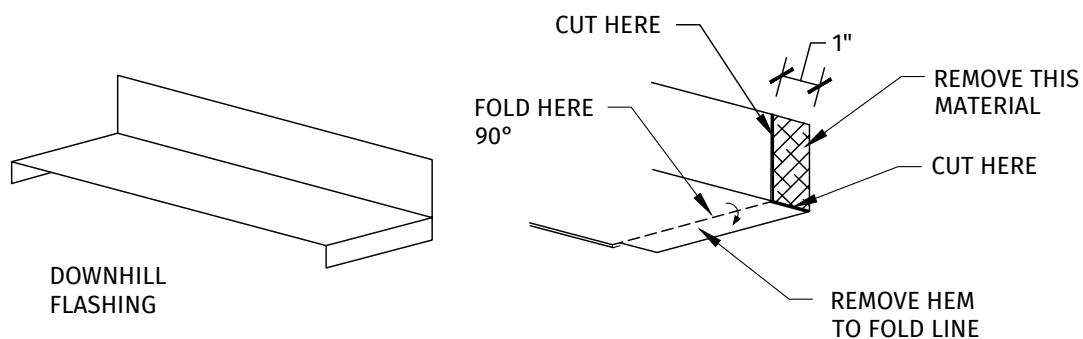
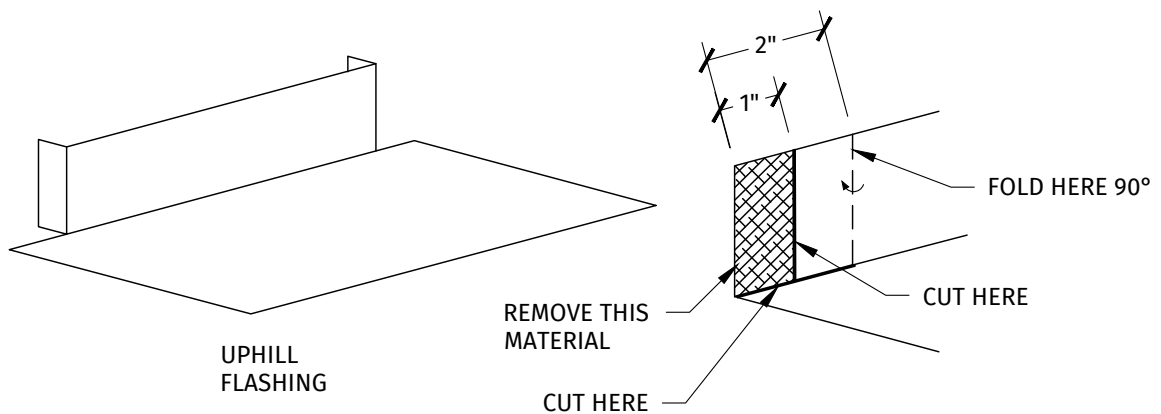
The skylight flashing will be 4" wider than the width of the curb (2" on each side). Cut a slot in the two uphill corners of the metal roofing panel slightly wider than 2", so the uphill flashing can slide through the two slots.

Adjustments to the horizontal leg dimension and length of slit may have to be modified depending on the location of the panels' major rib.

### Skylight Flashing Preparation



## Skylight Flashing Preparation (continued)



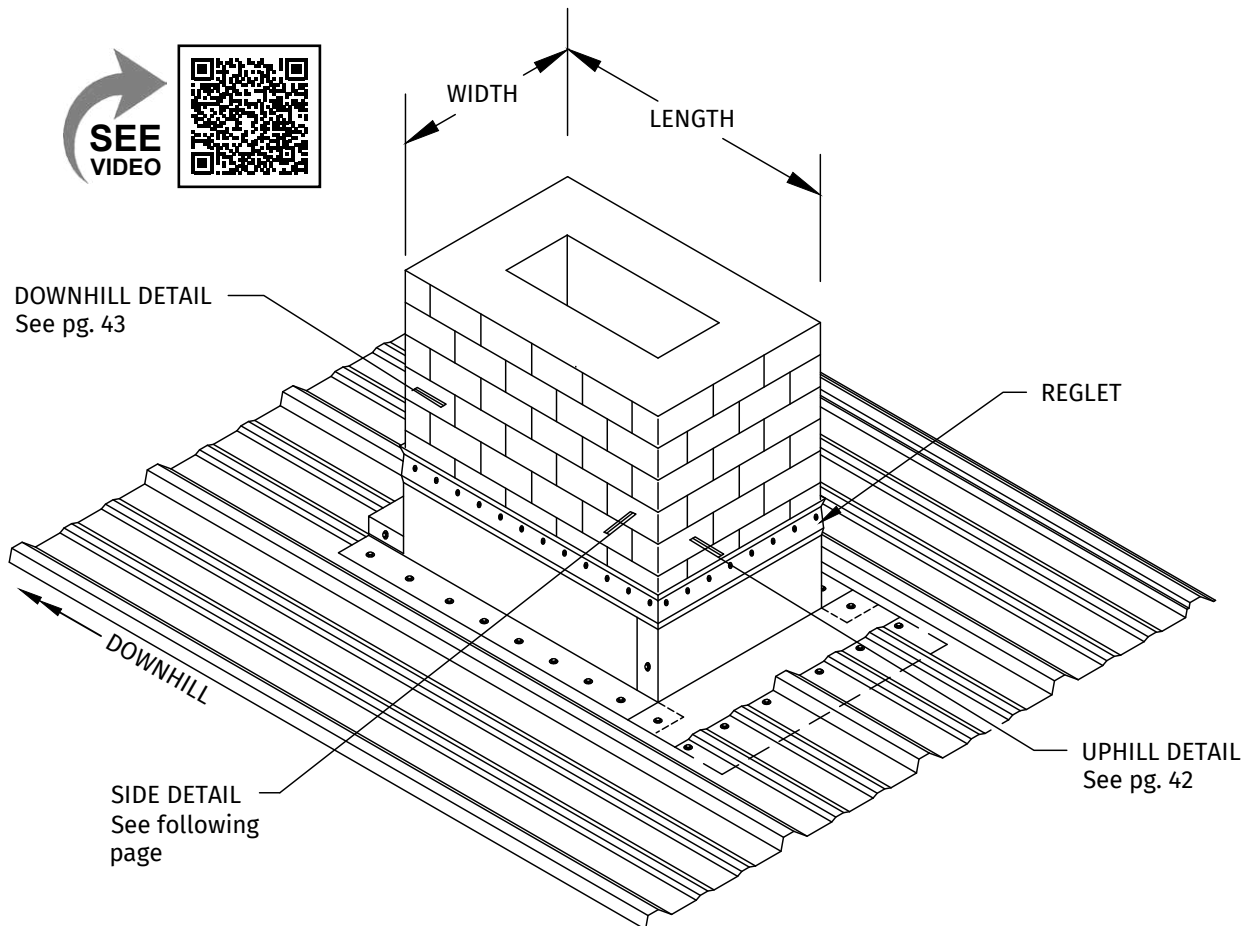
### Procedure:

- Trim uphill and downhill skylight flashings as shown.
- Slide the uphill flashing into the 1/8" slots of the metal roofing (see previous page for reference) and apply liberal amount of caulking.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

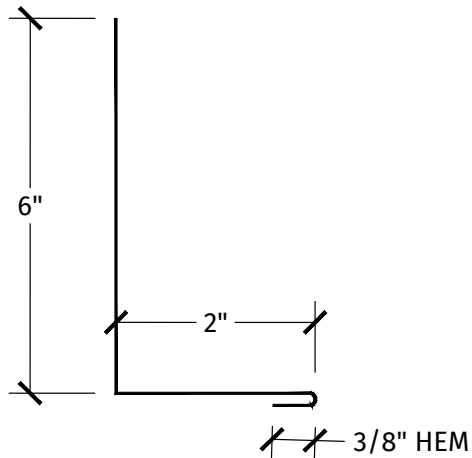
### Chimney Flashing



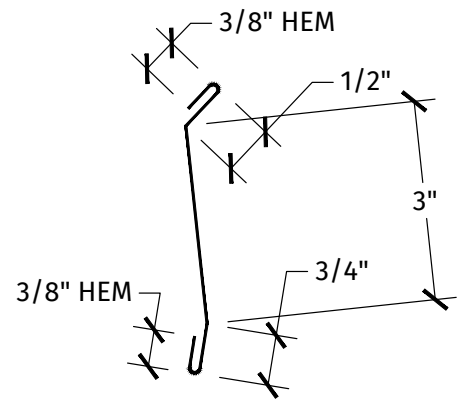
#### Note:

- Procedure for the installation of chimney flashings is similar to the skylights. The reglet "RG16" shown may be deleted if the chimney is clad with siding. (Lap the siding over the flashing and caulk). Be sure to specify the slope and the orientation of the chimney dimensions when ordering this assembly.

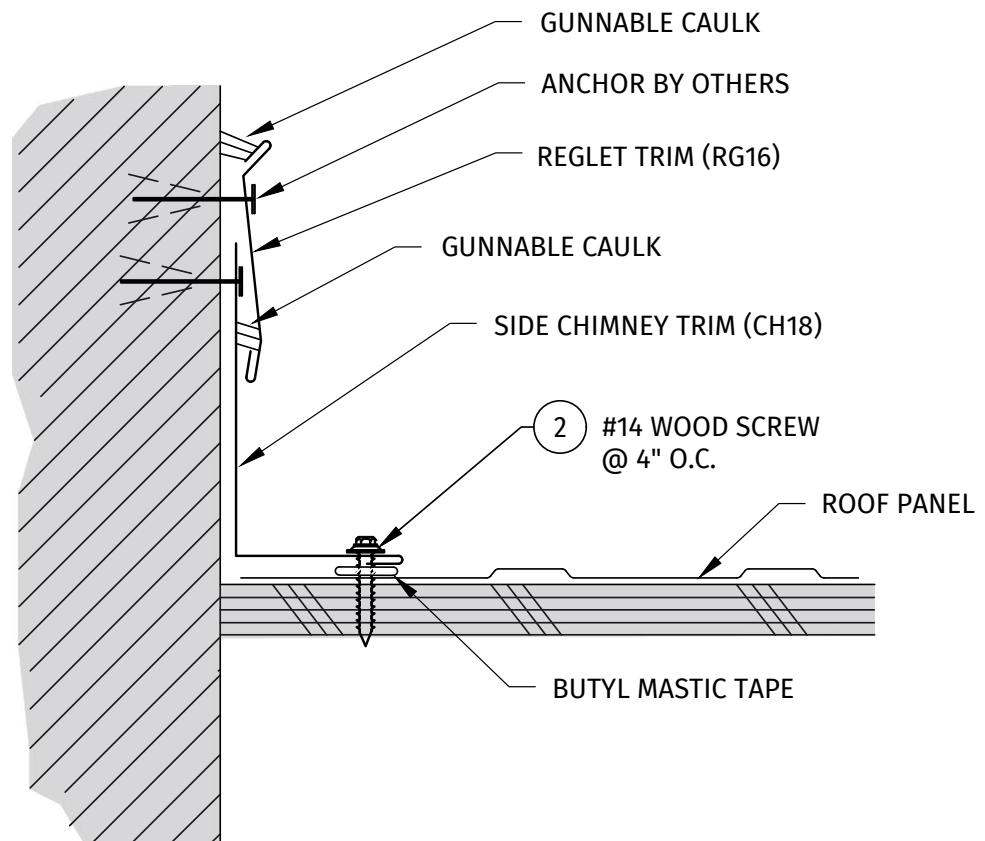
## Chimney Flashing (Side)



CH18



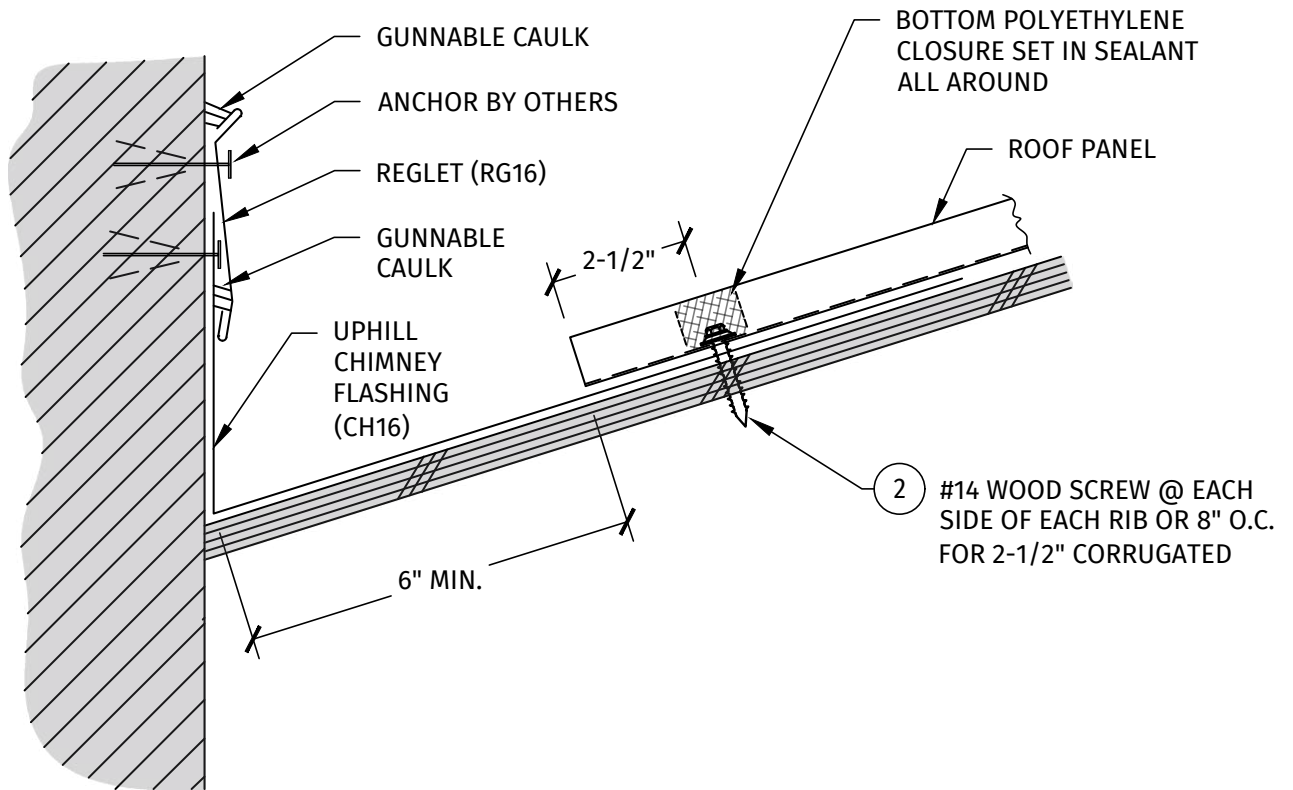
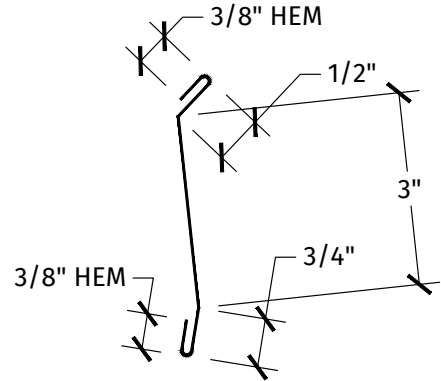
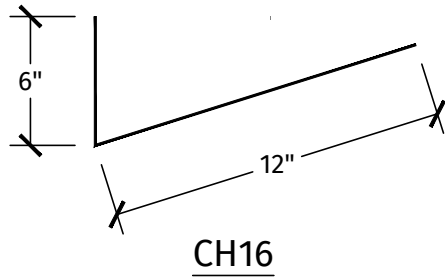
RG16



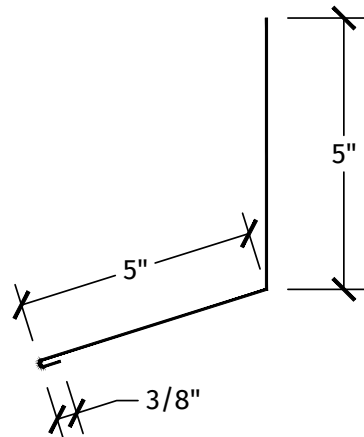
# Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

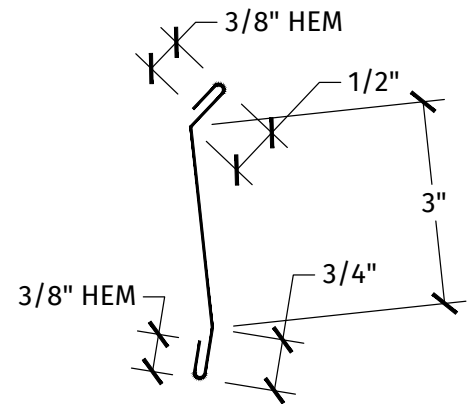
## Chimney Flashing (Uphill)



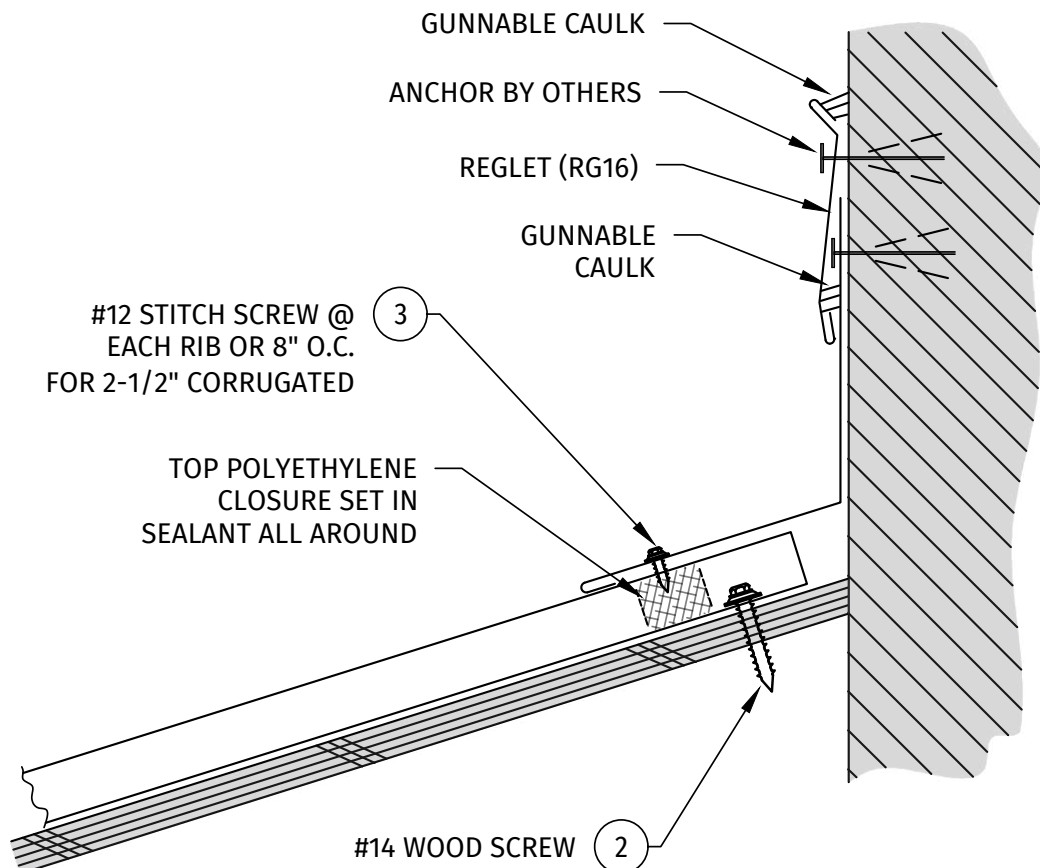
# Chimney Flashing (Downhill)



**CH17**



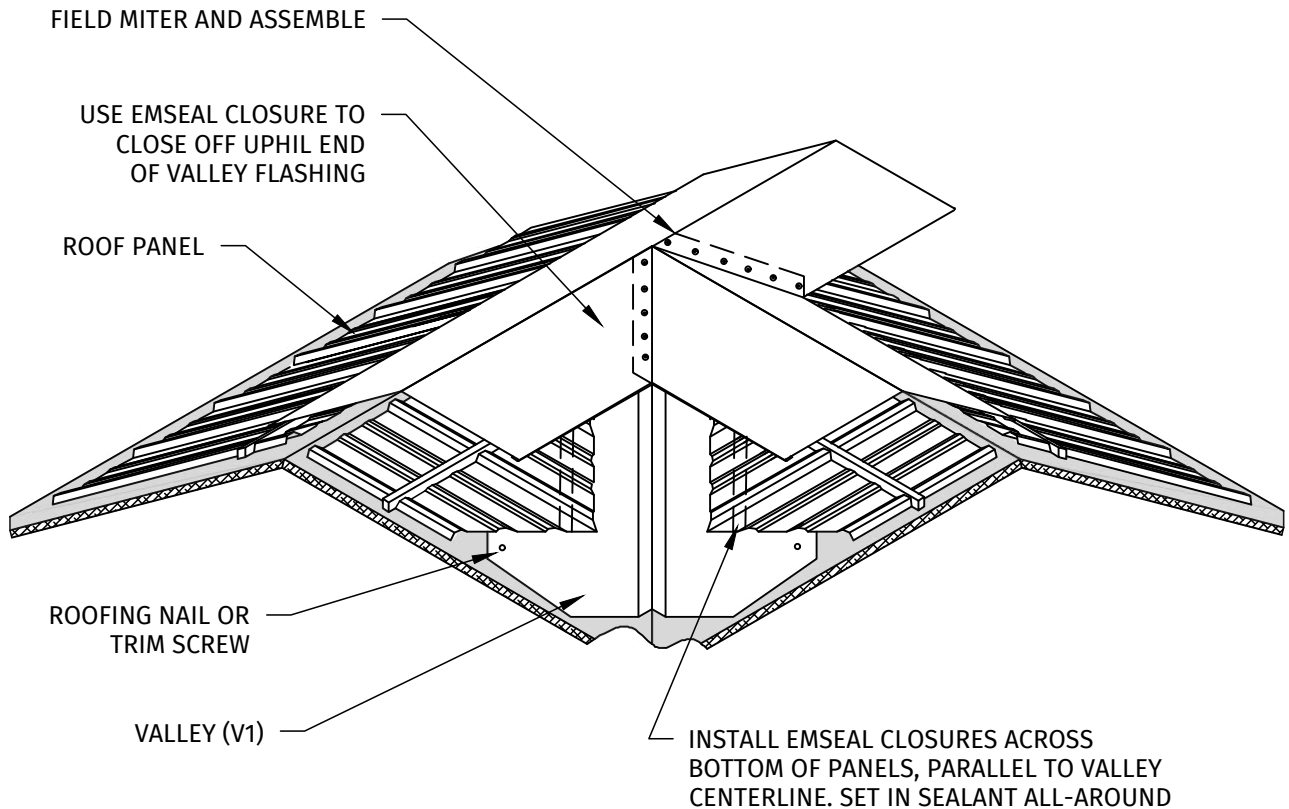
**RG16**



## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

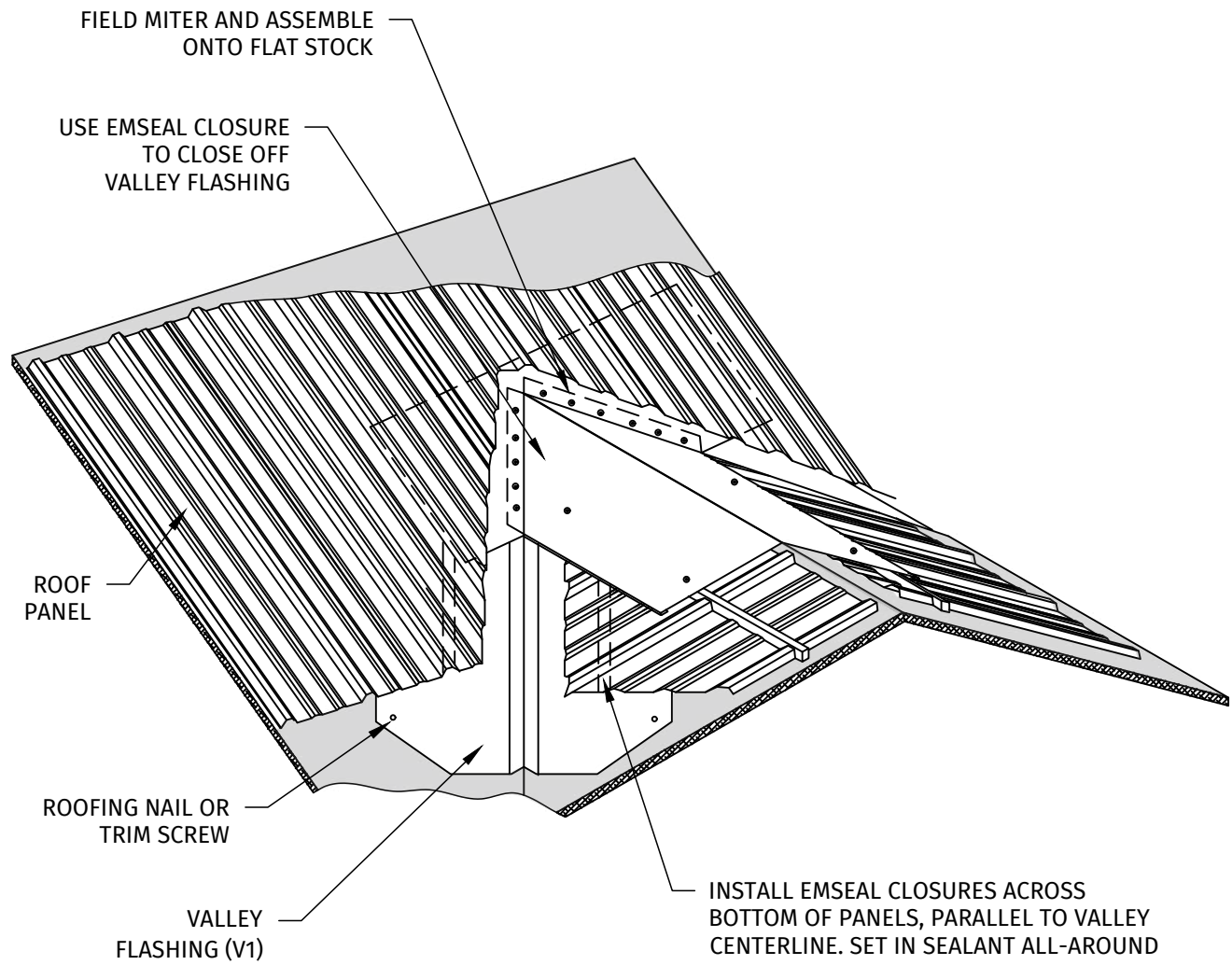
### Valley Top End



Note:

- Refer to Ridge and Valley installation details within this guide for further clarification on those areas.

# Valley Dormer

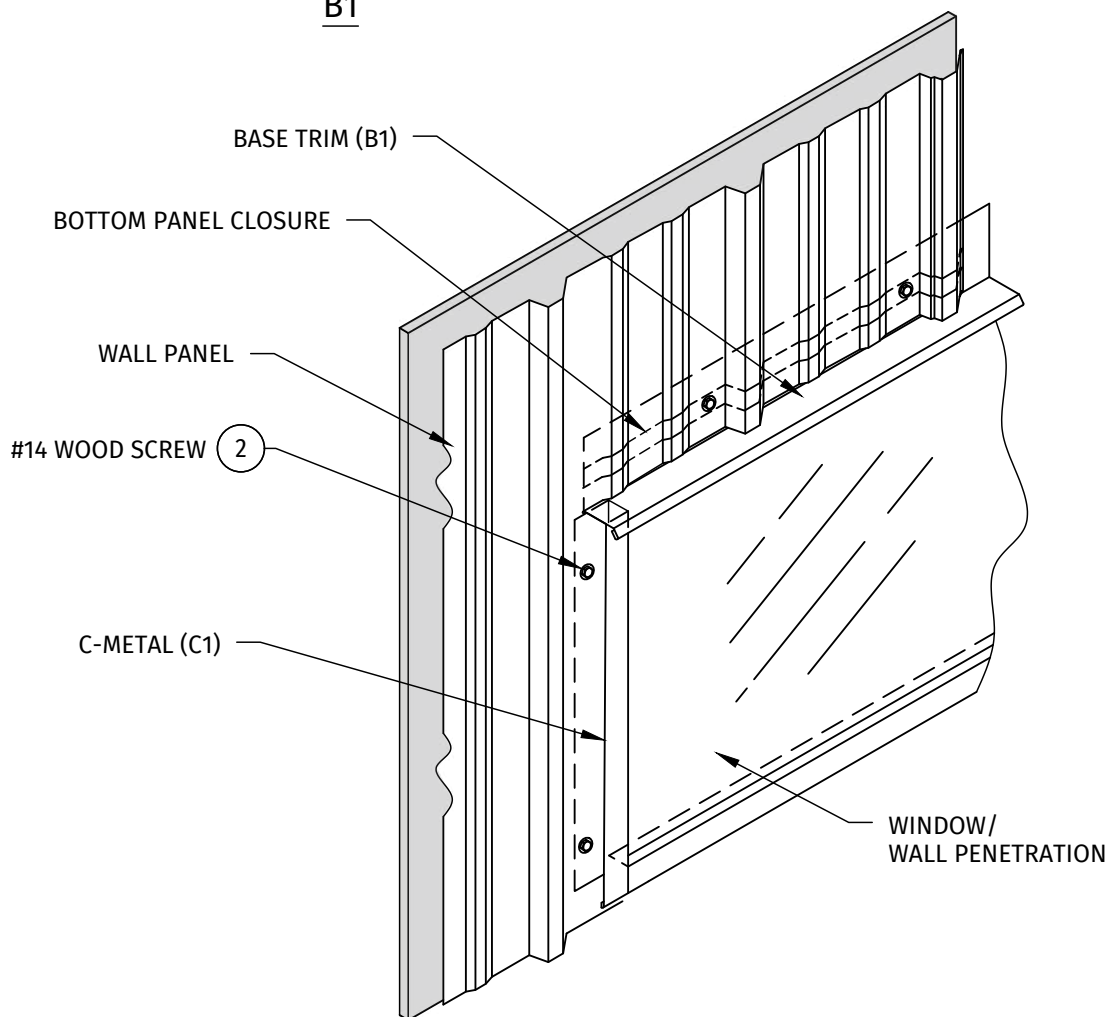
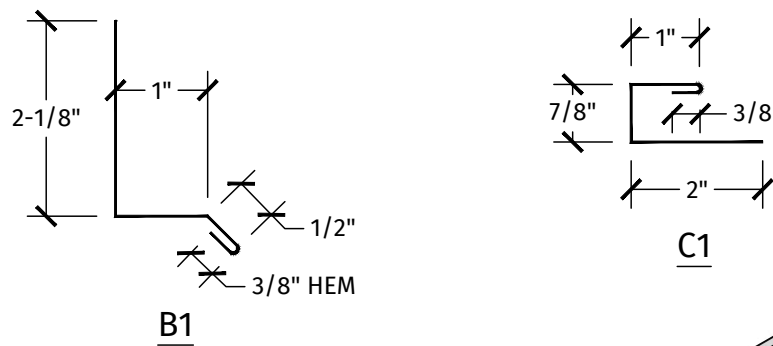


**Note:**

- Refer to Ridge and Valley installation details within this guide for further clarification on those areas.

# Wall Installation Details

## Window/Door Trim Corner



### Notes:

- A 1 inch horizontal cut needs to be made in the wall panel at the intersection of the jamb and head trim. Extend the top trim into this slot, allowing for proper

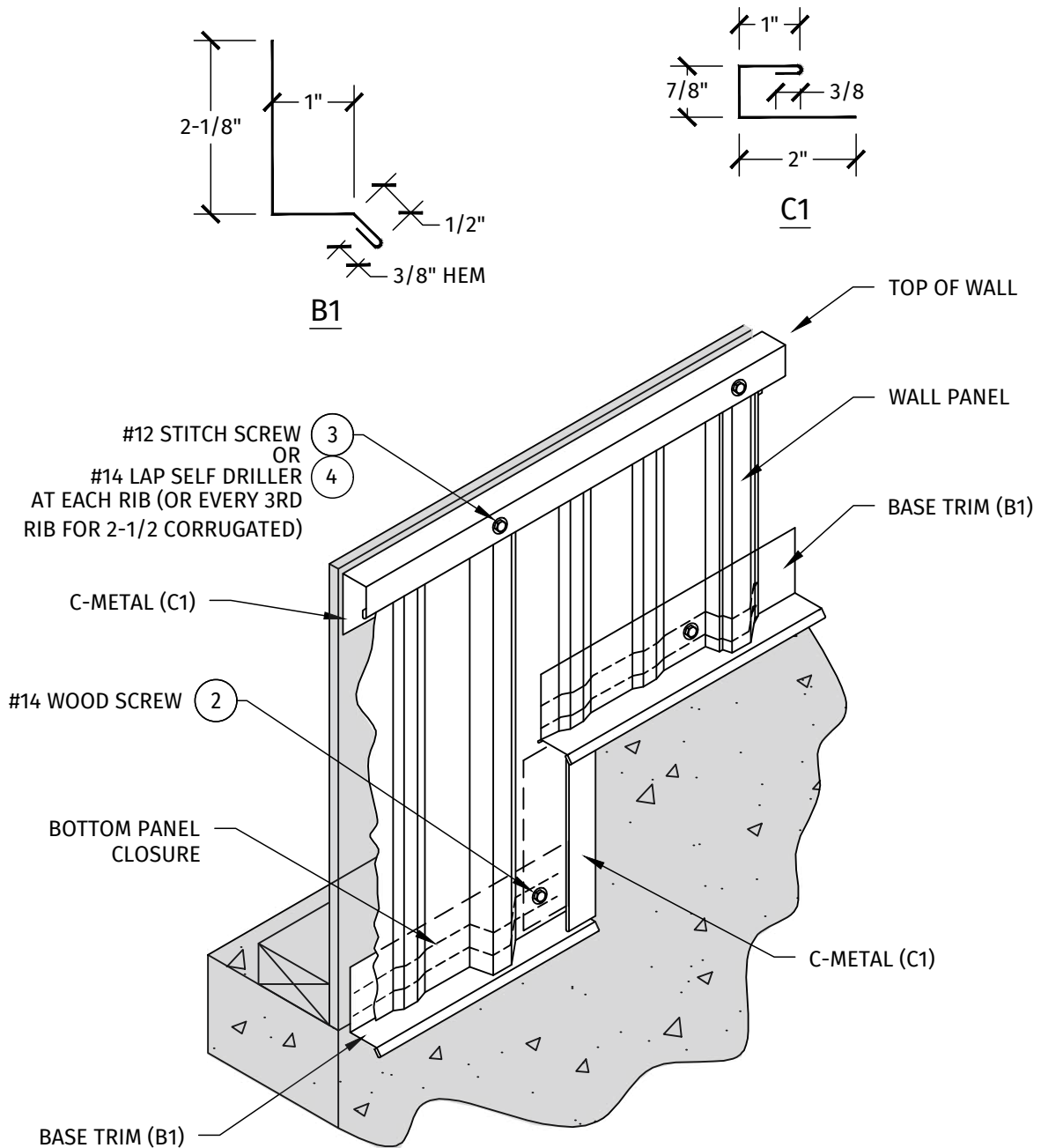
drainage to the outside of the building.

- Representative installation detail shown. Actual installations may require alternative construction.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

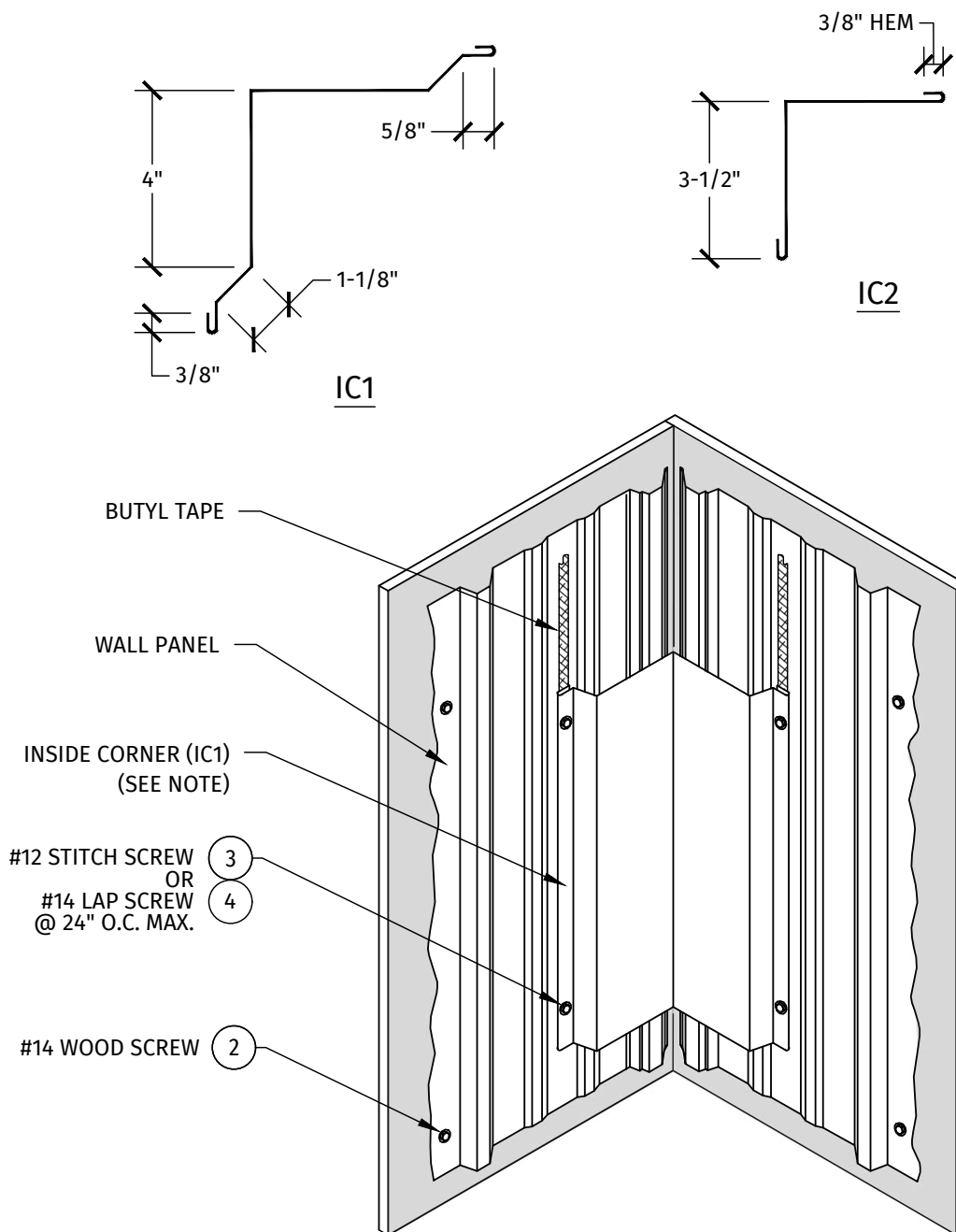
### Top and Bottom Trim



#### Notes:

- Representative installation detail shown. Actual installations may require alternative construction.

## Inside Corner



### Procedure:

- Install wall panels, positioning so that inside corner trim proper fits and covers edges of panel.
- Affix butyl mastic tape along both edges of corner trim. Attach with screws at a 24" O.C. spacing max.

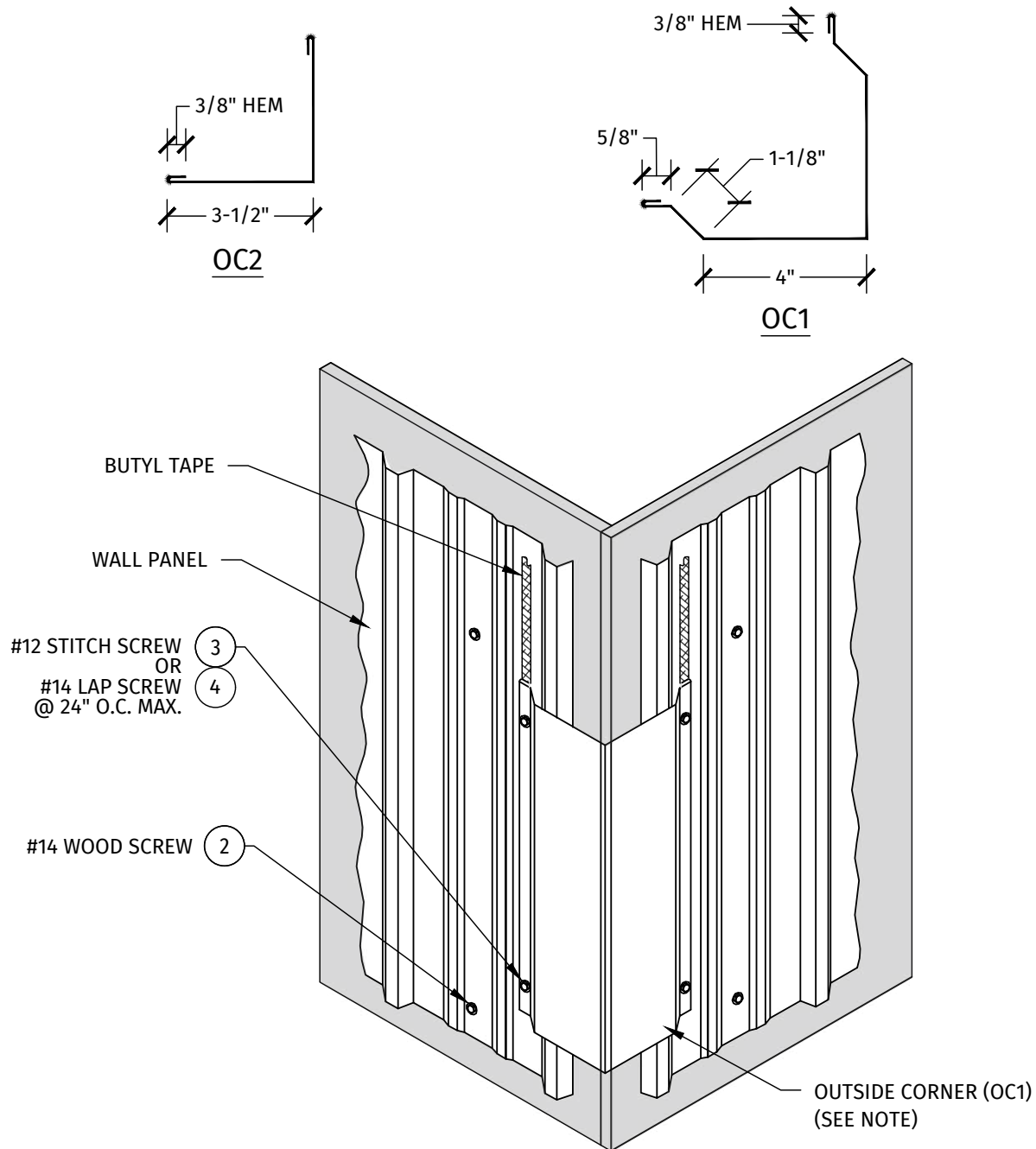
### Notes:

- Representative Nor-Clad panel shown with IC1 inside corner trim. IC2 trim may be better fit for most other panel installations.
- In many installations, the panels installed at the inside corner will require the panel width to be cut down. Allow the panel cut edge to be covered by the inside corner trim.

## Metal Roofing Panels

Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Outside Corner



#### Procedure:

- Install wall panels, positioning so that outside corner trim proper fits and covers edges of panel.
- Affix butyl mastic tape along both edges of corner trim. Attach with screws at a 24" O.C. spacing max.

#### Notes:

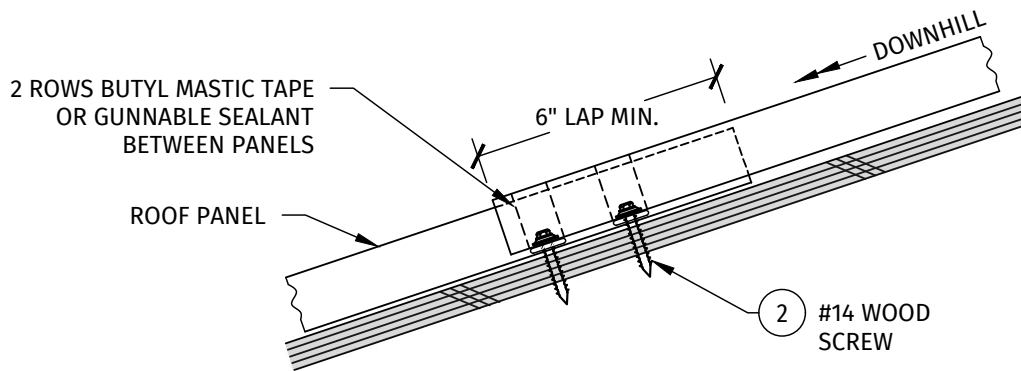
- Representative Nor-Clad panel shown with OC1 outside corner trim. OC2 trim may be better fit for most other panel installations.
- In many installations, the panels installed at the outside corner will require the panel width to be cut down. Allow the panel cut edge to be covered by the outside corner trim.

# Appendix

## Metal Roofing Panels

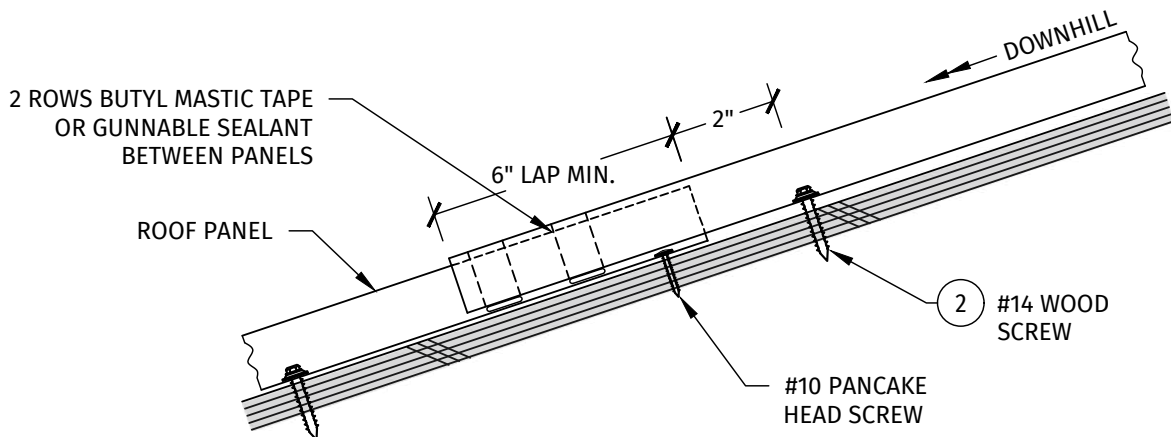
Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated

### Panel End Lap



### Long Panel End Lap

For panels 28 ft. or longer

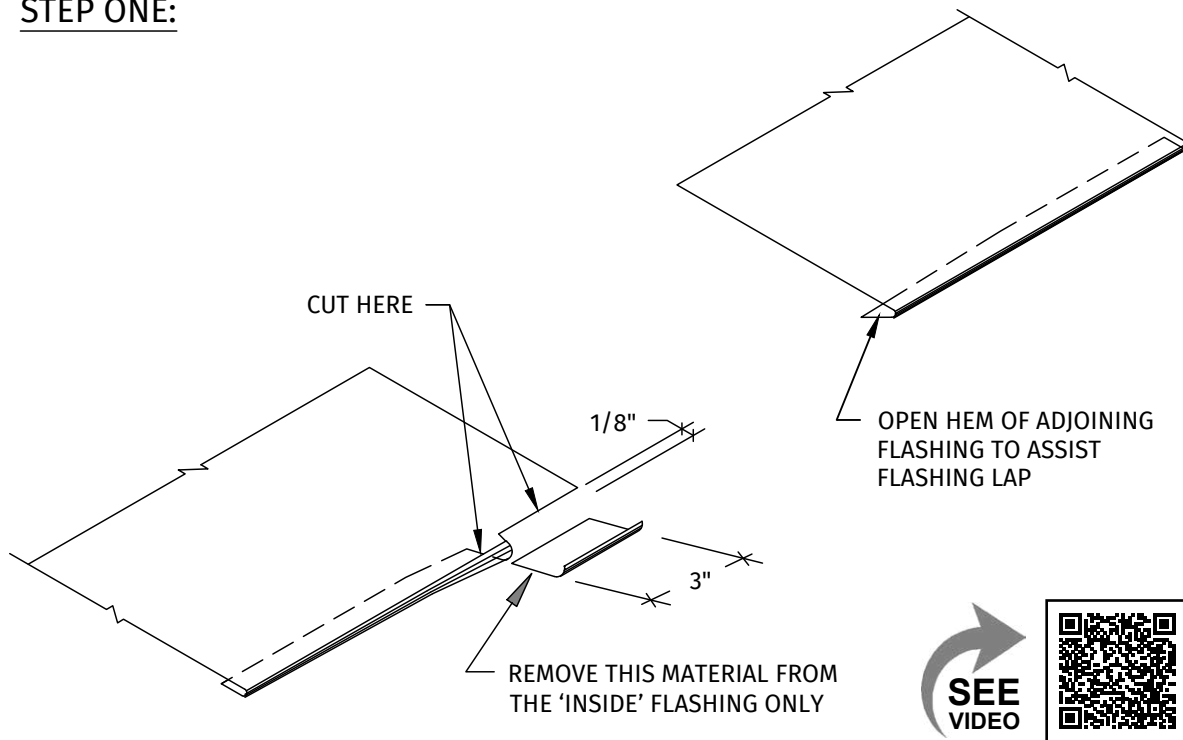


#### Note:

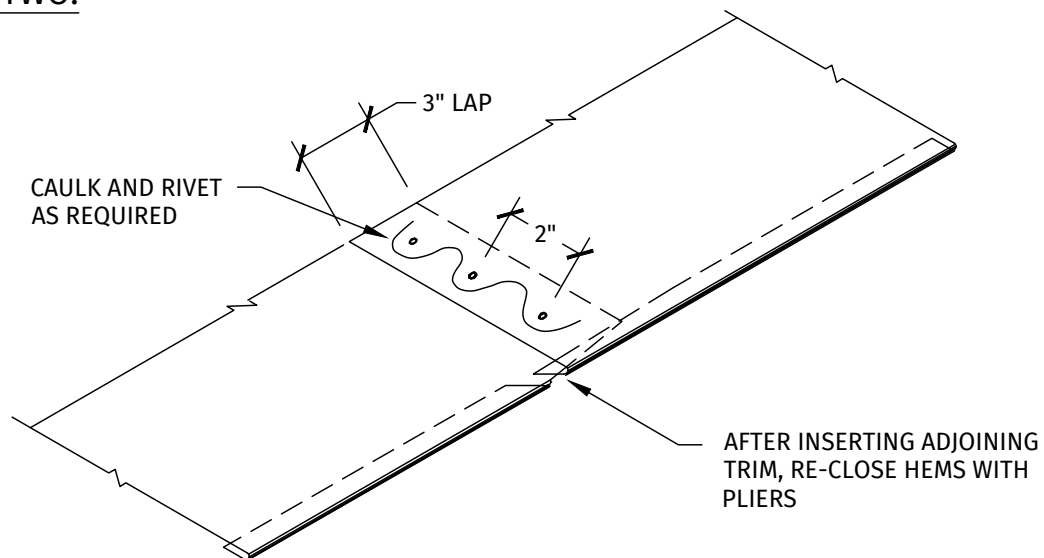
- Using the Long Panel Lap detail will allow the upper and lower panels to expand and contract independently of each other.

# Typical Flashing Lap

## STEP ONE:



## STEP TWO:



### Note:

- Flashing expansion joints may be required for long flashing runs (i.e. 40+ ft).

## **Metal Roofing Panels**

*Installation Guide for Delta Rib™, Delta Rib™ III, Nor-Clad®, Strata Rib® & 2½" Corrugated*

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**BLANK**

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Printed in the USA. 0426 2k BR128