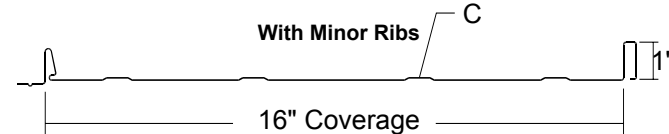
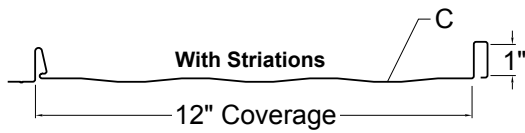


# IMAGE II TABLE OF CONTENTS

Product	Page No.	Product	Page No.
<b>Panel Information</b>		<b>Detail Conditions</b>	
Image II Panel Profiles .....	PIM-2	Eave Detail .....	PIM-10
Panel Overview .....	PIM-2	Eave with Offset Detail .....	PIM-10
<b>Flashing Profiles</b>		5K Gutter Detail .....	PIM-11
Eave .....	PIM-3	5K Gutter with Offset Detail .....	PIM-11
Extended Eave .....	PIM-3	Slope Change Detail .....	PIM-12
Cleat .....	PIM-3	Valley Detail .....	PIM-12
Offset Cleat .....	PIM-3	Valley with Offset Cleat Detail .....	PIM-13
5K Gutter .....	PIM-3	Step Rake Detail .....	PIM-13
5K Gutter Endcap .....	PIM-3	Rake Z-Closure Detail .....	PIM-14
3" Downspout .....	PIM-3	Rakewall Z-Closure Counter Detail .....	PIM-14
3" Downspout Elbow .....	PIM-3	Rakewall Z-Closure Reglet Detail .....	PIM-15
12" Downspout Bracket .....	PIM-3	Step Rakewall Counter Detail .....	PIM-15
12" Coil .....	PIM-3	Step Rakewall Reglet Detail .....	PIM-16
Valley .....	PIM-3	Endwall Z-Closure Counter Detail .....	PIM-16
Image II Rake .....	PIM-3	Endwall Z-Closure Reglet Detail .....	PIM-17
Image II Step Rake .....	PIM-3	Endwall Foam-Closure Counter Detail .....	PIM-17
Rakewall .....	PIM-3	Endwall Foam-Closure Reglet Detail .....	PIM-18
Image II Step Rakewall .....	PIM-3	Peak Z-Closure Detail .....	PIM-18
Counter Flashing .....	PIM-4	Peak Foam-Closure Detail .....	PIM-19
Reglet Flashing .....	PIM-4	Ridge/Hip Cover Detail .....	PIM-19
Step Ridge/Hip Cover .....	PIM-4	Vented Ridge (Cobra Vent) Detail .....	PIM-20
13" Ridge/Hip Cover .....	PIM-4	Vented Ridge (Perforated Vent Drip) Detail .....	PIM-20
Perforated Vent Drip .....	PIM-4		
Peak .....	PIM-4		
Pitch Break .....	PIM-4		
1.5" Sill/Head .....	PIM-4		
1.5" Sill to Soffit .....	PIM-4		
1" Z-Closure .....	PIM-4		
<b>Accessory Profiles</b>			
Cobra Vented Closure .....	PIM-5		
Outlet Tube .....	PIM-5		
Fascia Bracket .....	PIM-5		
Tube Sealant .....	PIM-5		
Tape Sealant .....	PIM-5		
Outside Closure .....	PIM-5		
Rubber Roof Jack .....	PIM-5		
Touch-Up Paint .....	PIM-5		
Metal Panel Hemming Tool .....	PIM-5		
<b>Testing Information</b>			
UL 263 Fire Resistance Ratings .....	PIM-6		
Section Properties and General Information .....	PIM-7		
<b>Design/Installation Considerations</b>			
Fastener Installation Technique .....	PIM-8		
Condition of Substructure .....	PIM-8		
Ventilation .....	PIM-9		
Panel Applications .....	PIM-9		

# IMAGE II PANEL OVERVIEW

## PANEL PROFILES



## SLOPE

The minimum recommended slope for any Image II roofing panel is 3:12.

## SUBSTRATE

The recommended substrate is  $\frac{5}{8}$ " plywood with a 30 pound felt moisture barrier. To avoid panel distortion, use a properly aligned and uniform substructure. **Please note that Image II panels are not recommended for use over open framing.**

## COVERAGE

Image II panels are available in a 12" and 16" widths with a 1" rib height.

## LENGTH

**Minimum panel length is 5'-0". Maximum recommended panel length is 30'-0".** Longer panels require additional consideration in packaging, shipping, and erection. Please consult your Metal Sales branch for recommendations (see PGI-2 and 3 for locations).

## AVAILABILITY

Image II panels material gauges and finishes vary. Please refer to the Image II brochure/color chart.

## APPLICATION

Applications include residential and architectural buildings ranging from new construction to retrofit. The term retrofit as applied to construction methods is to replace or rework.

## PERFORMANCE TEST

UL 2218, UL790, UL263, ASTM E-1592

## FASTENING SYSTEM

Concealed direct fastening system using Truss Head Woodscrews applied through factory punched fastening slots/groove into wood decking. Fastener spacing is 18" on center, except where extreme wind uplift conditions exist.

## FASTENERS

The fastener selection guide should be consulted for choosing proper fasteners for specific applications. Quantity and type of fastener must meet necessary loading and code requirements (see PGI-12-13).

## MATERIALS

Steel, minimum grade 50

## FINISH

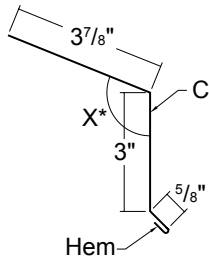
- ▶ \*Acrylic Coated Galvalume® (ACG) / ASTM A 792
- ▶ Prepainted Galvanized / ASTM A 792
- ▶ \*\*PVDF Fluorocarbon

\* Differential appearance of Acrylic Coated Galvalume roofing materials is not a cause for rejection.

\*\* Meets both Kynar 500 and Hylar 5000 specifications.

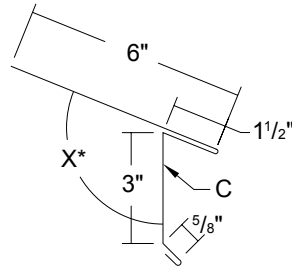
# IMAGE II FLASHING PROFILES

## EAVE



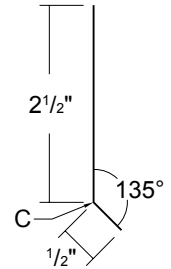
Length 10'-2" - \*Specify Slope Angle

## EXTENDED EAVE



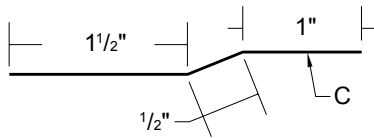
Length 10'-2" - \*Specify Slope Angle

## CLEAT



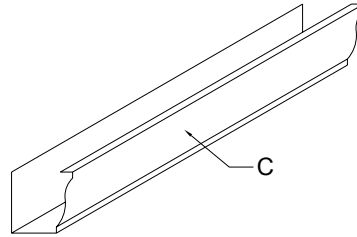
Length 10'-2"

## OFFSET CLEAT



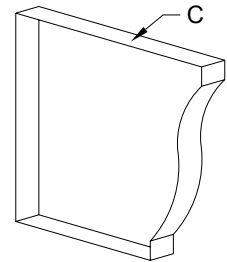
Length 10'-2"

## 5K GUTTER

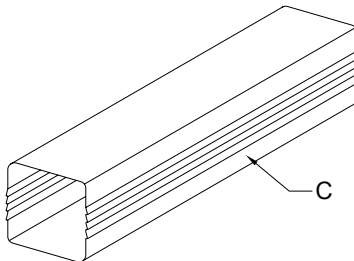


Length 20'-6"

## 5K GUTTER ENDCAP

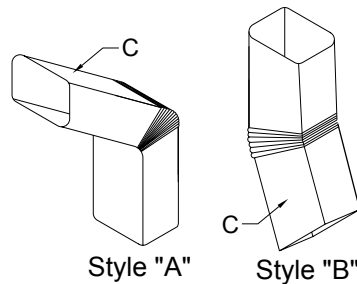


## 3" DOWNSPOUT



29 Gauge - Length 10'-3"

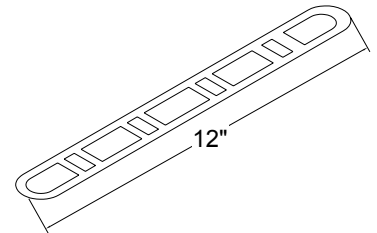
## 3" DOWNSPOUT ELBOW



Style "A"

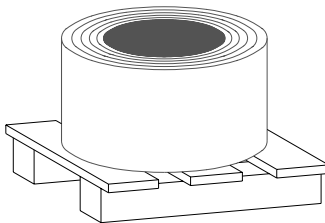
Style "B"

## 12" DOWNSPOUT BRACKET



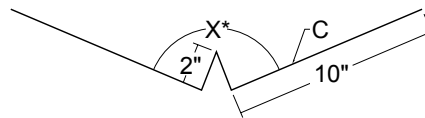
## 12" COIL

(For Continuous Gutters)



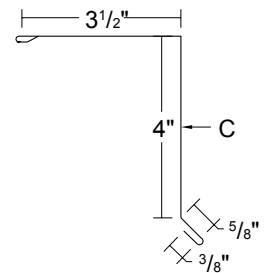
16" Inside Diameter  
Length 150'-0"

## VALLEY



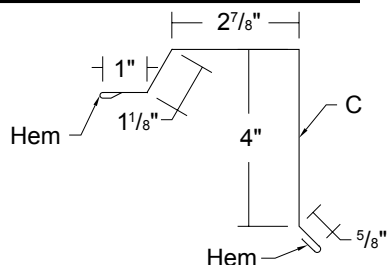
Length 10'-2", 20'-3" - \*Specify Slope Angle

## IMAGE II RAKE



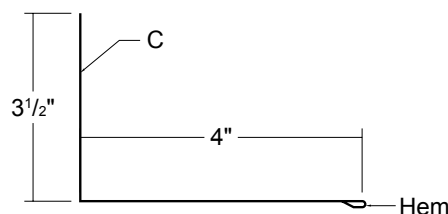
Length 10'-2", 20'-3"

## IMAGE II STEP RAKE



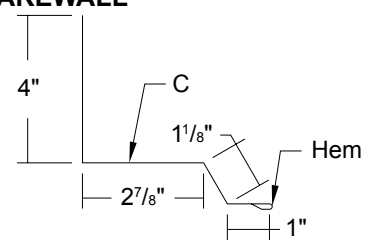
Length 10'-2", 20'-3"

## RAKEWALL



Length 10'-2"

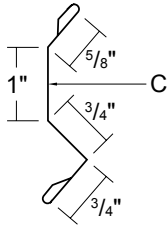
## IMAGE II STEP RAKEWALL



Length 10'-2"

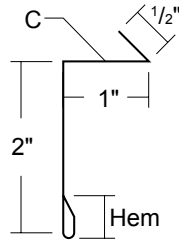
# IMAGE II FLASHING PROFILES (CONT.)

## COUNTER FLASHING



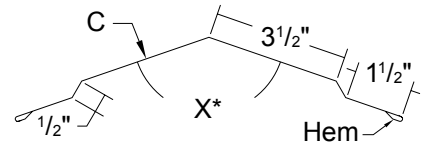
Length 10'-2"

## REGLET FLASHING



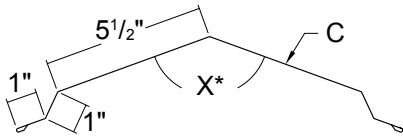
Length 10'-2"

## STEP RIDGE/HIP COVER



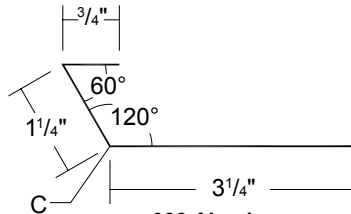
Length 10'-2" - \*Specify Slope Angle

## 13" RIDGE/HIP COVER



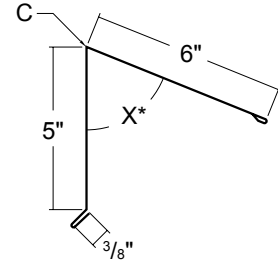
Length 10'-2", 20'-3" - \*Specify Slope Angle

## PERFORATED VENT DRIP



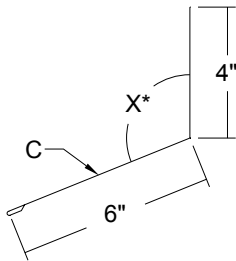
.032 Aluminum  
Linen White Only  
Length 10'-2"

## PEAK



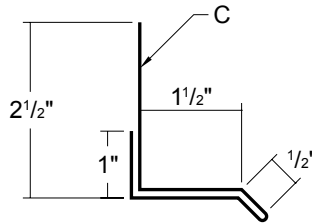
Length 10'-2", 20'-3" - \*Specify Slope Angle

## PITCH BREAK



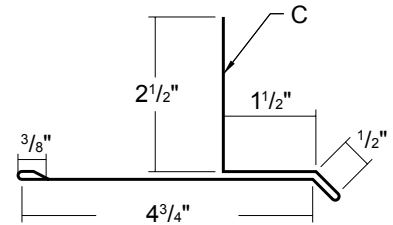
Length 10'-2" - \*Specify Slope Angle

## 1.5" SILL/HEAD



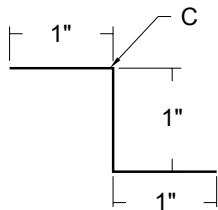
Length 10'-2"

## 1.5" SILL TO SOFFIT



Length 10'-2"

## 1" Z-CLOSURE

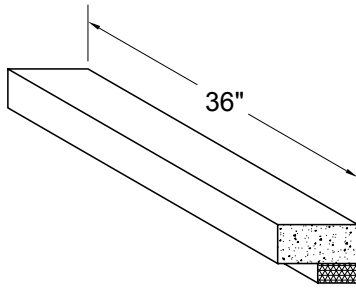


Length 10'-2"

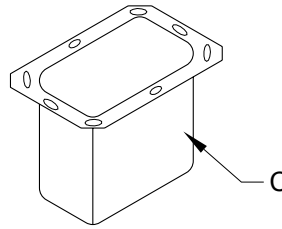
C- Indicates color side of flashing.

# IMAGE II ACCESSORY PROFILES

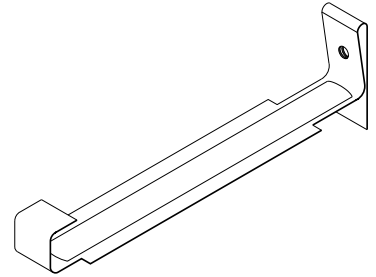
## COBRA VENTED CLOSURE



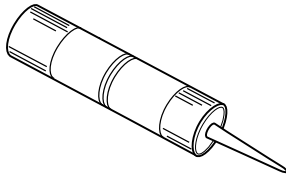
## OUTLET TUBE 2" X 3"



## FACIA BRACKET



## TUBE SEALANT



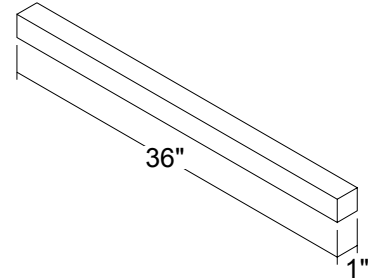
10.3 oz. Cartridge Urethane

## TAPE SEALANT

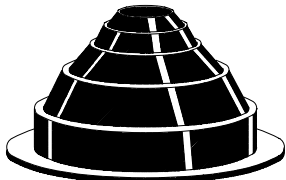


7/8" X 3/16" X 25'  
Double Bead Butyl - Gray

## OUTSIDE CLOSURE

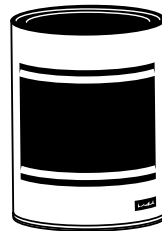


## RUBBER ROOF JACK



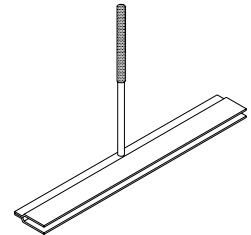
MINI (1/4" to 1 1/8" O.D. Pipe)  
#2 (1 3/4" to 3" O.D. Pipe)  
#4 (3" to 6" O.D. Pipe)  
#6 (6" to 9" O.D. Pipe)  
#8 (7" to 13" O.D. Pipe)

## TOUCH-UP PAINT



Available in pints  
PVDF / MS Colorfast45

## METAL PANEL HEMMING TOOL



**Metal Roof Deck Panels**

Metal Sales Manufacturing Corporation has obtained fire resistance ratings for various products conducted according to test criteria set forth by 'Underwriters Laboratories' "Standard Fire Tests of Building Construction and Material" (ANSI/UL 263). This test procedure is identical to ASTM E-119 and NFPA 251.

The fire resistance rating is for the total assembly and not just the external metal panel. Ratings are expressed in hours and vary depending upon the assemblies.

In general, the test criteria is to evaluate the assembly's ability to continue to support the super-imposed loads and resist the passage of flame, high temperatures, or hot gases which will ignite combustible materials. The test assemblies are identified by an alpha-numeric design number.

For detail information on specific assemblies and hourly ratings see UL Fire Resistance Directory.

**METAL SALES MFG CORP**

R9697

**Mechanically attached metal roof panels - Type "Image II"**

For use in Design Nos. P224 , P225 , P227 , P230 , P237 , P508 , P510 , P512 , P701 , P711 , P712 , P713 , P715 , P717 , P720 , P722 , P723 , P724 , P726 , P731 , P734 , P736 , P803 , P814 , P815 , P818 , P819 , P821 , P823 , P824 .

\*Hat shaped member to be a minimum of 16 gauge. The member will be fastened through the roof insulation to the steel roof deck with min. No. 14 self-drilling and/or self-tapping fasteners. Spacing to be determined by the structural loading requirements. In addition any compressible UL Classified glass fiber blanket insulation with or without a vapor retarder facing may be used between the specified roof insulation and the metal roof panels.

\*\*Bearing plate to be a minimum of 16 gauge. Member will be fastened through the roof insulation to the steel deck with min. No. 14 self-drilling and/or self-tapping fasteners.

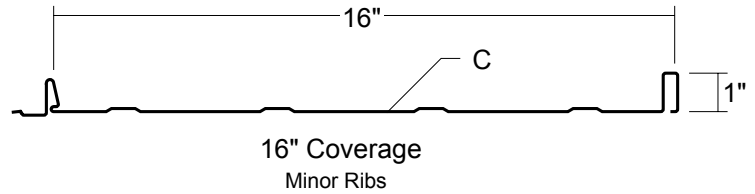
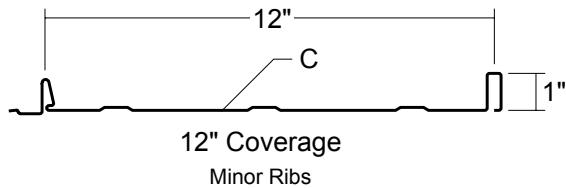
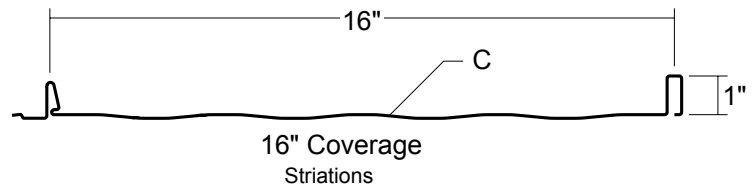
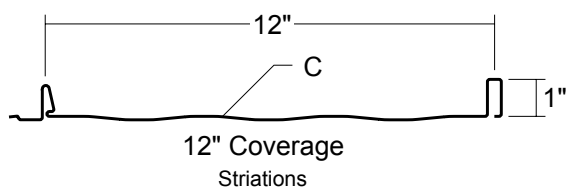
See the UL Fire Resistance Directory for explanation of each design number listed above.



Underwriters Laboratories Inc. ®

LISTED

# IMAGE II SECTION PROPERTIES AND GENERAL INFORMATION



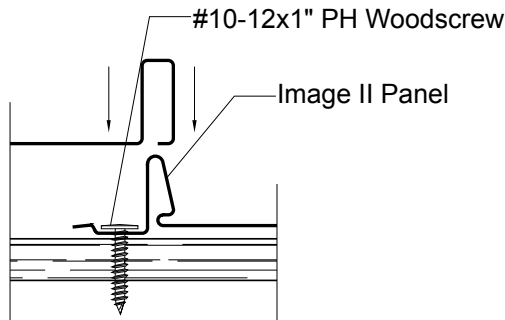
## SECTION PROPERTIES

## ALLOWABLE UNIFORM LOADS psf (3 or More Equal Spans)

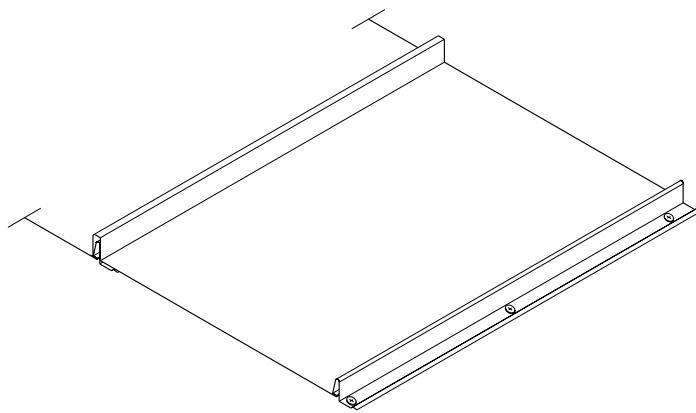
Ga.	Width in	Yield ksi	Weight psf	Top In Compression		Bottom In Compression		Outward Load					
				I <sub>xx</sub> in <sup>4</sup> /ft	S <sub>xx</sub> in <sup>3</sup> /ft	I <sub>xx</sub> in <sup>4</sup> /ft	S <sub>xx</sub> in <sup>3</sup> /ft	0'-6"	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"
26	16"	80	0.90	0.0157	0.0168	0.0163	0.0175	86	71	64	56	46	42
24	16"	50	1.19	0.0210	0.0226	0.0210	0.0226	86	71	64	56	46	42

- Theoretical section properties have been calculated per AISI 2001 "Specification for the Design of Cold-formed Steel Structural Members with 2004 Supplement." I<sub>xx</sub> and S<sub>xx</sub> are effective section properties for deflection and bending.
- Allowable load is calculated in accordance with AISI 2001 specifications considering bending, shear, combined bending and shear, deflection, testing, fastener pullout from 5/8" plywood, and pullover. Allowable load considers the worst case of 3 and 4 equal span conditions. Allowable load does not address web crippling. Panel weight is not considered.
- Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
- Allowable loads do not include a 1/3 stress increase in uplift.

## ATTACHMENT DETAIL



## FASTENING PATTERN



## GENERAL INFORMATION

### ► Slope

The minimum recommended slope for the Image II roof panel is 3:12.

### ► Substructure

Image II is designed to be utilized over a solid substrate. To avoid panel distortion use a properly aligned and uniform substructure.

NOTE: Image II roof panels are not recommended for use over open structural framing.

### ► Coverage

Image II panels are available in a 1" seam height with a 12" or 16" width coverage.

### ► Length

Minimum factory cut length is 5'-0". Maximum recommended panel length is 30'-0". Longer panels require additional consideration in packaging, shipping, and erection. Please consult Metal Sales for recommendations.

### ► Fasteners

The fastener selection guide should be consulted for choosing the proper fastener for specific applications. Quantity and type of fastener must meet necessary loading and code requirements.

NOTE: All panels are subject to surface distortion due to improperly applied fasteners. Overdriven fasteners will cause stress and induce oil canning across the face of the panel at or near the point of attachment.

### ► Availability

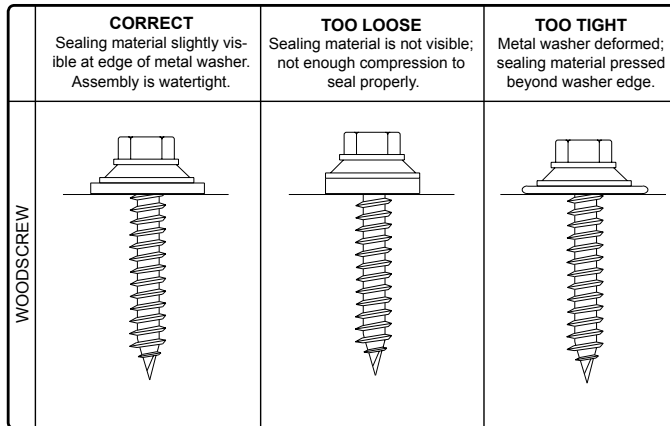
Finishes: Acrylic Coated Galvalume®, MS Colorfast45®, or various Kynar 500 (PVDF) colors.

Gauge: 26 ga standard, 24 ga optional

## FASTENER INSTALLATION TECHNIQUE

**Recommended Tool Type** - Use depth locating nose or adjustable clutch on screw gun to prevent overdrilling and strip out. **Do not use impact tools or runners.**

**Seating the washer** - Apply sufficient torque to seat the washer - do not overdrive the fastener.



**To prevent wobbling** - Make sure fastener head is completely engaged in the socket. If the head does not go all the way in the socket - tap the magnet deeper into the socket to allow full head engagement. Metal chips will build up from drilling and should be removed from time to time.

**Protect drill point** - Push only hard enough on the screw gun to engage clutch. This prevents excess friction and burn out of the drill point. Correct pressure will allow screw to drill and tap without binding.

**Drilling through sheet and insulation** - Ease up on pressure when drilling through insulation to avoid striking the purlin or girt with the point - apply more pressure after drill point contacts purlin or girt.

**Drilling through purlin overlaps** - Drilling through lapped purlins requires extra care. Excessive voids between purlins sometimes damages drill points and two self-drillers might be necessary to complete the operation. It is sometimes advantageous to predrill.

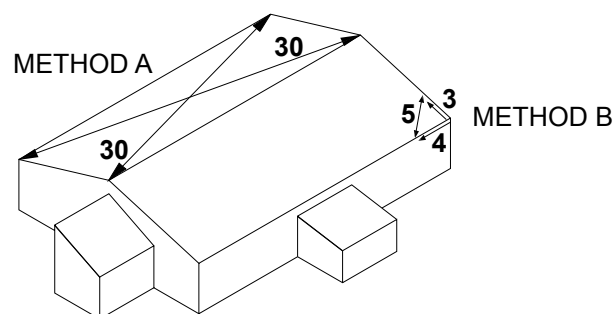
## CONDITION OF SUBSTRUCTURE

Whether over solid substrate or open structural framing, panel distortion may occur if not applied over properly aligned and uniform substructure.

The installer should check the roof deck for squareness before installing Image II panels. Several methods can be used to verify squareness of the structure for proper installation of the panels.

**METHOD "A"** - One method for checking the roof for squareness is to measure diagonally across one slope of the roof from similar points at the ridge and eave and obtain the same dimension.

**METHOD "B"** - The 3-4-5 triangle system may also be used. To use this system measure a point from the corner along the edge of the roof at a module of three (3). Measure a point from the same corner along another edge at a module of four (4). Then by measuring diagonally between the two points established, the dimension should be exactly a module of five (5) to have a square corner. Multiple uses of this system may be required to determine building squareness. If the endwall cannot be made square, the roof system cannot be installed as shown in these instructions.





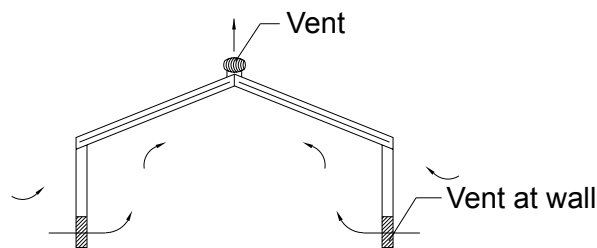
## IMAGE II DESIGN / INSTALLATION CONSIDERATIONS (CONT)

### VENTILATION

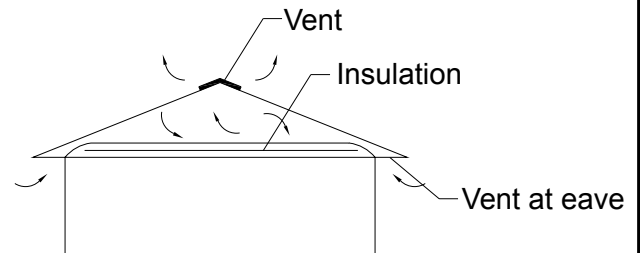
Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal roofing; these problems are common to all types of construction.

The underside of the metal roof on a typical Architectural building should be protected from condensation by installing panels directly over a minimum 30 lb moisture barrier and uniform solid substrate. This reduces airspace and the potential of condensation forming on the underside of the panels.



**Typical metal building (no attic)**



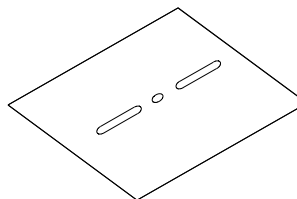
**Building with attic or retrofitted**

### PANEL APPLICATIONS

The following chart highlights UL 580 Class 90 for clip installation on the selected applications (see Fastener Selection Guide page PGI-12-14 for other fasteners available). For more information on UL Construction numbers, refer to UL Roofing Materials and System Directories. Panel gauges and clip spacing should be determined by a professional engineer according to the governing building code.

PANEL TYPE	APPLICATION	INSTALLATION REQUIREMENTS		FASTENER SPACING	*TYPE OF FASTENER	NUMBER REQUIRED
IMAGE II	OVER 5/8" WOOD DECK AND METAL DECK	Standard	26 GAUGE	18" o.c.	CALL YOUR METAL SALES BRANCH FOR ASTM-E1592 UPLIFT VALUE	

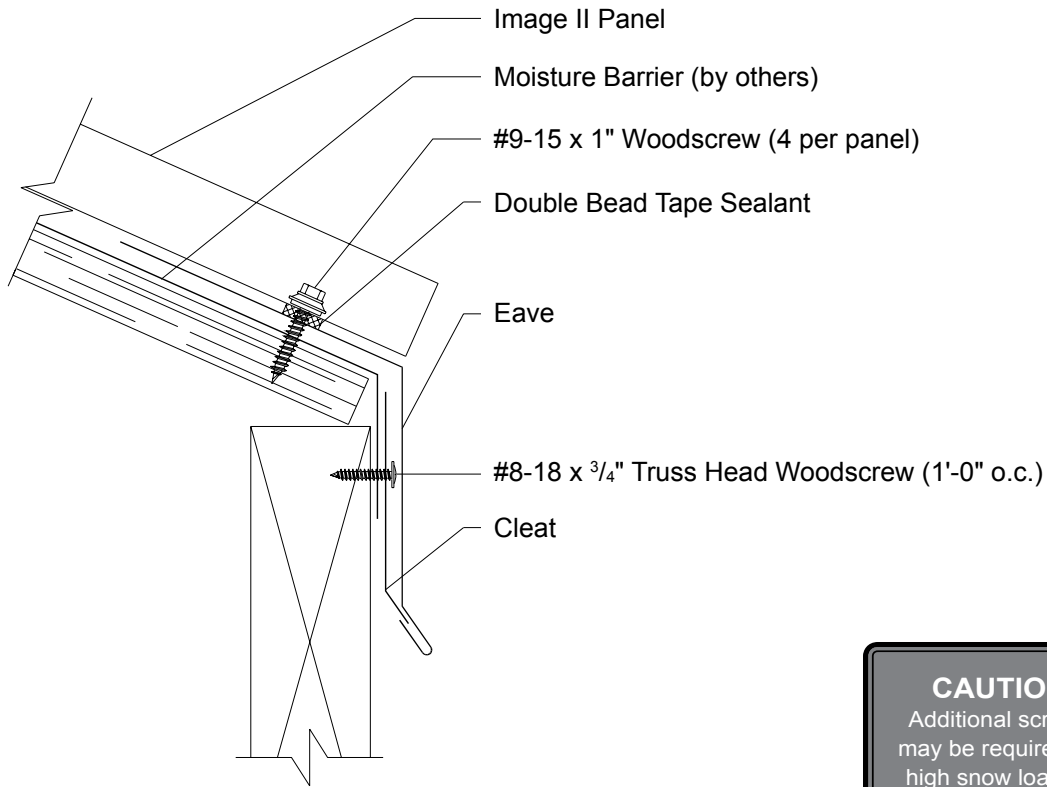
\* Subject to project loading, closer fastener spacing may be required. Contact your local Metal Sales branch representative for more information (see pages PGI-2-3). Fastener spacing is based on maximum uplift suction load of 32 psf.



**BEARING PLATE**

## IMAGE II EAVE DETAIL

3:12 Slope  
Minimum

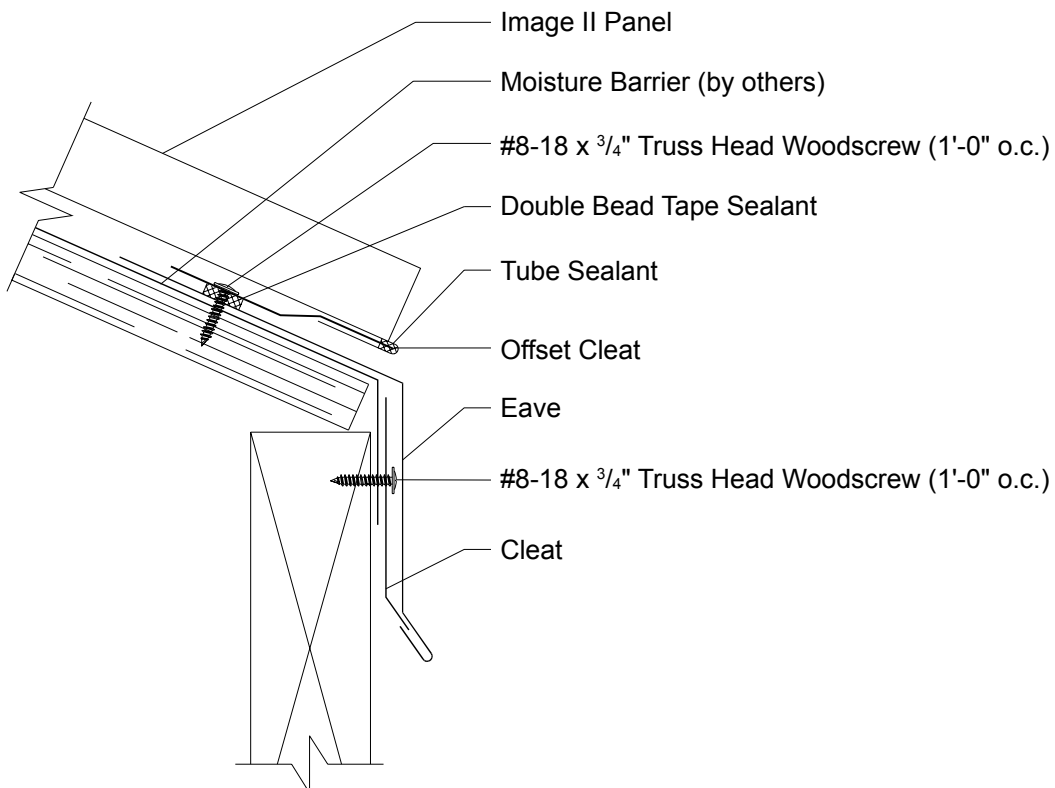


### CAUTION

Additional screws  
may be required for  
high snow loading  
and steep slopes.

## IMAGE II EAVE WITH OFFSET DETAIL

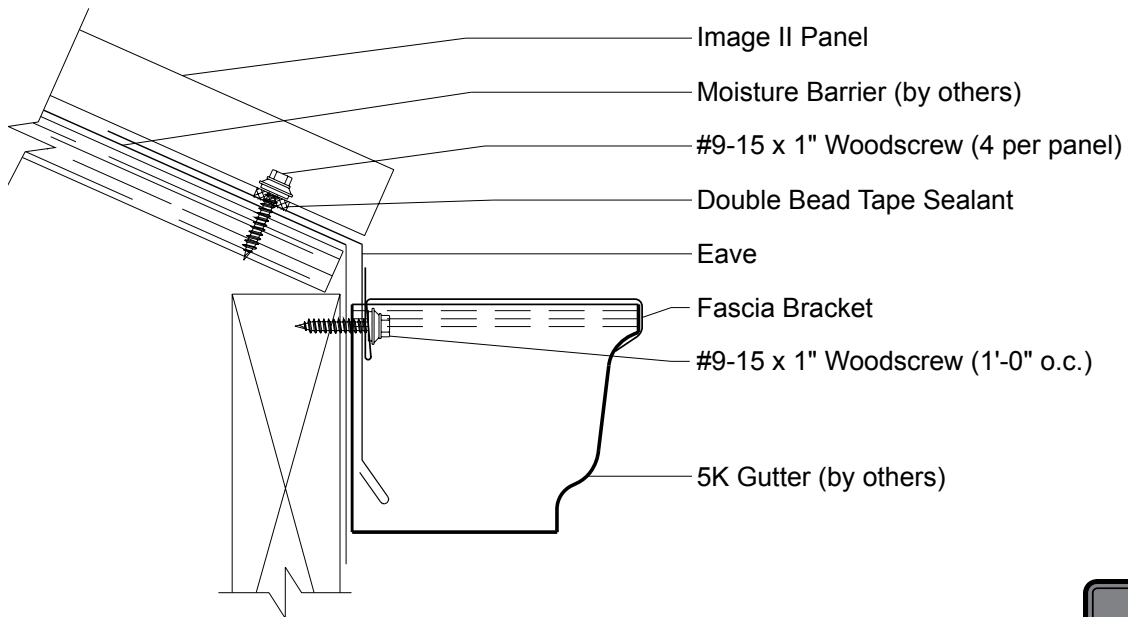
3:12 Slope  
Minimum



Panel rib must be field notched and flat part of panel must be field bent to accept offset cleat (see Architectural Manual).

## IMAGE II 5K GUTTER DETAIL

3:12 Slope  
Minimum

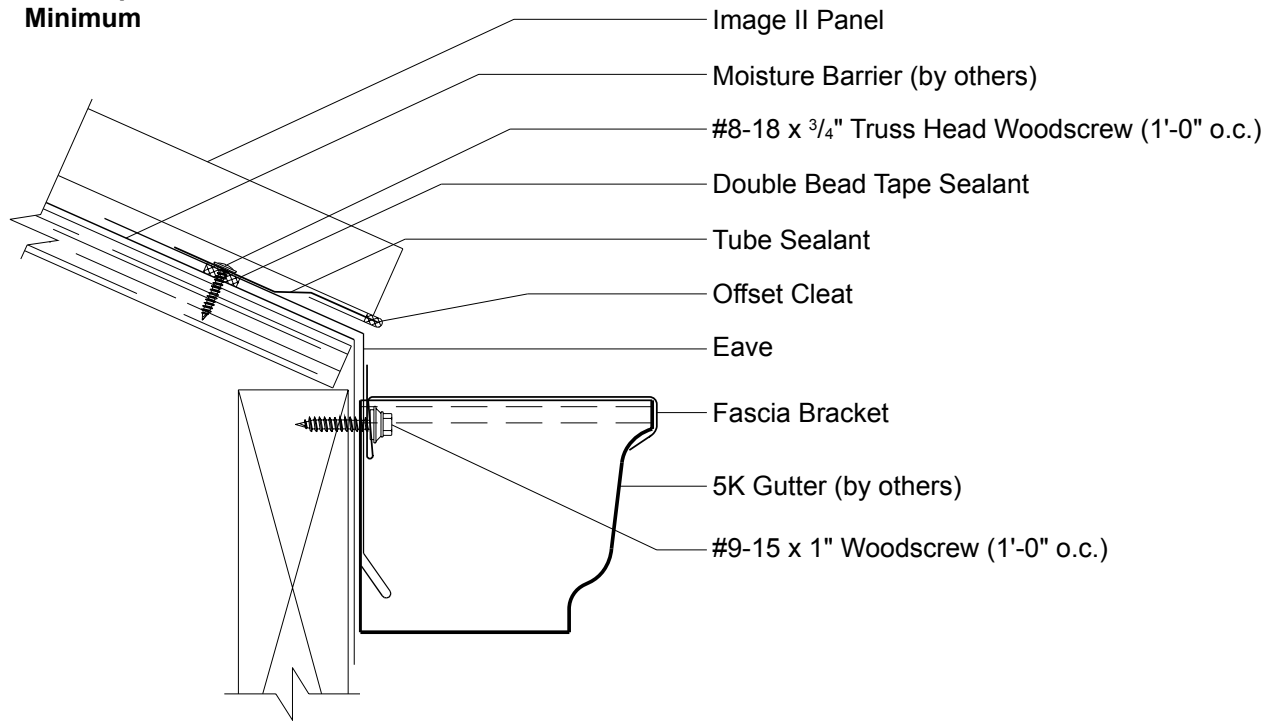


### CAUTION

Additional screws may be required for high snow loading and steep slopes.

## IMAGE II 5K GUTTER WITH OFFSET DETAIL

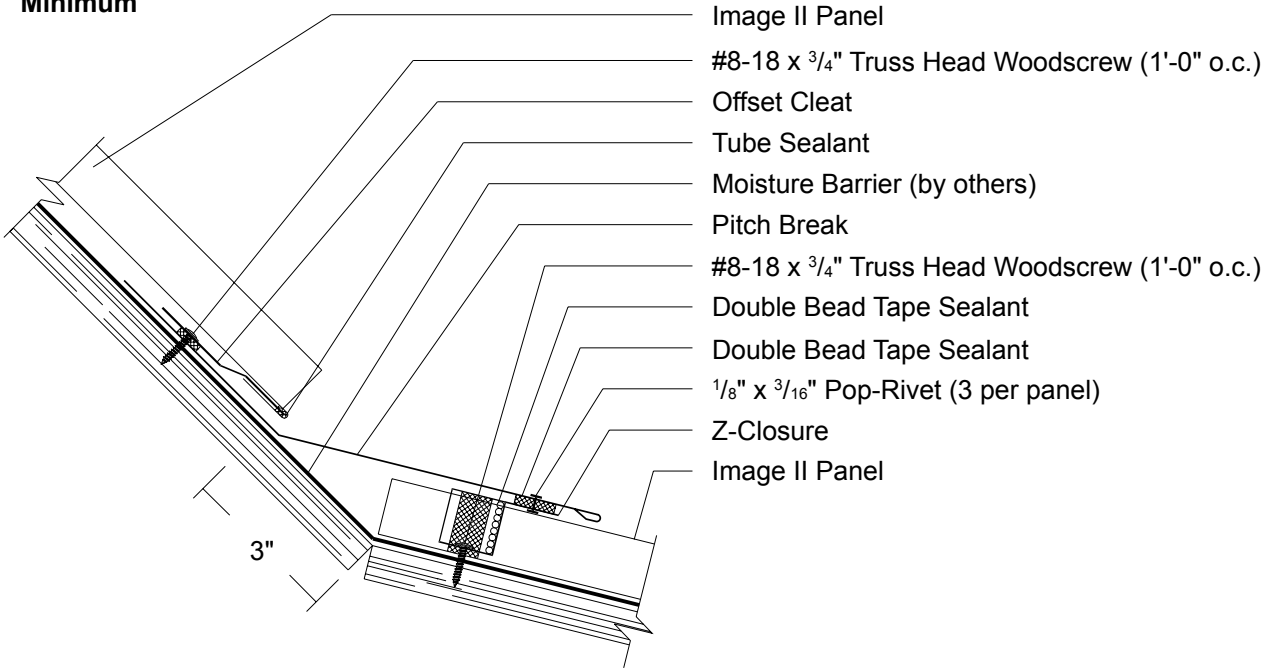
3:12 Slope  
Minimum



Panel rib must be field notched and flat part of panel must be field bent to accept offset cleat (see Architectural Manual).

## IMAGE II SLOPE CHANGE DETAIL

3:12 Slope  
Minimum

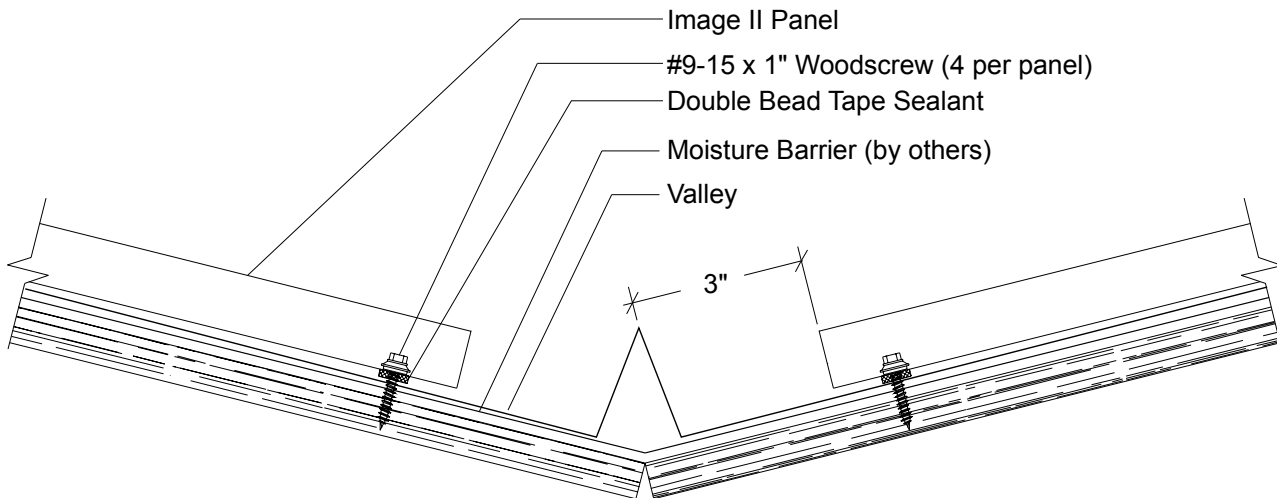


Note: Z-Closures must be field cut and bent to fit between panel ribs (see Architectural Manual).

Panel rib must be field notched and flat part of panel must be field bent to accept offset cleat (see Architectural Manual).

## IMAGE II VALLEY DETAIL

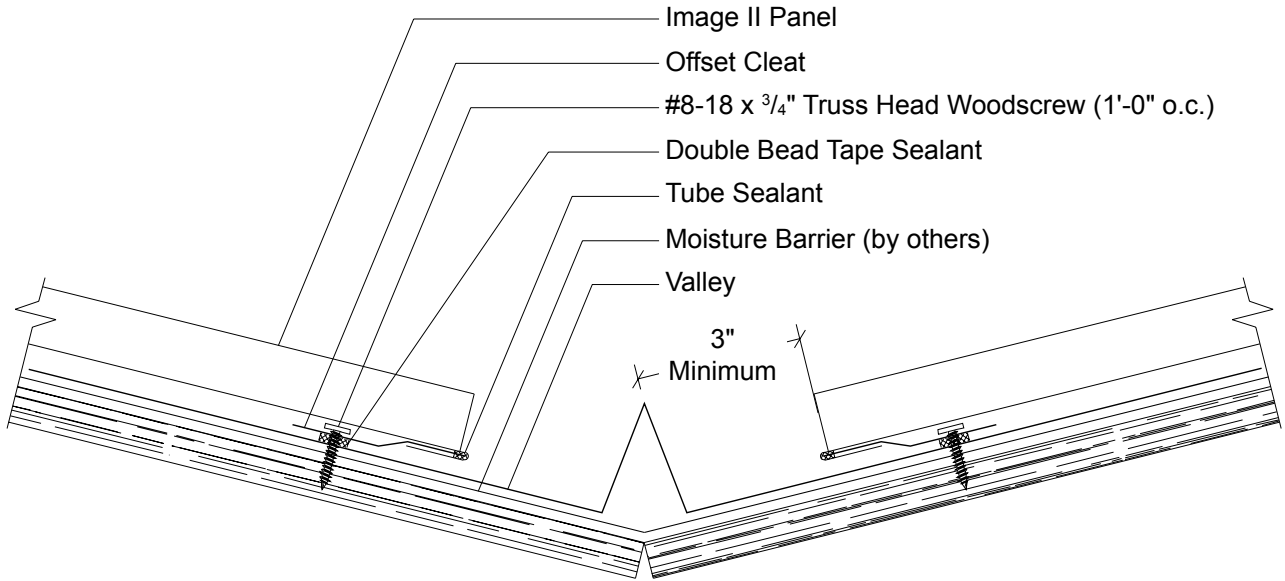
3:12 Slope  
Minimum



**CAUTION**  
Additional screws  
may be required for  
high snow loading  
and steep slopes.

## IMAGE II VALLEY WITH OFFSET CLEAT DETAIL

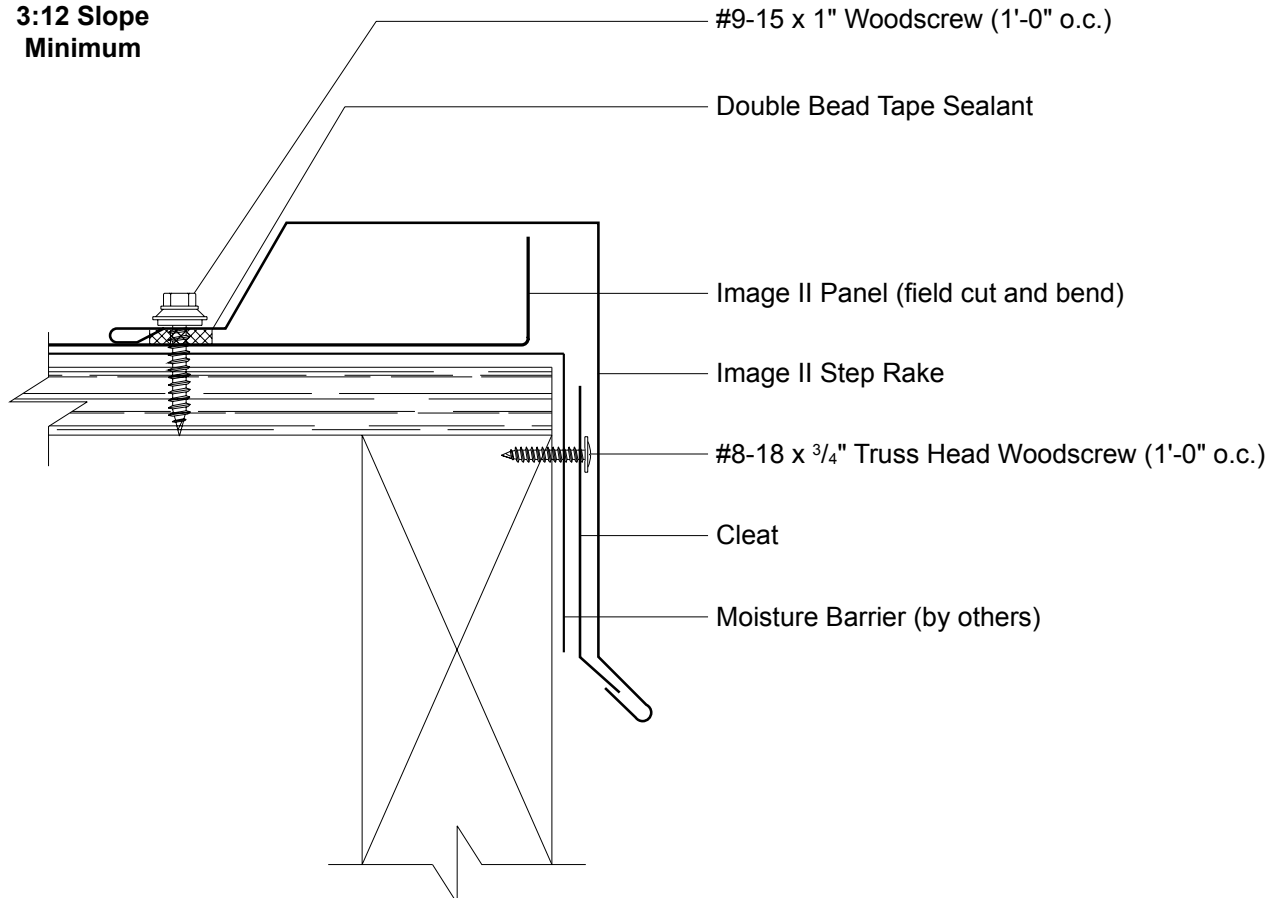
3:12 Slope  
Minimum



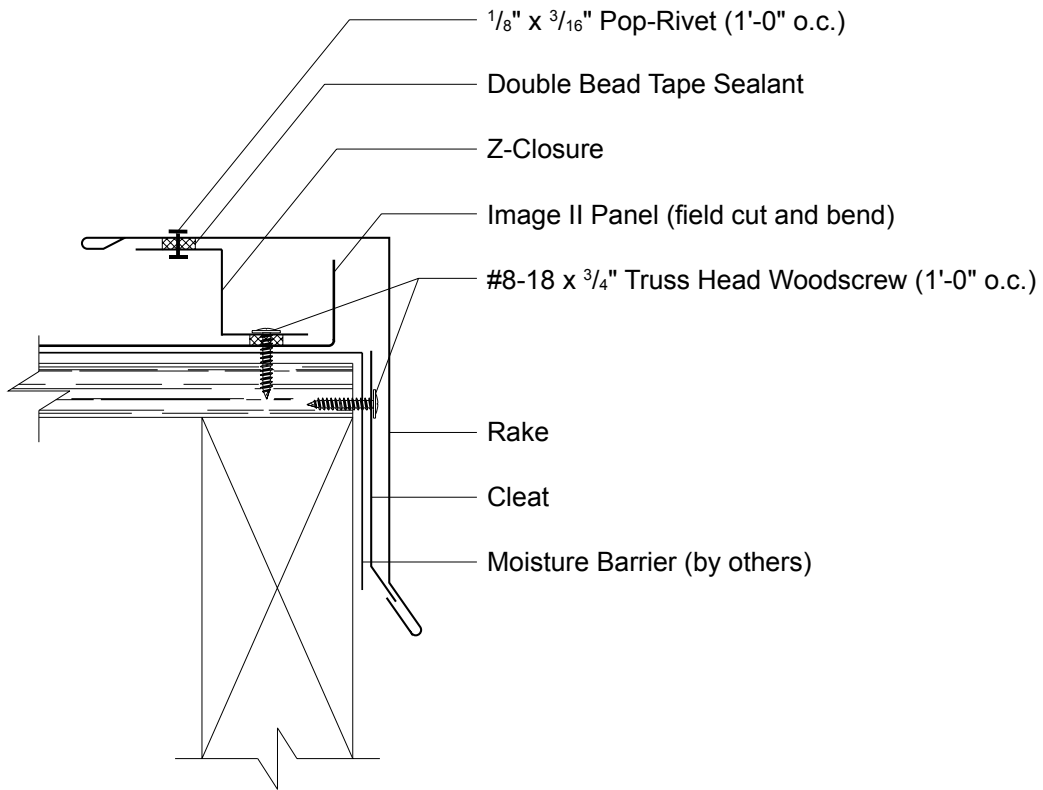
Panel rib must be field notched and flat part of panel must be field bent to accept offset cleat (see Architectural Manual).

## IMAGE II STEP RAKE DETAIL

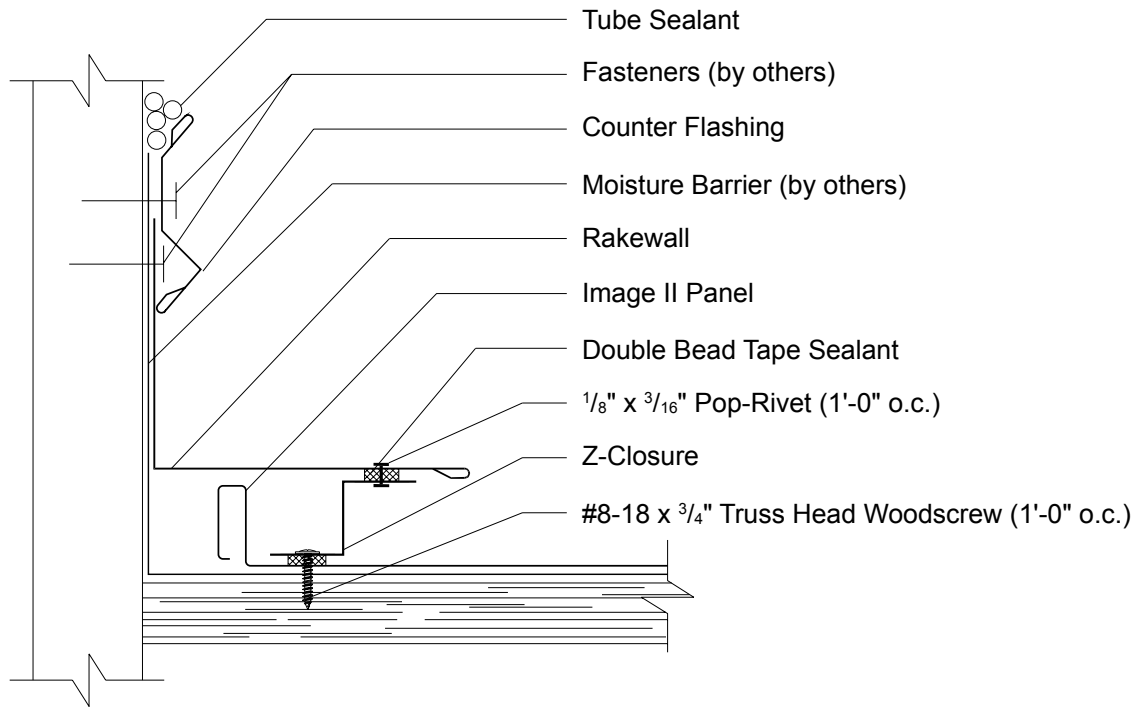
3:12 Slope  
Minimum



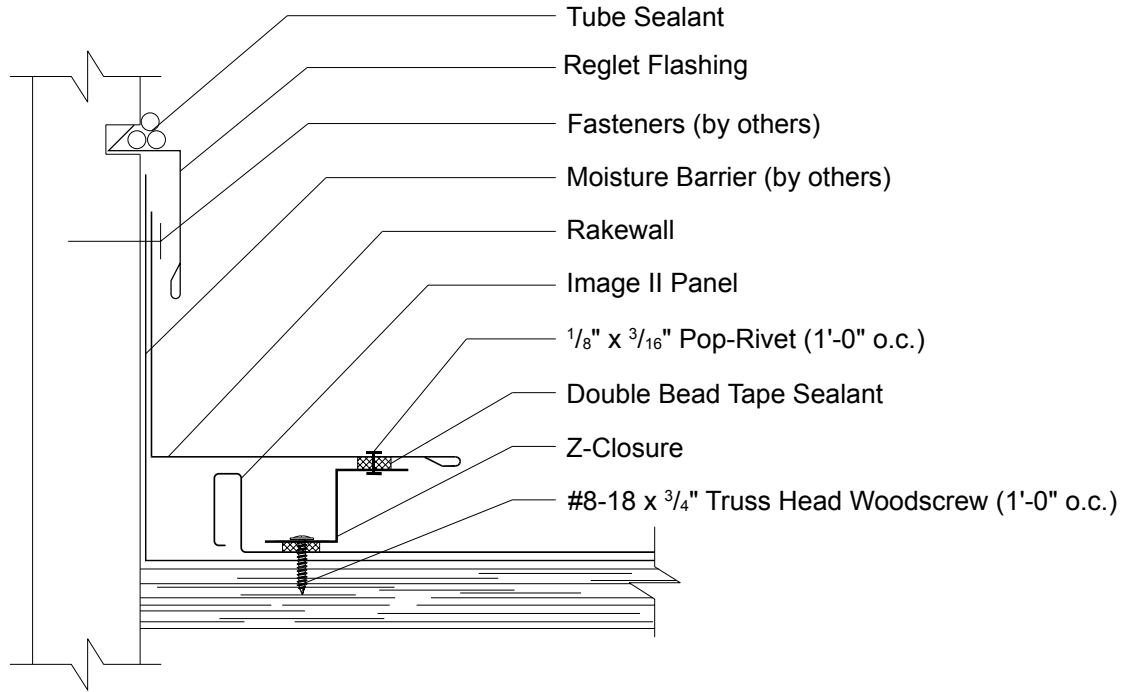
**IMAGE II RAKE WITH Z-CLOSURE DETAIL**



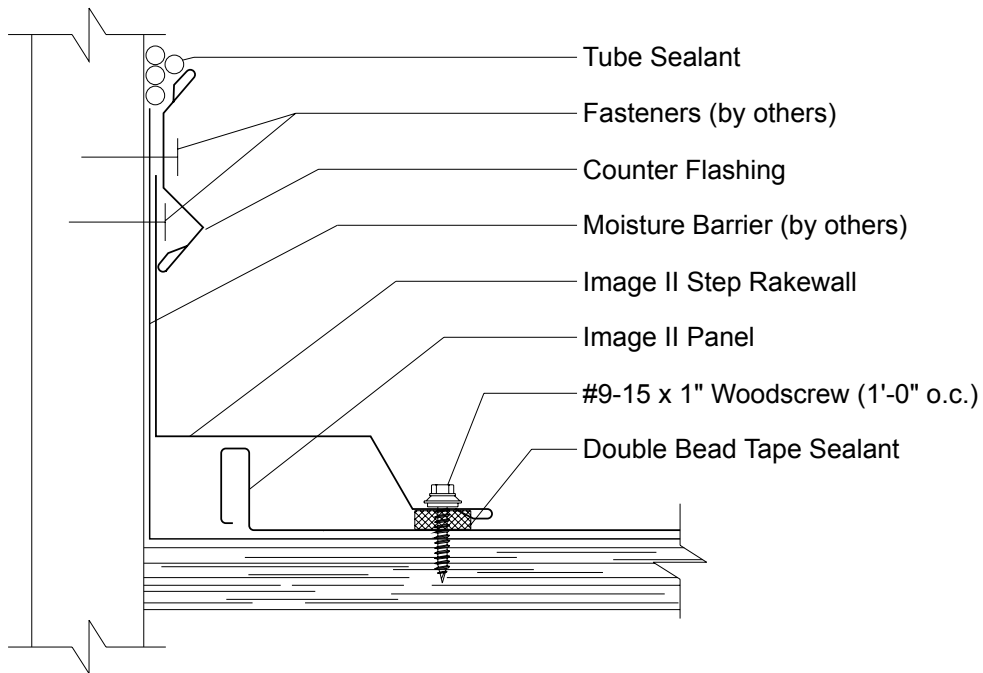
**IMAGE II RAKEWALL WITH Z-CLOSURE (COUNTER) DETAIL**



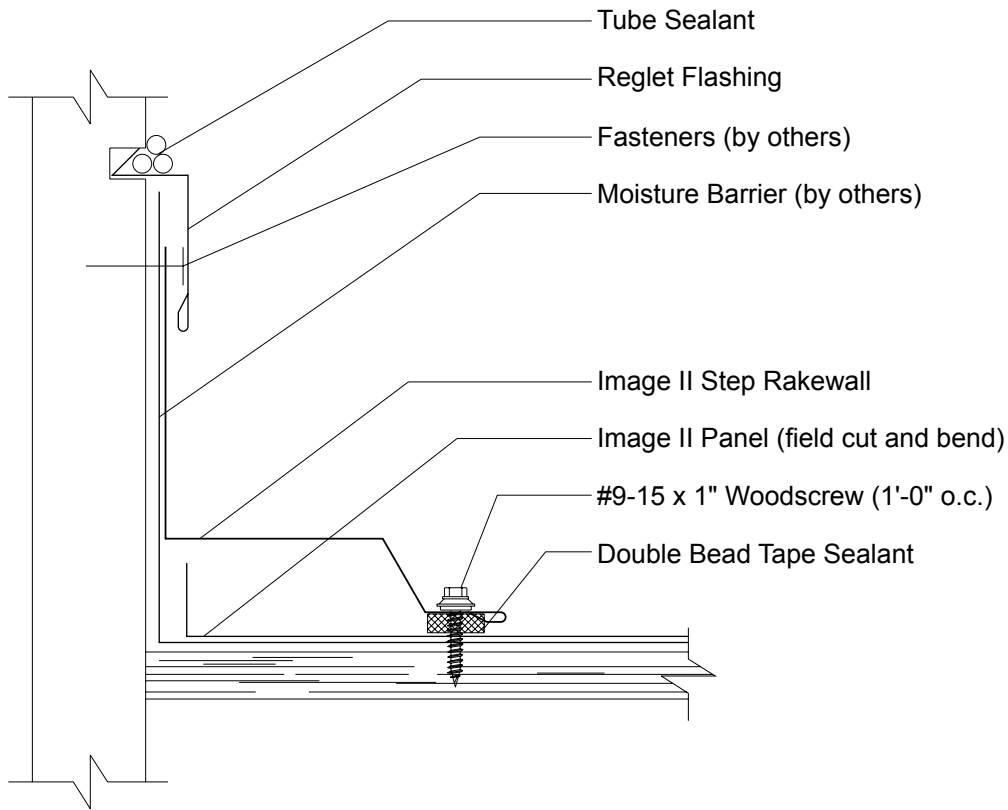
**IMAGE II RAKEWALL WITH Z-CLOSURE (REGLET) DETAIL**



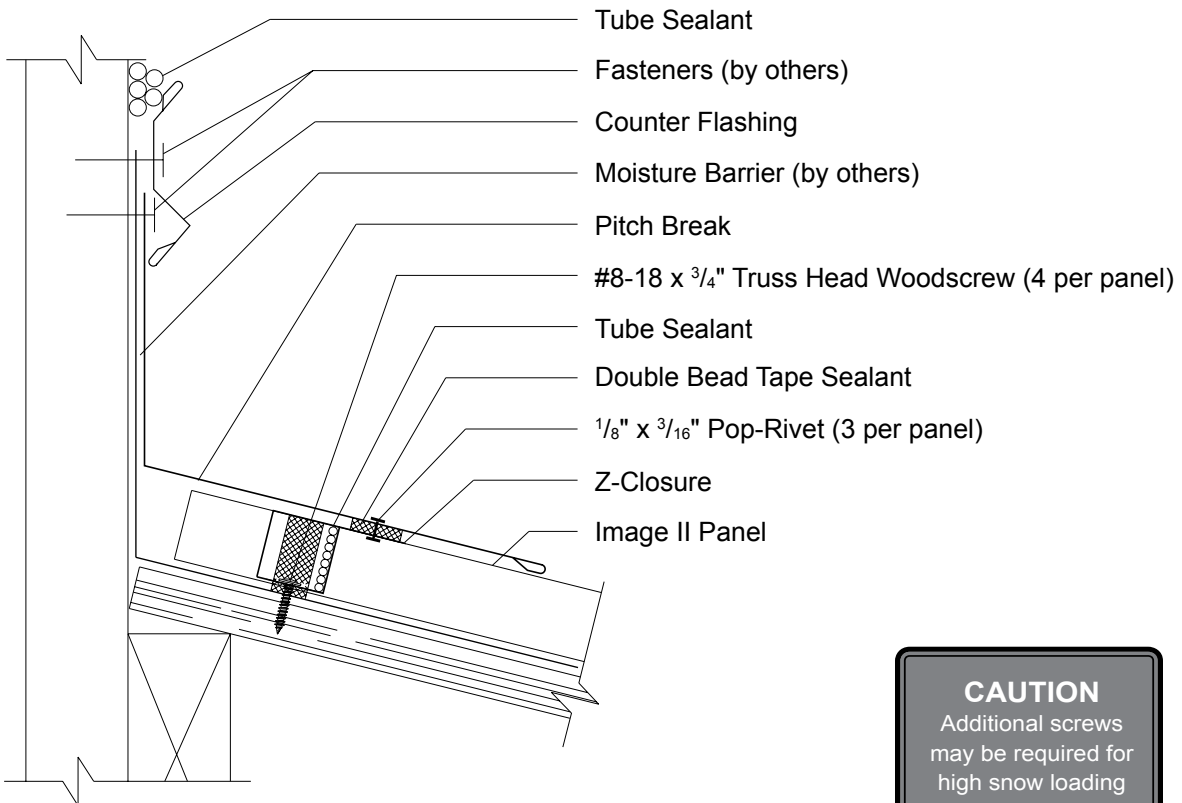
**IMAGE II STEP RAKEWALL (COUNTER) DETAIL**



## IMAGE II STEP RAKEWALL (REGLET) DETAIL



## IMAGE II ENDWALL WITH Z-CLOSURE (COUNTER) DETAIL



### CAUTION

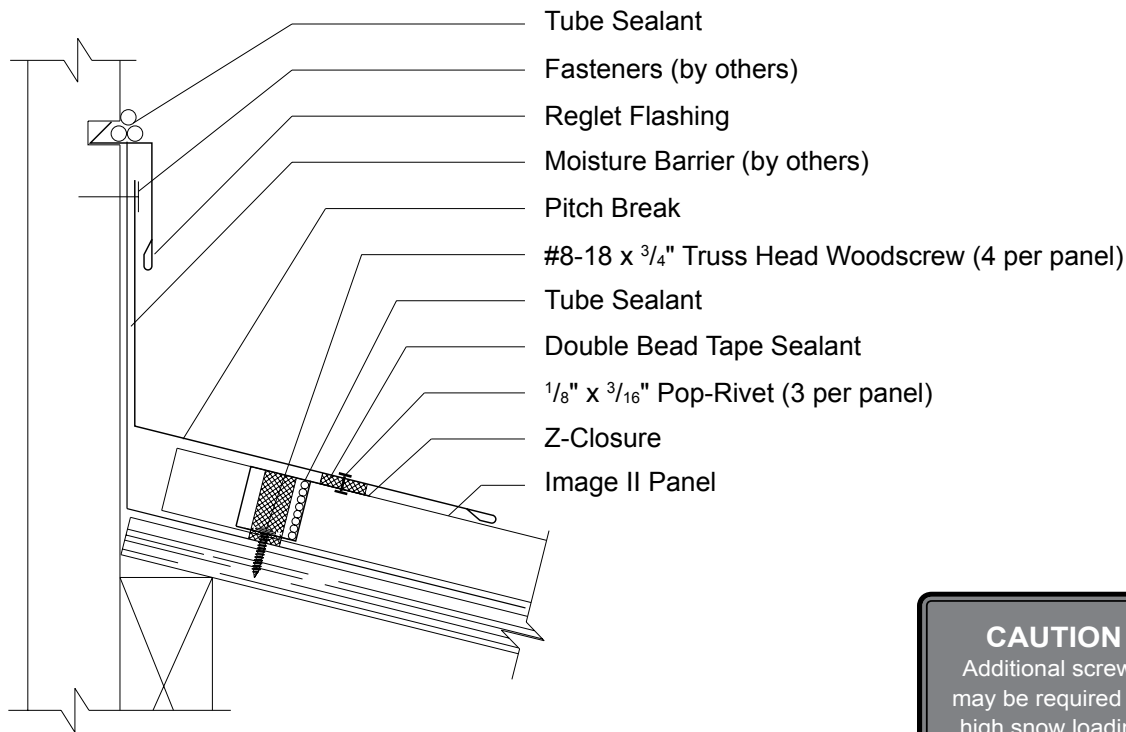
Additional screws may be required for high snow loading and steep slopes.

**Note: Z-Closures must be field cut and bent to fit between panel ribs (see Architectural Manual).**



## IMAGE II ENDWALL WITH Z-CLOSURE (REGLET) DETAIL

3:12 Slope  
Minimum

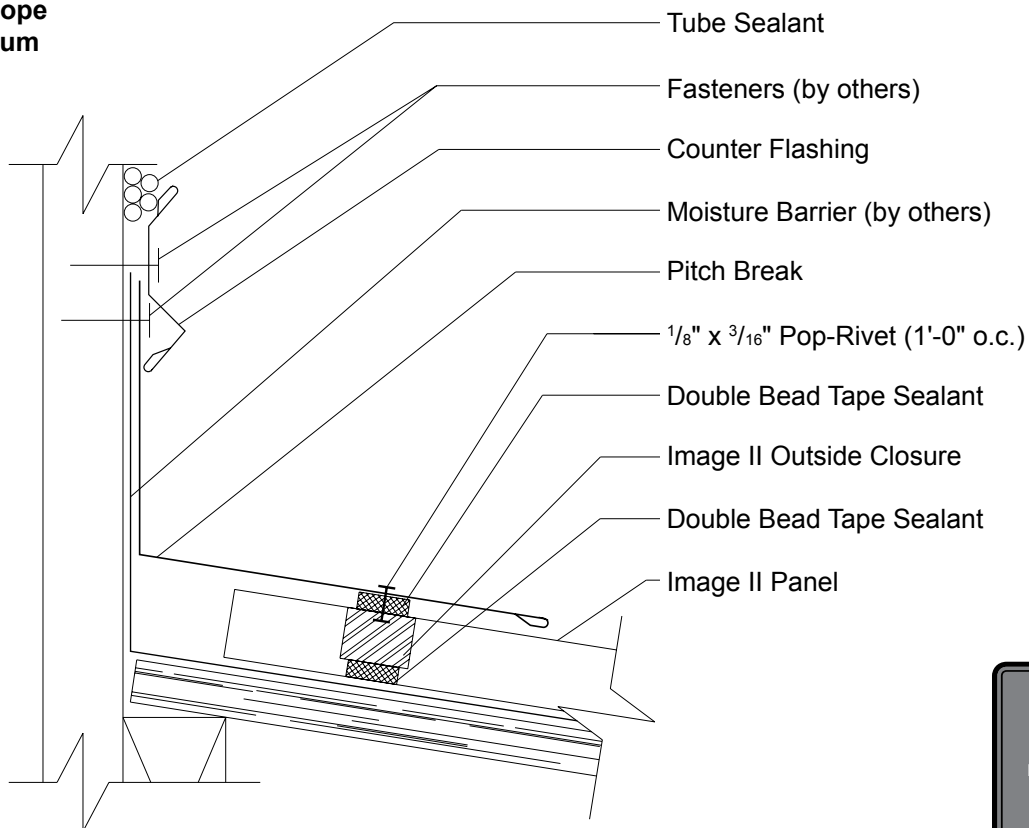


Note: Z-Closures must be field cut and bent to fit between panel ribs (see Architectural Manual).

**CAUTION**  
Additional screws may be required for high snow loading and steep slopes.

## IMAGE II ENDWALL WITH FOAM-CLOSURE (COUNTER) DETAIL

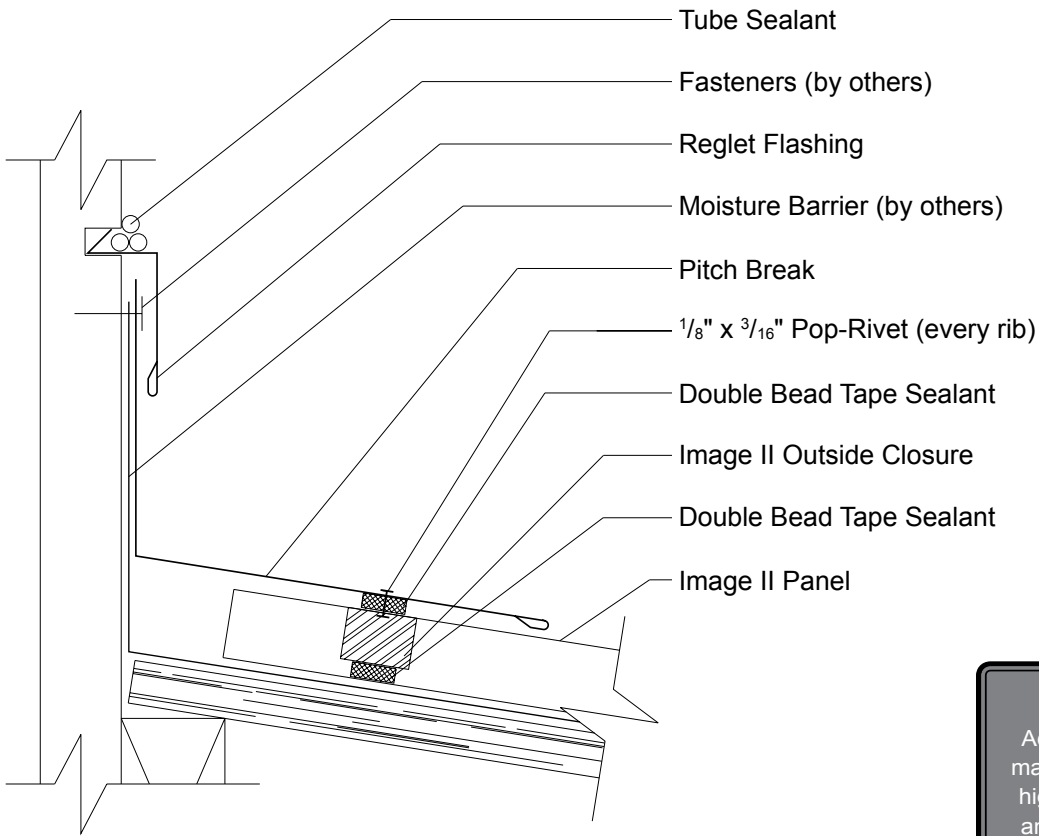
3:12 Slope  
Minimum



**CAUTION**  
Additional screws may be required for high snow loading and steep slopes.

## IMAGE II ENDWALL WITH FOAM-CLOSURE (REGLET) DETAIL

3:12 Slope  
Minimum

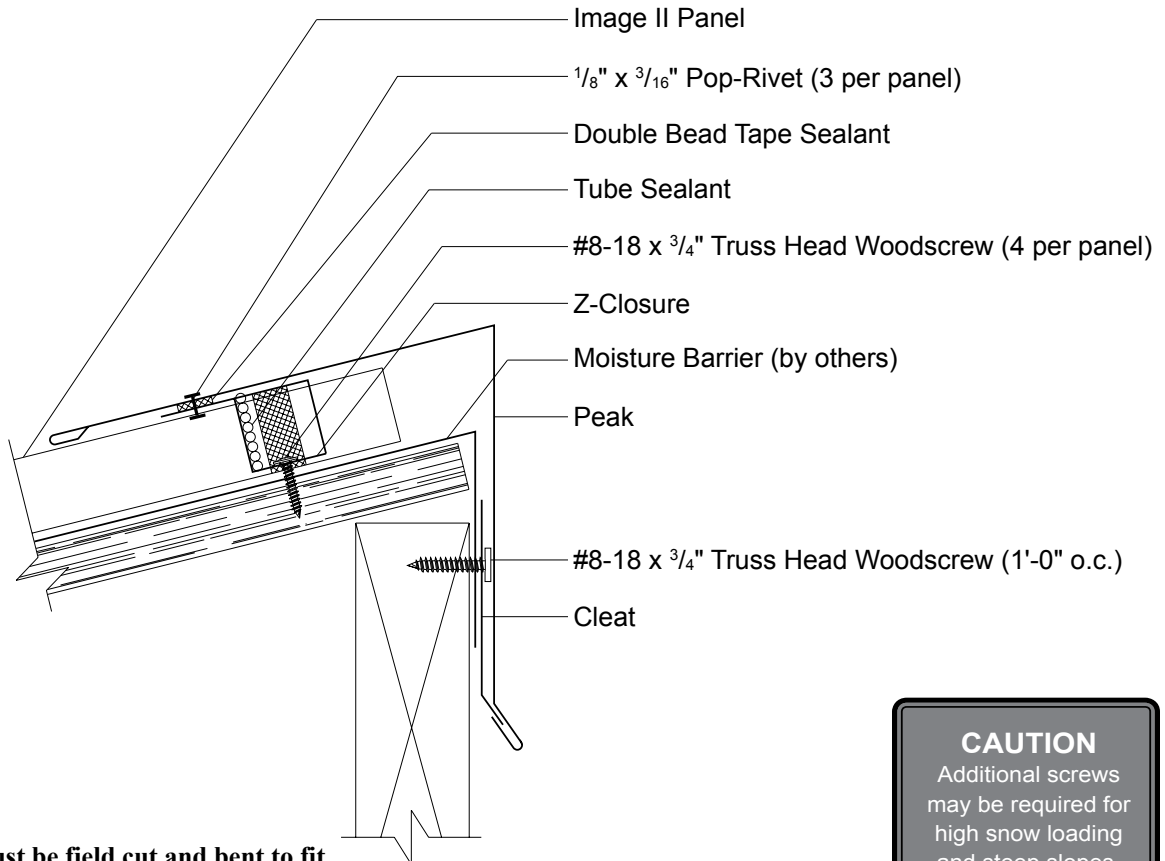


### CAUTION

Additional screws  
may be required for  
high snow loading  
and steep slopes.

## IMAGE II PEAK WITH Z-CLOSURE DETAIL

3:12 Slope  
Minimum



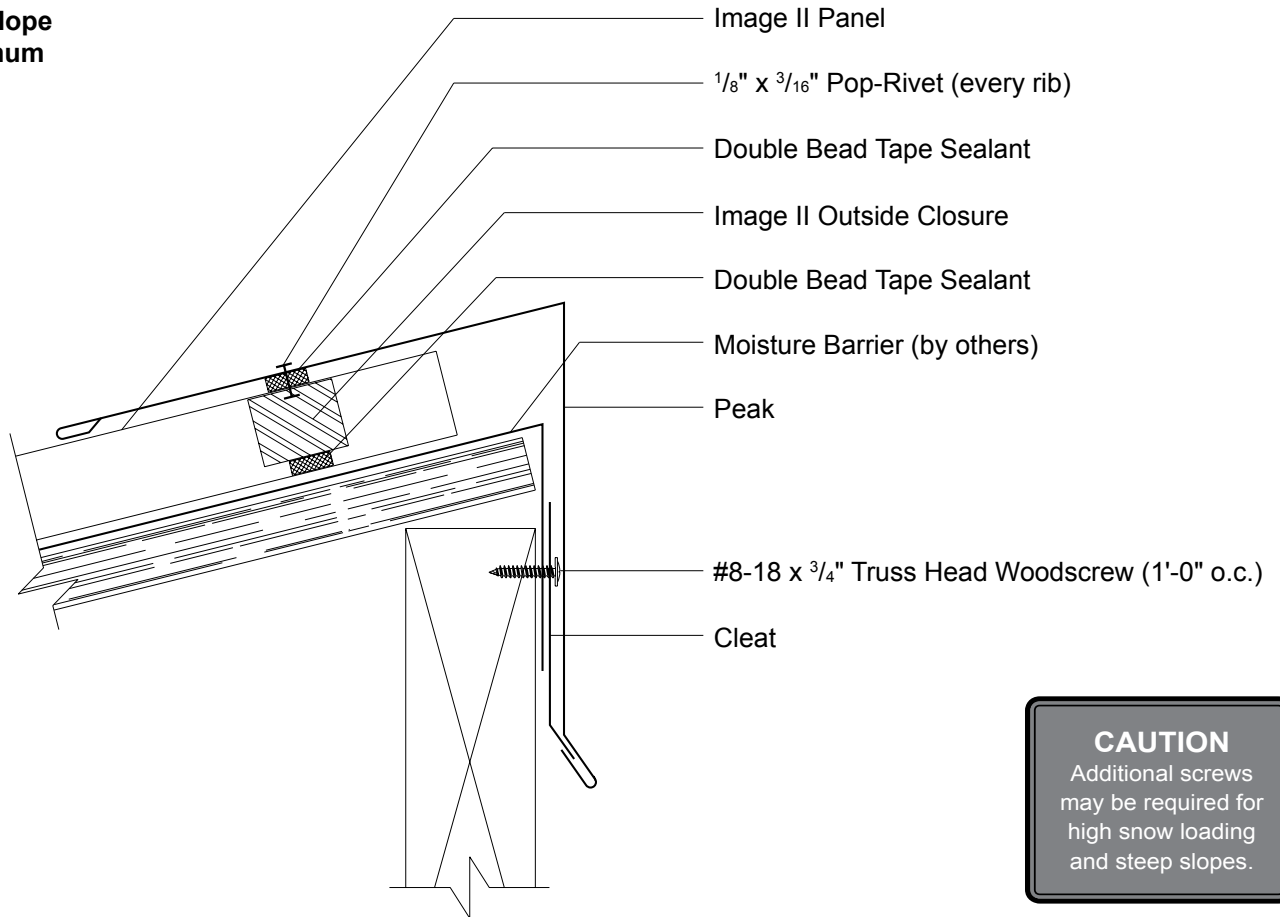
### CAUTION

Additional screws  
may be required for  
high snow loading  
and steep slopes.

**Note: Z-Closures must be field cut and bent to fit between panel ribs (see Architectural Manual).**

## IMAGE II PEAK WITH FOAM-CLOSURE DETAIL

3:12 Slope  
Minimum

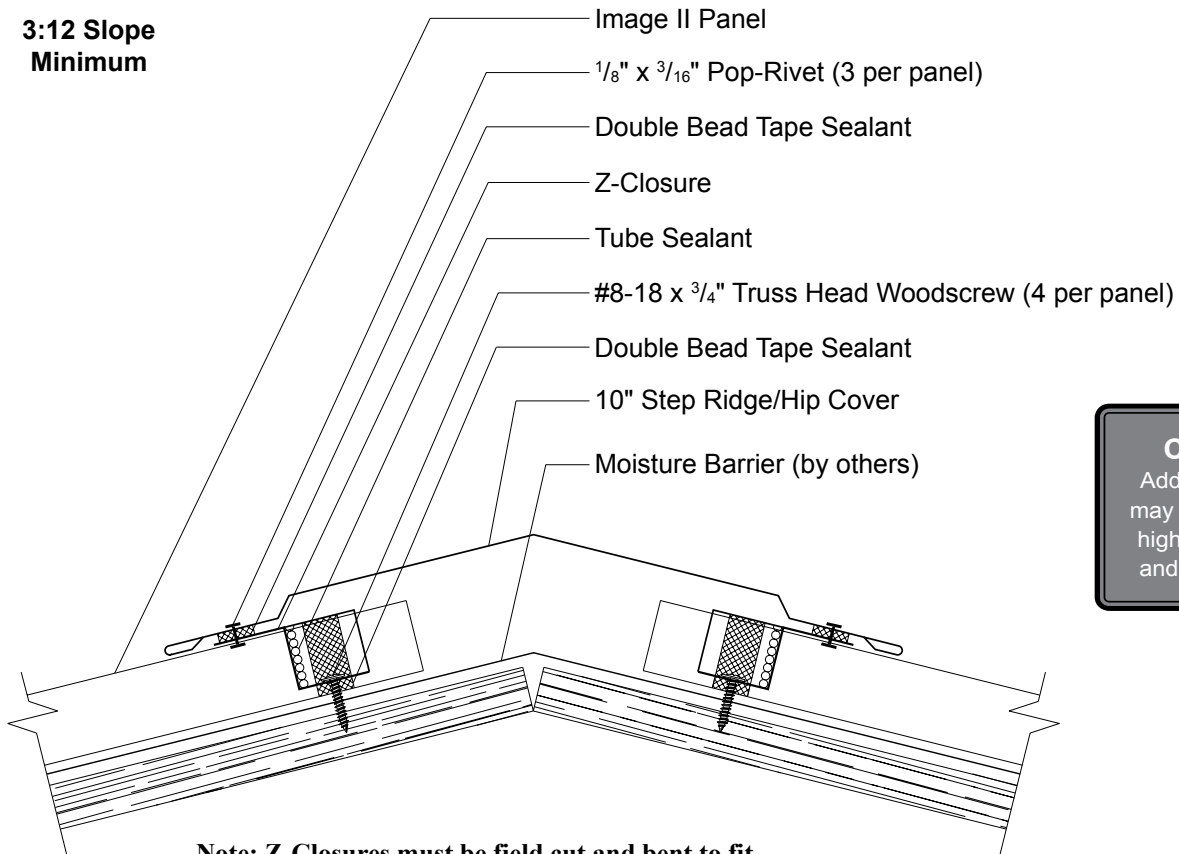


### CAUTION

Additional screws may be required for high snow loading and steep slopes.

## IMAGE II RIDGE/HIP COVER DETAIL

3:12 Slope  
Minimum



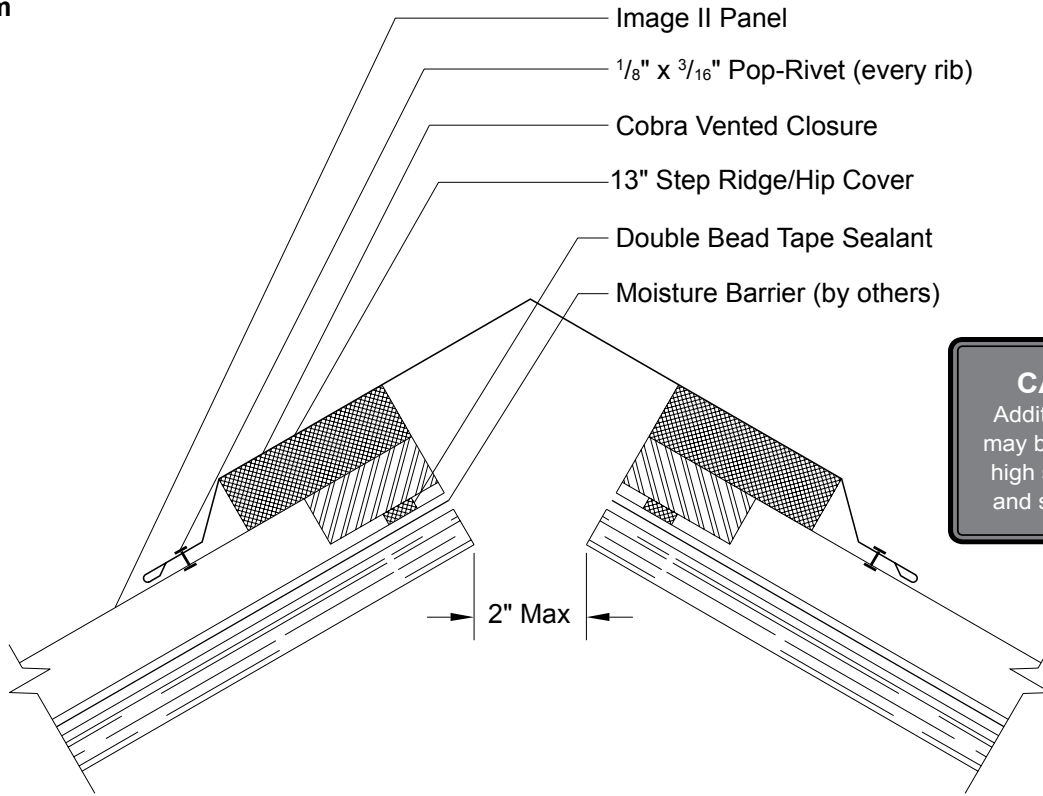
### CAUTION

Additional screws may be required for high snow loading and steep slopes.

**Note: Z-Closures must be field cut and bent to fit between panel ribs (see Architectural Manual).**

## IMAGE II VENTED RIDGE (COBRA VENT) DETAIL

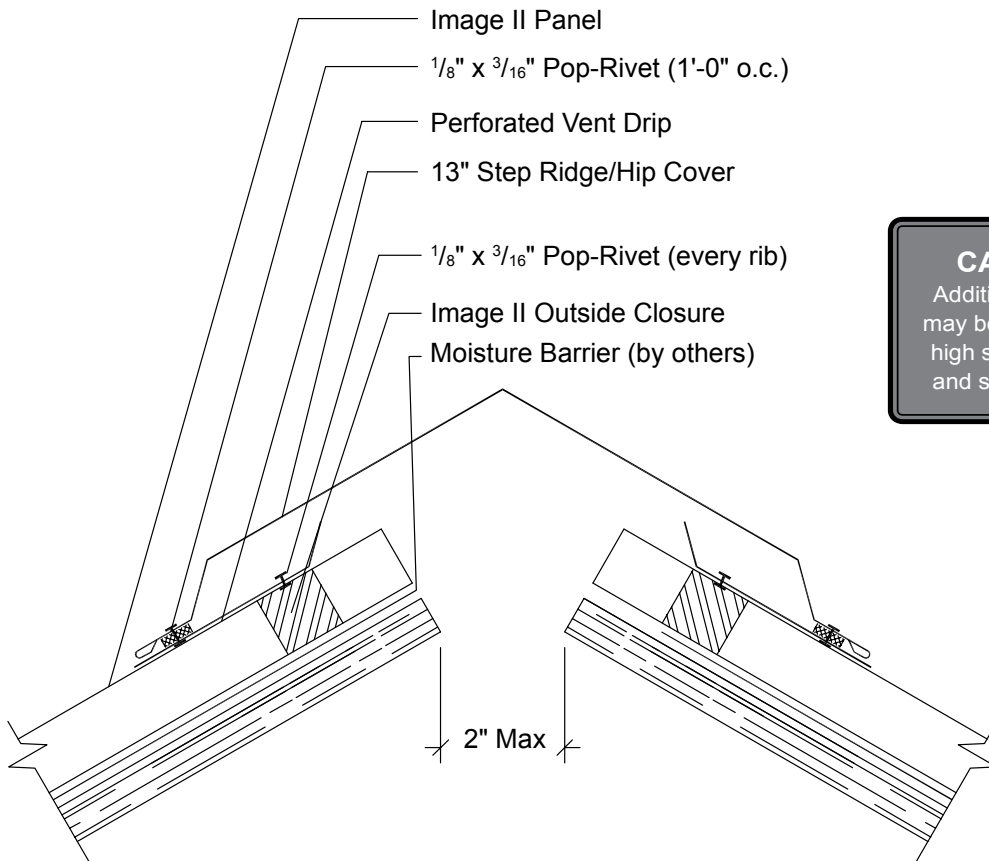
3:12 Slope  
Minimum



**CAUTION**  
Additional screws  
may be required for  
high snow loading  
and steep slopes.

## IMAGE II VENTED RIDGE (PERFORATED VENT DRIP) DETAIL

3:12 Slope  
Minimum



**CAUTION**  
Additional screws  
may be required for  
high snow loading  
and steep slopes.