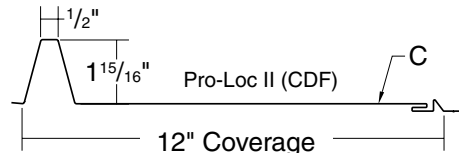
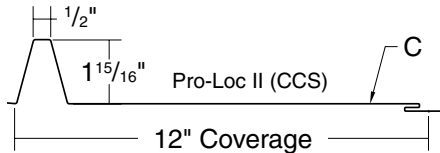
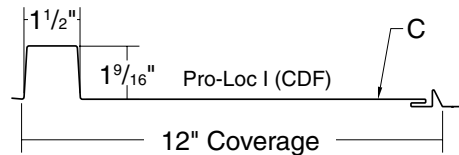
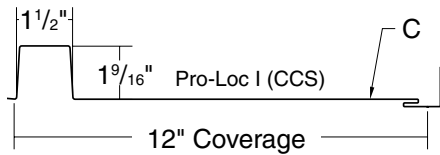


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**PANEL PROFILES**

Pro-Loc is available in a (CCS) Concealed Clip System, or as a (CDF) Concealed Direct Fasten.



**SLOPE**

The minimum recommended slope for any Pro-Loc roofing panel is 3:12.

**SUBSTRATE**

The recommended substrate is 5/8" plywood with a 30 pound felt moisture barrier. To avoid panel distortion, use a properly aligned and uniform substructure. **Please note that Pro-Loc panels are not recommended for use over open framing.**

**COVERAGE**

Pro-Loc panels have a coverage of 12".

**LENGTH**

Lengths under 5'-0" are available with some cutting restrictions. Maximum recommended panel length is 45'-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**

Pro-Loc panels are available in 26, 24, and 22 gauge. Minimum quantity may apply.

**APPLICATION**

Architectural and Residential panel.

**PERFORMANCE TEST**

UL-580 (CCS Only), ASTM E-1592 (15" Only), UL-790, UL-2218, UL-263 & Texas Department of Insurance.

**FASTENING SYSTEM**

Concealed Clip System (CCS) or Concealed Direct Fasten (CDF).

**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-12-14).

**MATERIALS**

Steel grade 50, per ASTM A-792

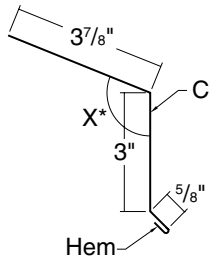
**FINISH**

- ▶ \*Acrylic Coated Galvalume® (ACG) / ASTM A-792 - AZ55
- ▶ Prepainted Galvalume / ASTM A-792 - AZ50
- ▶ \*\*Fluorocarbon (PVDF)

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

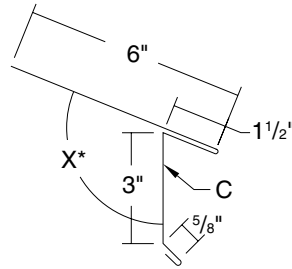
\*\* Meets both Kynar 500 and Hylar 5000 specifications.

**EAVE**



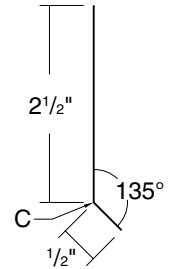
Length 10'-2" - \*Specify Slope Angle

**EXTENDED EAVE**



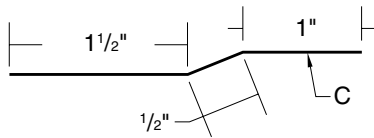
Length 10'-2" - \*Specify Slope Angle

**CLEAT**



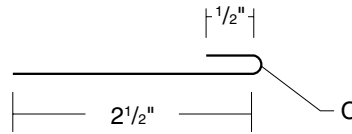
Length 10'-2"

**OFFSET CLEAT**



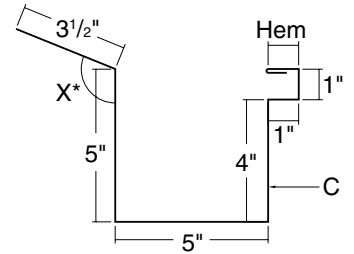
Length 10'-2"

**STARTER**



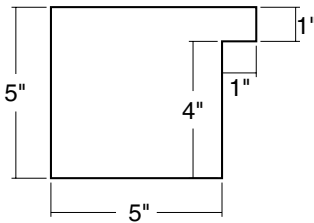
Length 10'-2"

**BOX GUTTER**

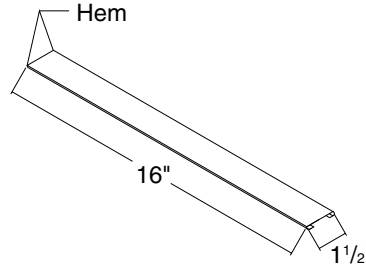


Length 10'-2", 20'-3" - \*Specify Slope Angle

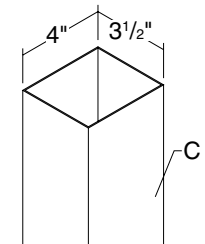
**BOX GUTTER END**



**UNIVERSAL GUTTER/  
DOWNSPOUT STRAP**

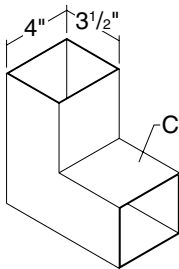


**DOWNSPOUT 4" x 3 1/2"**



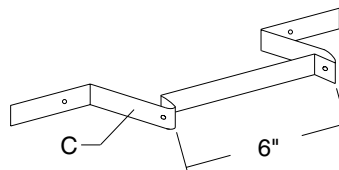
Length 10'-2", 20'-3"  
(Also available 6" x 4")

**95° ELBOW 4" x 3 1/2"**



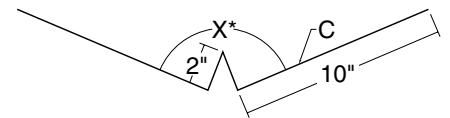
(Also available 6" x 4")

**DOWNSPOUT BRACKET**



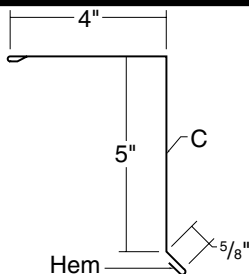
(Also available 4")

**VALLEY**



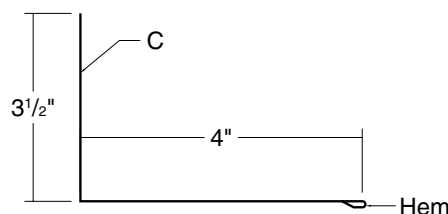
Length 10'-2", 20'-3" - \*Specify Slope Angle

**RAKE**



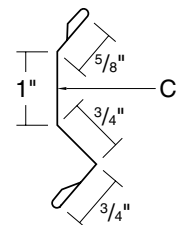
Length 10'-2", 20'-3"

**RAKEWALL**



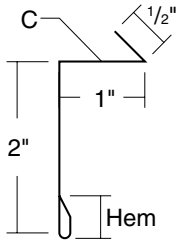
Length 10'-2"

**COUNTER FLASHING**



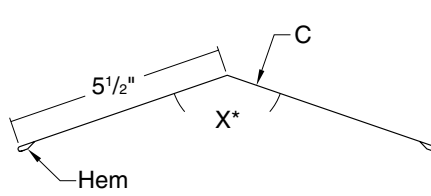
Length 10'-2"

**REGLET FLASHING**



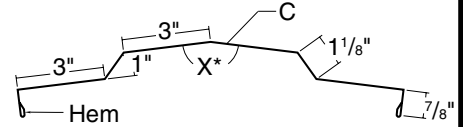
Length 10'-2"

**11" RIDGE/HIP COVER**



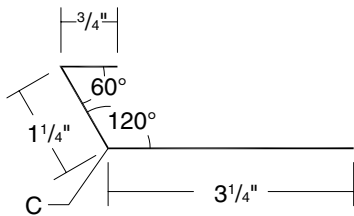
Length 10'-2", 20'-3" - \*Specify Slope Angle

**VENTED RIDGE COVER**



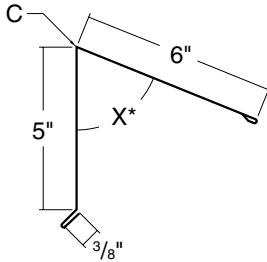
Length 10'-2", 20'-3" - \*Specify Slope Angle

**VENT DRIP**



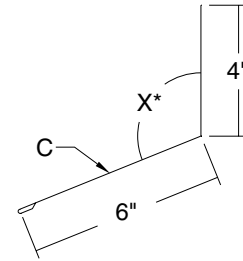
Length 10'-2"

**PEAK**



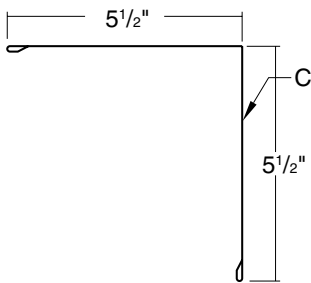
Length 10'-2", 20'-3" - \*Specify Slope Angle

**PITCH BREAK**



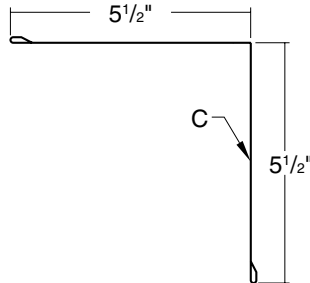
Length 10'-2"

**OUTSIDE CORNER**



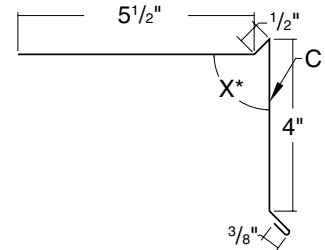
Length 10'-2", 20'-3"

**INSIDE CORNER**



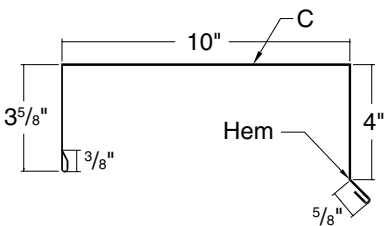
Length 10'-2", 20'-3"

**GRAVEL STOP**



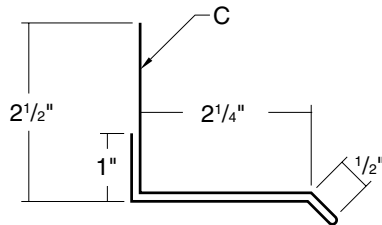
Length 10'-2", 20'-3" - \*Specify Slope Angle

**COPING**



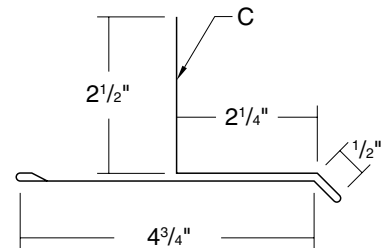
Length 10'-2", 20'-3"

**2.25" SILL/HEAD**



Length 10'-2"

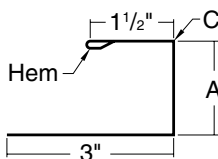
**2.25" SILL TO SOFFIT**



Length 10'-2"

**PRO-LOC CAP**

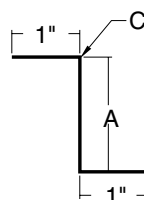
	A
PRO-LOC I	1 11/16"
PRO-LOC II	2"



Length 10'-2"

**PRO-LOC Z-CLOSURE**

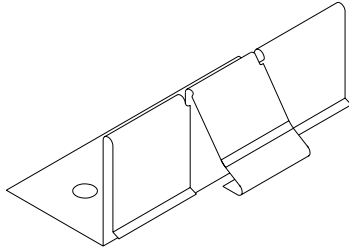
	A
PRO-LOC I	1 9/16"
PRO-LOC II	1 15/16"



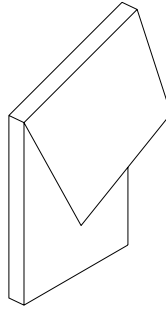
Length 10'-2"

C- Indicates color side of flashing.

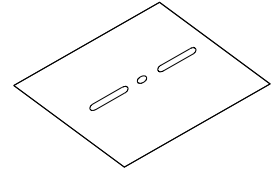
**PRO-LOC CLIP**



**PRO-LOC RIB COVER**

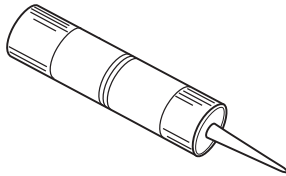


**BEARING PLATE**



4" X 5"

**TUBE SEALANT**



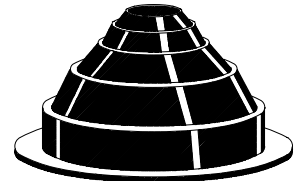
10.3 oz. Cartridge Urethane

**TAPE SEALANT**



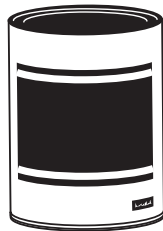
7/8" X 3/16" X 25' Double Bead Butyl - Gray

**RUBBER ROOF JACK**



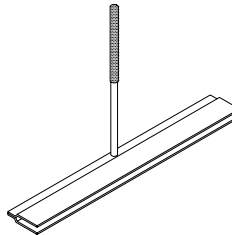
MINI (1/4" to 1 1/8" O.D. Pipe)  
#2 (1 3/4" to 3" O.D. Pipe)  
#4 (3" to 6" O.D. Pipe)  
#6 (6" to 9" O.D. Pipe)  
#8 (7" to 13" O.D. Pipe)

**TOUCH-UP PAINT**



Available in pints PVDF / MS CF30

**METAL PANEL HEMMING TOOL**



**PRO-LOC OUTSIDE CLOSURES**



Pro-Loc I

Pro-Loc II

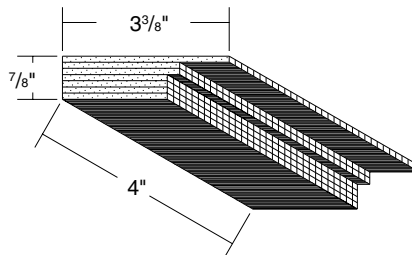
**PRO-LOC INSIDE CLOSURES**

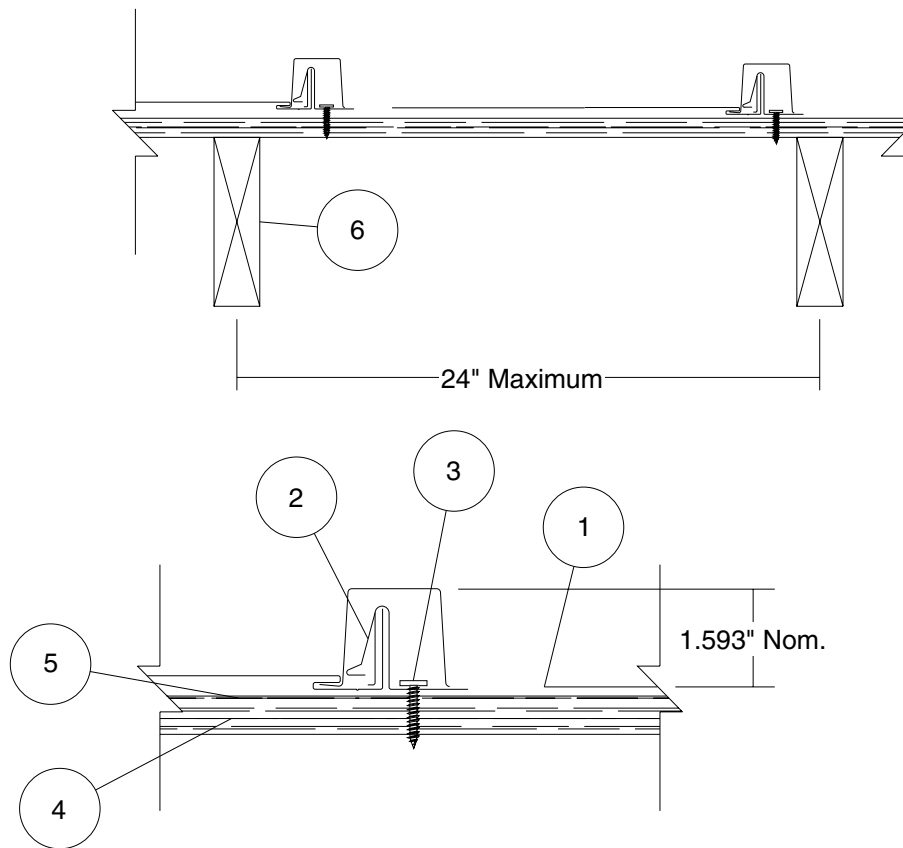


Pro-Loc I

Pro-Loc II

**VENT MATERIAL**





PRO-LOC I

**Construction No. 393**  
 November 20, 1993  
 Uplift - Class 90  
 Fire Not Investigated

1. **Metal Roof Deck Panels\*** No. 24 MSG min coated steel. Width 18 in. max, 19/16 in. high at female rib. Panels continuous over three or more clips with no endlaps.  
 METAL SALES MFG CORP - "ProLoc I"
2. **Roof Deck Fasteners (Panel Clips)\*** One piece assembly, 3 in. wide, 1-1/4 in. high with 1-1/4 in. horizontal leg. Min thickness No. 24 MSG coated steel. Clips spaced 18 in. OC, located at panel side ribs and fastened to plywood deck.  
 METAL SALES MFG CORP - "ProLoc Clip"
3. **Fasteners (Screws)** Screws used to attach panel clips to plywood deck (item 4) to be No. 10-12 by 1 in. long, pancake head, No. 2 Phillips drive, coated steel wood screws. As an alternate fastener, No. 10-12 by 1 in. long hex-head plated steel wood screws may be used. For both fastener types, one screw per clip to be used. Inserted into clip guide hole.  
 Screws used to attach plywood substructure (Item 4) to wood trusses or joists (Item 6) to be No. 8 by 2 in. bugle head screws. An optional fastener, 2-1/2 in. long 8d common deformed shank nails may be used. When light gauge structural steel joists are used as supports, screws to be No. 10-24 by 1-7/16 in. long self-drilling, self-tapping, No. 2 Phillips drive wafer head steel. Spacing of screws to be 6 in. OC at plywood butt ends and 12 in. OC in the interior.
4. **Plywood Decking** Plywood decking to be graded per PS83 specifications, nom 5/8 in. (18/32) thick, APA rated exposure sheathing, square edged. Butt ends not blocked.
5. **Felt Paper** One ply Type 30. Side and end laps to be per manufacturer's recommendations. Attached to plywood deck with staples in a random spacing.
6. **Supports (Joists)** Joists spaced max 2 ft, 0 in. OC. Any of the following types may be used to support the plywood decking:
  - A. Nom 2 by 6 in. wood joists No. 2 grade S-P-F, Hemlock Fir, Douglas Fir, Southern Pine or equivalent.
  - B. Wood trusses with a nom 2 by 4 in. upper chord of the same grade as Item A.
  - C. No. 22 MSG min cold formed steel (min yield strength to be 33,000 psi.)

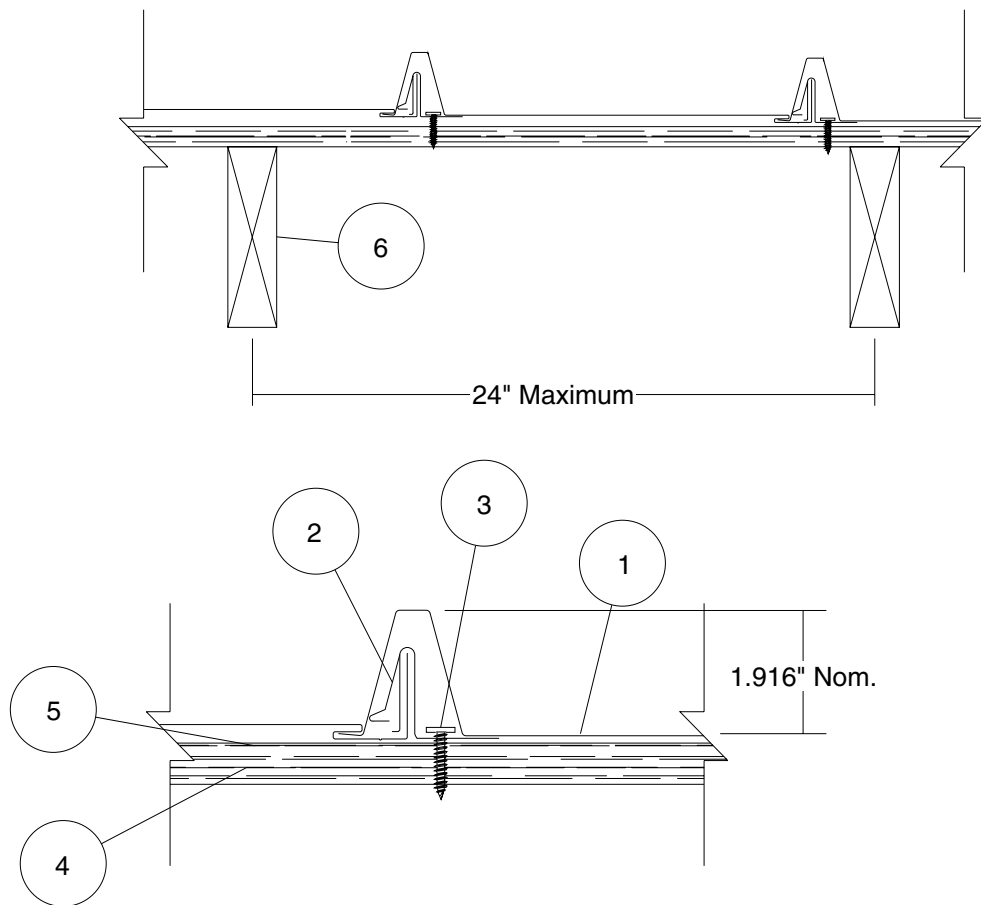
Refer to General Information Roof Deck Construction, (Roofing Materials and Systems Directory) for items not evaluated.

\*Bearing the UL Classification Marking



Underwriters Laboratories Inc. ®

LISTED



**PRO-LOC II**

**Construction No. 394**  
 November 20, 1993  
 Uplift - Class 90  
 Fire Not Investigated

1. **Metal Roof Deck Panels\*** No. 24 MSG min coated steel. Width 18 in. max, 19/16 in. high at female rib. Panels continuous over three or more clips with no endlaps.  
 METAL SALES MFG CORP - "ProLoc II"
2. **Roof Deck Fasteners (Panel Clips)\*** One piece assembly, 3 in. wide, 1-1/4 in. high with 1-1/4 in. horizontal leg. Min thickness No. 24 MSG coated steel. Clips spaced 18 in. OC, located at panel side ribs and fastened to plywood deck.  
 METAL SALES MFG CORP - "ProLoc Clip"
3. **Fasteners (Screws)** Screws used to attach panel clips to plywood deck (item 4) to be No. 10-12 by 1 in. long pancake head, No. 2 Phillips drive, coated steel wood screws. As an alternate fastener, No. 10-12 by 1 in. long hex-head plated steel wood screws may be used. For both fastener types, one screw per clip to be used. Inserted into clip guide hole.  
 Screws used to attach plywood substructure (Item 4) to wood trusses or joists (Item 6) to be No. 8 by 2 in. bugle head screws. An optional fastener, 2-1/2 in. long 8d common deformed shank nails may be used. When light gauge steel joists are used as supports, screws to be No. 10-24 by 1-7/16 in. long self-drilling, self-tapping, No. 2 Phillips drive wafer head steel.  
 Spacing of screws to be 6 in. OC at plywood butt ends and 12 in. OC in the interior.
4. **Plywood Decking** Plywood decking to be graded per PS83 specifications, nom 5/8 in. (18/32) thick, APA rated exposure sheathing, square edged. Butt ends not blocked.
5. **Felt Paper** One ply Type 30. Side and end laps to be per manufacturer's recommendations. Attached to plywood deck with staples in a random spacing.
6. **Supports (Joists)** Joists spaced max 2 ft, 0 in. OC. Any of the following types may be used to support the plywood decking:
  - A. Nom 2 by 6 in. wood joists No. 2 grade S-P-F, Hemlock Fir, Douglas Fir, Southern Pine or equivalent.
  - B. Wood trusses with a nom 2 by 4 in. upper chord of the same grade as Item A.
  - C. No. 22 MSG min cold formed steel (min yield strength to be 33,000 psi.)

Refer to General Information Roof Deck Construction, (Roofing Materials and Systems Directory) for items not evaluated.

\*Bearing the UL Classification Marking



Underwriters Laboratories Inc. ®

LISTED

**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 superimposed 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 "Pro-Loc Panel" secured by steel anchor clips. Anchor clips are attached to a hat shaped member\* (minimum depth 1 in.) or a bearing plate\*\*.

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.



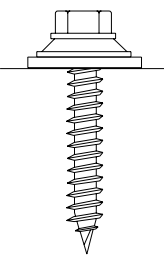
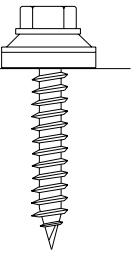
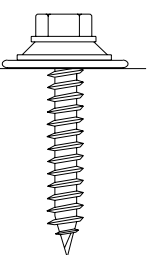
Underwriters Laboratories Inc. ®

LISTED

**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.

	<b>CORRECT</b> Sealing material slightly visible at edge of metal washer. Assembly is watertight.	<b>TOO LOOSE</b> Sealing material is not visible; not enough compression to seal properly.	<b>TOO TIGHT</b> Metal washer deformed; sealing material pressed beyond washer edge.
WOODSCREW			

**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.

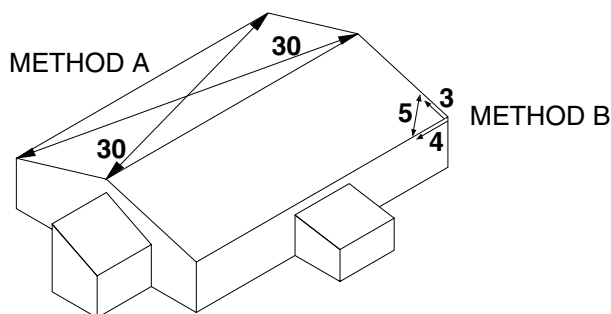
**CONDITION OF SUBSTRUCTURE**

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 Pro-Loc 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.

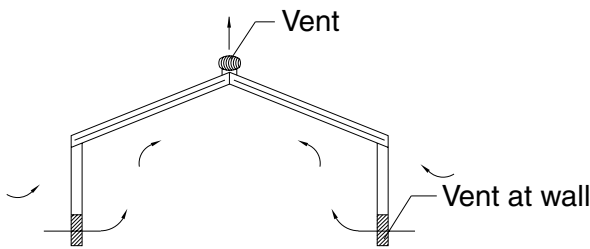


**VENTILATION**

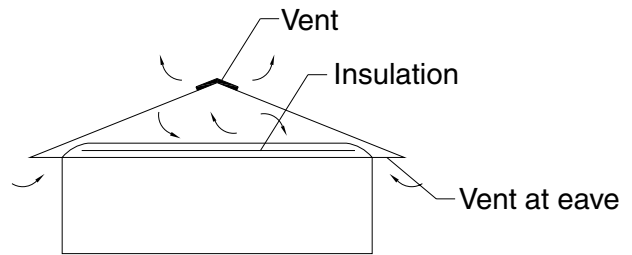
Proper design and installation of vapor barriers and ventilation systems are important to prevent condensation and the resulting problems of moisture damage and loss of insulation efficiency.

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)**



**Buildign with attic or retrofitted**

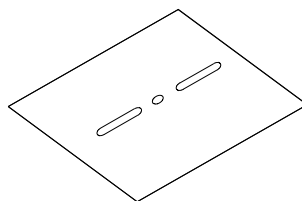
**PANEL APPLICATIONS**

The following chart highlights UL 580 Class 90 for clip installation on the selected applications (see Fastener Selection Guide pages PGI-12-14 for other fasteners available). For more information on UL Construction numbers, refer to UL Roofing Materials and Systems Directories.

PANEL TYPE	APPLICATION	INSTALLATION REQUIREMENTS		**CLIP SPACING	TYPE OF FASTENER	# REQ.
PRO-LOC I	CLIPS OVER 5/8" WOOD DECK CONST. #393	UL-90	24 GAUGE	1'-6" O.C.	#10-12 x 1" PANCAKE WOODSCREW	- 1 FASTENER
		UL-90	22 GAUGE	1'-6" O.C.	#10-12 x 1" PANCAKE WOODSCREW	- 1 FASTENER
PRO-LOC II	CLIPS OVER 5/8" WOOD DECK CONST. #394	UL-90	24 GAUGE	1'-6" O.C.	#10-12 x 1" PANCAKE WOODSCREW	- 1 FASTENER
		UL-90	22 GAUGE	1'-6" O.C.	#10-12 x 1" PANCAKE WOODSCREW	- 1 FASTENER

\* Length of Dekfast will vary depending on the total thickness of the rigid insulation and metal decking (see PGI-12-14).

\*\* Based on UL-580. Subject to project loading, closer clip (fastener) spacing may be required. Contact your local Metal Sales branch representative for more information (see pages PGI-2-3).

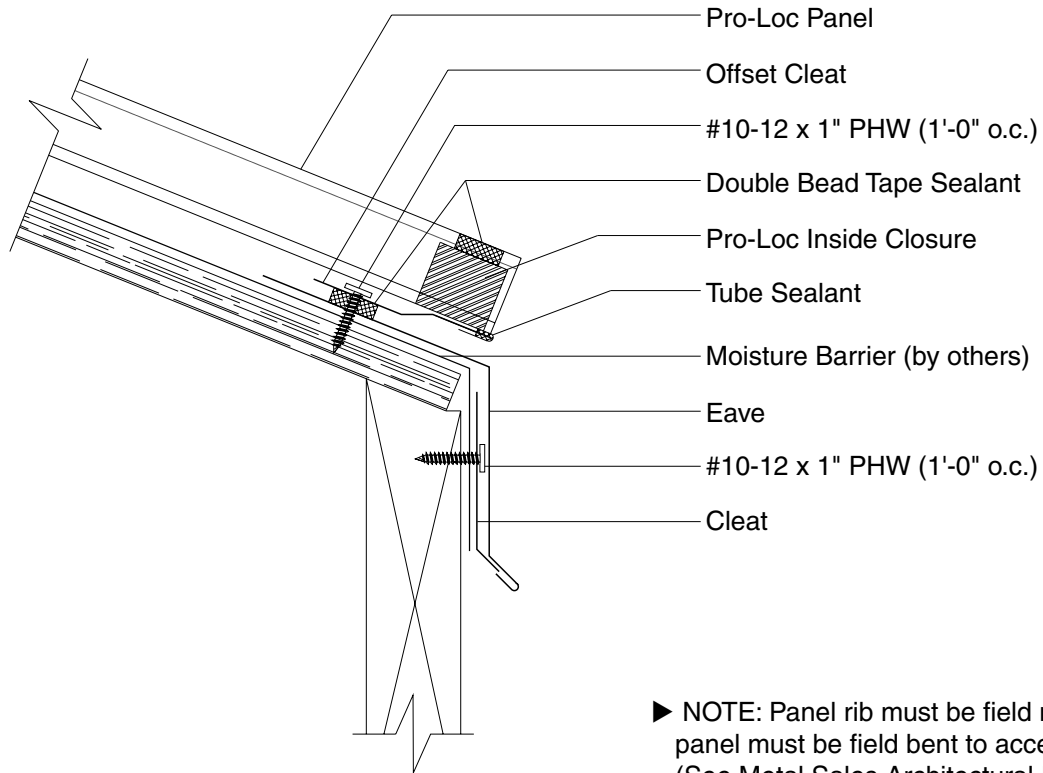


**BEARING PLATE**

# PRO-LOC I,II

## EAVE WITH OFFSET CLEAT DETAIL

3:12 SLOPE  
MINIMUM

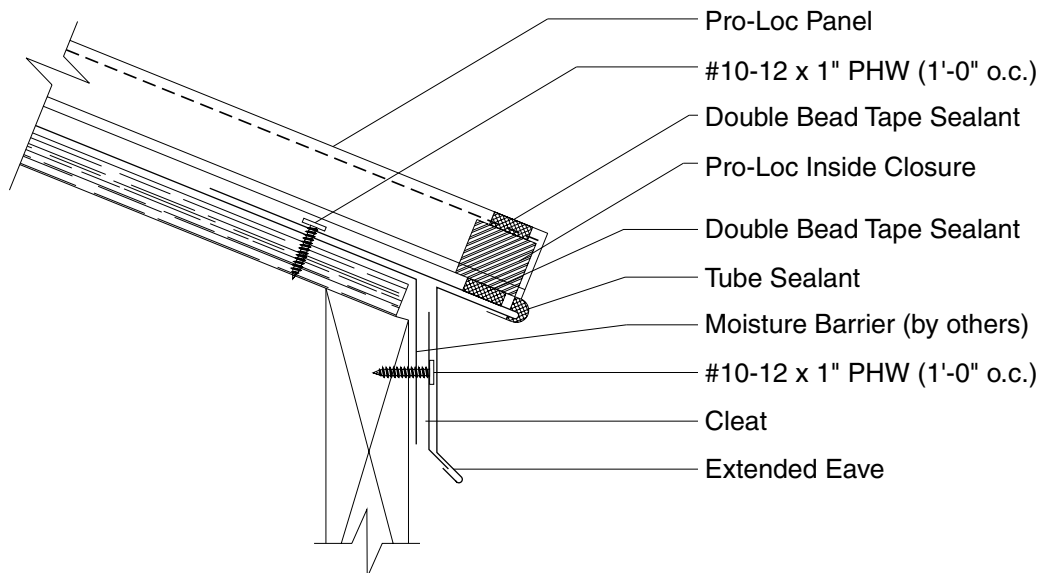


► NOTE: Panel rib must be field notched and flat part of panel must be field bent to accept Offset Cleat. (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

## EXTENDED EAVE DETAIL

3:12 SLOPE  
MINIMUM

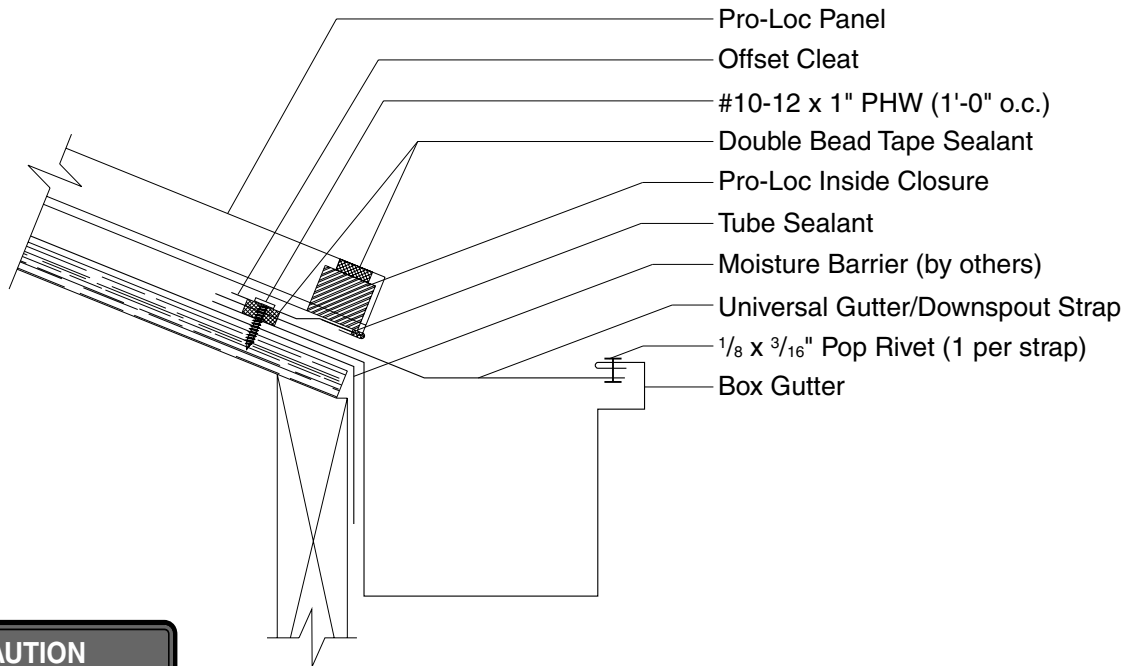


► NOTE: Panel rib must be field notched and flat part of panel must be field bent to accept Extended Eave. (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

## GUTTER WITH OFFSET CLEAT DETAIL

**3:12 SLOPE  
MINIMUM**



### CAUTION

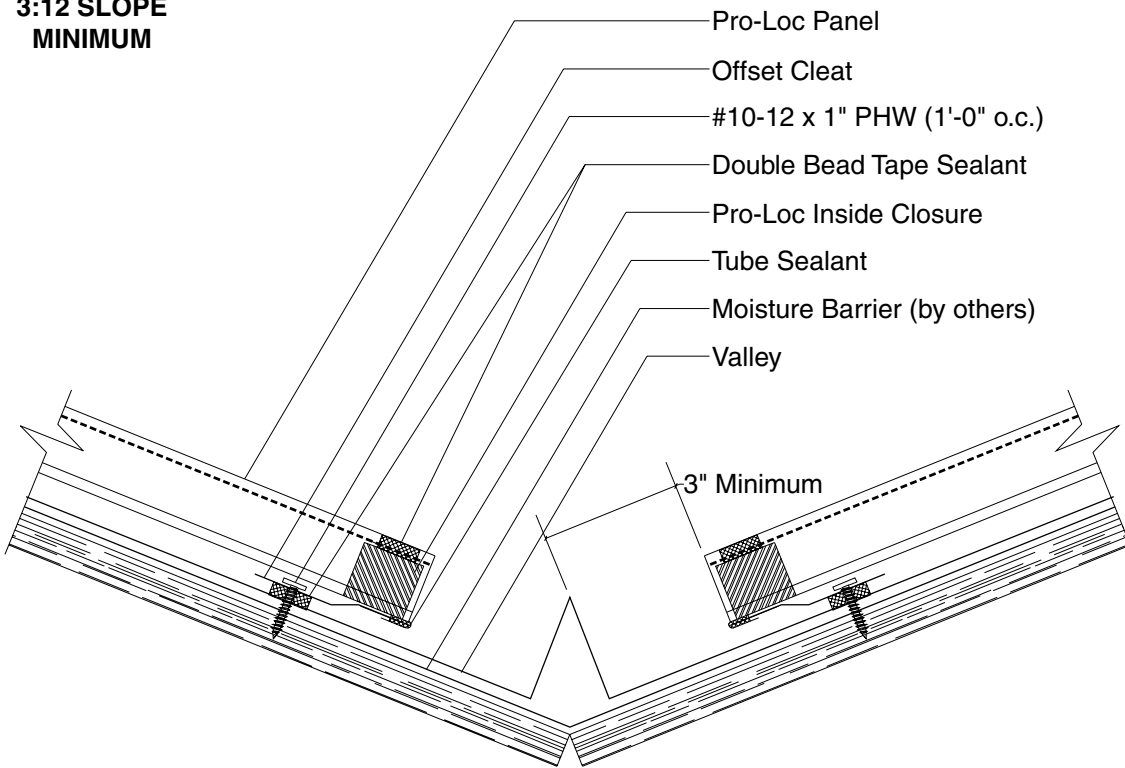
In locations where heavy rainfall or severe ice and snow may occur, Metal Sales' standard gutters may not be suitable for use.

► **NOTE:** Panel rib must be field notched and flat part of panel must be field bent to accept Offset Cleat. (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

## VALLEY WITH OFFSET CLEAT DETAIL

**3:12 SLOPE  
MINIMUM**

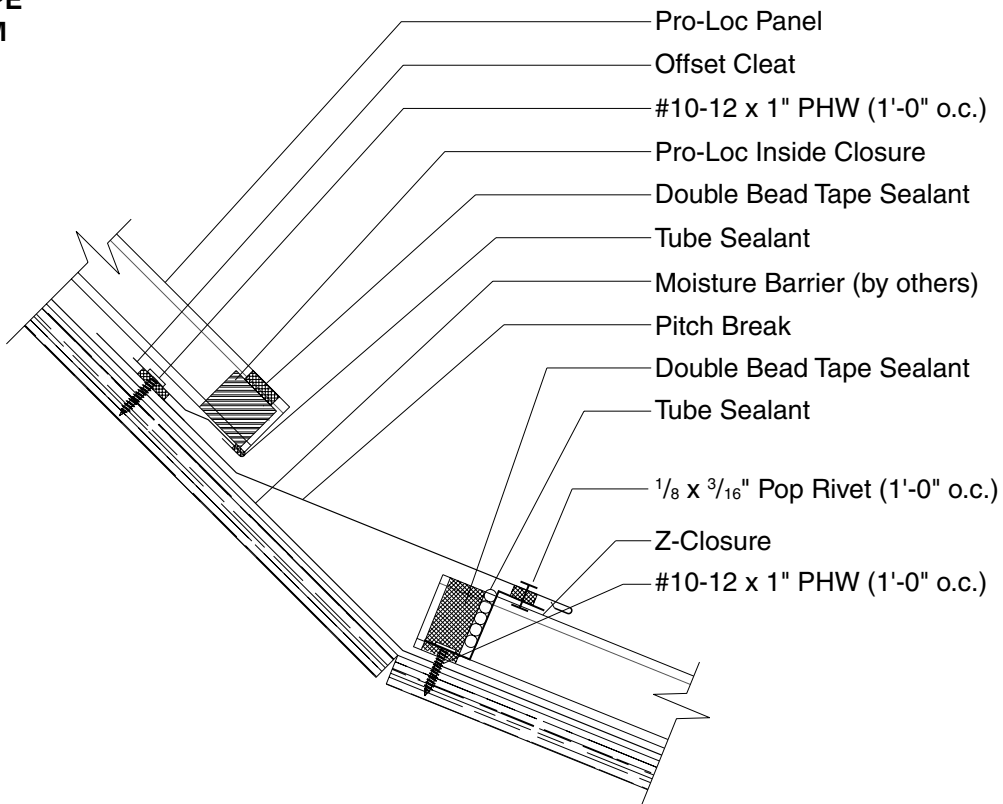


► **NOTE:** Panel rib must be field notched and flat part of panel must be field bent to accept Offset Cleat. (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

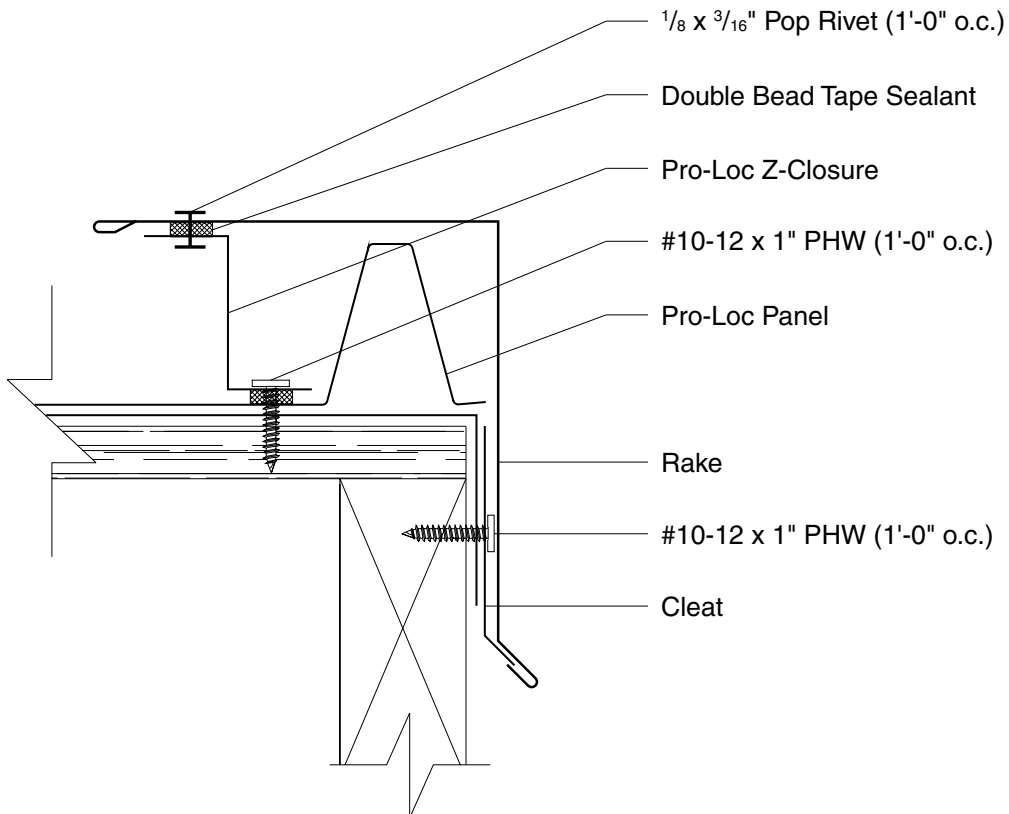
# SLOPE CHANGE DETAIL

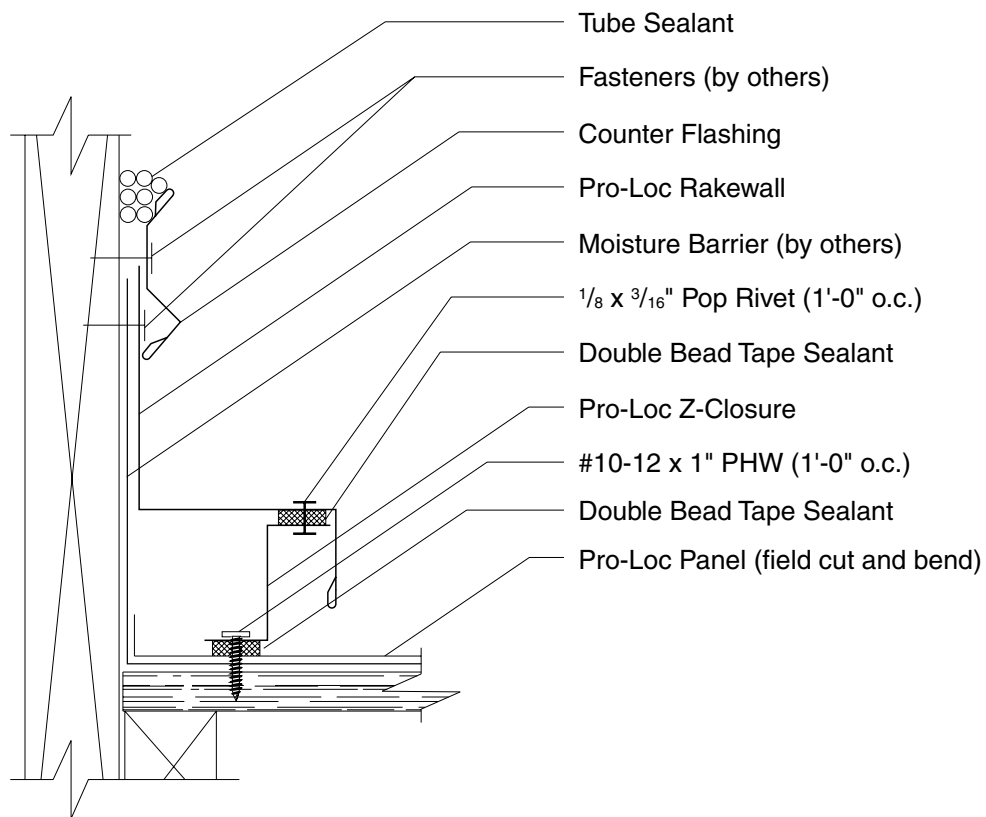
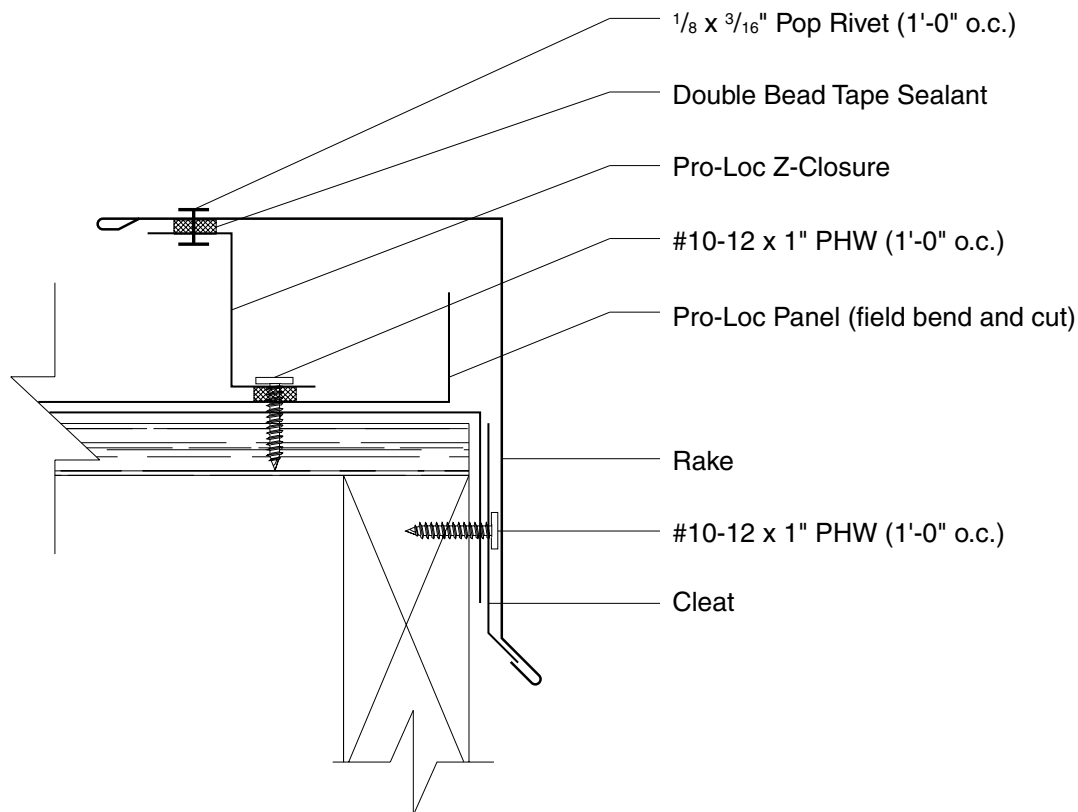
3:12 SLOPE  
MINIMUM

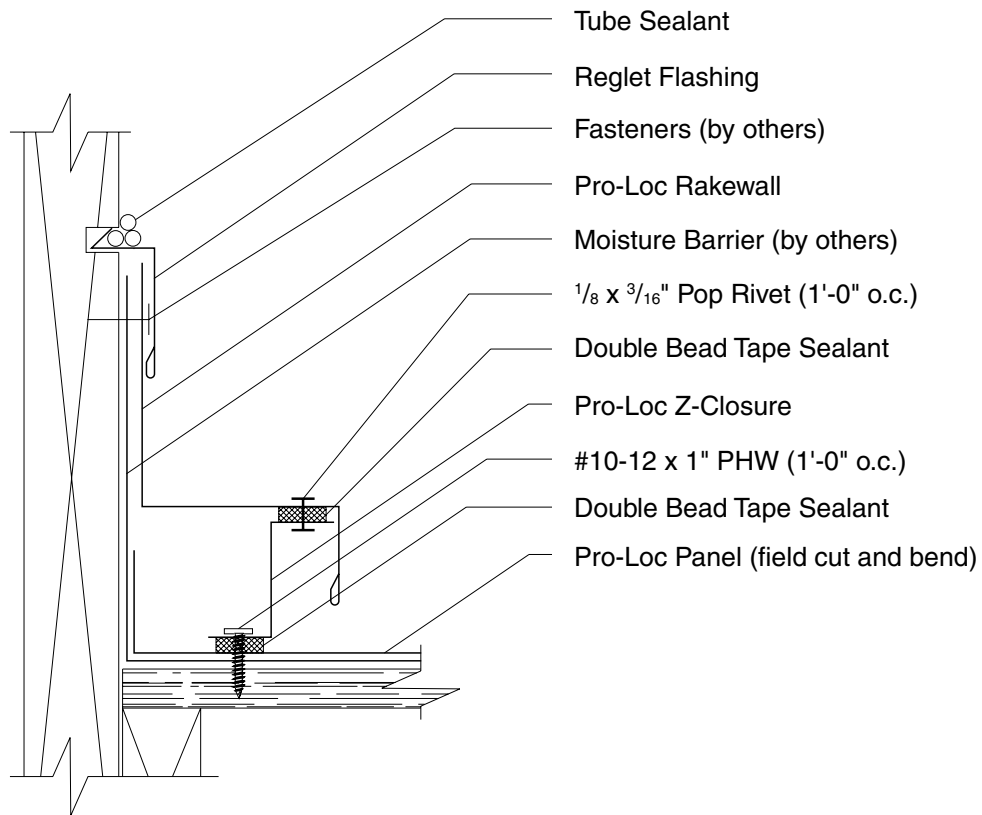


# PRO-LOC I,II

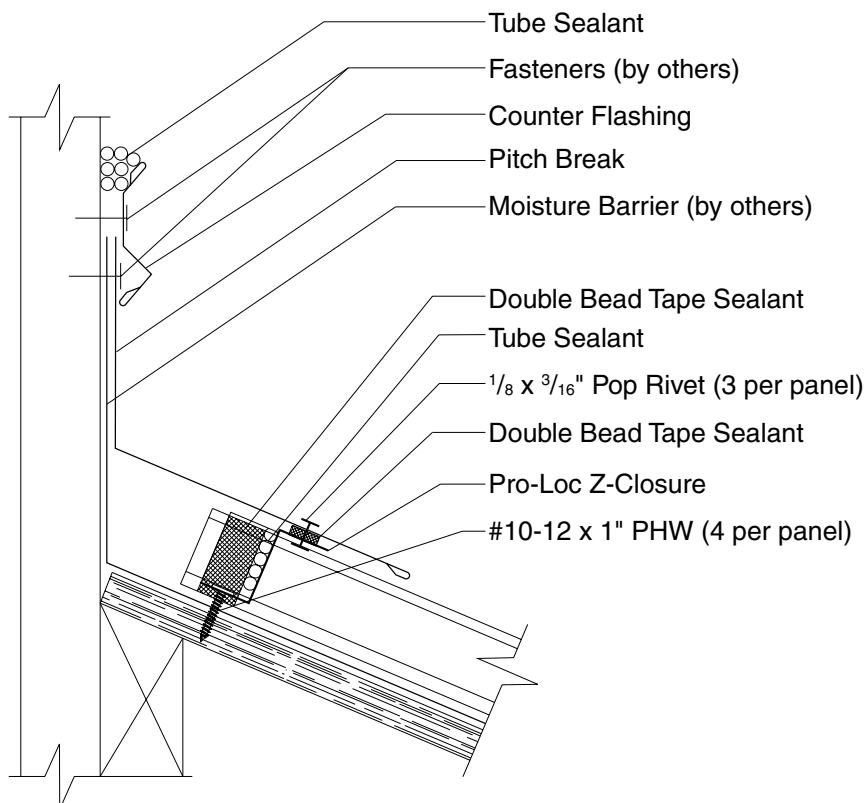
# RAKE (ON MODULE) DETAIL







**3:12 SLOPE  
MINIMUM**

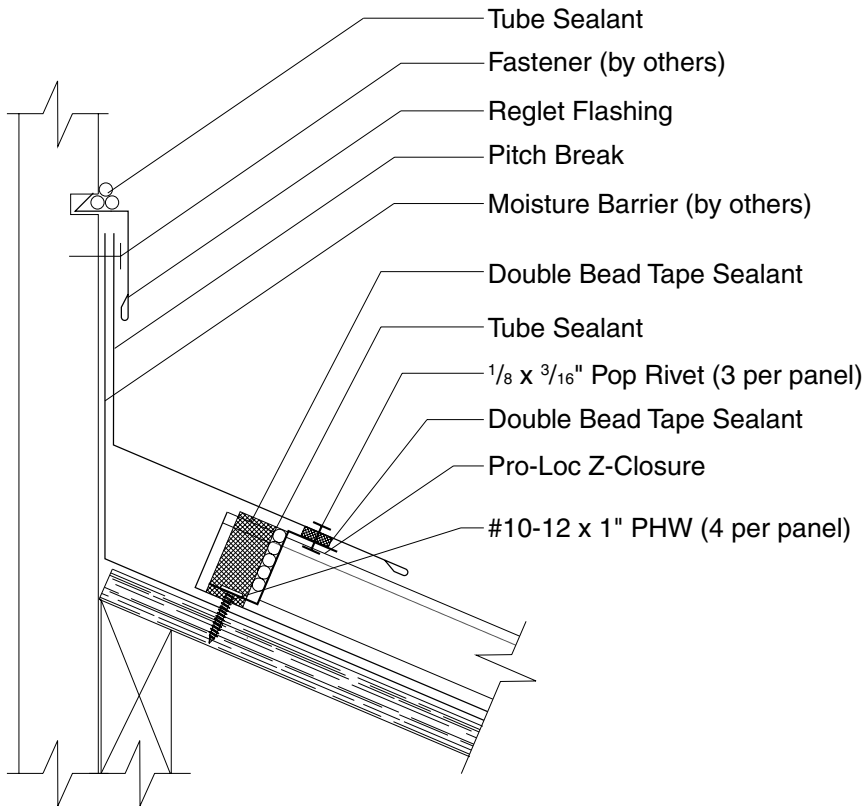


► NOTE: Z-Closures must be field cut and bent to fit between panel ribs (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

## ENDWALL WITH REGLET FLASHING DETAIL

3:12 SLOPE  
MINIMUM

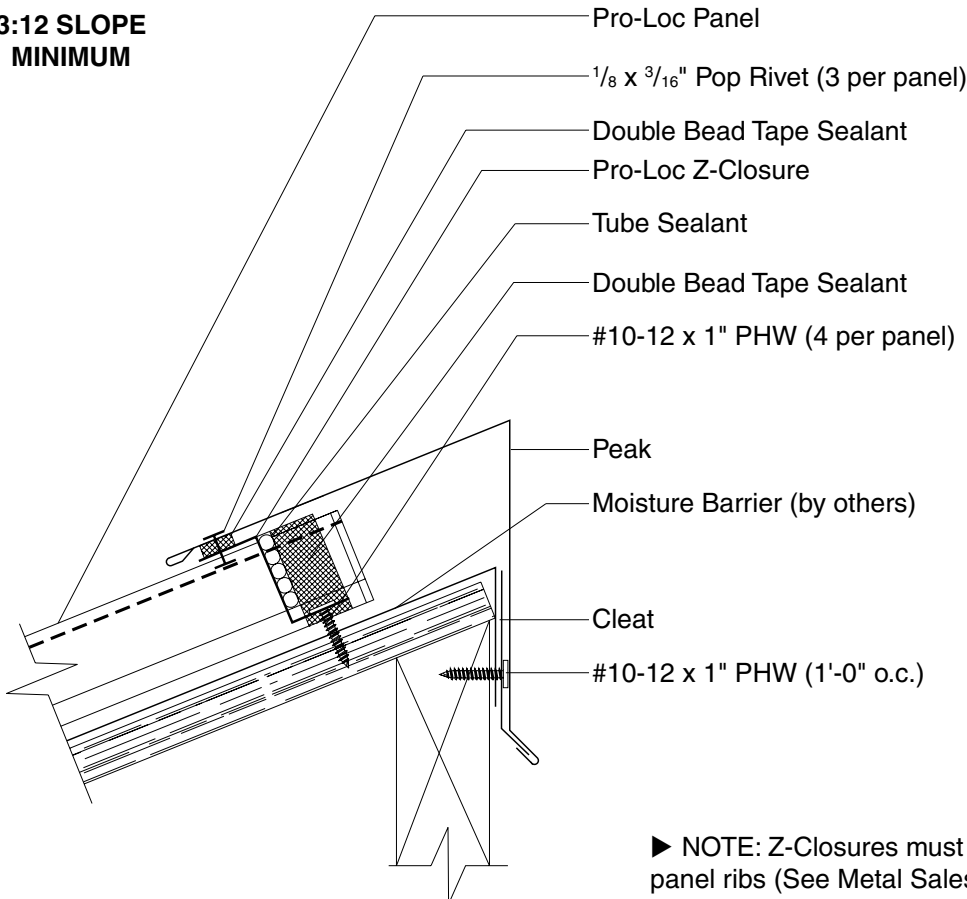


► NOTE: Z-Closures must be field cut and bent to fit between panel ribs (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

## PEAK DETAIL

3:12 SLOPE  
MINIMUM

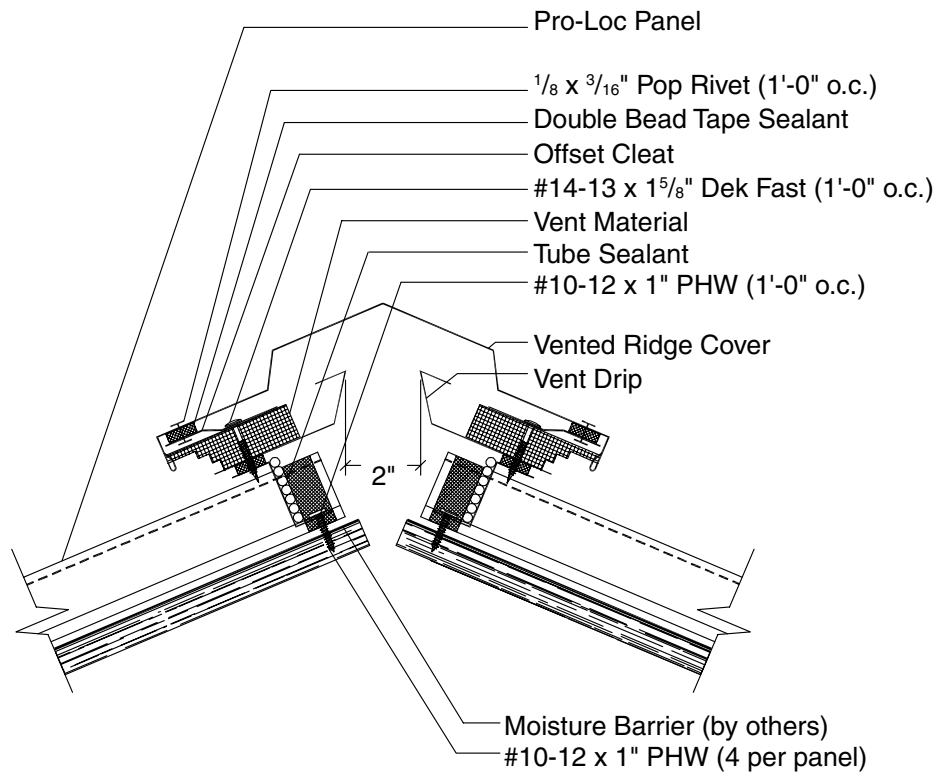


► NOTE: Z-Closures must be field cut and bent to fit between panel ribs (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

## VENTED RIDGE DETAIL

3:12 SLOPE  
MINIMUM

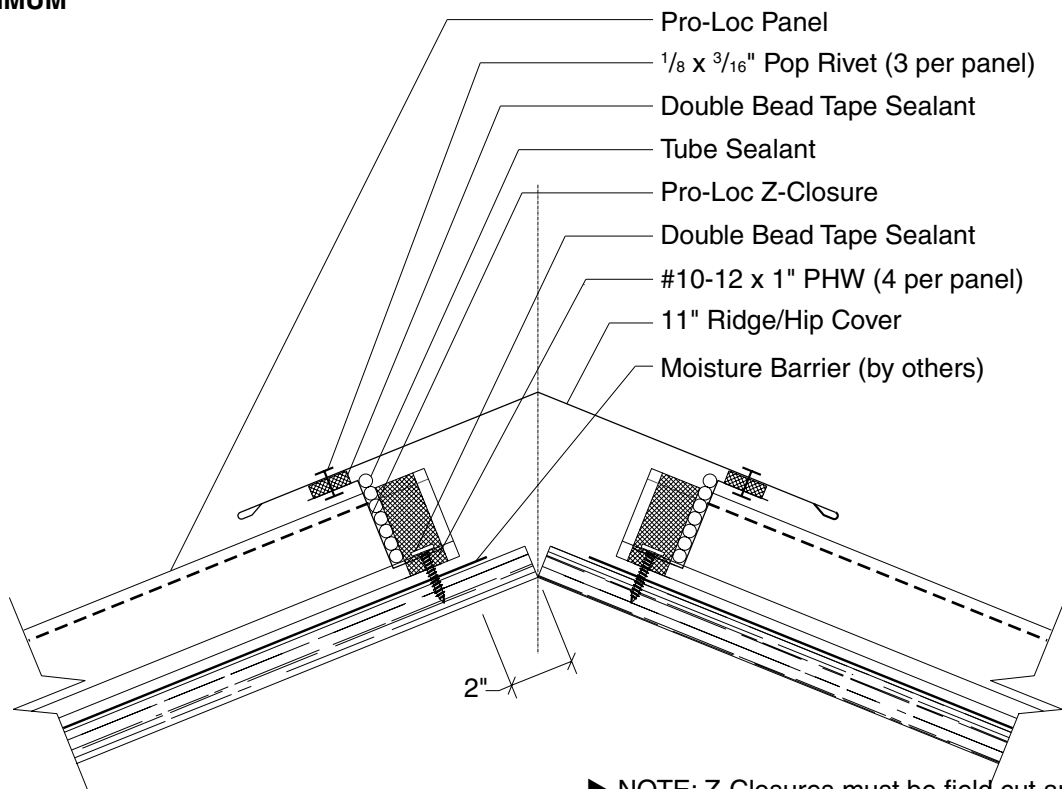


► NOTE: Z-Closures must be field cut and bent to fit between panel ribs (See Metal Sales Architectural Installation Manual).

# PRO-LOC I,II

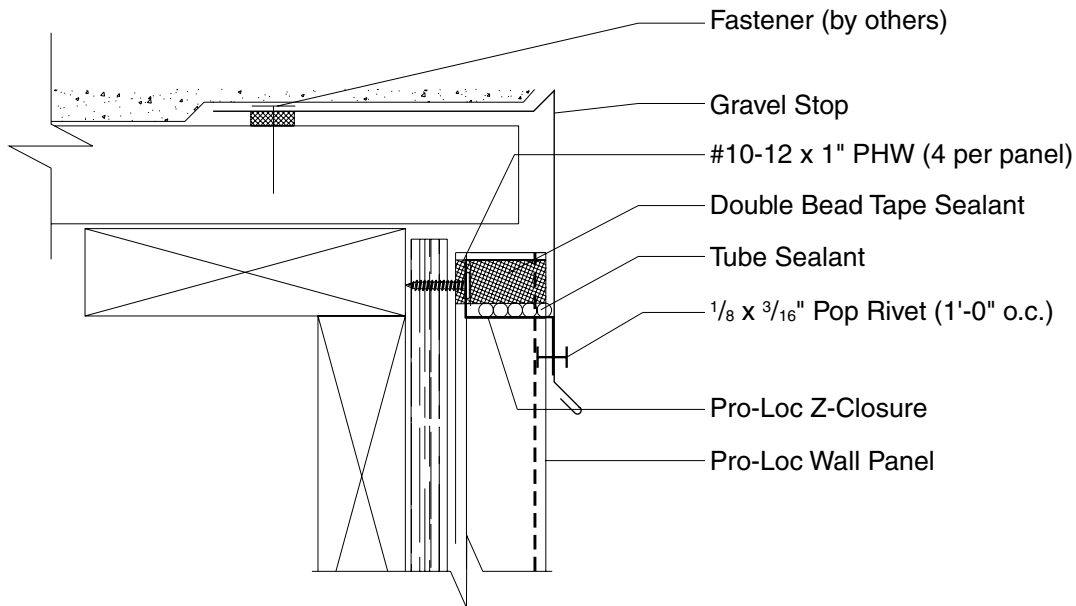
## 11" RIDGE/HIP DETAIL

3:12 SLOPE  
MINIMUM

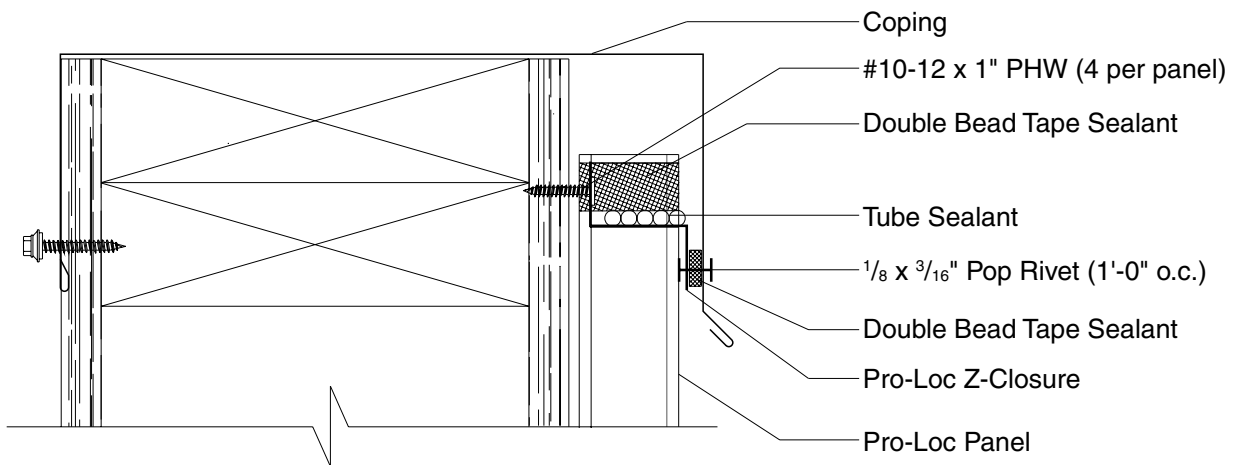


► NOTE: Z-Closures must be field cut and bent to fit between panel ribs (See Metal Sales Architectural Installation Manual).

**3:12 SLOPE  
MINIMUM**



► NOTE: Z-Closures must be field cut and bent to fit between panel ribs (See Metal Sales Architectural Installation Manual).



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