

# *Seam-Loc 24*<sup>®</sup>

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## *Installation Guide*

**metal sales**  
manufacturing corporation



The application and detail drawings in this manual are strictly for illustration purposes and may not be applicable to all building designs or product installations. All projects should conform to applicable building codes for that particular area. It is recommended to follow all building regulations and standard industry practices.

Metal Sales Manufacturing Corporation is not responsible for the performance of the roof system if it is not installed in accordance with the suggested instructions referenced in this manual. If there is a conflict between this manual and the Metal Sales approved erection drawings, the approved erection drawings are to take precedence.

Prior to ordering and installing materials, all dimensions should be verified by field measurements.

Metal Sales reserves the right to modify, without notice, any details, recommendations, or suggestions. Any questions you may have regarding proper installation of the Seam-Loc 24 roofing system should be directed to your Metal Sales representative, (see pages 2 and 3).

Oil canning is not a cause for rejection. Oil canning can be described as the amount of waviness found in the flat areas of metal panels. Oil canning is an inherent characteristic of light gauge cold formed metal products, particularly those with broad flat areas. There are many factors which may contribute to oil canning that Metal Sales is not able to control. These factors include: misalignment of the support system, over driving of fasteners used on the panels, stress (whether inherent in the panel or induced), thermal expansion and contraction of the panel, material handling, width, gauge, length, color of panels, and installation (Reference Metal Construction Association "Oil Canning Position Paper" - Appendix A).

Exposure of metal roof and wall materials to areas subject to corrosive, harmful and aggressive environment condition but not limited to salt water regions, marine atmosphere, repeated salt spray, corrosive chemical, ash, fumes, chemical dust, corrosive vapors, animal waste, confinement, run off from non-compatible metal, can cause premature rusting and other failure of metal materials (including panels and trims) and therefore is not a cause for claim or rejection.

Consult Metal Sales representative for any additional information not outlined in this manual (see pages 2-3).

This manual is designed to be utilized as a guide when installing Seam-Loc 24 roofing system. It is the responsibility of the erector to ensure the safe installation of this product system.

## **SAFETY**

### **STUDY APPLICABLE OSHA AND OTHER SAFETY REQUIREMENTS BEFORE FOLLOWING THESE INSTRUCTIONS.**

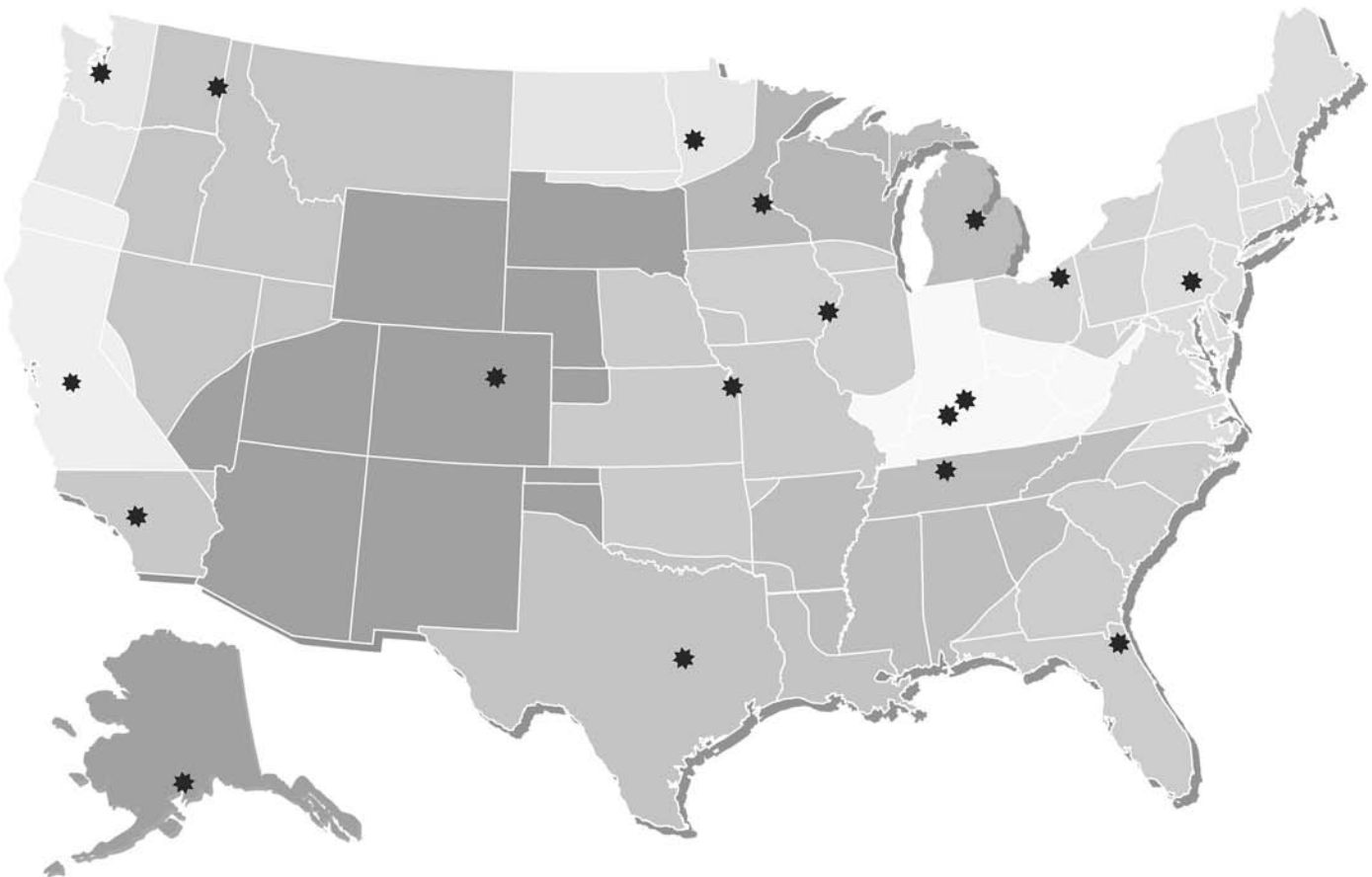
The installation of metal roof systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. **USE EXTREME CARE WHILE INSTALLING ROOF PANELS.** It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to exist. The erector of the roof system is responsible for reading these instructions and determining the safest way to install the roof system.

These instructions are provided only as a guide to show a knowledgeable, trained erector the correct parts placement one to another. If following any of the installation steps would endanger a worker, the erector should stop work and decide upon a corrective action.

Provide required safety railing, netting, or safety lines for crew members working on the roof.

Do not use the roof panel as a walking platform. The roof panels will not withstand the weight of a person standing at the edge of the panel.

Do not stand on the roof panel at the ends until the panels have been attached.



NOTE: Shaded areas represent regions served by each location.



## CORPORATE OFFICE SELLERSBURG, INDIANA

Metal Sales offers a complete line of metal roof, wall, and fascia panel systems for the commercial, architectural, industrial, residential, and agricultural markets. Metal Sales offers over 75 profiles with a wide selection of widths, colors, and gauges - new construction or retrofit.

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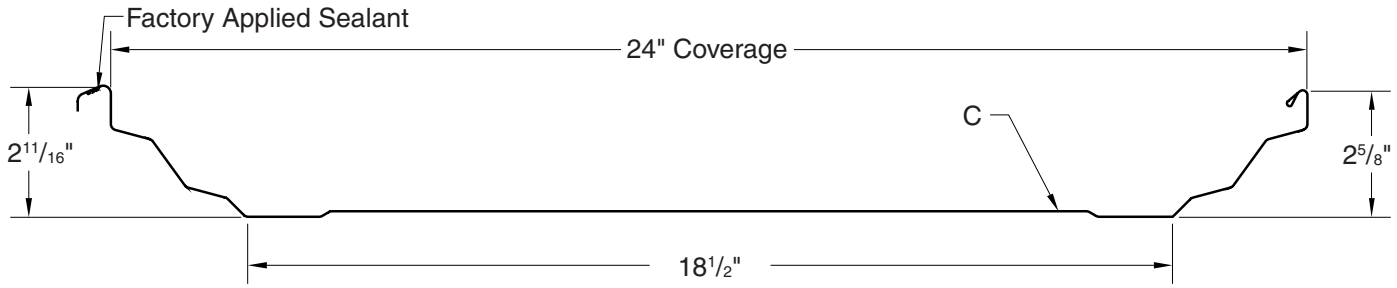
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7800 State Road 60  
Sellersburg, IN 47172  
(812) 246-0819 (800) 406-7387  
(812) 246-0829 /FAX (800) 944-6884 /FAX  
info@metalsales.us.com

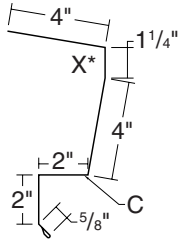
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### PANEL PROFILE

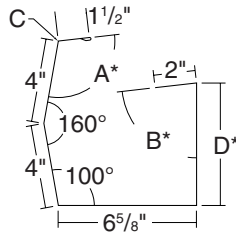


### SEAM-LOC 24 SCULPTURED EAVE



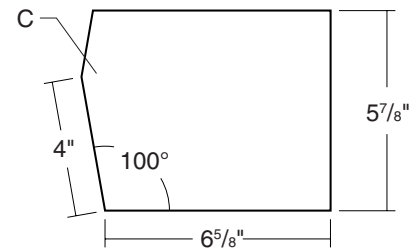
Length 10'-2", 20'-3" - \*Specify Slope Angle

### SEAM-LOC 24 SCULPTURED GUTTER

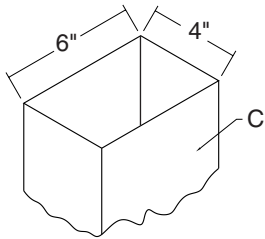


Length 10'-2", 20'-3"  
\*Specify Slope Angle For A and B, and Length for D.

### SEAM-LOC 24 SCULPTURED GUTTER END

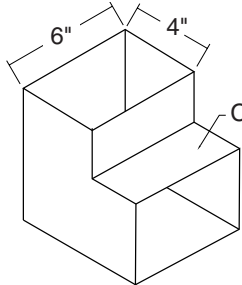


### DOWNSPOUT 6" x 4"



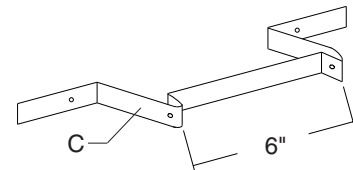
Length 10'-2", 20'-3"  
(Also available 4" x 3<sup>1</sup>/<sub>2</sub>")

### 95° ELBOW 6" x 4"



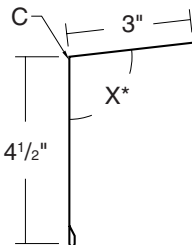
(Also available 4" x 3<sup>1</sup>/<sub>2</sub>")

### DOWNSPOUT BRACKET



(Also available 4")

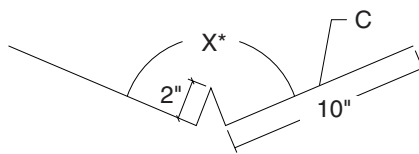
### GUTTER DRIP



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

### VALLEY

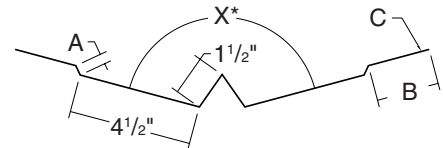
\*(For use with Utility System/Clip)



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

### SSR 4.5" DROP VALLEY

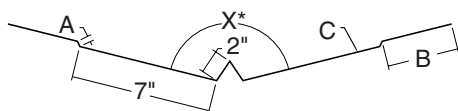
SYSTEM	A	B
LOW	3 <sup>3</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>2</sub> "
MID	1"	3 <sup>7</sup> / <sub>8</sub> "
HIGH	1 <sup>3</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>2</sub> "



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

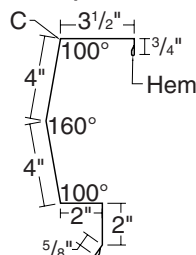
### SSR 7" DROP VALLEY

SYSTEM	A	B
LOW	3 <sup>3</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>2</sub> "
MID	1"	3 <sup>7</sup> / <sub>8</sub> "
HIGH	1 <sup>3</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>2</sub> "



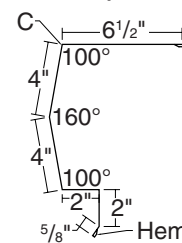
Length 10'-2", 20'-3" - \*Specify Slope Angle

### SSR SCULPTURED RAKE (ON MODULE)



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

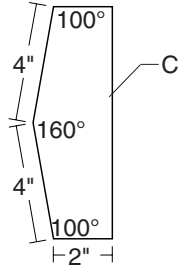
### SSR SCULPTURED RAKE (OFF MODULE)



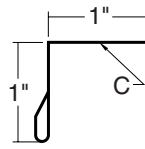
Length 10'-2", 20'-3"

### SSR SCULPTURED

#### RAKE END

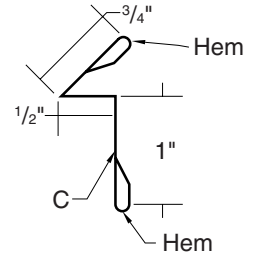


### SSR RAKE CLEAT



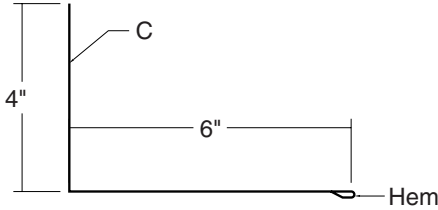
Length 10'-2"

### SSR RAKE SLIDE



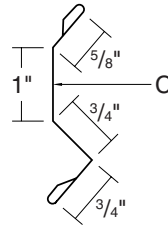
Length 10'-2"

### SSR RAKEWALL



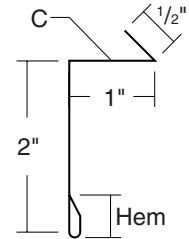
Length 10'-2"

### COUNTER FLASHING



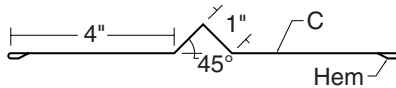
Length 10'-2"

### REGLET FLASHING



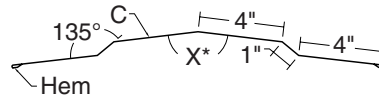
Length 10'-2"

### EXPANSION JOINT COVER



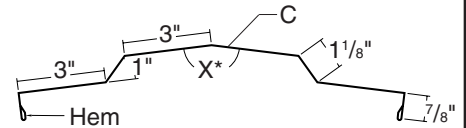
Length 10'-2"

### SSR RIDGE



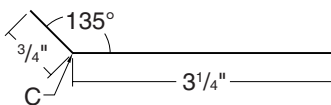
Length 10'-2", 20'-3" - \*Specify Slope Angle

### VENTED RIDGE COVER



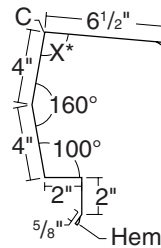
Length 10'-2", 20'-3" - \*Specify Slope Angle

### VENT DRIP



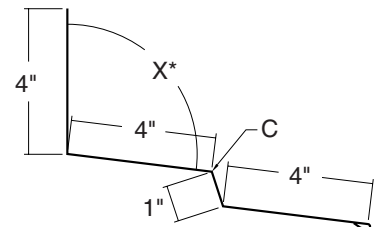
Length 10'-2"

### SSR SCULPTURED HIGH SIDE EAVE



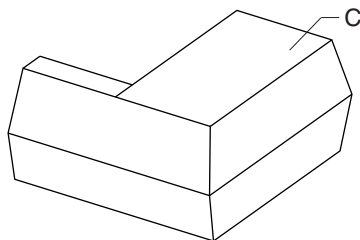
Length 10'-2", 20'-3" - \*Specify Slope Angle

### SSR HIGH SIDE PITCH BREAK



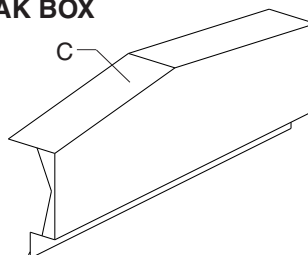
Length 10'-2", 20'-3" - \*Specify Slope Angle

### SSR SCULPTURED CORNER BOX



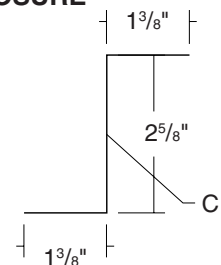
\*Specify Slope Angle

### SSR SCULPTURED PEAK BOX



\*Specify Slope Angle

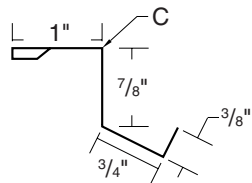
### SEAM-LOC 24 Z-CLOSURE



Length 10'-2"



### SSR GUTTER SUPPORT



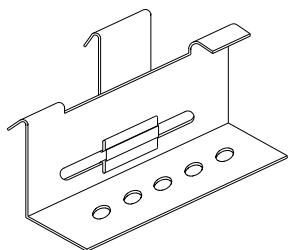
C- Indicates color side of flashing.

Length 0'-10"

# SEAM-LOC 24®

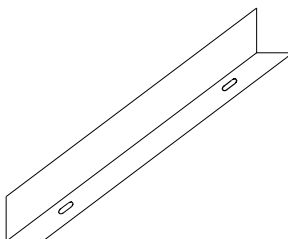
## ACCESSORY PROFILES

### SEAM-LOC 24 CLIP



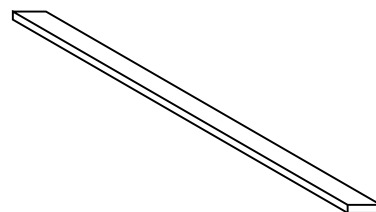
Height 2<sup>5</sup>/<sub>8</sub>" , 3<sup>1</sup>/<sub>8</sub>" , 3<sup>5</sup>/<sub>8</sub>" , 4<sup>1</sup>/<sub>8</sub>"  
Galvanized

### FLOATING RAKE ANGLE



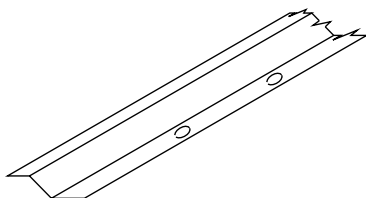
Length 10'-0"  
Height 2<sup>5</sup>/<sub>8</sub>" , 3<sup>1</sup>/<sub>8</sub>" , 3<sup>5</sup>/<sub>8</sub>" , 4<sup>1</sup>/<sub>8</sub>"  
Galvanized

### ENDLAP PAD



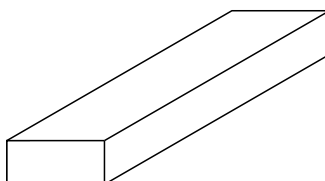
1<sup>1</sup>/<sub>2</sub>" x 3<sup>3</sup>/<sub>32</sub>" x 26<sup>1</sup>/<sub>4</sub>"  
Butyl - Gray

### EAVE PLATE



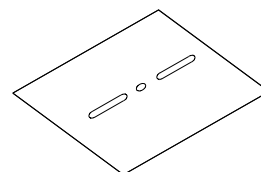
Length 10'-0"  
Height 3<sup>3</sup>/<sub>8</sub>" , 1" , 1<sup>3</sup>/<sub>8</sub>"  
Galvanized

### THERMAL BLOCK



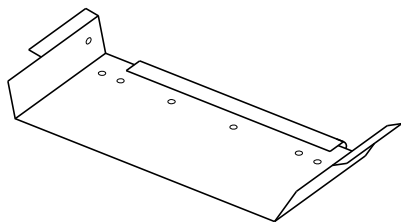
1" x 3" x 24"  
Polystyrene Foam

### BEARING PLATE

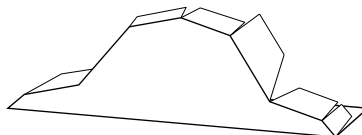


4" X 5"  
20 Gauge - Galvanized

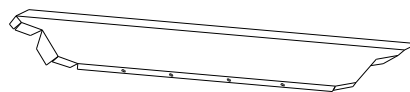
### COMPRESSION PLATE



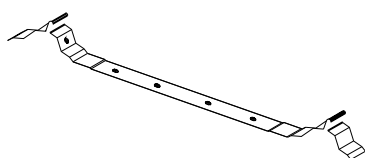
### METAL INSIDE CLOSURE



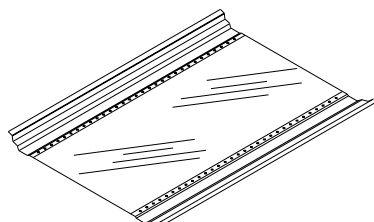
### METAL OUTSIDE CLOSURE



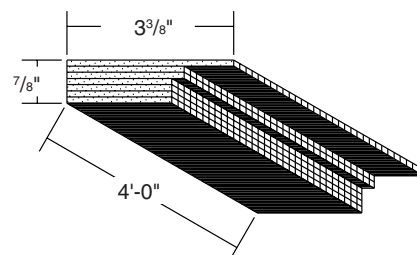
### CINCH STRAP



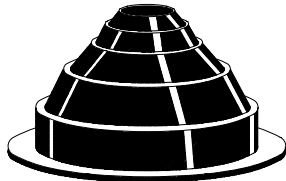
### SEAM-LOC 24 LIGHT TRANSMITTING PANEL



### VENT MATERIAL

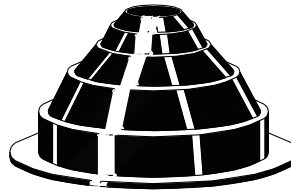


### RUBBER ROOF JACK



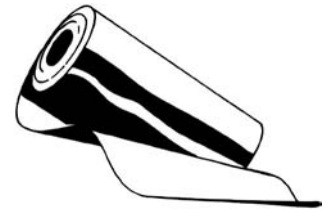
MINI (1/4" to 1 1/8" O.D. Pipe)  
#2 (1 3/4" to 3" O.D. Pipe)  
#4 (3" to 6" O.D. Pipe)  
#6 (6" to 9" O.D. Pipe)  
#8 (7" to 13" O.D. Pipe)

### RETRO ROOF JACK



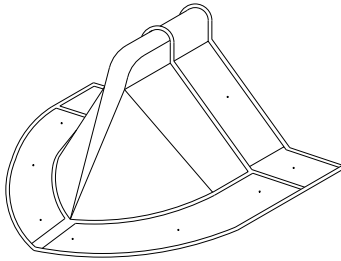
#801<sub>RETRO</sub> (3/4" to 2 3/4" O.D. Pipe)  
#802<sub>RETRO</sub> (2" to 7 1/4" O.D. Pipe)  
#803<sub>RETRO</sub> (3 1/4" to 10" O.D. Pipe)

### RUBBER ROOF FLASH KIT

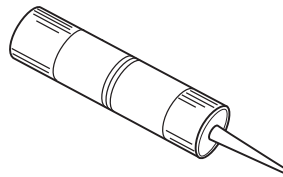


12" x 50'-0" Flash Kit  
18" x 50'-0" Flash Kit

### DECK CAP

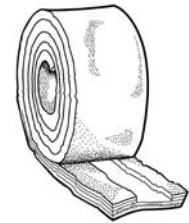


### TUBE SEALANT



10.3 oz. Cartridge  
Urethane

### TAPE SEALANT



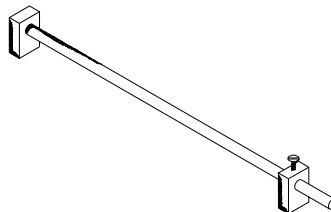
7/8" X 3/16" X 25'  
Double Bead  
Butyl - Gray

### TOUCH-UP PAINT

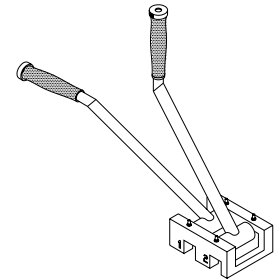


Available in Pints  
PVDF / MS CF30

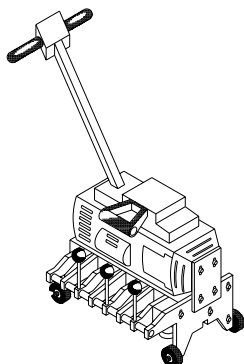
### ADJUSTABLE SPACER BAR



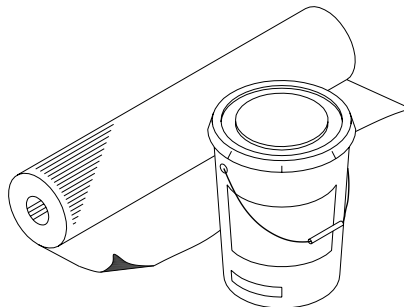
### SEAM-LOC HAND CRIMPER



### MECHANICAL SEAMER

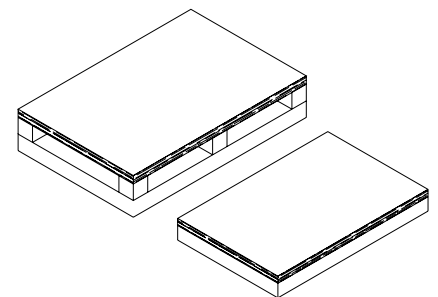


### UNDERLAYMENT & PRIMER



Contact Metal Sales for information

### AVAILABLE INSULATION



Contact Metal Sales for information

**RECEIVING MATERIAL**

It is the responsibility of the installer to unload material from the delivery truck. The installer shall be responsible for providing suitable equipment for unloading of material from the delivery.

After receiving material, check the condition of the material, and review the shipment against the shipping list to ensure all materials are accounted for. If damages or shortages are discovered, it should be noted on the Bill of Lading at the time of delivery. A claim should be made against the carrier as soon as possible. Metal Sales is not responsible for any damages or shortages unless they are documented in writing and presented to Metal Sales within 48 hours.

**GENERAL HANDLING**

Each bundle should be handled carefully to avoid being damaged. Care should be taken to prevent bending of the panel or abrasion to finish. Whenever possible, the bundle should remain crated until it is located in its place of storage. If bundles must be opened, we recommend you recrate them before lifting. To avoid damage please lift the bundle at its center of gravity.

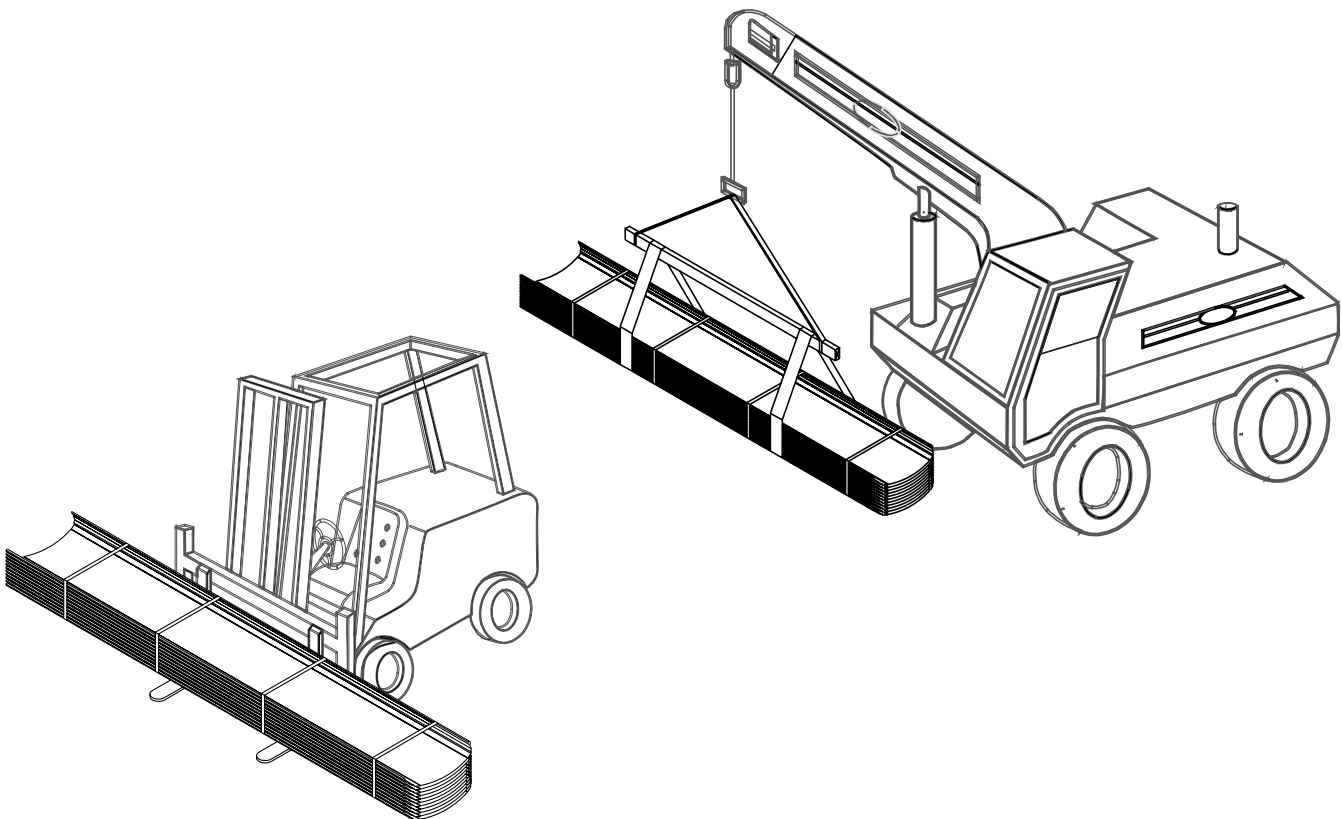
**CAUTION**

Improper loading and unloading of bundles and crates may result in bodily harm and/or material damage. Metal Sales is not responsible for bodily injuries and/or material damages resulting from improper loading and unloading.

**MECHANICAL HANDLING**

**Forklift** - A forklift may be used for panels up to 20'-0" long. Please make sure the forks are at their maximum separation. Do not transport open bundles. When transporting bundles across rough terrain, or over a longer distance, some means of supporting the panel load must be used.

**Crane** - A crane should be used when lifting panels with lengths greater than 20'-0". Please be sure to utilize a spreader bar to ensure the even distribution of the weight to the pick up points. As a rule when lifting panels, no more than  $\frac{1}{3}$  of the length of the panel should be left unsupported. Never use wire rope because this will damage the panels.

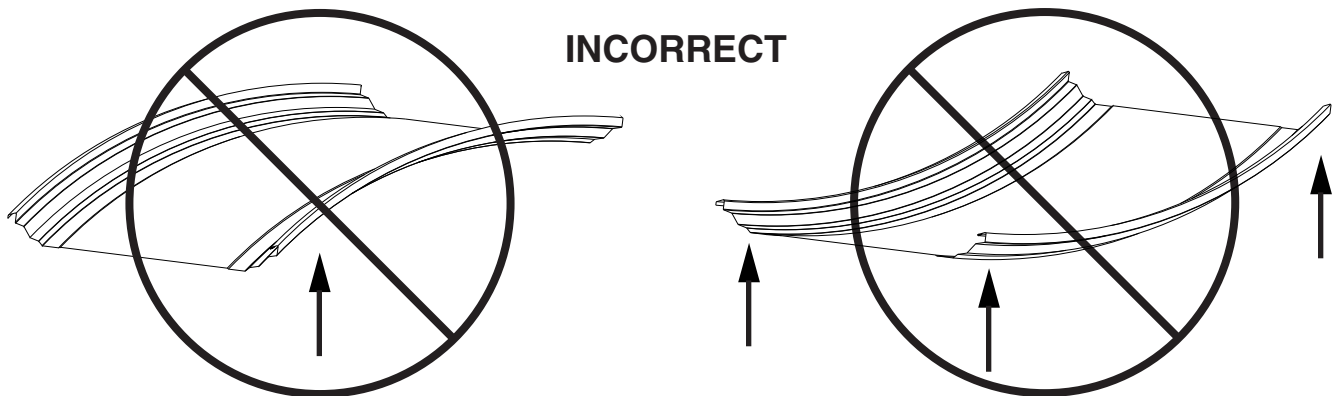
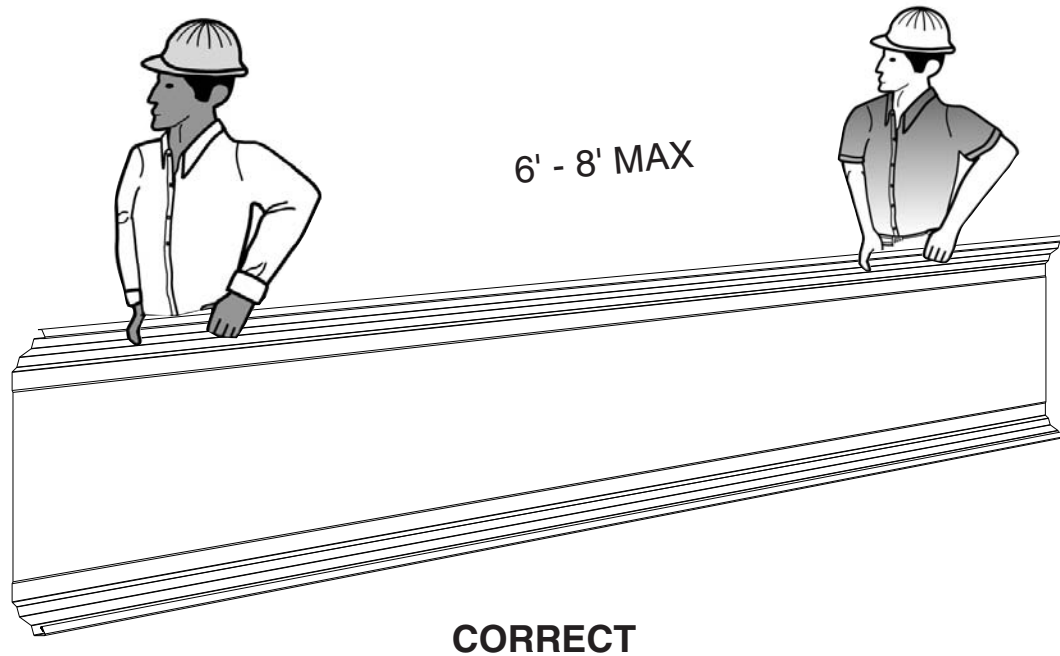


### MANUAL HANDLING

When handling painted steel care should be taken to prevent scratching of material. Clean gloves should be worn at all times to prevent a reaction with salts found on bare skin. Installers should wear rubber sole shoes to keep from scuffing material while walking on the roof.

Handling of individual panels should be done carefully and properly to avoid bending or damaging. Seam-Loc 24 panels should be carried by grasping the edge of the panel so that the Seam-Loc 24 panel is vertical to the ground. The Seam-Loc 24 panel should not be carried with the panel horizontal to the ground as this could cause the panel to buckle or bend in the center.

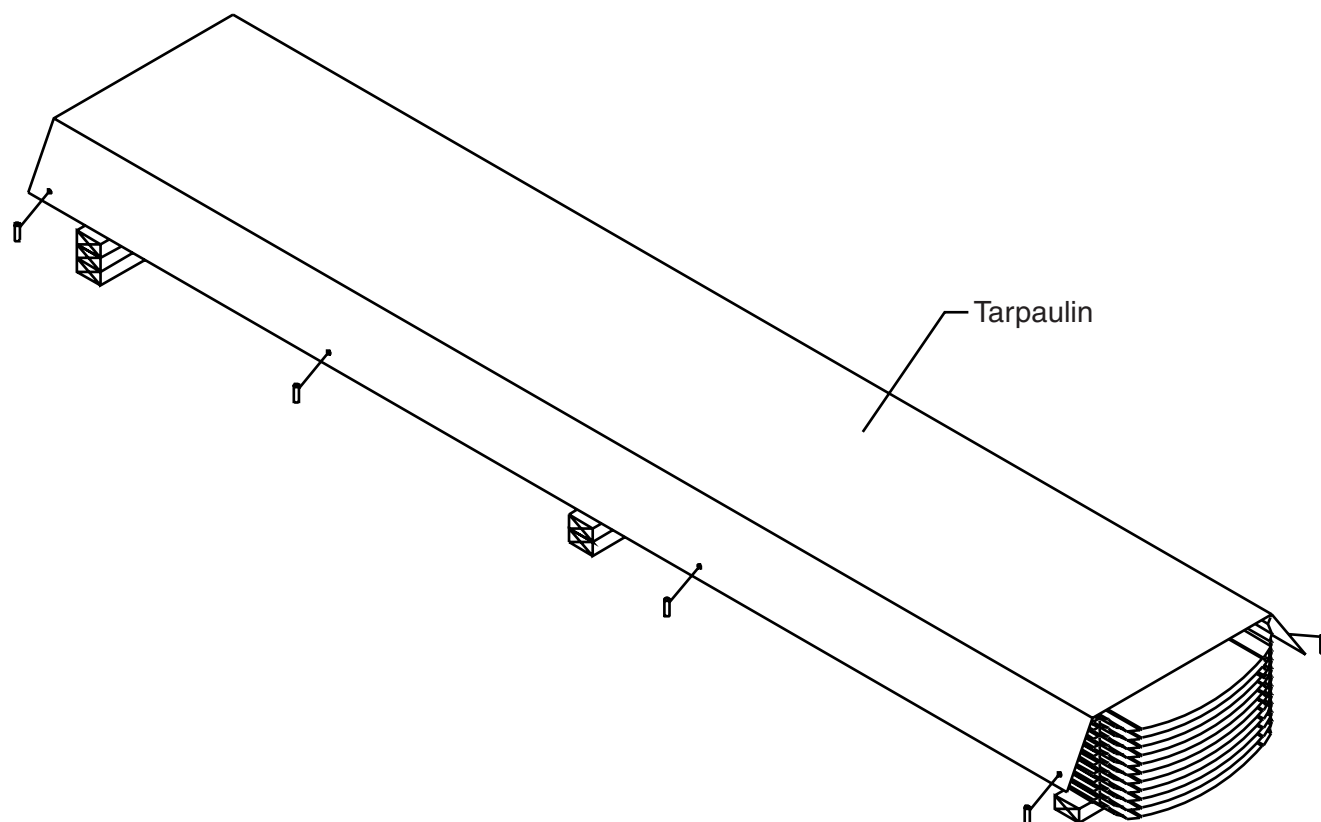
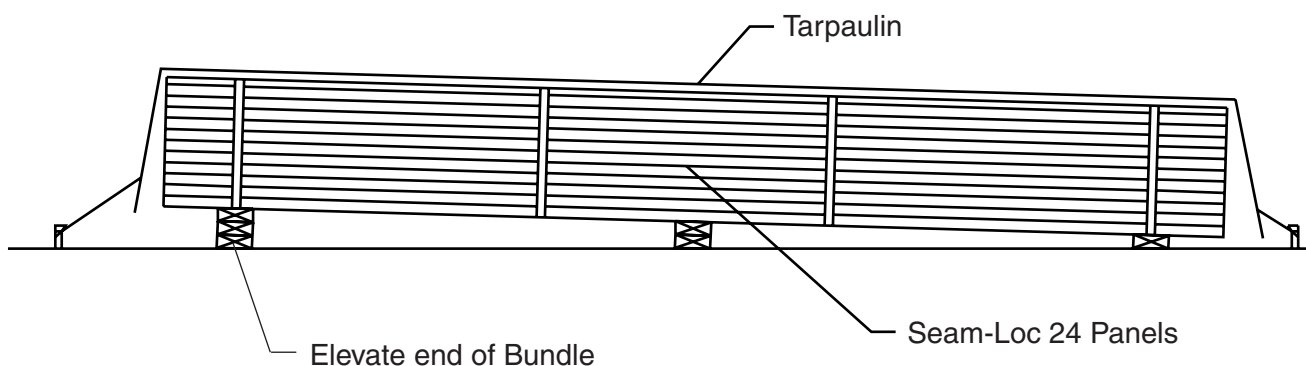
Normally individual panels can be handled by people placed every 6'-0" to 8'-0" along the length of the panel.



## GENERAL

Please inspect panels for moisture accumulation. If moisture has formed, the panels should be unbundled, wiped dry, and allowed to dry completely. Once dry, carefully restack the panels and loosely recover allowing for ample air circulation.

Bundled sheets should be stored high enough off of the ground to allow for air circulation and prevent contact with accumulating water. If possible, elevate one end of the bundle to allow any moisture to run off the panels. Metal Sales recommends covering the bundle with a tarpaulin. Do not use tight fitting plastic-type tarpaulins as panel bundle covers. While they may provide protection from heavy downpours, they can also retard necessary ventilation and trap heat and moisture that may accelerate metal corrosion. If panels are to be stored in possible bad weather, we suggest they be stored inside. Extended storage of panels in a bundle is not recommended. **Under no circumstances should the sheets be stored near or come in contact with salt water, corrosive chemicals, ash, or fumes generated or released inside the building or nearby plants, foundries, plating works, kilns, fertilizer, and wet or green lumber. These conditions will cause premature rusting of panels.**

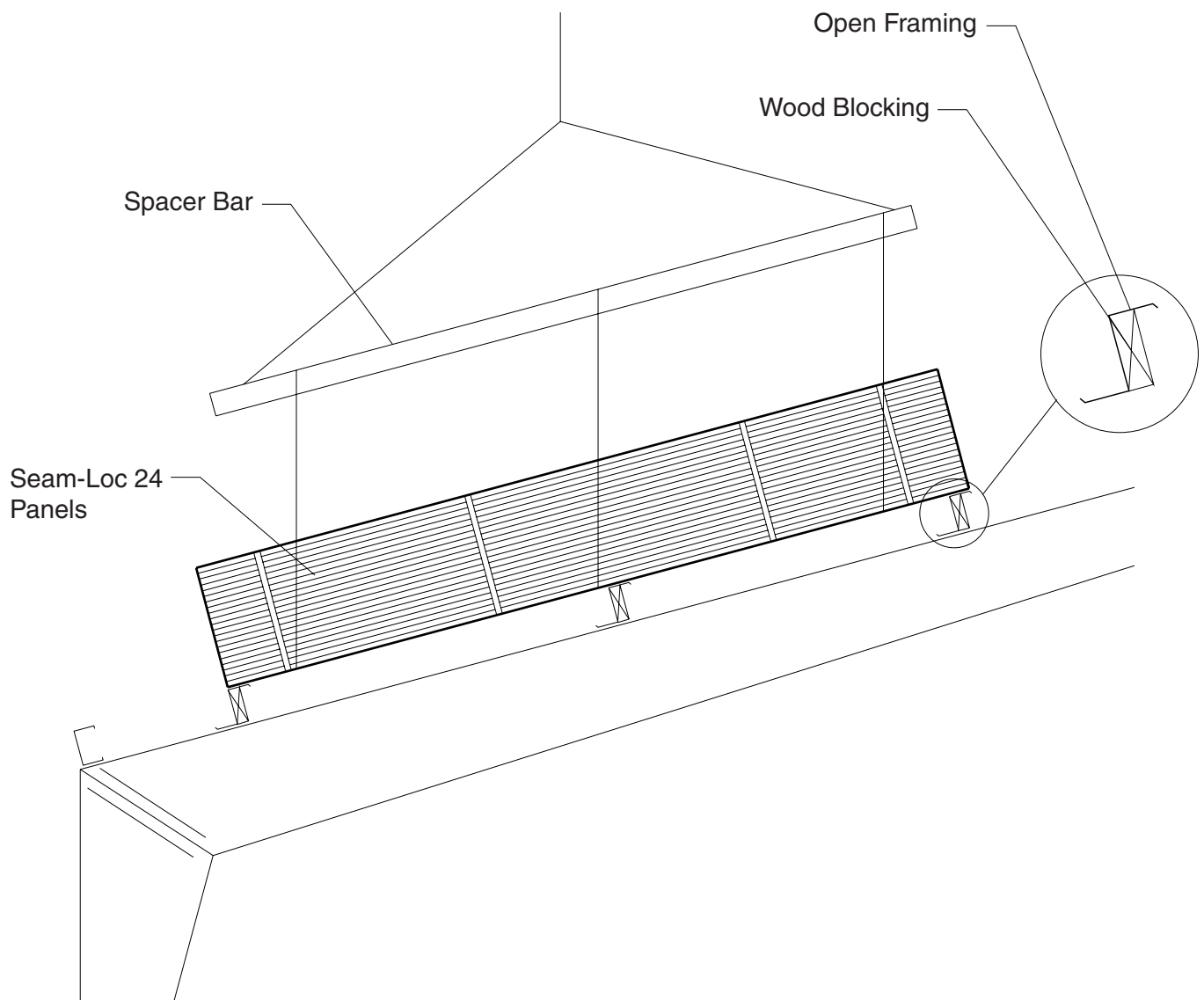


**STORAGE ON ROOF**

To facilitate the handling of Seam-Loc 24 panels, panel bundles can be lifted and placed on the roof. Bundles need to be placed on the roof in order for the roof structure to handle the weight. Loading capabilities of the structure must be checked.

When lifting packaged sheets, make certain they are adequately supported. Panels less than 20'-0" in length can normally be lifted with a forklift; however, when lifting panels in excess of 20'-0", it is recommended that a spreader bar and slings be used. As a rule, when lifting, no more than  $\frac{1}{3}$  of the length of the panel should be left unsupported.

Make a plan for bundle placement by determining how much area a bundle of panels will cover. Bundles should be placed on the roof in accordance with the direction the panel will be installed. Consider where the string line, if any, is to run at the eave to set roof panels by. Roof bundles should not interfere with this string line.

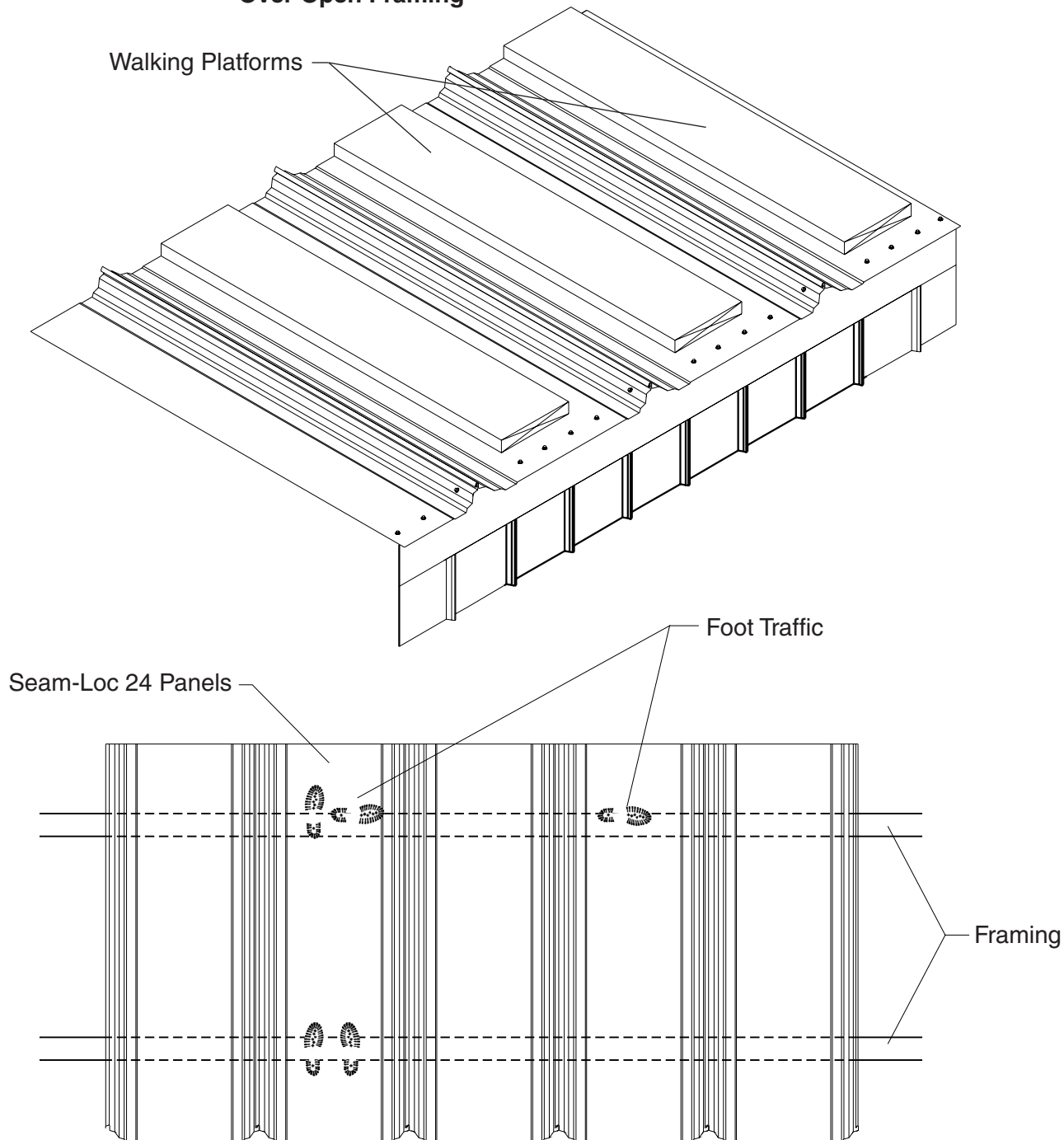


Care of metal panels and flashings must be exercised throughout erection. Foot traffic can cause distortion of panel and damage to finish. Traffic over the installed system must be kept to an absolute minimum. If continuous foot traffic is necessary for maintenance over certain areas of the roof, then a permanent walkway should be installed.

If metal panels are installed over open framing, do not use the roof panel as a walking platform. The roof panels will not withstand the weight of a person standing at the edge of the panel. Provide walking platforms to avoid any panel damage as shown below.

When walking on the roof panels is unavoidable, walk only in the flats of the panel. Walking on the ribs can cause damage to the panels. If Seam-Loc 24 is installed over open framing, step in the flat of the panel only and as close to the framing as possible.

## Over Open Framing



### FIELD CUTTING

Tin snips or a "nibbler" type electric tools are recommended for field cutting Seam-Loc 24 panels. Cutting the steel generates slivers or metal chips. These slivers and metal chips must be immediately removed from the Seam-Loc 24 panels because they will damage the finish and shorten the life of the product.

One method of preventing this problem is to flip the Seam-Loc 24 panels over when cutting. This allows the slivers and metal chips to be brushed from the back side and avoids damaging the paint on the top side of the panels.

When cutting Seam-Loc 24 panels, goggles must be worn for eye protection.

### CAUTION

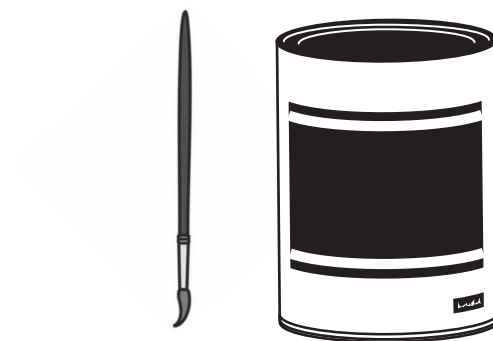
All product surfaces should be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface, voiding the warranty.

### TOUCH-UP PAINT

All painted panels and flashings have a factory applied baked on finish. Handling and installing panels may result in some small scratches or nicks to the paint finish. Touch-up paint is available in matching colors from Metal Sales. It is recommended that a small brush be used to apply touch-up paint to those areas that are in need of repair. Touch-up paint does not have the superior chalk and fade resistance of the factory applied paint finish and will normally discolor at an accelerated rate. Aerosol paint should not be used because of the overspray that may occur.


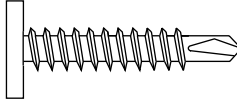
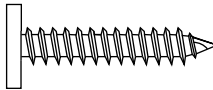
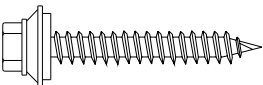
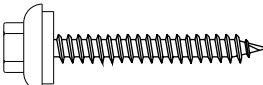
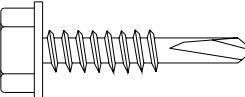
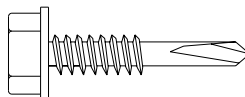
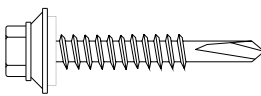
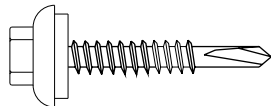


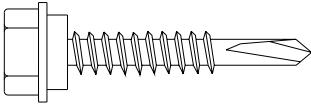
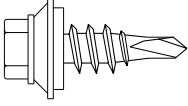
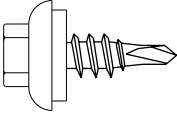
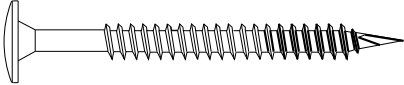
SPRAY PAINT



TOUCH-UP PAINT



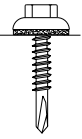
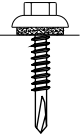
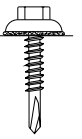
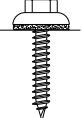
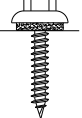
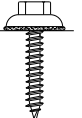
<p><b>POP RIVET</b></p> 	<p><b>SIZE</b></p> <p>1/8" x 3/16"</p> <p>1/8" x 3/16"</p>	<p><b>TYPE</b></p> <p>A</p> <p>A</p>	<p><b>FINISH</b></p> <p>Unpainted</p> <p>Painted</p>	<p><b>APPLICATION</b></p> <p>Flashing to Panel or Flashing</p> <p>Flashing to Panel or Flashing</p>
<p><b>PANCAKE HEAD DRILLER</b></p> 	<p><b>SIZE</b></p> <p>#10-16 x 1" (#2 Point)</p>	<p><b>TYPE</b></p> <p>Driller</p>	<p><b>FINISH</b></p> <p>Plated</p>	<p><b>APPLICATION</b></p> <p>Panel/clip/flashing to metal framing or decking</p>
<p><b>PANCAKE HEAD WOODSCREW</b></p> 	<p><b>SIZE</b></p> <p>#10-12 x 1"</p>	<p><b>TYPE</b></p> <p>A</p>	<p><b>FINISH</b></p> <p>Plated</p>	<p><b>APPLICATION</b></p> <p>Panel/clip/flashing to wood substructure</p>
<p><b>WOODSCREW</b></p> 	<p><b>SIZE</b></p> <p>#9-15 x 1" #9-15 x 1 1/2" #9-15 x 2"</p>	<p><b>TYPE</b></p> <p>A A A</p>	<p><b>FINISH</b></p> <p>Painted Painted Painted</p>	<p><b>APPLICATION</b></p> <p>Panel or Flashing to wood substructure</p>
<p><b>WOODSCREW XL</b></p> 	<p><b>SIZE</b></p> <p>#9-15 x 1" #9-15 x 1 1/2" #9-15 x 2"</p> <p>#9-15 x 1" #9-15 x 1 1/2" #9-15 x 2"</p>	<p><b>TYPE</b></p> <p>A A A</p> <p>A A A</p>	<p><b>FINISH</b></p> <p>Unpainted Unpainted Unpainted</p> <p>Painted Painted Painted</p>	<p><b>APPLICATION</b></p> <p>Panel or Flashing to wood substructure</p> <p>Panel or Flashing to wood substructure</p>
<p><b>SELF DRILLER NO WASHER</b></p>  	<p><b>SIZE</b></p> <p>#1/4-14 x 1 1/4"</p> <p>#12-14 x 1"</p> <p>#12-24 x 1 1/4"</p>	<p><b>TYPE</b></p> <p>Driller</p> <p>Driller</p> <p>Driller (#4 point)</p>	<p><b>FINISH</b></p> <p>Plated</p> <p>Plated</p> <p>Plated</p>	<p><b>APPLICATION</b></p> <p>Panel clips to metal substructure</p> <p>Accessories to metal substructure and used with framing on Retrofit</p> <p>Panel clips to bar joists up to 3/8" thick</p>
<p><b>SELF DRILLER</b></p>  <p><b>SELF DRILLER XL</b></p> 	<p><b>SIZE</b></p> <p>#12-14 x 1 1/4" #12-14 x 1 1/2" #12-14 x 1 1/4"</p> <p>#12-14 x 1 1/4" #12-14 x 1 1/2" #12-14 x 1 1/4"</p> <p>#12-14 x 1 1/4" #12-14 x 1 1/2" #12-14 x 1 1/4"</p>	<p><b>TYPE</b></p> <p>Driller Driller Driller</p> <p>Driller Driller Driller</p> <p>Driller Driller Driller</p>	<p><b>FINISH</b></p> <p>Painted Painted Painted</p> <p>Unpainted Unpainted Unpainted</p> <p>Painted Painted Painted</p>	<p><b>APPLICATION</b></p> <p>Panel or Flashing to metal substructure</p> <p>Panel or Flashing to metal substructure</p> <p>Panel or Flashing to metal substructure</p>

SHOULDER SELF DRILLER	SIZE	TYPE	FINISH	APPLICATION
	#12-14 x 1 1/4"	Driller	Plated	For use with Floating Rake Angle to substructure
STITCH SCREW	SIZE	TYPE	FINISH	APPLICATION
	#1/4 - 14 x 7/8"	Stitch	Painted	Flashing to Panel or Flashing
STITCH SCREW XL				
	#1/4 - 14 x 7/8"	Stitch	Unpainted	Flashing to Panel or Flashing
	#1/4 - 14 x 7/8"	Stitch	Painted	Flashing to Panel or Flashing
DEKFAST	SIZE	TYPE	FINISH	APPLICATION
	#14-13 x 2"	Driller	Black	Panel Clip to metal deck and rigid board insulation assembly or wood substructure
	#14-13 x 4"	Driller	Black	
	#14-13 x 5"	Driller	Black	
	#14-13 x 6"	Driller	Black	
	#14-13 x 8"	Driller	Black	

### 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.
<b>SELF DRILLER</b>			
<b>WOODSCREW</b>			

**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.

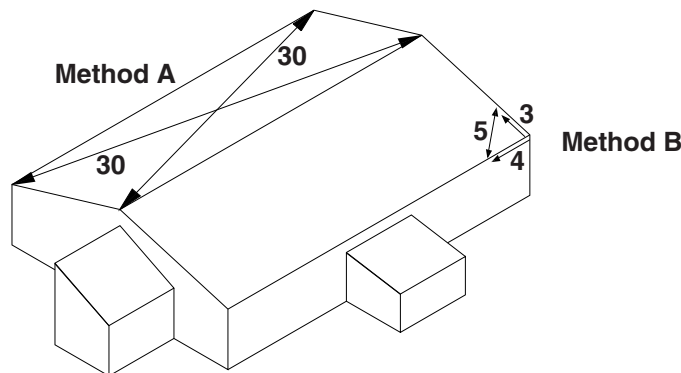
### CONDITION OF SUBSTRUCTURE

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 Vertical Seam 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.



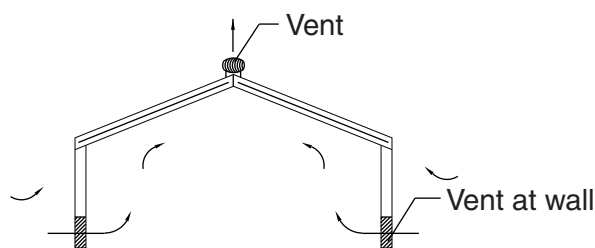
### VENTILATION

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.

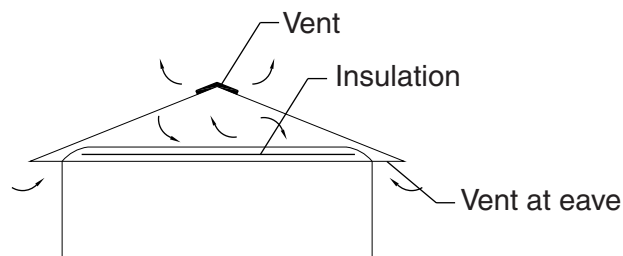
Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below the dew point of the air. This phenomenon creates problems that are not unique with metal buildings; these problems are common to all types of construction.

The underside of the metal roof on a typical metal building (no attic) should be protected from condensation by insulating with a faced insulation. This should reduce the potential of condensation forming on the underside of the panels.

On buildings that have an attic space or are being retrofitted with a metal roofing system, vents should be placed at both the eave and peak of the roof in order to prevent a buildup of moisture (humidity) in the attic space.



**Typical metal building (no attic)**



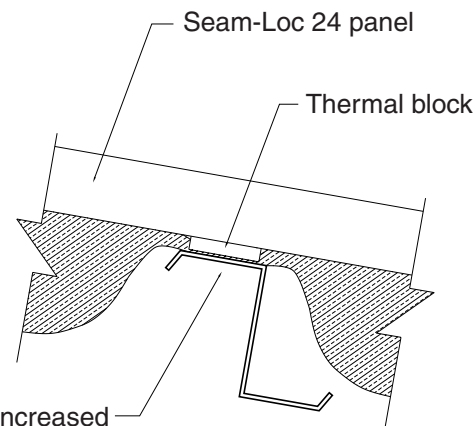
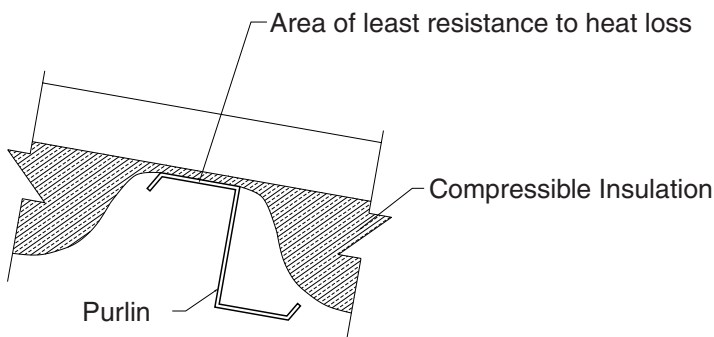
**Building with attic or retrofitted**

### INSULATION

In most cases insulation is installed directly under roof panels. Insulation is recommended on all applications to act as a sound barrier, prevent condensation, and increase insulating value of a roof system.

Many different types of insulation can be used with the metal roof panels. Please contact your insulation supplier for specific recommendations on installation of insulation and vapor barriers.

When applying a compressible type of insulation over open framing members. Rigid thermal blocks can be used to help eliminate heat lost at purlin locations.



Resistance to heat loss is increased

### CAUTION

Use extreme care when working next to insulation. The insulation will provide a false sense of security by hiding the view of the ground below the insulation.

### SYSTEM EXPANSION / CONTRACTION

Steel roofing panels are subject to dimensional changes after installation due to exposure to varying temperatures. The greatest influence is solar energy. Steel roofing absorbs various amounts of heat depending upon color, finish, angle of exposure, and time of exposure.

The relationship of ambient temperature to building structural temperature must be considered when designing a Seam-Loc 24 roof system. The clips for the Seam-Loc 24 panels are designed for expansion and contraction of the panels in the longitudinal direction. Lateral expansion and contraction is accommodated by the configuration of the panel cross section and causes negligible panel movement.

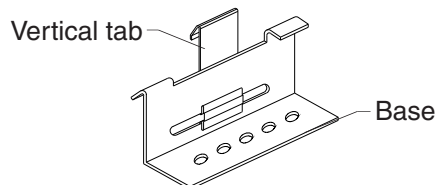
When the total length of panel run exceeds the capability of the clips to accommodate the thermal movement, expansion joints must be designed into the structure.

### SELECTION OF SYSTEM COMPONENTS

The following information should be used to determine system components needed once insulation thickness has been selected. Refer to pages 16-17 for appropriate fastener selections.

SYSTEM COMPONENTS					
SYSTEM	CLIP	EAVE PLATE	RAKE ANGLE	THERMAL BLOCK	INSULATION
UTILITY	2 <sup>5</sup> / <sub>8</sub> " UTILITY	NONE REQUIRED	2 <sup>5</sup> / <sub>8</sub> " UTILITY	NONE REQUIRED	1/2" TO 4" BLANKET
LOW	3 <sup>1</sup> / <sub>8</sub> " LOW	3/8" LOW	3 <sup>1</sup> / <sub>8</sub> " LOW	NONE REQUIRED	4" TO 6" BLANKET
MID	3 <sup>5</sup> / <sub>8</sub> " MID	1" MID	3 <sup>5</sup> / <sub>8</sub> " MID	1"	1/2" TO 4" BLANKET
HIGH	4 <sup>1</sup> / <sub>8</sub> " HIGH	1 <sup>3</sup> / <sub>8</sub> " HIGH	4 <sup>1</sup> / <sub>8</sub> " HIGH	1"	4" TO 6" BLANKET

**Seam-Loc 24 Panel Clips-** The floating clips allow the roof surface (panels) to move independently of the roof substructure to allow for thermal expansion and contraction. These clips are designed with a vertical tab that slides along the base section of the clip. Clips are placed along the male leg of each panel prior to installing adjacent panels. Design wind uplift requirements must be considered for proper clip spacing.



**SEAM-LOC 24 PANEL CLIP**

The following chart should be used to determine proper fasteners required for clip installation on the selected applications. (See Product General Information pages 16-17 for other fasteners available.)

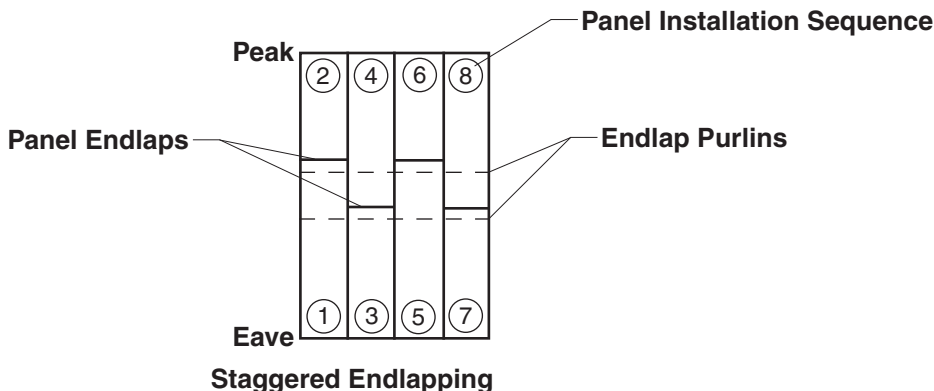
APPLICATION	INSTALLATION REQUIREMENTS		**CLIP SPACING	TYPE OF FASTENER	# REQ.
<b>CLIPS OVER PURLINS (16 GA. MIN)</b>	STANDARD	24 GAUGE	5'-0" O.C.	1/4-14 x 1 1/2" SELF DRILLER NW	2 FASTENERS
	STANDARD	22 GAUGE	5'-0" O.C.	1/4-14 x 1 1/2" SELF DRILLER NW	2 FASTENERS
<b>CLIPS OVER 5/8" WOOD DECK</b>	STANDARD	24 GAUGE	BY DESIGN	#10 X 1" PANCAKE HEAD WOOD	2 FASTENERS
	STANDARD	22 GAUGE	BY DESIGN	#10 X 1" PANCAKE HEAD WOOD	2 FASTENERS
<b>CLIP OVER RIGID INSULATION / METAL DECK</b>	STANDARD	24 GAUGE	4'-0" O.C.	DEKFAST #14*	2 FASTENERS
	STANDARD	22 GAUGE	4'-0" O.C.	DEKFAST #14*	2 FASTENERS

\* Length of Dekfast will vary depending on the total thickness of the rigid insulation and metal (see page 17).

\*\* Based on UL580. Subject to project loading requirements, closer clip spacing may be required. Contact your local Metal Sales branch representative for more information (see pages 2 and 3).

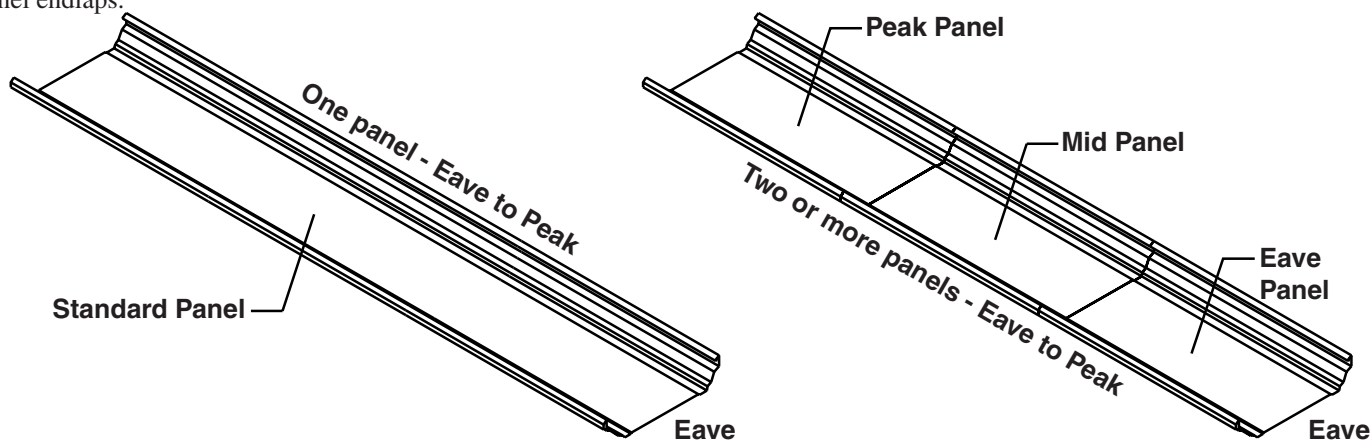
### PANEL ENDLAPPING

If panel endlapping is required, endlaps must be staggered. This prevents material build-up and aids in overall structural performance.



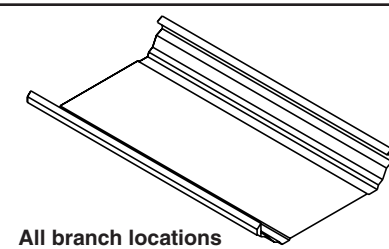
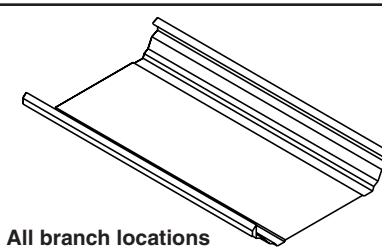
### FACTORY NOTCHED / PUNCHED PANELS

Metal Sales can provide factory notched/punched panel ends to eliminate reliance on field notching for weathertight seams at panel endlaps.



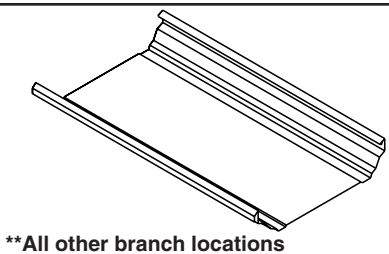
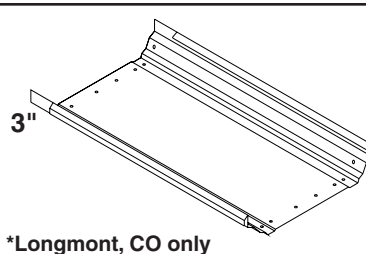
#### STANDARD PANEL:

- ▶ Used when endlapping of panels is not required
- ▶ One panel from eave to peak of roof
- ▶ No notching/punching



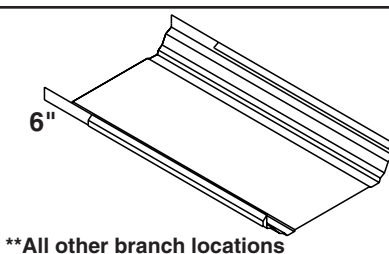
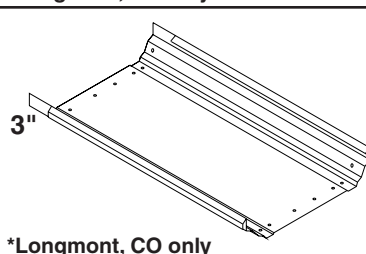
#### PEAK PANEL:

- ▶ Used when endlapping of panels is required
- ▶ Used as upper panel of endlapping run
- ▶ Notching and punching\*
- ▶ No notching or punching\*\*



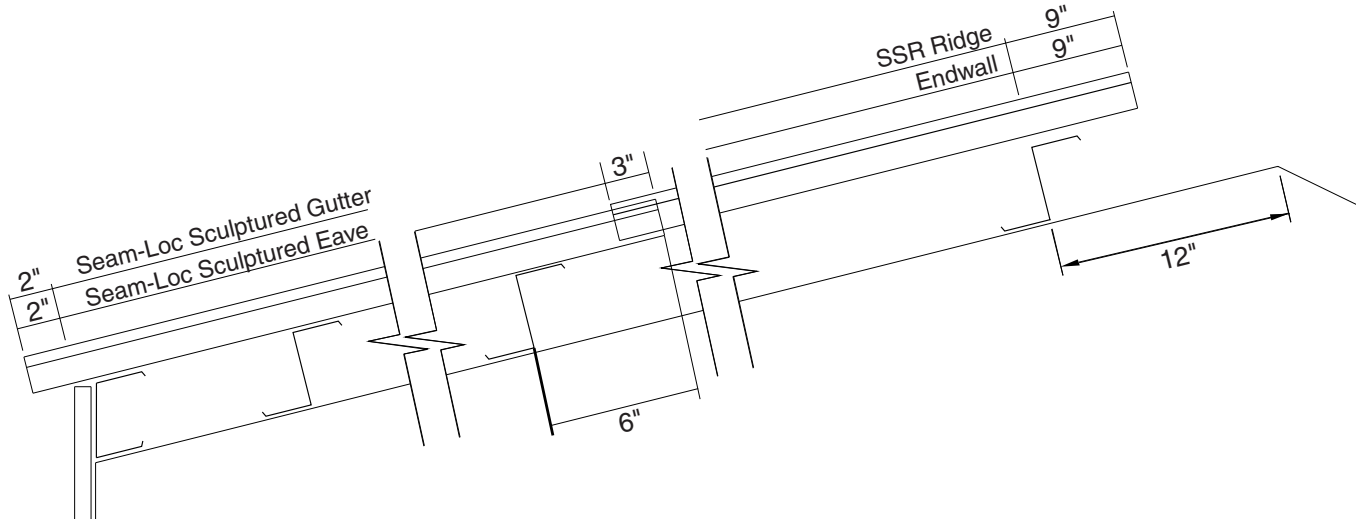
#### EAVE PANEL OR MID PANEL:

- ▶ Used when endlapping of panels is required
- ▶ Used as lower or middle panel of endlapping run
- ▶ Notching and punching\*
- ▶ Notched for panel endlapping\*\*

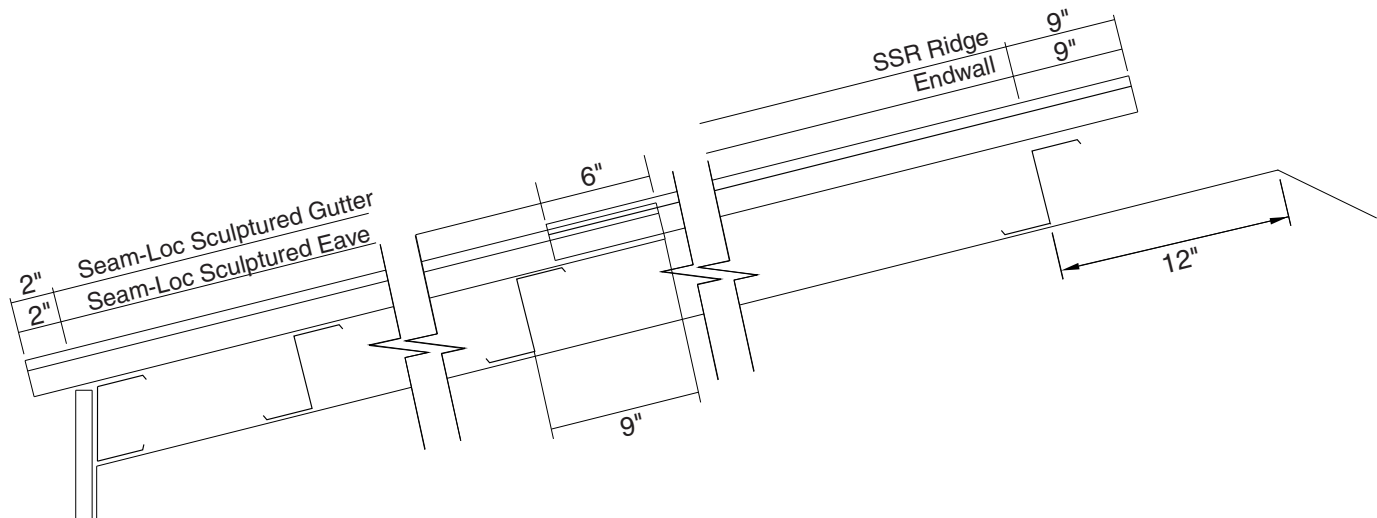


\*See next page for panel length considerations at endlaps.

### LENGTH CONSIDERATIONS FOR PANELS PRODUCED AT LONGMONT, CO BRANCH



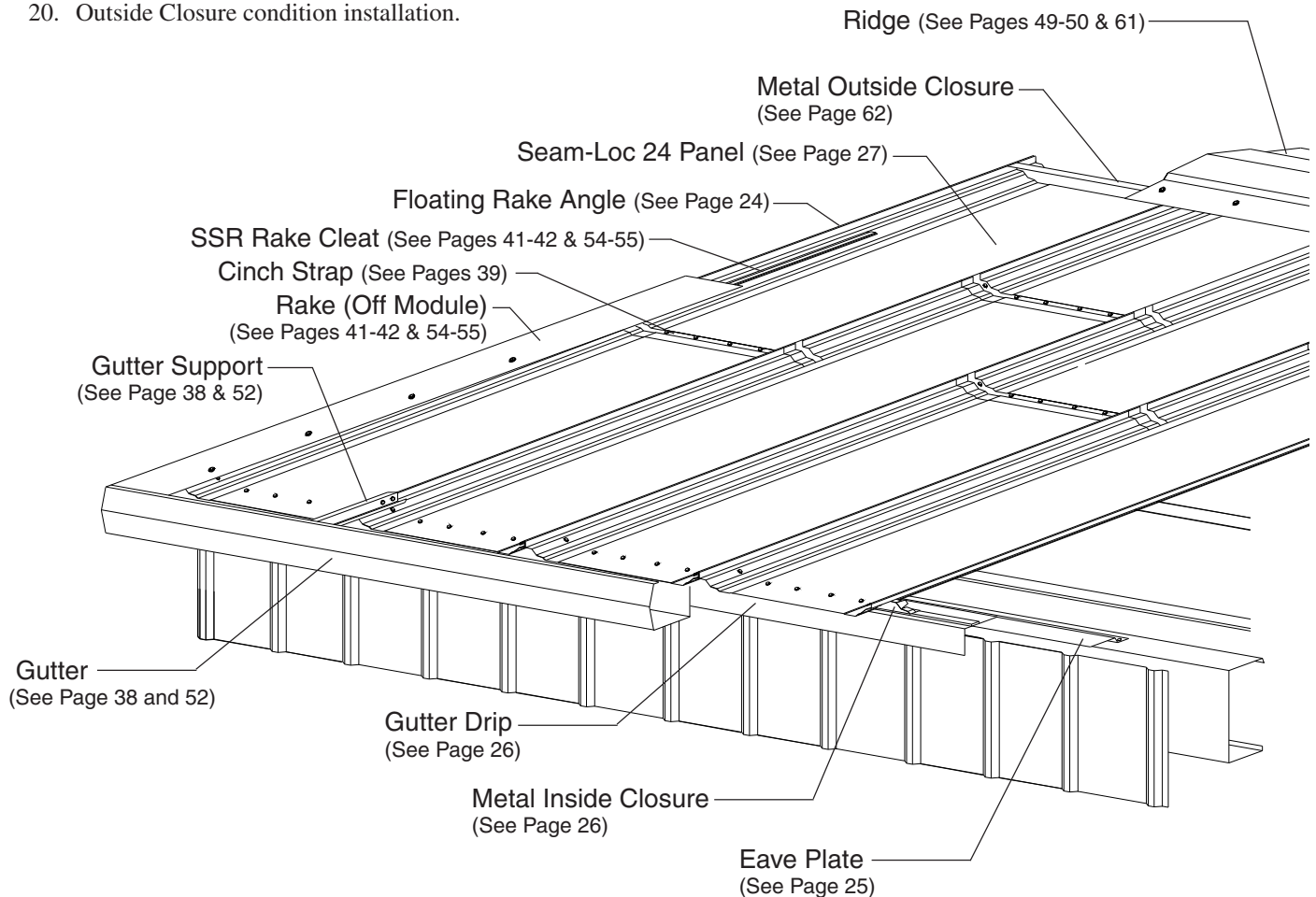
### LENGTH CONSIDERATIONS FOR PANELS PRODUCED AT ALL OTHER BRANCHES



The following procedures (pages 24-36) are presented as a general guide for installing Seam-Loc 24 panels, flashings, and accessories on a typical building or residence. Details are shown for installing Seam-Loc 24 and related flashings over open framing and over rigid insulation. For other applications please contact your nearest Metal Sales location (See pages 2 and 3).

The installation procedures will involve:

1. Installation of Floating Rake Angle.
2. Installaton of Eave plate.
3. Installing Metal Inside Closures
4. Installing First Panel.
5. Installing Panel Clips.
6. Endlapping of Panel.
7. Sidelapping of Panel.
8. Installing Panel Terminations.
9. Seaming Panels
10. Eave condition installation.
11. Gutter condition installation.
12. Valley condition installation.
13. Endlap condition installation.
14. Rake condition installation.
15. Rakewall condition installation.
16. Expansion Joint condition installation.
17. Endwall condition installation.
18. High Side Eave condition installation.
19. Ridge / Hip condition installation.
20. Outside Closure condition installation.





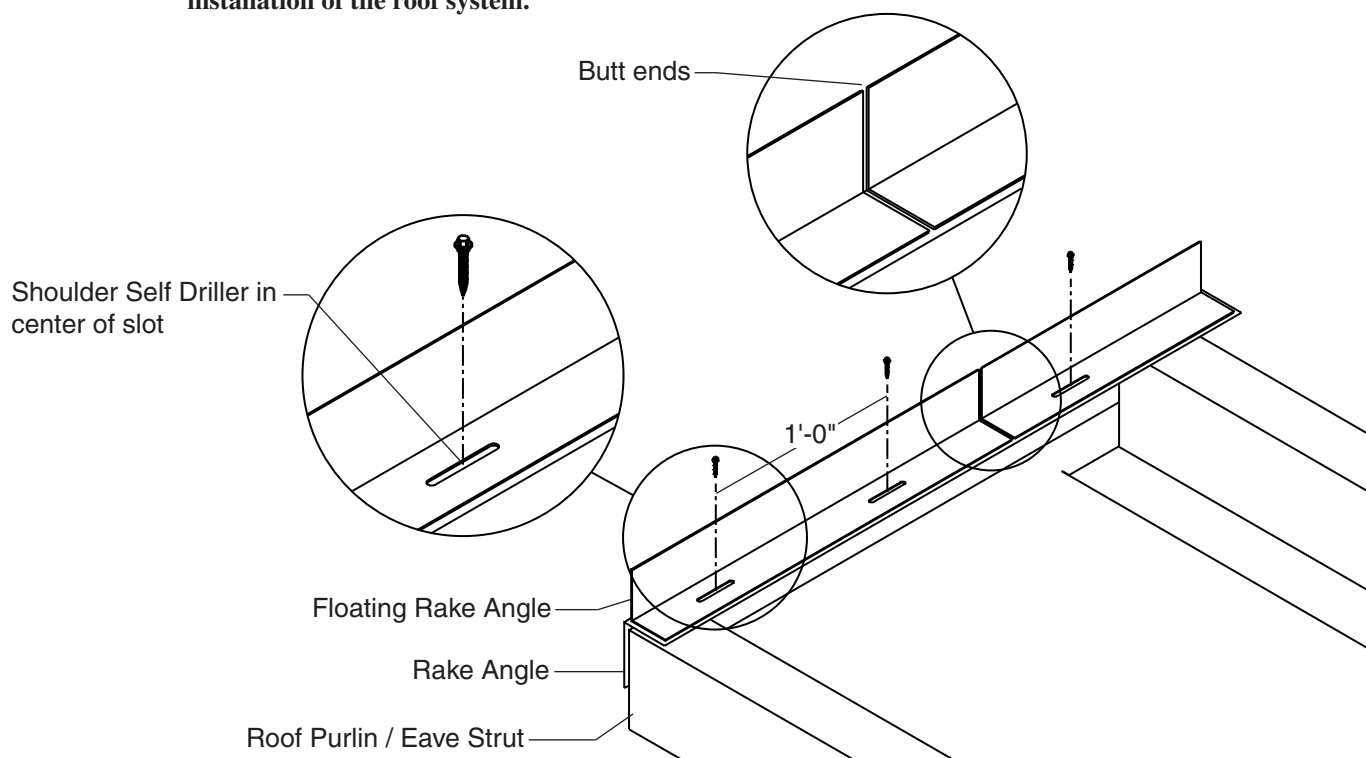
## INSTALLING FLOATING RAKE ANGLE

STEP  
1

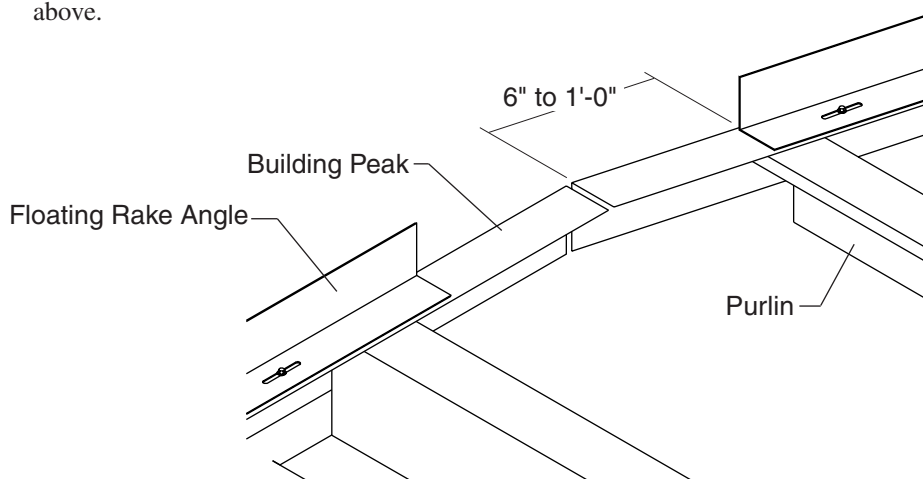
**Note:** The Floating Rake Angle must be attached to the framing member along the rake and rakewall. Size of Floating Rake Angle can vary, (see System Components list on page 20).

**Steps:**

1. Starting on the left or right hand side, at the eave of the building (looking eave to peak), align the Floating Rake Angle flush with the existing rake angle/framing. **It is critical that the Floating Rake Angle be straight and square with the building as it controls the alignment of the roof panels.**
2. Fasten Floating Rake Angle with #12-14 x 1¼" Shoulder Self Driller screws into the center of each slot, (1'-0" intervals). **Do not overtighten screws. Movement of the Floating Rake Angle is imperative for proper installation of the roof system.**



3. If two or more Floating Rake Angles are required, butt ends of Floating Rake Angles (**Do not overlap**) and continue fastening.
4. If necessary, field cut Floating Rake Angle to terminate 6"-12" from peak of building.
5. Install Floating Rake Angle on the opposite end where the panels terminate using the same procedures as above.



6. After applying Floating Rake Angle, insulation (if required) can be installed. Roll out insulation eave to peak, laying side of insulation on Floating Rake Angles.
7. Avoid side lap of insulation from occurring directly beneath side lap of panel.

## INSTALLING EAVE PLATE

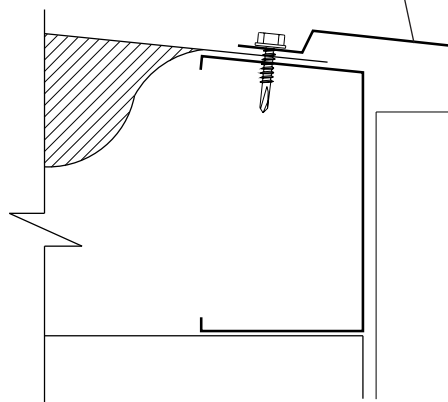
STEP  
2

**Note:** The Eave Plate serves as an extension of the structure to support and fasten the panel at the eave and valley on applications utilizing the Low, Mid, or High Floating Clip Systems. Size of Eave Plate can vary, (see System Components list on page 20).

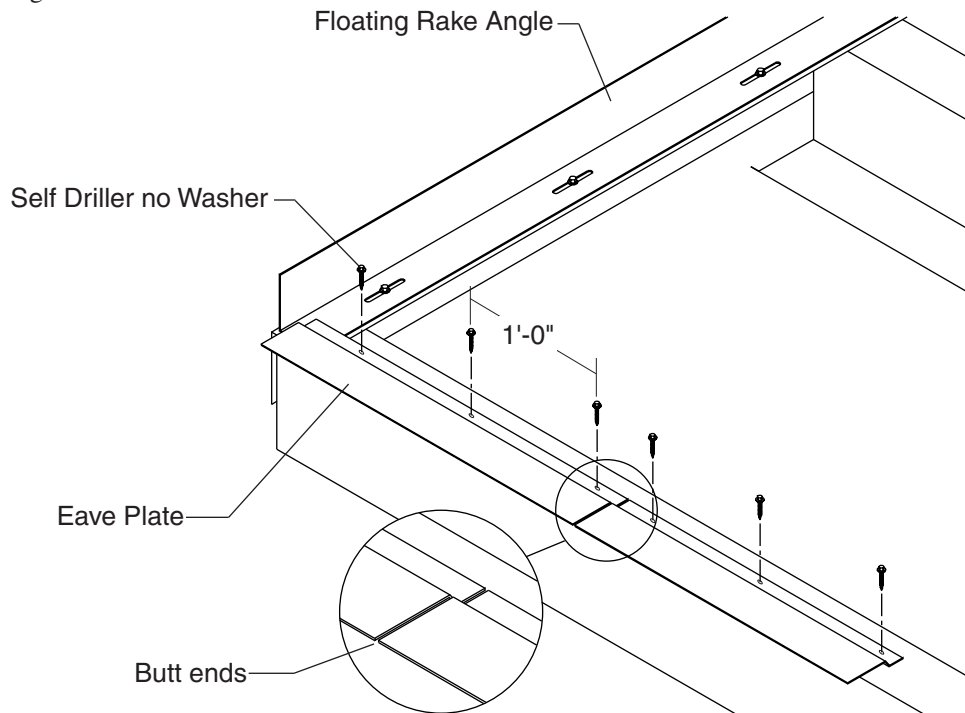
**Steps:**

1. If using blanket insulation, the Eave Plate may be used to secure the insulation at the eave. Be sure to remove the fiberglass and fasten only the vapor barrier to avoid wicking.
2. Place pre-punched leg of Eave Plate on top of eave framing member. Align the top leg of the Eave Plate flush with the finished wall surface at the eave of the building.

Align Eave Plate With  
Finished Wall Surface



3. Fasten Eave Plate to eave framing member with #12 -14 x 1" Self Driller No Washer screws 1'0" o.c.  
**Do not fasten through Eave Plate into Floating Rake Angle. Movement of the Floating Rake Angle is imperative for proper installation of roof system.**
4. If two or more Eave Plates are required, butt ends of the Eave Plates (**Do Not Overlap**) and continue fastening.



## INSTALLING METAL INSIDE CLOSURES

STEP  
3

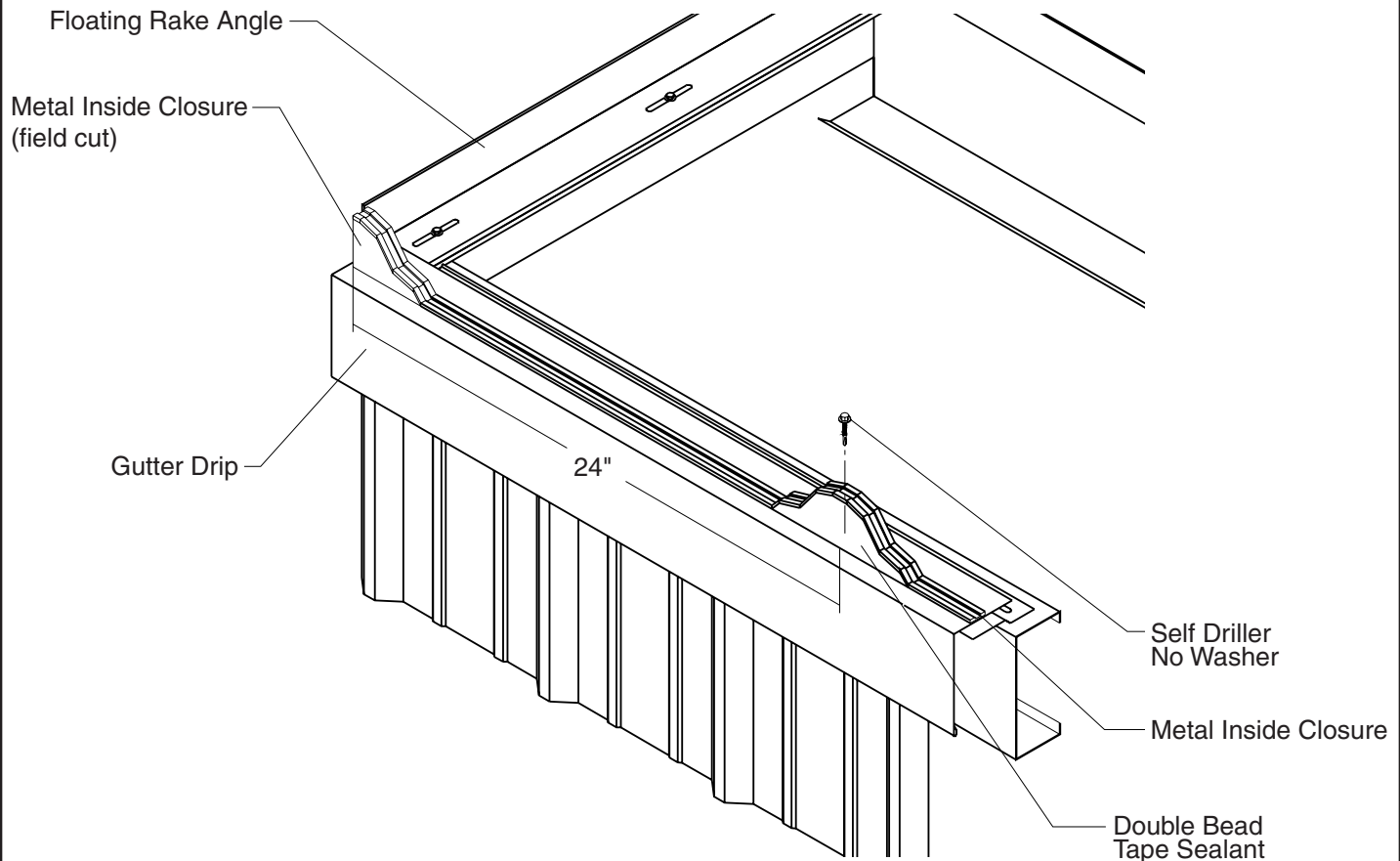
The following steps are for installing the Seam-Loc 24 Panel to accommodate for the Seam-Loc Sculptured Gutter and Gutter Drip Flashing.

**Note:** Eave, Gutter Drip, Gutter, Valley, or any low side flashing must be installed prior to installation of metal inside closure. The following steps are for installing Seam-Loc 24 from left to right On Module (full panel width). Seam-Loc 24 may be installed from right to left if end lapping of panels is not required See page 34 for off module panel installation.

**Metal Inside Closures can be installed prior to panel installation or as the panel installation occurs. The following steps are based on installing Metal Inside Closures as installation of each panel occurs.**

**Steps:**

1. Place a row of Double Bead Tape Sealant across top of Gutter Drip flashing. Be sure to place sealant where panel fasteners will be placed.
2. Starting at the left hand side of the building (looking eave to peak) measure from the vertical leg of the Floating Rake Angle along the Gutter Drip flashing and mark every 24". Care should be taken in measuring as this helps determine panel modularity.
3. Strip off the paper backing on the Double Bead Tape Sealant a few inches past the first mark.
4. Field cut a Metal Inside Closure in half and place on top of the Double Bead Tape Sealant flush with the end of the Gutter Drip flashing and Floating Rake Angle. Place next Metal Inside Closure so that the hole at the base of the closure lines up with the first 24" mark.
5. Fasten both Metal Inside Closures to the Gutter Drip flashing and Eave Plate with #12-14 x 1" Self Driller No Washer screws.
6. Apply Double Bead Tape Sealant across the top of the Metal Inside Closures and remove the paper backing.

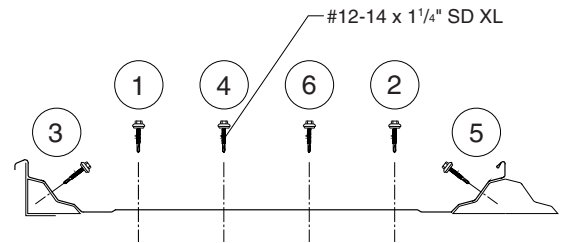
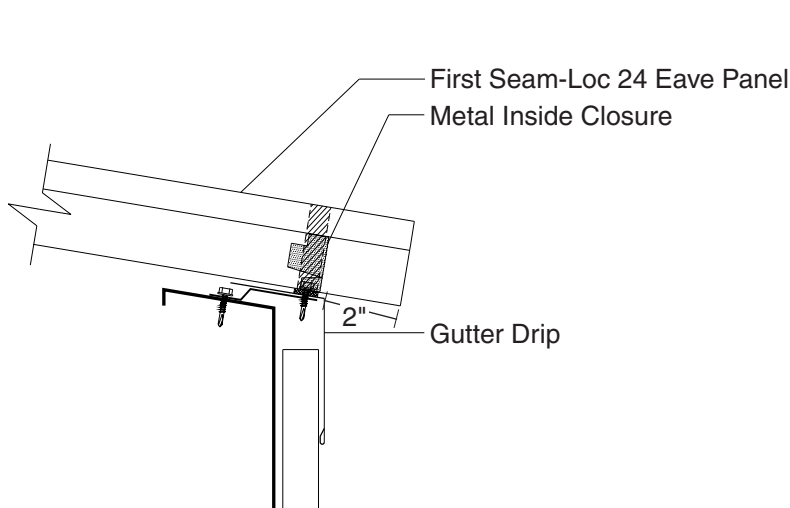
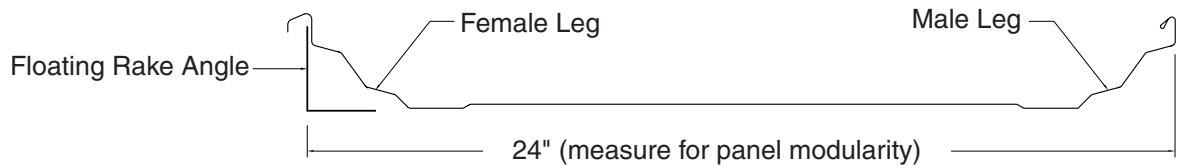


### INSTALLING FIRST PANEL

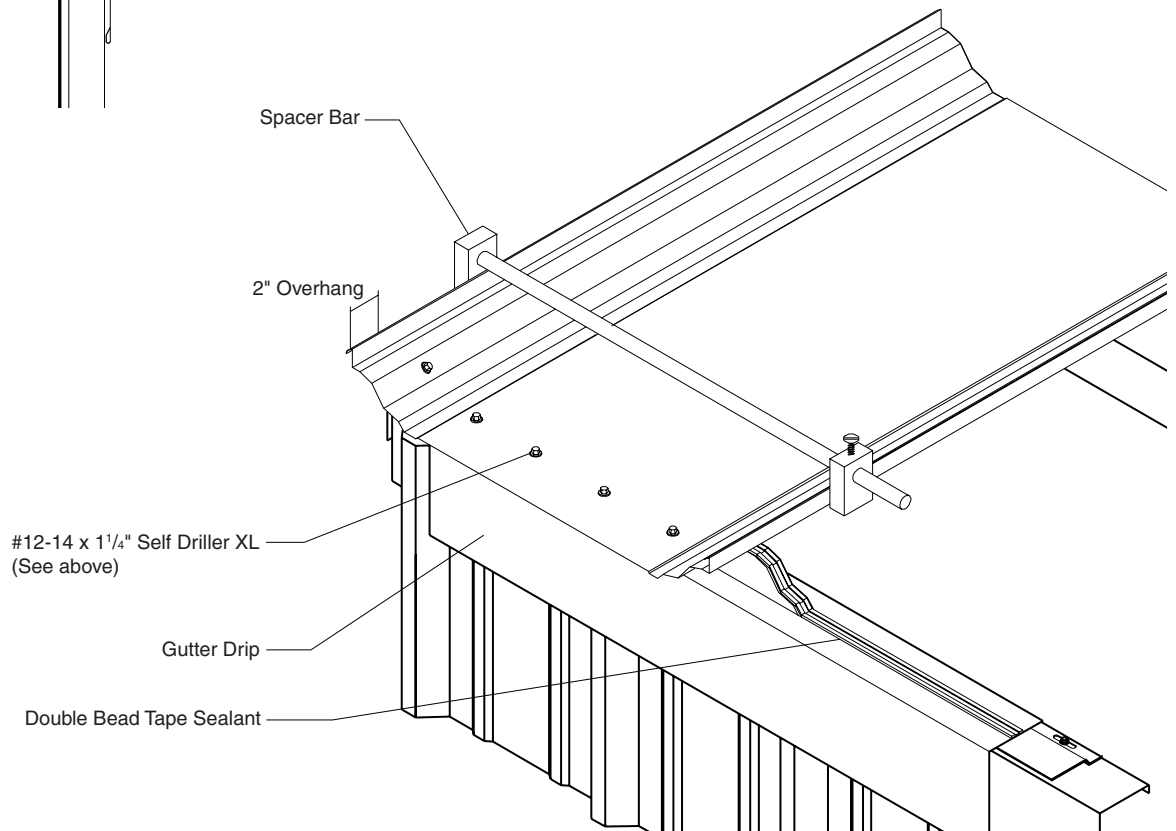
# STEP 4

#### Steps:

1. Position the first panel so the female leg is against the vertical leg of the Floating Rake Angle.
2. Slide the panel over the Gutter Drip flashing, 2" past finished wall surface.
3. Use a C-clamp to hold the panel against the vertical leg of the Floating Rake Angle.
4. Recheck the panel overhang dimension at Eave, Ridge, and Endlap.
5. Fasten panel through the Double Bead Tape Sealant and Gutter Drip flashing into the Eave Plate using (4) #12-14 x 1/4" Self Driller XL screws. Fasten panel rib through Double Bead Tape Sealant to Metal Inside Closures with (2) #12-14 x 1/4" Self Driller XL screws.



**Seam-Loc 24 Fastening Pattern**  
(Additional fasteners may be required at valley condition)



## INSTALLING PANEL CLIPS

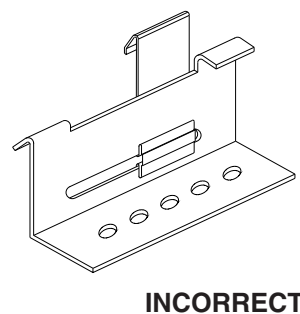
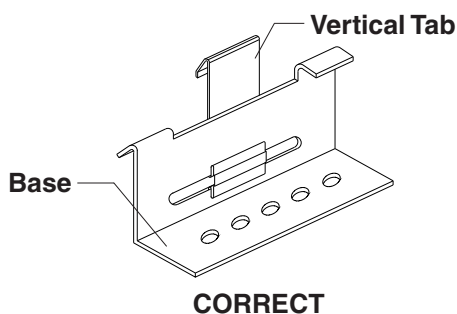
STEP  
5

**Note:** The following procedures are based on installing panel clips over steel purlins. For fastening clips to a substructure other than steel, (see page 20). Design wind uplift requirements and insulation thickness must be considered for proper selection of clip type, size, and spacing (see Systems Components chart on page 20).

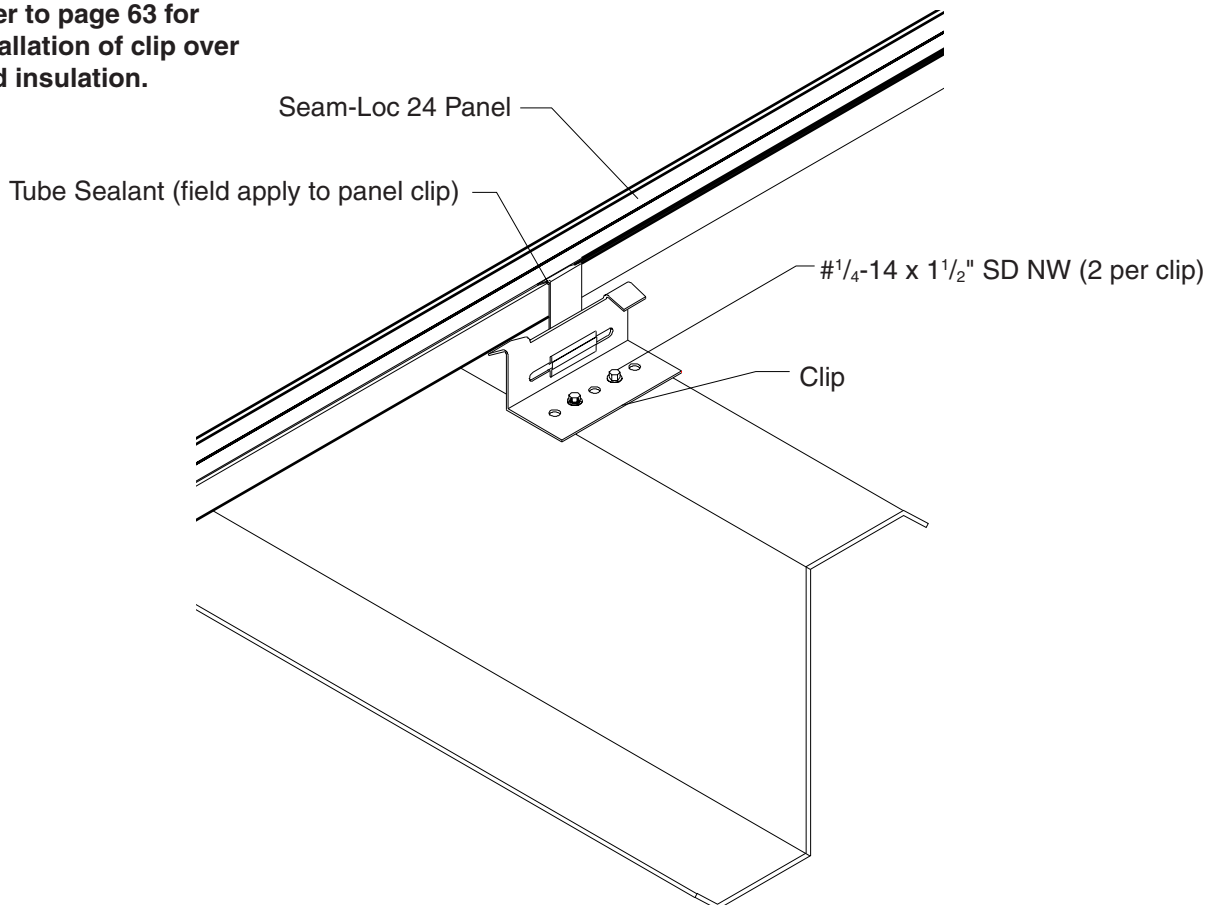
**Steps:**

1. Check vertical tab of clip is centered with the base. The clip must be aligned with the centering tab.
2. Place the panel clip over the male leg of panel and center the base of the clip with the center of the top flange of the purlin.
3. Rotate the clip to a vertical position so that the base of the clip rests on the top flange of the purlin.
4. After installing clips along the male leg of the panel, measure across the pan of the panel to confirm panel modularity. Use the Spacer Bar to hold panel modularity.

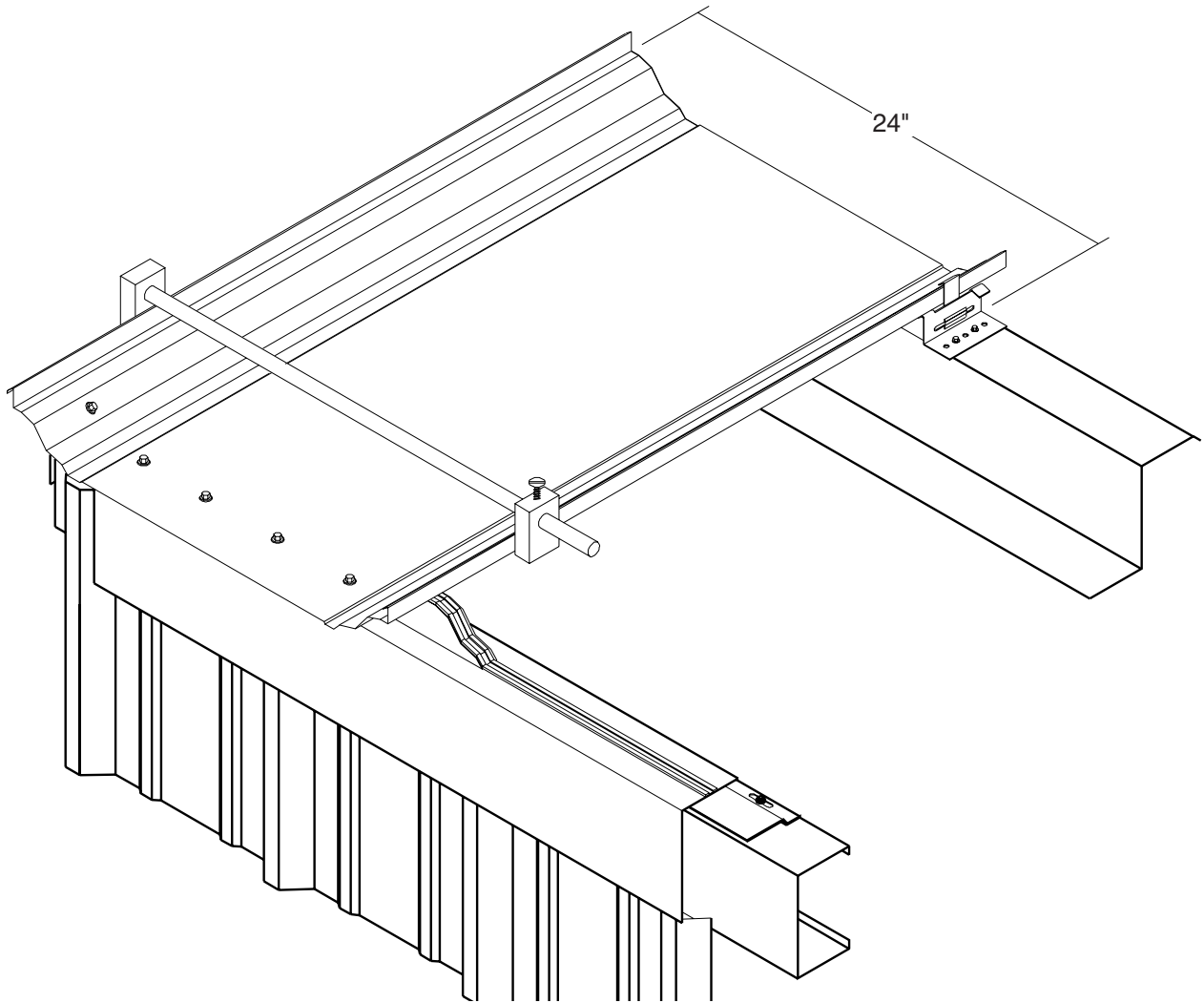
Refer to the chart for determination of the proper clip size. Correct clip size must be used for panel system to function properly.



Refer to page 63 for installation of clip over rigid insulation.



## INSTALLING PANEL CLIPS (CONT.)



5. If Thermal Blocks are required, slide thermal block under panel prior to fastening clips.
6. Fasten clip to purlin with (2) #1/4-14 x 1½" Self Driller No Washer screws.
7. Clips should be installed at all purlin intersections. **Panel clips are not required at eave framing members.**
8. If installing over insulation, some method of finding the purlins for clip location must be used. Insulation should be installed as panels are installed allowing for ease of locating purlins.

**CAUTION**

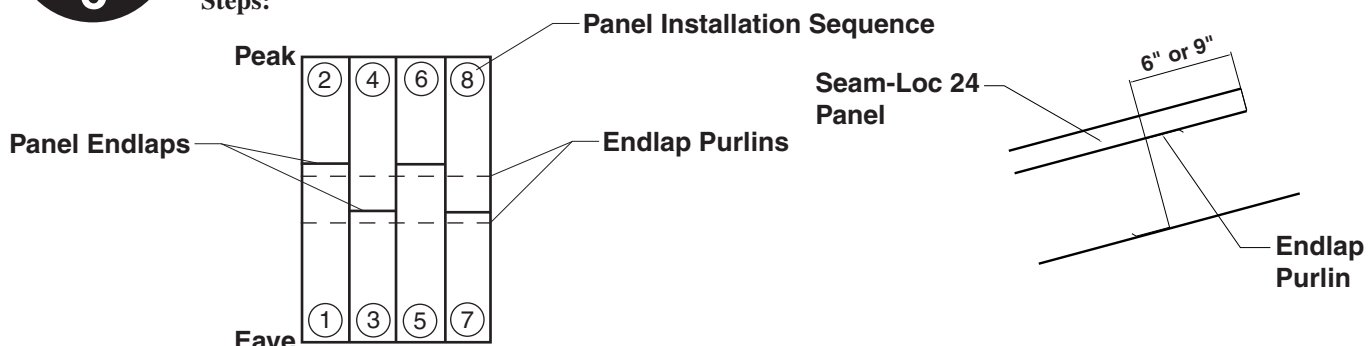
If a fastener strips out, you must remove the clip and reposition so the fastener can drill a new hole at least  $\frac{3}{8}$ " from the stripped hole or install an oversized fastener in the stripped hole. Failure to do this will result in weakening the roof wind uplift resistance.

### ENDLAPPING OF PANEL

# STEP 6

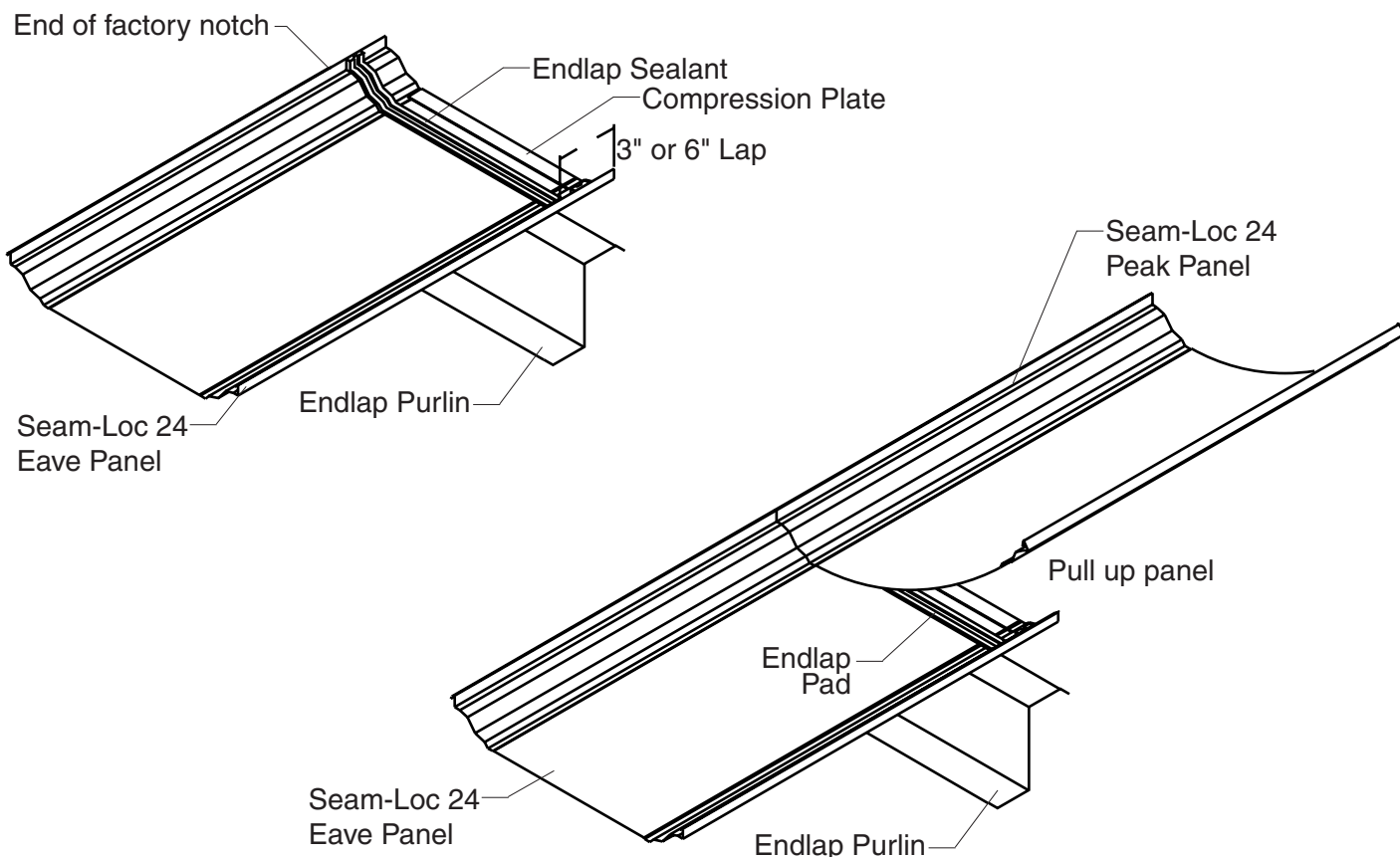
**Note:** It is critical that purlins at the ridge and endlap be exactly located as detailed on construction drawings. Panels with endlaps must be fixed at the eave. Endlap splices are to be staggered as shown. The following procedures also apply to panel runs with multiple laps.

Steps:



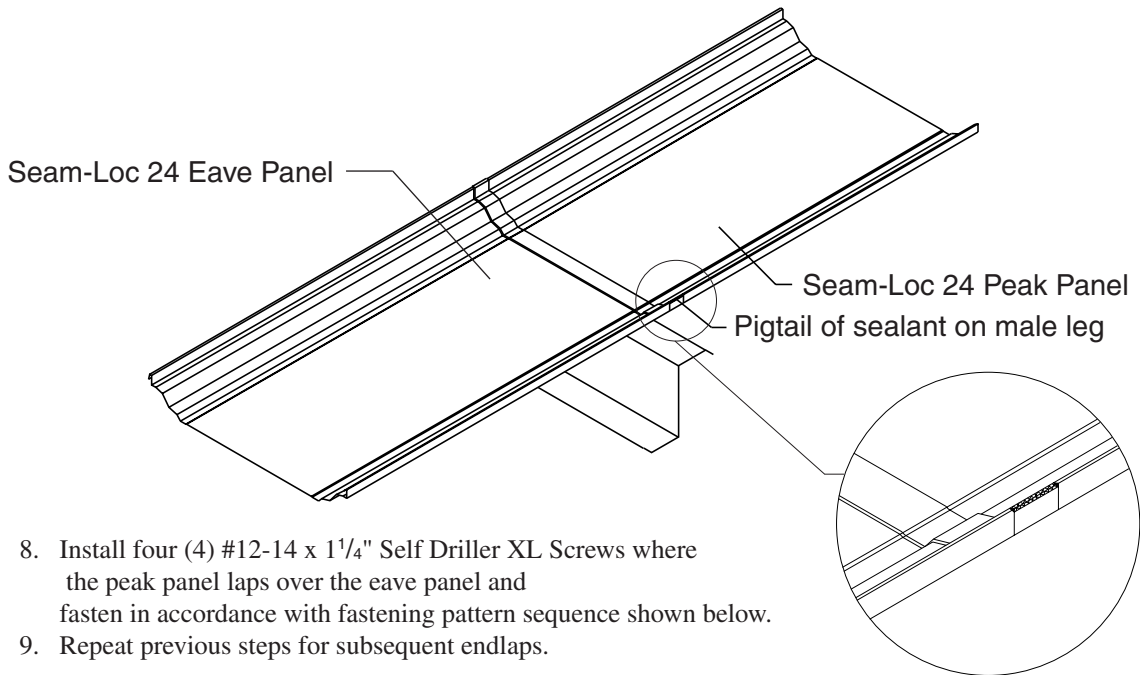
### Staggered Endlapping

1. The installed eave panel should measure 6" or 9" from the web of the endlap purlin to the end of the eave panel. (6" for panels produced in Longmont, CO / 9" for panels produced at all other branches) This dimension must be verified. If the panel exceeds this, verify that the eave overhang dimension is correct.
2. Slide Compression Plate under panel in center of endlap and cee clamp to panel to hold in place for attachment.
3. The male and female legs of the high end of the eave panel are factory notched to allow the peak panel to nest inside the eave panel.
4. Apply Endlap Pad on the notched end of the eave panel down male leg, across panel flat, and up the female leg  $\frac{1}{2}$ " to  $\frac{3}{4}$ " from the end of the panel.
5. Lap the female leg of the peak panel into the female leg of the eave panel lapping the proper 3" or 6".

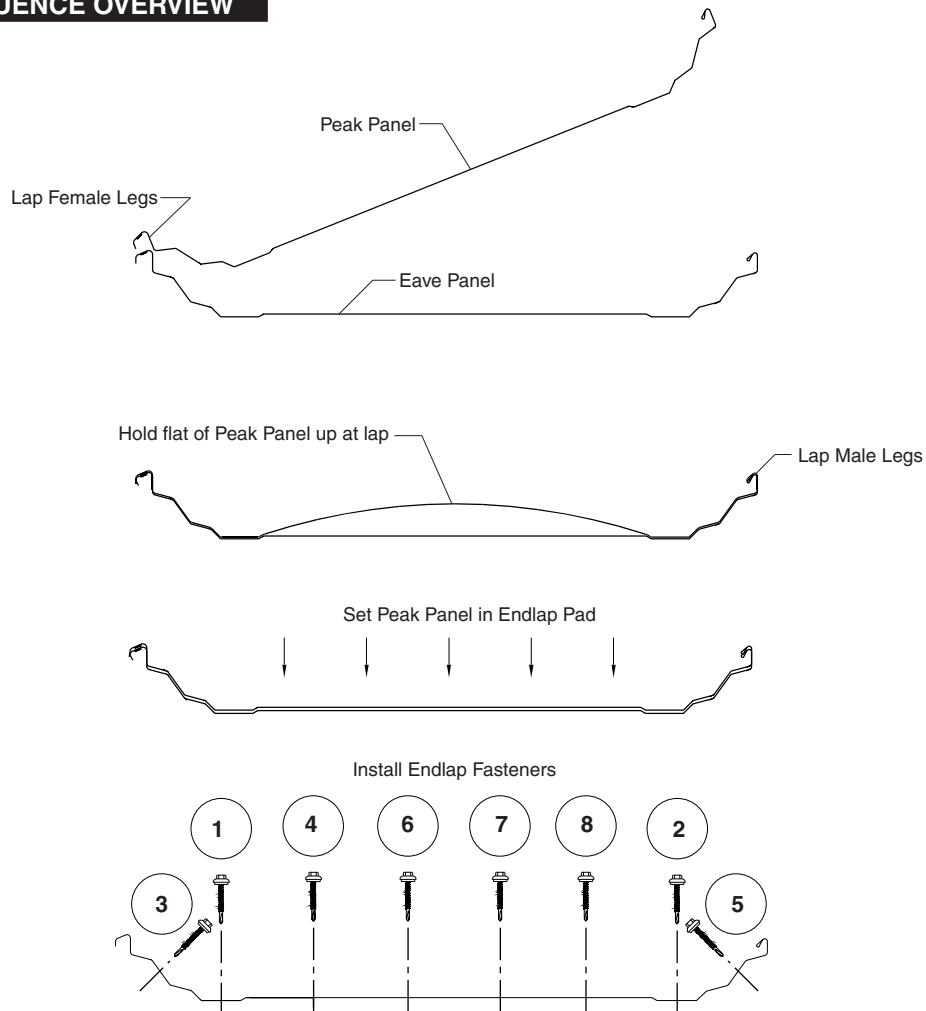


### ENDLAPPING OF PANEL (CONT.)

6. Nest the flat of the peak panel into the eave panel.
7. Apply a pig tail of Endlap Pad on the top side of the male leg where panel notch occurs.



### ENDLAPPING SEQUENCE OVERVIEW





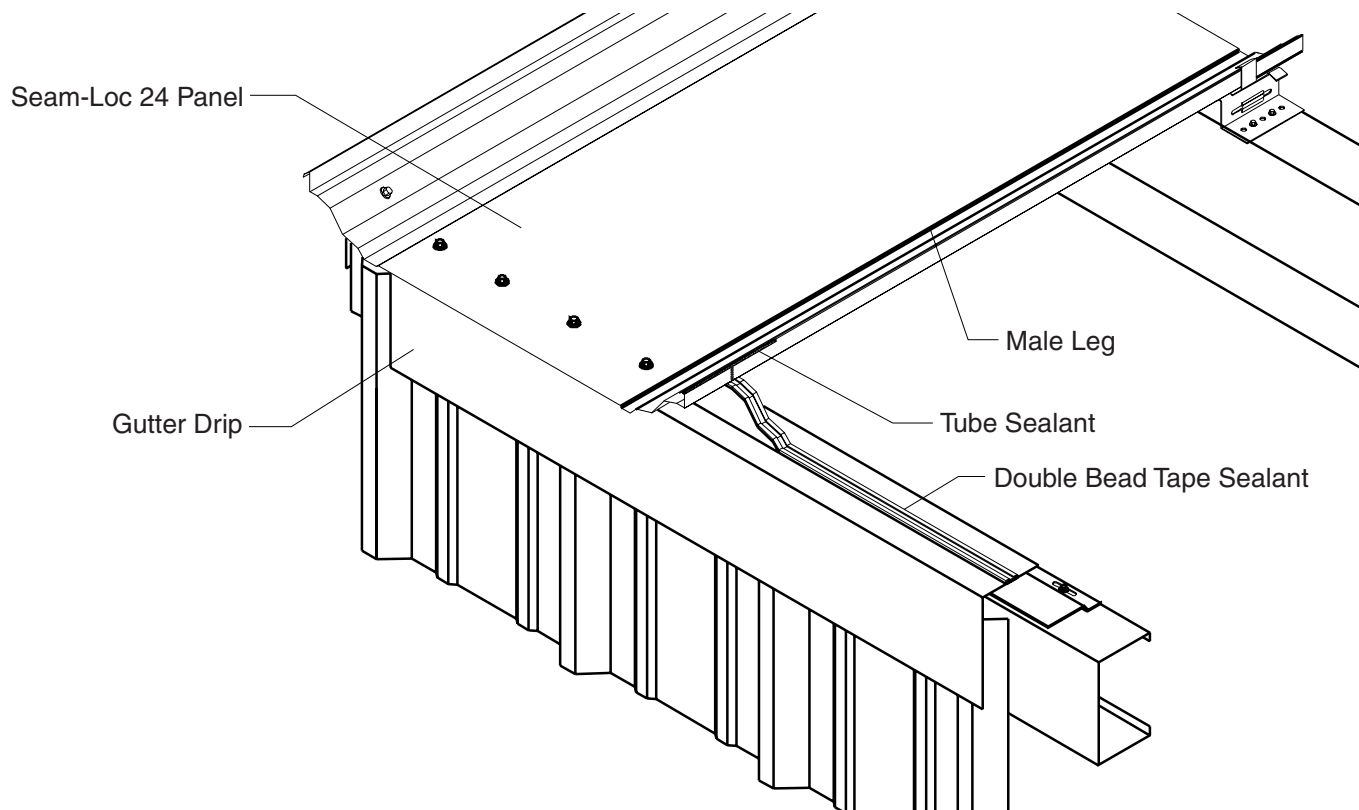
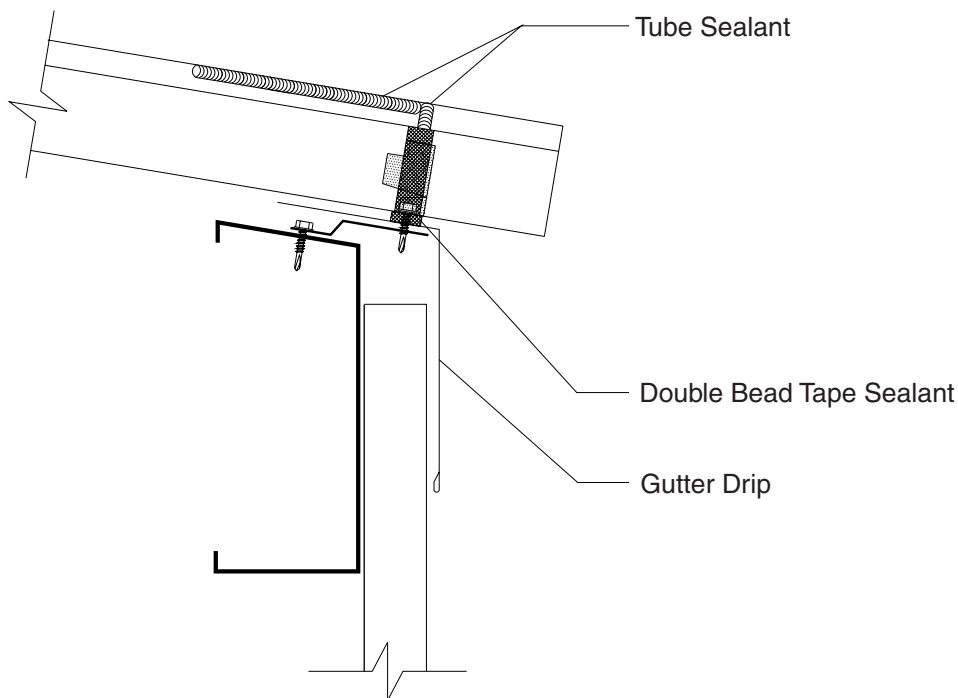
## SIDELAPPING OF PANEL

STEP  
7

**Note: It is critical that sealants be properly placed to prevent moisture leakage.**

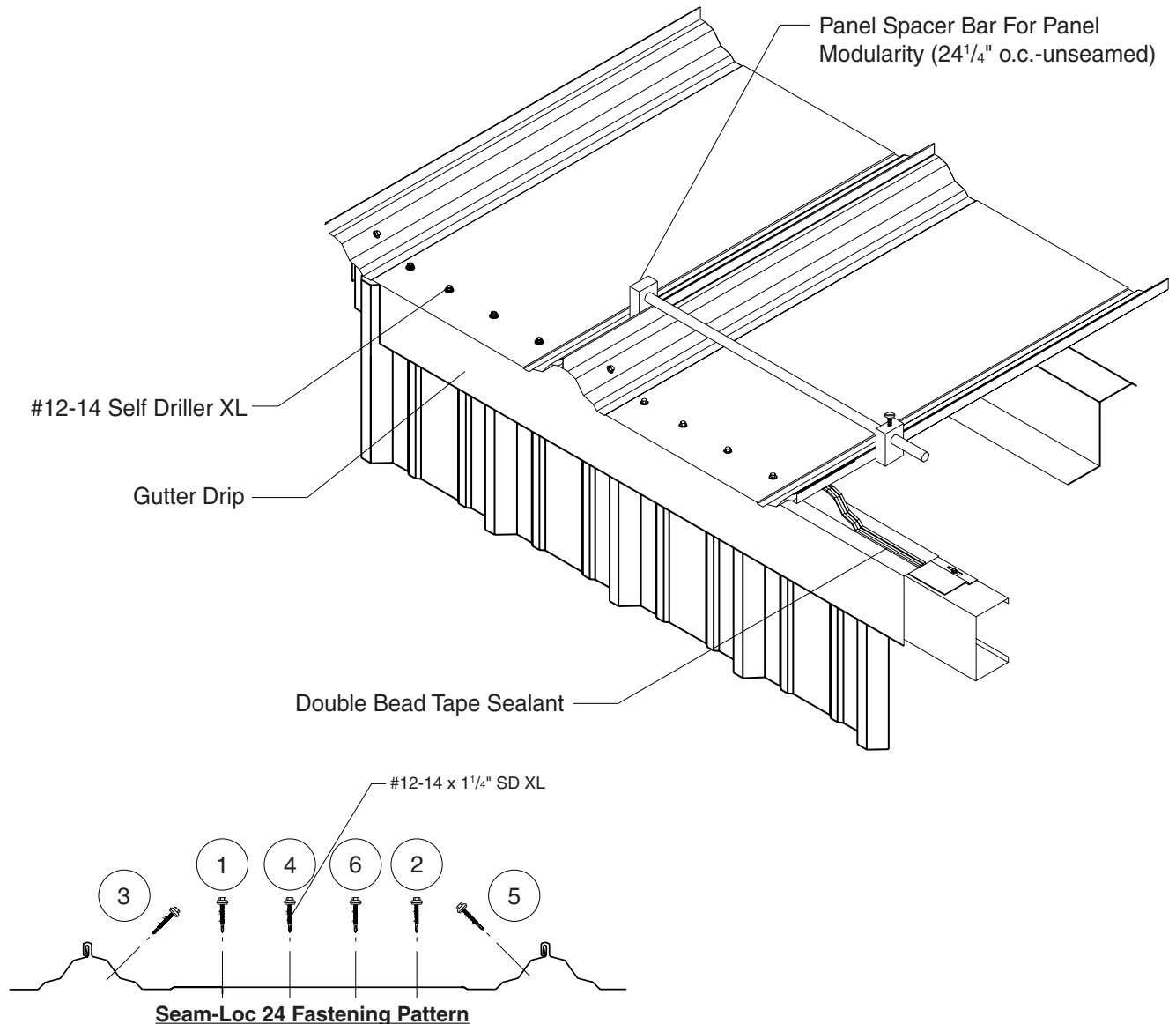
**Steps:**

1. Apply a  $\frac{3}{8}$ " bead of Tube Sealant along the vertical male leg of the panel directly over the Double Bead Tape Sealant on the metal inside closure. Be sure the Tube Sealant joins with the Double Bead Tape Sealant.
2. Apply a  $\frac{3}{8}$ " bead of Tube Sealant 6" long across to top of the male leg.
3. Peel back the paper backing covering the Double Bead Tape Sealant at the eave flashing previously installed.



### SIDELAPPING OF PANEL (CONT.)

4. Roll the female leg of the second panel into place over the male leg of the first panel so their ends are flush.  
Do not let the flat of the second panel touch the Double Bead Tape Sealant at the eave until the ends are flush.
5. Use Cee Clips to hold the two vertical legs of the panel seams together.
6. Fasten panel through the Double Bead Tape Sealant and Gutter Drip flashing into the Eave Plate using (4) #12-14 x 1/4" Self Driller XL screws. Fasten panel rib through Double Bead Tape Sealant to Metal Inside Closures with (2) #12-14 x 1/4" Self Driller XL screws.
7. Measure the distance from the female leg of the first panel installed. This dimension should be and even multiple of 24"-1/4" for every four panels. It is very important that the dimension from the start panel to the last male leg, at the eave and peak, be the same dimension within a 1/4" of each other.
8. Make certain that all clips are properly installed and that the panel sidelaps are properly positioned to be seamed.



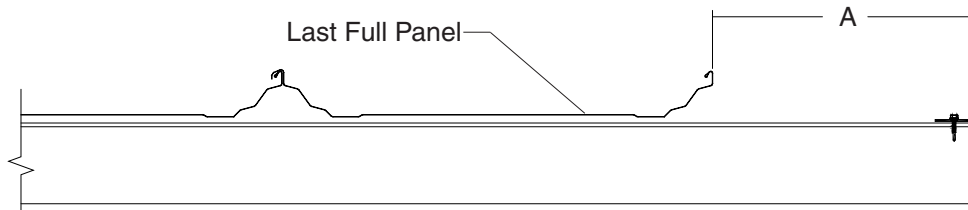
## TERMINATION OF PANEL

STEP  
7

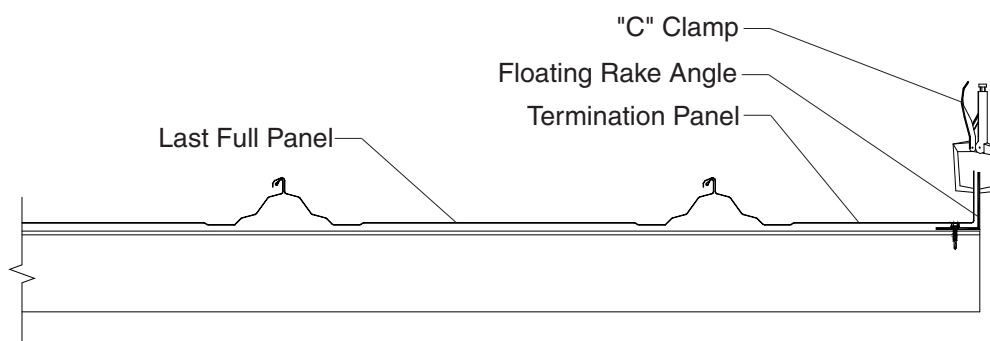
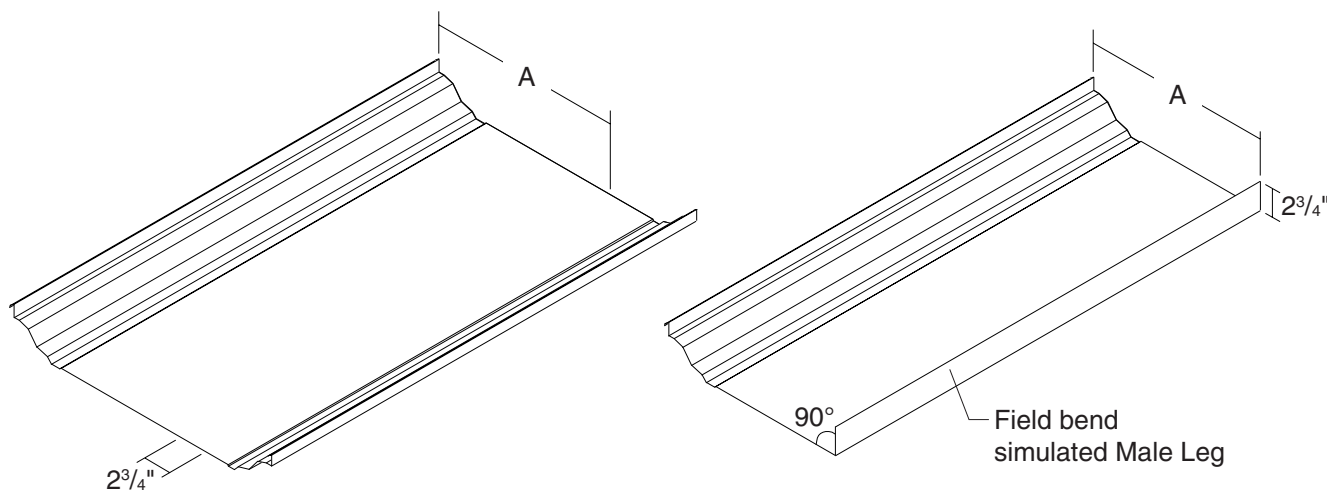
**Note:** The following steps are for terminating a panel run when the pan width exceeds the width of the building.

**Steps:**

1. When the roof panel installation has reached the opposite end of the roof, the last panel run may need to be field modified to attach to the Floating Rake Angle previously installed.
2. Measure the distance between the vertical leg of the last full panel run and the vertical leg of the Floating Rake Angle at the eave, endlap, and peak. See dimension "A".
3. Determine if a full panel will fit between the last full run and the Floating Rake Angle. In most cases it will not fit. If the full panel will fit, then continue with the installation of the roof. When the last panel is installed the vertical leg of the male side must fit flush with the Floating Rake Angle.



4. If a full panel is too wide to fit between the last full panel run and the Floating Rake Angle, a panel will have to be field cut and bent to simulate a male leg.
5. Use the dimension "A" and mark a line on the last panel to serve as the bend line. Mark a second line to match rake angle height past the bend line to be the line you will cut off the excess panel.
6. Field bend the roof panel up 90 degrees to form a vertical leg.
7. Place termination panel between last full panel and vertical leg of Floating Rake Angle making sure the panel fits properly.
8. Clamp termination panel to leg of Floating Rake Angle until Rake Detail is to be installed. (See page 41 for details.)



## SEAMING PANELS

**Note:** The Seam-Loc 24 panel system requires the use of a mechanical seamer for proper installation. The mechanical seamer runs from ridge to eave with Seam-Loc 24 panels laid from left to right. This necessary seamer is designed to seam the panel clips and the vertical legs of the panel together for weathertightness and resistance to wind uplift loads.

- Rental or purchase of the Seam-Loc 24 mechanical seamer and hand crimpers for field seaming are the responsibility of the installer. Mechanical seamers and hand crimpers can be acquired from Seamer Tools, Inc. Phone No. (662) 895-1222.
- Read the field manual that is enclosed in the case with the seamer. The operator should adhere to all instructions for proper use of the seamer. Failure to follow the required instructions may result in damage to the panel and/or seamer. Metal Sales Manufacturing Corporation will not be responsible for damage incurred by improper use of the seamer.

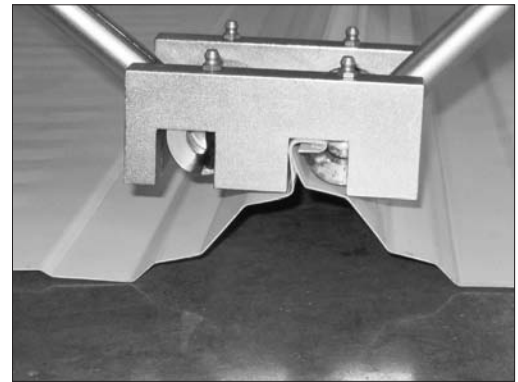
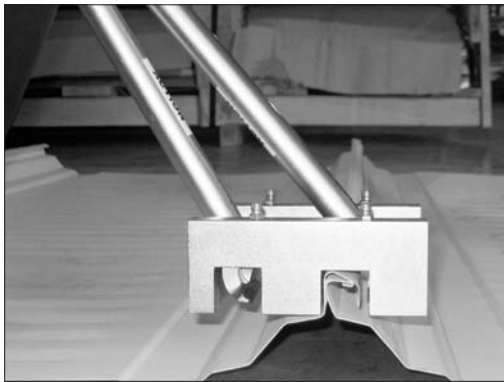
**Preparation Notes:**

1. Check to insure all components are in the shipping container:  
Electric Seamer, Handle Assembly, and Hand Crimper.
2. Read instructions completely and then check roof system for proper installation.
3. Clean and remove all construction debris to avoid damage.
4. Panels MUST be hand crimped 6-8 inches per Step 1 at the start end of each panel row and endlaps. Metal Sales recommends panels be seamed as soon as possible to prevent wind damage.
5. If panels are installed from left to right (looking from eave to ridge), electric seamer will run down slope from ridge to eave.
6. Panels may be hand crimped per Step 1, only at clips, until electric seamer is used.

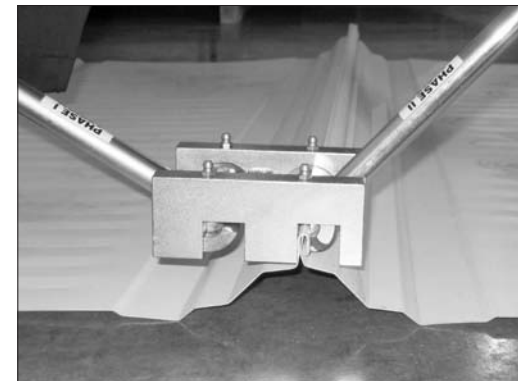
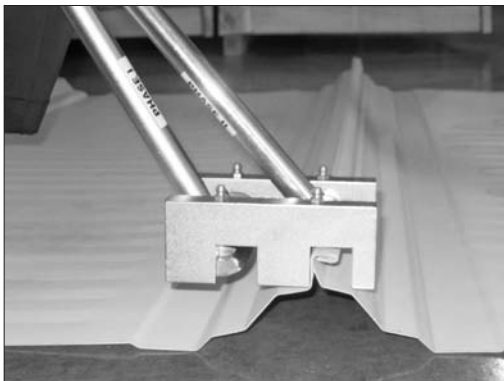
**STEP 1 - Required Hand Crimping Before Seaming:**

Begin at the seaming start end of the panel. Place the "Phase 1" slot of the hand crimper over the panel rib with the "Phase 1" handle on the open side of the panel rib. Engage the tool to a fully closed position. Hand crimp the first 6-8 inches. In high wind situations, Step 1 can be done at clip locations to hold panels in place until electric seamer is used. Make sure hand crimper does not flatten rib of panel. Step 1 should also be applied at all endlap conditions.

NOTE: Step 1 should be applied at each panel clip location if you are NOT going to run the mechanical seamer after you apply each panel. Metal Sales recommends that panel ribs be mechanically seamed before the end of each working day.

**STEP 2 - Required hand Crimping only at the START END of the panel to be seamed:**

Place the "Phase 2" slot onto the open side of the panel rib at the very end of the panel to be seamed, and engage the handle to a fully closed condition as shown. Hand crimp only the first 3-4 inches. Do not use "Phase 2" slot at a clip condition prior to using the Electric Seamer.



## SEAMING PANELS (CONT.)

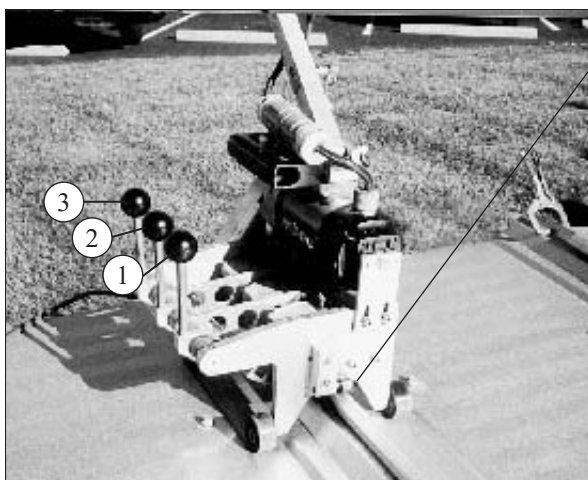
**STEP 3 - Electric Seaming:**

A. Place the electric seamer in position at the start end of the panel and engage the three handles to the fully locked position. Pull the handles in order of #1, #2, and #3 (See Photo 3A). Make sure the forming rolls are on the open side of the panel rib. Start the electric seamer and let run for 2 feet. Stop electric seamer and check seam. Continue if seam is correct.

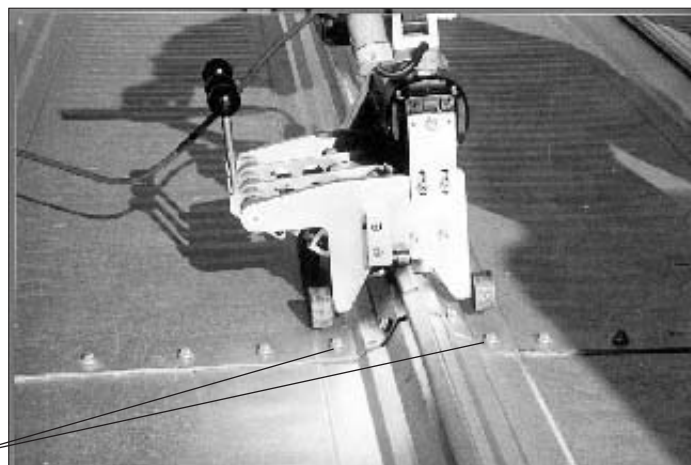
B. Stop electric seamer before endlap screws in panel at endlap condition (See Photo 3B). Failure to stop before these screws will cause electric seamer wheels to hit screws and disengage electric seamer. Disengage the electric seamer from the panel and hand crimp endlap condition and 8-10 inches past endlap per Step 1 and Step 2. Move electric seamer to other side of endlap and continue seaming.

C. Disengage the electric seamer from the panel and move it to the start of the next panel rib.

**NOTE: The Seam-Loc 24 electric seamer is a single direction machine. If panels are installed from left to right (looking from eave to ridge), electric seamer will run down slope from ridge to eave. If panels were installed on a gable building from one side of the building to the other, the seamer will start at the ridge on one side of the building and start at the eave on the other side of the building.**



**Photo 3A Electric Seaming**



**Photo 3B Electric Seaming at Endlap**

Panel ends, panel endlap conditions or any other areas, that the electric seamer did not seam will need to be hand crimped to complete seam as outlined in Step 1 and 2.

**NOTE: Do NOT hand crimp per Step 2 at any panel clips.**

**NOTE: Keep the forming rolls on the seamer CLEAN**

**At completion of seaming, repack tool and return to:  
Seamer Tools, Inc.**

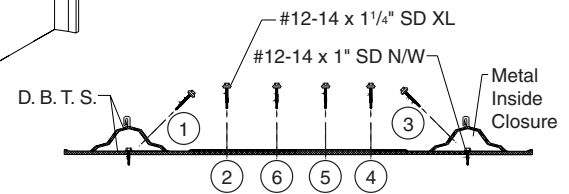
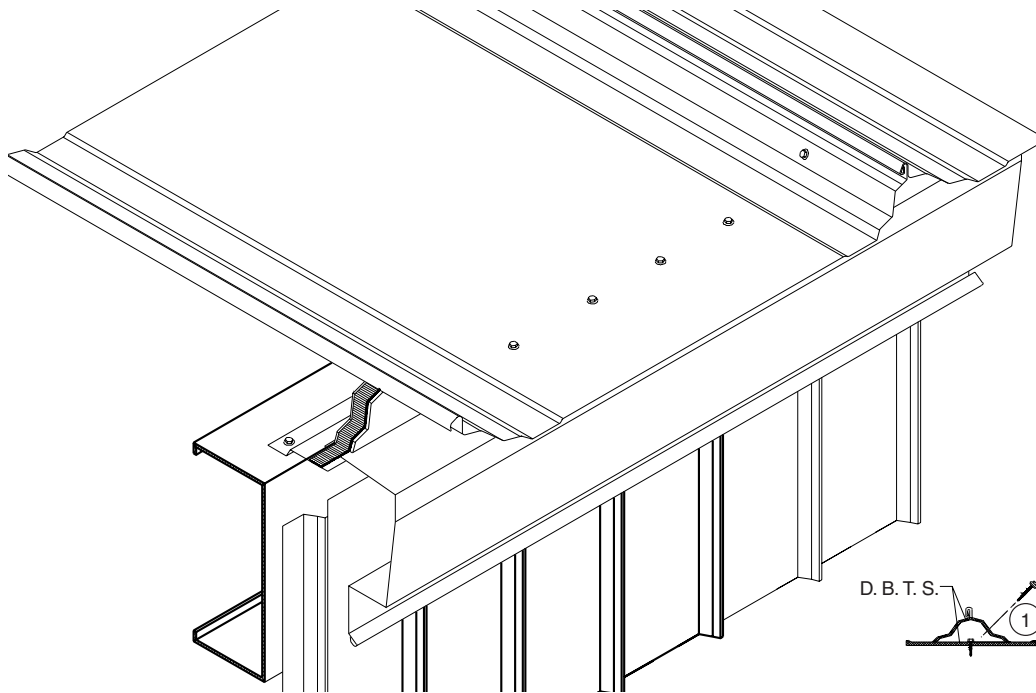
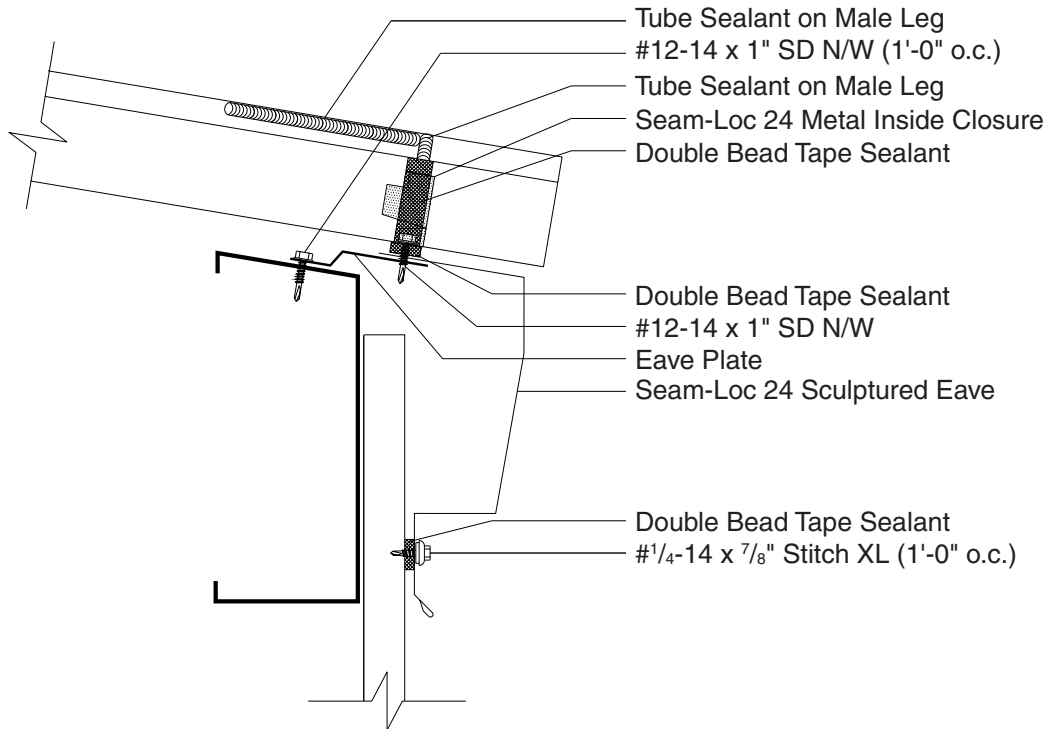
**8265 Highway 178 Olive Branch, MS 38654.**

**Phone No. (662) 895-1222, Fax No. (662) 890-4775.**

**CAUTION**

**Do not run the seamer off the end of the panel. If the seamer is run off the end of the roof it could cause injury to personnel and damage the roof or the seamer (see seamer instructions enclosed in the case for additional information about the proper handling of the seamer).**

**1/4:12 Slope  
Minimum**



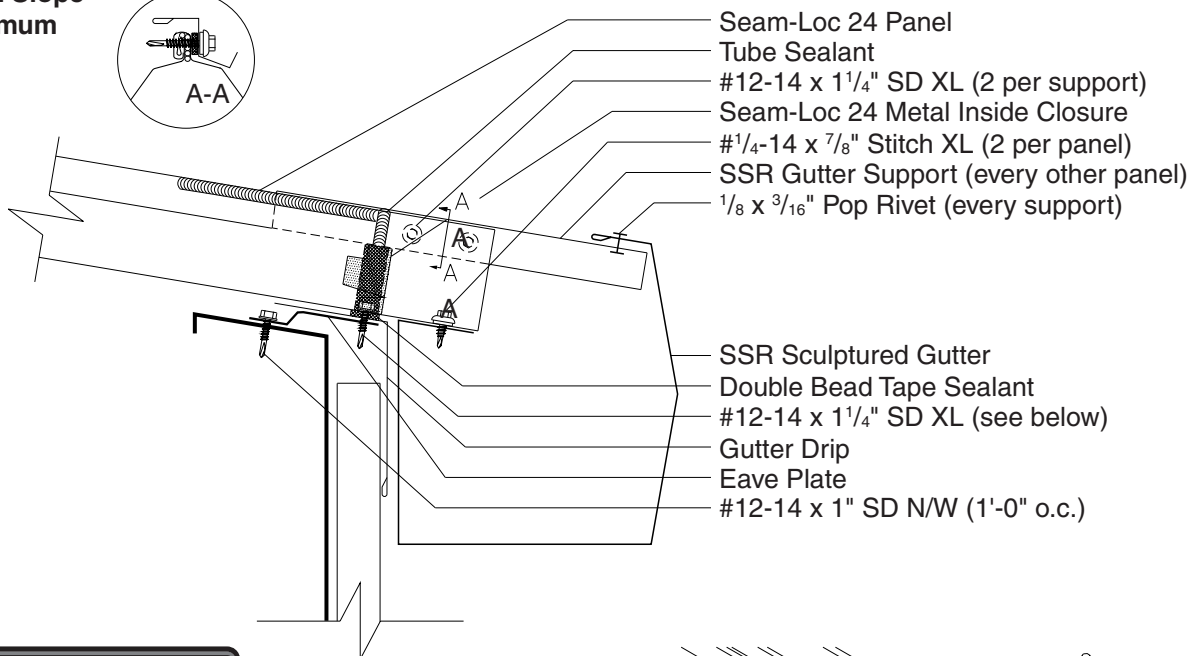
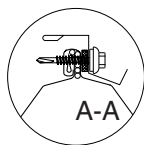
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

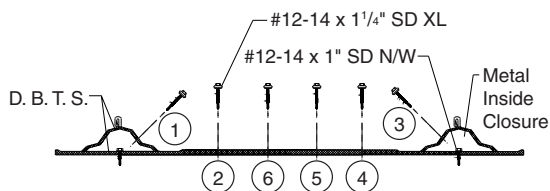
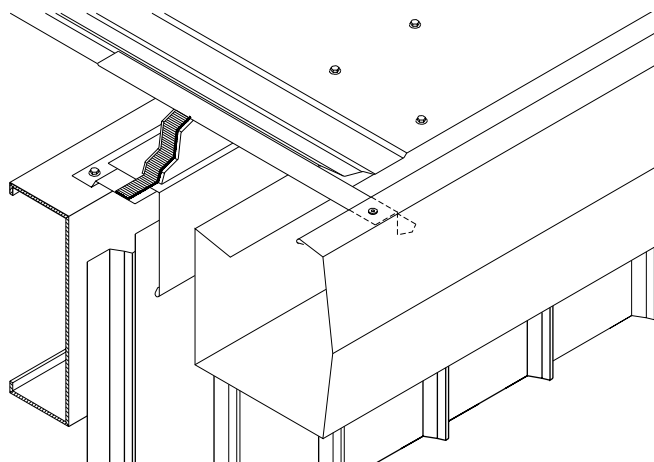
**All Eave flashings must be installed prior to panel installation.**

1. Install Sculptured Eave back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Sculptured Eave in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c.
2. Fasten Sculptured Eave to wall with appropriate fastener, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Sculptured Eave so that sealant is centered over top leg of Eave Plate.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.
5. Once panels and inside closures have been installed and properly sealed, (See page 26), fasten through panel, Double Bead Tape Sealant, and Sculptured Eave into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.

**1/4:12 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.



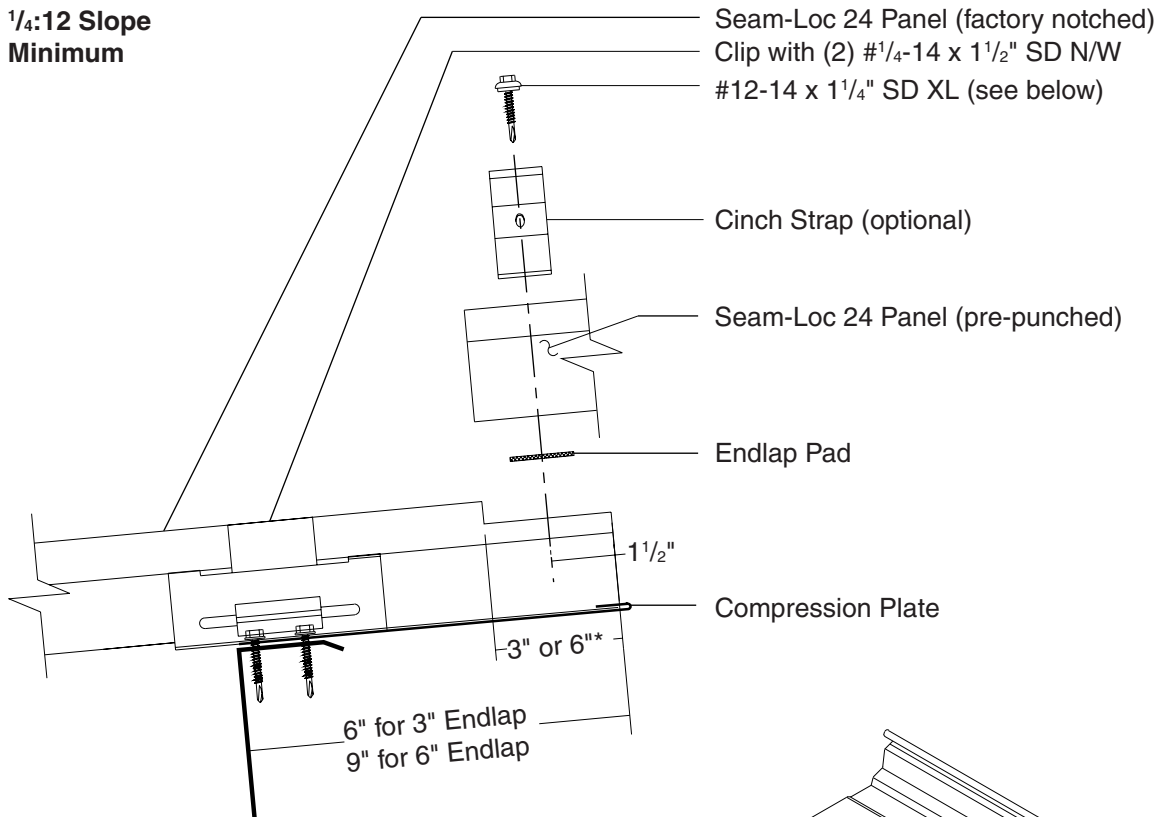
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

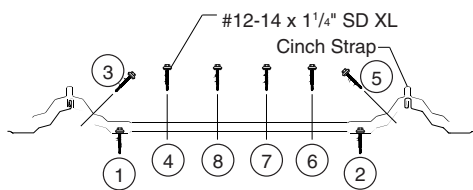
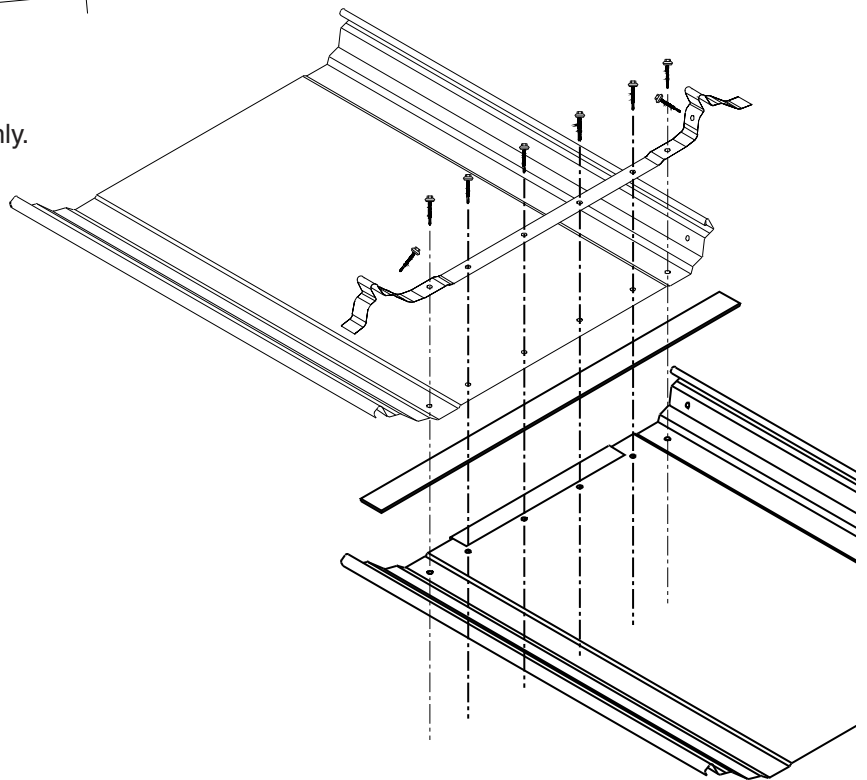
**Gutter Drip Flashings must be installed prior to panel installation.**

1. Install Gutter Drip back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Gutter Drip in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c.
2. Apply a row of Double Bead Tape Sealant across Gutter Drip so that sealant is centered over top leg of Eave Plate.
3. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2"
4. Once panels and inside closures have been installed and properly sealed, (See page 26), fasten through panel, Double Bead Tape Sealant, and Sculptured Eave into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.
5. Attach the SSR Gutter Support to the panel rib every other panel (48" o.c.) with (2) #12-14 x 1 1/4" Self Driller XL screws. Fasteners must be applied down slope of the sealant line. Do not apply screws up slope of the sealant line. The SSR Gutter Supports can be adjusted in or out to allow the gutter to be installed in a straight line, even if the edge of the roof is not straight.
6. Prepare the first gutter section with a Sculptured Gutter End. Consider rake to gutter connection for proper placement of Sculptured Gutter End and the gutter flashing. Fasten with (8) #1/4-14x7/8" Stitch XL screws or Pop Rivets.
7. Position the gutter over the SSR Gutter Supports with one end against the Rake flashing and rotate gutter into position.
8. Clamp the top of the back lip of the gutter in position with a C-clamp. Install a #1/4-14 x 7/8" Stitch XL screw or Pop Rivet where the front lip of the gutter rests on the SSR Gutter Support, and fasten the back lip of the gutter to the panel flat with (2) #1/4-14 x 7/8" Stitch XL screw per panel.
9. Field miter the rake trim to fit the gutter contour at the corner of the building or install a SSR Sculptured Corner Box.
10. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with #1/4-14 x 7/8" Stitch XL screws or Pop Rivets, 2 1/2" o.c.

**1/4:12 Slope  
Minimum**



\* 3" Endlap produced at Longmont Branch Only.



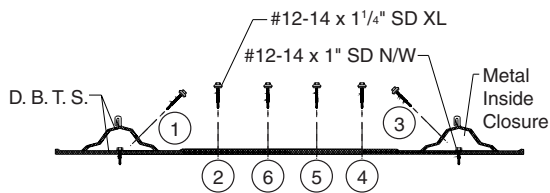
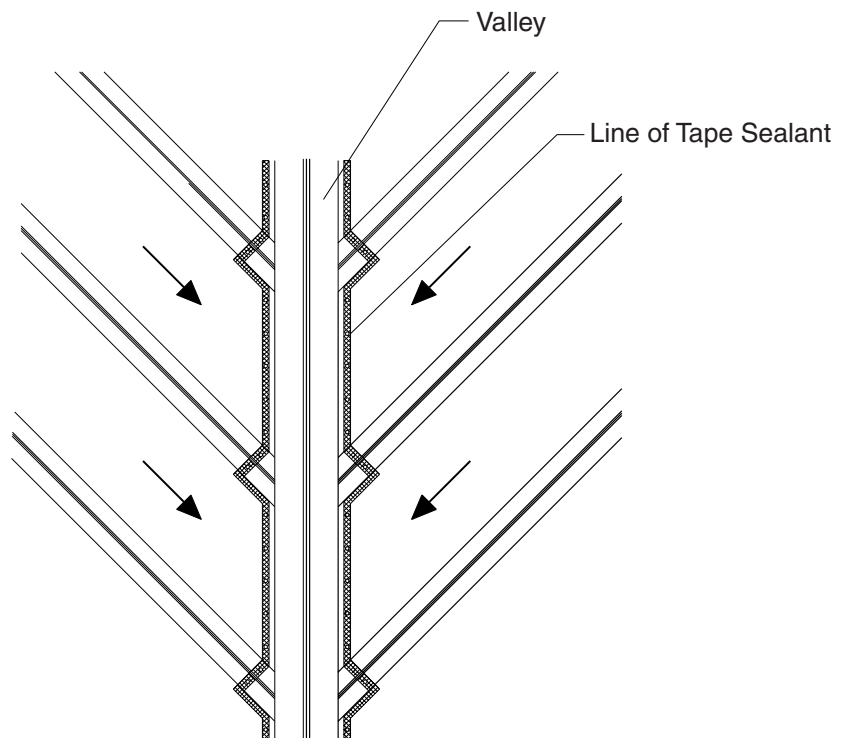
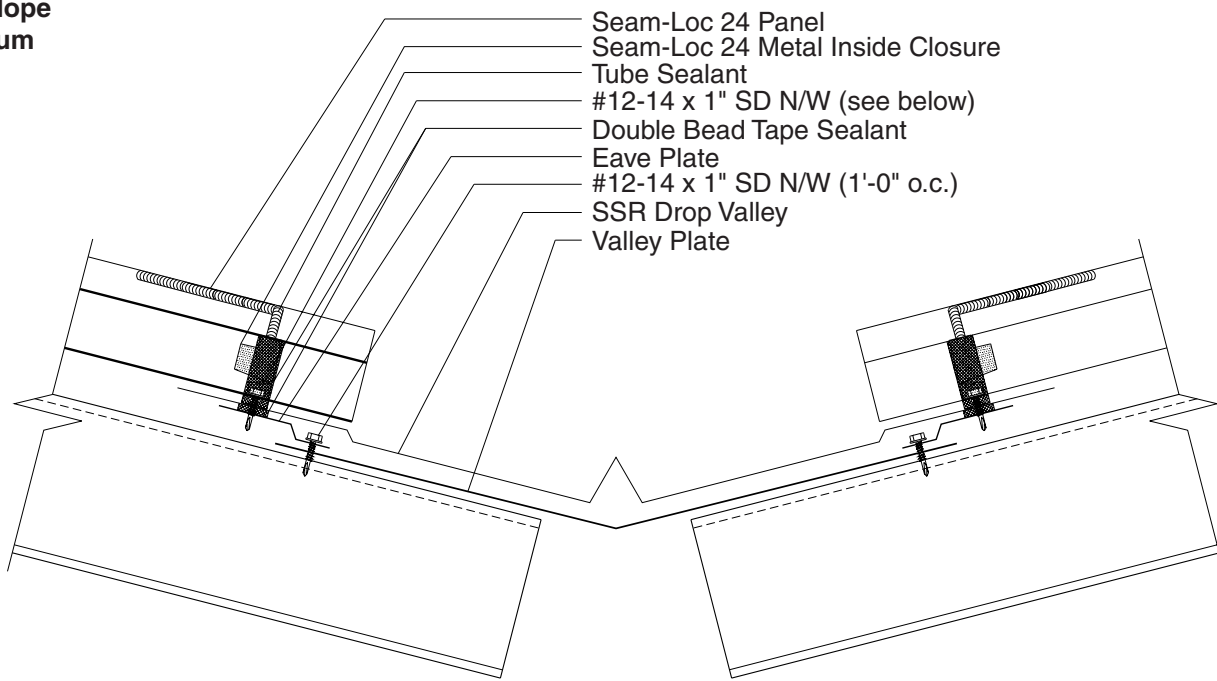
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

1. Once eave panel has been installed, (see pages 30-31), slide a Compression Plate under upper edge of panels. Compression Plate should be flush with edge of Seam-Loc 24 eave panel. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Endlap Pads across flat pans, up and over all ribs of eave panels. Endlap Pad should be flush with edge of eave panel.
3. Roll Seam-Loc 24 peak panel into place and nest with eave panel so that factory notch is completely covered. (See page 30 for complete details on installing lapped panels.)
4. With peak panel in place, fasten panel endlap with (8) #12-14 x 1 1/4" Self Driller XL fasteners per panel through factory punched holes and into the Compression Plate.
5. Apply a pig tail of Endlap Pad, approximately 2 1/2", over factory notched section of male legs.



6:12 Slope  
Minimum



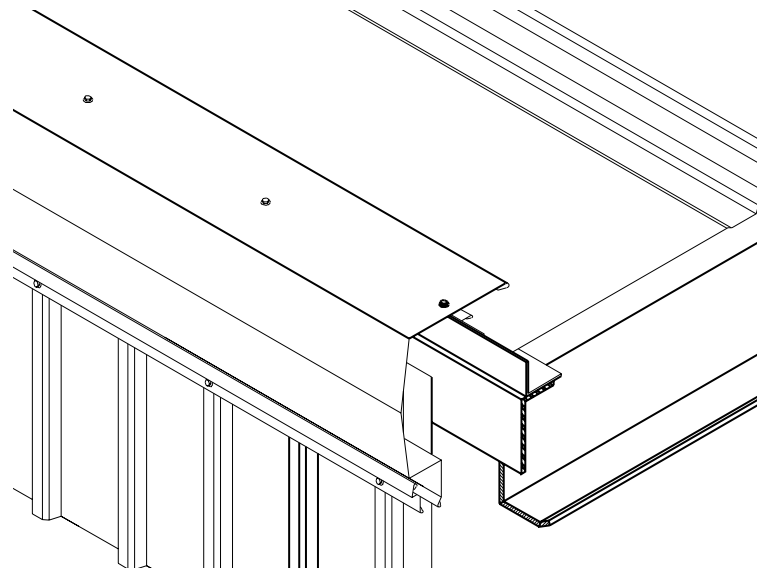
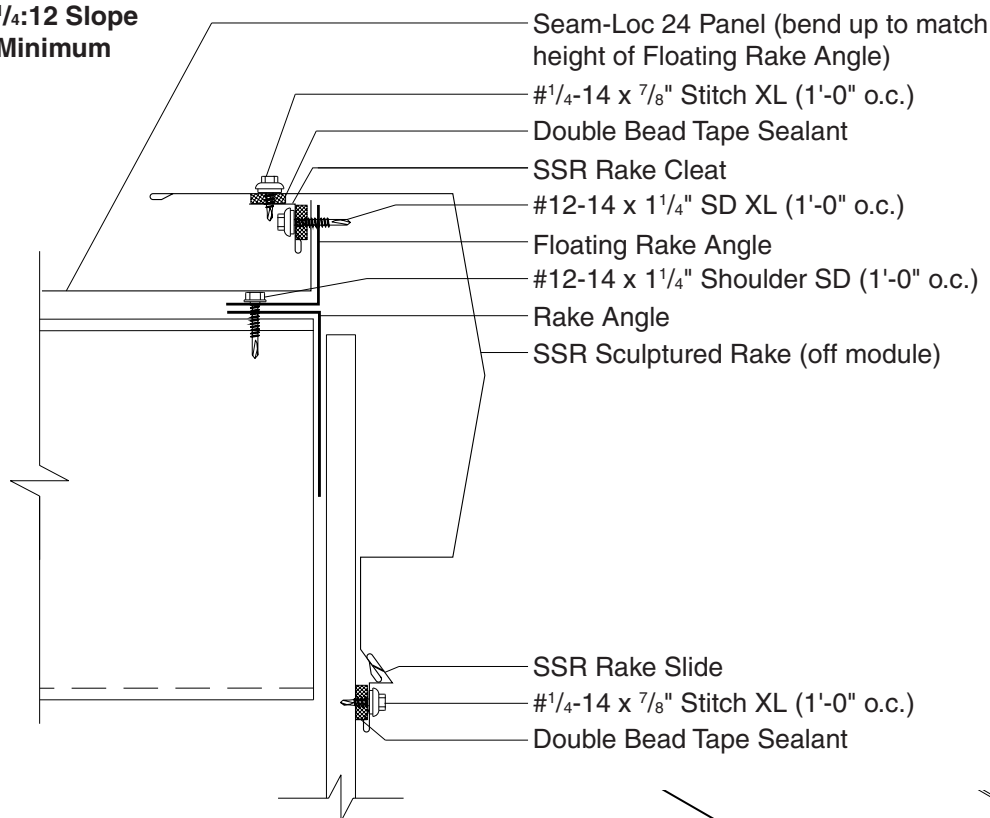
Seam-Loc 24 Fastening Pattern

### INSTALLATION NOTES

All Valley flashings must be installed prior to panel installation. If two or more Valley flashings are required, valley must be installed working from eave to peak. It is recommended that ice and water shield be installed under Valley flashing for added moisture protection.

1. Install Drop Valley flashing back against previously installed Eave Plates. To hold Valley in place, fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c. into top leg of Eave Plate.
2. Apply a row of Double Bead Tape Sealant across both sides of the Drop Valley flashing so that the sealant is centered over the top leg of the Eave Plate.
3. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 6" placing two beads of Tube Sealant per side between the flashings.
4. Once panels and inside closures have been installed and properly sealed, (See pages Tape Sealant, and Sculptured Eave into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.

**1/4:12 Slope  
Minimum**

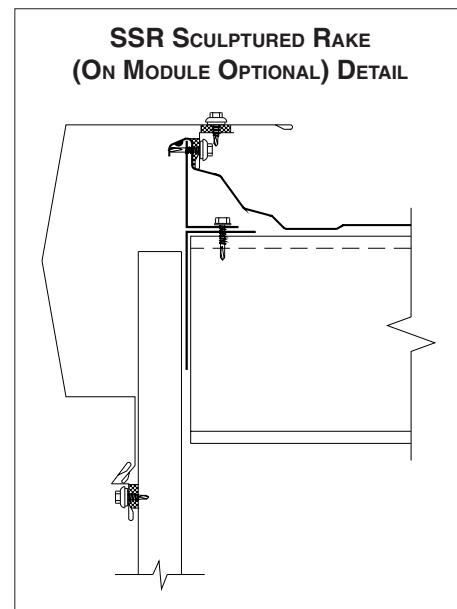
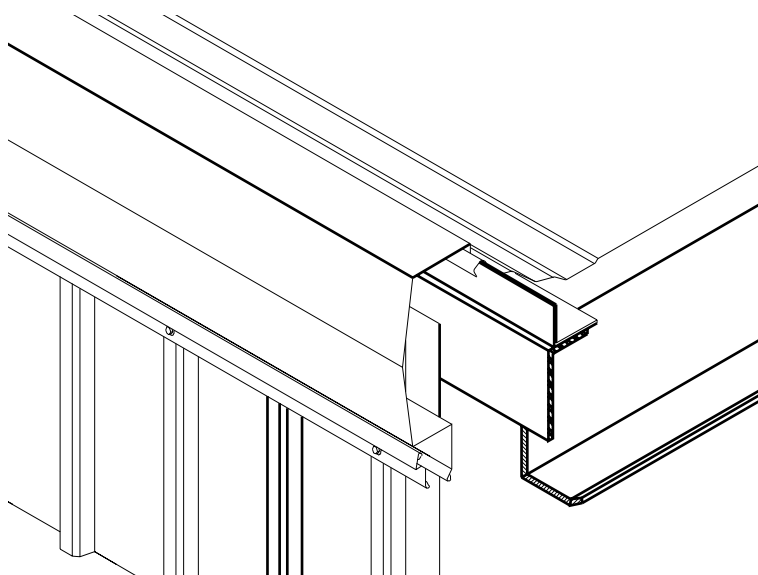
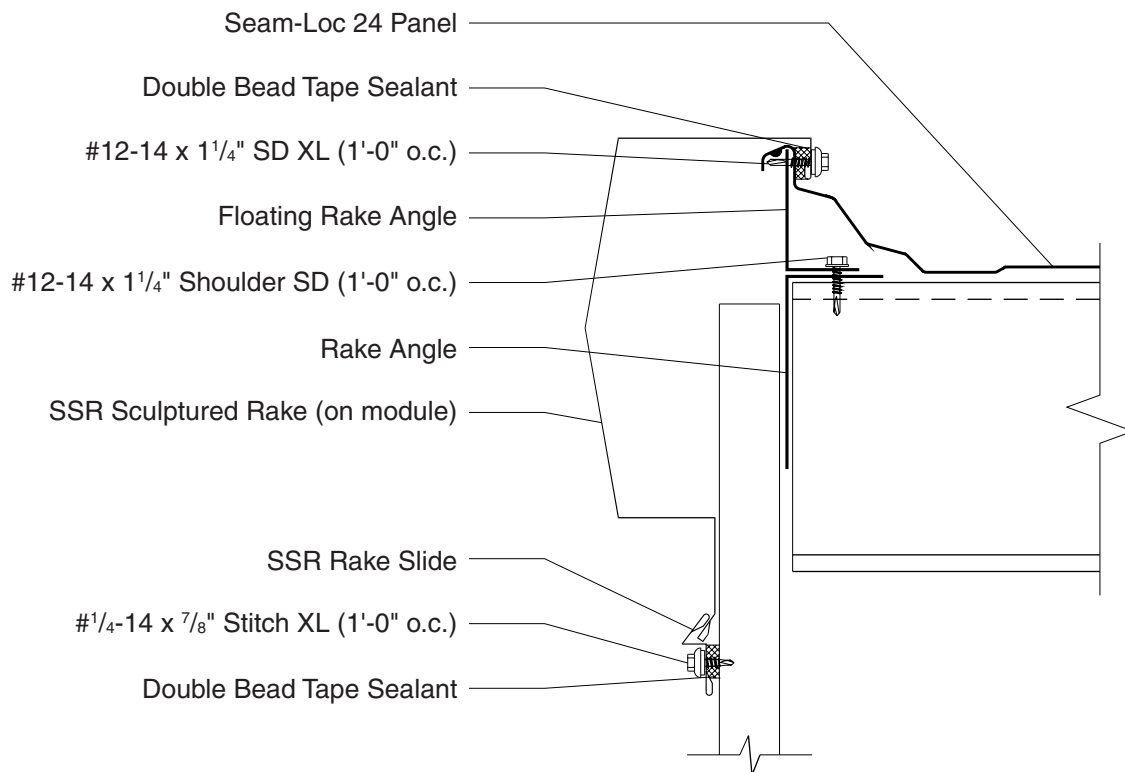


### INSTALLATION NOTES

**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See Pages 24-36).**

1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape sealant across upper side of field bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake flashing so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Rake flashing.
6. Install SSR Rake Slide over lower leg of SSR Rake flashing and Double Bead Tape Sealant. Fasten with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

**1/4:12 Slope  
Minimum**

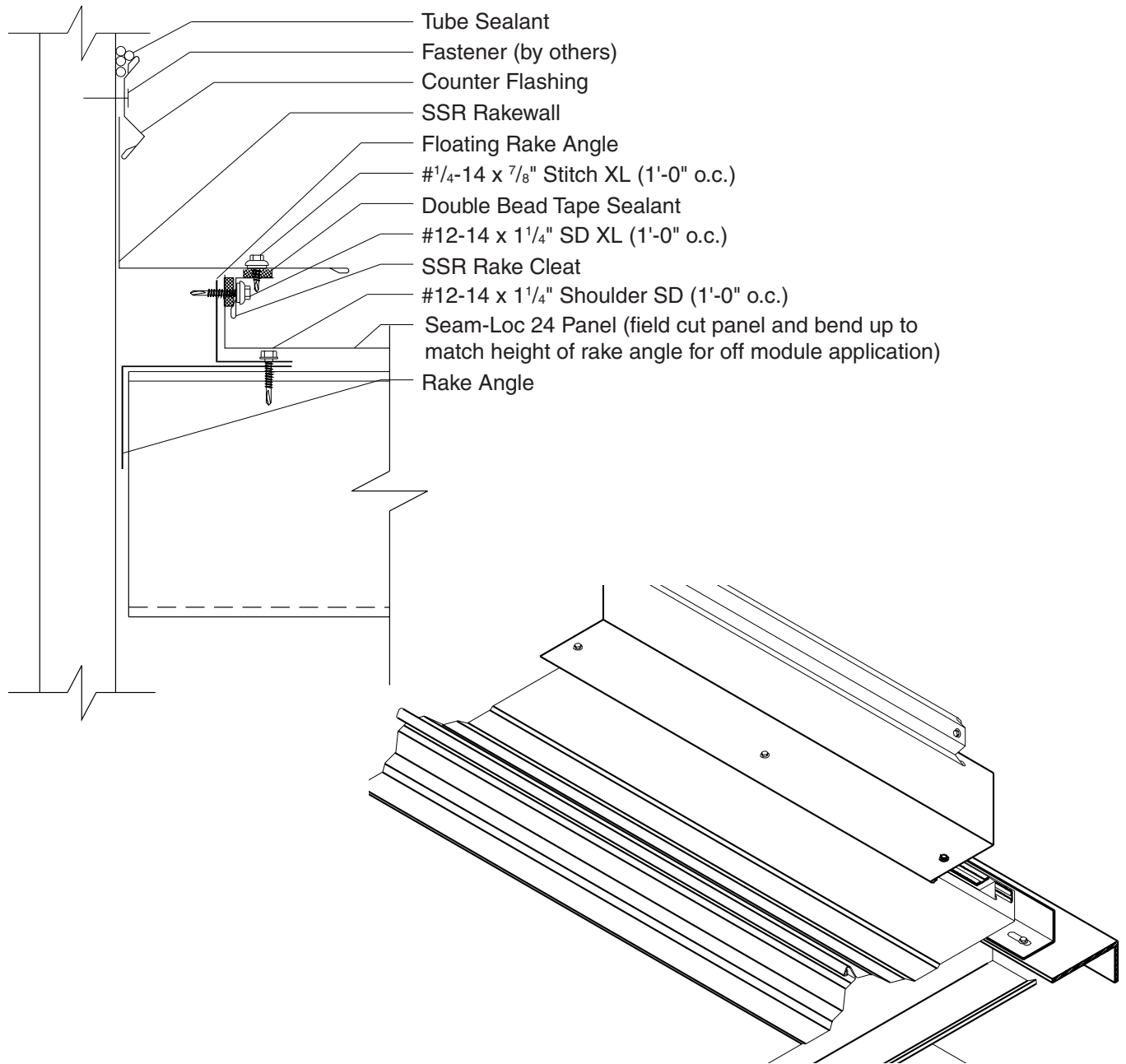


### INSTALLATION NOTES

**Seam-Loc 24 floating rake angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See pages 24-36).**

1. With Seam-Loc 24 panel properly nested over top of Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel rib.
2. Install SSR Sculptured Rake flashing so that side of flashing is flush with vertical leg of panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into Rake Angle with #12-14 x 1 1/4" SD XL, 1'-0" o.c.
3. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Rake Flashing.
4. Install SSR Rake Slide over lower leg of SSR Rake flashing and Double Bead Tape Sealant. Fasten with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

1/4:12 Slope  
Minimum

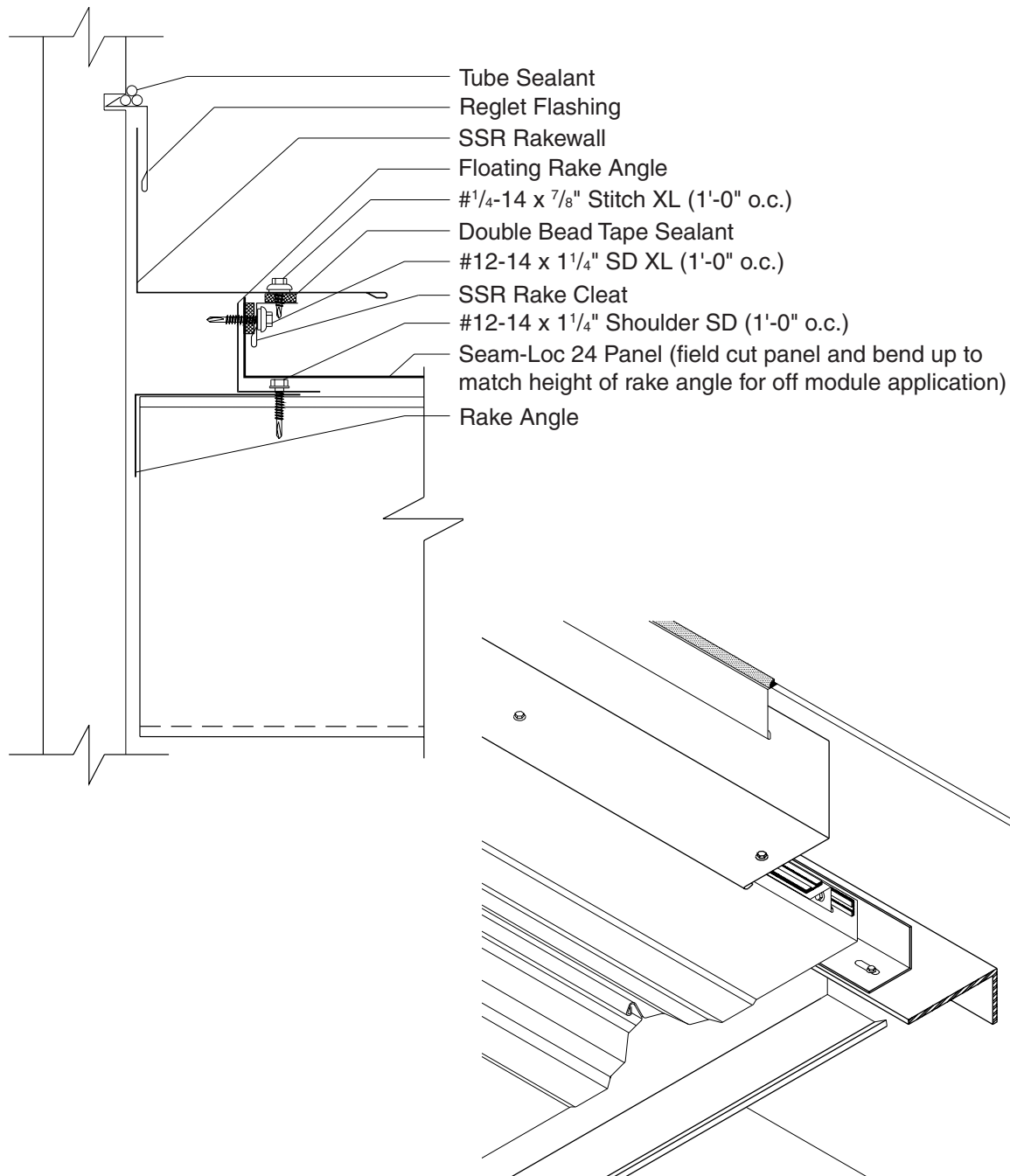


## INSTALLATION NOTES

**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Rakewall installation (See pages 24-36).**

1. With Seam-Loc 24 panel properly nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rakewall so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Rakewall, Tape Sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with Tube Sealant. Do NOT fasten SSR Rakewall to parapet wall.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

1/4:12 Slope  
Minimum

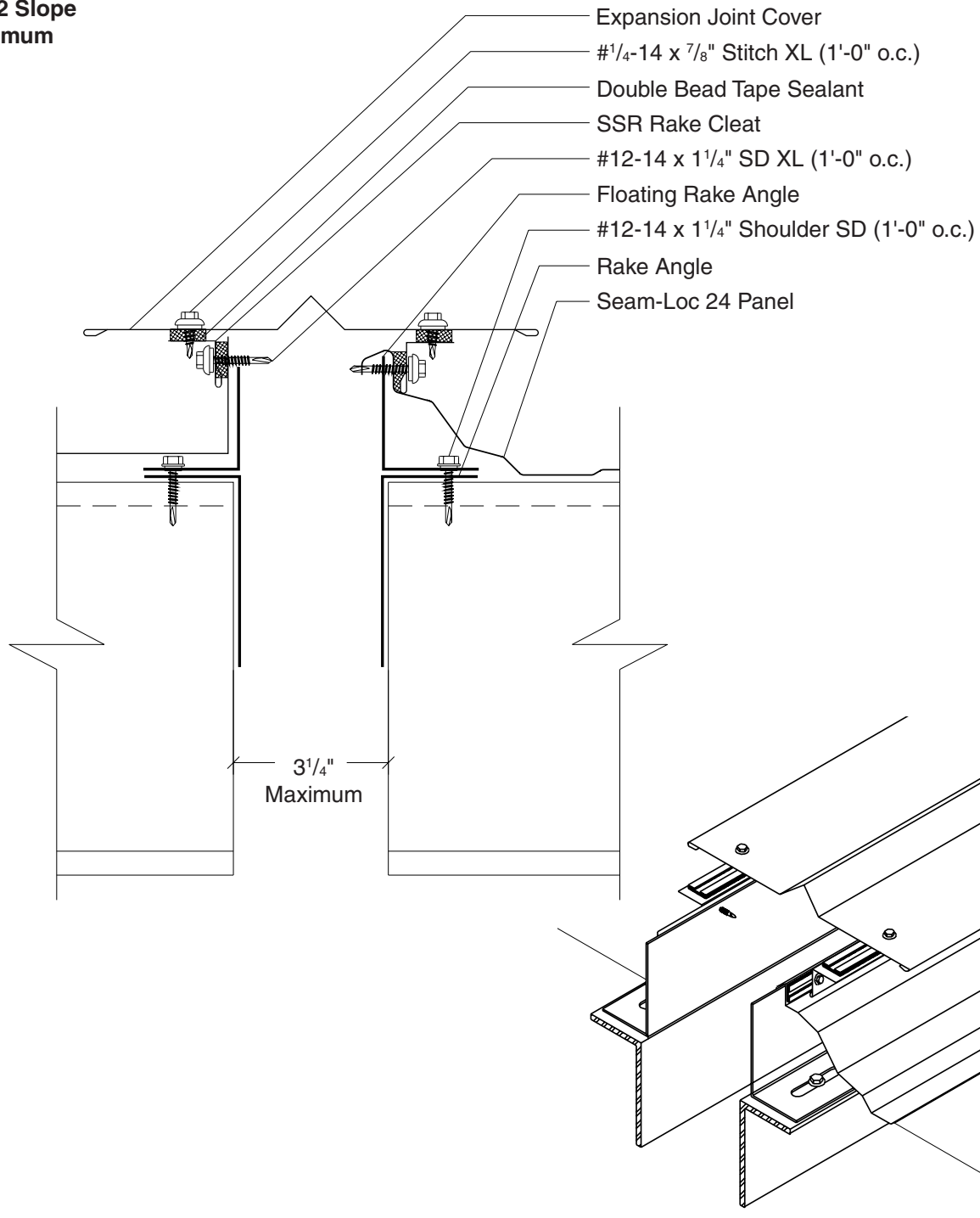


## INSTALLATION NOTES

**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Rakewall installation (See pages 24-36).**

1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of field bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, tape sealant, panel, and into floating rake zee with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rakewall so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Rakewall, tape sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with tube sealant. Do NOT fasten SSR Rakewall to parapet wall.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a min. of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

**1/4:12 Slope  
Minimum**

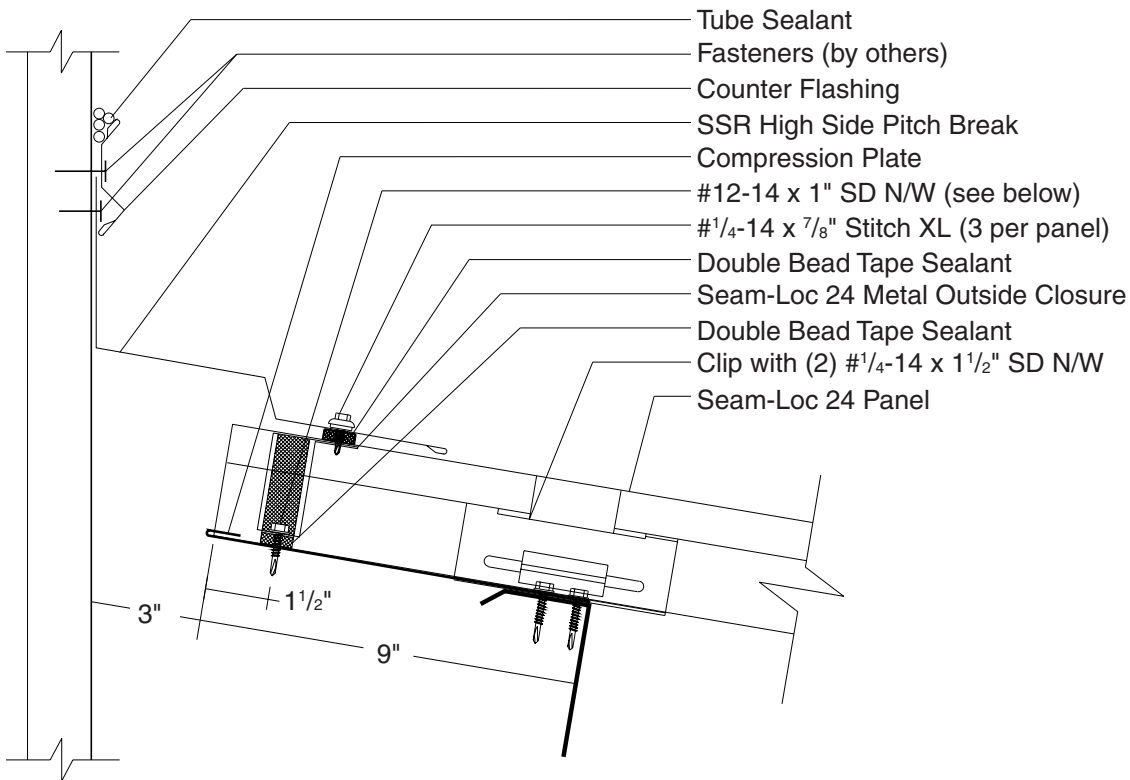


### INSTALLATION NOTES

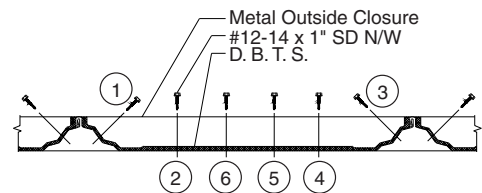
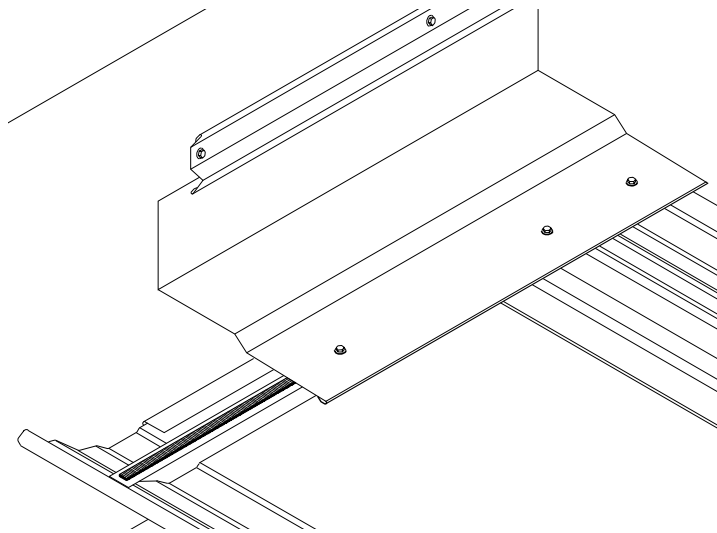
**Seam-Loc 24 Floating Rake Zees and Seam-Loc 24 Panels must be installed prior to Expansion Joint installation (See pages 24-36).**

1. With Seam-Loc 24 panels nested against Seam-Loc 24 Floating Rake Zees, apply a row of Double Bead Tape Sealant across vertical side of panel ribs on both sides of Expansion Joint. (See page 34 for proper bending of panel if off module.)
2. Install SSR Rake Cleats over Double Bead Tape Sealant on both sides. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c. on both sides of Expansion Joint.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleats.
4. Install Expansion Joint flashing on top legs of SSR Rake Cleats. Fasten through Expansion Joint flashing, Tape Sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c. on both sides of Expansion Joint.
5. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

1/4:12 Slope  
Minimum



- Tube Sealant
- Fasteners (by others)
- Counter Flashing
- SSR High Side Pitch Break
- Compression Plate
- #12-14 x 1" SD N/W (see below)
- #1/4-14 x 7/8" Stitch XL (3 per panel)
- Double Bead Tape Sealant
- Seam-Loc 24 Metal Outside Closure
- Double Bead Tape Sealant
- Clip with (2) #1/4-14 x 1 1/2" SD N/W
- Seam-Loc 24 Panel

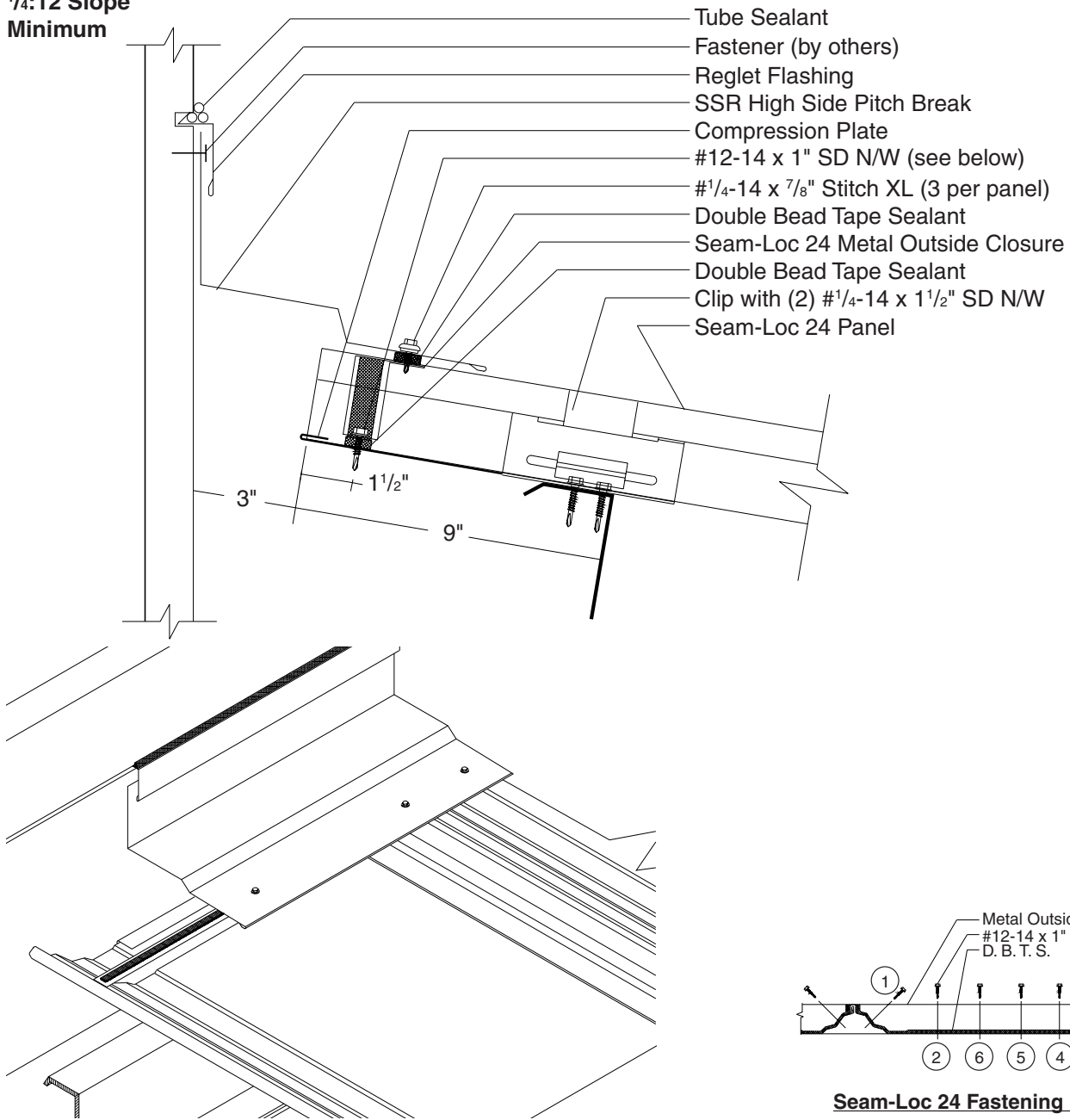


**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above and to parapet wall with appropriate fastener, 1'-0" o.c.
7. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with Tube Sealant.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

1/4:12 Slope  
Minimum



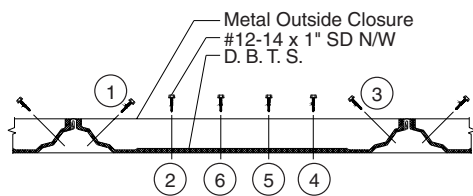
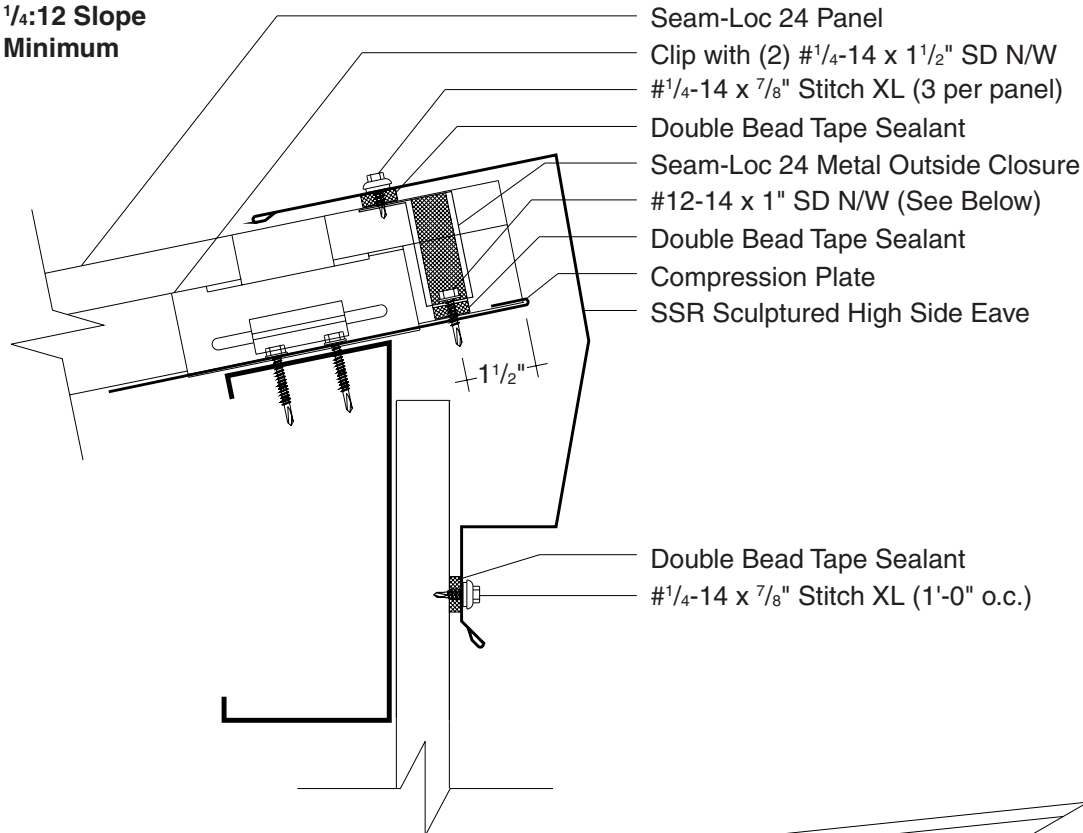
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

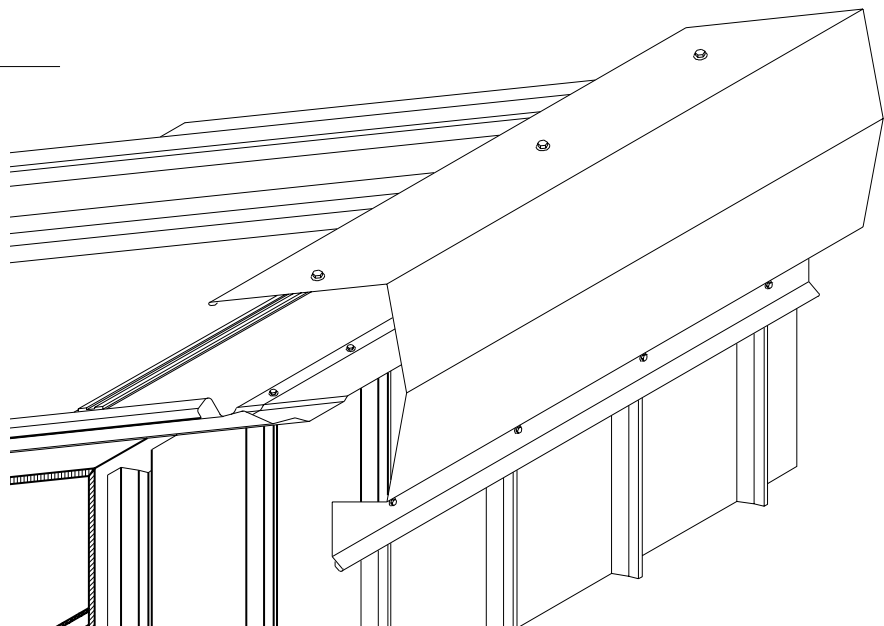
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above and to parapet wall with appropriate fastener, 1'-0" o.c.
7. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with Tube Sealant.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.



**1/4:12 Slope  
Minimum**

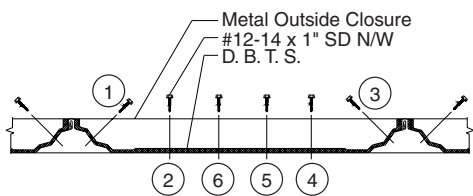
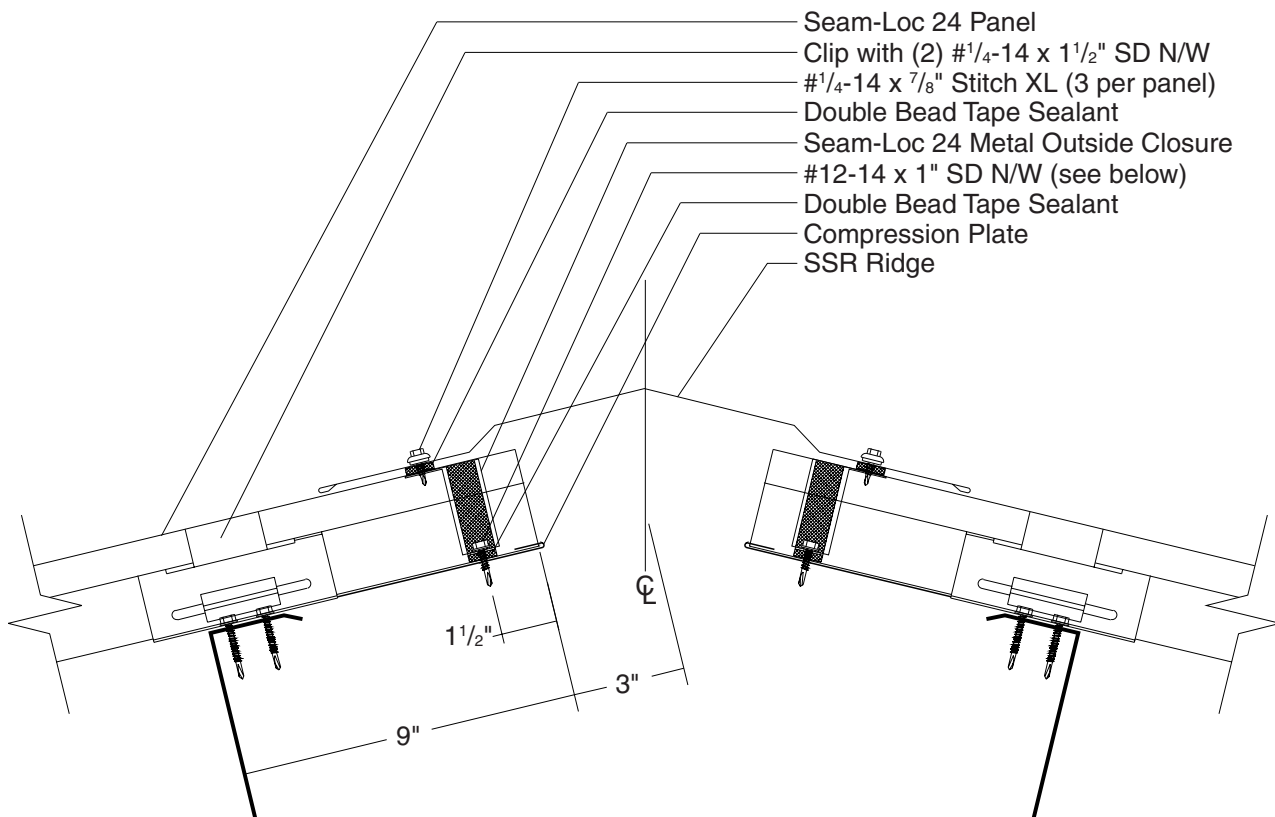


**Seam-Loc 24 Fastening Pattern**

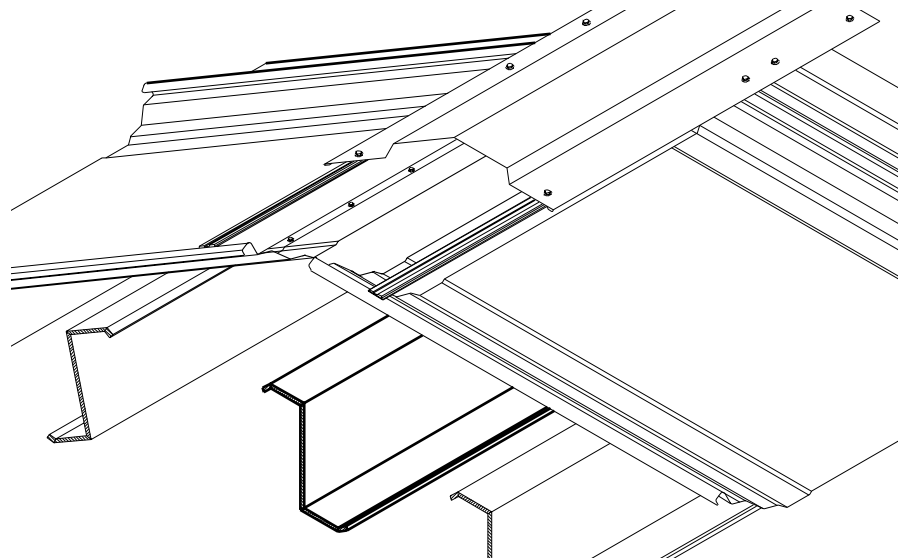


### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of High Side Eave assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over tape sealant. Before continuing make sure Outside Closure placement will accommodate SSR Sculptured High Side Eave flashing.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Sculptured High Side Eave flashing and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above.
7. Fasten SSR Sculptured High Side Eave flashing to finished wall with appropriate fastener, 1'-0" o.c.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.



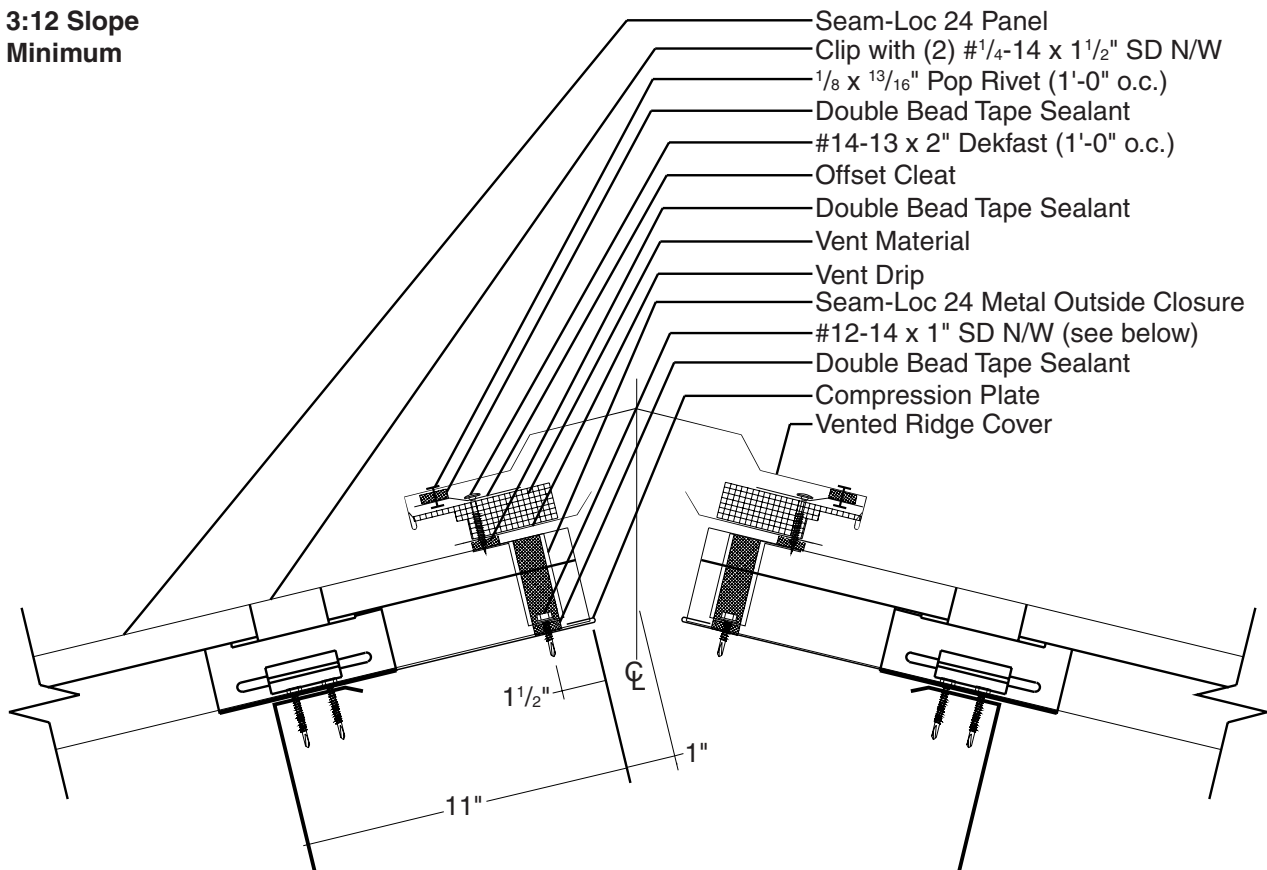
**Seam-Loc 24 Fastening Pattern**



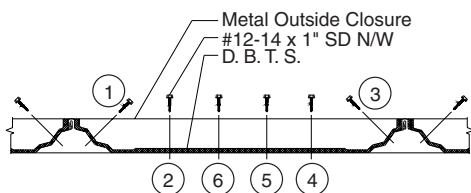
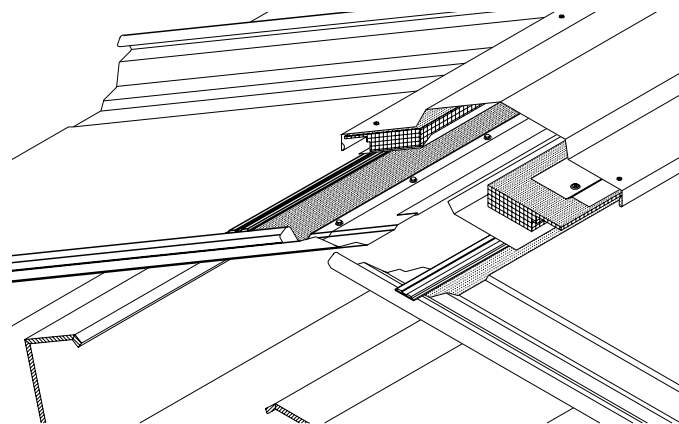
### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of ridge assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end on both sides of ridge.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR Ridge.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) #12-14 x 1" SD N/W per panel. C-clamps may be removed once Closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures on both sides of ridge. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Ridge flashing and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

**3:12 Slope  
Minimum**



Note: Refer to page 19 for proper ventilation considerations.

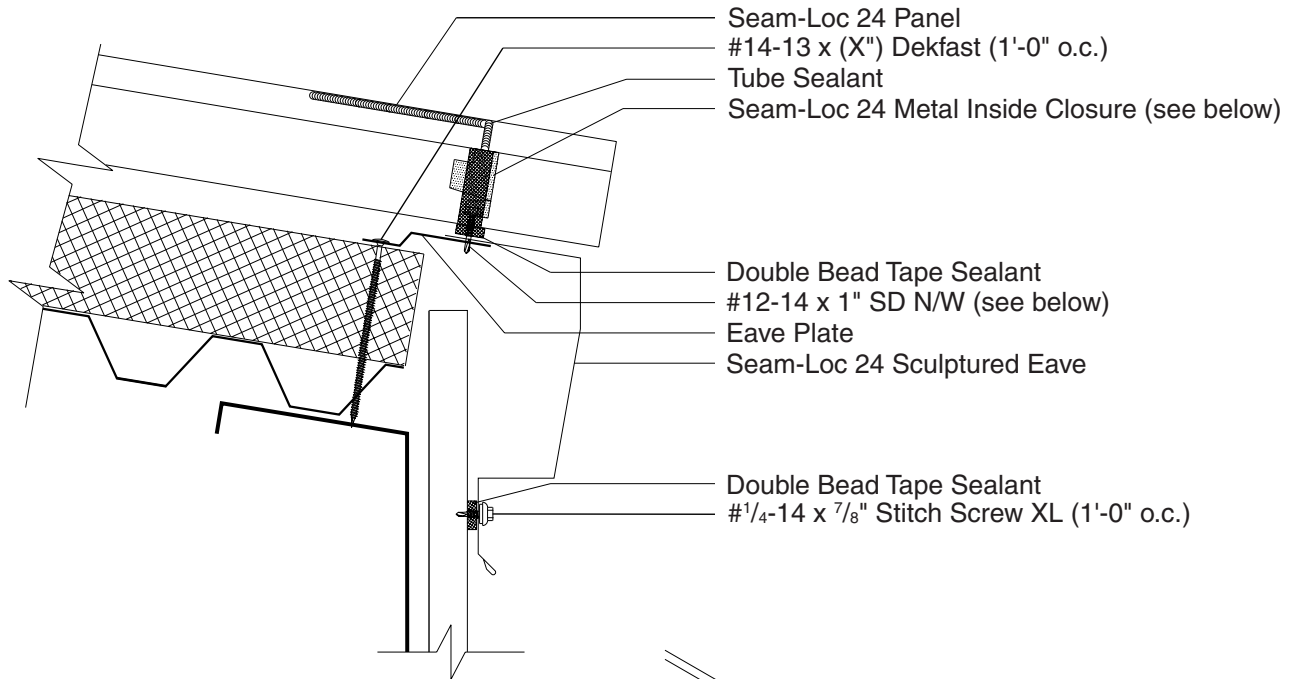


**Seam-Loc 24 Fastening Pattern**

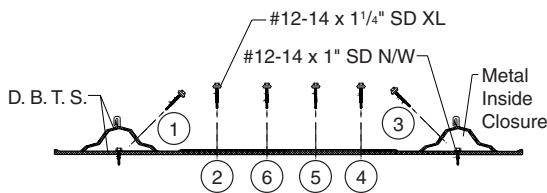
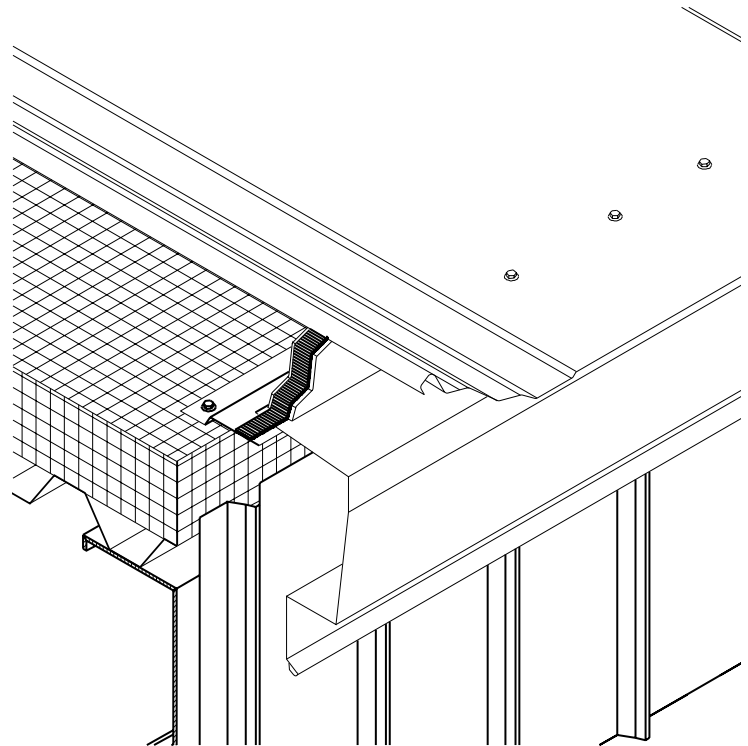
### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under the upper edge of panels. Position Compression Plate to allow for proper installation of vented ridge assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end on both sides of ridge.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate Vented Ridge Cover.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once Closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures on both sides of ridge. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install Vent Drip, Vent Material, and Offset Cleat (in order) and fasten to top leg of Outside Closure with #14 Dekfasts at 1'-0" o.c.
7. Apply a row of Double Bead Tape Sealant across outer leg of Offset Cleat.
8. Install Vented Ridge Cover and secure to outer leg of Offset Cleat with Pop Rivets at 1'-0" o.c.
9. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets 2 1/2" o.c.

**1/4:12 Slope  
Minimum**



**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



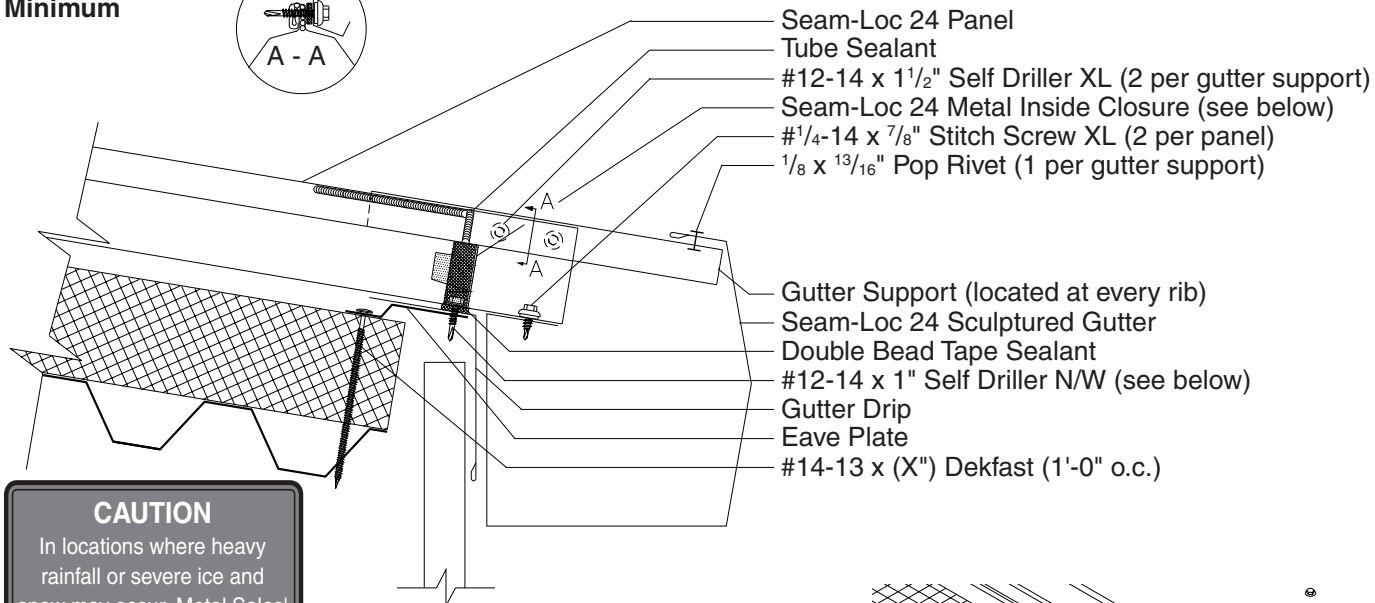
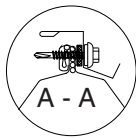
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

**All Eave flashings must be installed prior to panel installation.**

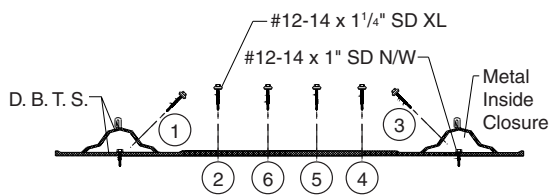
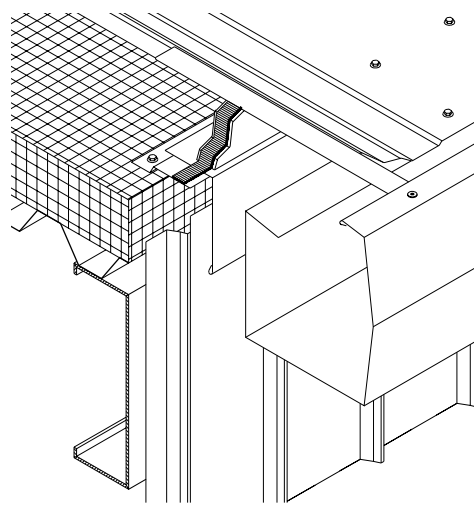
1. Install Sculptured Eave back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Sculptured Eave in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c.
2. Fasten Sculptured Eave to wall with appropriate fastener, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across Sculptured Eave so that sealant is centered over top leg of Eave Plate.
4. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.
5. Once panels and inside closures have been installed and properly sealed, (See page 26), fasten through panel, Double Bead Tape Sealant, and Sculptured Eave into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.

**1/4:12 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: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



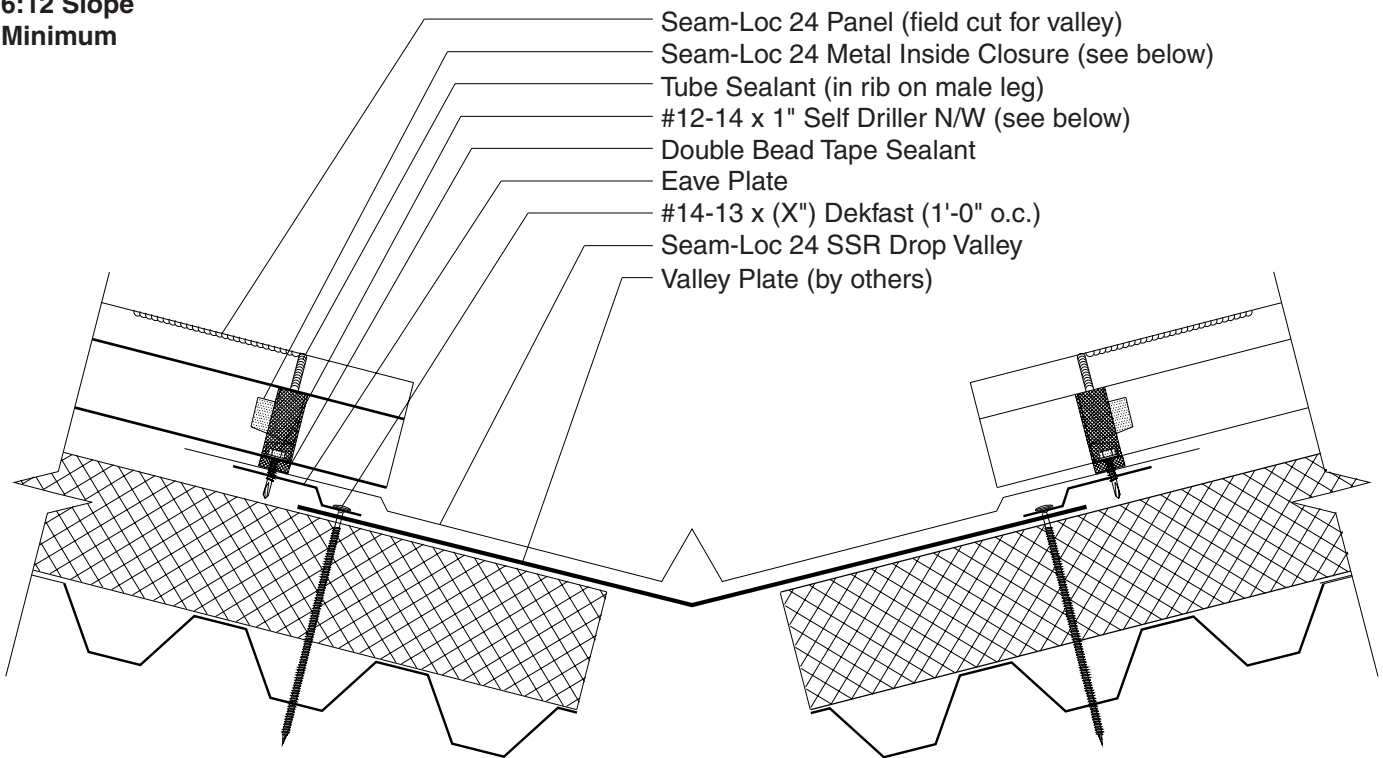
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

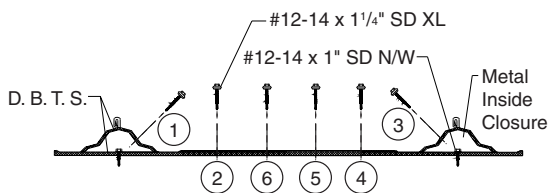
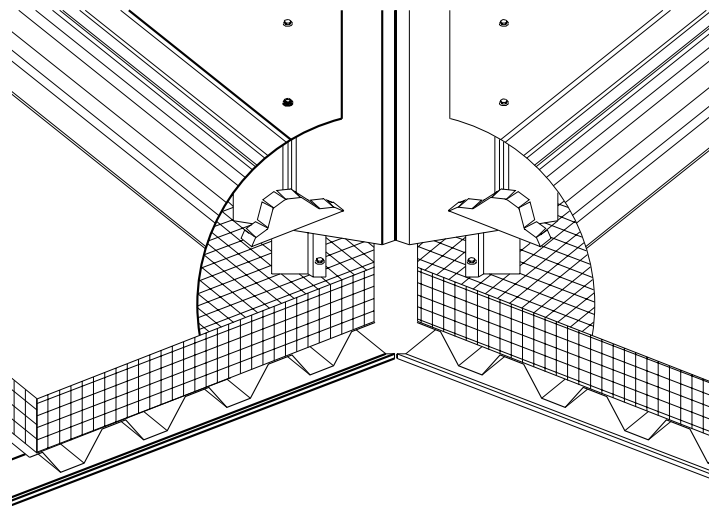
**Gutter Drip Flashings must be installed prior to panel installation.**

1. Install Gutter Drip back against previously installed Eave Plate, (see page 25 for Eave Plate installation). To hold Gutter Drip in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c.
2. Apply a row of Double Bead Tape Sealant across Gutter Drip so that sealant is centered over top leg of Eave Plate.
3. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2"
4. Once panels and inside closures have been installed and properly sealed, (see page 26), fasten through panel, Double Bead Tape Sealant, and Gutter Drip into Eave Plate with (6) #12-14 x 1 1/4" Self Driller XL screws per panel.
5. Attach the SSR Gutter Support to the panel rib every other panel (48" o.c.) with (2) #12-14 x 1 1/4" Self Driller XL screws. Fasteners must be applied down slope of the sealant line. Do not apply screws up slope of the sealant line. The SSR Gutter Supports can be adjusted in or out to allow the gutter to be installed in a straight line, even if the edge of the roof is not straight.
6. Prepare the first gutter section with a Sculptured Gutter End. Consider rake to gutter connection for proper placement of Sculptured Gutter End and the gutter flashing. Fasten with (8) #1/4-14x7/8" Stitch XL screws or Pop Rivets.
7. Position the gutter over the SSR Gutter Supports with one end against the Rake flashing and rotate gutter into position.
8. Clamp the top of the back lip of the gutter in position with a C-clamp. Install a #1/4-14 x 7/8" Stitch XL screw or Pop Rivet where the front lip of the gutter rests on the SSR Gutter Support, and fasten the back lip of the gutter to the panel flat with (2) #1/4-14 x 7/8" Stitch XL screw per panel.
9. Field miter the rake trim to fit the gutter contour at the corner of the building or install a SSR Sculptured Corner Box.
10. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with #1/4-14 x 7/8" Stitch XL screws or Pop Rivets, 2 1/2" o.c.

**6:12 Slope  
Minimum**



**Note:**  
Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).

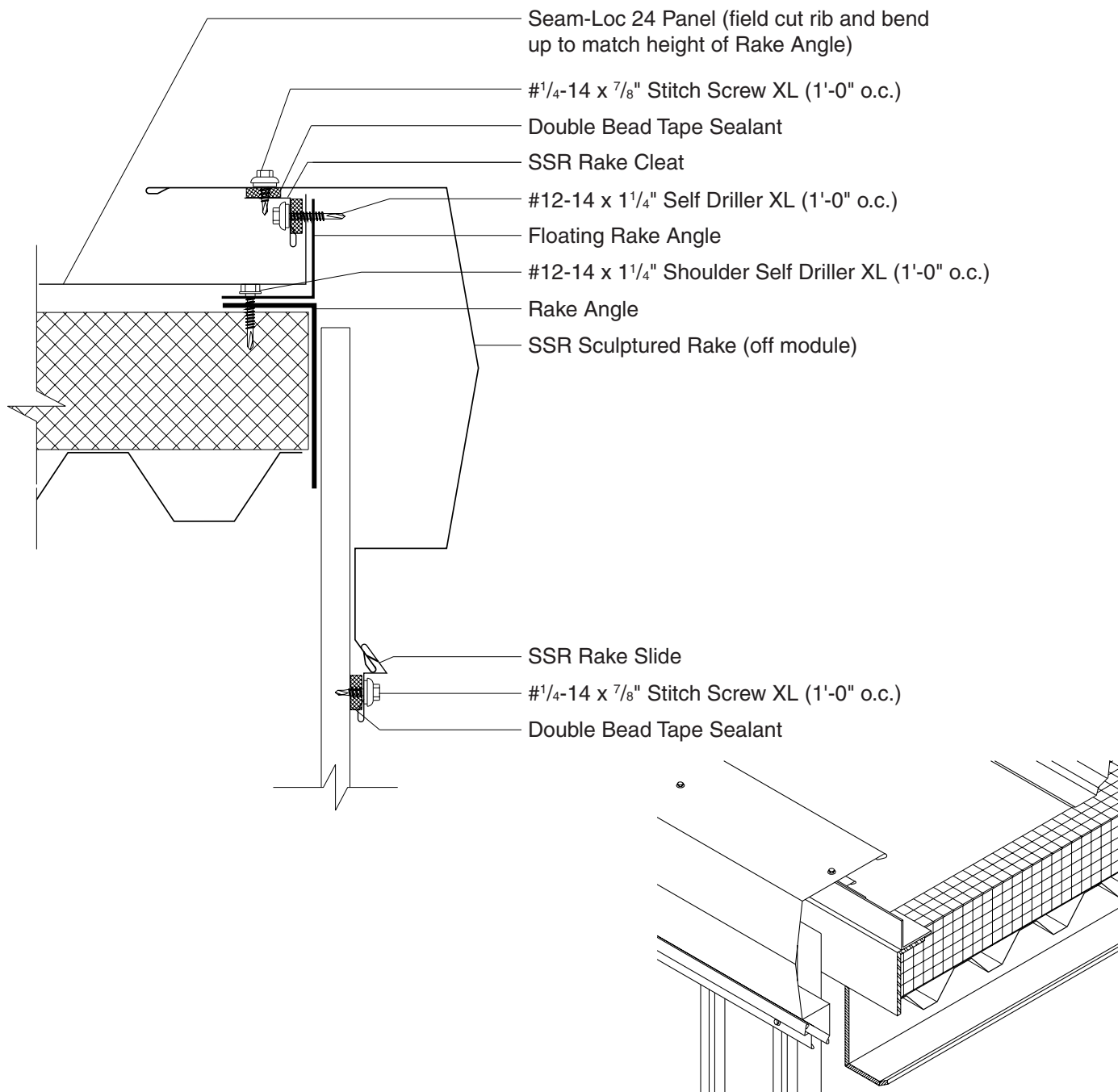


**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

**All Valley flashings must be installed prior to panel installation. If two or more Valley flashings are required, valley must be installed working from eave to peak. It is recommended that ice and water shield be installed under Valley flashing for added moisture protection.**

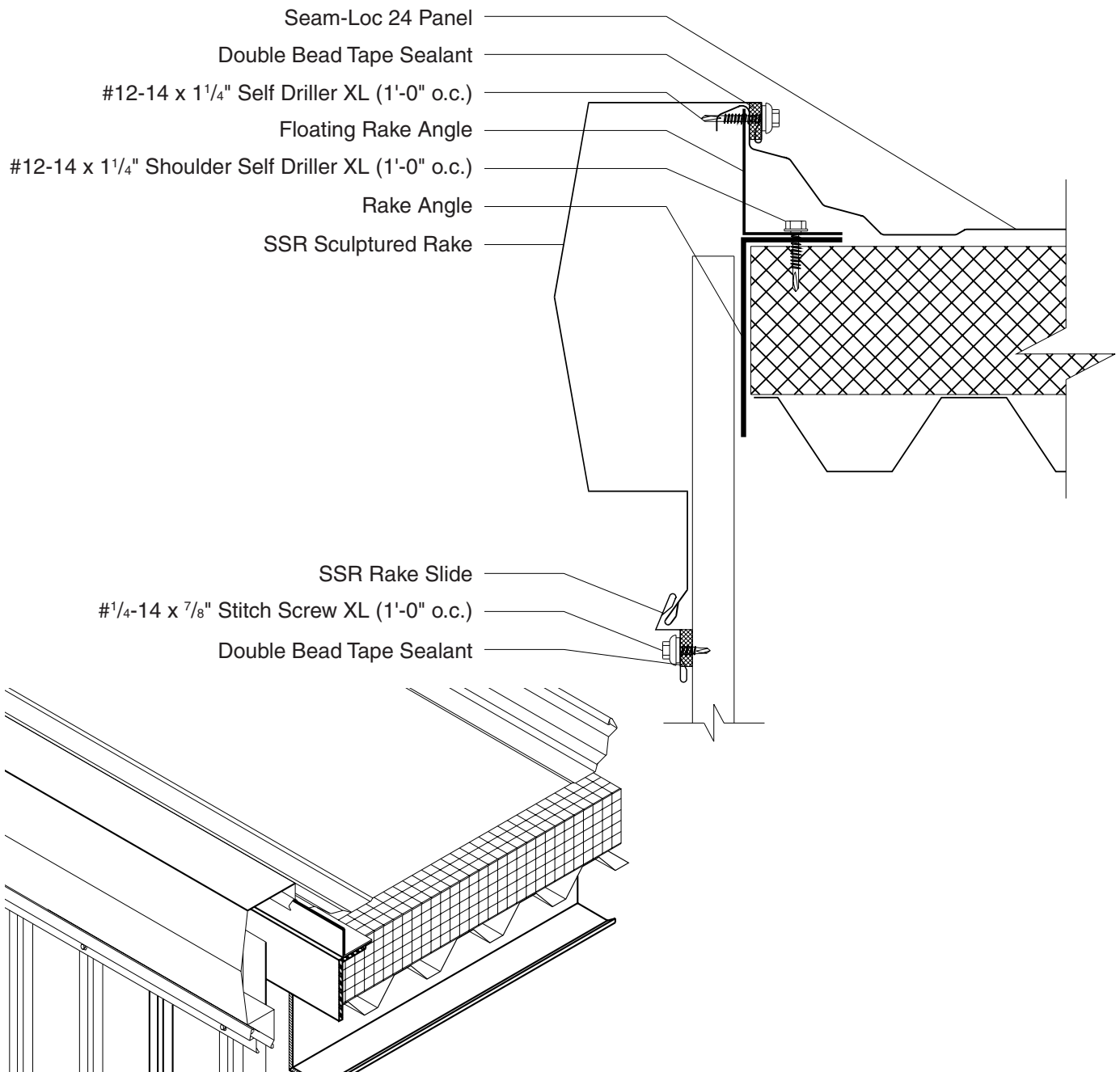
1. Install Drop Valley flashing back against previously installed Eave Plates. To hold Valley in place fasten to substrate with #10-16 x 1" Pancake Head fastener, 4'-0" o.c. into top leg of Eave Plate.
2. Apply a row of Double Bead Tape Sealant across both sides of the Drop Valley flashing so that the sealant is centered over the top leg of the Eave Plate.
3. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 6" placing two beads of Tube Sealant per side between the flashings.
4. Once panels and inside closures have been installed and properly sealed, (see pages 26-27), fasten through panel, Double Bead Tape Sealant, and Drop Valley into Eave Plate with #12-14 x 1/4" Self Driller XL screws.



### INSTALLATION NOTES

**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See Pages 24-36).**

1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape sealant across upper side of field bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake flashing so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Rake flashing.
6. Install SSR Rake Slide over lower leg of SSR Rake flashing and Double Bead Tape Sealant. Fasten with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

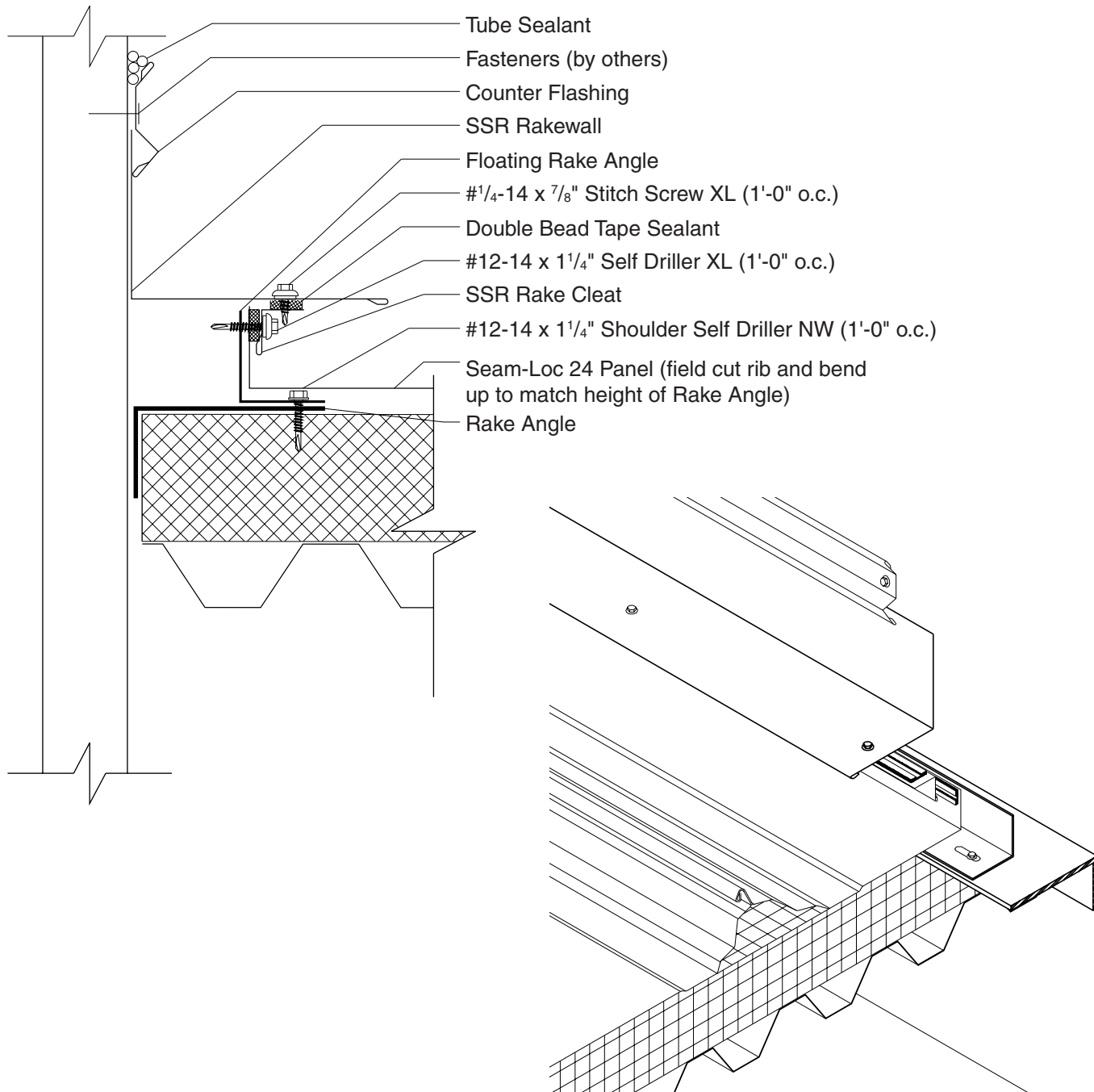


### INSTALLATION NOTES

**Seam-Loc 24 floating rake angle and Seam-Loc 24 panels must be installed prior to SSR Sculptured Rake installation (See pages 24-36).**

1. With Seam-Loc 24 panel properly nested over top of Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across upper side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Sculptured Rake flashing so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Sculptured Rake, Tape Sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Position and apply a row of Double Bead Tape Sealant across wall panel just below lower leg of SSR Rake Flashing.
6. Install SSR Rake Slide over lower leg of SSR Rake flashing and Double Bead Tape Sealant. Fasten with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

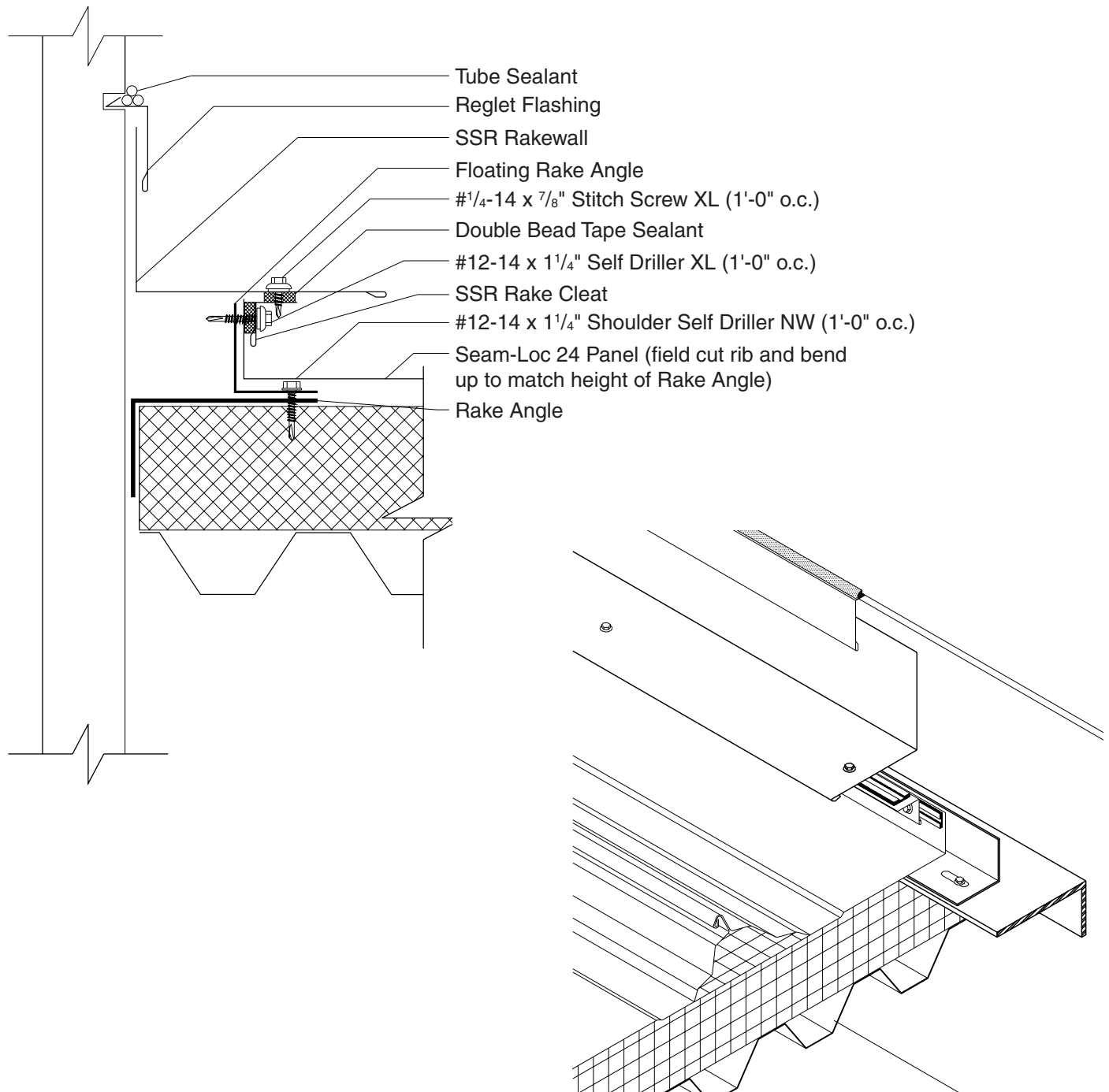




## INSTALLATION NOTES

**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Rakewall installation (See pages 24-36).**

1. With Seam-Loc 24 panel properly nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of panel rib.
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, Tape Sealant, panel, and into Floating Rake Angle with #12-14 x 1 1/4" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rakewall so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Rakewall, Tape Sealant, and into SSR Rake Cleat with #1/4-14 x 7/8" Stitch XL, 1'-0" o.c.
5. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with Tube Sealant. Do NOT fasten SSR Rakewall to parapet wall.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

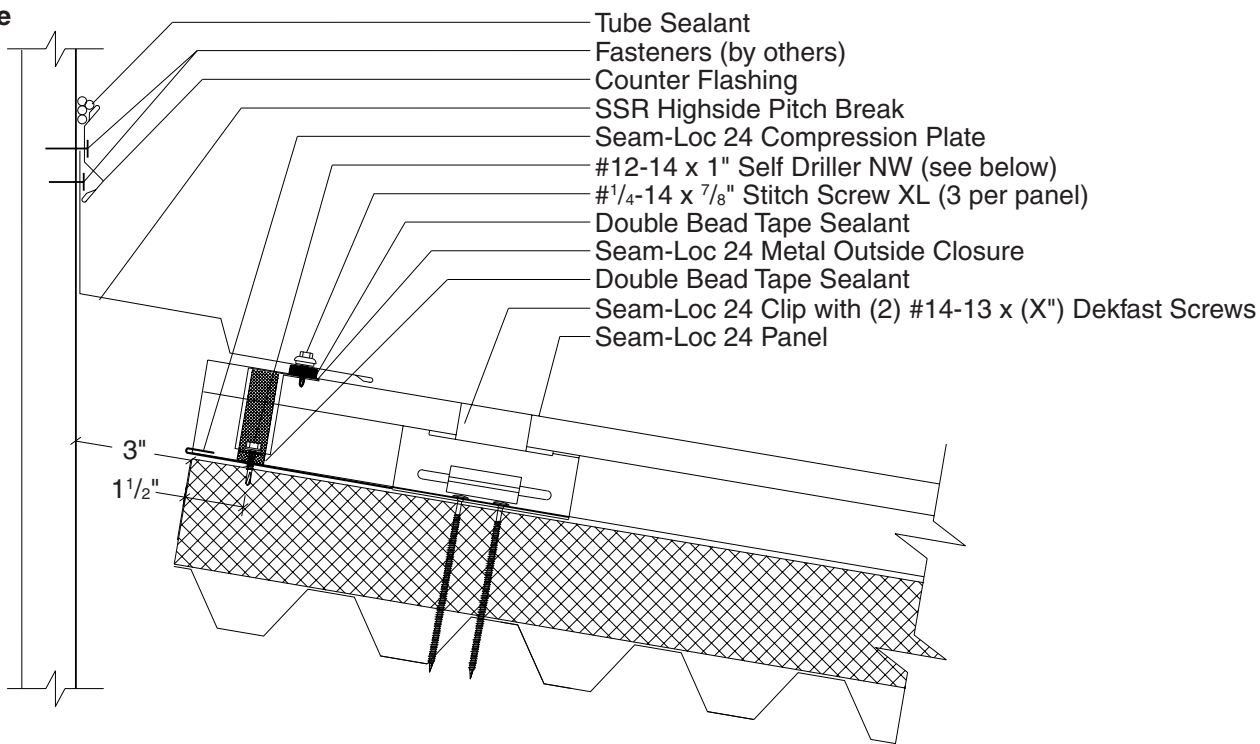


### INSTALLATION NOTES

**Seam-Loc 24 Floating Rake Angle and Seam-Loc 24 Panels must be installed prior to Rake Wall installation (See pages 24-36).**

1. With Seam-Loc 24 panel nested against Seam-Loc 24 Floating Rake Angle, apply a row of Double Bead Tape Sealant across vertical side of field bent panel rib. (See page 34 for proper bending of panel.)
2. Install SSR Rake Cleat over Double Bead Tape Sealant. Fasten through SSR Rake Cleat, tape sealant, panel, and into floating rake zee with #12-14 x 1<sup>1</sup>/<sub>4</sub>" Self Driller XL screws, 1'-0" o.c.
3. Apply a row of Double Bead Tape Sealant across top leg of SSR Rake Cleat.
4. Install SSR Rake Wall so that top of flashing is flush with top of SSR Rake Cleat and panel rib. Fasten through SSR Rake Wall, tape sealant, and into SSR Rake Cleat with #<sup>1</sup>/<sub>4</sub>-14 x <sup>7</sup>/<sub>8</sub>" Stitch XL, 1'-0" o.c.
5. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with tube sealant. Do NOT fasten SSR Rake Wall to parapet wall.
6. If two or more flashings are required, lap the flashing over the previously installed flashing by a min. of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2<sup>1</sup>/<sub>2</sub>" o.c.

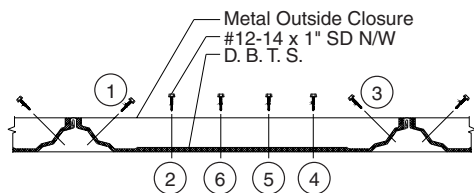
1/4:12 Slope  
Minimum



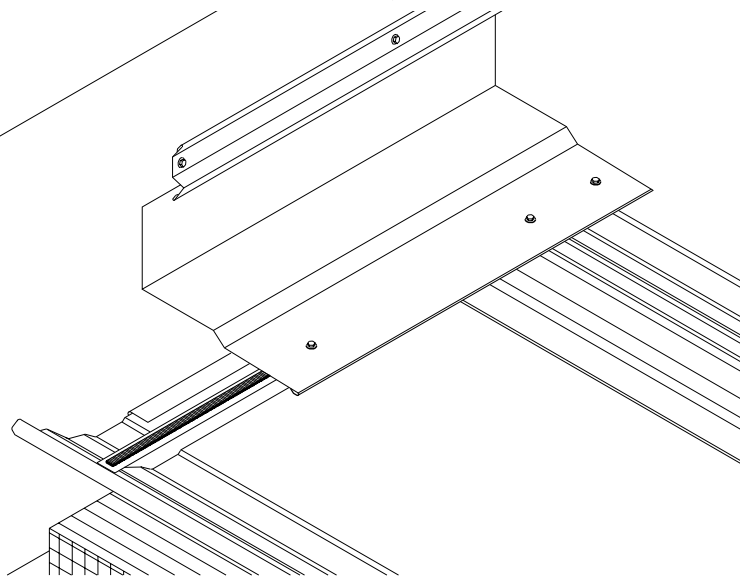
- Tube Sealant
- Fasteners (by others)
- Counter Flashing
- SSR Highside Pitch Break
- Seam-Loc 24 Compression Plate
- #12-14 x 1" Self Driller NW (see below)
- #1/4-14 x 7/8" Stitch Screw XL (3 per panel)
- Double Bead Tape Sealant
- Seam-Loc 24 Metal Outside Closure
- Double Bead Tape Sealant
- Seam-Loc 24 Clip with (2) #14-13 x (X") Dekfast Screws
- Seam-Loc 24 Panel

**Note:**

Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).



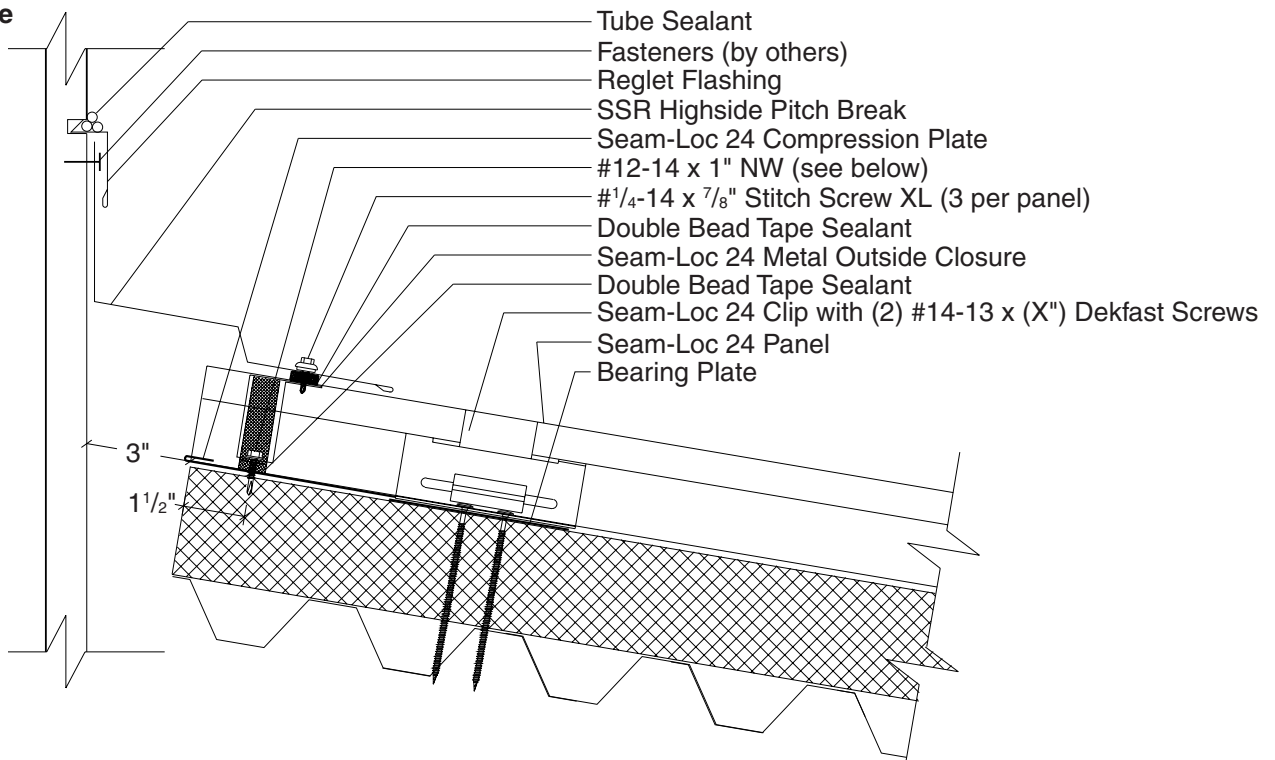
**Seam-Loc 24 Fastening Pattern**



### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above and to parapet wall with appropriate fastener, 1'-0" o.c.
7. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with Tube Sealant.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.

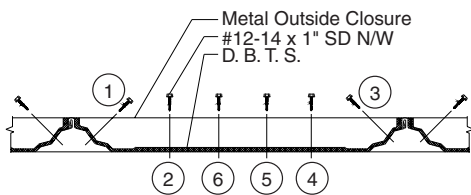
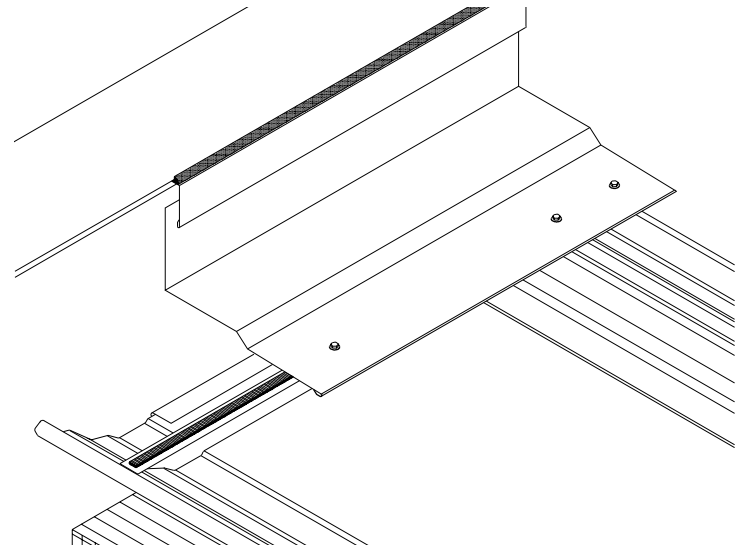
1/4:12 Slope  
Minimum



- Tube Sealant
- Fasteners (by others)
- Reglet Flashing
- SSR Highside Pitch Break
- Seam-Loc 24 Compression Plate
- #12-14 x 1" NW (see below)
- #1/4-14 x 7/8" Stitch Screw XL (3 per panel)
- Double Bead Tape Sealant
- Seam-Loc 24 Metal Outside Closure
- Double Bead Tape Sealant
- Seam-Loc 24 Clip with (2) #14-13 x (X") Dekfast Screws
- Seam-Loc 24 Panel
- Bearing Plate

**Note:**

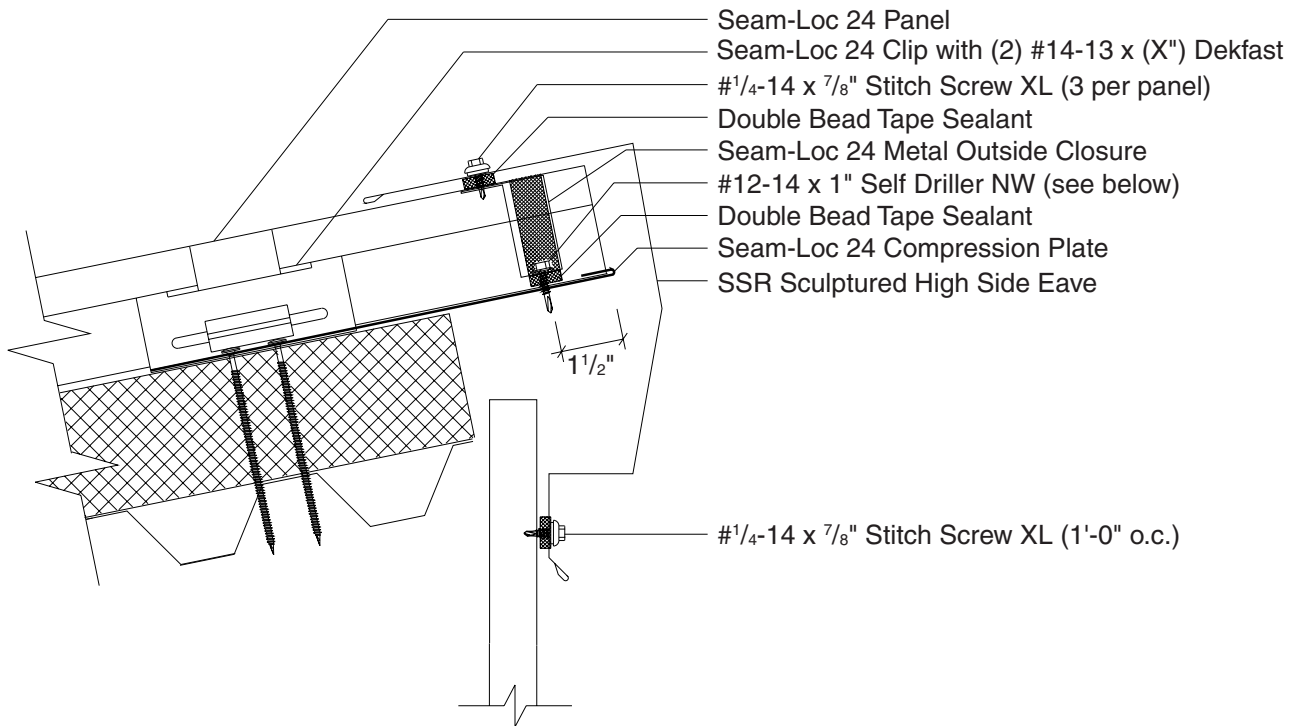
Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).



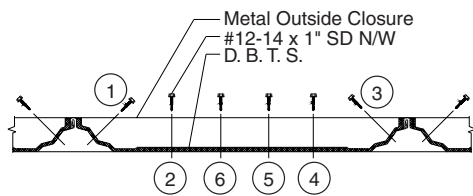
**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

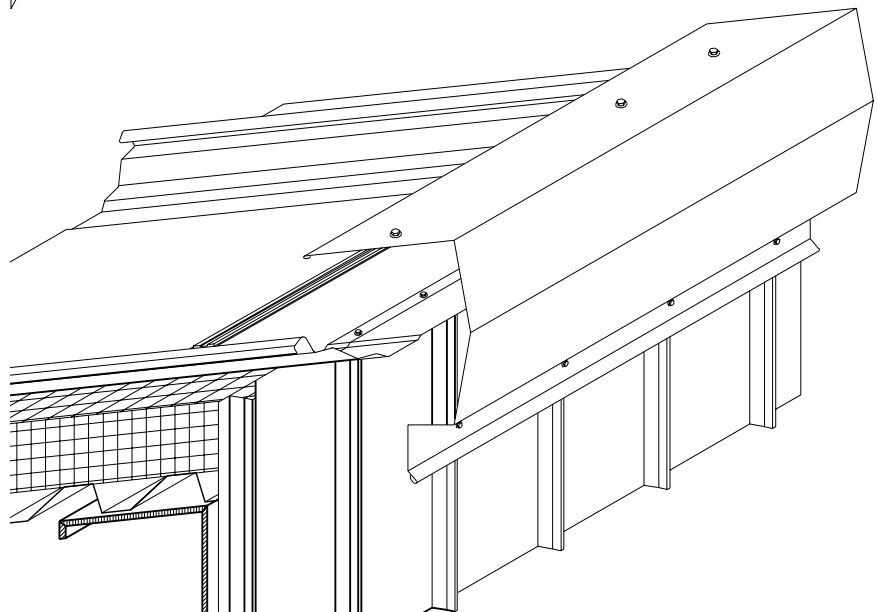
1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of endwall assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR High Side Pitch Break.
4. Once closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR High Side Pitch Break and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above and to parapet wall with appropriate fastener, 1'-0" o.c.
7. Install Counter Flashing, Reglet, or wall panel and fasten to parapet wall with appropriate fastener, 1'-0" o.c. If Counter Flashing or Reglet is used, seal to parapet wall with Tube Sealant.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.



**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**

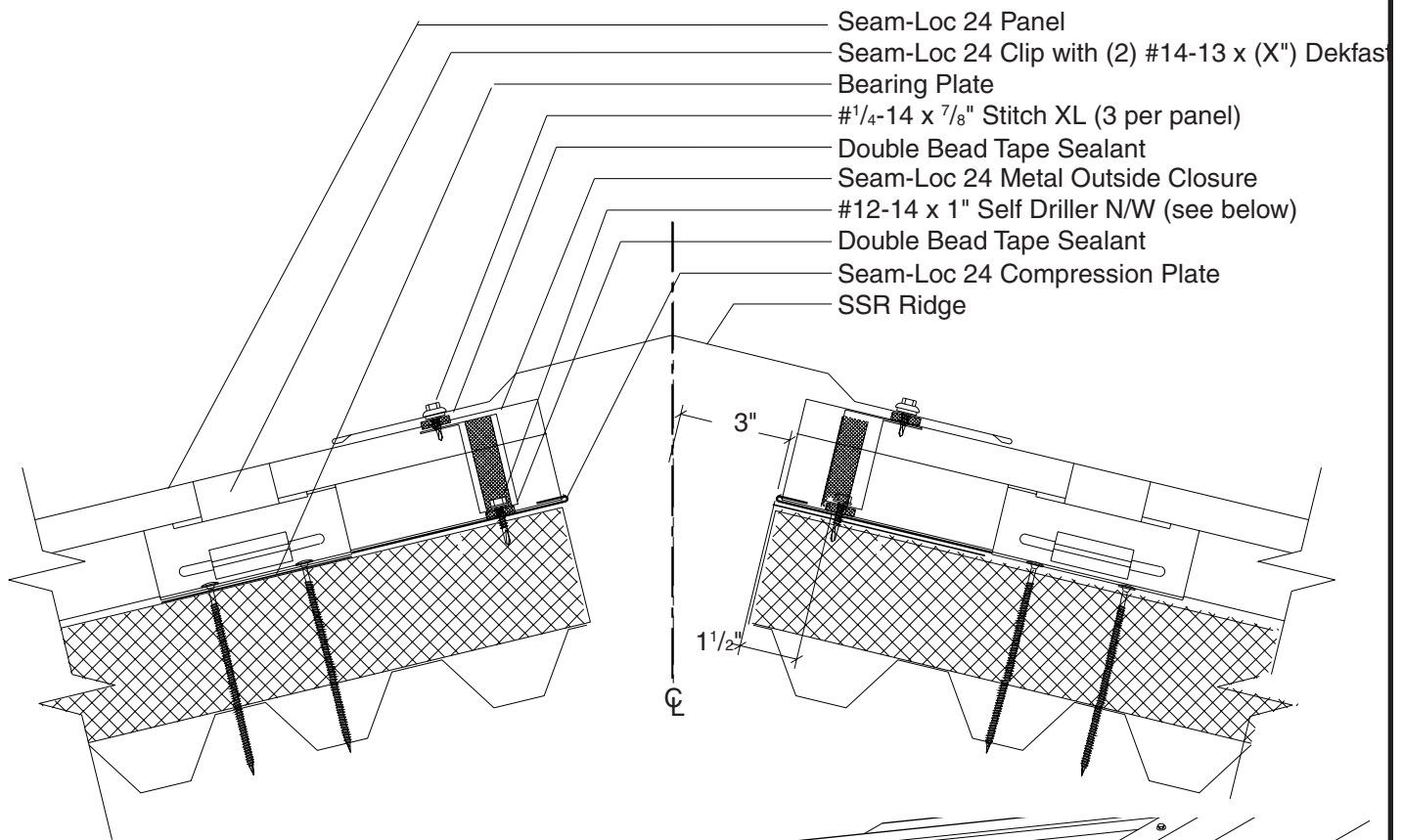


**Seam-Loc 24 Fastening Pattern**



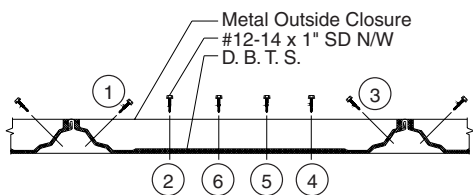
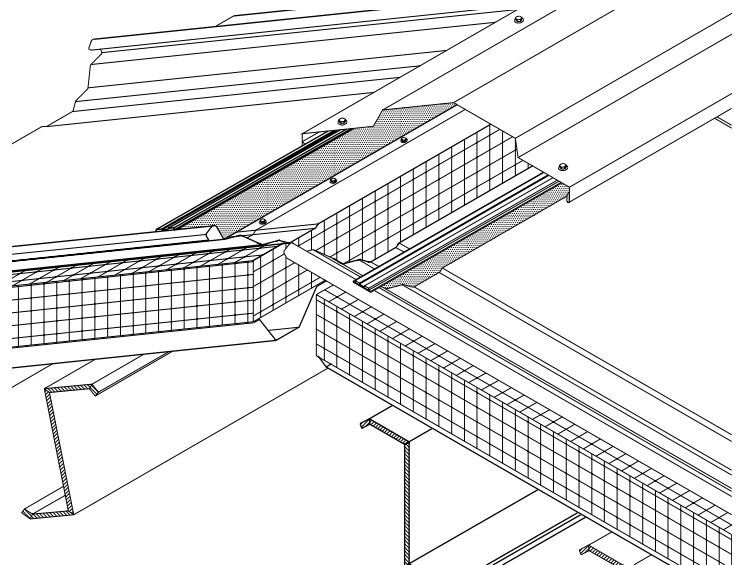
### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of High Side Eave assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end.
3. Install Seam-Loc 24 Outside Closures over tape sealant. Before continuing make sure Outside Closure placement will accommodate SSR Sculptured High Side Eave flashing.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) 12-14 x 1" SD N/W per panel. C-clamps may be removed once closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Sculptured High Side Eave flashing and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above.
7. Fasten SSR Sculptured High Side Eave flashing to finished wall with appropriate fastener, 1'-0" o.c.
8. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.



- Seam-Loc 24 Panel
- Seam-Loc 24 Clip with (2) #14-13 x (X") Dekfast
- Bearing Plate
- #1/4-14 x 7/8" Stitch XL (3 per panel)
- Double Bead Tape Sealant
- Seam-Loc 24 Metal Outside Closure
- #12-14 x 1" Self Driller N/W (see below)
- Double Bead Tape Sealant
- Seam-Loc 24 Compression Plate
- SSR Ridge

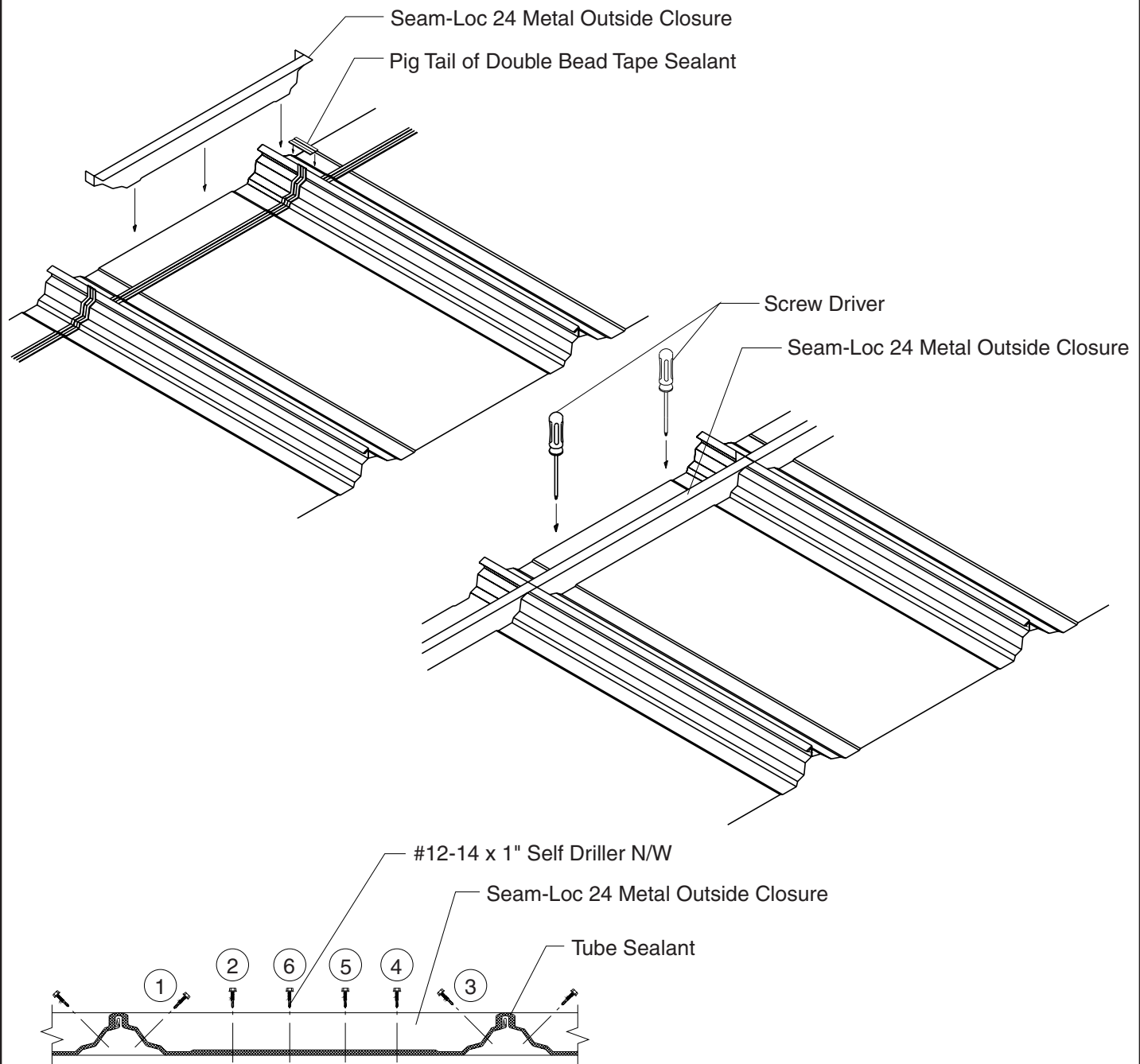
**Note: Lengths of Dekfast screws are dependent on the assembly thickness (see page 17 for lengths).**



**Seam-Loc 24 Fastening Pattern**

### INSTALLATION NOTES

1. Once panels have been installed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of ridge assembly. Use C-clamps to hold Compression Plate in place.
2. Apply a row of Double Bead Tape Sealant across panel, up and over all ribs approximately 1 1/2" from panel end on both sides of ridge.
3. Install Seam-Loc 24 Outside Closures over Tape Sealant. Before continuing make sure Outside Closure placement will accommodate SSR Ridge.
4. Once Closure is set in Tape Sealant, fasten through Outside Closure, Tape Sealant, Seam-Loc 24 panel, and into Compression Plate with (6) #12-14 x 1" SD N/W per panel. C-clamps may be removed once Closures have been fastened.
5. Once all Outside Closures have been installed, place a row of Double Bead Tape Sealant across top of Outside Closures on both sides of ridge. Tube Sealant must be used to fill any and all gaps left around Outside Closures.
6. Install SSR Ridge flashing and secure to top leg of Outside Closures with #1/4-14 x 7/8" Stitch XL at the spacing shown above.
7. If two or more flashings are required, lap the flashing over the previously installed flashing by a minimum of 2" placing a bead of Tube Sealant between the flashings and securing with Pop Rivets, 2 1/2" o.c.



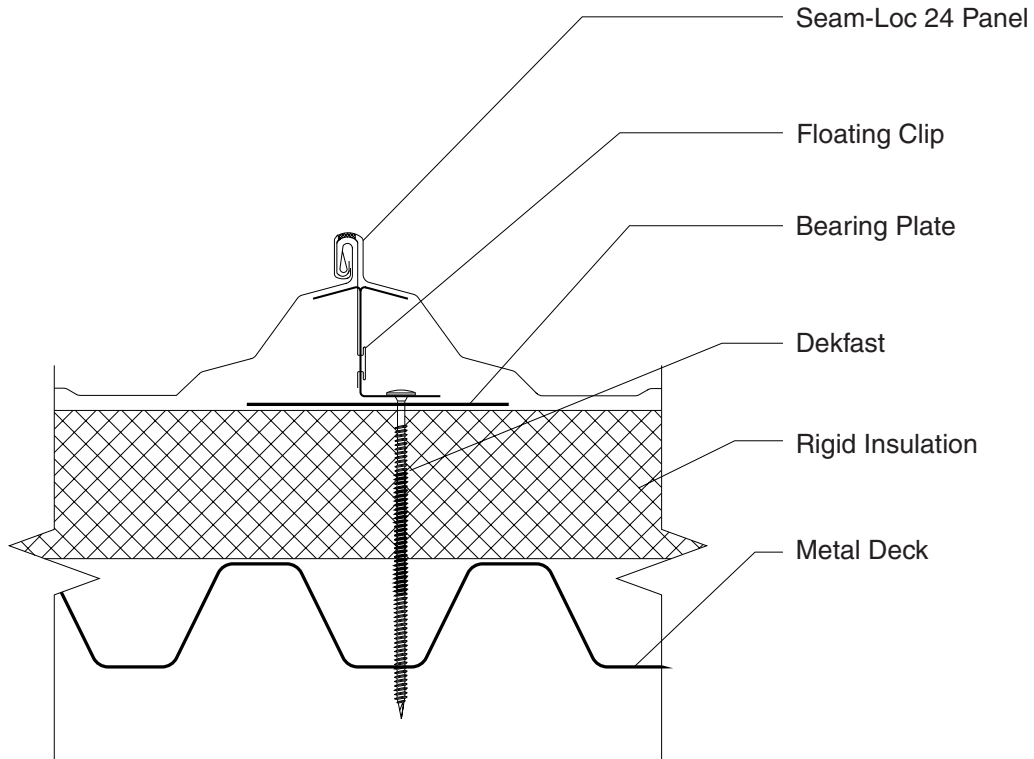
### INSTALLATION NOTES

**Note:** The Metal Outside Closure is used to close off the high end of the panel applications for open framing. Before installation of Metal Outside Closure can begin, all roof panels must be seamed. (See seaming panels on pages 35 and 36 for proper seaming instructions.)

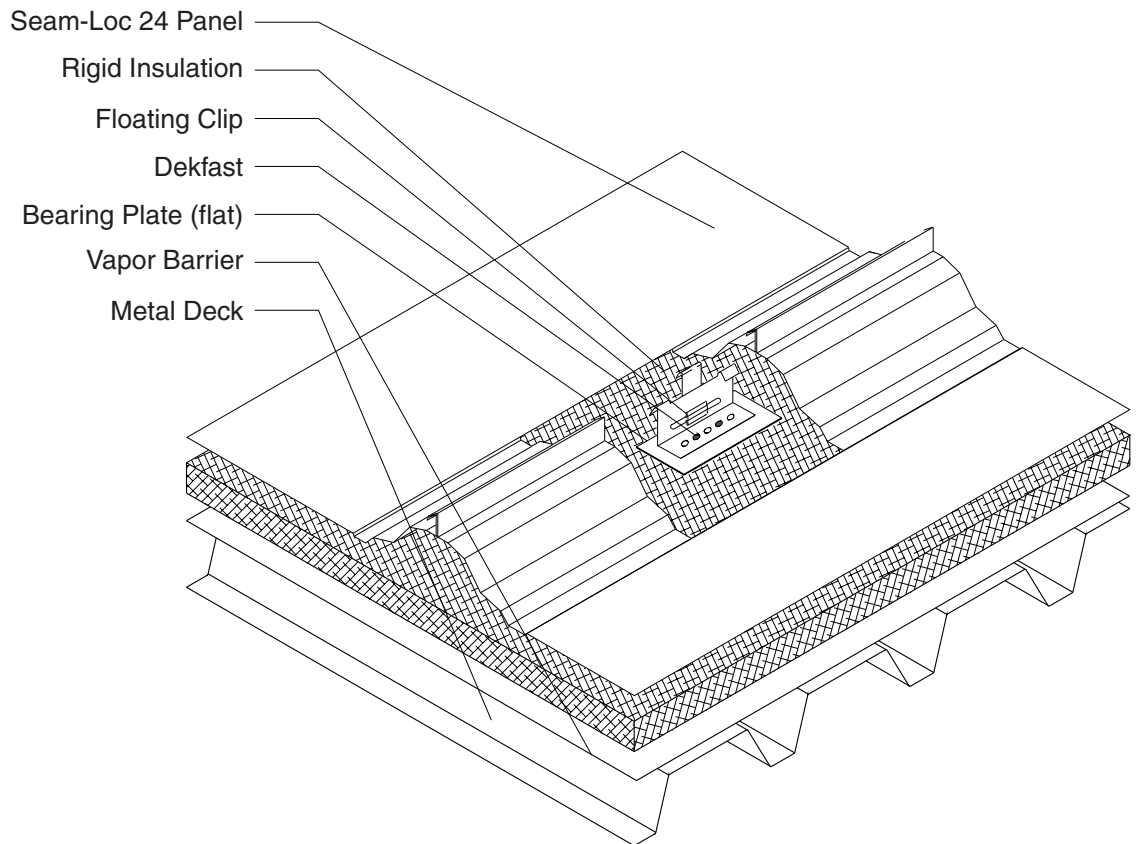
#### Steps:

1. Once panels have been installed and seamed, slide Compression Plate under upper edge of panels. Position Compression Plate to allow for proper installation of flashing assembly. Use C-clamps to hold Compression Plate in place.
2. Apply Double Bead Tape Sealant down the female leg, across the panel and up the male leg  $1\frac{1}{2}$ " from the end of the panel.
3. Place the Metal Outside Closure on Double Bead Tape Sealant making sure the punched lower leg is towards the ridge. The punched lower leg should be  $1\frac{1}{2}$ " from the end of the panel. Use screw driver to properly align panel, closure, and compression plate.
4. Fasten the Metal Outside Closure with (6) #12-14 x 1" SD NW screws. Fasteners must penetrate the Metal Outside Closure, sealant, panel, and Compression Plate.
5. Apply a continuous  $\frac{3}{8}$ " diameter bead of Tube Sealant (if necessary) where the Metal Outside Closure meet the panel seams and fill any and all gaps left around closure.

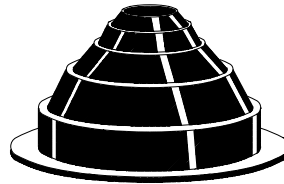
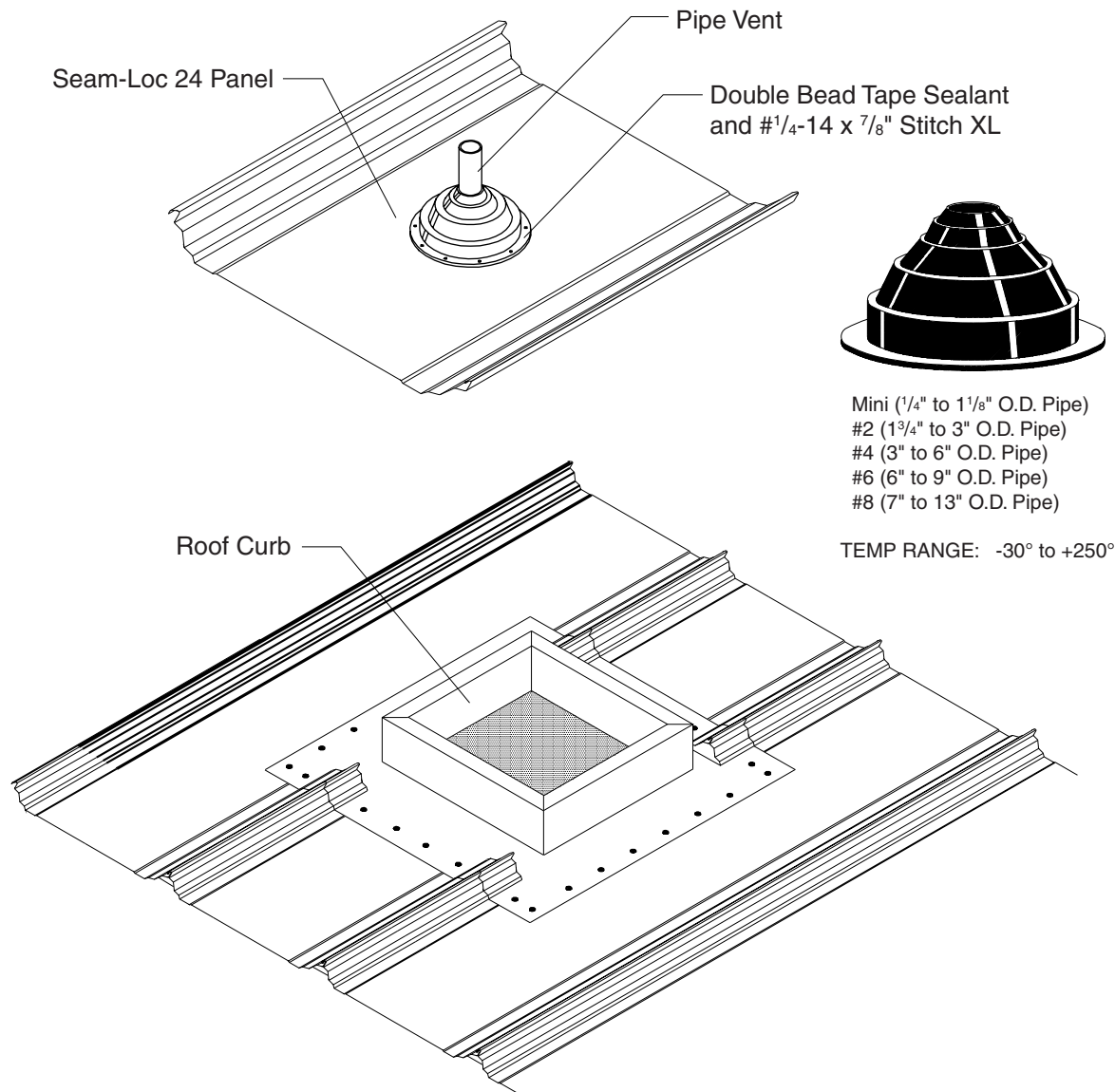
### FLOATING SYSTEM WITH BEARING PLATE



### FLOATING SYSTEM WITH BEARING PLATE ISOMETRIC







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)

TEMP RANGE: -30° to +250°

## GENERAL NOTES

Size and location of all roof penetrations should be an important consideration. Areas around roof vents or rooftop units may show that corrosive fumes are emitted from a process within the building.

Curbs can be obtained from any of the following manufacturers:

KCC International, Inc.	(800)382-2872	Custom Curb	(800)251-3001
ThyCurb	(800)666-2872	LM Curbs	(800)284-1412

## INSTALLATION NOTES

**NOTE: The following procedures are for vent pipes 6" or less and not transmitting extremely hot or caustic materials.**

**When installing vent pipes abide by the local plumbing codes.**

1. Determine the size and length of the vent pipe to be raised.
2. Take the appropriate measurements for the vent location and mark them on the Seam-Loc 24 panel. The vent pipe must extend through the flat of the roof panel. If the vent pipe extension cannot be raised directly into the flat of the new roof panel, elbows should be used to offset the pipe. Cut the panel to fit the vent pipe properly.
3. Use a light gauge angle to secure and plumb the vent pipe to the framing system.
4. Flash the vent pipe with a Rubber Roof Jack or similar pipe flashing.
5. Apply Double Bead Tape Sealant between the panel and the base of the Rubber Roof Jack as well as the top where the boot meets the pipe.
6. Attach the base of the Rubber Roof Jack to the panel using #1/4-14 x 7/8" Stitch XL fasteners.

Though factory applied prepainted finishes are very durable and will last many years, eventually it may be desirable to thoroughly clean or repaint them.

Dirt pickup may cause apparent discoloration of the paint when it has been exposed in some dirt laded atmospheres for long periods of time. In areas of strong sunlight, slight chalking may cause some change in appearance. A good cleaning will often restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will help maintain a good appearance.

In many cases, simply washing the building with plain water using a hose or pressure sprayer will be adequate. In areas where heavy dirt deposits dull the surface, a cloth or soft bristle brush and solution of water and detergent ( $\frac{1}{3}$  cup of laundry detergent per gallon of water for example) may be used. This should be followed by an adequate rinse of water. Do not use wire brushes, abrasives, or cleaning tools which will abrade the coating surface.

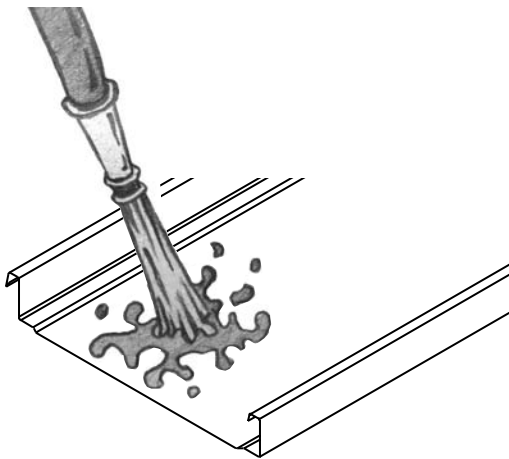
Mildew may occur in areas subject to high humidity but is not normally a problem due to the high inherent mildew resistance of the baked finish that is used. However, mildew can grow on dirt and spore deposits in some cases. To remove mildew along with the dirt, the following solution is recommended.

- $\frac{1}{3}$  cup detergent (Tide® or equivalent)
- $\frac{2}{3}$  cup trisodium phosphate (Solex® or equivalent)
- 1 quart of 5% sodium hypochlorite solution (Clorox® or equivalent)
- 3 quarts of water

Strong solvents and abrasive type cleaners should be avoided. Most organic solvents are flammable and toxic, and must be handled accordingly. When using a solvent, consult maintenance professionals and label instructions for proper handling and disposal of washings. If required, a mild solvent such as mineral spirits can be used to remove caulking compounds, oil, grease, tars, wax, and similar substances. Use a cloth dampened with mineral spirits and apply only to areas which are contaminated. Follow up the use of this mild solvent with detergent cleaning and rinsing.



**DO NOT USE A  
WIRE BRUSH**



**HOSE OR PRESSURE SPRAY  
FOR ADEQUATE CLEANING**



**USE MILD DETERGENT AND WATER  
FOR HEAVY DIRT DEPOSITS**

