



*Residential &
Post-Frame*

Installation Guide



IMPORTANT INFORMATION

The instructions and drawings in this guide are for illustration purposes only. It should not be assumed that they apply to every project or product. Please adhere to all building codes for the location of the project.

If the metal roofing is not installed in accordance with the suggestions that are referenced in this guide, Mansea Metal has no responsibility in the performance of the product. If there is a discrepancy between the guide and the approved Mansea Metal drawings, the approved drawings will take precedence.

All measurements should be verified prior to ordering and installing product. Mansea Metal reserves the right to change any details, suggestions and/or recommendations without notice. This manual is meant to be used as a guide for the installation of Standing Seam (SSF) metal roofing.

HANDLING, DELIVERY AND STORAGE

Bundles should be handled carefully to avoid damage. Please take precautions to avoid bending or scratching panels. If bundles are opened, it is recommended that you recreate them before lifting and lift the bundles at their center of gravity.

CAUTION:

Damage of materials or bodily injury may occur if bundles are loaded or unloaded improperly. Mansea Metal is not responsible for such damages or injuries if materials are not loaded or unloaded properly.

Product should be inspected upon delivery for damages or discrepancies in the material quantities and the shipping list. Please note any damages or shortages and notify supplier within 24 hours.

If a peel off plastic layer is present on any product, these parts should be kept from sunlight. These plastic layers are sometimes applied in order to prevent damage to the finish and should be removed prior to installation. Never slide metal panels or parts across each other.

Product should be stored in a dry, well-ventilated area. One end of each bundle should be elevated at a maximum of 2' in order to allow any moisture that may have accumulated during shipment to run off. Air must be able to circulate freely to prevent moisture build-up. Product should never be stored directly on the ground.

MECHANICAL HANDLING

FORKLIFT: Forklifts may be used for panels up to 20'-0" long. Forks must be at their maximum separation. Do not transport open bundles. When moving across rough terrain or moving a long distance, a means of support for the panels must be used.

CRANE: A crane should be used to lift panels that are greater than 20'-0" in length. Use a spreader bar to make sure the weight is evenly distributed at the pick up points. No more than 1/3 of the panel should be left unsupported. Do not use wire roping-this will damage the panels.

IMPORTANT INFORMATION

Drawings in this guide are for illustration purposes only and may not apply to varying designs, projects, or product installations. All building projects are subject to the building codes for that area. Following all building regulations and acceptable industry practices is highly recommended.

This guide is for installation of Residential and Post-Frame roofs. Safe installation of the product is the responsibility of the erector.

All measurements and product requirements for a project should be verified before ordering and installing the materials.

Recommendations, details, and suggestions may be modified without notice by Mansea Metal Manufacturing. Please contact your Mansea Metal sales representative with any questions regarding proper and safe installation of the product.

Mansea Metal Manufacturing is not responsible for the performance of the product if it has not been properly installed in accordance with the recommended instructions in this manual or in the product overview. Any conflict between this guide and the actual erection drawings, will result in the erection drawings taking precedence.

SAFETY

PLEASE CONSULT OSHA REGULATIONS AND OTHER SAFETY REQUIREMENTS BEFORE ADMINISTERING THESE INSTRUCTIONS.

This manual is only a guide to illustrate the parts and placement to a trained, knowledgeable erector. Work should stop immediately if any of the installation steps could endanger any worker.

Installation of metal roofs is dangerous and should be under supervision of a trained, knowledgeable erector. PLEASE EXERCISE EXTREME CAUTION WHEN INSTALLING METAL ROOF PANELS. Mansea Metal cannot be aware of all job site situations that may create an unsafe work environment. The erector should read all instructions and should determine the safest way to install the product.

The roof panel should NOT be used as a platform to walk on. Metal roof panels WILL NOT withstand a person's weight who is standing on the edge of a panel.

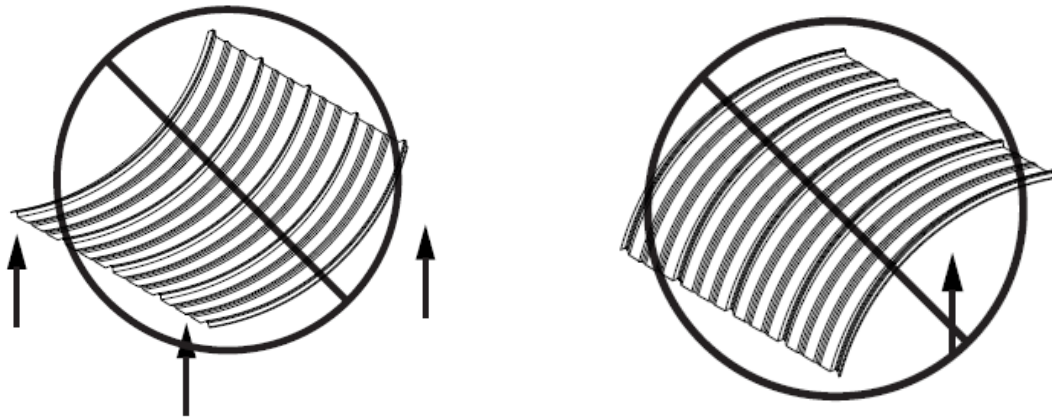
Panels should be attached at the ends before standing on that particular panel.

Workers should be trained in safe installation and should be provided with safety lines, railing, or netting.

MANUAL HANDLING

When handling any painted steel, use care not to scratch the product. Always wear clean gloves to prevent any reactions with the salts found on skin. Installers should wear rubber sole shoes to prevent scuffing the metal when walking on roof.

Measures should be taken to ensure there is no bending or damaging of individual panels. Carry the panels by holding the edge of the panel so the panel is vertical to the ground. Do not carry the panel horizontally because the panel could buckle or bend in the center. Each panel should be carried by placing a person every 6'-0" to 8'-0" along the length of the panel.





Safety and Storage Instructions for Metal Roofing and Siding

Safety Advisories

Due to sharp edges on metal panels and trim, protective gloves and clothing should be worn. Safety glasses must be worn when cutting or drilling steel panels to prevent eye injury. Be cautious when walking on roof panels.

To prevent fall-throughs, be sure to have a proper substrate under the panels. Plywood is typically recommended on non-structural applications. Mansea Metal recommends that OSHA requirements are followed for protection from falls. Metal panels will likely be slippery when wet. Work on metal panels is not recommended when weather conditions are wet or otherwise unsuitable for safe installation.

Roofing Applications

Filings from any screw fasteners or from application of metal products must be removed from the roof to prevent rust marks or “bleeding” on panels. For any application questions, please contact Mansea Metal.

Storage

Metal roofing must be properly handled and stored to maintain the integrity of the product. Metal roofing should be installed immediately. Panels or trim that are not immediately installed must be stored in a dry, indoor area. Extra precautions should be taken to avoid moisture penetration by condensation, rain, or snowfall. Condensation occurs naturally as moisture from a change in temperature of the metal where it does not receive adequate ventilation.

Storage Recommendations

Metal roofing should be stored indoors and off the ground on wooden supports with one end slightly elevated. Cut any banding around the panels to allow for expansion and ventilation. Metal parts should be covered with a loose tarp or waterproof material. Cover the stack, but do not tighten to the ground so that the materials still receive air flow.

NEVER USE PLASTIC TARPS! Plastic tarps create condensation.

A failure to comply with any of these storage, safety, or roofing procedures will relieve Mansea Metal from any damage or deterioration of the panels. This will also void any warranty that may apply. There is no implied warranty of fitness for purpose or merchantability.

Building code requirements vary by county and by project. Before beginning any construction project, contact the local building and zoning department for information. Mansea Metal acts only as the manufacturer of metal roofing and siding products and is not in control of the application, construction, or installation.

METAL ROOF ACCESSORIES



BUTYL TAPE

3/32" X 3/8" X 45'

Asbestos free butyl tape in roll form. Applications include metal roof endlaps, sidelaps, vents, pipe flashings, and skylights.

DEKTITE FLASHERS

Retro Boot, Hi Temp Boot, and Rubber Roof Boot

Pipe diameter Ranges: 1/4" to 18"

Colors: Gray, Black, Silicone Orange

Materials: EPDM - Gray & Black (250°F maximum)
Silicone - (450°F maximum) operating temperature



TUBE SEALANT

10.3 OZ CARTRIDGE

UNIVERSAL CLOSURE

1" X 1½" X 50'-0"



CLOSURE STRIPS



1" X 3'-0"
Polyethylene Foam

FASTENERS

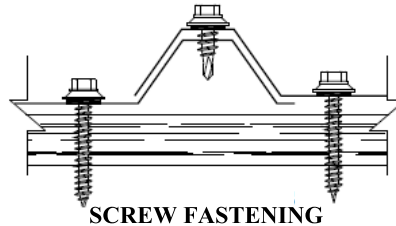


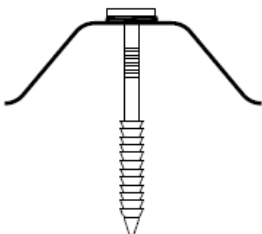
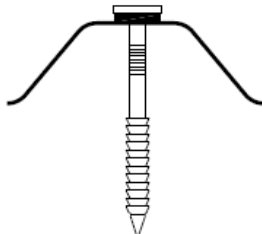
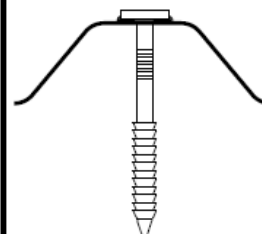
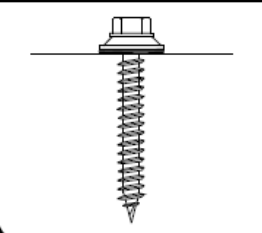
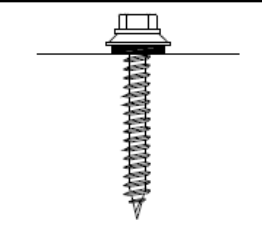
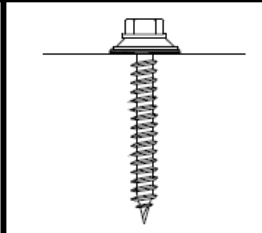
NAILS:

If using nails for fastening, painted or galvanized steel ring shank nails with a flat neoprene washer should be used. The nails should penetrate through the wood support to a 1/4" depth, however, they should not be so long that they completely go through the support. Do not drive the nails too tight. Overdriving may cause the washers and/or the steel to be damaged. Drive nails perpendicular to the wood support, unless manufacturer state otherwise. Approximately 2 pounds of nails should be used per square for 3' wide panels.

SCREWS:

If using screws for fastening, painted or plated screws, Type A or driller tips with flat rubber washers should be used. The right screw gun is also important for correct installation of self-drilling or self-tapping screws. A tool with appropriate torque and speed will help prevent strip-out and possible damage to panel or the coating of the panel. Approximately 80 screws should be used per square for 3' wide panels.



CORRECT When the sealing material is slightly visible at the edge of the washer, it will be water tight.	TOO LOOSE When sealing material is not visible, then there is not enough compression to seal.	TOO TIGHT When sealing material is pressed beyond the edge, the washer becomes deformed.
		
		

Washer: Apply adequate torque to set the washer. Do not overdrive fastener.

Wobbling: Fastener head must be completely engaged in socket. If the head doesn't go all the way into the socket, tap the magnet deeper to allow it to fully engage. Remove any metal shavings that will build up from drilling.

Protecting drill point: Only push hard enough on the screw gun to engage the clutch. This will prevent extra friction and burn out of the drill point. Adequate pressure will prevent binding.

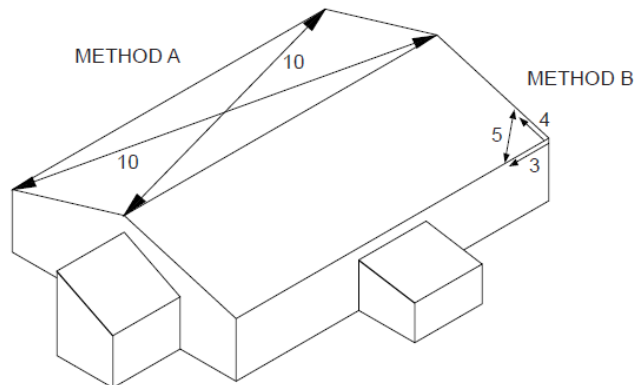
INSTALLATION INFORMATION

Before installing metal roofing, the roof should be inspected for trapped moisture or any damage (such as sagging or bowing rafters and warped or loose purlins or solid decking). Any such damages should be repaired before installing new metal panels.

There should not be any nails or fasteners protruding from the framing or the substrate. This could damage the panels and hinder the installation. Panels must be installed over an aligned and uniform substructure to avoid distortion of the panels. Make sure the roof deck is square before installing on new or existing roofs. There are a couple of different methods that can be used to check the squareness of the structure.

METHOD A: Measure diagonally across one slope of the roof from other similar points at the ridge and the eave. If square, the measurements will match.

METHOD B: Use of the 3-4-5 triangle system is also an acceptable method. Measure from a point in the corner along the edge of the roof at a module of three (3). Then measure a point from the same corner along another edge at a module of four (4). In measuring diagonally between these two points, the dimension should match a module of five (5) for a square corner. Many uses of this method may be required to verify squareness. The endwall must be made square or the roof system cannot be installed as shown.



FIELD CUTTING TECHNIQUES, TOUCH-UP PAINT, AND VENTILATION

FIELD CUTTING:

Tins snips or another similar “nibbling” type tool are recommended when field cutting metal panels. Any metal shavings or slivers that occur when cutting should be removed immediately to avoid damage to the finish of the panels. To prevent excess metal shavings, flip the panel over when cutting. Slivers and shavings are then brushed from the back of the panel and prevents damaging the paint on the top side. Goggles must be worn for eye protection.

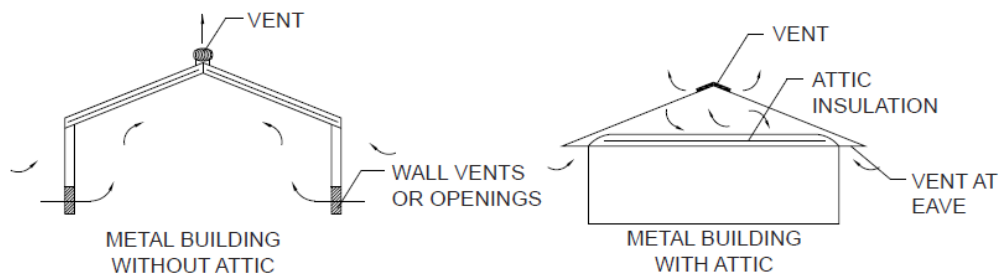
Keep all surfaces free of debris at all times. Installed pieces should be wiped clean following all work periods. Do not cut panels over metal surfaces. The metal shavings will rust on the surface and void the warranty.

TOUCH-UP PAINT:

Panels may have small scratches or nicks due to handling and installing of product. Touch-up paint is available in matching colors for the panels at Mansea Metal. Use a small brush to apply touch-up paint on spots in need of repair. Touch-up paint will normally discolor at an accelerated rate because it does not have the superior chalk and fade resistant properties of the factory applied finish.

VENTILATION:

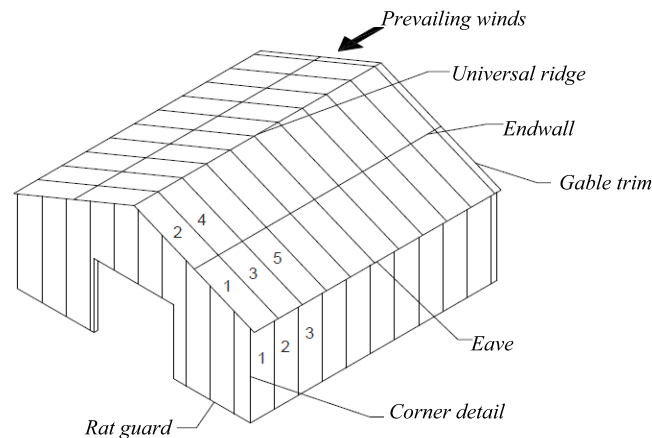
Installation of vapor barriers and ventilation systems is critical to prevent condensation and the issues of moisture damage and loss of insulation efficiency. Condensation occurs when moisture in the air comes into contact with a surface temperature that is equal to or below the dew point of the air. This creates problems that are not unique with metal roofing. These problems are common to all types of construction. The underside of a metal roof on a typical metal building with no attic should be protected from condensation by insulating it with a faced insulation. On other buildings that have an attic or are being retrofitted with a metal roof, vents should be installed at the eave and the peak of the roof to avoid buildup of moisture in the attic space.



PANEL OVERVIEW

Panel minimum cut length is 3'-0". Panels that are over 45'-0" will require additional consideration the the packaging, shipping and installation. Two crucial measurements involving metal panels are: the length of the panel overhang required at the eave, and the peak end. In each case, a certain measurement is required. Verify measurements to make sure the panel placement give you the distance needed at the eave and peak condition. Any variance can usually be taken out at the eave or peak ends.

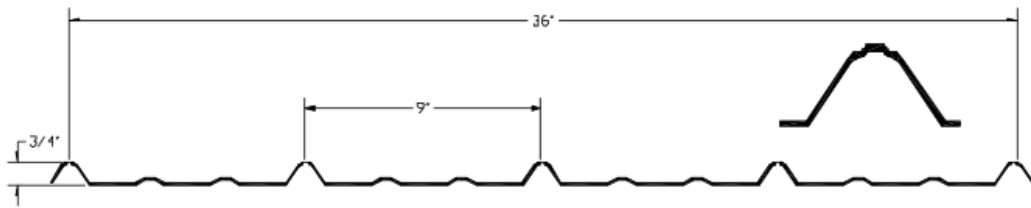
INSTALLATION OVERVIEW



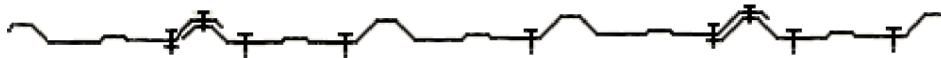
- * Install panel against the prevailing wind as shown in the number designations.
- * Metal siding panels should not be installed all the way to the ground to minimize corrosion.
- * Side panels should overlap the foundations or splash boards by at least three (3) inches.
- * Position of fasteners may need to be closer if the area is prone to high winds.
- * When installing side panels, it is necessary to attach a temporary guide to the foundation to be used as an alignment guide.
- * If applicable, the siphon groove side of the panel must be overlapped with the non-siphon groove side of the adjacent panel.

PANEL INFORMATION

PREMIUM RIB



SCREW PLACEMENT



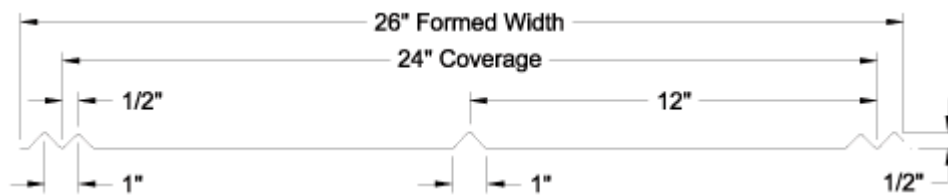
****CAUTION:**

In order to meet uplift and snow load building codes, the use of additional fasteners may be necessary.

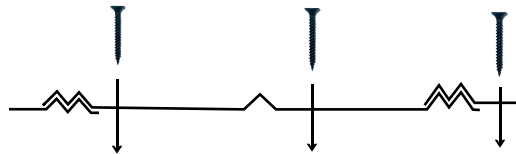


PANEL INFORMATION

5V



SCREW PLACEMENT



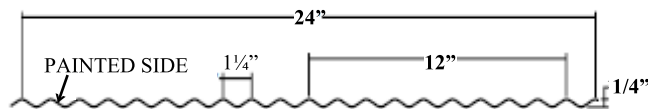
****CAUTION:**

In order to meet uplift and snow load building codes, the use of additional fasteners may be necessary.

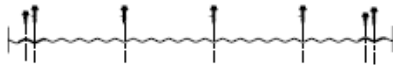


PANEL INFORMATION

1 $\frac{1}{4}$ " CORRUGATED



SCREW PLACEMENT



*CAUTION:

In order to meet uplift and snow load building codes, the use of additional fasteners may be necessary.

POST FRAME FLASHINGS

<p>SQUARE BASE TRIM</p>	<p>RAT GUARD</p>	<p>J-CHANNEL</p>	<p>SOFFITT/FASCIA</p>
<p>ENDWALL</p>	<p>SIDEWALL</p>	<p>MINI ANGLE</p>	<p>INSIDE CORNER</p>
<p>POST TRIM</p>	<p>NATIONAL TRACK COVER</p>	<p>CANNONBALL TRACK COVER</p>	<p>RAKE TRIM</p>

POST FRAME FLASHINGS

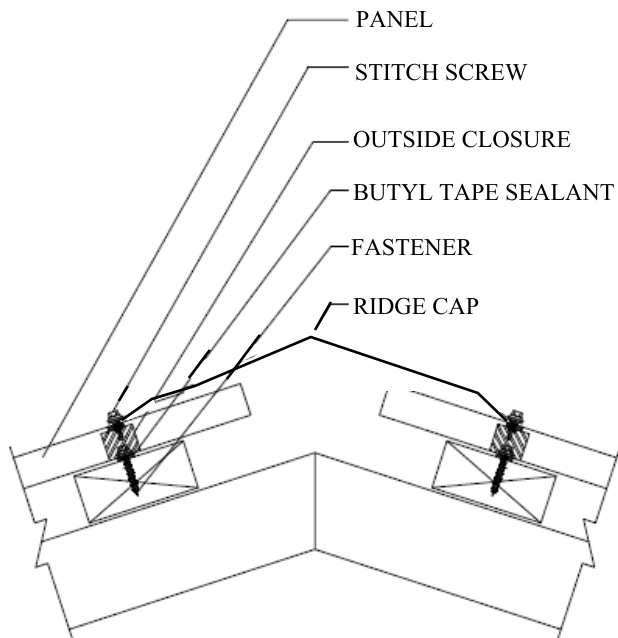
(continued)



<p>OUTSIDE CORNER</p>	<p>OVERHEAD DOOR TRIM</p>	<p>DOOR JAMB MOLDING</p>
<p>DRIP CAP</p>	<p>DOOR POST TRIM</p>	<p>TRANSLUCENT PANEL</p> <p>LENGTHS: 10'-0", 12'-0", 16'-0" CLEAR OR WHITE</p>
<p>EAVE MOLDING</p>	<p>DOUBLE ANGLE</p>	<p>WIDE Z-METAL</p>
<p>GAMBREL</p>	<p>GABLE TRIM</p>	<p>3/4" F & J CHANNEL</p>

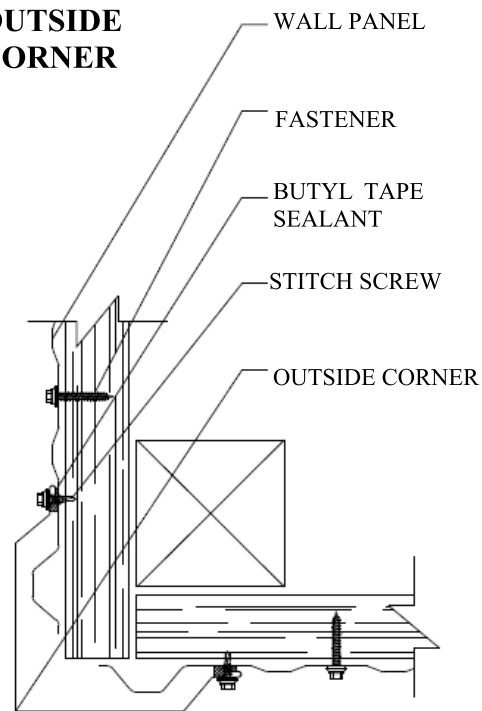
POST FRAME DETAILS

UNIVERSAL RIDGE



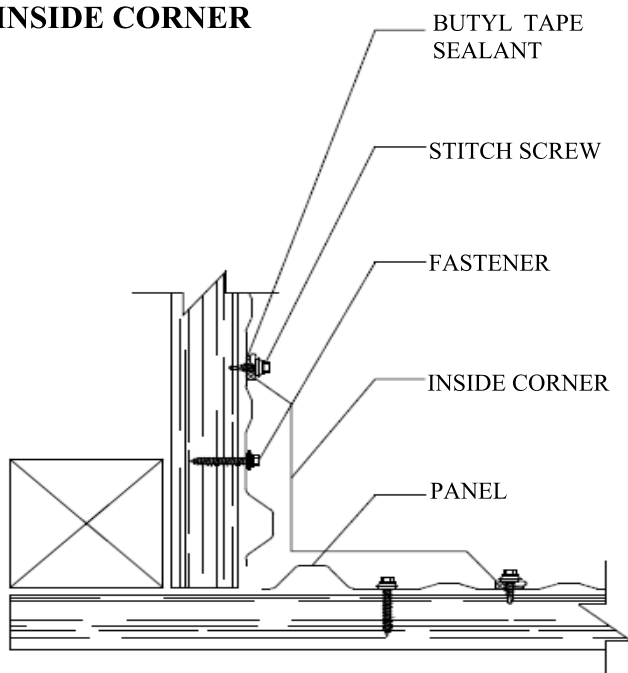
**fasteners should be spaced at 8" - 12" o.c.
stitch screws should be placed at every rib

OUTSIDE CORNER

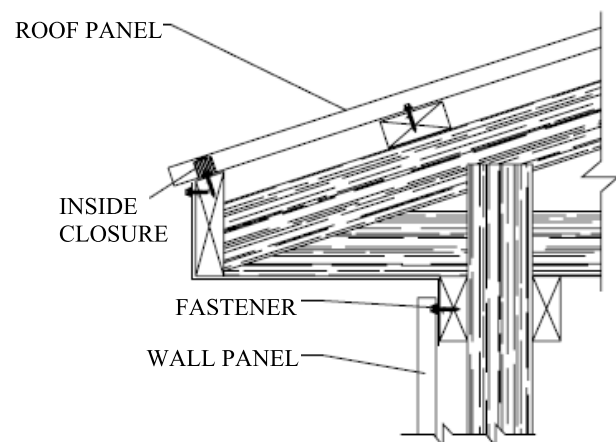


**stitch screws should be placed 1'-0" o.c.*

INSIDE CORNER



SOFFITT

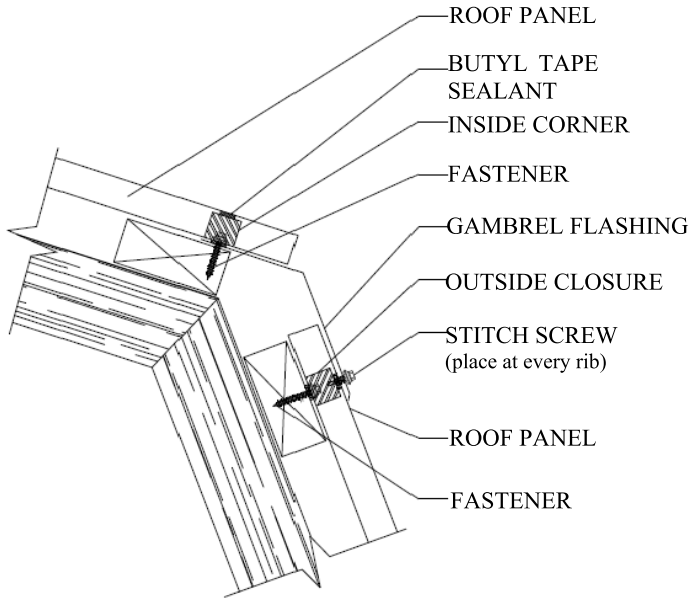


**Fasteners should be spaced at 8"-12" o.c.*

POST FRAME DETAILS
(continued)

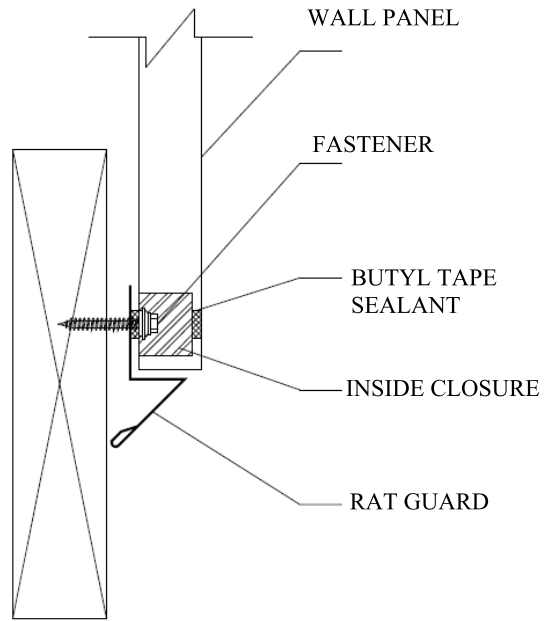


GAMBREL

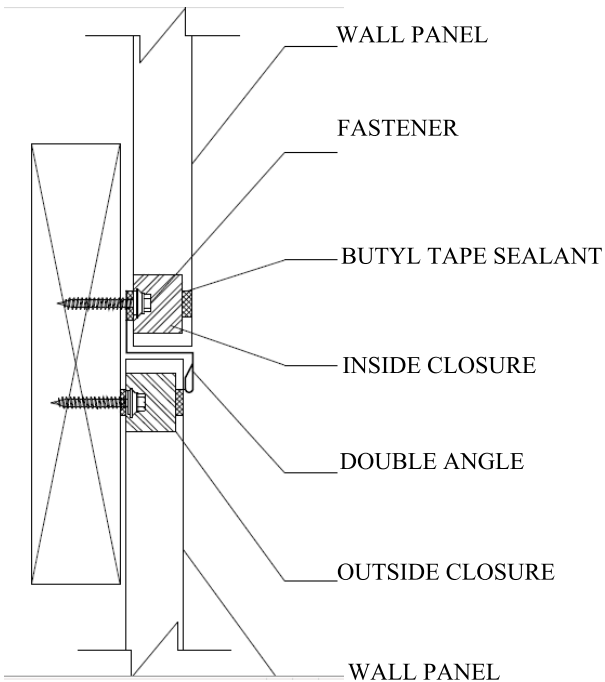


FASTENERS SHOULD BE SPACED 8"-12" O.C.

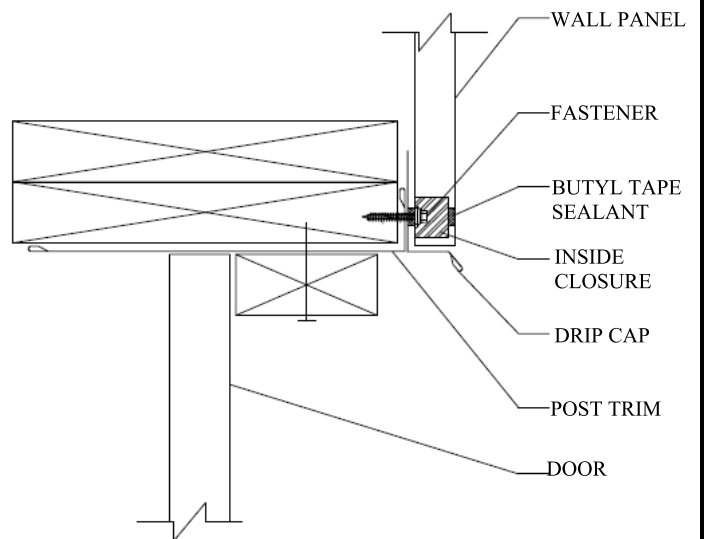
RAT GUARD



DOUBLE ANGLE



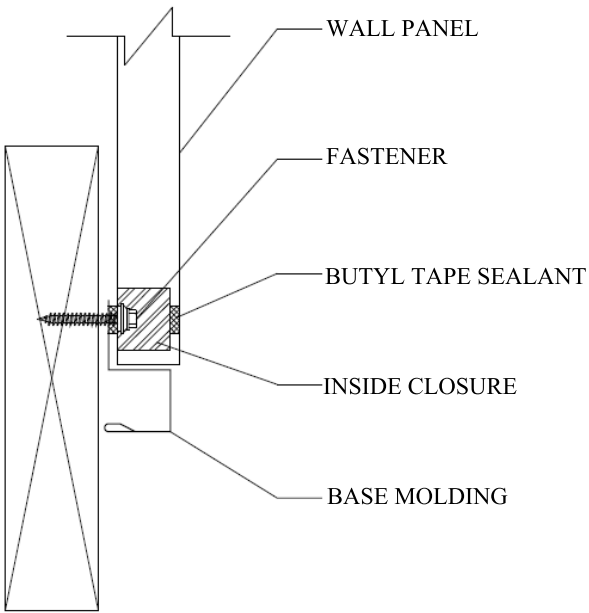
DRIP CAP



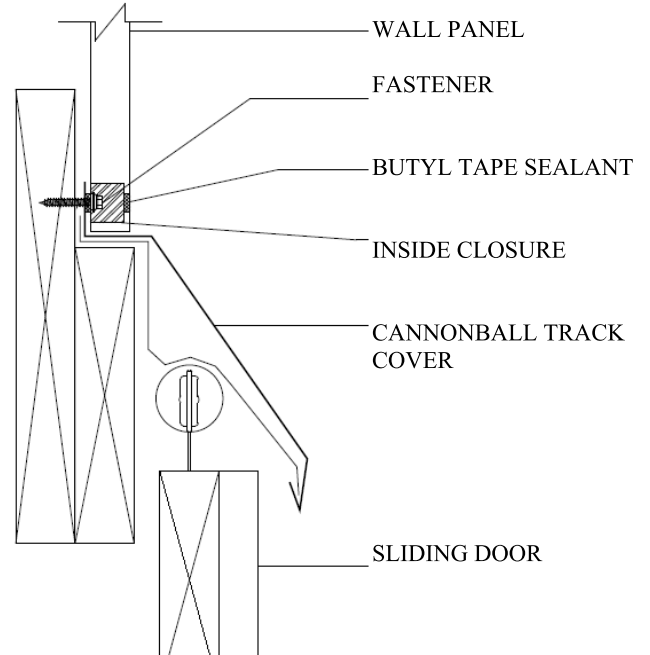
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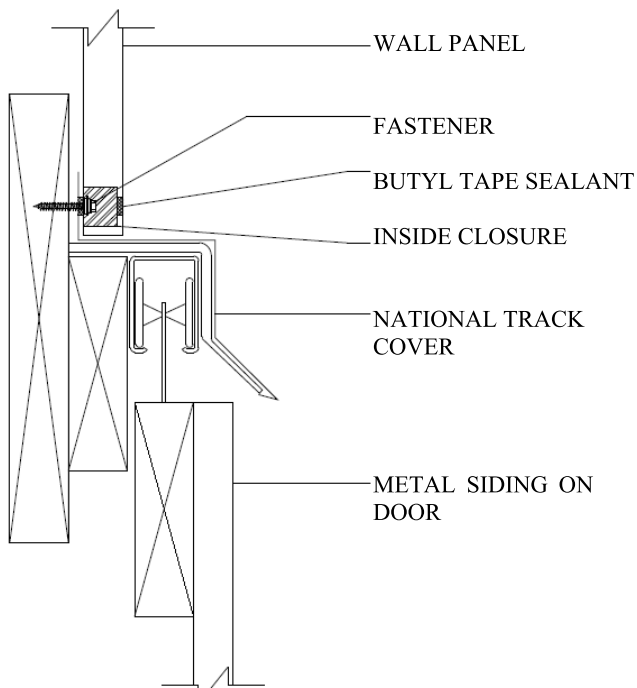
BASE MOLDING



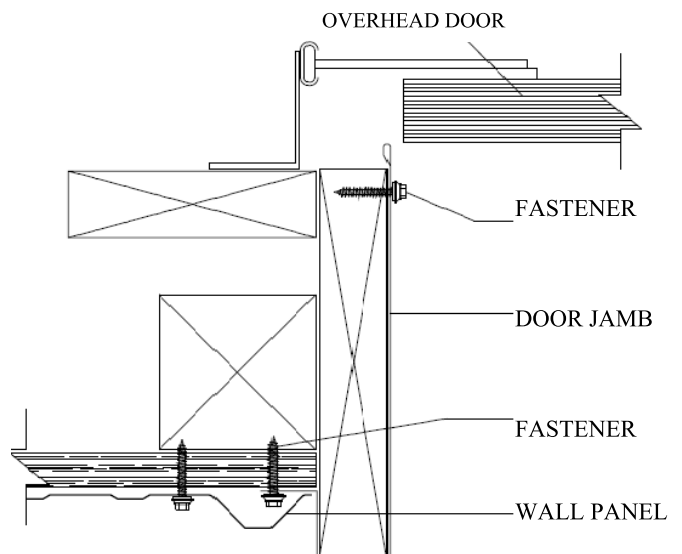
TRACK COVER (CANNONBALL)



TRACK COVER (NATIONAL)



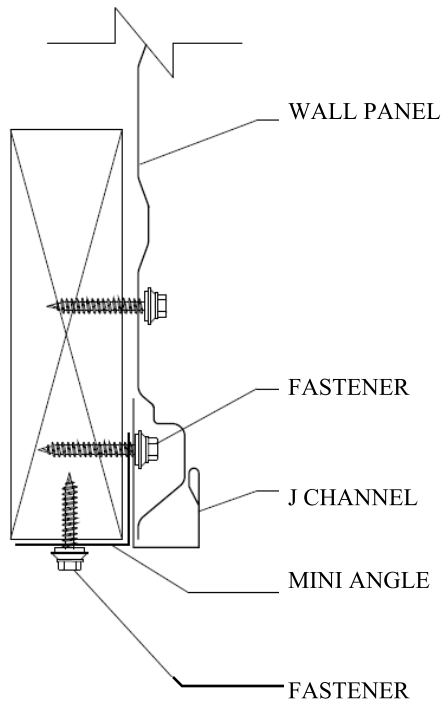
DOOR JAMB MOLDING



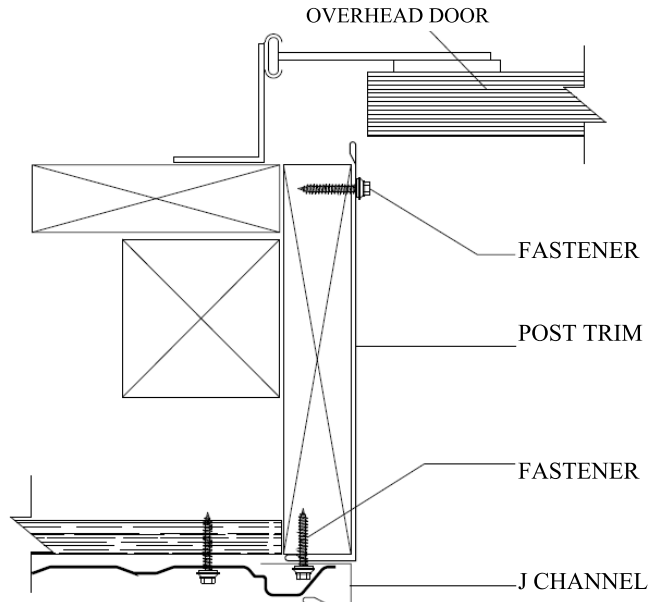
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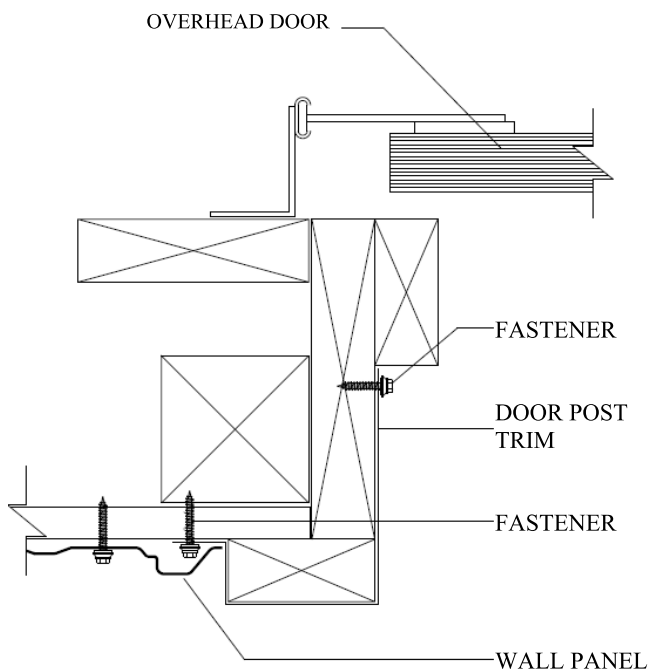
MINI ANGLE



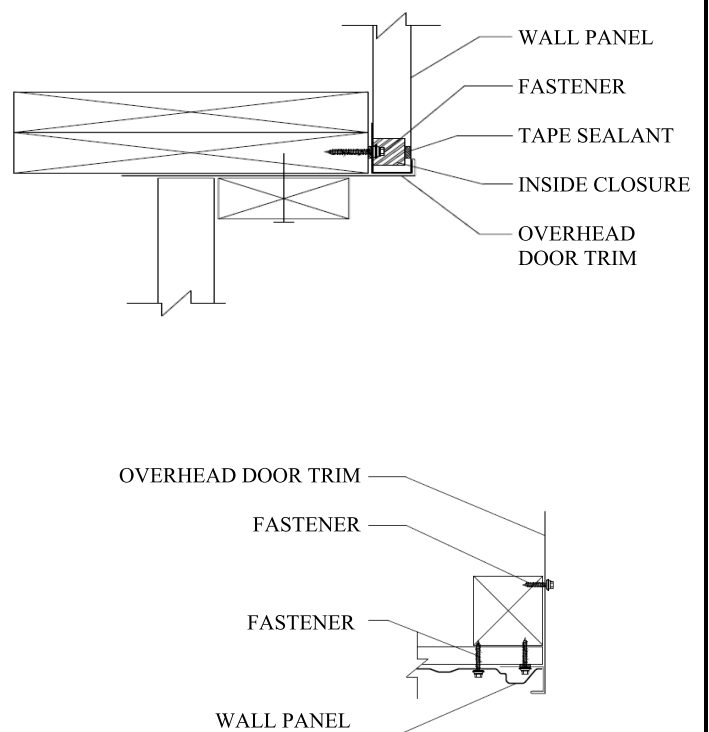
POST TRIM



DOOR POST TRIM



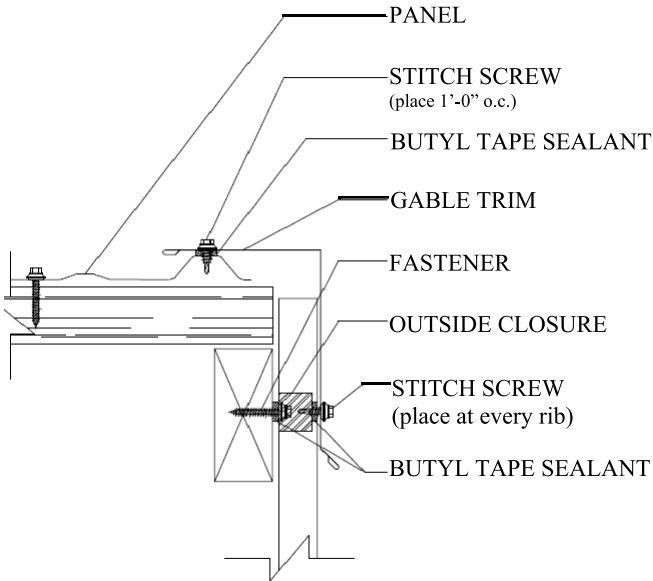
OVERHEAD DOOR TRIM



POST FRAME DETAILS

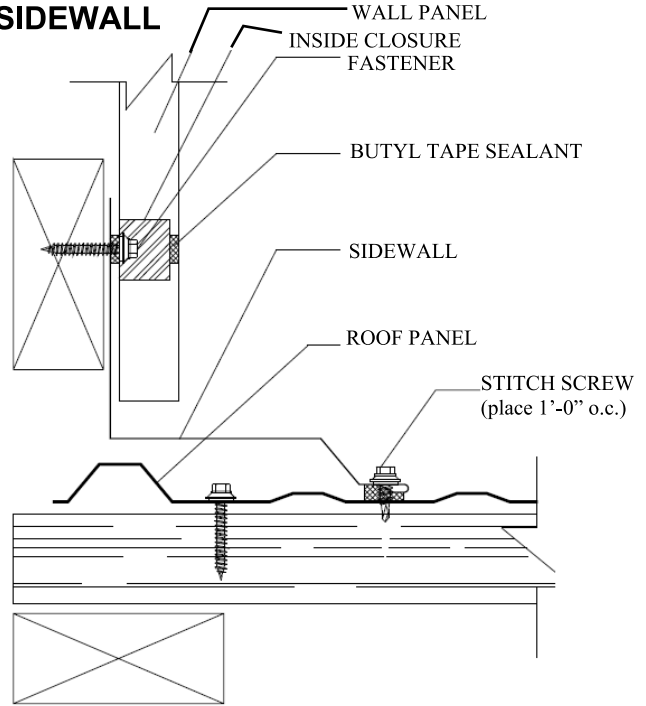


RAKE TRIM

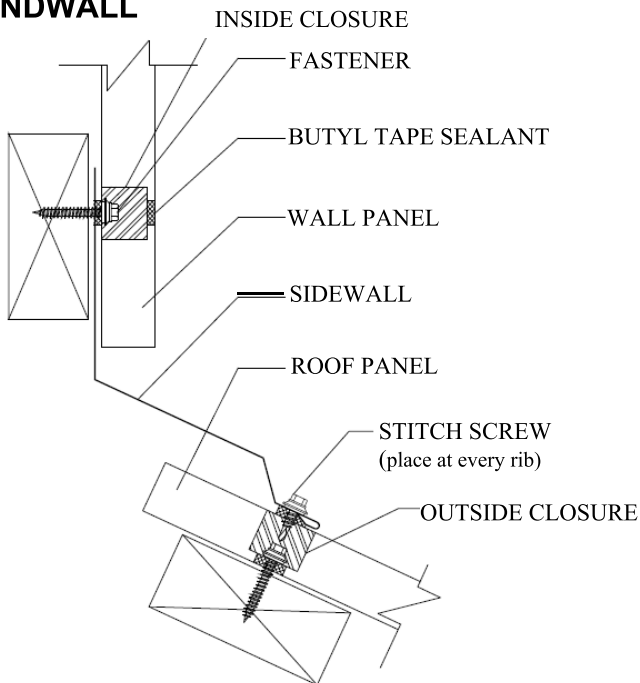


FASTENERS SHOULD BE SPACED AT 8"-12" O.C.

SIDEWALL

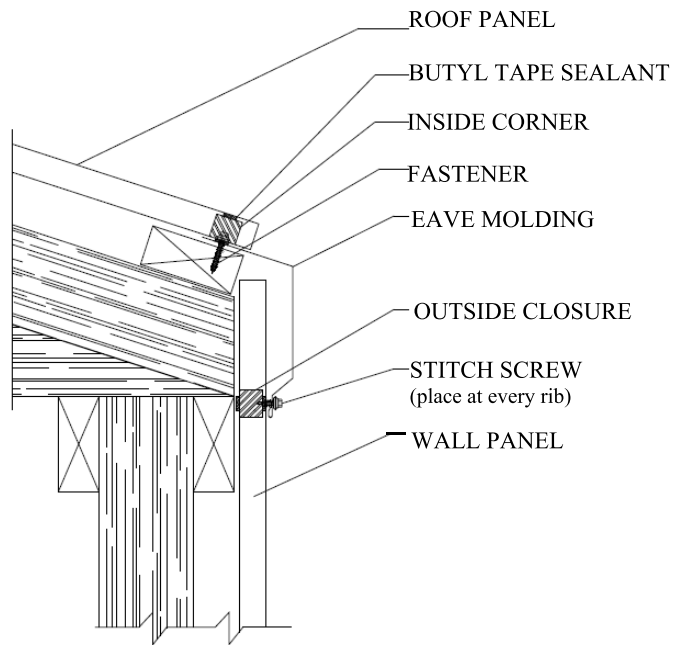


ENDWALL



FASTENERS SHOULD BE SPACED 8"-12" O.C.

EAVE MOLDING



FASTENERS SHOULD BE SPACED 8"-12" O.C.

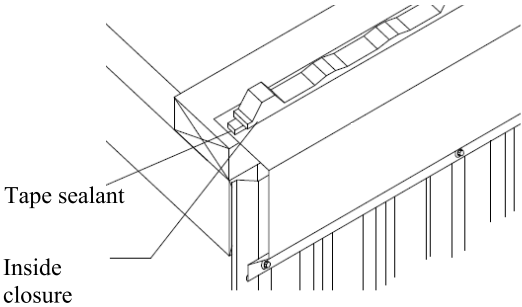
POST FRAME INSTALLATION



ATTENTION:

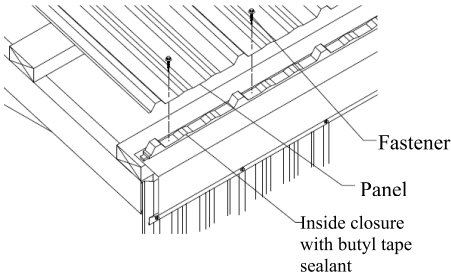
Eaves, gutters, and valleys must be installed first before panels. Panels can be installed going left to right or right to left looking from the eave to the peak.

STEP 1: INSIDE CLOSURES



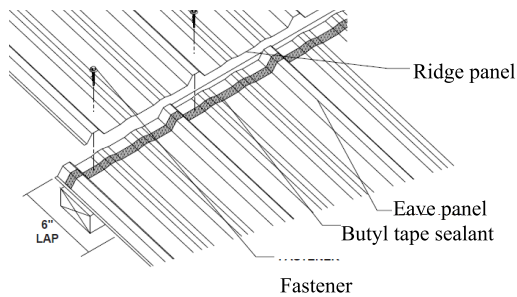
1. Apply a row of butyl tape sealant across the top leg of the eave along width of building.
2. Place inside closures ovetop the tape sealant. Closures must be square to the building to control the alignment of the panels.
3. Apply a row of butyl tape sealant across the top of the inside closure.

STEP 2: INSTALLATION OF FIRST PANEL



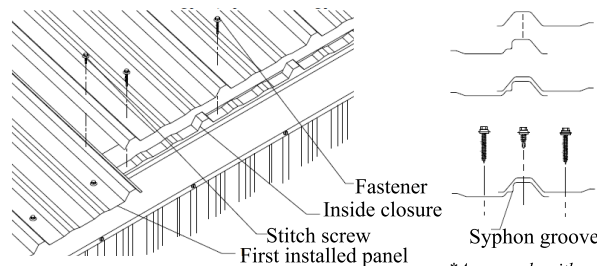
1. Install first panel over the inside closure still allowing for desired overhang. Panel should be square to the eave and the rake.
2. Fasten through the panel, closure, and the sealants into the decking with appropriate amount of fasteners to meet your local building codes. Make sure fasteners penetrate closure and tape sealant.

STEP 3: ENDLAP PANEL (when applicable)



1. Apply row of butyl tape sealant across and overtop the ribs of eave panel approximately 3" from the panel end.
2. Install ridge panel over the eave panel and the tape sealant allowing a 6" endlap. Fasten through both of the panels and the sealant into the support with sufficient number of fasteners to meet local building code. The fasteners must penetrate closure and sealant.
3. After panel has been secured, repeat the fastening pattern at every panel support location.

STEP 4: SIDELAP PANEL



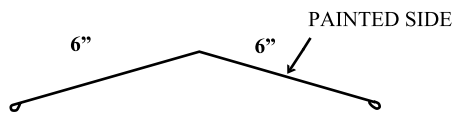
**Any panels without a syphon groove will require tape sealant in the sidelap*

1. Position the lapping seam of the second panel overtop the already installed panel. The panel ends should be flush at the eave.
2. Fasten through the panel, closure, and the tape sealant into the support with an adequate number of fasteners to meet local building code. Make sure the fasteners penetrate the closure and sealant.
3. After panel has been secured, repeat the fastening pattern at all panel support locations.

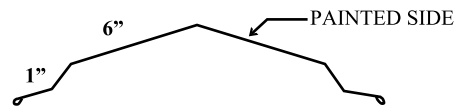
RESIDENTIAL FLASHINGS



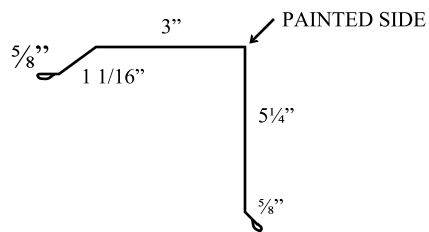
RIDGE/HIP COVER



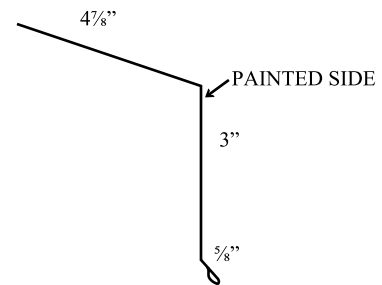
STEP RIDGE/HIP COVER



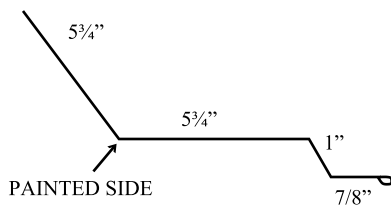
GABLE TRIM



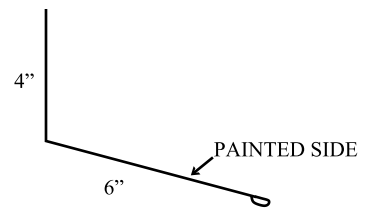
EAVE



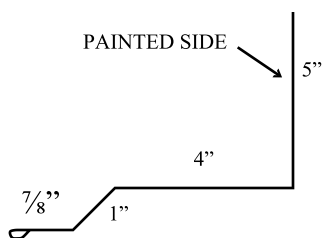
UNIVERSAL ENDWALL



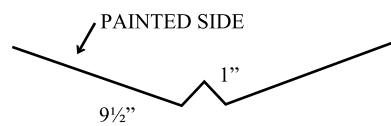
PITCH BREAK



UNIVERSAL SIDEWALL

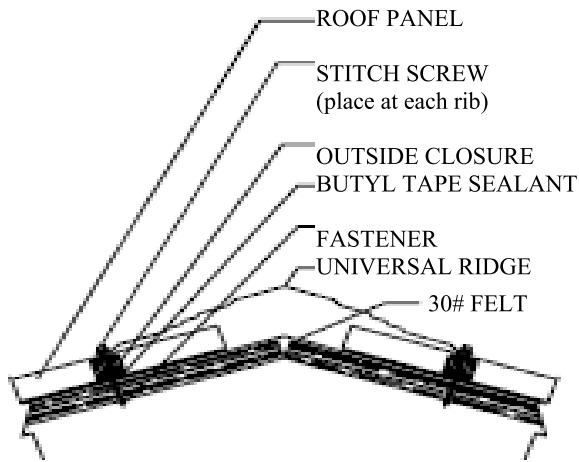


VALLEY



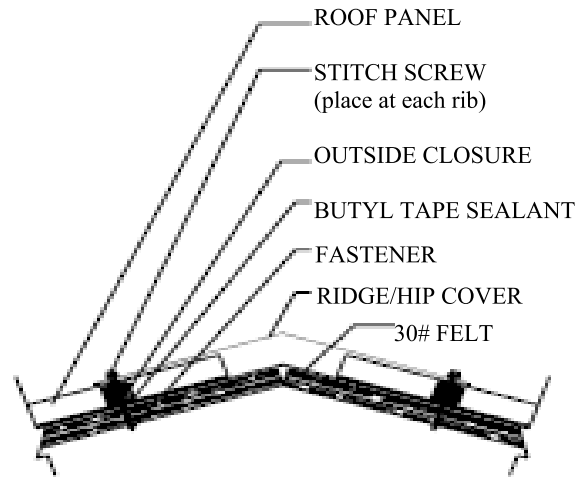
RESIDENTIAL DETAILS

UNIVERSAL RIDGE



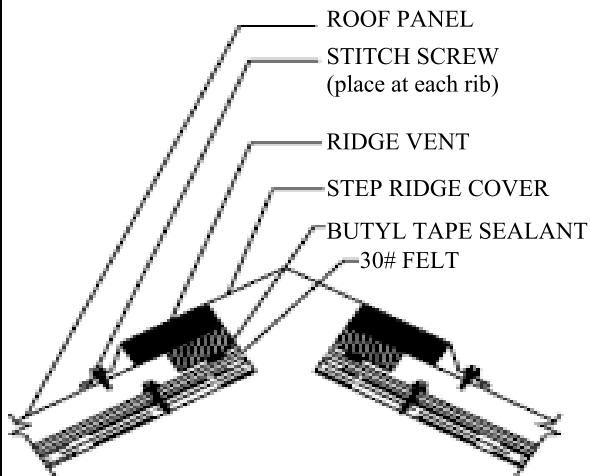
FASTENERS SHOULD BE SPACED 8"-12" O.C.

RIDGE/HIP



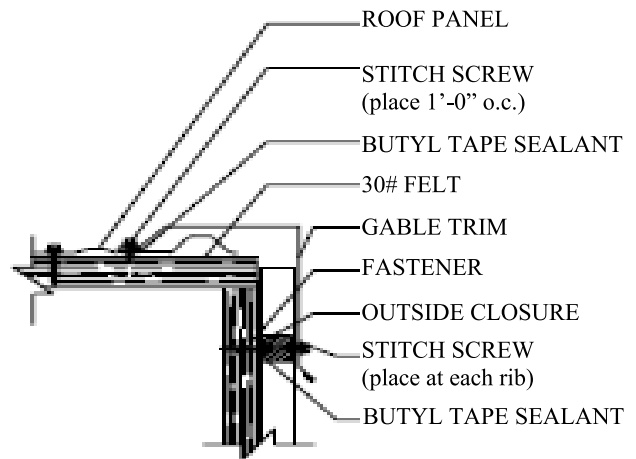
FASTENERS SHOULD BE SPACED 8"-12" O.C.

VENTED RIDGE



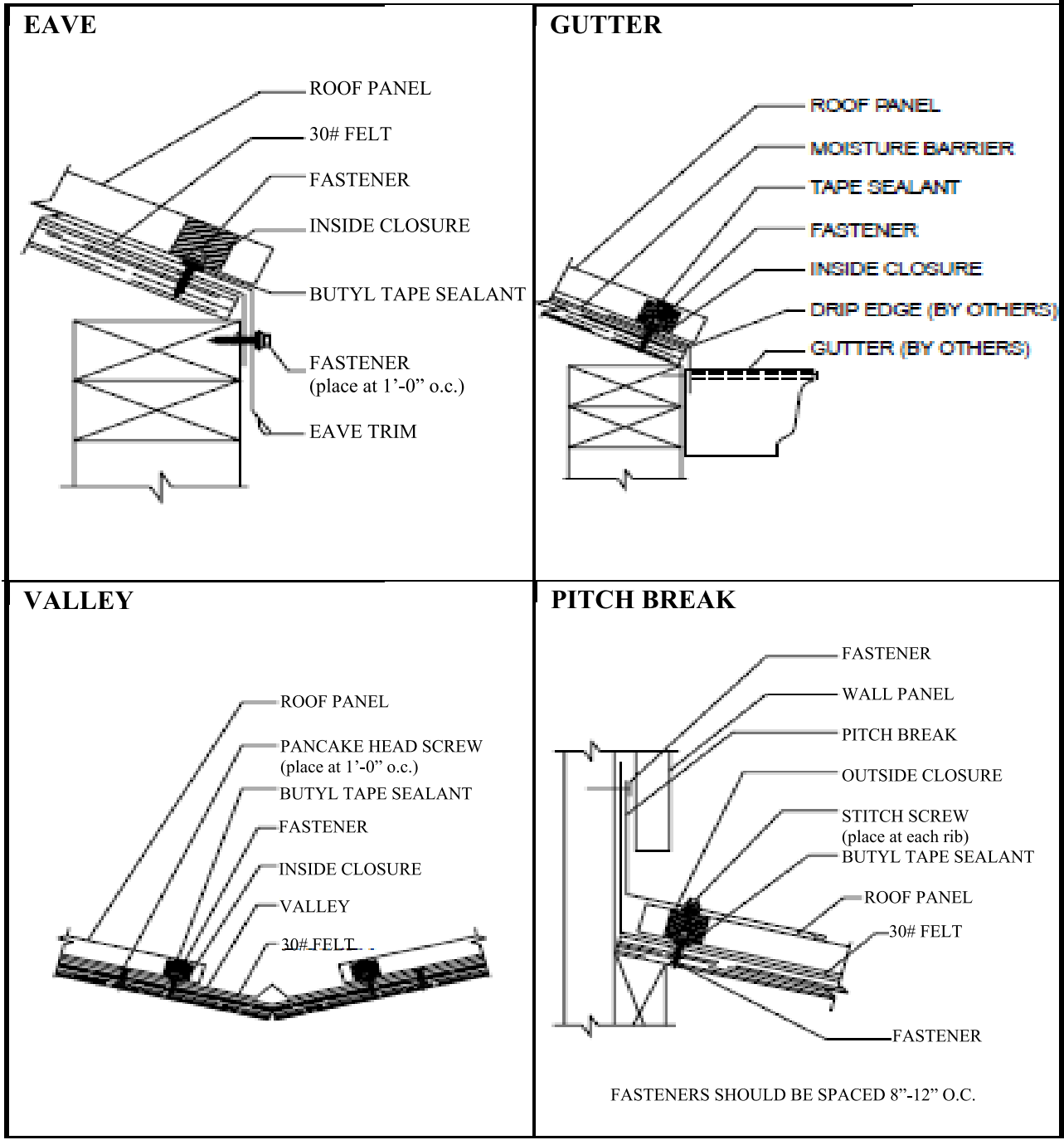
FASTENERS SHOULD BE SPACED 8"-12" O.C.

GABLE TRIM



FASTENERS SHOULD BE SPACED 8"-12" O.C.

RESIDENTIAL DETAILS (continued)



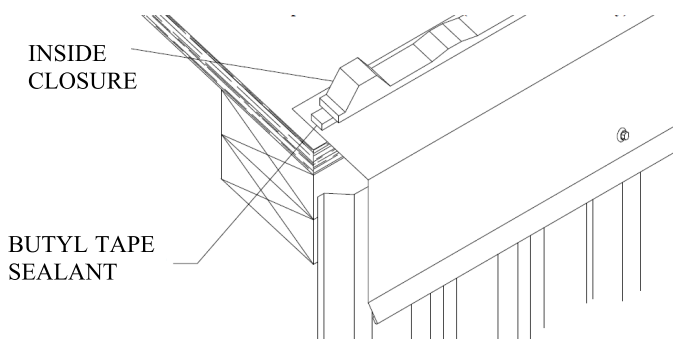
RESIDENTIAL PANEL INSTALLATION



ATTENTION: EAVE MOLDING, GUTTER AND VALLEYS MUST BE INSTALLED BEFORE PANEL INSTALLATION. PANELS CAN BE INSTALLED FROM LEFT TO RIGHT OR RIGHT TO LEFT.

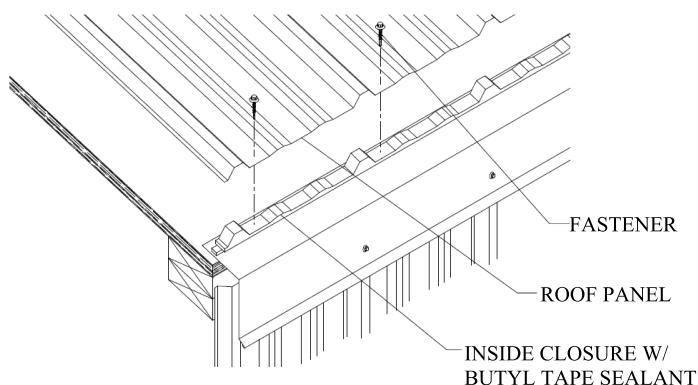
STEP 1: INSIDE CLOSURES

1. Apply a row of butyl tape sealant across the top leg of the eave molding along the width of the building.
2. Place inside closures over the butyl tape sealant. Inside closures must be square to the building. This will control the alignment of the panels.
3. Apply a row of butyl tape sealant across the top of the inside closure.



STEP 2: FIRST PANEL

1. Install first panel overtop the inside closure while allowing for adequate overhang. Panel must be square to eave and rake.
2. Put fasteners through panel, closure, and sealants into the decking with adequate number of fasteners to meet the local building codes. It is important for the fasteners to penetrate closure and sealant.
3. When panel has been secured at the eave, repeat the fastening pattern. (Be sure spacing of fasteners is done so to meet local building codes.)

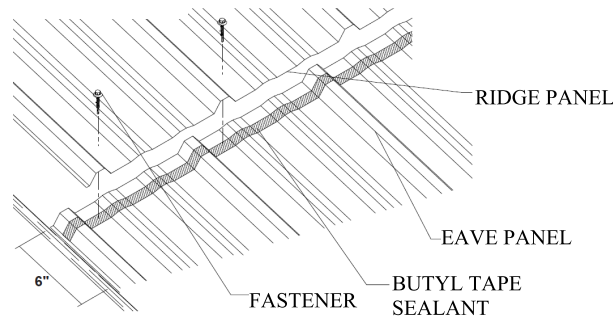


RESIDENTIAL PANEL INSTALLATION (continued)



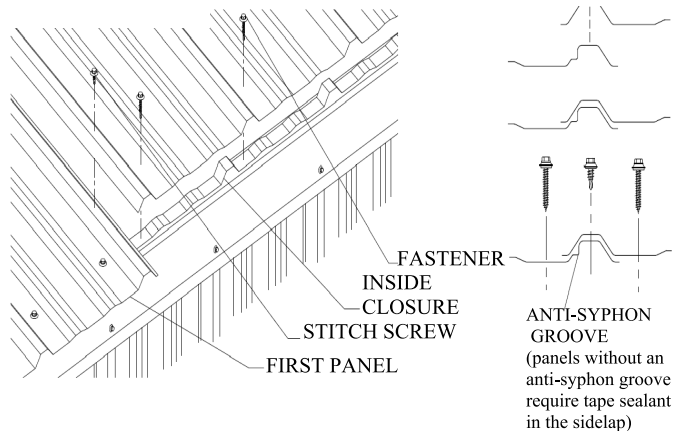
STEP 3: SECOND PANEL

1. Apply a row of butyl tape sealant across and overtop the ribs of the first panel. The tape sealant should be approximately 3” from the end.
2. Install the second panel over the first panel and the sealant leaving a 6” endlap. Fastening must be done through the panels and the sealant into the support with adequate number of fasteners as required by local building codes. All fasteners must penetrate closure and sealant.
3. Once the panel has been secured at the eave, repeat the fastening pattern. Fasteners must be spaced to meet local building codes.



STEP 4: SECOND EAVE PANEL

1. Align the lapping seam of the second panel over the already installed panel so the panel ends are flush at eave.
2. Be sure to fasten through the panel, closure, and butyl tape sealant into the support with adequate number of fasteners to meet local building codes. All fasteners must penetrate closure and sealant.
3. Once the panel has been secured at the eave, repeat the fastening pattern. Fasteners must be spaced to meet local building codes.





MAINTENANCE

Your new metal roof has been prepainted with factory applied finishes and is very durable and virtually maintenance free. However, you may desire to clean or repaint the surfaces at some point.

Discoloration of metal roofing may occur when it has been exposed to a dirt laden atmosphere for a long period of time. Likewise, in areas of strong sunlight, some slight chalking may also change the appearance of the painted surface. These surfaces can often be restored in appearance with a thorough cleaning.

Simply washing a metal roof with plain water (using a hose or pressure washer) will usually be enough to restore the roof to its previous appearance. If the roof is in an area where heavy dirt has deposited on it and dulled the surface, you may use a cloth or soft bristle brush and a solution of detergent and water, using 1/3 cup of laundry detergent to every gallon of water. Rinse the area thoroughly. DO NOT use abrasives, wire brushes, or cleaning tools which could scratch the surface.

In areas that are prone to high humidity, mildew may occur but is not typically a problem due to the mildew resistance of the baked finish of the paint. However, mildew can be sometimes seen on dirt deposits. In this case you can remove the mildew and the dirt with a cleaning solution as follows: 1/3 C laundry detergent, 2/3 C trisodium phosphate, 1 qt of 5% sodium hypochlorite solution (bleach), and 3 qts water.

DO NOT use abrasive cleansers or strong solvents. Organic solvents are often flammable and toxic. When choosing a solvent, consult a maintenance professional and the label instructions for handling and disposal. If necessary, a mild solvent such as mineral spirits can be used to remove things such as excess caulking, oil, grease, tars, and wax. Dampen a cloth with mineral spirits and apply ONLY to the area that needs such contaminants removed. Finish with detergent solution and rinse.