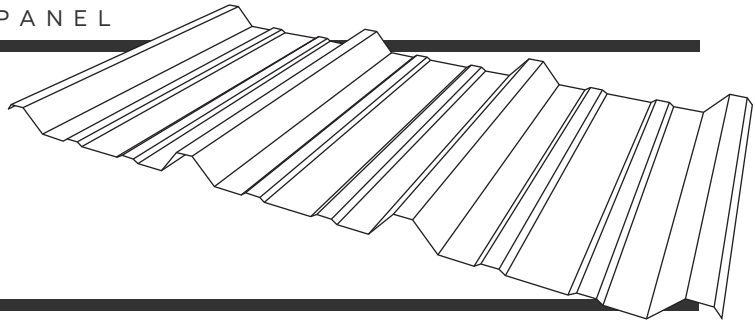




EXPOSED
FASTENER
ROOF AND WALL
SYSTEMS

Installation Manual

R - PANEL | PBR - PANEL



San Antonio • 2707 Castrovilla Rd • San Antonio, TX 78237 • (210) 227-727 **McAllen** • 2221 Austin Ave • McAllen, TX 78501 • (956) 627-2966
Dallas • 11569 Goodnight Ln • Dallas, TX 75229 • (972) 331 6800 **Houston** • 6460 Langfield Road • Houston, TX 77092 • (713) 944-4480

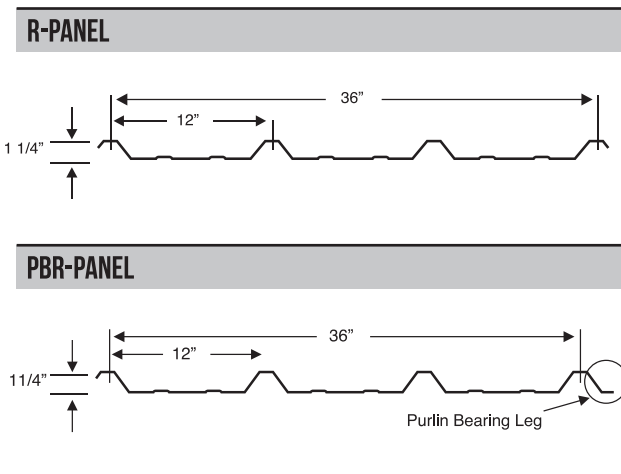
www.saqualitymetals.com

INTRODUCTION

R/PBR panels are structural in nature and can be installed either on solid substrate or open framing. This panel can be installed vertically or horizontally with exposed fasteners.

APPLICATIONS

R/PBR Panels are designed for industrial, commercial, and steel-frame building applications, these roofing panels has the strength to perform on roof pitches as low as 1:12 and on spans up to 5'.



SPECIFICATIONS

Color and Finishes

- 26 Gauge Standard , 24 Ga. optional.
- 40 Year Finish Warranty on SMP Finish

Widths

- Actual Panel Coverage (Width): 36"
- Minimum Slope = 1 1/2":12" (PBR)

Lengths

- R/PBR Panel is available in standard lengths from 3' to 5'. Longer lengths require additional handling, packaging, and shipping considerations. An extra handling charge may apply to panels over 40'.
- Continuous Rollformed Lengths: eliminates need for panel lap joints.

DESIGN

Exposed Fastened Roofing

The **R Panel** is designed for sidewall applications while **PBR metal roofing panel** has an added purlin bearing leg to provide better support for roofing applications.

TESTING

UL 790 Fire Test of Roof Coverings, Class A, B, C

UL 2218 For Impact Resistance, Class 4

UL 580 Uplift Resistance. Class 90 Construction No. 30, 79, 161,167, & 638.

INSTALLATION

- Solid Substrate or open framing

TOOLS AND EQUIPMENT

Installer must have prior experience and knowledge of the tools listed below and their uses in working with metal roofing.

- Caulking Gun
- Snips
- Cordless Screw Gun
- Pop Rivet Tool
- Tape Measure
- Hemming Tool
- Electrical Extension Cord
- Heavy Gloves
- Safety Glasses.



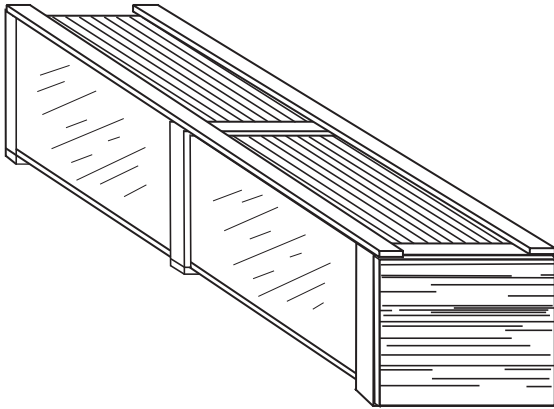
**EXPOSED
FASTENER**
ROOF AND WALL
SYSTEMS

R-PBR PANEL

PACKAGING OPTIONS

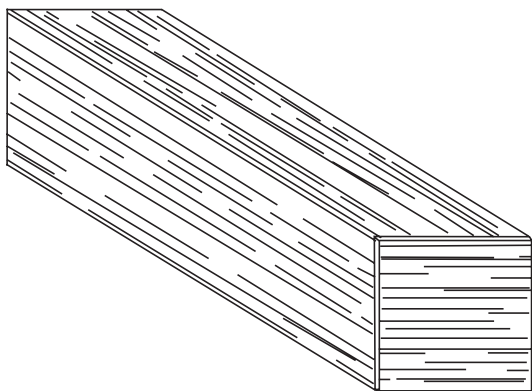
STANDARD PACKING

A packaging charge will be added to all orders. Standard packing is crating for all orders.



LTL PACKING

For LTL, panels are packaged in a completely enclosed crate to provide optimum protection. Additional charges will apply for non-standard packing and special requests.



LEAD TIME

Please allow 2-3 days for delivery for material or colors we have in stock. Color we have to paint please allow 10-12 working days.

STORAGE

Bare Galvalume and painted panels can be expected to give many years of rust-free service when precautions are taken during storage.

If metal is not to be used immediately, store inside in a well ventilated, dry location. Any outdoor storage is at the customer's own risk!

At time of delivery, inspect panels for moisture. If moisture has formed, the panels should be uncrated, wiped dry, and allowed to dry completely. Failure to remove the entrapped moisture between the sheets immediately will affect the service life of the metal.

Extended storage of panels in a bundle is not recommended.

Storage on Roof, Crates need to be placed parallel to the framing members and the slope of the roof.

**ANY OUTDOOR STORAGE OF PANELS IS
AT THE CUSTOMER'S OWN RISK!**

STRIPPABLE FILM REMOVAL

The panels may have a protective strippable film layer applied to the topside of the panel to prevent possible damage to the painted surface. If panel has a protective film coating, remove the film before exposing to direct sunlight and high temperatures.

After exposure to sunlight, the film cannot be removed. Under no circumstances should the film remain on the panels after installation.

RECEIVING MATERIALS

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 truck.

After receiving material, check the condition of the material, and review the shipment against the shipping list to ensure all materials are accounted for.

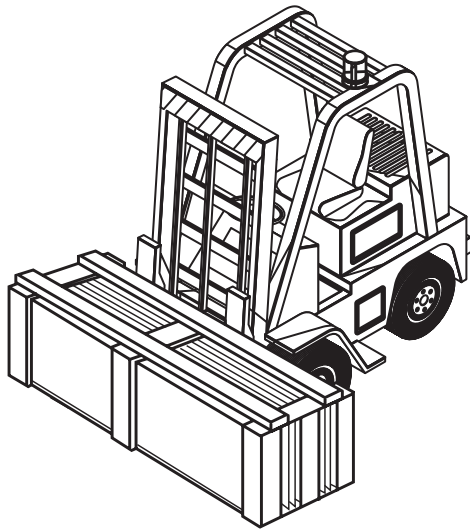
If damages or shortages are discovered, it should be noted on the shipping copy at time of delivery.

If material is delivered by common carrier, a claim must be made with the carrier as soon as possible.

MECHANICAL HANDLING:

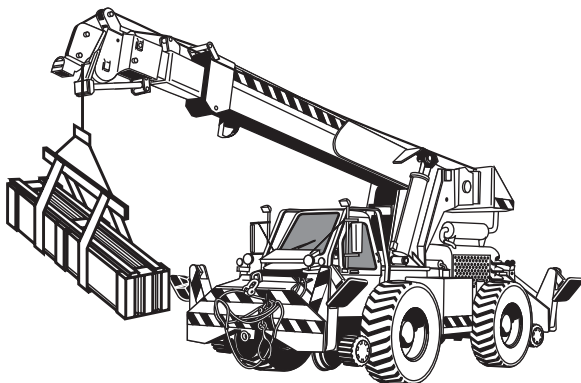
FORKLIFT

A forklift may be used for panels up to 20' long. Please make sure the forks are at their maximum separation. Do not transport open crates. When transporting crates across rough terrain, or for a long 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'. 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 1/3 of the length of the panel should be left unsupported. Canvas or nylon slings should be used to pick up the panels. DO NOT use cable or chains because this will damage the panels.



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

GENERAL HANDLING

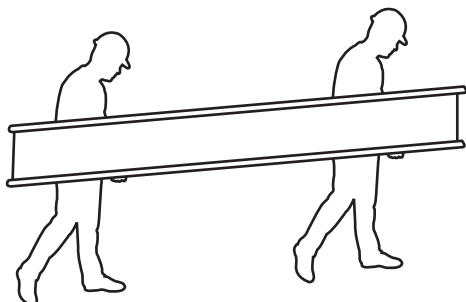
Each crate should be handled carefully to avoid being damaged. Care should be taken to prevent bending of the panel or abrasion to finish. Please follow these steps for proper care while unloading and handling crates in order to prevent panel damage:

1. Crates should remain intact during any handling, and until the individual panels in each bundle are ready to be installed. Crates should never be lifted by the banding.
2. Lift each crate as close as possible to its center of gravity.
3. If the crates are to be lifted with a crane, use a spreader bar of appropriate length, and nylon band slings. (Do not use wire rope slings as they will damage the panels).
4. Depending on panel length, some crates may be lifted by a forklift. When using a forklift, the forks should be spread apart to their maximum spacing, and the load must be centered on the forks to prevent scratching the next panel. A panel should never be picked up by its ends. Instead, lift the panel along its longitudinal edge and carry in a vertical (not flat) position. For panels over 10 feet long, two or more people should lift the panel along the same edge.
5. After crates are opened, individual panels must also be handled carefully to prevent panel buckling or damage to the panel coating. When removing a panel from a crate, it should never be allowed to slide over another panel. The individual panels should be "rolled" out of the crate in order to minimize the chance of panel damage.

Manual Handling

6. Soft gloves must be worn when handling panels.

A panel should never be picked up by its ends. Instead, lift the panel along its longitudinal edge and carry in a vertical (not flat) position.



6' - 8' MAX

General Installation Information

Insure that the structure is square and true before beginning panel installation. If the structure is not square is not square, the panels will not properly seal at the side laps. Green or damp lumber is not recommended. Moisture released from the damp lumber may damage the metal panels. Remove any loose metal shavings left on roof surface immediately to prevent corrosion. Keep roof free of debris that could trap moisture on the metal, causing corrosion. The R Panel is recommended for use on side walls only. For roof installations, use the PBR Panel which has a purlin bearing leg to provide greater support at the laps.

Safety Precautions

Always wear heavy gloves when working with steel panels to avoid cuts from sharp edges. When power cutting or drilling steel panels, always wear safety glasses to prevent eye injury from flying metal fragments. If you must walk on a metal roof, take great care. Metal panels can become slippery, so always wear shoes with non-slip soles. Avoid working on metal roofs during wet conditions when the panels can become extremely slippery. Walking or standing on a metal roof which does not have a plywood or other deck beneath it is not recommended. However, if you must do so, always walk on the purlins, never between. Do not, for any reason, walk on a roof made of material thinner than 29 gauge.



All applicable safety regulations, including OSHA regulations, must be complied with during the panel installation process.

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.

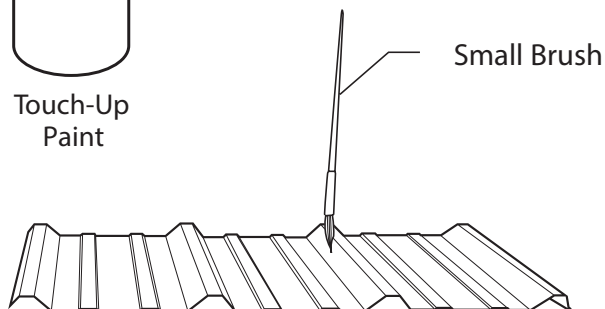
Touch-up paint is available in matching colors. It is recommended that a small brush be used to apply touch-up paint to those areas that are in need of repair. Touch-up paint does not have the superior chalk and fade resistance of the factory applied paint finish and will normally discolor at an accelerated rate.

Periodic touch-up may be required to maintain color match. There is no warranty on touch-up paint in regards to color match because the paint processes are different.

Aerosol paint should not be used because of the overspray that may occur.

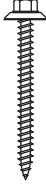
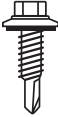
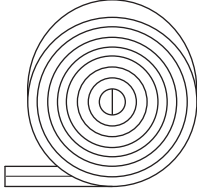
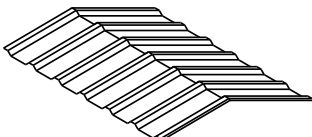
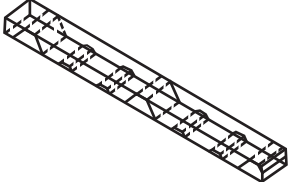
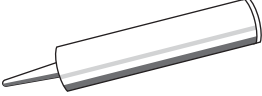
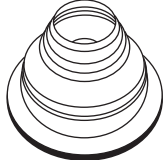


Touch-Up
Paint



Small Brush

ACCESORIES

			
#10 x 1" Hex Head Woodgrip	#10 x 1-1/2" Hex Head Woodgrip	#10x 2 1/2" Hex Head Woodgrip	#14 x 7/8" Hex Head Lap Tek Screw Metal-to-Metal
			
#12 x 14 1/4" Wafer Head	#10 x 1 L	Pop Rivet (stainless) (1/8" x 3/16")	Double Bead Butyl Tape (7/8" x 3/16" x 40')
			
Form Ridge Cap	Inside/Outside Closure Strip	Tube Sealant	Pipe Boot (Various sizes, hot treated & retro fit also available)

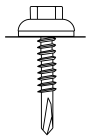
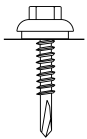
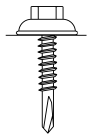
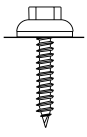
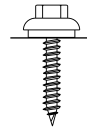
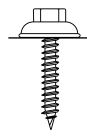
FASTENER INSTALLATION

RECOMENDED TOLL TYPE

Use depth locating nose or adjustable clutch on screw gun to prevent over-drilling 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.*

SELF DRILLER		
CORRECT Sealing material slightly visible at edge of metal washer. 	TOO LOOSE Sealing material is not visible; not enough compression to seal. 	TOO TIGHT Metal washer deformed; sealing material pressed beyond washer edge. 
WOODSCREW		
		

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

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

Drilling through sheet and insulation ease up on pressure when drilling through insulation to avoid striking the purlin or girt with the pont 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 ponts and two self drillers might be necessary to complete the operation.

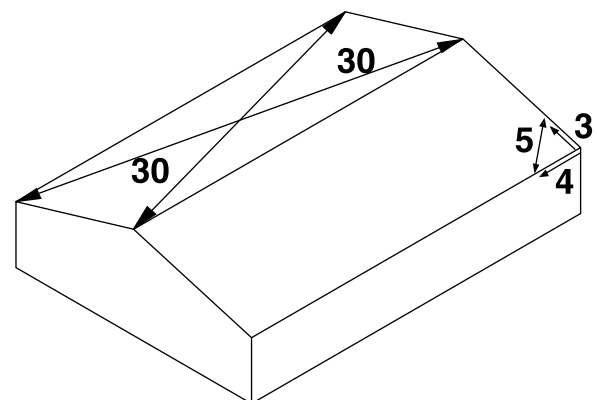
CONDITION OF SUBSTRUCTURE:

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. Several methods can be used to verify squareness for proper installation of the panels.

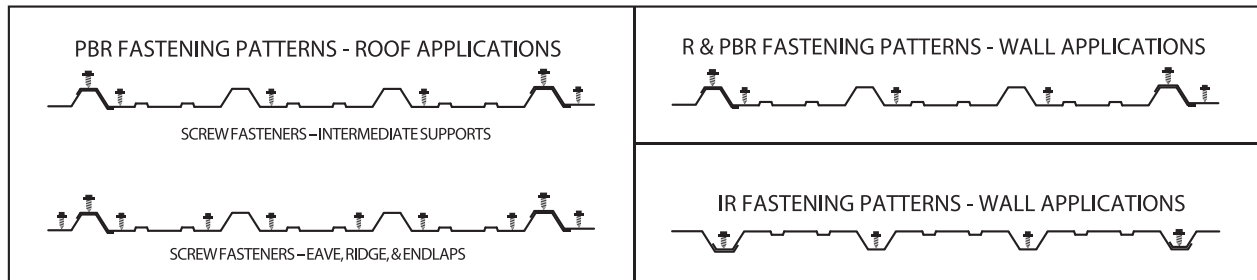
Method 1 Measure diagonally across one slope of the roof from similar points at the ridge and eave and obtain the same dimension.

Method 2 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 stablished, 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.



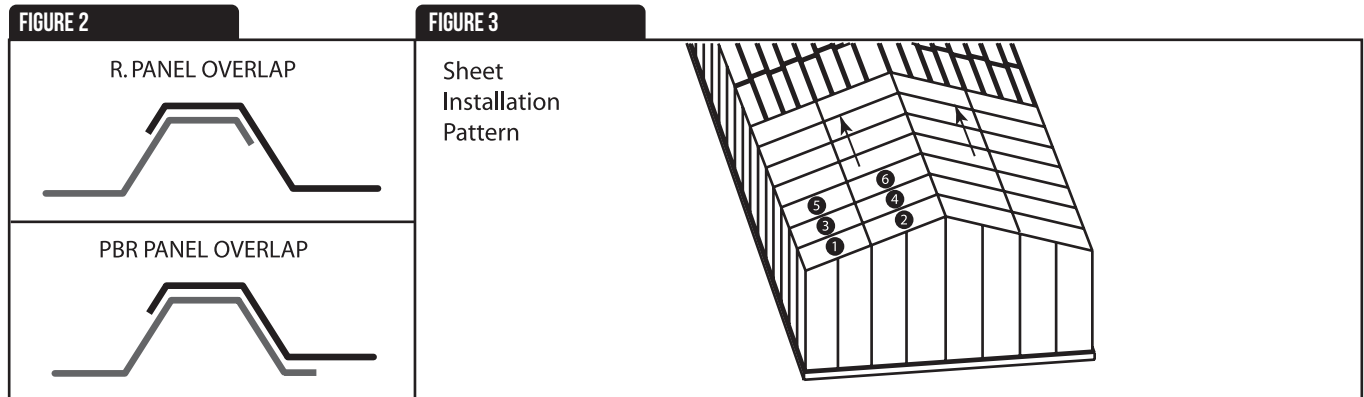
FASTENING

If you wish to pre-drill fasteners holes, use a cover sheet to prevent hot metal shavings from sticking to panels. It is recommended that you cut panels upside down using a nibbler.



ROOFING & SIDING

Since the R Panel profile is symmetric, either edge of the panel can be overlapped. For the PBR Panel, the non-purlin bearing leg side of the panel must lap over the purlin bearing leg side. In either case, it is recommended that the panel be installed so that the open side of the lap faces away from the prevailing wind. See Figure 2 for panel overlap diagram and Figure 3 for Sheet Installation Pattern.



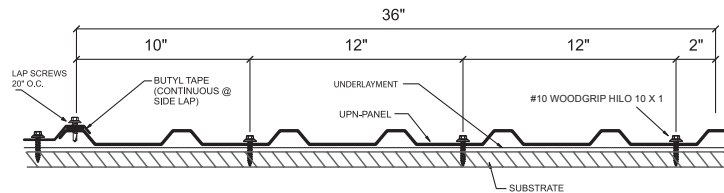
ALLOWABLE UNIFORM LOADS PER SQUARE FOOT - R AND PBR PANELS (IR PANEL USED ON SIDE WALLS ONLY)

Maximum purlin spacing for roof 2' on center and maximum girt spacing for sidewall 3' on center. Place fasteners in the pan of panel for best results. (Three spans or more)

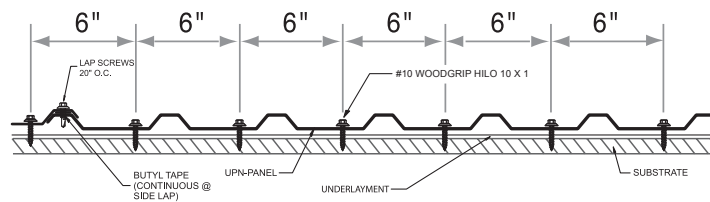
	LIVE LOAD (lb/ft ²)							WIND LOAD (lb/ft ²)						
SPAN (INCHES)	24"	30"	36"	42"	48"	54"	60"	24"	30"	36"	42"	48"	54"	60"
26 Gauge	351	224	156	114	87	69	56	271	174	120	88	67	53	43

ATTACHMENT TO PLYWOOD

TYPE 1: FASTENER LOCATION AT PANEL INTERIOR

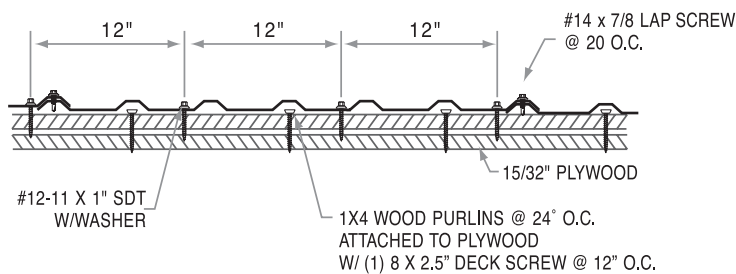


TYPE 2: FASTENER LOCATION AT LOW EAVE END ENDLAP

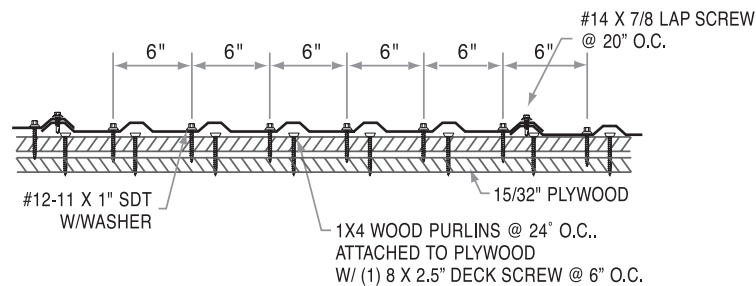


ATTACHMENT 1 X 4 WOOD PURLIN

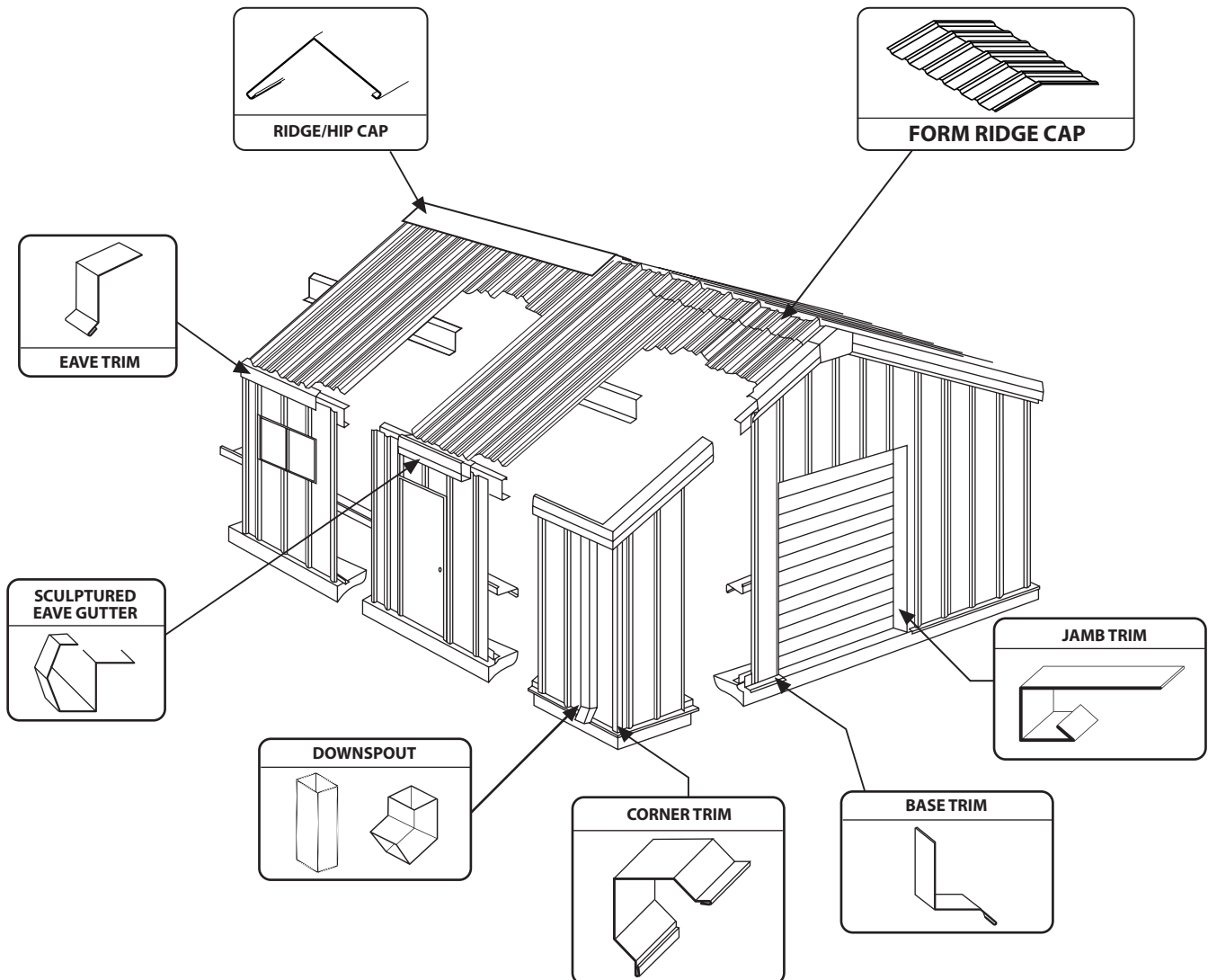
TYPE 1: FASTENER LOCATION



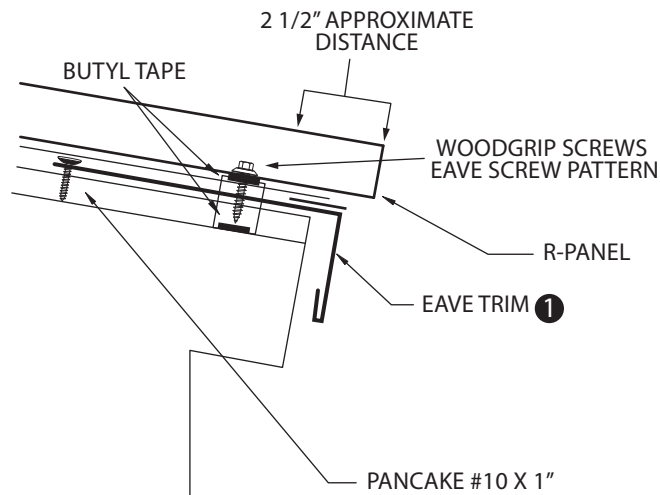
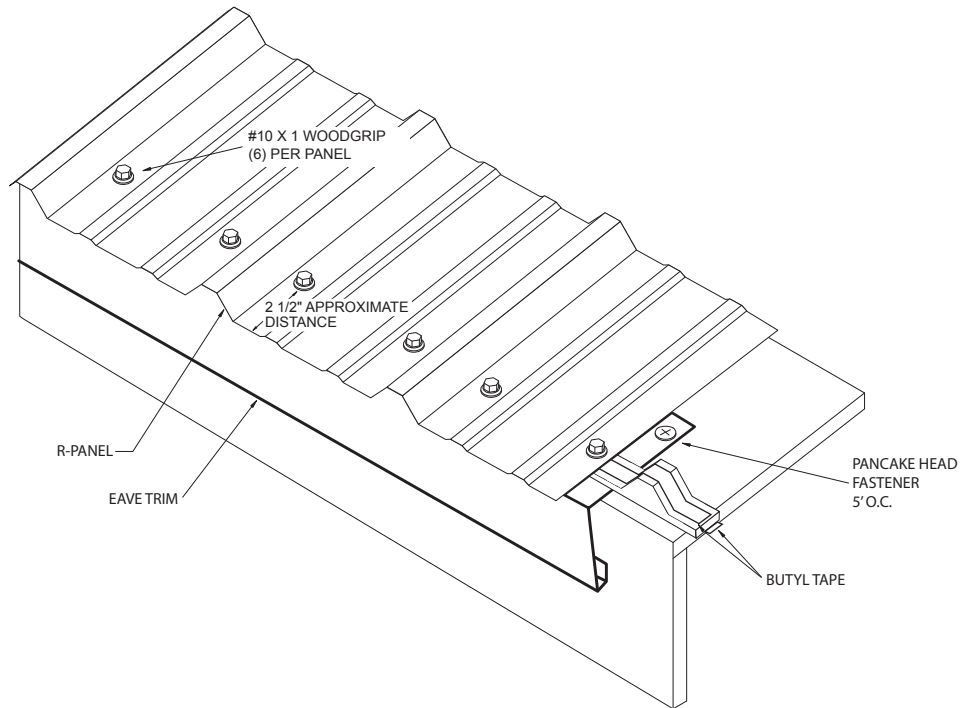
TYPE 1: FASTENER LOCATION AT LOW EAVE EN ENDLAP



TRIM DIAGRAM

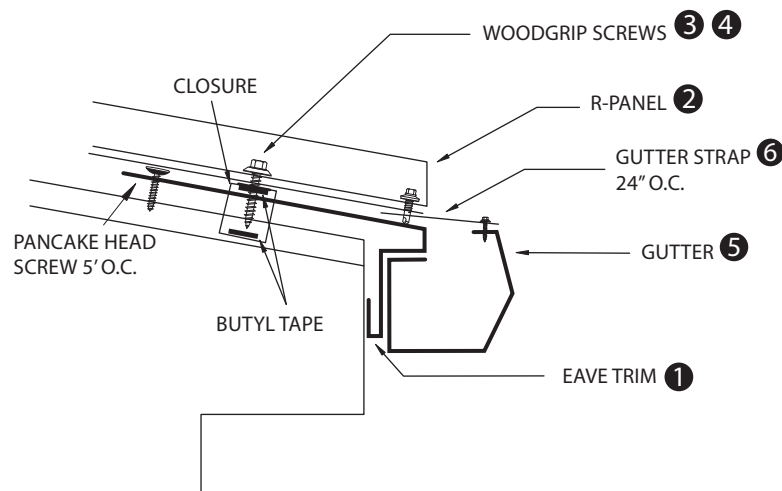
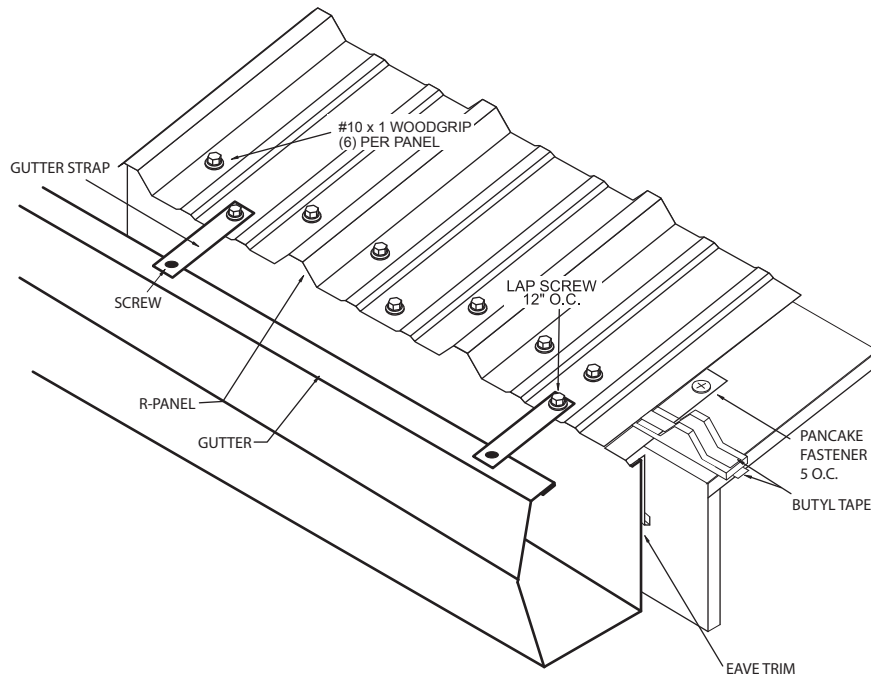


EAVE DETAIL



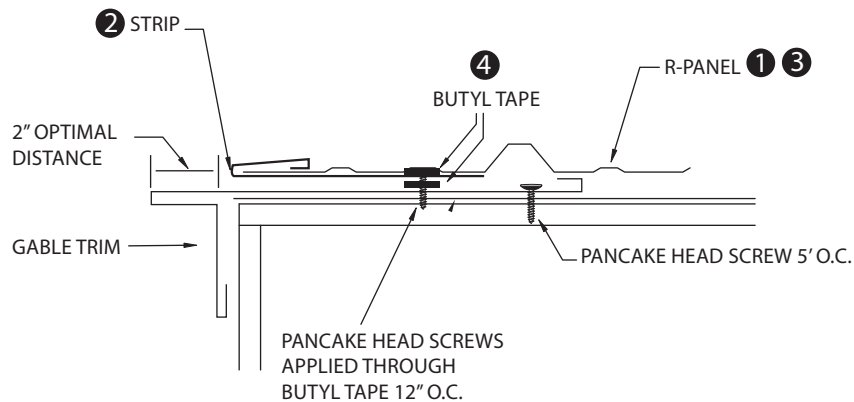
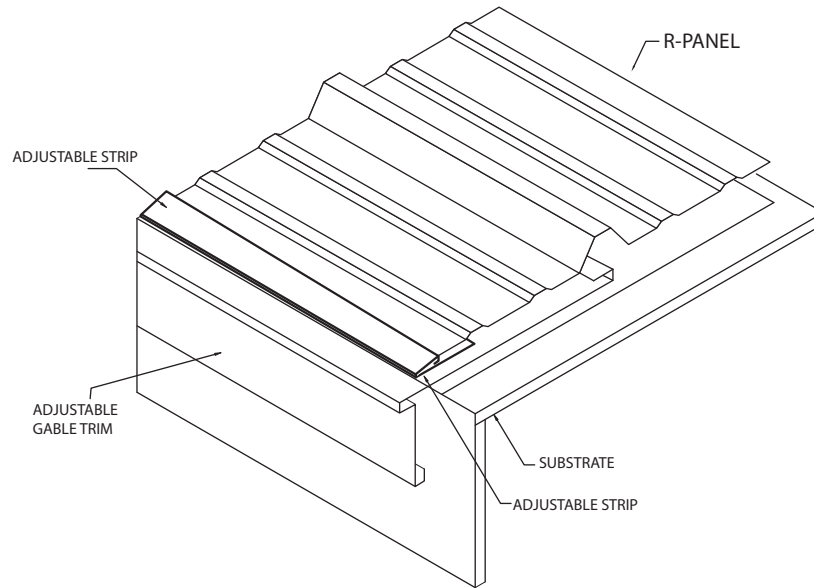
1. Install the eave trim by sliding it underneath the underlayment and securing it to the roof surface with pancake head screws on 5' centers.
2. There are no screws or nails to be placed in the exposed fascia of the trim.
3. At the corners, cut the eave trim 1 1/2" long and prepare the ends with tabs to receive the gable trim.eave detail

GUTTER DETAIL



1. Install the eave trim to the substrate with pancake head fasteners at 5' O.C.
2. Position the roof panel so that the down slope end matches the dimension called for on the erection drawings.
3. Attach the roof panel with #10 x 1" woodgrip screw. (Refer to screw placement table).
4. Attach the roof panels at the eave with (6) #10 x 1" woodgrip screws - (6) per panel.
5. Attach the gutter with #14 x 7/8" lapteks @ 24" O.C.
6. Install the gutter strap at alternate 24" with #14 x 7/8" lapteks on the sheet end of strap, and stitch screws, pop rivets, or lap screws on gutter end of the strap.

START AND END PANEL INSTALLATION



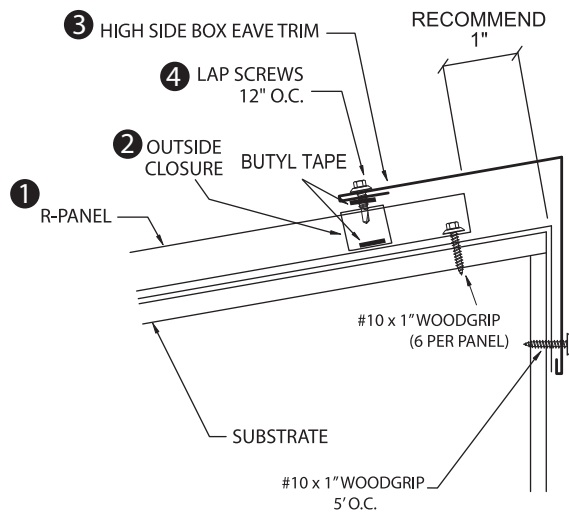
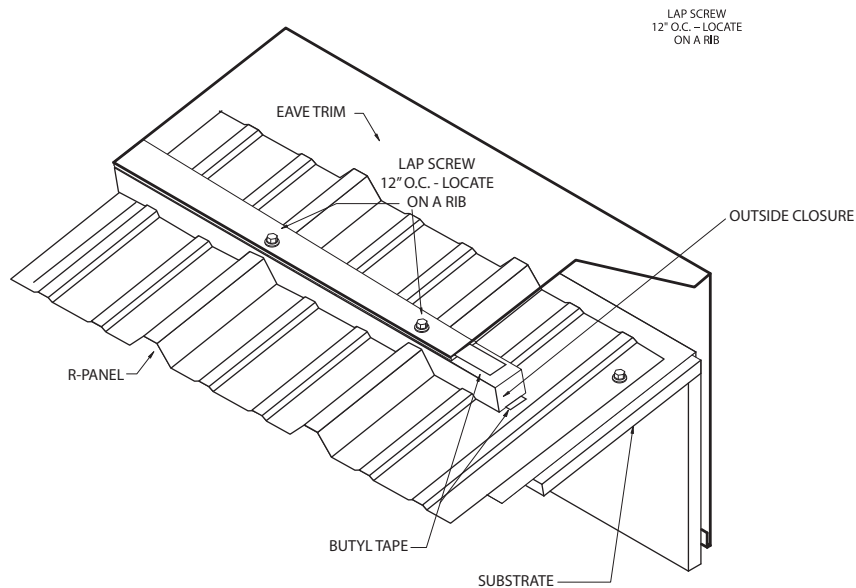
Starting Panel

1. Apply adjustable strip as previously instructed.
2. Remove the first rib of panel, making a straight cut the length of the panel.
3. Apply butyl tape continuously down the length of the adjustable strip, covering the pancake head screw.
4. Insert the cut edge of the panel into the strip, making sure the panel is seated fully into the strip.
5. Attach the panel to the roof with #10 x 1" woodgrip screws on the required centers.
6. Apply 1/2" x 3/32" butyl tape continuously on the top of the outside rib before applying the next panel.

Ending Panel

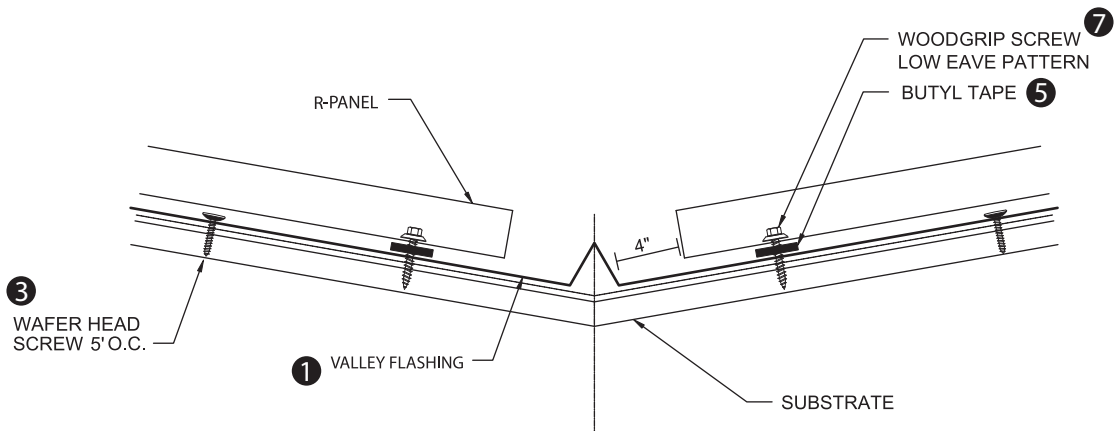
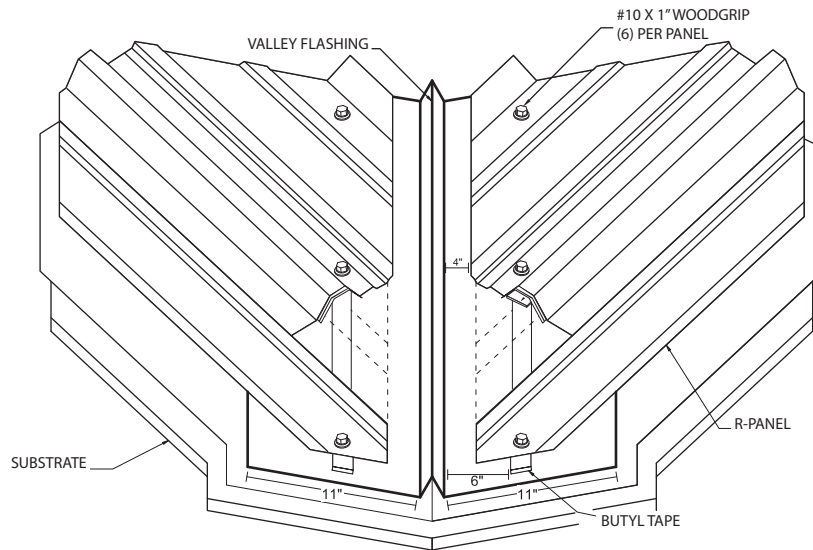
1. Remove the last rib of the panel at point that is inside the adjustment portion of the gable trim, making a straight cut the length of the panel (optimal 2" from gable edge)
2. Apply adjustable strip as previously instructed.
3. Test apply the panel to assure proper fit.
4. Apply butyl tape and apply last panel into strip, making appropriate panel lap.

HIGH SIDE EAVE TRIM



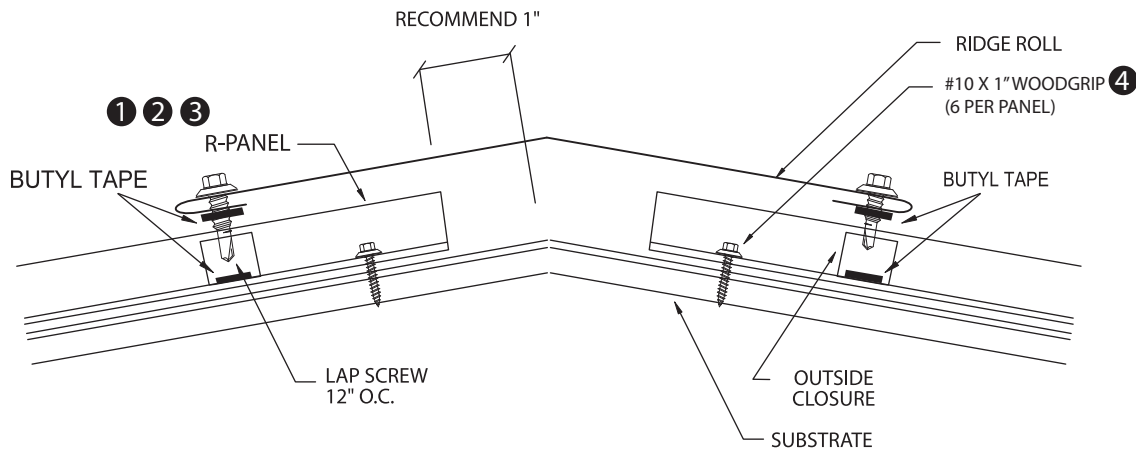
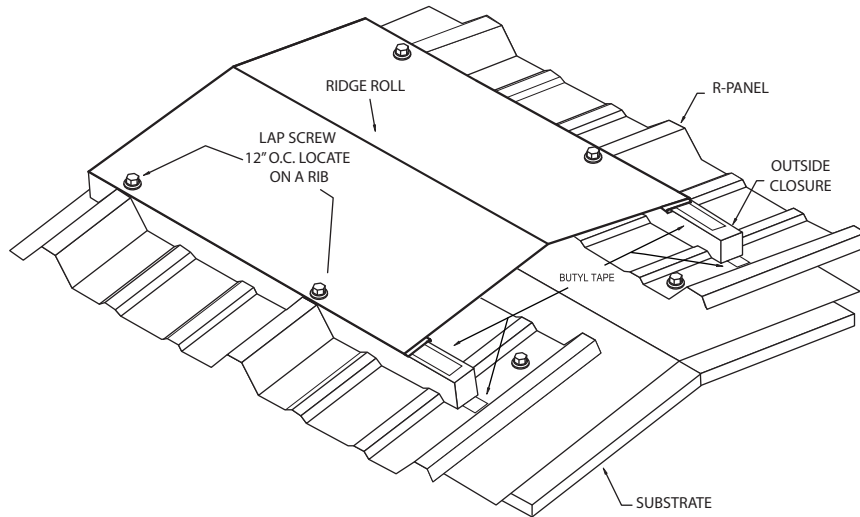
1. Ensure the roof panel is installed completely. Reference the erection drawings for the top dimension to ensure correct installation.
2. Install the outside closure on the top of the roof panel, make sure the closure is in line with the extended flange of the high side eave trim.
3. Install the high side eave trim.
4. Attach the high side eave trim with lap screws @ 12" O.C. locate the screws on the high ribs to prevent dimpling of the eave trim due to over-tightening. I lap.

VALLEY DETAIL



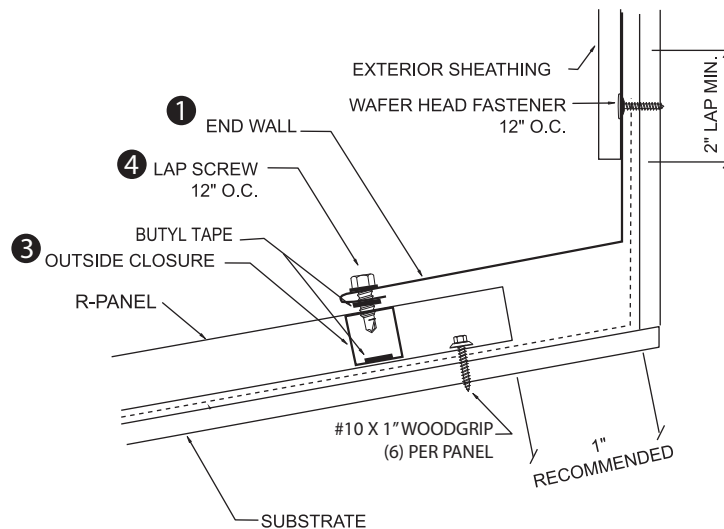
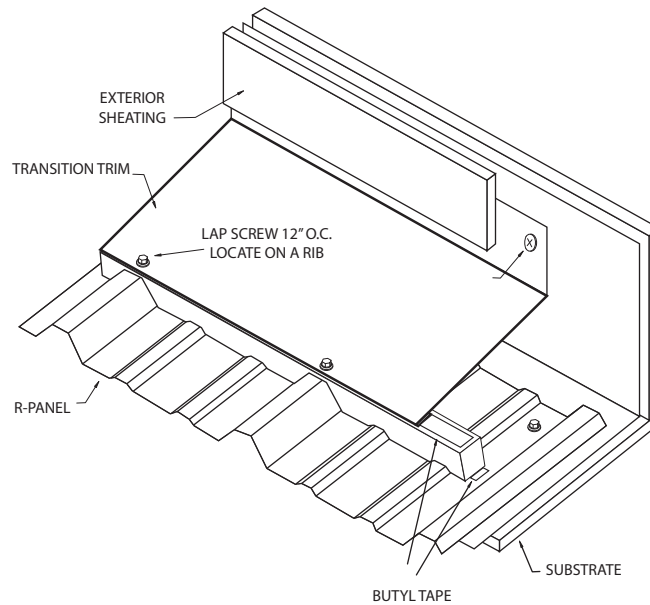
1. Start at the low end, trim and place the valley flashing. The valley end should overhang the eave trim 1".
2. If there is an end lap required in the valley pieces, caulk and lap at least 8".
3. Use wafer head screws on 5' centers to secure the valley in place along the outside edge.
4. Hem the edges of the valley over the eave trim, after trimming the center "V" back 1" to align with the edge of the eave. Leave a tab to bend and cover the exposed opening of the center "V".
5. Place butyl tape on the upper surface of the valley 6" up slope from the "V" of the valley trim, before applying intersecting panels.
6. Field cut the panels that intersect the valley holding the end of the panel 4" back from the "V" of the valley trim and parallel to the "V" of the valley.
7. Attach panel at valley using eave screw requirements for panel being installed.

HIP CAP DETAIL



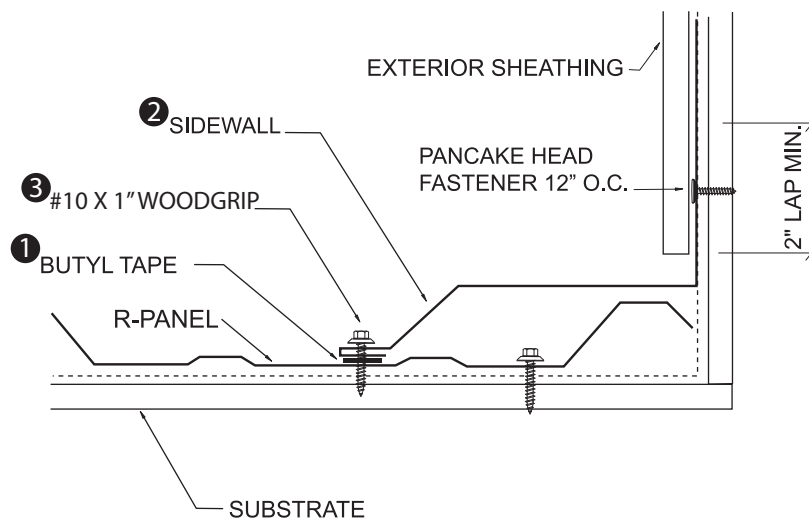
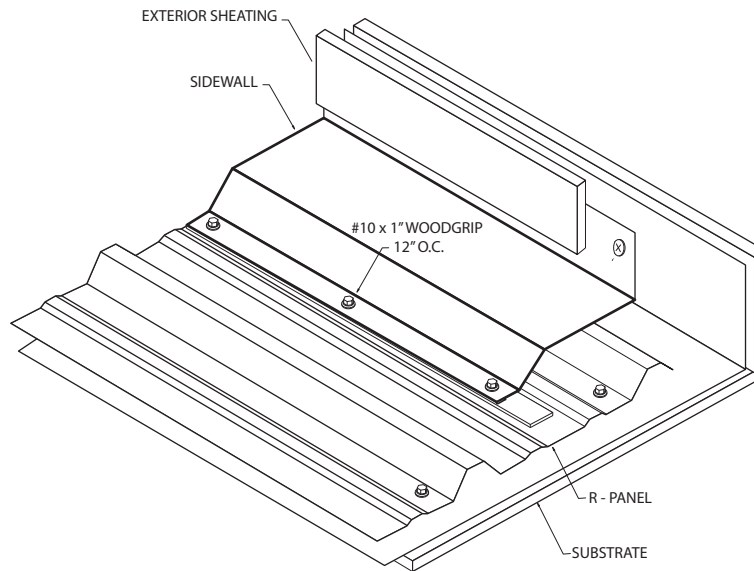
1. Ensure the roof panel is installed completely. Reference the erection drawings for the top dimension to ensure correct installation.
2. Install the outside closure on the top of the roof panel. Make sure the closure is in line with the extended flange of the ridge roll.
3. Repeat the above steps on the other side of the ridge making sure that the flanges of the ridge roll line up with the placement of the closure.
4. Install the ridge roll.
5. Attach the ridge roll with lap screws @ 12" O.C. locate the screws on the high ribs to prevent dimpling of the ridge roll due to over-tightening.
6. Before the ridge trim is installed, if the pitch of the roof is 4:12 or less, the end of the panel that is under the ridge or hip trim should be bent up between the high ribs to prevent moisture blow back.

ENDWALL DETAIL



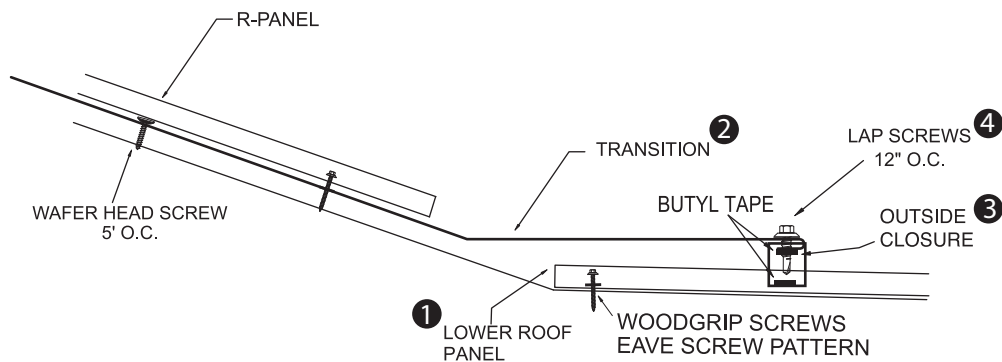
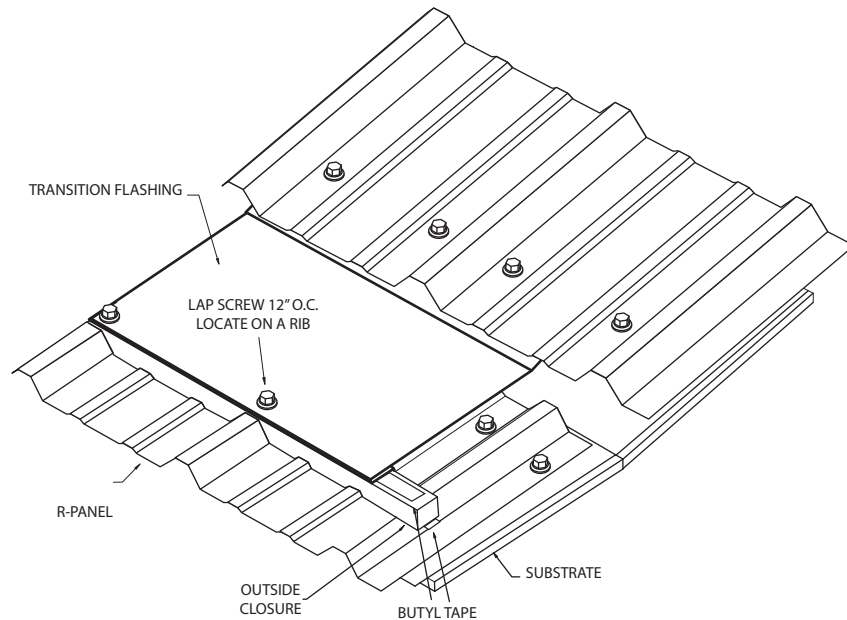
1. Insert the endwall flashing behind the existing wall counter-flashing and attach to the wall using appropriate fasteners. Make sure the receiver hem of the endwall flashing is resting on the top of the roof sheet rib. If required, cap the ends of the trim by cutting and folding a tab. Remove the hems before making the folds.
2. If there is no counter-flashing, install counter-flashing using appropriate fasteners.
3. Install the outside closure on top of the roof panel. Make sure the closure is in line with the lower flange of the endwall trim.
4. Install the endwall trim by attaching with lap screws @ 12" O.C. Locate the screws at the high ribs to prevent dimpling of the endwall trim due to over-tightening.
5. All end laps should be at least 4". Remove 4" of the hem on the overlapping piece and secure to the overlapped piece with caulk and stitch screws.

SIDEWALL DETAIL



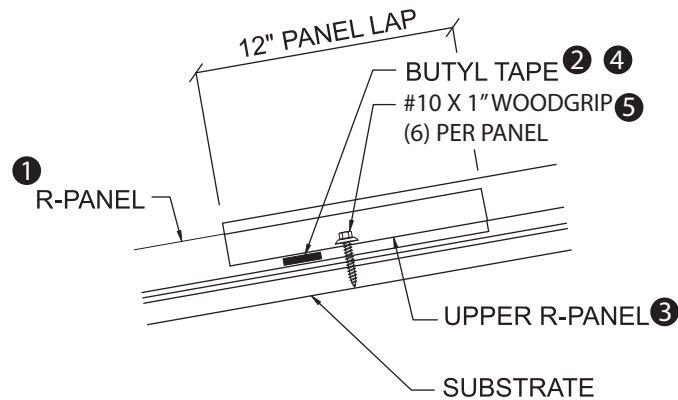
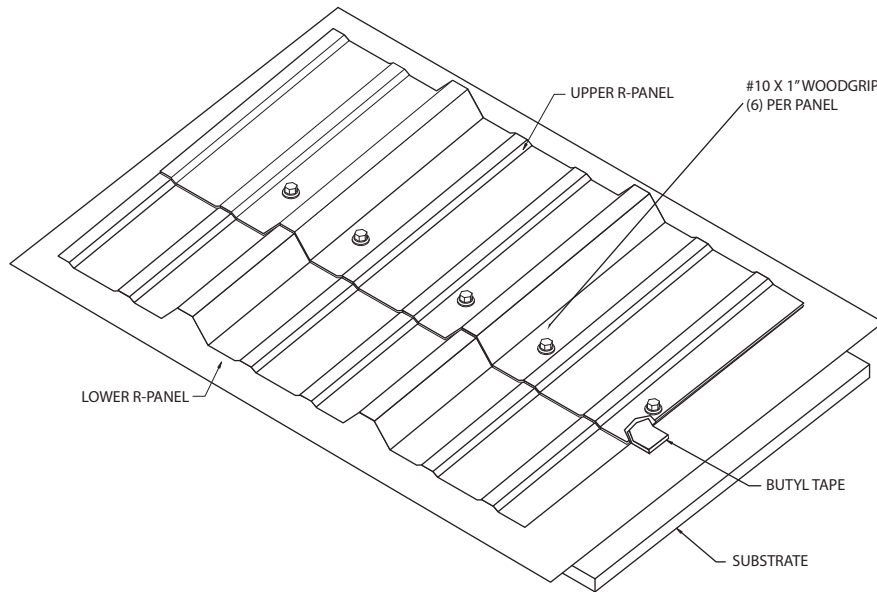
1. Install the butyl tape to the top of the roof panel. Make sure the tape is running parallel to the panel ribs and is in the correct location to line up with the extended flange of the roof transition trim.
2. Insert the sidewall flashing behind existing counter-flashing with the extended flange centered over the butyl tape.
3. Attach the transition trim with #10 x 1" woodgrip screws @ 12" O.C.
4. If there is no existing counter-flashing, install counter-flashing to wall with appropriate fasteners.

TRANSITION DETAIL



1. Apply lower panels.
2. Install the transition flashing making sure the bottom portion of the flashing is at the same pitch as the lower panels.
Attach to decking 1" from top of flashing with wafer head screws on 5' centers.
3. Install outside closure on top of the lower panel. Make sure the closure is in line with the lower flange of the transition trim.
4. Attach using lap screw, 12" on center at the rib.
5. All trim end laps should be at least 4". Secure to the overlapped piece with caulk and stitch screws.
6. Cap the ends of the trim by cutting and folding a tab that attaches to the gable trim. Capping is usually easier to do before the trim is installed. If done after the trim is installed, be sure and leave 6" of the trim overhanging to allow enough material for the cut and folds.
7. Before applying the upper panels, place a row of butyl tape continuously along the trim at a point where the screws holding the lower end of the upper panel will go through the butyl tape. This is usually 4" uphill from the bottom of the upper sheet.

ENDLAP DETAIL



1. Ensure the lower panel is installed completely (except for the top fasteners).
2. Install the tape sealant 10" from the top of the lower panel.
Do not remove the paper backing from the tape sealant until upper roof panel lap and the top dimension have been confirmed.
Reference the erection drawings for the top dimension.
3. Position the roof panel so that a 12" panel lap is achieved.
4. Remove paper backing and compress the sealant between the upper and lower roof panels.
5. Attach the upper roof panel through the lower roof panel with #10 x 1" (min.) woodgrip screws, (6) per panel making sure the screw line is above the tape sealant.