



# Retro-R®

Technical/Installation Information

# IMPORTANT NOTICE

**READ THIS MANUAL COMPLETELY PRIOR TO BEGINNING THE INSTALLATION OF THE Retro-R® PANELS. THE MANUFACTURER DETAILS MUST BE FOLLOWED AS A MINIMUM TO INSURE APPROPRIATE WARRANTIES WILL BE ISSUED.**

**ALWAYS INSPECT EACH AND EVERY PANEL AND ALL ACCESSORIES BEFORE INSTALLATION. NEVER INSTALL ANY PRODUCT IF ITS QUALITY IS IN QUESTION. NOTIFY MBCI IMMEDIATELY IF ANY PRODUCT IS BELIEVED TO BE OUT OF TOLERANCE, SPECIFICATION OR HAS BEEN DAMAGED DURING SHIPMENT.**

**IF THERE IS A CONFLICT BETWEEN PROJECT INSTALLATION DRAWINGS PROVIDED OR APPROVED BY THE MANUFACTURER AND DETAILS IN THIS MANUAL, PROJECT INSTALLATION DRAWINGS WILL TAKE PRECEDENCE.**

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The Engineering data contained herein is for the expressed use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project jobsite in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.

Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, MBCI reserves the right to discontinue products at any time or change specifications and/or designs without incurring obligations. To ensure you have the latest information available, please inquire or visit our website at [www.mbc.com](http://www.mbc.com). Application details are for illustration purposes only and may not be appropriate for all environmental conditions, building designs, or panel profiles. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices. Insulation is not shown in these details for clarity.

For complete performance specifications, product limitations, and disclaimers, please consult MBCI's Paint and Galvalume Plus® warranties. Upon receipt of payment in full, these warranties are available upon request for all painted or Galvalume Plus® prime products. Sample copies can be found at [www.mbc.com](http://www.mbc.com) or contact your local MBCI Sales Representative.

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## ROOF DETAILS

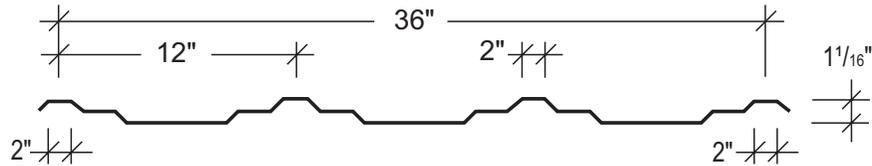
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# PRODUCT INFORMATION

## GENERAL DESCRIPTION Retro-R® PANEL



**Coverage Width - 36"**

**Minimum Slope - 1/2 :12**

**Panel Attachment -** See pages RR-3 and RR-4

**Panel Substrate -** Galvalume®

**Gauge -** 29 standard, 26 also available

**Coatings -** Galvalume Plus®, Signature® 200\*

**Panel Application -** Designed for installation over an existing "R" type panel in a retro-fit (reroof) application

**Panel Weight -** 29 gauge - 64 lbs. per 100 sq. feet, 26 gauge - 84 lbs. per 100 sq. feet

### PRODUCT SELECTION CHART

GAUGE	GALVALUME PLUS®	SIGNATURE® 200*
26 gauge	●	■
29 gauge	●	●

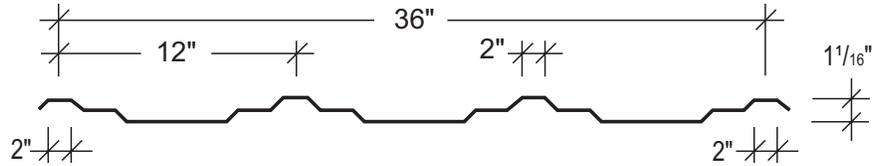
● - Available in any quantity.

■ - Minimum quantity may be required.

\*See residential color chart for available colors.

# PRODUCT INFORMATION

## Retro-R® PANEL



Panel Section Properties												
						Negative Bending			Positive Bending			
Panel Gauge	Fy (Ksi)	Weight (Psf)	Va (Kips/Ft)	Pa,end (Kips/Ft)	Pa,int (Kips/Ft)	Ixe (In. <sup>4</sup> /Ft.)	Sxe (In. <sup>3</sup> /Ft.)	Maxo (Kip-In./Ft.)	Ixe (In. <sup>4</sup> /Ft.)	Sxe (In. <sup>3</sup> /Ft.)	Maxo (Kip-In./Ft.)	
29	60 *	0.63	0.242	0.091	0.128	0.0130	0.0189	0.680	0.0186	0.0247	0.982	
26	60 *	0.84	0.333	0.164	0.236	0.0204	0.0310	1.158	0.0288	0.0398	1.629	

\* Panels are made from 80 ksi yield material. Flexural effective yield strengths vary by direction of bending. Shear and web crippling capacities have been determined using an effective yield strength of 60 ksi.

**NOTES:**

1. All calculations for the properties of Retro-R panels are calculated in accordance with the 2012 S100 AISI "North American Specification for the Design of Cold-formed Steel Structural Members".
2. Va = allowable transverse shear per foot of panel width.
3. Pa,end = allowable web crippling load at the panel end support per foot of panel width.
4. Pa,int = allowable web crippling load at interior panel supports per foot of panel width.
5. Ixe = effective moment of inertia per foot of panel width at nominal moment capacity.
6. Sxe = effective section modulus per foot of panel width at nominal moment capacity.
7. Maxo = allowable bending moment based on initiation of yielding.

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# PRODUCT INFORMATION

## Retro-R® PANEL ALLOWABLE UNIFORM LOADS IN POUNDS PER SQUARE FOOT

29 Gauge thickness								
Span Type	Load Type	Support Spacing						
		3 Ft.	3.5 Ft.	4 Ft.	4.5 Ft.	5 Ft.	5.5 Ft.	6 Ft.
1-span	NEGATIVE WIND LOAD	50.35	36.99	28.32	22.38	18.13	14.98	12.59
	LIVE LOAD/DEFLECTION - L/60	60.99	52.28	40.90	32.32	26.18	21.64	18.18
	LIVE LOAD/DEFLECTION - L/180	60.17	37.89	25.38	17.83	13.00	9.76	7.52
	LIVE LOAD/DEFLECTION - L/240	45.13	28.42	19.04	13.37	9.75	7.32	5.64
2-span	NEGATIVE WIND LOAD	63.33	48.10	37.67	30.25	24.80	20.68	17.50
	LIVE LOAD/DEFLECTION - L/60	34.02	29.16	25.51	21.65	17.65	14.65	12.35
	LIVE LOAD/DEFLECTION - L/180	34.02	29.16	25.51	21.65	17.65	14.65	12.35
	LIVE LOAD/DEFLECTION - L/240	34.02	29.16	25.51	21.65	17.65	14.65	12.35
3-span	NEGATIVE WIND LOAD	75.27	57.76	44.25	34.96	28.32	23.41	19.67
	LIVE LOAD/DEFLECTION - L/60	38.66	33.13	28.99	25.77	21.81	18.14	15.32
	LIVE LOAD/DEFLECTION - L/180	38.66	33.13	28.99	25.77	21.81	18.14	15.32
	LIVE LOAD/DEFLECTION - L/240	38.66	33.13	28.99	25.77	21.81	18.13	13.97
4-span	NEGATIVE WIND LOAD	71.48	54.66	43.03	34.69	28.52	23.83	20.20
	LIVE LOAD/DEFLECTION - L/60	37.21	31.89	27.90	24.80	20.44	16.99	14.34
	LIVE LOAD/DEFLECTION - L/180	37.21	31.89	27.90	24.80	20.44	16.99	14.34
	LIVE LOAD/DEFLECTION - L/240	37.21	31.89	27.90	24.80	20.44	16.99	14.34

26 Gauge thickness								
Span Type	Load Type	Support Spacing						
		3 Ft.	3.5 Ft.	4 Ft.	4.5 Ft.	5 Ft.	5.5 Ft.	6 Ft.
1-span	NEGATIVE WIND LOAD	85.77	63.02	48.25	38.12	30.88	25.52	21.44
	LIVE LOAD/DEFLECTION - L/60	109.47	88.63	67.86	53.62	43.43	35.89	30.16
	LIVE LOAD/DEFLECTION - L/180	93.10	58.63	39.28	27.59	20.11	15.11	11.64
	LIVE LOAD/DEFLECTION - L/240	69.83	43.97	29.46	20.69	15.08	11.33	8.73
2-span	NEGATIVE WIND LOAD	99.76	76.58	60.45	48.83	40.21	33.65	28.55
	LIVE LOAD/DEFLECTION - L/60	62.84	53.86	45.36	36.28	29.66	24.68	20.84
	LIVE LOAD/DEFLECTION - L/180	62.84	53.86	45.36	36.28	29.66	24.68	20.84
	LIVE LOAD/DEFLECTION - L/240	62.84	53.86	45.36	36.28	29.66	24.68	20.84
3-span	NEGATIVE WIND LOAD	116.84	90.79	72.35	58.88	48.25	39.87	33.50
	LIVE LOAD/DEFLECTION - L/60	71.41	61.20	53.55	44.44	36.45	30.41	25.74
	LIVE LOAD/DEFLECTION - L/180	71.41	61.20	53.55	44.44	36.45	30.41	25.74
	LIVE LOAD/DEFLECTION - L/240	71.41	61.20	53.55	44.44	35.09	26.36	20.30
4-span	NEGATIVE WIND LOAD	111.49	86.28	68.54	55.64	45.99	38.60	32.83
	LIVE LOAD/DEFLECTION - L/60	68.73	58.91	51.55	41.78	34.22	28.53	24.13
	LIVE LOAD/DEFLECTION - L/180	68.73	58.91	51.55	41.78	34.22	28.53	24.13
	LIVE LOAD/DEFLECTION - L/240	68.73	58.91	51.55	41.78	34.22	28.52	21.97

**Notes:**

- Strength calculations are based on the 2012 S100 AISI "North American Specification for the Design of Cold-formed Steel Structural Members".
- Allowable loads are applicable for uniform loading and spans without overhangs.
- LIVE LOAD/DEFLECTION capacities are for those loads that push the panel against its support. The applicable limit states are flexure, shear, combined shear and flexure, web crippling at end and interior supports, and the strength-level load deflection limit shown.
- Capacities for LIVE LOAD/DEFLECTION pressure loading are determined as the smaller of the LIVE LOAD/DEFLECTION - Strength and the required deflection limit values listed.
- NEGATIVE WIND LOAD capacities are for those loads that pull the panel away the support. The applicable limit states are flexure, shear, combined shear and flexure, and a deflection limit of L/60 under 10-year wind loading.
- Panel pullover and screw pullout connection capacities need to be checked separately for the particular fasteners employed using tributary area-based connection loads.
- Effective yield strength has been determined in accordance with section A2.3.3 of the 2012 AISI S100 specification.
- The use of any accessories other than those provided by the manufacturer may damage panels, void all warranties and will void all engineering data.
- This material is subject to change without notice. Please contact MBCI for most current data.

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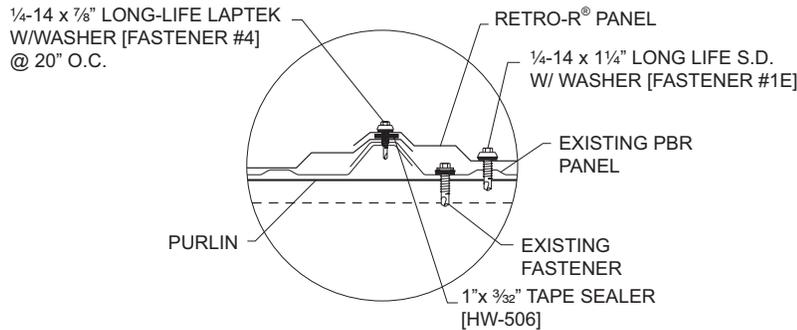
# PRODUCT INFORMATION

## DESIGN INFORMATION

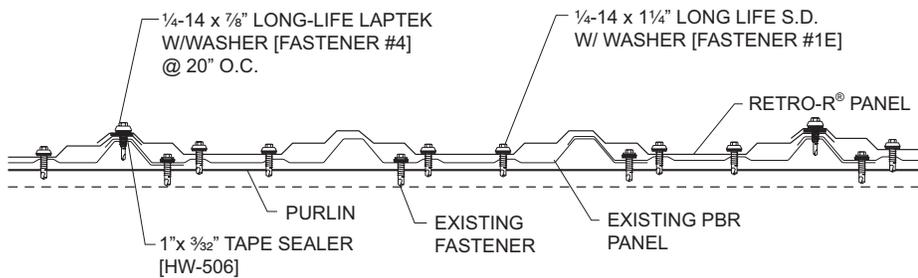
1. Retro-R® is a non-structural panel that can be installed over an existing "R" panel roof with minimal alterations. Retro-R® is available in 29 and 26 gauge in Galvalume Plus® and Signature® 200 colors and comes with a factory applied vapor barrier on the underside.
2. The Retro-R® panel is a through-fastened panel. Self-drilling fasteners are used to attach the Retro-R® panels to the existing purlins. Fasteners are installed adjacent to the major ribs of the panel, through the minor ribs of the existing "R" panel and into the existing purlin. Please see pages RR-5 and RR-6 for panel design information.
3. The side laps of the Retro-R® panel can be aligned with the side laps of the existing "R" panel or they may be offset. Either way, the lap screws in the existing "R" panels must be removed to allow the Retro-R® panel to fit onto the existing "R" panel. If the side laps are aligned, then the lap screws installed in the Retro-R® panel will function as the side lap screws for the existing R panel as well. If the side laps are offset, side lap screws will be required at both the Retro-R® side laps and the existing "R" panel side laps.
4. Retro-R® panels may be end lapped. It is recommended that the end lap occur down slope from the end lap in the existing "R" panel roof.
5. Light transmitting panels are available for the Retro-R® roof. When LTPs are present in the existing "R" panel roof, change them out with a clear polycarbonate LTP and then install the Retro-R® LTP over it. This will require that the Retro-R® side laps align with the existing "R" panel side laps.
6. Retro-R® can be installed on roof slopes of ½:12 and greater.
7. Field applied tape sealant is required at Retro-R® panel side laps and end laps.
8. The new Retro-R® roof system will add approximately .64 lbs. per square foot for 29 gauge and .84 lbs. per square foot for 26 gauge to the existing roof structure. A registered professional engineer should be consulted to determine if the existing structure can safely support the additional loads. The existing zee or cees of the structure should also be inspected to assure their structural integrity.

# PRODUCT INFORMATION

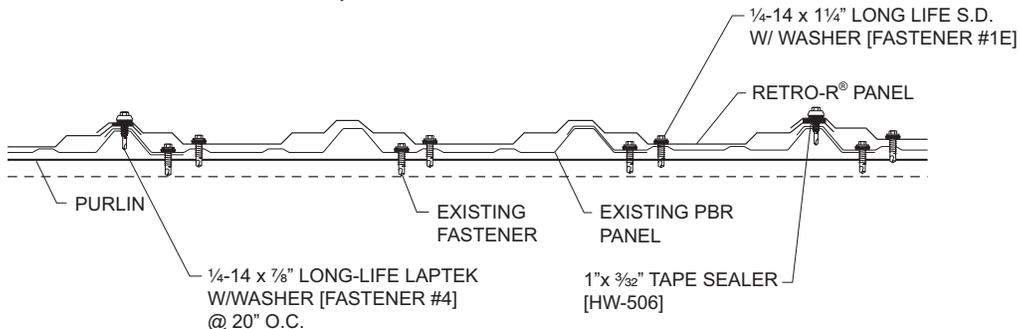
## Retro-R® PANEL FASTENER LOCATIONS



**PANEL ATTACHMENT AT SIDE LAP**



**PANEL ATTACHMENT AT  
EAVE, RIDGE AND ENDLAPS**



**PANEL ATTACHMENT AT  
INTERMEDIATE CONNECTIONS**

**NOTES:**

1. The Retro-R® Panel has an unsymmetrical side lap. Panel side lap with widest dimension laps on top of side lap with narrow dimension. However, where possible, the panels should be lapped against prevailing wind.
2. The above are typical fastener spacings. However, they may not be appropriate for all applications. Consult a professional engineer for use on any specific application.
3. Minimum 1" x 3/32" tape sealer required at panel side laps.
4. Side lap fasteners are required. Typical spacing is 20" O.C. However, this spacing may not be appropriate for all applications. Consult a professional engineer for use on any specific application.

# PRODUCT INFORMATION

## PRODUCT CHECKLIST

<p>Retro-R® Panel</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-53B <input type="checkbox"/></p>	<p>Parapet High Eave</p> <p>• Length 10'-2"</p> <p>COLOR</p> <p>SPECIFY ANGLE</p> <p>5 1/2"</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-874 <input type="checkbox"/></p>	<p>Sculptured High Side Eave</p> <p>• Length 10'-2"</p> <p>COLOR</p> <p>8"</p> <p>4"</p> <p>4"</p> <p>2"</p> <p>1 3/4"</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-17 <input type="checkbox"/></p>
<p>Retro-R® Panel Die Formed Ridge Cap</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-53B <input type="checkbox"/></p>	<p>Flat Ridge/Hip Flashing</p> <p>• Length 10'-2"</p> <p>COLOR</p> <p>11 1/2"</p> <p>11 1/2"</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-38 <input type="checkbox"/></p>	<p>Sculptured Rake</p> <p>• Length 10'-2"</p> <p>5"</p> <p>4"</p> <p>4"</p> <p>2"</p> <p>1 3/4"</p> <p>1 3/4"</p> <p>1 3/4"</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-16 <input type="checkbox"/></p>
<p>Retro-R® Panel Light Transmitting Panel (10'-8")</p> <p>HW-1558 <input type="checkbox"/></p>	<p>Parapet Rake</p> <p>• Length 10'-2"</p> <p>6"</p> <p>COLOR</p> <p>5"</p> <p>1 3/4"</p> <p>3/4"</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-952 <input type="checkbox"/></p>	<p>Eave Trim</p> <p>• Length 10'-2"</p> <p>5"</p> <p>3 1/2"</p> <p>5/8"</p> <p><input type="checkbox"/> Specify Roof Pitch</p> <p>FL-19 <input type="checkbox"/></p>
<p>Jamb Trim</p> <p>COLOR</p> <p>2"</p> <p>1 1/4"</p> <p>1 1/4"</p> <p>7/8"</p> <p>FL-22 <input type="checkbox"/></p> <p>FL-23 <input type="checkbox"/></p> <p>FL-23B <input type="checkbox"/></p> <p>FL-23C <input type="checkbox"/></p>	<p>Drip Trim</p> <p>3"</p> <p>COLOR</p> <p>5/8"</p> <p>1 1/2"</p> <p>1/2"</p> <p>FL-870 <input type="checkbox"/></p> <p>FL-871 <input type="checkbox"/></p>	<p>Head Trim</p> <p>2 1/2"</p> <p>1 1/4"</p> <p>COLOR</p> <p>1 3/8"</p> <p>FL-24 <input type="checkbox"/></p> <p>FL-25 <input type="checkbox"/></p> <p>FL-26 <input type="checkbox"/></p> <p>FL-26B <input type="checkbox"/></p> <p>FL-26C <input type="checkbox"/></p>

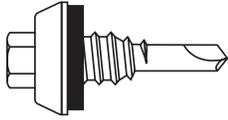
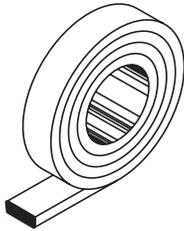
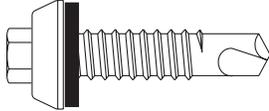
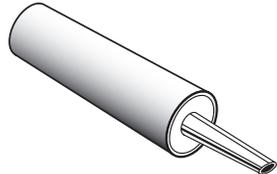
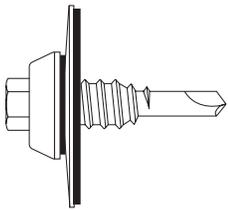
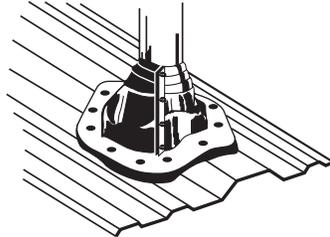
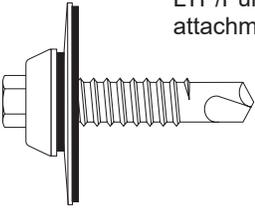
# PRODUCT INFORMATION

## PRODUCT CHECKLIST

<p><b>Head Trim</b></p> <p> <input type="checkbox"/> FL-850  <input type="checkbox"/> FL-851  <input type="checkbox"/> FL-852  <input type="checkbox"/> FL-853  <input type="checkbox"/> FL-854         </p>	<p><b>Outside Corner</b></p> <p> <input type="checkbox"/> FL-876  <input type="checkbox"/> FL-877         </p>	<p><b>Inside Corner</b></p> <p> <input type="checkbox"/> FL-878  <input type="checkbox"/> FL-879         </p>
<p><b>Sculptured Hang-On Gutter</b></p> <ul style="list-style-type: none"> <li>• 1/2-4:12 Roof Pitch</li> <li>• Length 10'-2"</li> </ul> <p>Specify Roof Pitch</p> <p><input type="checkbox"/> FL-18C</p>	<p><b>Gutter Strap</b></p> <p><input type="checkbox"/> FL-895</p>	
<p><b>Downspouts</b></p> <p><input type="checkbox"/> FL-31-Straight 10'-2"</p> <p><input type="checkbox"/> FL-31A-With Kick-Out 10'-2"</p>	<p><b>Fastener #3</b></p> <ul style="list-style-type: none"> <li>• Used at Retro-R® sidelaps</li> <li>• Used at trim conditions</li> </ul> <p>12-14 X 1 1/4" Long Life Driller 5/16" Hex Washer Head w/Sealing Washer</p> <p><input type="checkbox"/></p>	<p><b>Fastener #14</b></p> <ul style="list-style-type: none"> <li>• 1/8" diameter x 3/8" grip range</li> </ul> <p>1/8" X 0.337" Pop Rivet</p> <p><input type="checkbox"/></p>

## PRODUCT INFORMATION

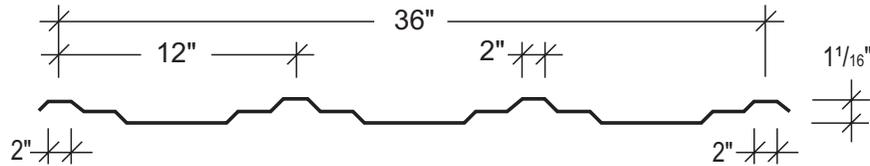
### PRODUCT CHECKLIST

<p><b>Fastener #4</b></p> <ul style="list-style-type: none"> <li>• Used at Retro-R® sidelaps</li> <li>• Used at trim conditions</li> </ul>  <p>1/4"-14 X 7/8" Long Life Lap TEK S.D. w/ Sealing Washer <input type="checkbox"/></p>	<p><b>Flat Tape Sealer</b> Flat 1" x 3/32"</p> <ul style="list-style-type: none"> <li>• Used at panel sidelaps and trim</li> </ul>  <p>HW-506 <input type="checkbox"/></p>	<p><b>Touch Up Paint</b></p> <ul style="list-style-type: none"> <li>• Sig 200 Colors</li> </ul>  <p>HW-304 <input type="checkbox"/></p>
<p><b>Fastener #1E</b></p> <ul style="list-style-type: none"> <li>• Used at Retro-R® purlin attachment</li> </ul>  <p>1/4"-14 X 1 1/4" Long Life Driller 5/16" Hex Washer Head w/ 1 1/8" Sealing Washer <input type="checkbox"/></p>	<p><b>Tape Sealer</b></p> <ul style="list-style-type: none"> <li>• Used at panel endlaps</li> </ul>  <p>Triple Bead</p> <p>HW-502 <input type="checkbox"/></p>	<p><b>Urethane Tube Sealant</b></p>  <p>HW-540 (WHITE) <input type="checkbox"/>          HW-541 (GRAY) <input type="checkbox"/>          HW-542 (BRONZE) <input type="checkbox"/>          HW-544 (ALMOND) <input type="checkbox"/></p>
<p><b>Fastener #44L</b></p> <ul style="list-style-type: none"> <li>• Used at Retro-R® LTP sidelaps</li> </ul>  <p>1/4"-14 X 7/8" Long Life Driller 5/16" Hex Washer Head w/ 1 1/8" O.D. Washer <input type="checkbox"/></p>	<p><b>Rubber Roof Jack</b></p>  <p>Specify Pipe Size <input type="checkbox"/></p>	<p><b>Retro-R® Closure Strip</b></p>  <p>Outside</p> <p>HW-469 <input type="checkbox"/></p>  <p>Inside</p> <p>HW-468 <input type="checkbox"/></p>
<p><b>Fastener #43L</b></p> <ul style="list-style-type: none"> <li>• Used at Retro-R® LTP/Purlin attachment.</li> </ul>  <p>1/4"-14 x 1 1/4" Long Life S.D. w/ 1 1/8" O.D. Washer <input type="checkbox"/></p>	<p><b>Retrofit Rubber Roof Jack</b></p>  <p>Specify Pipe Size <input type="checkbox"/></p>	

\* It is the user's responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railings, or other acceptable safety controls that prevent fall-through.

# PRODUCT INFORMATION

## PREPARATORY REQUIREMENTS



1. The Retro-R® panel is designed to be used to sheet over an existing “R” panel roof or wall.
2. Prior to any installation, have the project engineer verify that the structure is sufficiently designed to accept the additional load requirements imposed by additional roofing material.
3. The Retro-R® panel is designed for attachment to the existing purlins or girts by installing fasteners through the minor rib of an “R” panel and into the existing purlin or girts.
4. If trim is to be replaced, remove all existing perimeter trim from the roof/wall.
6. The eave of the existing “R” panel roof should be cut back so that it does not extend beyond the building side wall.
7. Lap screws must be removed from the existing “R” panels prior to installation of the Retro-R® panels.
8. Field cutting of Retro-R® panels should be avoided when possible. If field cutting is required, the panels must be cut with nibblers, snips or shears to prevent edge rusting. Do not cut the panels with saws, abrasive blades, grinders or torches.
9. Roof jacks - Roof jacks must be removed prior to Retro-R® installation; new roof jacks are recommended.
10. Roof curbs - If the existing roof curbs are designed to fit the contour of the “R” panel, new curbs are recommended to match the new Retro-R® contour. Follow manufacturers recommendations for installation.

### NOTE

Since the “Retro-R®” panel follows the contour of the existing roof line, oil canning, may be induced by an uneven roof line. Oil canning does not compromise the structural integrity of the panel, the coating or the warranty and is not a cause for rejection.

### NOTE

MBCI makes no claims as to the structural integrity of the existing structure or the existing roof panels. MBCI recommends that a project engineer verify that the existing panels are adequate to act as a deck.

### NOTE

It is the responsibility of the erector to install this roof using safe construction practices that are in compliance with OSHA regulations. MBCI is not responsible for the performance of this roof system if it is not installed in accordance with the instructions shown in this manual. Deviations from these instructions and details must be approved in writing by MBCI.

### CAUTION

The minimum recommended slope for the roof system is ½ on 12. A slope of less than ½ on 12 could cause ponding and will void material warranties.

### NOTE

Application and design details are for illustration purposes only, and may not be appropriate for all environmental conditions or building designs. Projects should be engineered to conform to applicable building codes, regulations, and accepted industry practices.

# PRODUCT INFORMATION

## UNLOADING

Upon receiving material, check shipment against shipping list for shortages and damages. The manufacturer will not be responsible for shortages or damages unless they are noted on the shipping list.

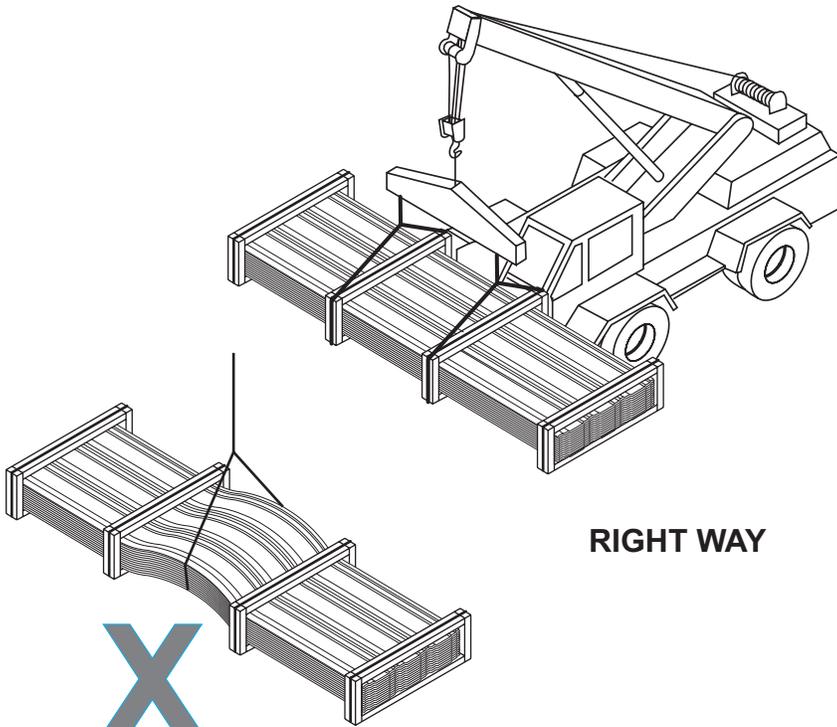
Each bundle should be lifted at its center of gravity. Where possible, bundles should remain banded until final placement on roof. If bundles must be opened, they should be retied before lifting.

When lifting bundles with a crane, a spreader bar and nylon straps should be used. **NEVER USE WIRE ROPE OR CHAIN SLINGS. THEY WILL DAMAGE THE PANELS.**

When lifting bundles with a forklift, forks must be a minimum of five feet apart. Do not transport open bundles. Drive slowly when crossing rough terrain to prevent panel buckling.

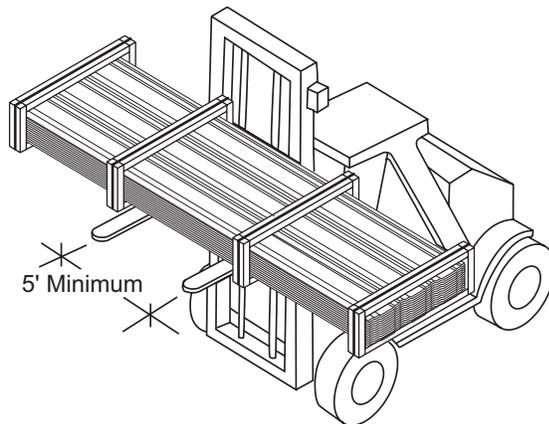
**CAUTION**

Improper unloading and handling of bundles and crates may cause bodily injury or material damage. The manufacturer is not responsible for bodily injuries or material damages during unloading and storage.

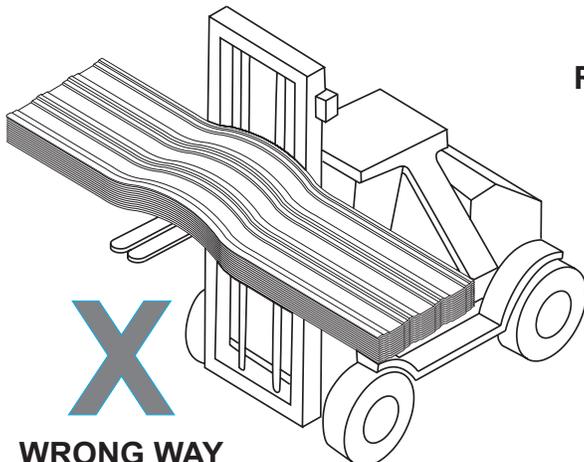


**RIGHT WAY**

**WRONG WAY**

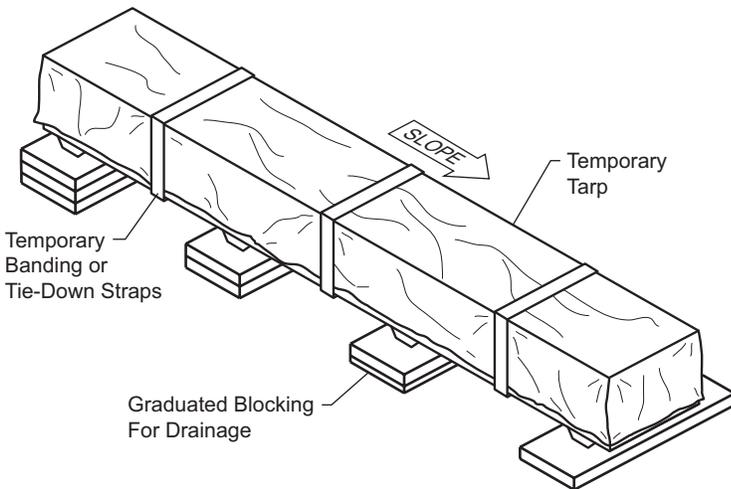
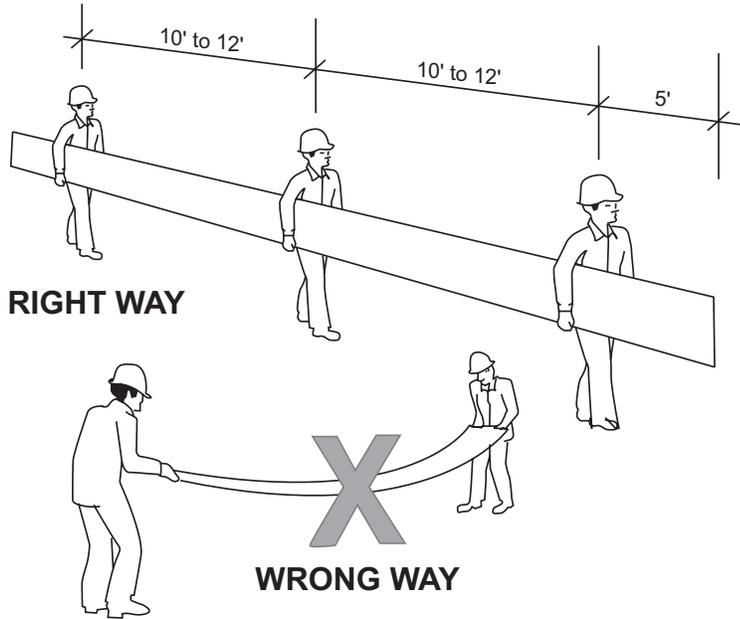


**RIGHT WAY**



**WRONG WAY**

# PRODUCT INFORMATION



## PANEL HANDLING

Standing on one side of the panel, lift it by the edge. If the panel is over 10' long, lift it with two or more people on one side of the panel to prevent buckling.

Do not pick panels up by the ends.

**NOTE**

Protective gloves and safety glasses should always be used while handling panels. OSHA safety regulations must be followed at all times.

## ROOF PANEL TRAFFIC

Never step on panels until they are completely fastened. Use rubber sole shoes while working on metal roofs. New panels may have a slippery film.

**NOTE**

Never install any material if its quality is in question.

**NOTE**

Always remove drill shavings at the end of each work period.

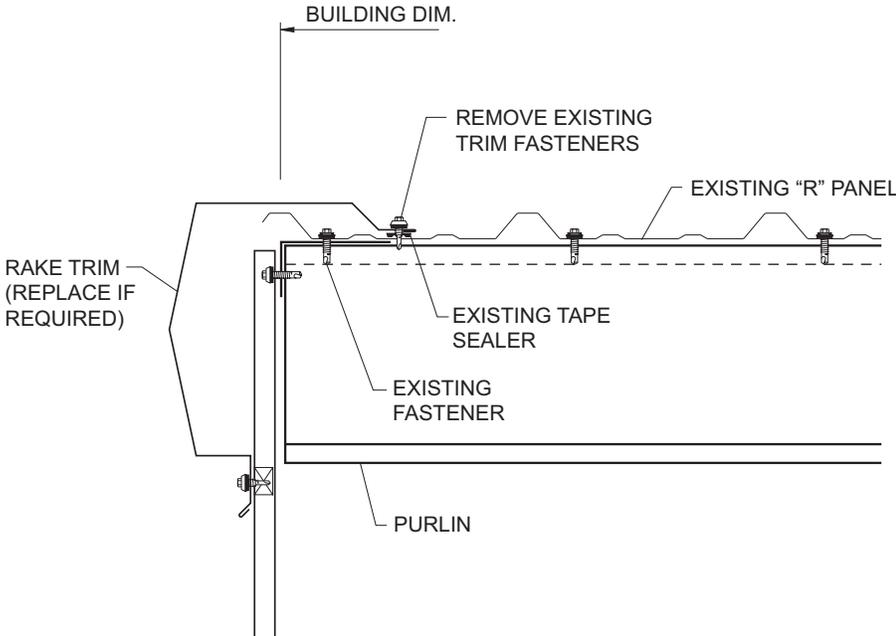
## PANEL STORAGE

Store bundled sheets off the ground sufficiently high to allow air circulation beneath bundle and to prevent rising water from entering bundle. Slightly elevate one end of bundle. Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpaulin and the ground. **PROLONGED STORAGE OF SHEETS IN A BUNDLE IS NOT RECOMMENDED.** If conditions do not permit immediate erection, extra care should be taken to protect sheets from white rust or water marks.

Check to see that moisture has not formed inside the bundles during shipment. If moisture is present, panels should be uncrated and wiped dry, then restacked and loosely covered so that air can circulate between the panels.

# ROOF PANEL INSTALLATION

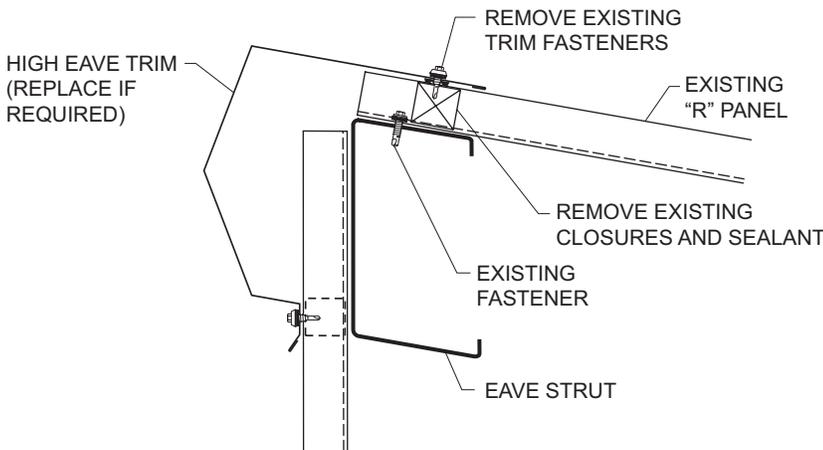
## PREPARATORY START-UP



### Rake

Remove the fasteners at the rake trim/roof intersection.

If rake trim is to be reused, remove only the rake trim screws at the roof as shown.



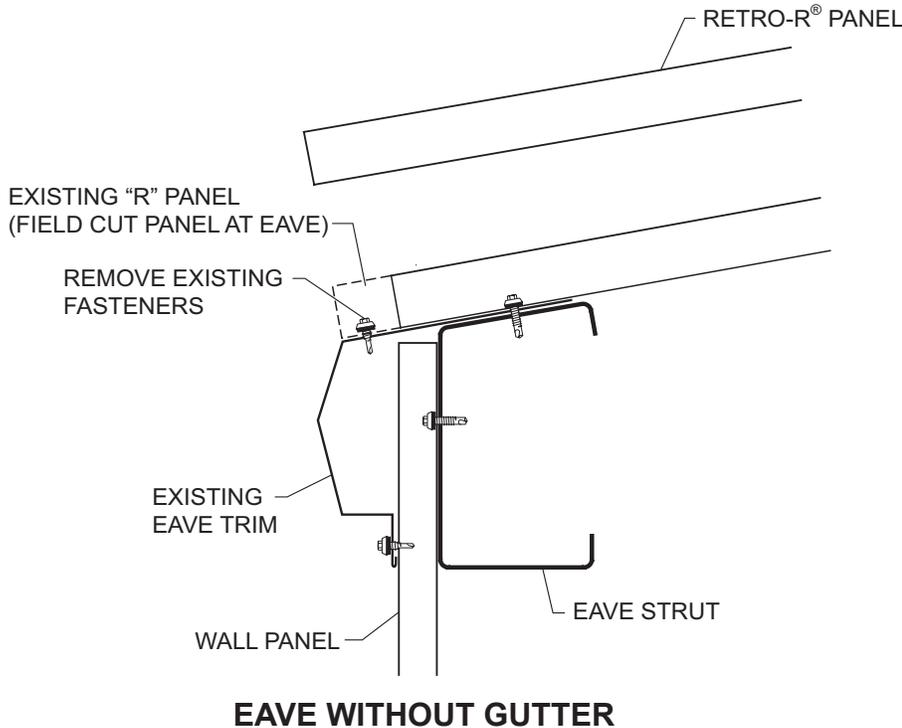
### High Eave

Remove the fasteners and closures at high eave trim/roof intersection.

If complete removal of the high eave trim is not desired, remove only the high eave trim screws and closures at the roof as shown.

# ROOF PANEL INSTALLATION

## PREPARATORY START-UP

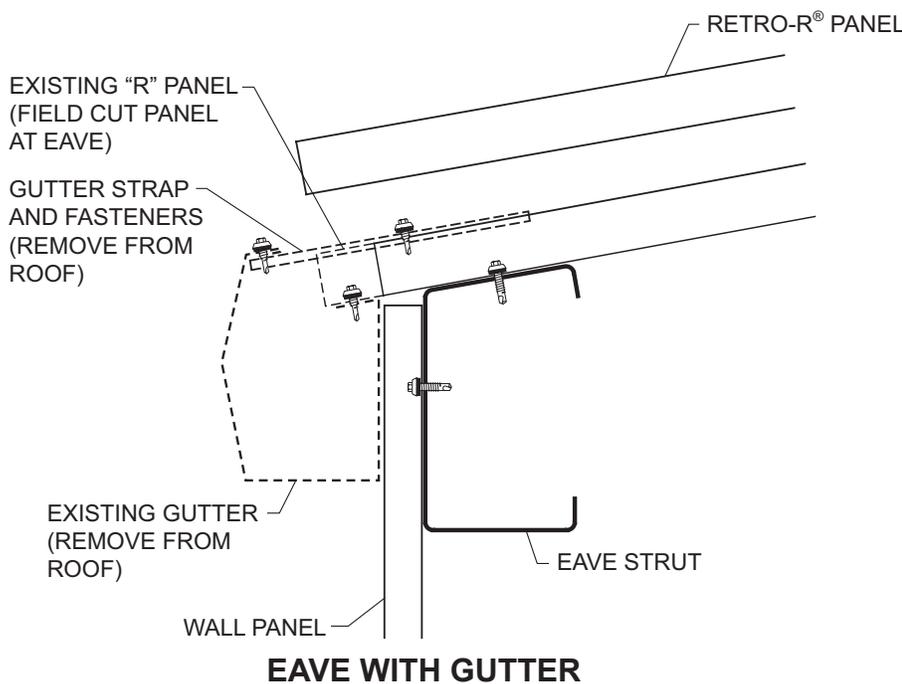


### Eave Conditions w/o Gutters

Remove fasteners at eave trim /roof intersection.

Cut existing "R" panels back, flush with outside of wall.

If eave trim is to be reused, remove only the eave trim screws at the roof as shown.



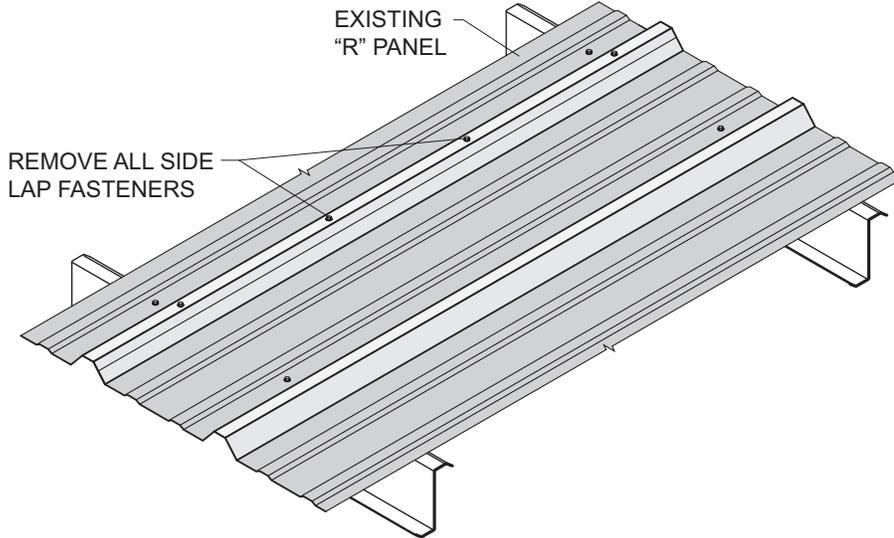
### Eave Conditions w/ Gutters

Remove complete gutter from existing roof surface.

Cut the existing "R" panels back flush with outside of wall panel.

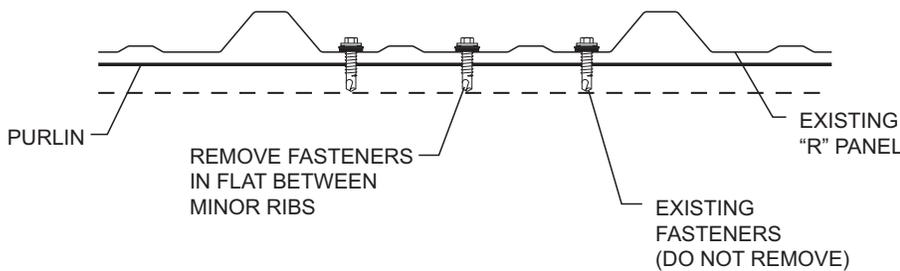
# ROOF PANEL INSTALLATION

## PREPARATORY START-UP



Remove all side-lap fasteners at the major ribs of the existing "R" panels. Note, it may be necessary to install a standard pop rivet at the major ribs (60" O.C.) to maintain a positive connection during installation of the Retro-R® panel.

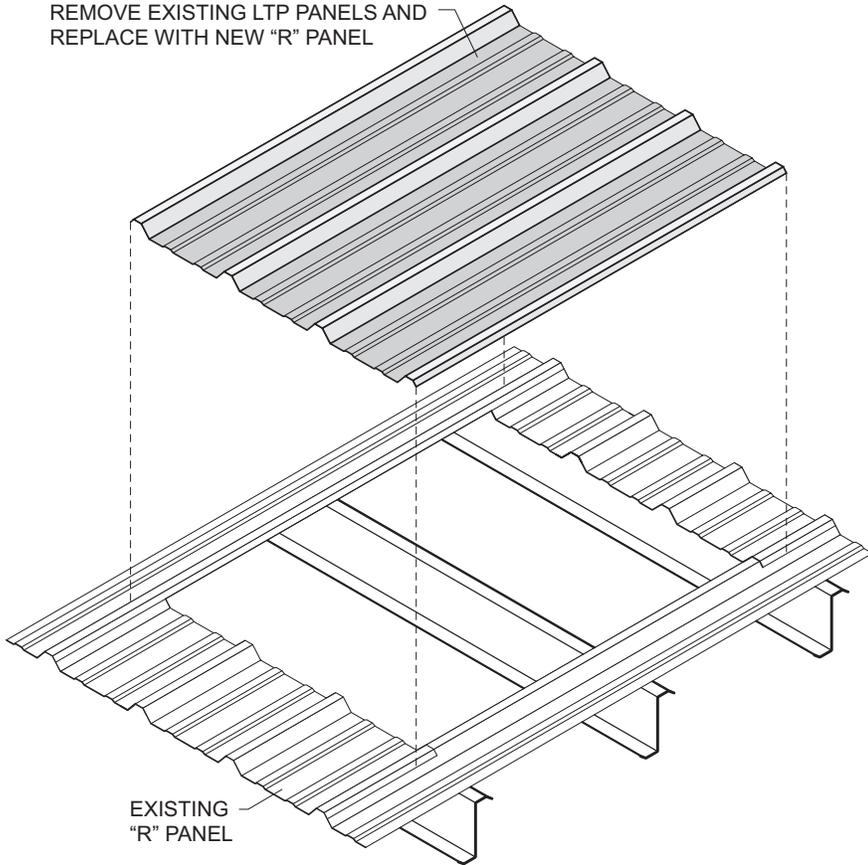
Only remove as many side lap fasteners as can be covered in one work day.



Remove any fasteners in the middle 5" of the pan of the "R" panel as shown. Fasteners in this area could interfere with the Retro-R® panel. Seal exposed screw holes with urethane sealant to maintain weathertightness.

# ROOF PANEL INSTALLATION

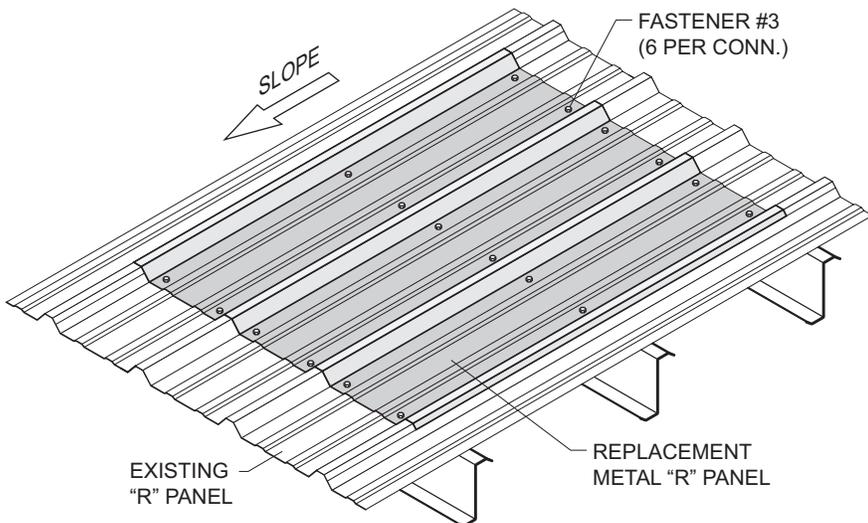
REMOVE EXISTING LTP PANELS AND REPLACE WITH NEW "R" PANEL



## LIGHT TRANSMITTING PANELS - ELIMINATION

If LTPs in existing "R" panel roof are to be eliminated, remove them and replace with an "R" panel to support the Retro-R® panel that will be installed at this location. Attach the new "R" panel to the existing purlins with Fastener # 3 on each side of the major ribs. **Note: replacement "R" panels must be ordered and purchased separately.**

If LTPs are to be kept in roof, please see Pages RR-16 and RR-17 for installation instructions.

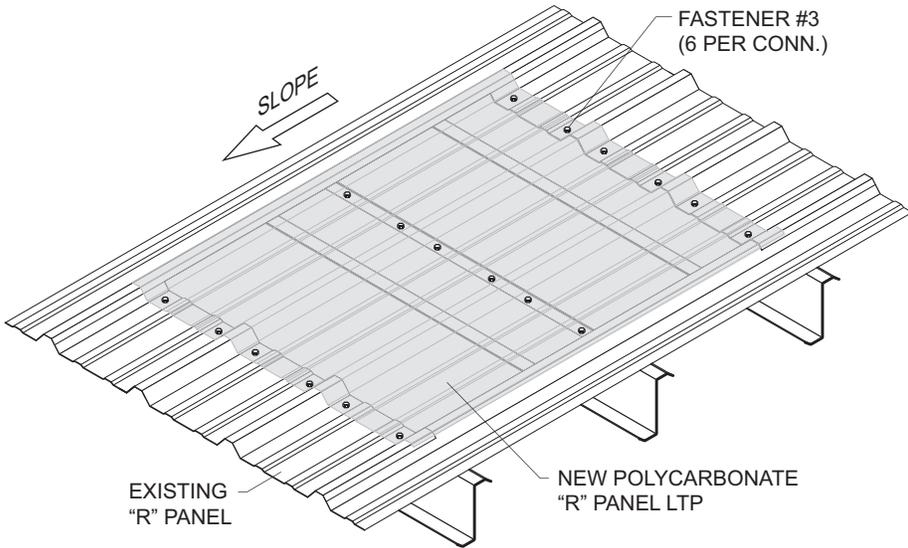


**NOTE**  
The replacement panel must be purchased separately.

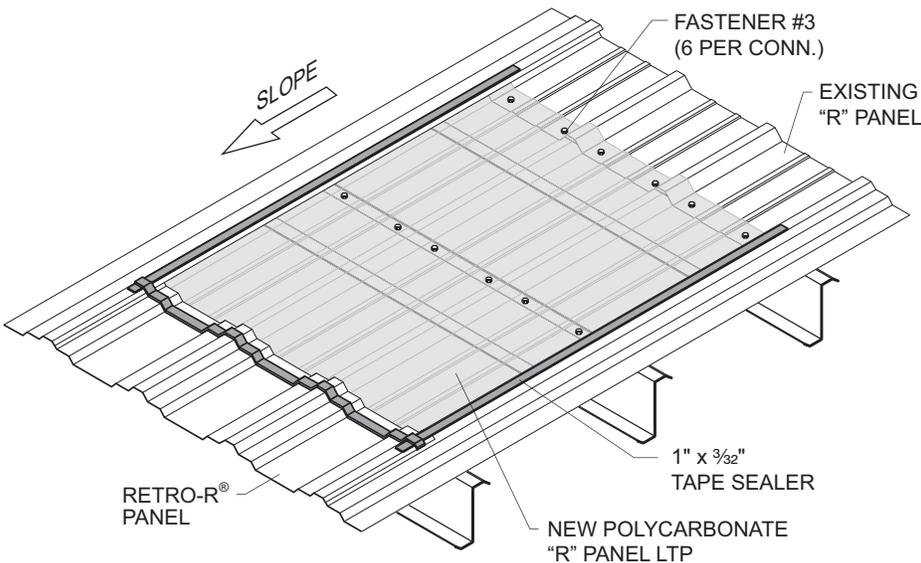
# ROOF PANEL INSTALLATION

## LIGHT TRANSMITTING PANELS - REPLACEMENT

When LTPs are to be installed in the Retro-R® roof, the old "R" panel LTP should be removed and replaced with a new clear polycarbonate LTP. Attach the polycarbonate "R" LTP to the existing purlins with Fastener #3 on each side of the LTP panel's major ribs.



Install Retro-R® roof panels leaving the panel run at the LTP location open, except for the Retro-R® panel at the down slope end of the LTP opening. Apply 1" x 3/32" tape sealant to the metal Retro-R® side laps and the across the metal Retro-R® panel at the LTP location.

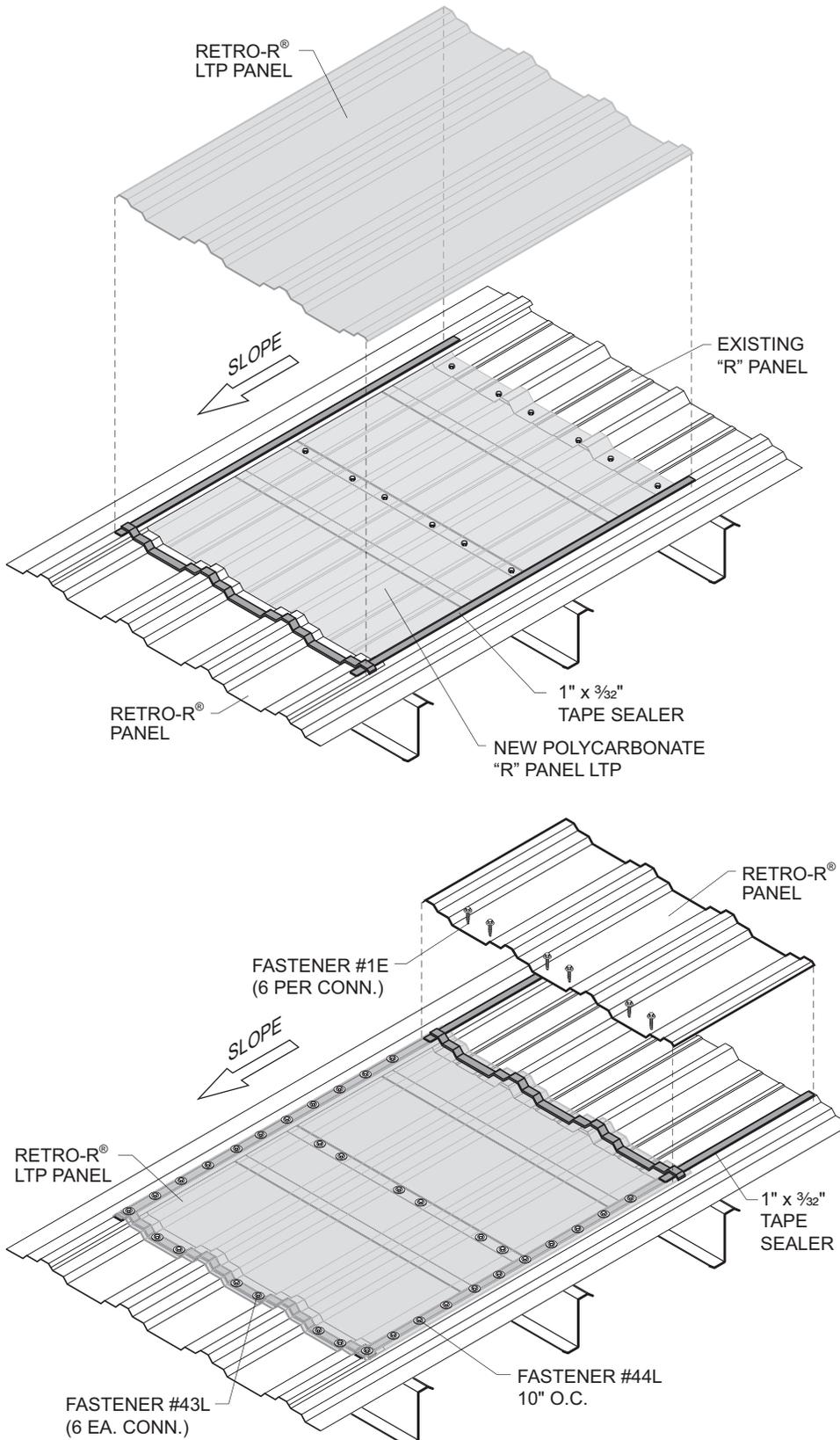


**LTP DISCLAIMER**

It is the user's responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railing or other acceptable safety controls that prevent fall-through.

# ROOF PANEL INSTALLATION

## LIGHT TRANSMITTING PANELS - REPLACEMENT (cont.)



Attach the Retro-R® LTP at the down slope and midpoint purlins with Fastener #43L on each side of the major ribs.

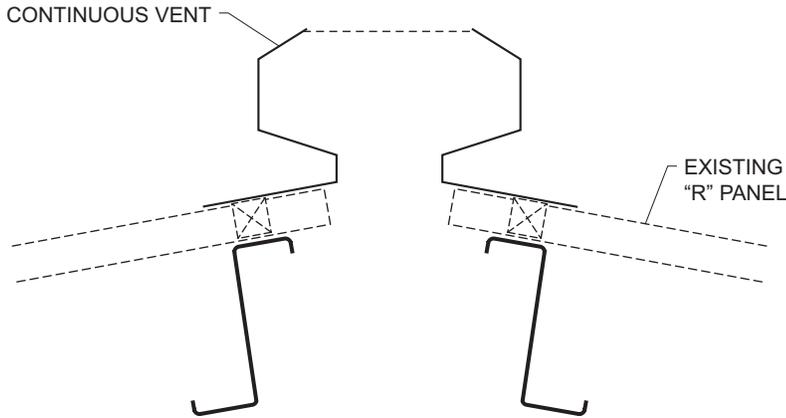
Apply 1" X 3/32" tape sealant across the up slope end of the Retro-R® LTP and along the side laps. Attach the upper metal Retro-R® panel in the LTP run and fasten as at a normal end lap. Install Fastener #44L 10" on center at each LTP side lap.

### LTP DISCLAIMER

It is the user's responsibility to ensure that the installation and use of all light transmitting panels comply with State, Federal and OSHA regulations and laws, including, but not limited to, guarding all light transmitting panels with screens, fixed standard railing or other acceptable safety controls that prevent fall-through.

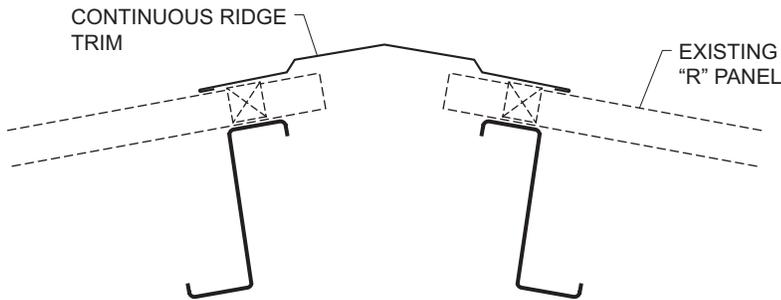
# ROOF PANEL INSTALLATION

## RIDGE CONDITIONS

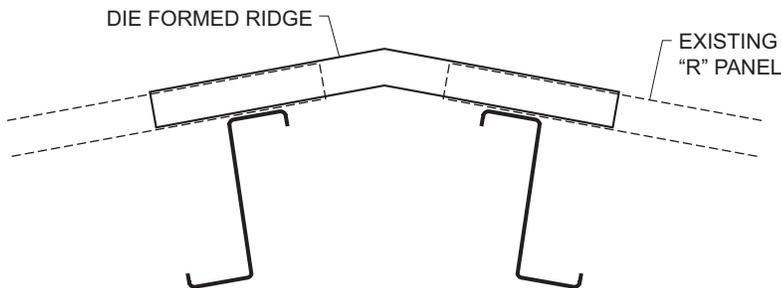


**Continuous Vents** - Continuous vents may be completely removed or they may be reused. To reuse, remove the ridge vent skirt fasteners from one side only. Raise the vent skirt out of the way, remove closure and sealant. After Retro-R® panel installation reseal vent and seal with new Retro-R® outside closure and 1" x 3/32" tape sealer top and bottom.

**NOTE**  
If existing vent has die stamped side skirts that fit the existing "R" panel, they should not be reused on the Retro-R® panel.



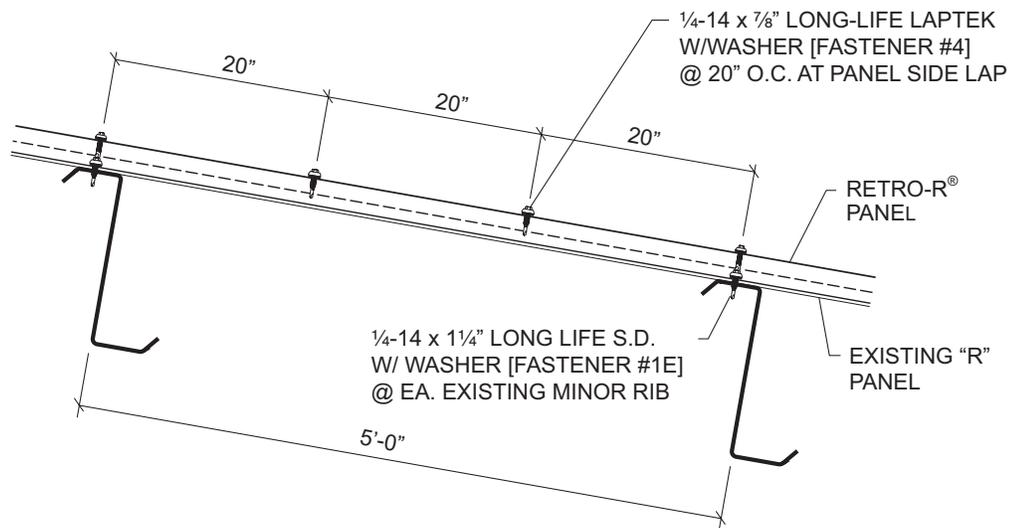
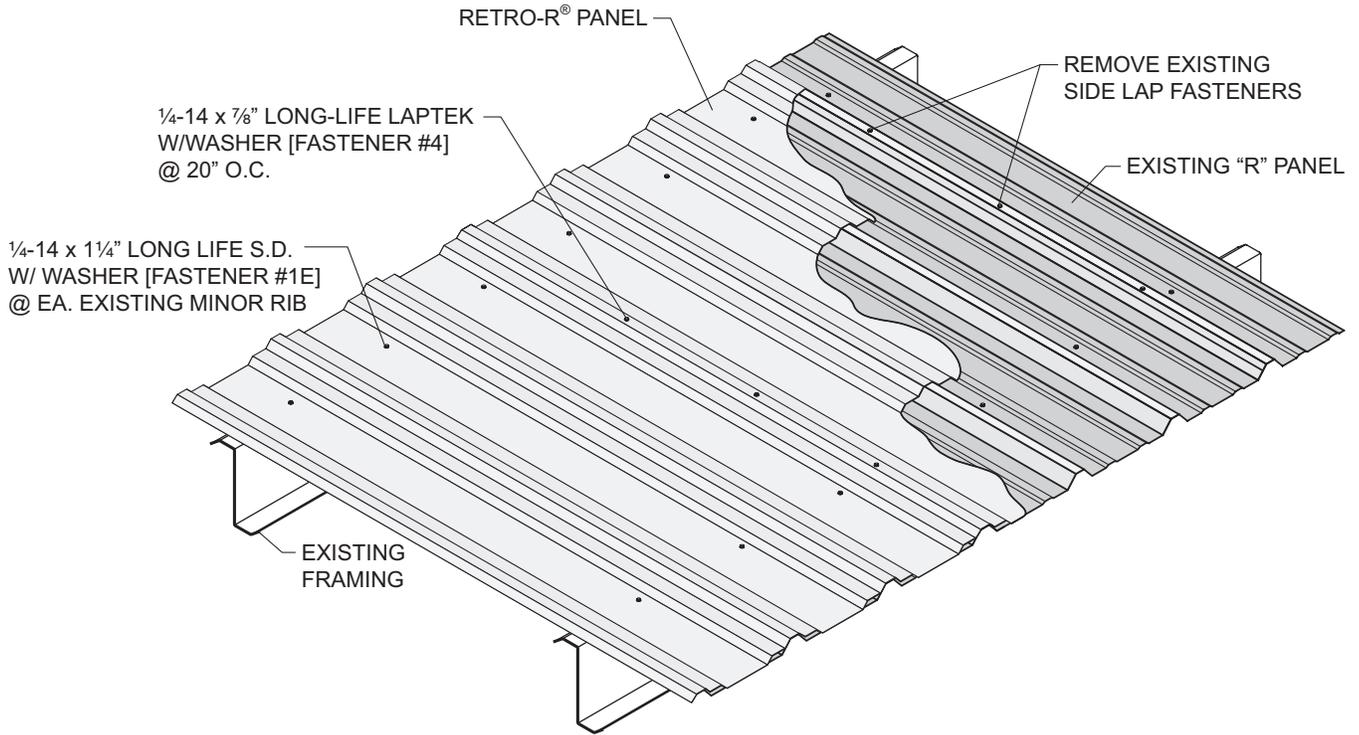
**Continuous Ridge Trim**- Remove the ridge and all closures and sealant. Re-install existing flat ridge or replace with new ridge flashing and Retro-R® outside closures and 1" x 3/32" tape sealer top and bottom after Retro-R® panels are installed.



**Die Formed Ridge** - Removal of "R" panel dieformed ridge is not necessary. The Retro-R® panel and dieformed ridge cap will cover ridge. The lap screws in the major ribs as well as certain "pan" screws must be removed. Add new dieformed ridge caps after Retro-R® panels are installed.

# ROOF PANEL INSTALLATION

## PANEL FASTENER APPLICATION



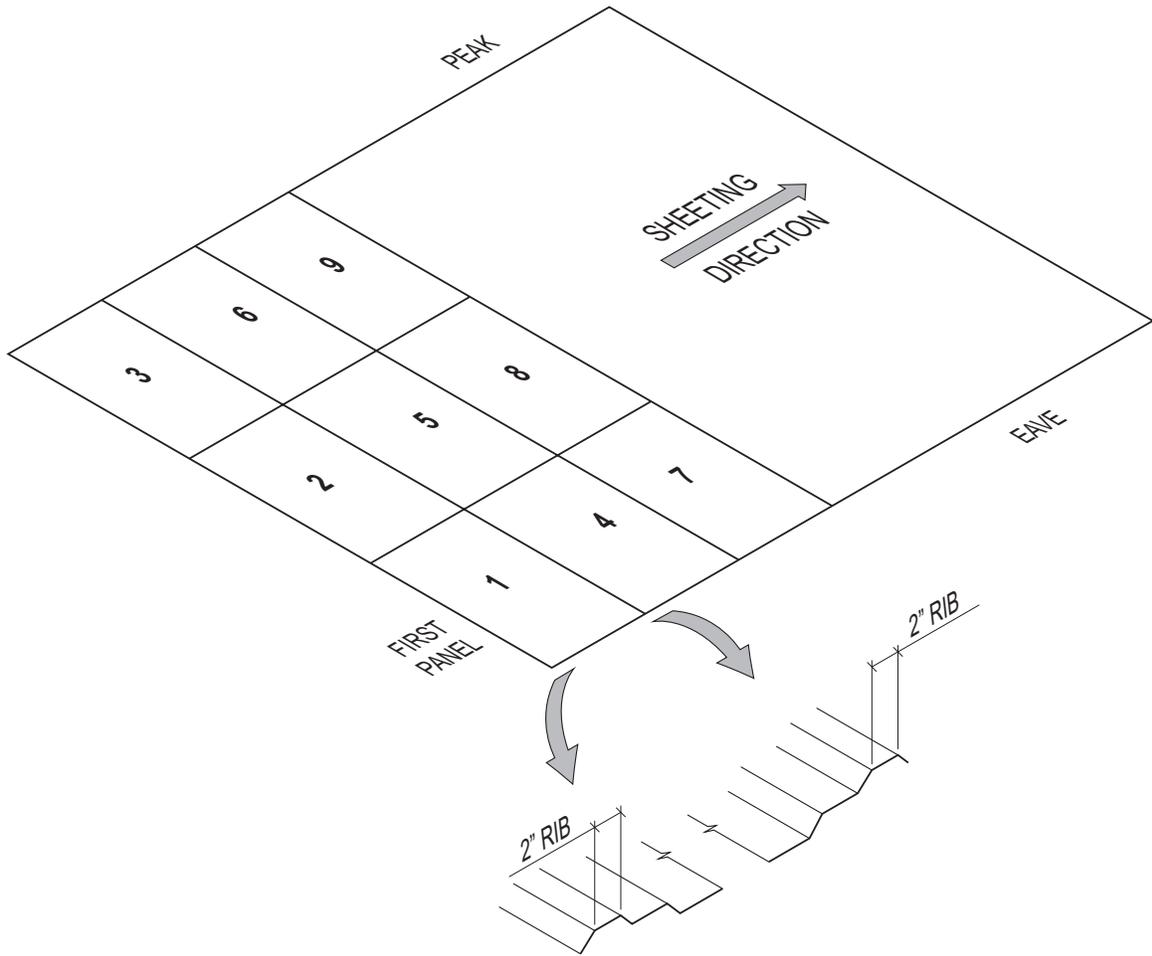
## SIDE LAP FASTENER SPACING

**NOTES:**

1. Install Fastener #1E adjacent to each major rib at all purlin locations. Install lap fasteners (Fastener #4 at 20" on center at the panel side lap only.)

# ROOF PANEL INSTALLATION

SHEETING  
DIRECTION

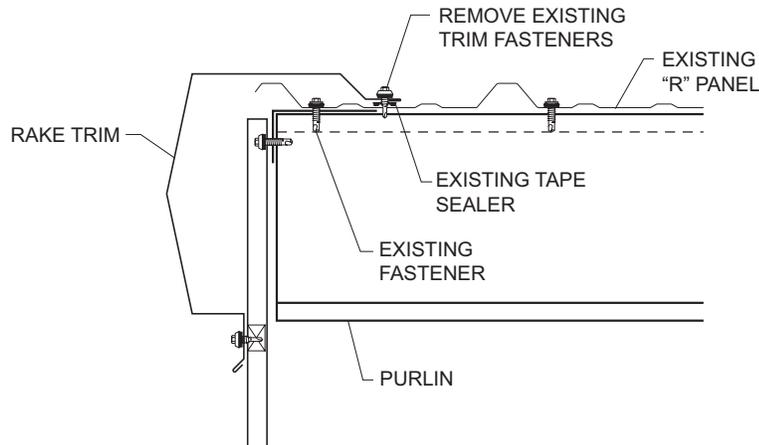


**NOTES:**

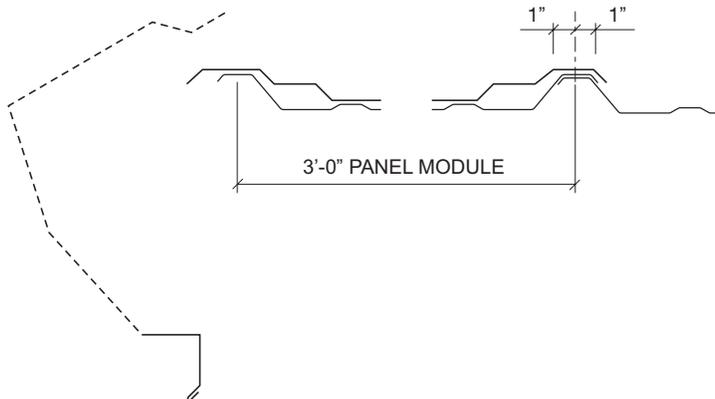
1. The Retro-R® Panel has an unsymmetrical side lap. Panel side lap with widest dimension laps or top of side lap with narrow dimension. However, where possible, the panel should be lapped against prevailing wind.

# ROOF PANEL INSTALLATION

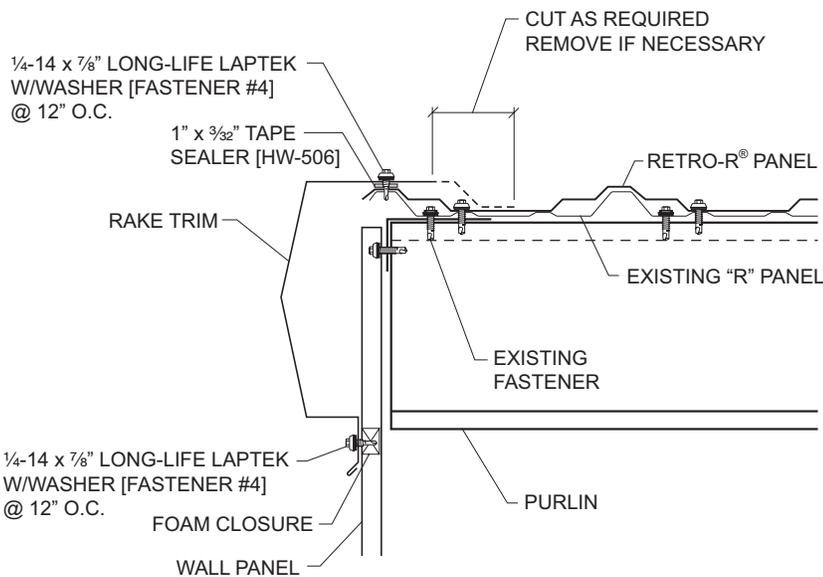
## PANEL INSTALLATION AT RAKE



If the existing rake trim is to be reused, it does not have to be removed. Remove only the rake fasteners on the roof.



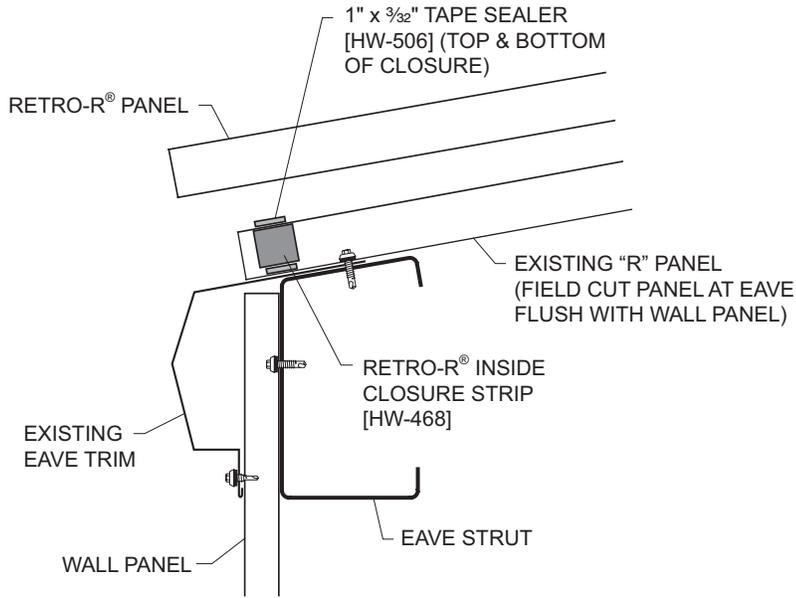
Position the first row of Retro-R® panels as shown over the major ribs of the "R" panel. See detail for positioning information..



Attach Retro-R® panel to purlins with Fastener #1E. Apply a continuous run of 1" tape sealant, as shown, and attach the rake trim, Retro-R®, and existing "R" panel together with Fastener #4 at 1'-0" O.C.

# ROOF PANEL INSTALLATION

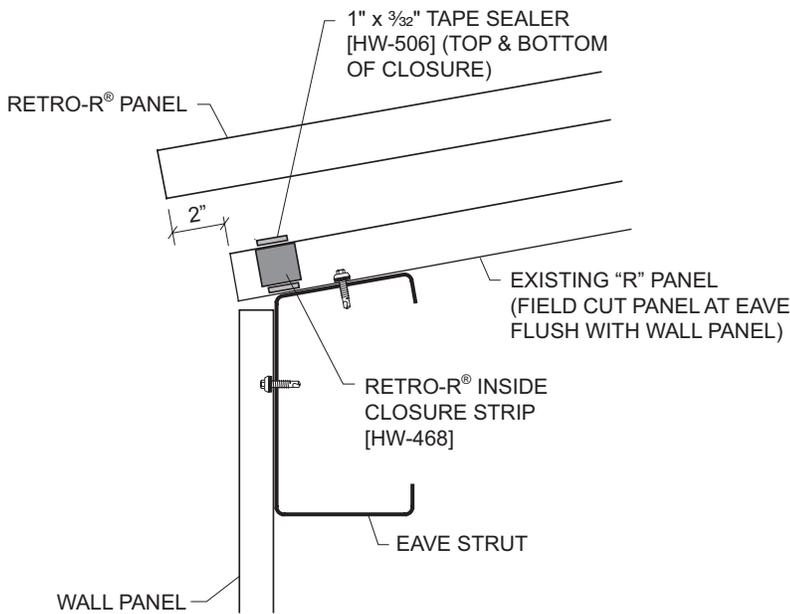
## PANEL INSTALLATION EAVE



### Eave without Gutter

Install the Retro-R® panels with the same overhang as that of the original “R” panel. Membrane on underside of panel at eave can be fused with a heat gun to prevent moisture wicking.

Inside closures should be installed at the eave between the Retro-R® and the cut-back “R” panels.



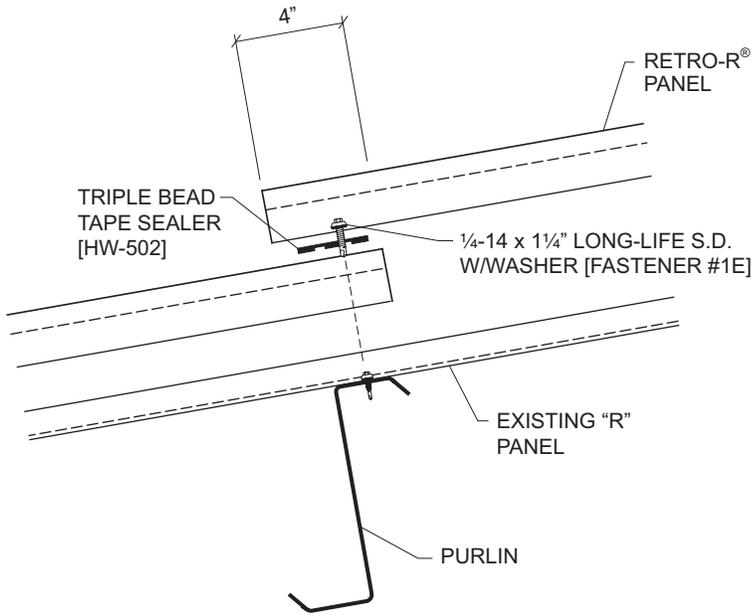
### Eave with Gutter

Install the Retro-R® panels with a 2" overhang at the eave. Gutter and gutter straps will be installed later. Membrane on underside of panel at eave can be fused with a heat gun to prevent moisture wicking.

Inside closures should be installed at the eave between the Retro-R® and the cut-back “R” panels.

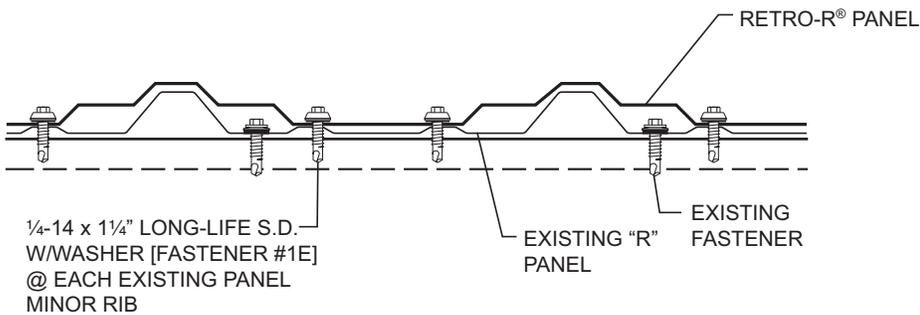
# ROOF PANEL INSTALLATION

## PANEL INSTALLATION ENDLAP



MBCI recommends that the Retro-R® endlap occur one purlin downhill from the existing "R" panel lap.

The lap should be 4", as shown. Apply triple bead tape sealant between the panels.

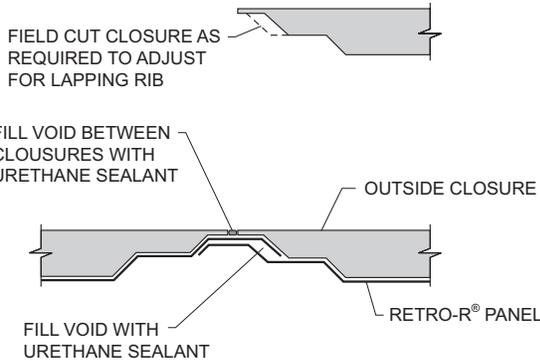
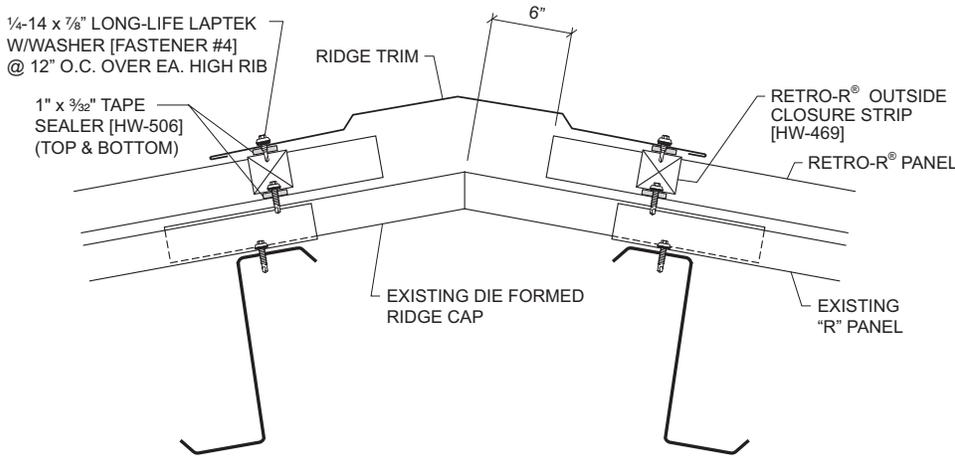


**FASTENER SEQUENCE @ ENDLAP**

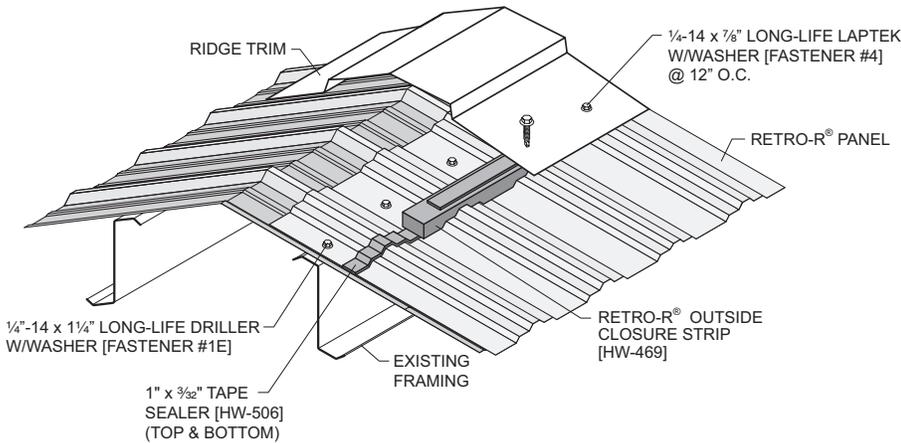
Install Fastener #1E at each minor rib of the existing "R" panel.

# ROOF PANEL INSTALLATION

## PANEL INSTALLATION RIDGE



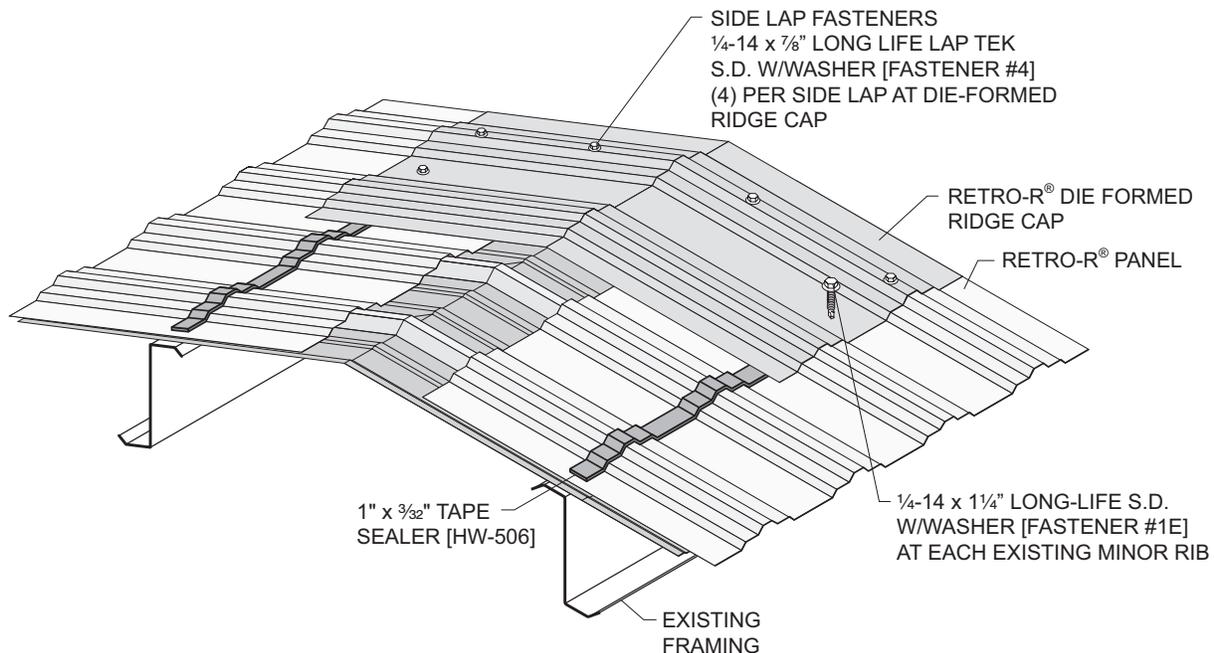
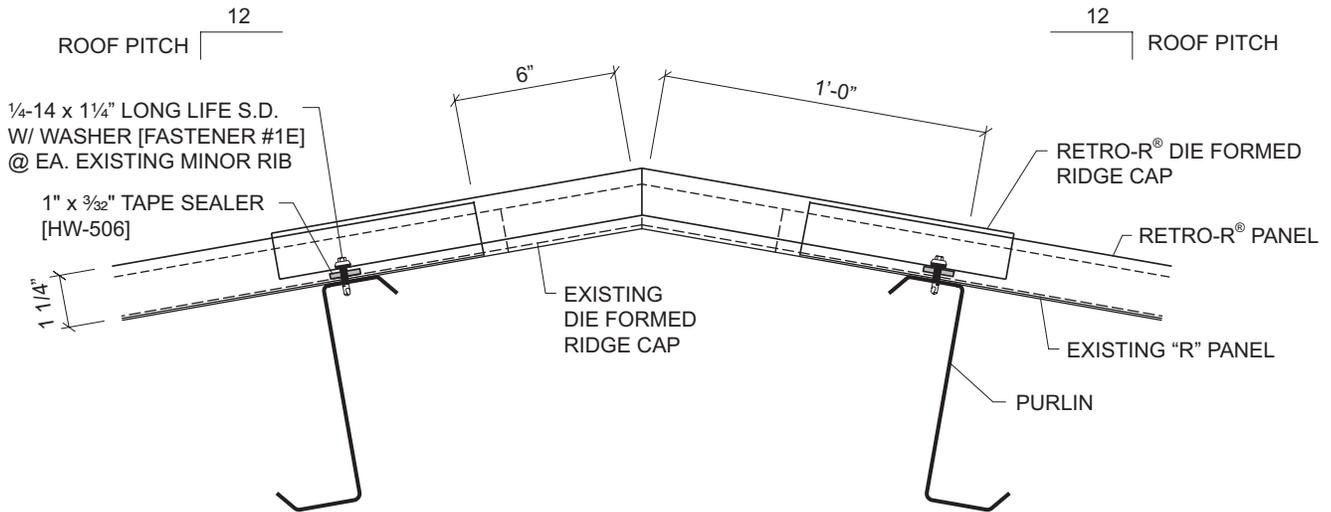
Decide on the peak condition to be used and determine Retro-R® panel overhang required. Continuous ridge trim has been illustrated.



The ridge flashing is to be installed with an outside Retro-R® closure that has 1" tape sealant, top and bottom (as shown). Install Fastener #4 on 12" centers (at Retro-R® major ribs).

# ROOF DETAILS

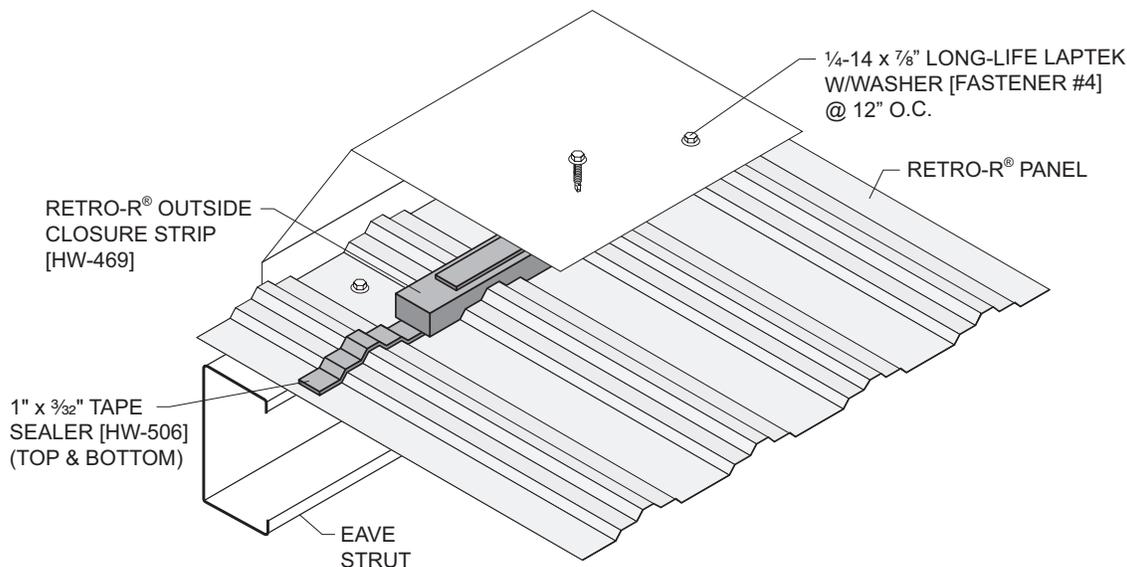
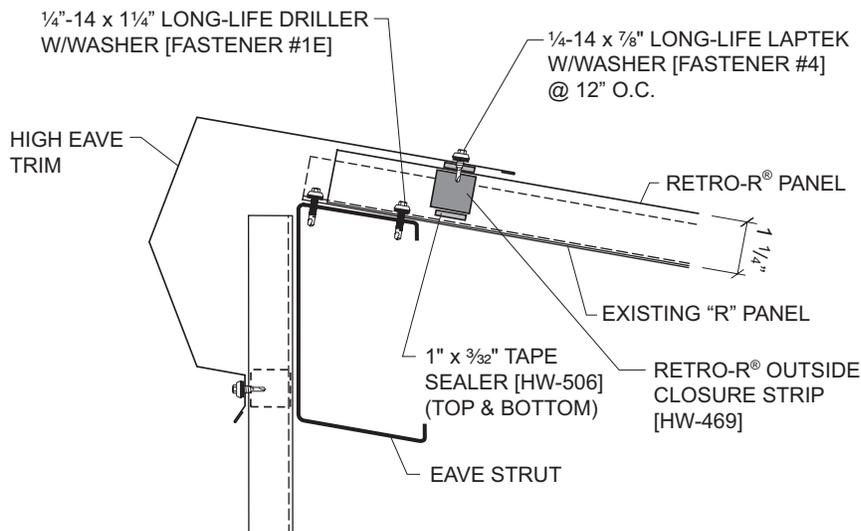
## TYPICAL DETAILS Ridge


**NOTES:**

1. When ordering ridge caps, specify roof slope.
2. Install 1" x 3/32" tape sealer across full width of ridge cap on both sides. Tape sealer must be installed between weather infiltration point and fasteners.
3. Install 1" x 3/32" tape sealer to the sidelap of the ridge cap that will lap onto adjacent ridge cap. Tape sealer must be installed between weather infiltration point and fasteners.
4. Install Fastener #1E at both sides of each major rib. (Six fasteners on each side of ridge cap.)
5. Install four (Fastener #4) 1/4-14 x 7/8" Long Life Lap Tek in each ridge cap sidelap.

# ROOF DETAILS

## TYPICAL DETAILS High Side Eave

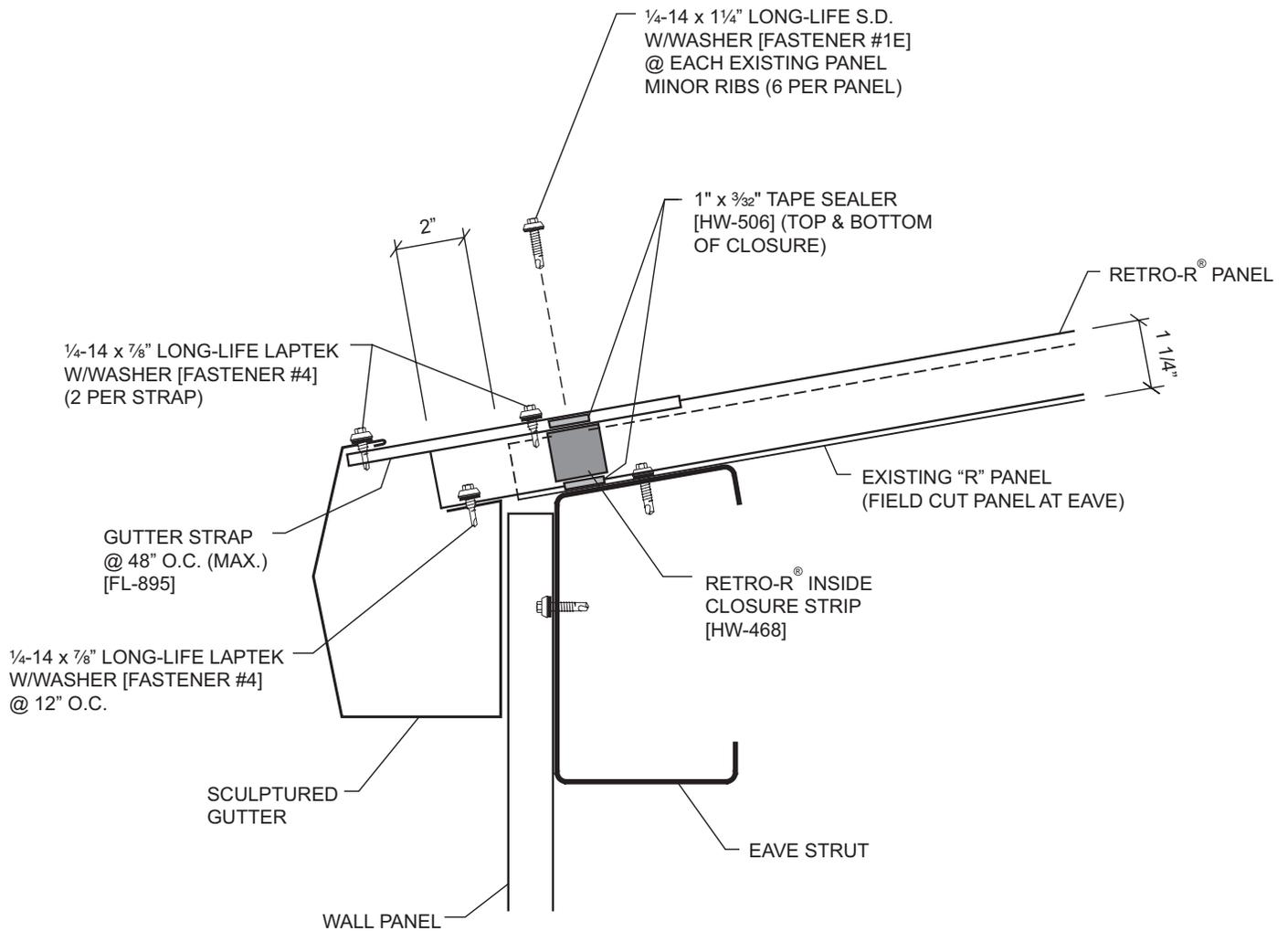


**NOTES:**

1. Install outside closure, with 1" x 3/32" tape sealer top and bottom, across width of Retro-R® panels.
2. Install Sculptured High Side Eave to Retro-R® panels at each major rib with (Fastener #4) 1/4"-14 x 7/8" Lap Tek. Fasteners must be up slope of tape sealant. Sculptured high side eave trim should overhang outside closures 1/2" - 1".
3. Attach front face of sculptured high side eave trim to wall with fasteners or cleat as required for wall substrate.
4. Trim laps should be approximately 3". Apply bead of urethane sealant between trim at 3" lap.
5. Fuse membrane on underside of panel at eave to prevent moisture wicking.

# ROOF DETAILS

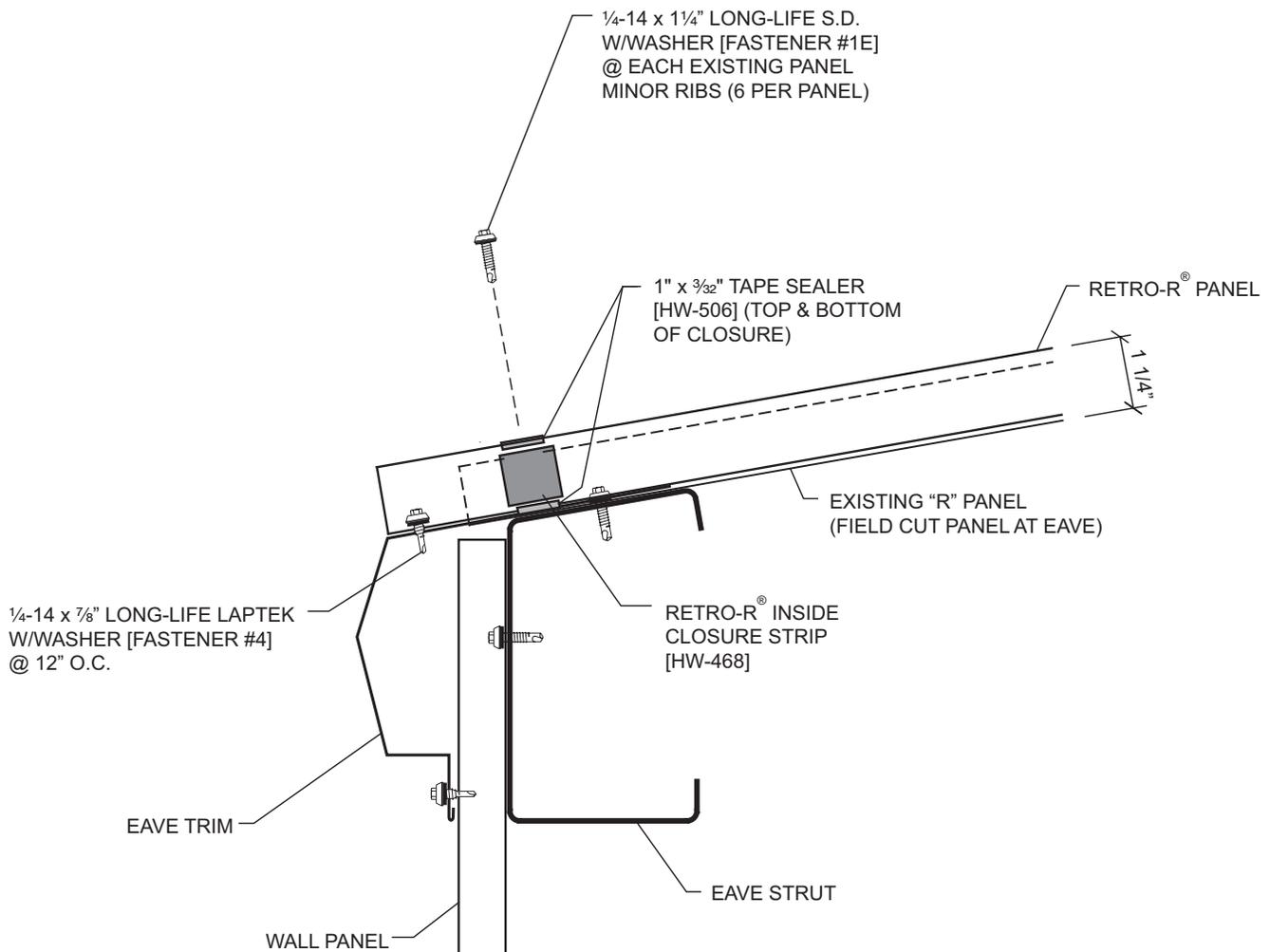
## TYPICAL DETAILS Eave with Gutter


**NOTES:**

1. Field cut panel at eave. (Existing roof panel should not extend beyond wall panel.)
2. Apply 1" x 3/32" tape sealer continuous along existing "R" panel.
3. Place Retro-R® inside closure strip on tape sealer. Apply 1" x 3/32" tape sealer continuous on top of Retro-R® inside closure strip.
4. Attach Retro-R® panel with 1/4-14 x 1 1/4" long-life S.D. w/washer [Fastener #1E ] through Retro-R® panel and into each minor rib of existing "R" Panel.

# ROOF DETAILS

## TYPICAL DETAILS Eave with Trim

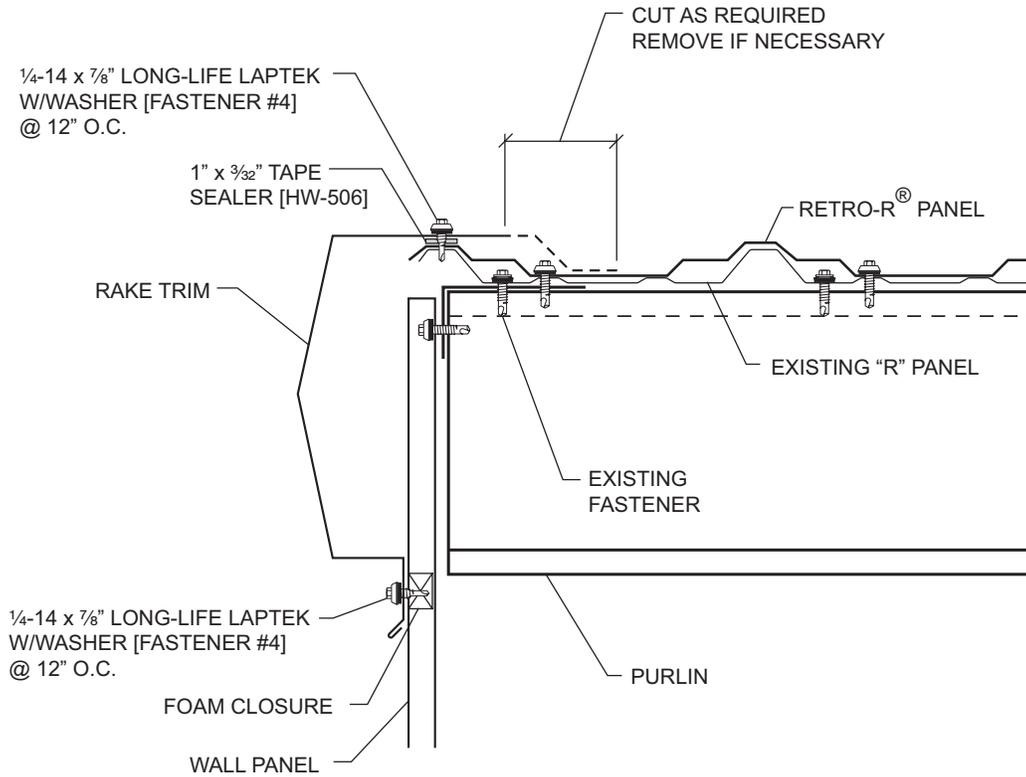


**NOTES:**

1. Field cut panel at eave. (Existing roof panel cannot extend beyond wall panel).
2. Apply 1" x 3/32" tape sealer continuous along existing "R" panel at Eave.
3. Place Retro-R® inside closure strip on tape sealer. Apply 1" x 3/32" tape sealer continuous on top of Retro-R® inside closure strip.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between.
5. Attach front face of eave trim to wall with fasteners or cleat as required for wall substrate.
6. Trim laps should overlap approximately 3" with a bead of urethane sealant in between.

# ROOF DETAILS

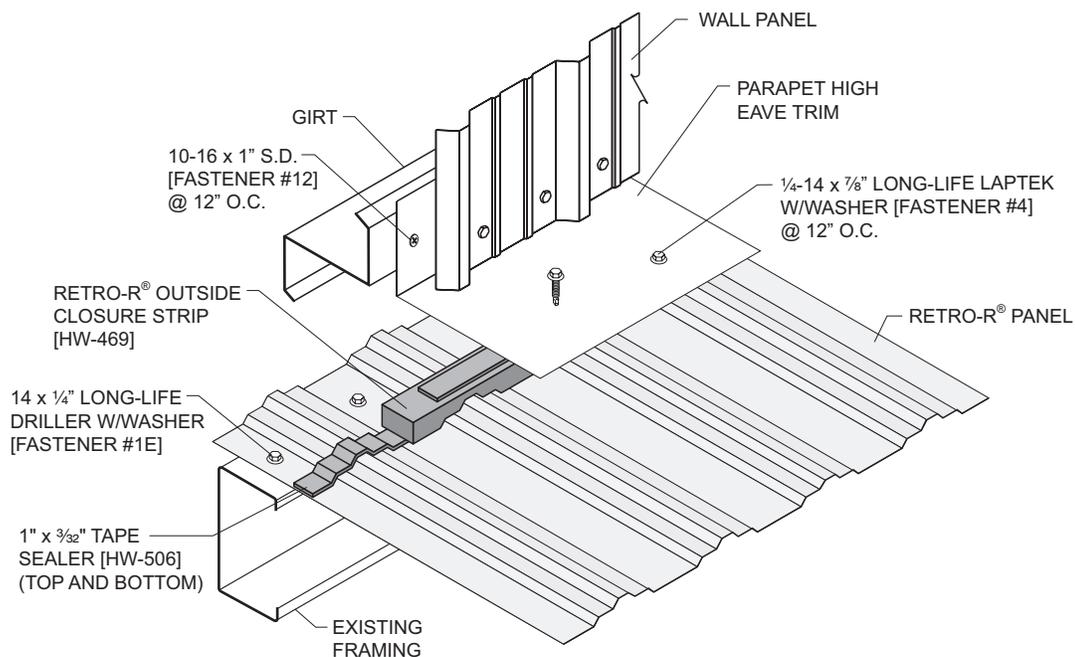
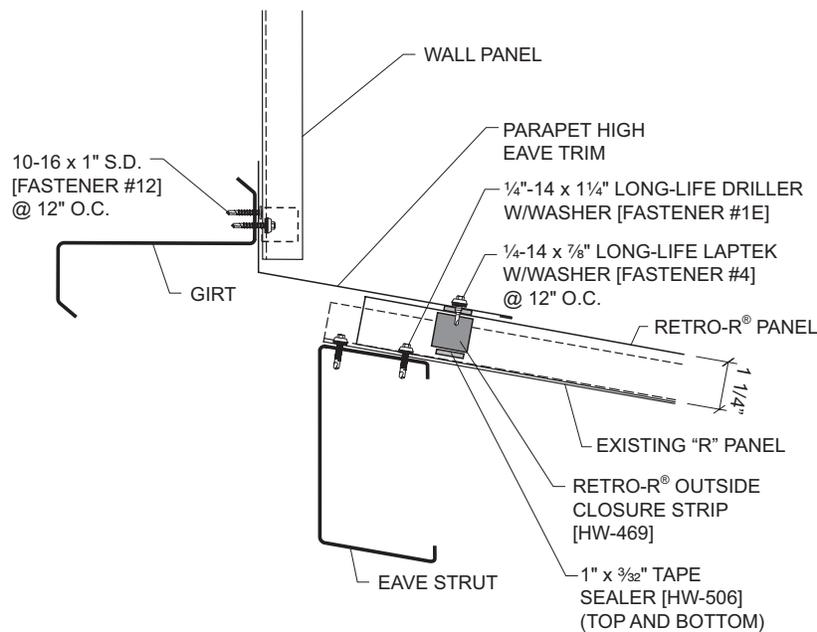
## TYPICAL DETAILS Rake


**NOTES:**

1. Install 1" x 3/32" tape sealer to top of Retro-R® panel rib.
2. Install rake trim to Retro-R® panel rib with (Fastener #4) 1/4-14 x 7/8" Long Life Lap Tek's at 1'-0" on center.
3. Attach front face of rake trim to wall with fasteners or cleat as required for wall substrate.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between.

# ROOF DETAILS

## TYPICAL DETAILS Parapet High Side Eave

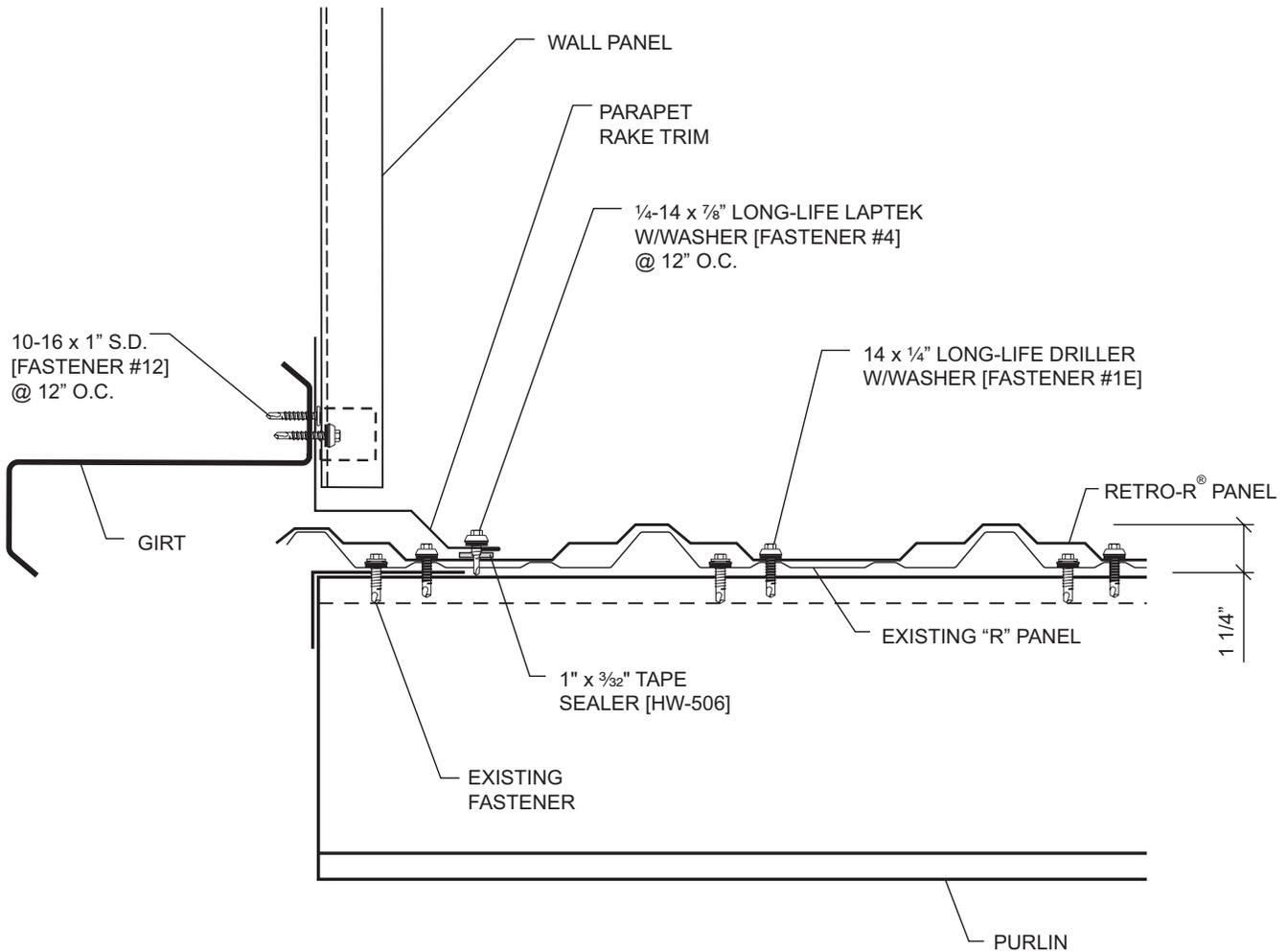


**NOTES:**

1. Install outside closure, with 1" x 3/32" tape sealer top and bottom, across width of Retro-R® panels.
2. Install parapet high side trim to Retro-R® panels at each major rib with (Fastener #4) 1/4-14 x 7/8" Lap TEK. Fastener must be up slope of tape sealant. Trim should overhang outside closures 1/2" - 1".
3. Attach top leg of parapet high side trim to wall with fasteners as required for wall substrate.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between.

# ROOF DETAILS

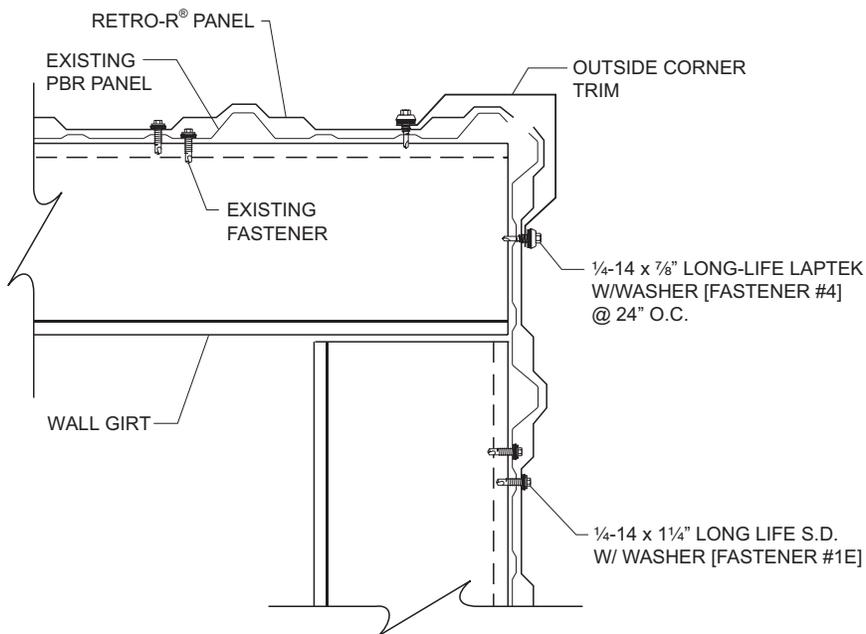
## TYPICAL DETAILS Parapet Rake


**NOTES:**

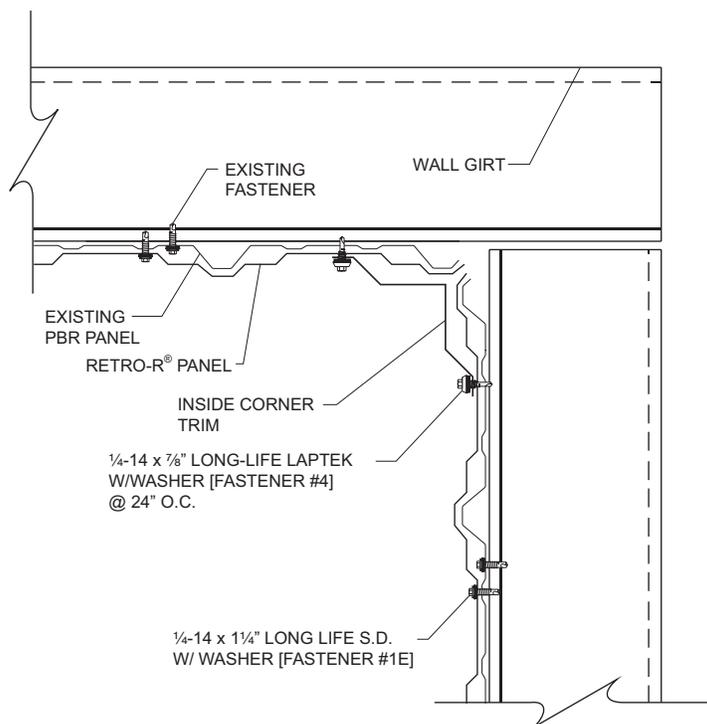
1. Install 1" x 3/32" tape sealer to top of Retro-R® panel.
2. Install parapet rake trim to Retro-R® panel with (Fastener #4) at 12" on center.
3. Attach top leg of parapet rake trim to girt with Fastener #12. Elevate horizontal leg of parapet trim slightly, to provide for positive drainage of water.
4. Trim laps should overlap approximately 3" with a bead of urethane sealant in between.

# WALL DETAILS

## TYPICAL DETAILS Corner



### OUTSIDE CORNER DETAIL



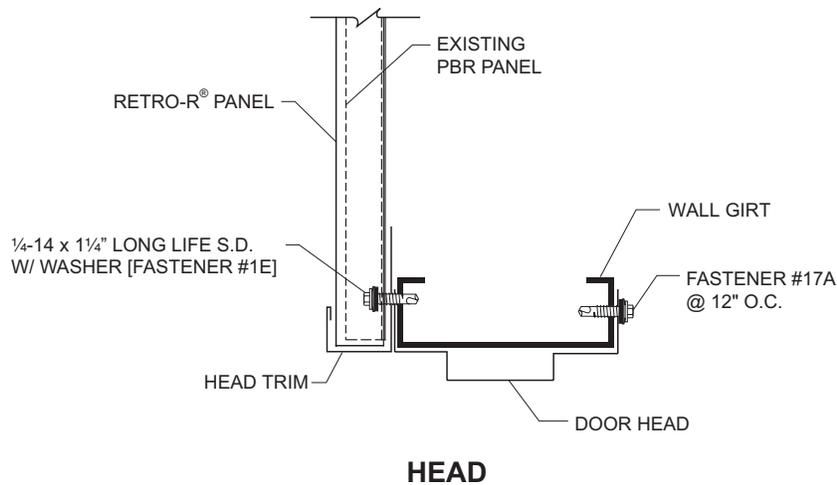
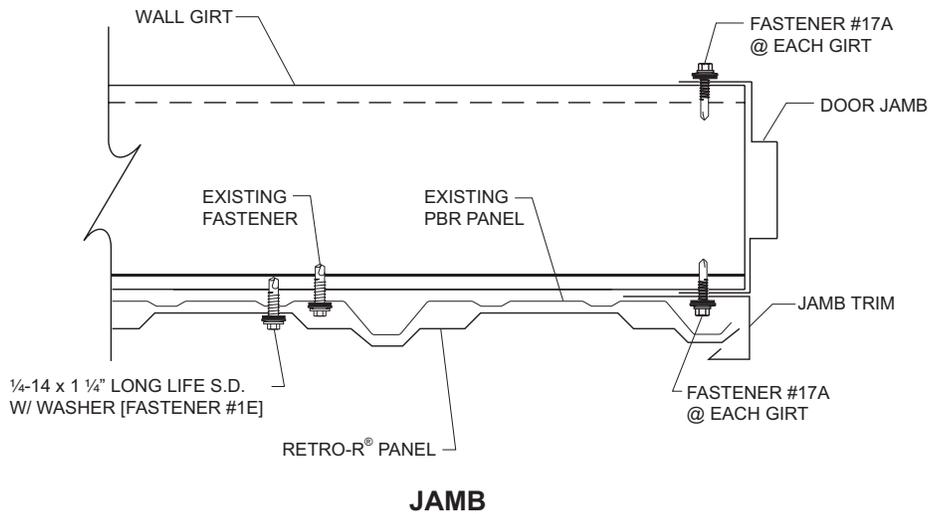
### INSIDE CORNER DETAIL

**NOTES:**

1. Install corner trim with Fastener #4 (1/4 - 14 x 7/8" Long Life Lap Tek) at 2'-0" O.C.

# WALL DETAILS

## TYPICAL DETAILS Head Jamb

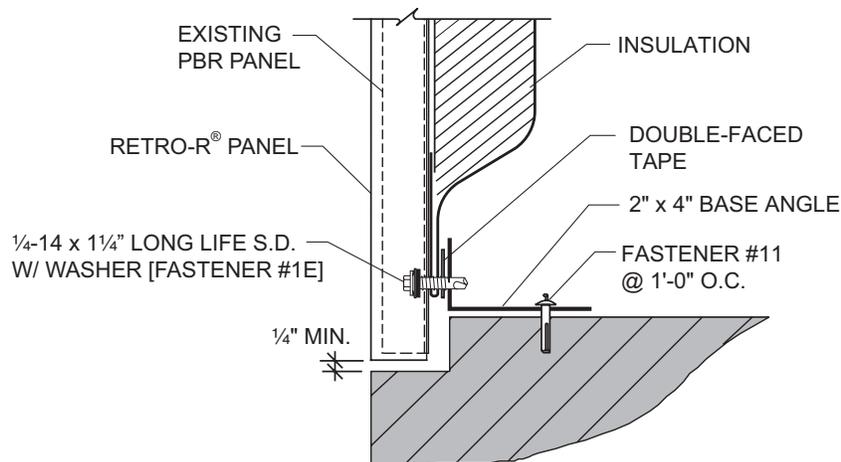


**NOTES:**

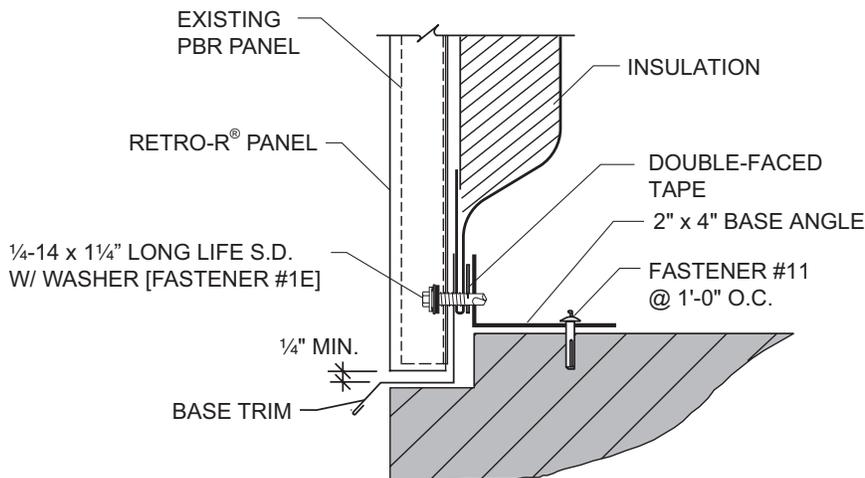
1. Install Jamb and Head Trim with pop rivets as required to support flashing during panel installation.

# WALL DETAILS

## TYPICAL DETAILS Base



## BASE w/o TRIM



## BASE w/TRIM

**NOTES:**

1. Wall with vinyl insulation, pull back fiberglass approximately 4" pull over end and staple. Apply double face tape to base angle and stick insulation to it before applying panel and fastening with Fastener #3 (1/4 - 14 x 1 1/4" Long Life Driller), six each per panel.
2. Should base trim be desired, temporarily attach trim to base angle with two Fastener #14 pop rivets until panels are installed.



Retro-R®

# NOTES

# NOTES



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