

TREMLOCK LSP INSTALLATION MANUAL

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GENERAL NOTES

The details shown on the following pages are suggestions or guidelines on how to install Tremlock LSP panels. The information shown is accurate and the installation details shown are proven methods of construction, but it is not intended to cover all instances, building requirements, designs or codes. The details may require changes or revisions due to individual project conditions. The installer should follow these recommended details using proper workmanship procedures.

It is the responsibility of the designer/installer to ensure the details meet particular building requirements and to assure adequate water-tightness. It must be noted that water-tightness is a function of the installer. Tremco Roofing and Building Maintenance will be held harmless from any and all claims arising from a lack of water-tightness.

A proper uniform substructure should be used to avoid any panel distortion. All substructures should be designed to meet all necessary code requirements.

The installer should thoroughly familiarize himself/herself with all installation instructions. Before beginning installation of the panels, the installer should examine the substrate to ensure that all supporting members are straight, level and plumb.

The panels should be installed plumb, straight and accurately to the adjacent work. No penetrations shall be placed in the panel system by fasteners except as shown on the installation drawings.

Tremco Roofing and Building Maintenance can provide all flashings and accessories shown in the installation drawings unless noted otherwise. Installation procedures shall be in accordance with the manufacturer's printed instructions, detail or approved shop drawings. Flashing and trim shall be installed true and in proper alignment, with any exposed fasteners equally spaced for the best appearance.

Some field cutting and fitting of panels and flashings is to be expected by the installer and minor field corrections are a part of normal installation work. Workmanship shall be of the best industry standards and with installation performed by an experienced metal craftsman.

Oil canning of metal panels is inherent in the product and is not a cause for rejection.

Contents of this manual are subject to change without notice. Because this manual is revised from time to time, users are advised to check the revision date to be sure they have the most current copy in print. To confirm this book is the most current copy, please visit Tremco Roofing and Building Maintenance's web site at <http://www.TremcoRoofing.com>.

SECTION PROPERTIES & LOAD TABLES

Tremlock LSP

Bare Galvalume & Painted Galvalume

SECTION PROPERTIES				TOP IN COMPRESSION			BOTTOM IN COMPRESSION		
GAUGE	FY (KSI)	WEIGHT (PSF)	V _a kip/ft.	I _x (in. ⁴ /ft.)	S _e (in. ³ /ft.)	M _a kip-in./ft.	I _x (in. ⁴ /ft.)	S _e (in. ³ /ft.)	M _a kip-in./ft.
24	50.0	1.18	0.8790	0.2970	0.1195	3.5760	0.1480	0.1023	2.7270

1. Section properties are calculated with the 2001 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. V_a is the allowable shear.
3. I_x is for deflection determination.
4. S_e is for bending.
5. M_a is the allowable bending moment.
6. All values are for one foot of panel width.

Allowable Uniform Loads (PSF)

Span Type	Load Type	Span in Feet															
		1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50
Single	Positive Wind	500	500	500	381	264	194	149	117	95	78	66	56	48	42	37	32
	Live	500	500	500	381	264	194	149	117	95	78	66	56	48	42	37	32
	Deflection (L/180)	500	500	500	500	500	500	405	284	207	156	120	94	75	61	50	42
	Deflection (L/240)	500	500	500	500	500	454	304	213	155	117	90	70	56	46	38	31
2 Span	Positive Wind	500	500	381	258	185	139	108	86	70	58	49	42	36	31	28	24
	Live	500	500	381	258	185	139	108	86	70	58	49	42	36	31	28	24
	Deflection (L/180)	500	500	500	500	500	500	500	500	374	281	216	170	136	111	91	76
	Deflection (L/240)	500	500	500	500	500	500	500	385	281	211	162	127	102	83	68	57
3 Span	Positive Wind	500	500	448	308	224	169	132	106	86	72	61	52	45	39	34	30
	Live	500	500	448	308	224	169	132	106	86	72	61	52	45	39	34	30
	Deflection (L/180)	500	500	500	500	500	500	500	402	293	220	169	133	106	86	71	59
	Deflection (L/240)	500	500	500	500	500	500	430	302	220	165	127	100	80	65	53	44
4 Span	Positive Wind	500	500	427	292	211	159	124	99	81	67	57	48	42	37	32	28
	Live	500	500	427	292	211	159	124	99	81	67	57	48	42	37	32	28
	Deflection (L/180)	500	500	500	500	500	500	500	427	311	234	180	141	113	92	76	63
	Deflection (L/240)	500	500	500	500	500	500	456	320	233	175	135	106	85	69	57	47
ASTM E1592 Wind Uplift Testing		70	61	53	45	39	35	32	30	28							

Notes:

1. Allowable uniform loads are based upon equal span lengths.
2. Positive Wind is wind pressure and is **NOT** increased by 33 1/3 %.
3. Live is the allowable live or snow load.
4. Deflection (L/180) is the allowable load that limits the panel's deflection to L/180 while under positive or live load.
5. Deflection (L/240) is the allowable load that limits the panel's deflection to L/240 while under positive or live load.
6. The weight of the panel has **NOT** been deducted from the allowable loads.
7. Positive wind and Live load values are limited to combined shear & bending using Eq. C3.3.1-1 of the AISI Specification.
8. Values of ASTM E1592 Wind Uplift Testing include a factor of safety of 2.0. Shaded areas are outside of test range. Contact Tremco Roofing and Building Maintenance Metal for more information.
9. Web Crippling has **NOT** been checked for this panel.
10. Load Tables are limited to a maximum allowable load of 500 psf.

SECTION PROPERTIES & LOAD TABLES

Tremlock LSP

Bare Galvalume & Painted Galvalume

SECTION PROPERTIES				TOP IN COMPRESSION			BOTTOM IN COMPRESSION		
GAUGE	FY (KSI)	WEIGHT (PSF)	V _a kip/ft.	I _x (in. ⁴ /ft.)	S _e (in. ³ /ft.)	M _a kip-in./ft.	I _x (in. ⁴ /ft.)	S _e (in. ³ /ft.)	M _a kip-in./ft.
22	50.0	1.53	1.2510	0.3970	0.1603	4.8000	0.2050	0.1464	3.6600

1. Section properties are calculated with the 2001 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. V_a is the allowable shear.
3. I_x is for deflection determination.
4. S_e is for bending.
5. M_a is the allowable bending moment.
6. All values are for one foot of panel width.

Allowable Uniform Loads (PSF)

		Span in Feet															
Span Type	Load Type	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50
Single	Positive Wind	500	500	500	500	355	261	200	158	128	105	88	75	65	56	50	44
	Live	500	500	500	500	355	261	200	158	128	105	88	75	65	56	50	44
	Deflection (L/180)	500	500	500	500	500	500	500	380	277	208	160	126	101	82	67	56
	Deflection (L/240)	500	500	500	500	500	500	406	285	208	156	120	94	75	61	50	42
2 Span	Positive Wind	500	500	500	350	251	188	145	116	94	78	66	56	49	42	37	33
	Live	500	500	500	350	251	188	145	116	94	78	66	56	49	42	37	33
	Deflection (L/180)	500	500	500	500	500	500	500	500	500	380	293	230	184	150	123	103
	Deflection (L/240)	500	500	500	500	500	500	500	500	380	285	220	173	138	112	92	77
3 Span	Positive Wind	500	500	500	421	304	229	179	143	117	97	82	70	60	53	46	41
	Live	500	500	500	421	304	229	179	143	117	97	82	70	60	53	46	41
	Deflection (L/180)	500	500	500	500	500	500	500	500	397	298	229	180	144	117	96	80
	Deflection (L/240)	500	500	500	500	500	500	500	408	297	223	172	135	108	88	72	60
4 Span	Positive Wind	500	500	500	398	287	216	168	134	109	91	77	65	56	49	43	38
	Live	500	500	500	398	287	216	168	134	109	91	77	65	56	49	43	38
	Deflection (L/180)	500	500	500	500	500	500	500	500	421	316	243	191	153	124	102	85
	Deflection (L/240)	500	500	500	500	500	500	500	433	316	237	182	143	115	93	77	64
ASTM E1592 Wind Uplift Testing		93	84	74	64	57	52	49	47	44							

Notes:

1. Allowable uniform loads are based upon equal span lengths.
2. Positive Wind is wind pressure and is **NOT** increased by 33 1/3 %.
3. Live is the allowable live or snow load.
4. Deflection (L/180) is the allowable load that limits the panel's deflection to L/180 while under positive or live load.
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8. Values of ASTM E1592 Wind Uplift Testing include a factor of safety of 2.0. Shaded areas are outside of test range. Contact Tremco Roofing and Building Maintenance Metal for more information.
9. Web Crippling has **NOT** been checked for this panel.
10. Load Tables are limited to a maximum allowable load of 500 psf.

TECHNICAL INFORMATION

Tremlock LSP has been tested in accordance with the following test procedures:

ASTM E1592 Standard Test Method for Structural Performance of Sheet Metal Roofing and Siding systems by Uniform Static Air Pressure Difference:

See load tables on pages B1 and B2 for results.

ASTM E1646 Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference:

See page C2 for results.

ASTM E1680 Standard Test Method for Rate of Air Leakage Through Metal Roof Panel Systems:

See page C2 for results.

UL 580 Test for Uplift Resistance of Roof Assemblies:

Class 90 rating when constructed in accordance with the following UL construction number per the UL Roofing Materials and systems Directory:

#538 For installation over purlins.

#539 For installation over metal deck.

UL 2218 Impact Resistance of Prepared Roof Covering Materials:

Class 4 Rating

UL 790 Test for Fire Resistance of Roof Covering Materials:

Class A

UL 263 Test for Fire Resistance of Roof Covering Materials:

Has been approved for use in the following Underwriters Laboratories Design Numbers:

P225, P227, P230, P237, P250, P259, P265, P266, P268, P508, P510, P512, P514, P516, P518, P701, P711, P712, P713, P717, P720, P722, P723, P726, P731, P732, P734, P736, P739, P740, P801, P815, P819, P824, P825, P828.

TECHNICAL INFORMATION

AIR and WATER INFILTRATION

TEST METHODS:

Air Leakage: ASTM E1680-95, "Rate of Air Leakage Through Exterior Metal Roof Panel Systems"

Water Penetration: ASTM E1646-95, "Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference"

TEST SPECIMEN:

Tremco Roofing and Building Maintenance 24 Ga. 24 in. wide Tremlock LSP Roof Panels were attached to purlins with Tremlock LSP Low Floating panel clips w/ sealant using (2) 1/4-14 x 1 1/4" TEK2 w/o Washer fasteners per clip. 1/4" bead butyl factory installed sealant was used in the sidelap.

TEST RESULTS:

*Results are extrapolated to different panel widths

Specimen	Air Infiltration			Water Infiltration			
	Static Pressure Difference (psf)	Air Infiltration Rate (cfm/lf)	Air Infiltration Rate (cfm/sf)	Static Pressure Difference (psf)	Rate (gal/hr/sf)	Test Duration (min)	Water Infiltration
Tremlock LSP 24 in. 24 Ga.	+6.24	0.016	0.008	12.00	5	15	None
Tremlock LSP 24 in. 24 Ga.	+1.57	0.000	0.000				
Tremlock LSP 24 in. 24 Ga.	-6.24	0.020	0.010				
Tremlock LSP 24 in. 24 Ga.	-1.57	0.008	0.004				
Tremlock LSP *18 in. 24 Ga.	+6.24	0.016	0.011				
Tremlock LSP *18 in. 24 Ga.	+1.57	0.000	0.000				
Tremlock LSP *18 in. 24 Ga.	-6.24	0.020	0.013				
Tremlock LSP *18 in. 24 Ga.	-1.57	0.008	0.005				

Test Report No.: T229-06

Dated: October 9, 2006

GENERAL INFORMATION

INSTALLATION

MATERIAL INVENTORY

All material is carefully inspected before leaving the plant and accepted by the transportation company complete and in satisfactory condition. It is the carrier's responsibility to deliver the shipment intact. It is the consignee's responsibility to inspect the shipment for damages and shortages when it is delivered.

Shortage or damage of the delivered materials must be noted and clearly marked on the Bill of Lading before signature of acceptance. Notify Tremco Roofing and Building Maintenance immediately of any conflicts. Tremco Roofing and Building Maintenance will not be responsible for shortages or damages unless they are noted on the Bill of Lading. Customer's signature on the Bill of Lading is an acknowledgment that the shipment is complete and undamaged, unless otherwise noted.

FASTENERS

SCREW GUN

Depth sensing or torque-controlled screw guns may be used for driving exposed self-drilling screws. A 2000 maximum R.P.M. variable-speed screw gun may be used, but an 1800 R.P.M. gun is preferred. Use good quality, industrial grade screw guns as the higher amperage rating (5 to 7 amps.) of the guns is required to achieve adequate torque for secure fastening. Screw guns should be variable speed and reversible.

INSTALLATION

Before starting the screw, the materials to be joined must be pressed together with foot or hand pressure. The pressure must be maintained until the screw has drilled through all the materials and the threads have engaged.

EQUIPMENT for UNLOADING and LIFTING

Hoisting equipment is necessary to unload and position the panels and accessory crates for site storage and installation. The equipment must have sufficient capacity and reach to place the material where it is required for effective installation. A forklift should be handy for unloading and placing shorter panel and accessory crates.

Nylon slings will be required to avoid panel damage. Slings should be 8" minimum width and 6'-10" long to accommodate the panel bundle girth. Sling capacity should be at least 6000 pounds. Never use wire rope slings.

A spreader may be required for panels over 25'-0" in length to assure correct sling spacing and uniform lifting. The spreader must be sized to handle panel bundle weight.

GENERAL INFORMATION

INSTALLATION (CONT.)

HANDLING PANEL BUNDLES

Under normal conditions, panel bundles over 25'-0" long should be lifted with two (2) slings spaced at greater distances than third points. Panel bundles less than 25'-0" long may be lifted with a forklift only if the forks are spread at least 5'-0" apart.

Loads should always be checked for secure hook-up, proper balance, and lift.

Tag lines should be used if necessary to control the load during lifting, especially if operating in the wind.

When moving panel bundles, extreme caution should be taken to prevent damage to the panel edges. Un-crated panels should be supported at each end and at 8'-0" spacing.

ELECTRICAL CONDUCTANCE

Since metal panels are excellent electrical conductors, a possible cause of injury is the contact of metal panels with power lines during handling and installation. Appropriate pre-cautions should be employed. The installation process must be routed to avoid contact with all power lines and high voltage services and equipment. All tools and power cords must be properly insulated and grounded and the use of approved ground fault circuit breakers is recommended.

HANDLING PANELS IN STRONG WINDS

Do not attempt to move panels in strong winds. Wind pressure can easily cause someone to lose their balance and fall.

Loose, wind borne panels are very dangerous and can cause severe injury and damage. Secure open bundles of panels with banding or tie-downs so wind will not propel the panels. Clamp individual, unsecured panels to the structural members.

ALLOWABLE TOLERANCES

Variation from plumb: 1/8" in 20'-0"

Variation from level: 1/8" in 20'-0"

Variation from True Plane: 1/8" in 20'-0"

NOTE:

Although these structure alignment tolerances will allow for reasonable component fit-up and ease of installation, the extremes of these tolerances may, in limited instances, be aesthetically objectionable. For this reason, discretion should always be exercised, and closer tolerances may be necessary in some instances.

GENERAL INFORMATION

INSTALLATION (CONT.)

FIELD CUTTING PANELS and FLASHINGS

It is recommended that panels and flashing be cut with electric or hand shears or electric nibblers to provide a clean, undamaged cut. Electric shears work well for long straight "rip" cuts. Hand snips are used for smaller cuts when power shears or nibblers are not practical.

Whenever possible, fit the material so that the factory cut edge is exposed and the field cut edge is covered.

CAUTION!!!

NEVER USE ABRASIVE SAWS (circular saws with friction disks). Abrasive saws create extreme heat, burning away the protective metallic coating from the cut and causing corrosion. Also, abrasive saw dust contains fine, hot-steel particles which can accumulate on the panel and flashing surfaces where they can cause staining and rusting. Rust caused by abrasive saw damage or abrasive dust particles is excluded from warranty coverage.

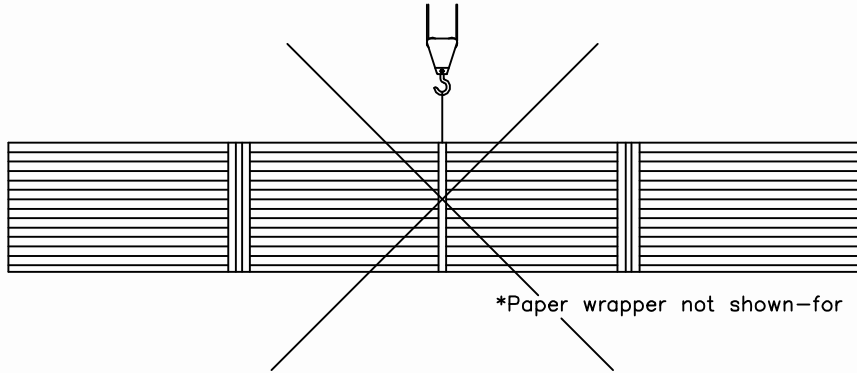
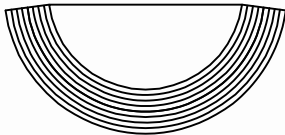
For cosmetic reasons, avoid marking the panels where markings will be visible on the finished surface. Use only felt-tip markers. Never use graphite pencils. Graphite causes rapid corrosion of Galvalume coating and (rusting) of the panel. Such corrosion from graphite pencil marks is excluded from warranty coverage.

GENERAL INFORMATION

ATTENTION

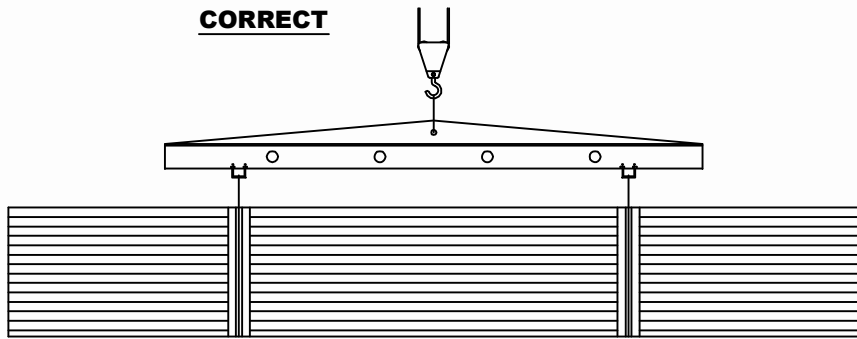
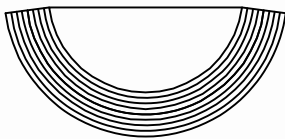
Panels are not designed to support their own weight. DO NOT use rope slings.

INCORRECT



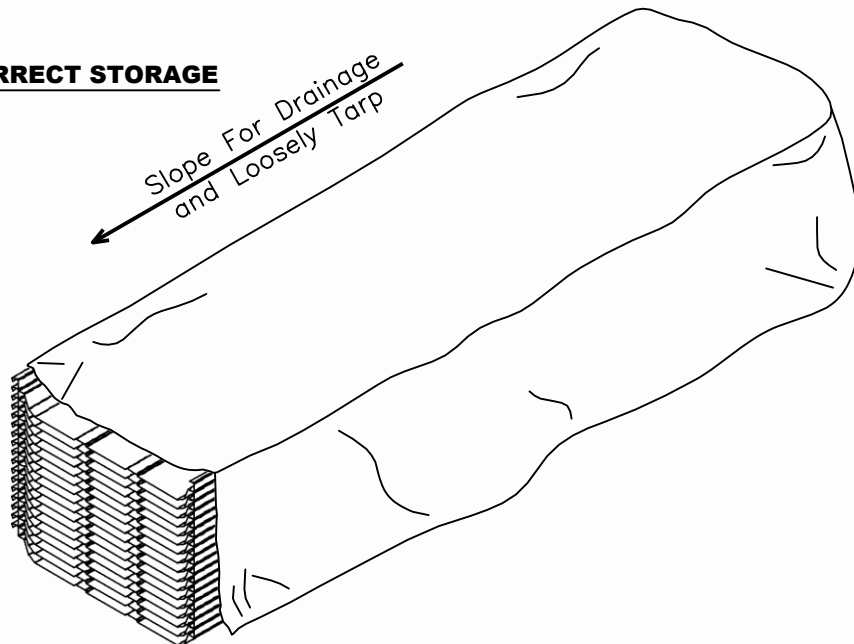
*Paper wrapper not shown—for clarity.

CORRECT

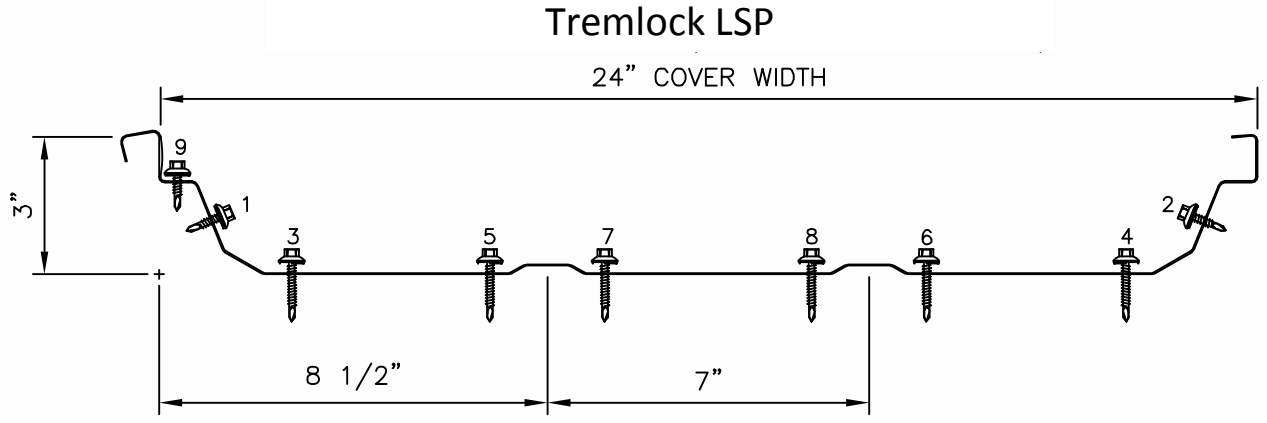


*Paper wrapper not shown—for clarity.

CORRECT STORAGE



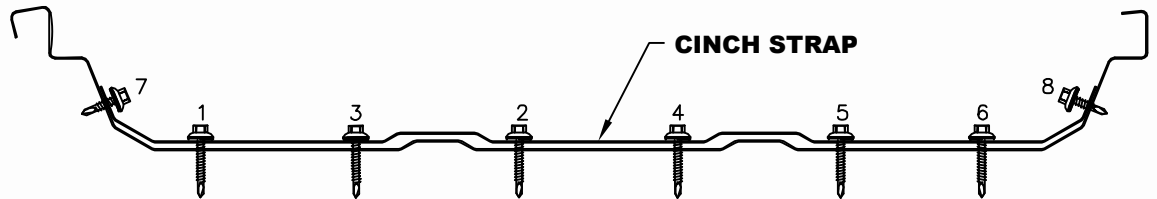
EAVE FASTENER PATTERN



LOCATION: EAVE

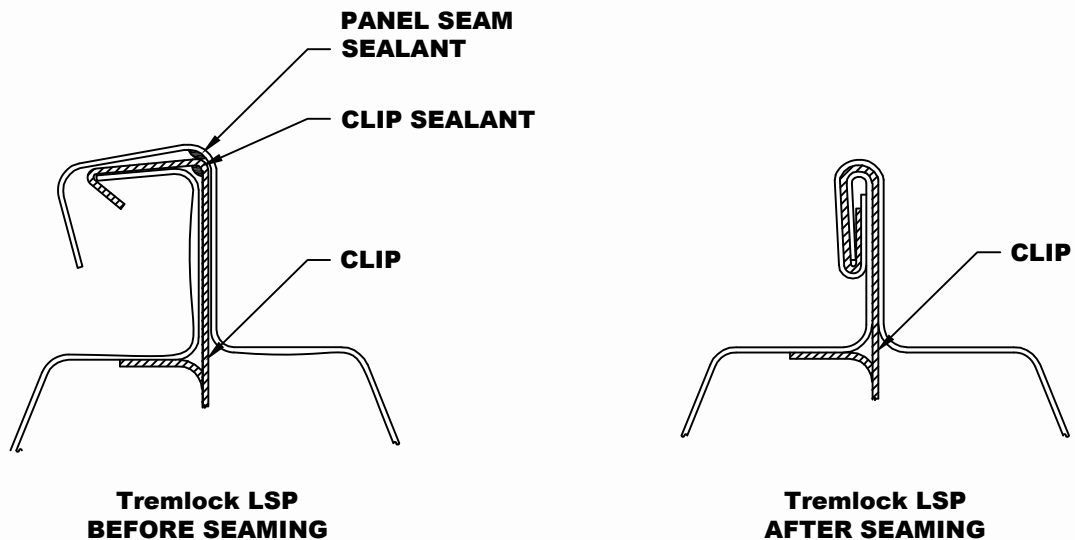
FASTENERS 1, 2, 3, 4, 5, 6, 7, & 8 ~ 1/4-14 X 1 1/4" TEK 2 ZAC

FASTENER 9 ~ 1/4-14 X 1 1/4" TEK2 ZAC (INSTALL AFTER SEAMING)



LOCATION: END LAP

FASTENERS 1, 2, 3, 4, 5, 6, 7, & 8 ~ 1/4-14 X 1 1/4" TEK 2 ZAC



GENERAL INFORMATION

INSPECTION

Inspection of Panel Assembly During Installation

During the panel installation, all areas of the system assembly must be frequently inspected to ensure the correct assembly in accordance with the erection drawings and this installation guide. Although some of these inspection items can be satisfactorily conducted post-assembly, others can only be done as work progresses.

Failure to assemble the system correctly could result in performance problems which may require costly corrective work or replacement. Incorrect installation may also void system warranties.

Inspection List

A: Drawings and Details

Verify that the erection drawings have been reviewed for conflict with actual field conditions. Also, confirm that the drawings and this manual are the latest issuance with the latest revisions. To confirm this manual, please visit Tremco Roofing and Building Maintenance Metal's web site at: <http://www.Tremcoroofing.com>

B: Panel Length

Verify that the panel lengths match the lengths on the invoice and are sufficient for the project.

C: Flashings and Penetrations

Inspect and Verify:

1. All flashings are correctly assembled and tightly fitted.
2. Required sealants are correctly positioned on the "wet" side of the fasteners and in complete contact with the adjoining surfaces without voids or interruptions.
3. Flashing splices are correctly lapped, sealed and fastened.
4. Where critical, confirm pigtail sealants.
5. All fasteners are the specified type, size, length, finish and spacings. Confirm that the fasteners are properly seated with sealing washers in full contact with the flashing surface and not split or otherwise damaged.

D: Surface Conditions

Inspect and Verify:

1. That panel finish has not been excessively scratched, dented or abraded.
2. That no dissimilar metals are in electrolytic contact with panels or flashings and the same are free of graphite pencil markings.
3. All other corrosive elements have not contacted the panels, e.g. strong acids, alkalis or other chemicals or fumes, wet cementitious mortars, stucco, copper condensate, or run-off from treated lumber.

GENERAL INFORMATION

INSPECTION

D: Surface Conditions (cont.)

Inspect and Verify:

4. Waste, debris and construction residuals are not left on the panels such as: Tools, material drop-off, fasteners, wire, staples, drill and nibbler chips, saw and file particles, etc.
5. Panels and flashing are not being subjected to long term wet conditions such as: Standing water, consistent source of steam, mist, spray, wet debris, wet insulation or other moisture holding material.
6. Materials have not been subjected to heat sources such as: Cutting torches, abrasive saws, etc.

E: Materials, Accessories and Ancillaries by Others

Inspect and Verify:

1. All flashings, accessories, and ancillary items not furnished by Tremco Roofing and Building Maintenance Metal are compatible both metallurgically and from a service life standpoint with Tremco Roofing and Building Maintenance material.
2. Tremco Roofing and Building Maintenance cannot be responsible for the performance of materials which are not provided, specified or approved by Tremco Roofing and Building Maintenance.

GENERAL INFORMATION

ATTENTION

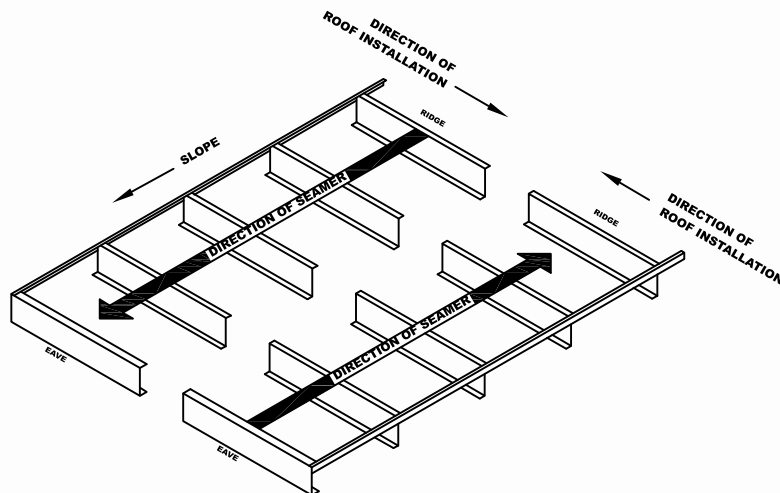
READ THE SEAMER INFORMATION THOROUGHLY BEFORE STARTING THE SEAMING OPERATION. FAILURE TO ADHERE TO THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND DAMAGE TO THE SEAMER AND/OR PANELS. THE ERECTOR WILL BE HELD LIABLE FOR ANY COSTS INCURRED FOR REPLACEMENT OR REPAIR.

PRE-SEAMING INFORMATION

1. Locate seamer box. Check to make sure you received a hand seamer, electric seamer and an information booklet. If not, please go to www.USASEAMERS.com.
2. Locate power source and check against power requirements in the information booklet.
3. Check seams for proper engagement.
4. Clean dirt, debris and excess sealant from seams and panel surfaces to avoid interfering with the seaming operation.
5. Panels do not have to be machine seamed as they are installed. However, panels should be hand seamed 90° at each clip location as soon as possible.

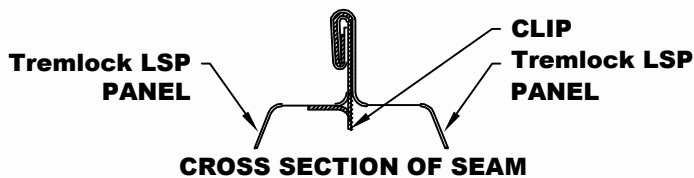
SEAMING OPERATION

To determine the direction of the seaming process, stand at the eave and look upslope. If the roof is being installed from **LEFT to RIGHT**, the seamer will run from **RIDGE to EAVE**. If the roof is being installed from **RIGHT to LEFT**, the seamer will run from **EAVE to RIDGE**.



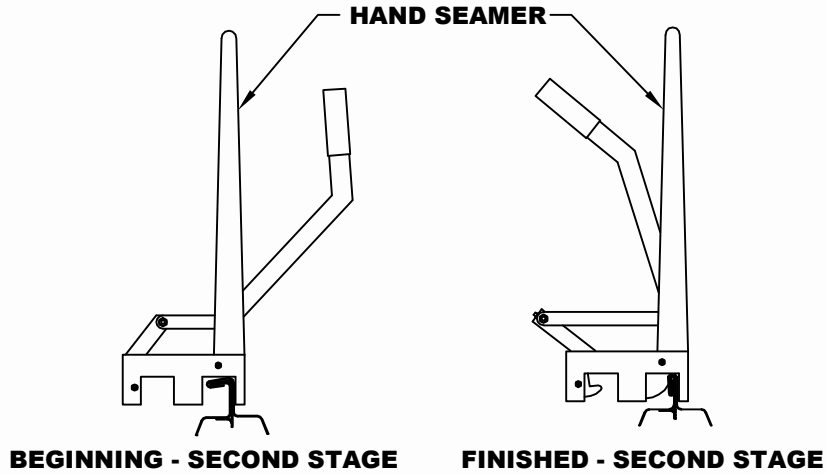
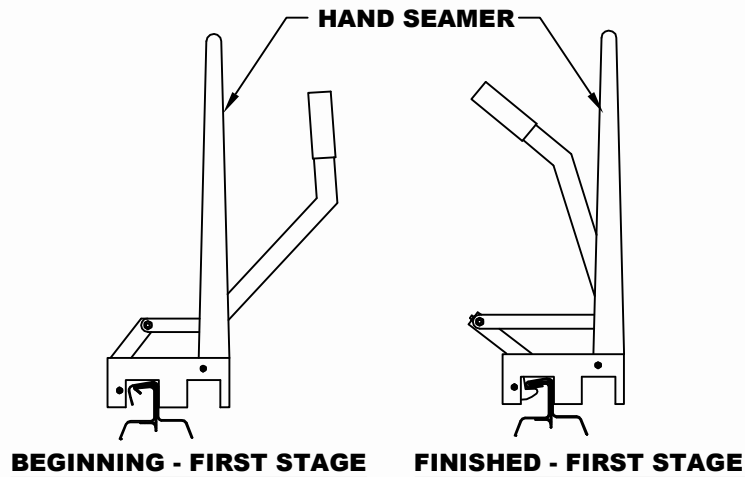
INSPECTION OF SEAM

A visual inspection of the seam should be made to determine if the seam is forming properly. Check seam against the cross section provided. **IF THE SEAMER IS NOT PRODUCING A FINISHED SEAM SIMILAR TO THE CROSS SECTION PICTURED, STOP AT ONCE AND CONTACT USA SEAMERS AT WWW.USASEAMERS.COM.**



CAUTION: The use of any field seamer machine other than that provided by the manufacture may damage the panels, void all warranties and will void all engineering data.

GENERAL INFORMATION



HAND SEAMING OPERATION

CAUTION!!!

It is critical that the panel seams are crimped and folded before using the electric seamer. Failure to follow these guidelines will result in damaged seams.

To begin seaming, set the hand seamer on the seam. Align the edge of the hand seamer about one to two inches passed the edge of the panel. Crimp the panel 3 to 4 times along the seam for a total of 24".

Return to the end of the panel to begin the second stage. Set the hand seamer onto the seam and crimp the panel seam once forming the 180° finished seam for a total of 6" along the seam. The relationship of this 6" of finished seam to the 24" of crimped seam is critical to the proper alignment of the roll formers on the electric seamer.

GENERAL INFORMATION

ELECTRIC SEAMING

OPERATION CAUTION!!!

PLEASE REFER TO THE INFORMATION SHEET THAT SHIPPED WITH THE ELECTRIC SEAMER. Seamer motor should be used in conjunction with extension cords that meet the follow specifications:

14 GA. Wire ~ 50 FT.

Extension Cord

12 GA. Wire ~ 150 FT.

Extension Cord

10 GA. Wire ~ 250 FT.

Extension Cord

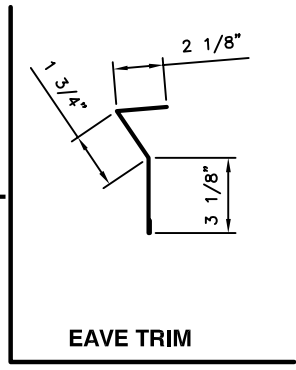
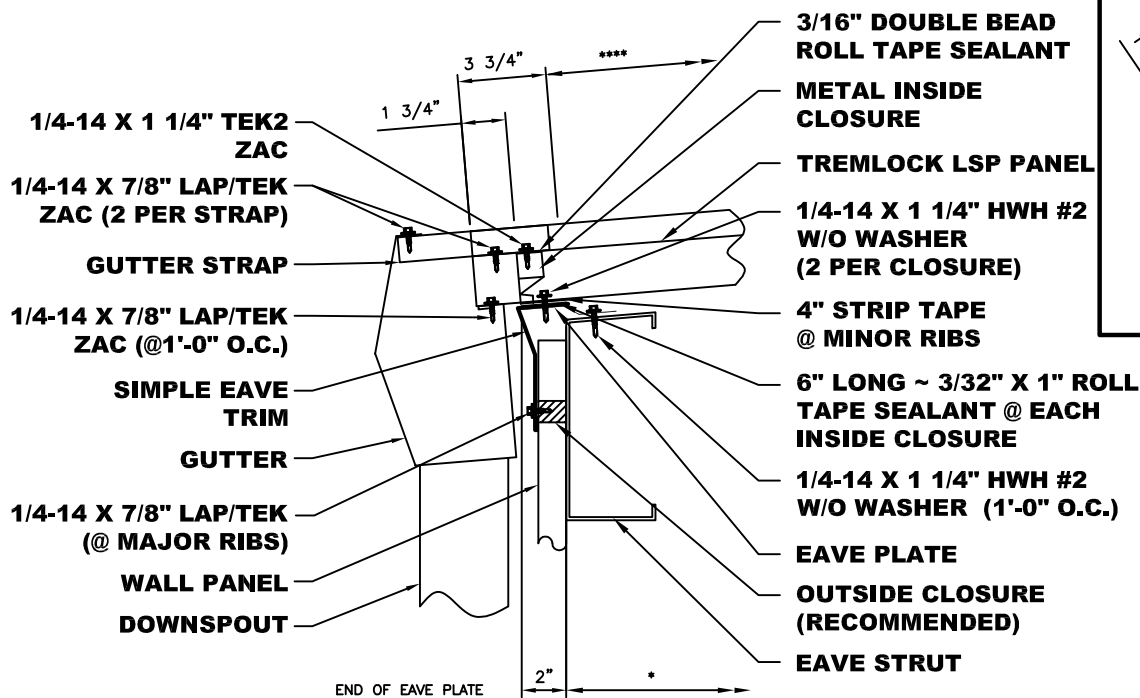
8 GA. Wire ~ 350 FT.

Extension Cord

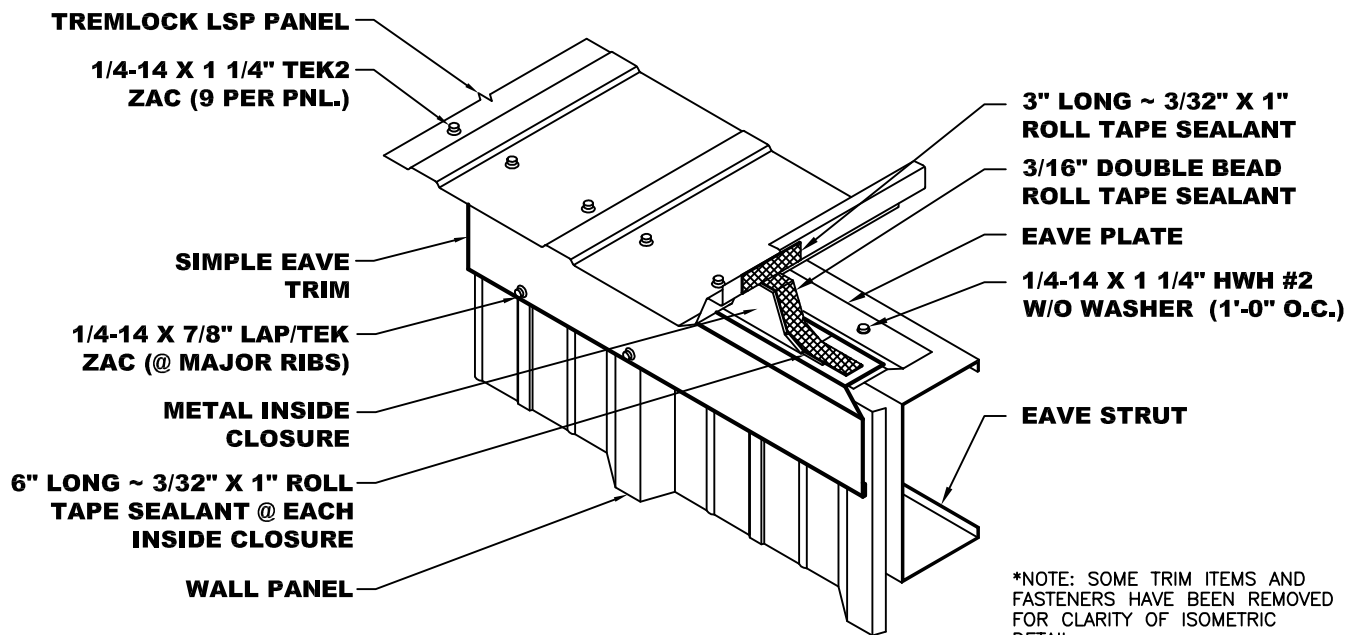
Seamer operation should be closely supervised at all times. A safety cable should be attached to the seamer.

Stop seamer about one foot from the ridge. Disengage locking arm and remove the electric seamer. Finish seam with hand seamer. Seam must be finished before outside closure can be put into place. Repeat this process for all panels.

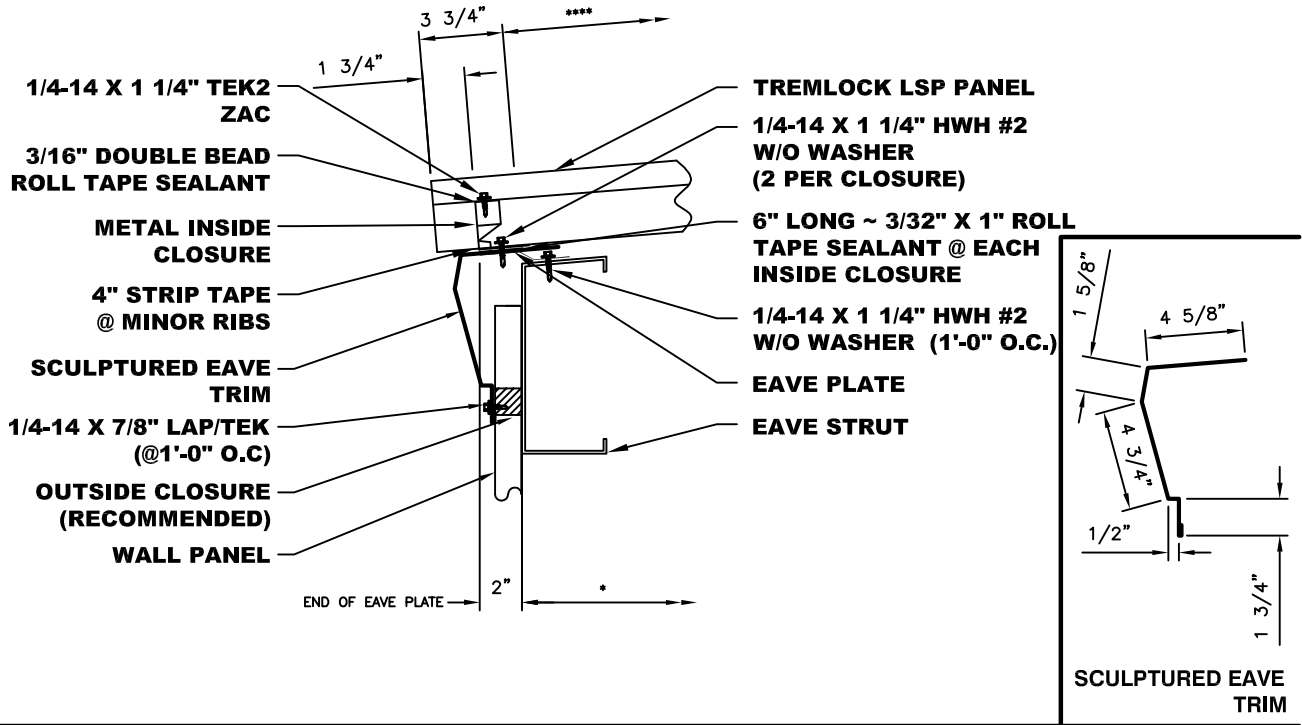
IF DIFFICULTIES ARISE WHILE USING THE ELECTRIC SEAMER, PLEASE CONTACT USA SEAMERS AT WWW.USASEAMERS.COM.



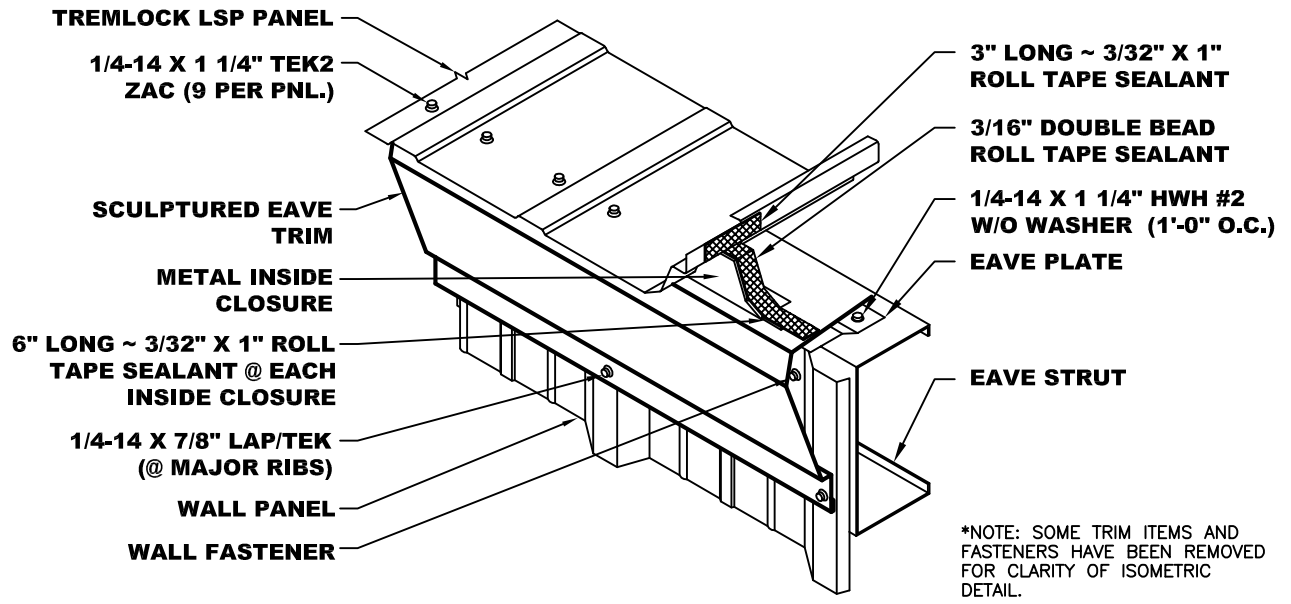
- NOTES:**
1. Eave Plate to run from steel line to steel line.
 2. Simple Eave Trim to run from out of wall to out of wall.
 3. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long ~ 3/32" x 1" Roll Tape Sealant.
 4. Apply continuous run of 3/16" x 7/8" Double Bead Roll Tape Sealant on top of Simple Eave Trim and over Metal Inside Closure.
 5. Add 4" long ~ 7/32" x 1 3/8" Strip Tape at Minor Ribs before installing panel.
 6. 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead sealant below and Seam Sealant above.

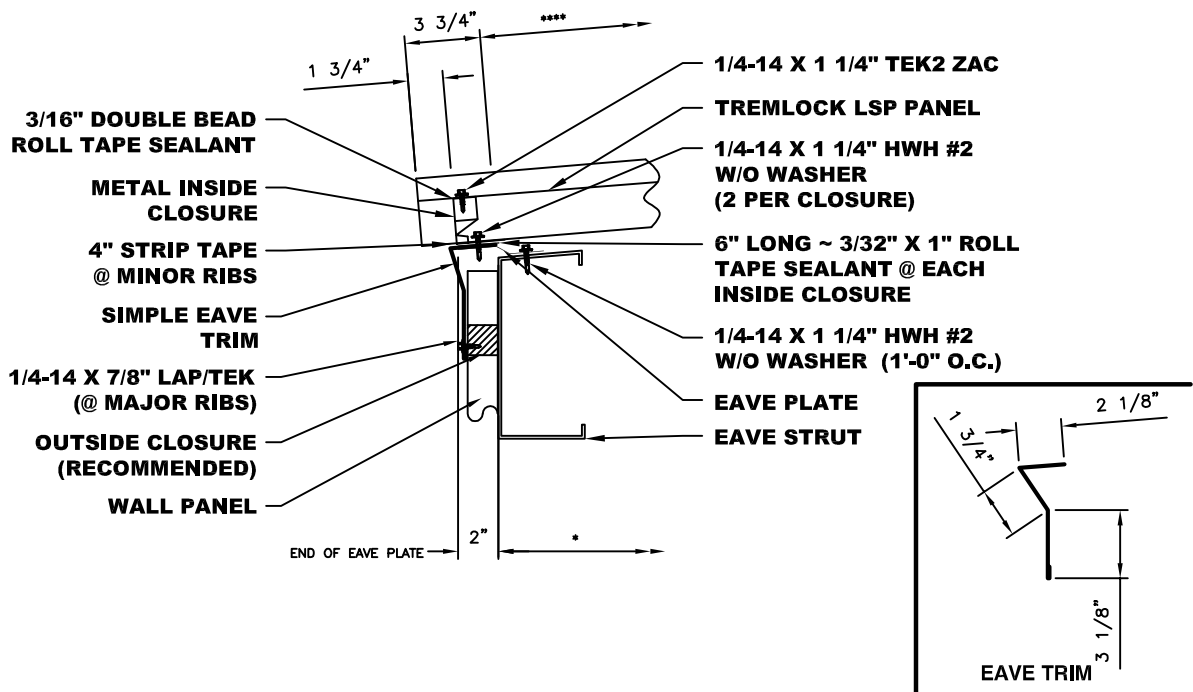


*NOTE: SOME TRIM ITEMS AND FASTENERS HAVE BEEN REMOVED FOR CLARITY OF ISOMETRIC DETAIL.

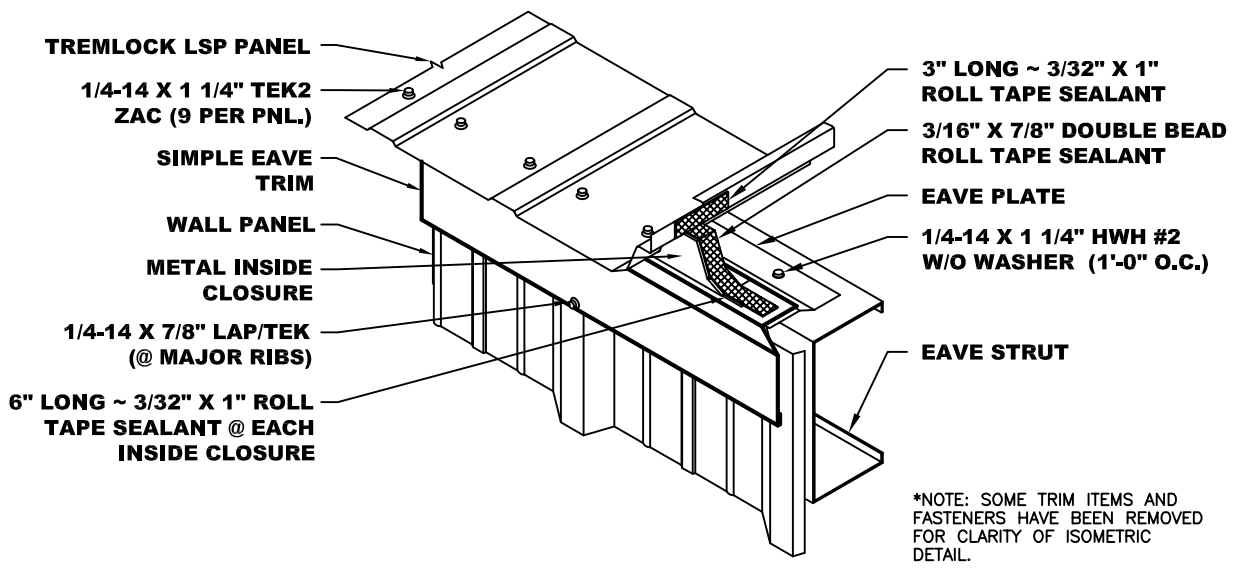


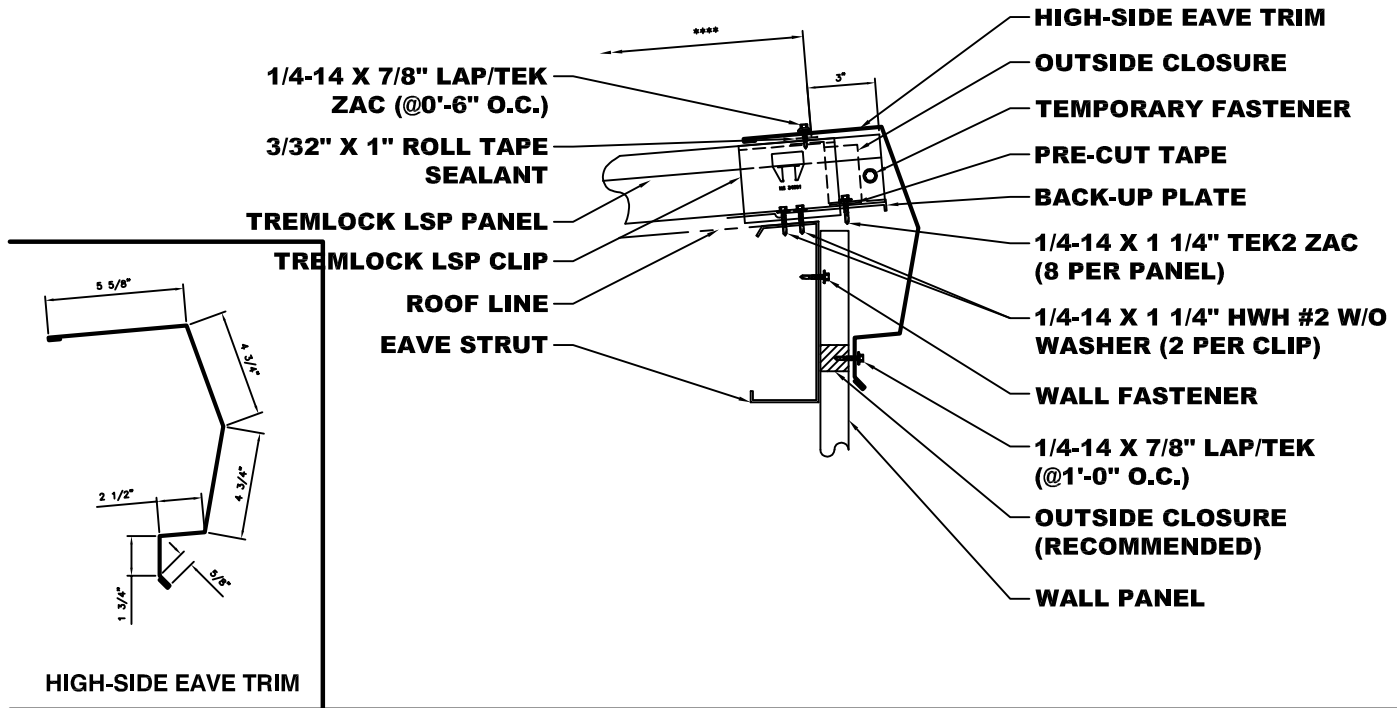
- NOTES:**
1. Eave Plate to run from steel line to steel line.
 2. Sculptured Eave Trim to run from out of wall to out of wall.
 3. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long ~ 3/32" x 1" Roll Tape Sealant.
 4. Apply continuous run of 3/16" x 7/8" Double Bead Roll Tape Sealant on top of Simple Eave Trlm and over Metal Inside Closure.
 5. Add 4" long ~ 7/32" x 1 3/8" Strip Tape at Minor Ribs before installing panel.
 6. 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead sealant below and Seam Sealant above.



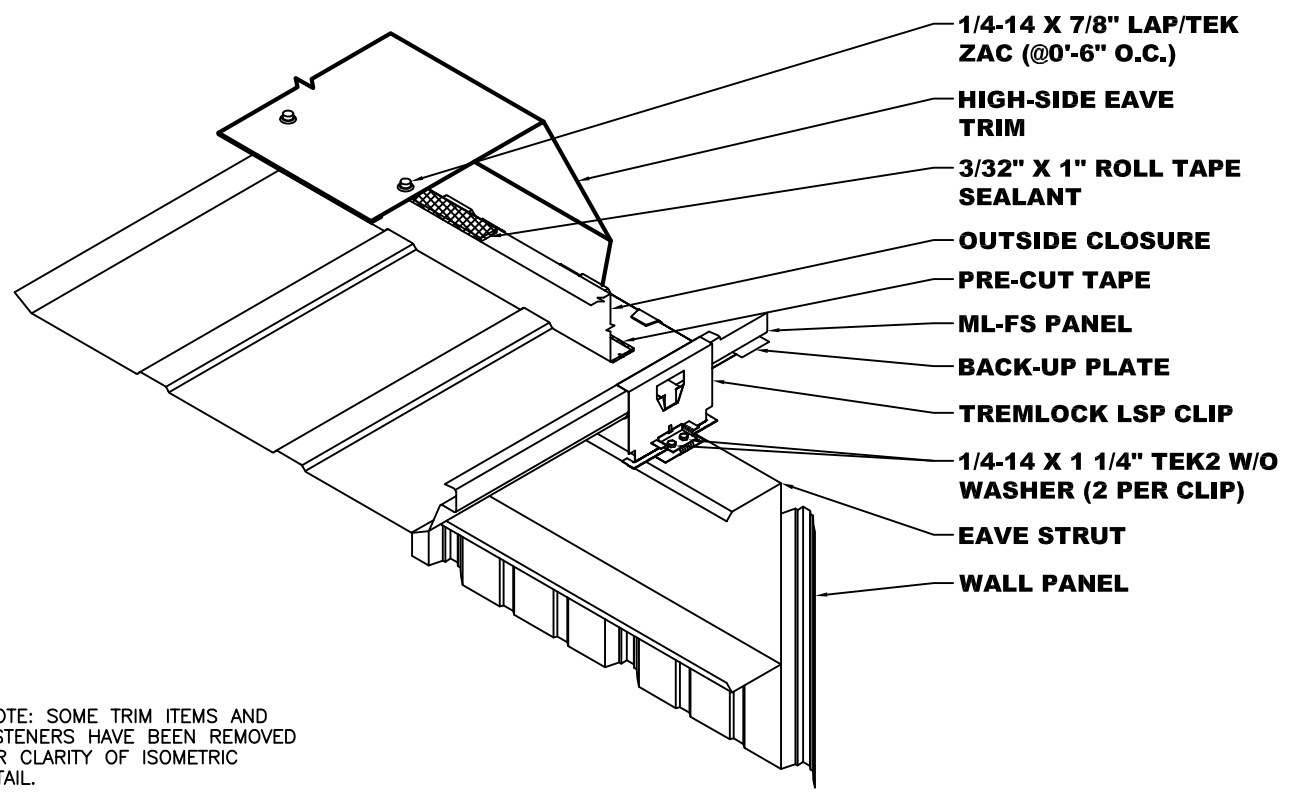


- NOTES:**
1. Eave Plate to run from steel line to steel line.
 2. Simple Eave Trim to run from out of wall to out of wall.
 3. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long ~ 3/32" x 1" Roll Tape Sealant.
 4. Apply continuous run of 3/16" x 7/8" Double Bead and over Inside Closures.
 5. Add 4" long ~ 7/32" x 1 3/8" Strip Tape @ Minor Ribs before installing panel.
 6. 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead Sealant below and Seam Sealant above.

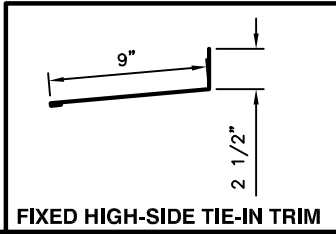
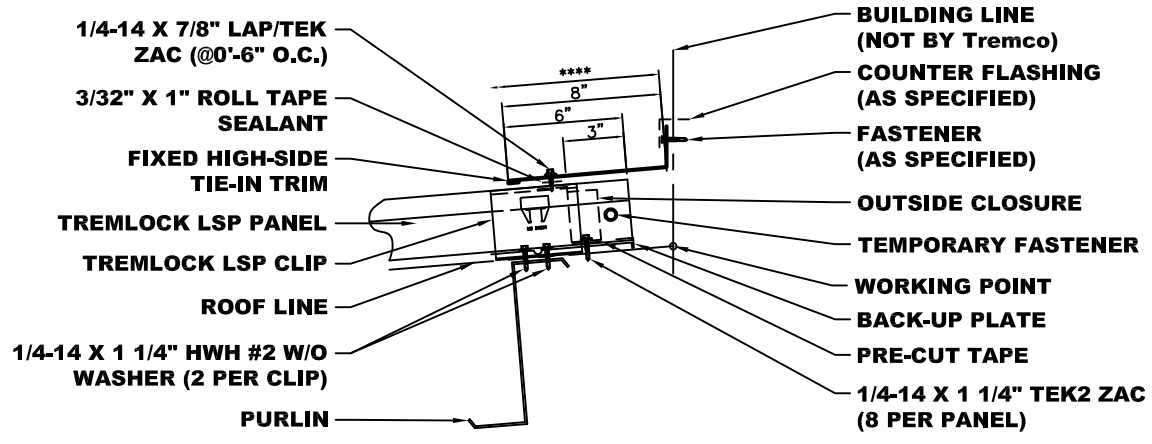




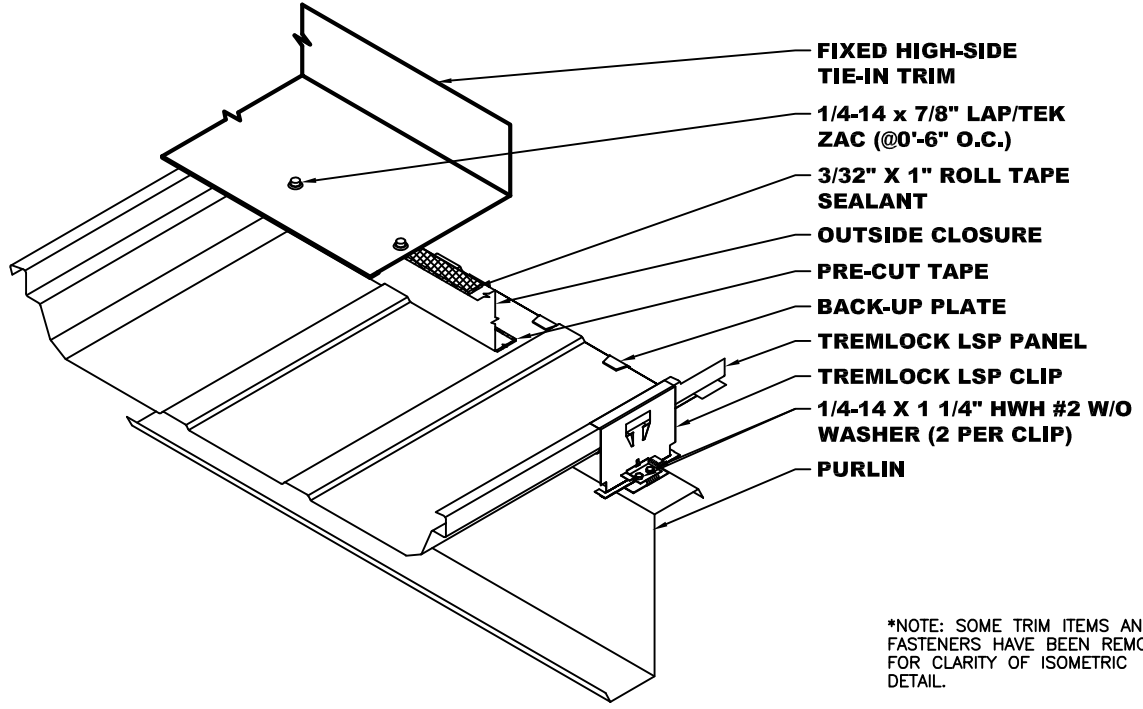
- NOTES:**
1. Install Back-up Plates with panels.
 2. Use a temporary fastener at each side of panel to hold Back-up Plate.
 3. Panel must be fully seamed (180°) before installing Outside Closure.
 4. Check for voids, fill with Butyl Tube Sealant.



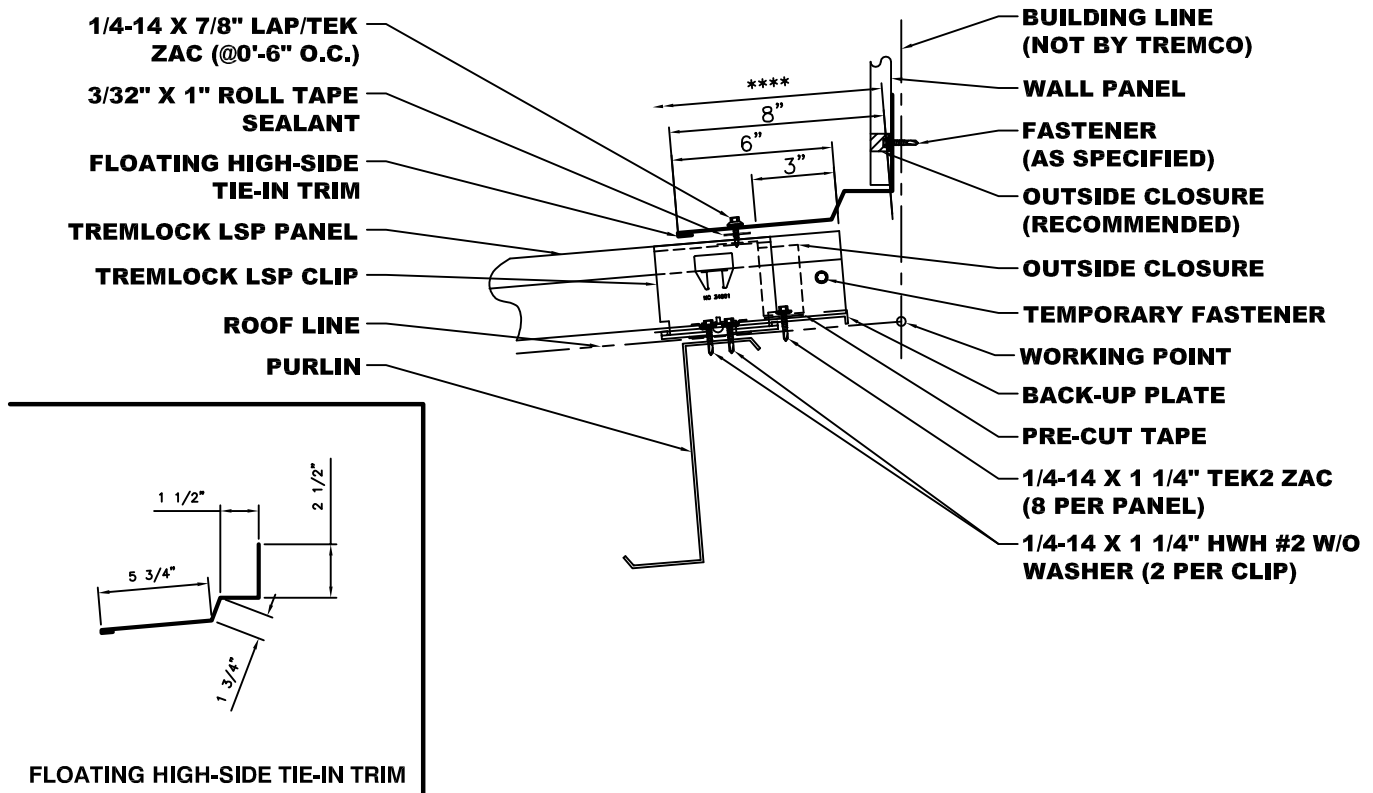
*NOTE: SOME TRIM ITEMS AND FASTENERS HAVE BEEN REMOVED FOR CLARITY OF ISOMETRIC DETAIL.



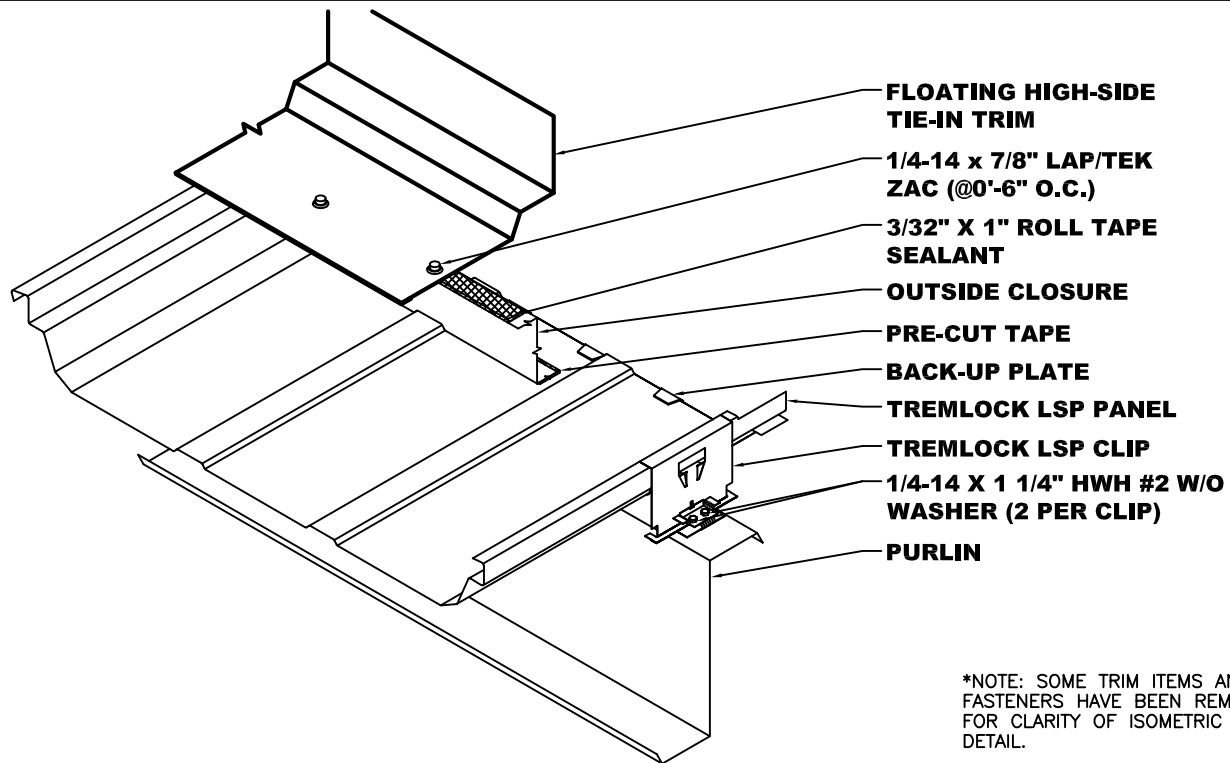
- NOTES:**
1. Install Back-up Plates with panels.
 2. Use a temporary fastener at each side of panel to hold Back-up Plate.
 3. Panel must be fully seamed (180°) before installing Outside Closure.
 4. Check for voids, fill with Tube Butyl Sealant.



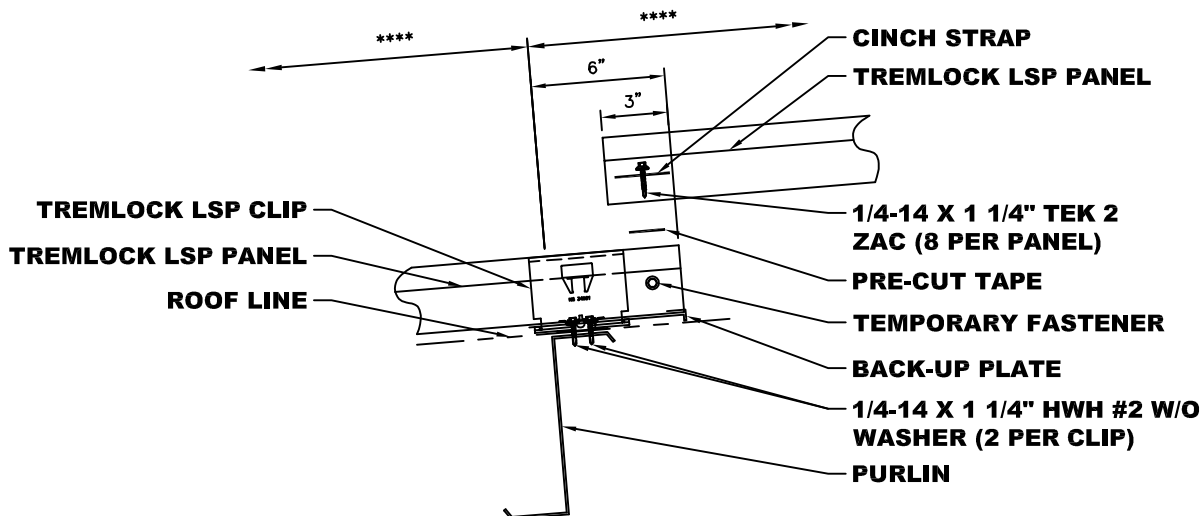
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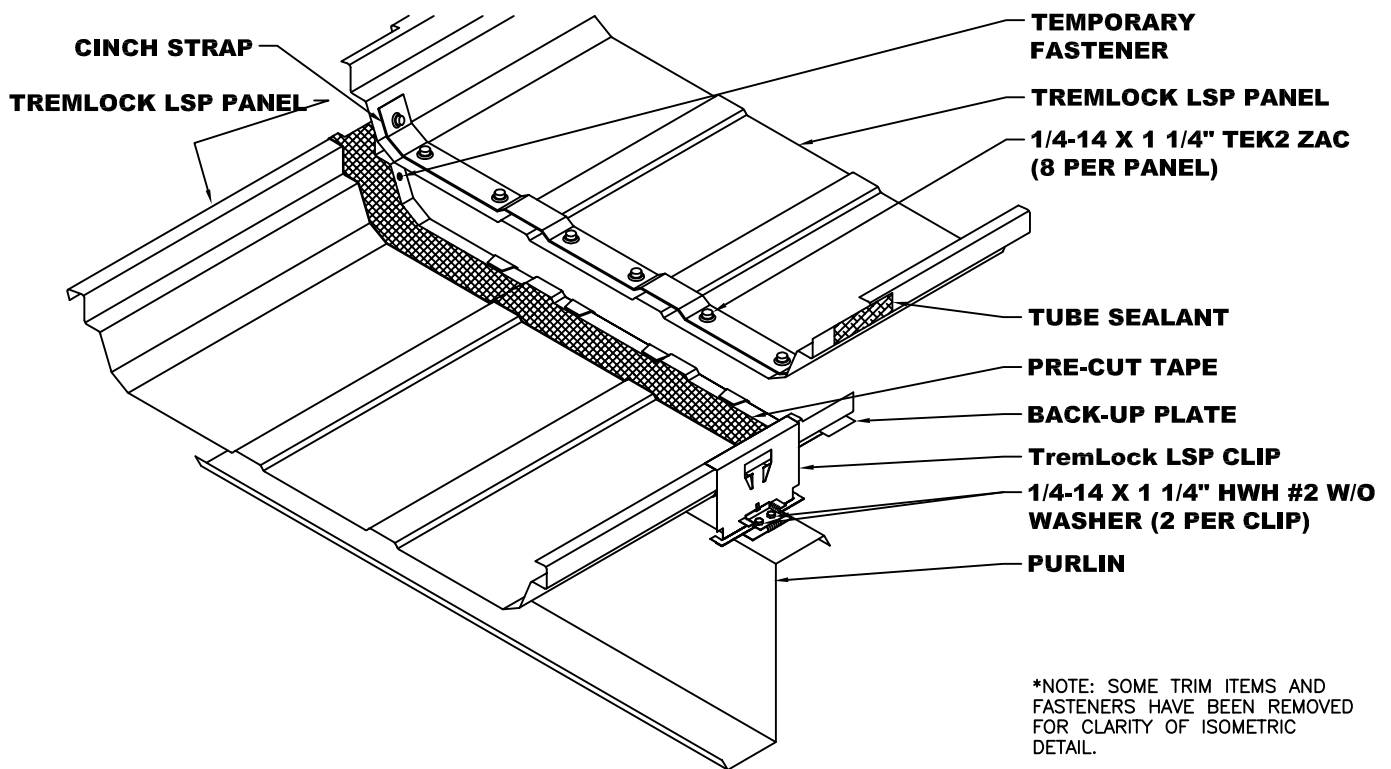
- NOTES:**
1. Install Back-up Plates with panels.
 2. Use a temporary fastener at each side of panel to hold Back-up Plate.
 3. Panel must be fully seamed (180°) before installing Outside Closure.
 4. Check for voids, fill with Tube Butyl Sealant.

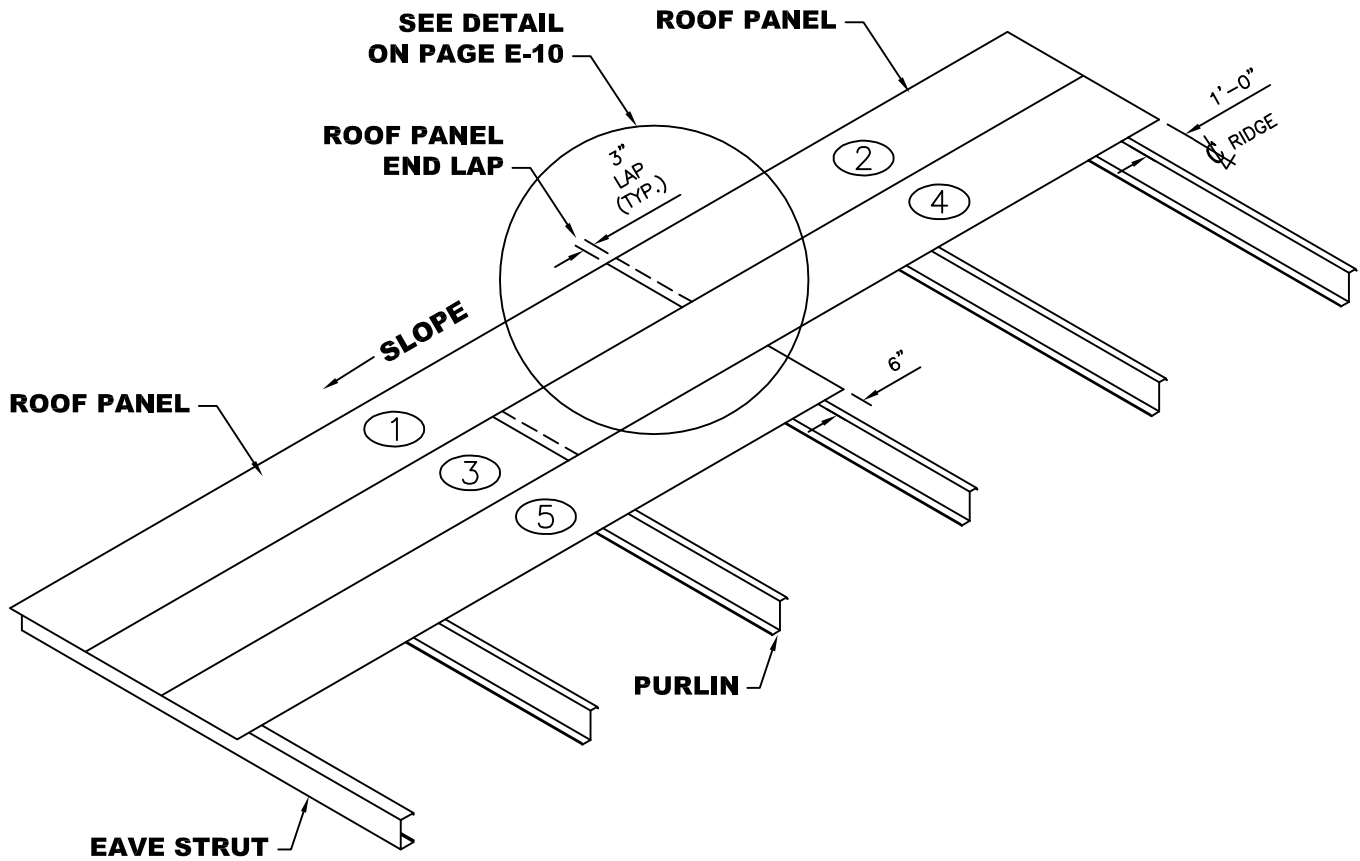


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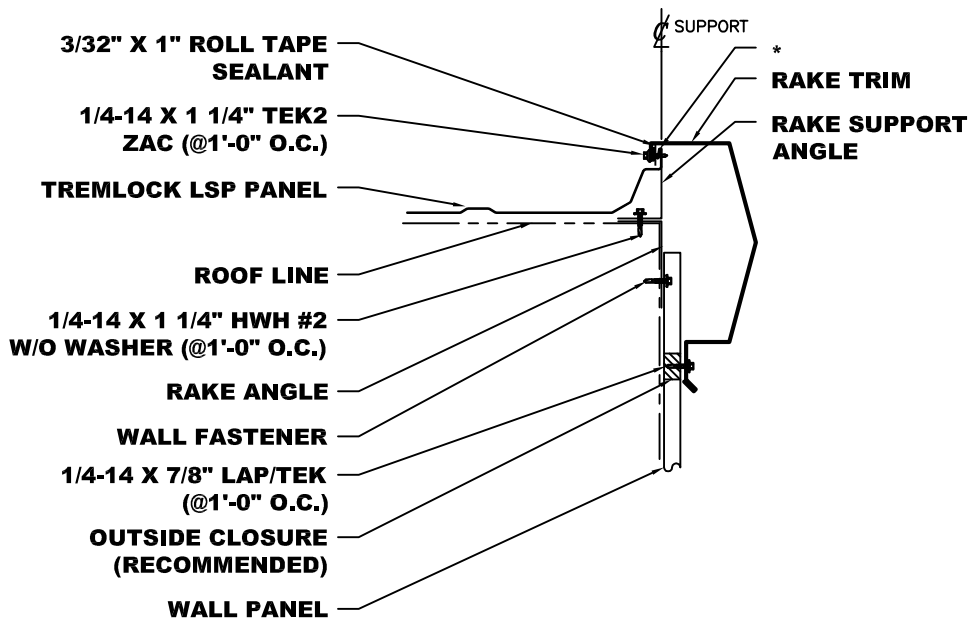


- NOTES:**
1. Install 16 gauge Back-up Plate on upper end of lower panels.
 2. Use Temporary Fasteners to hold Back-up Plates.
 3. Sealant shall be applied between panels and secured with fasteners through the Cinch Strap, Panels and into the Back-up Plate to form a compressed joint.

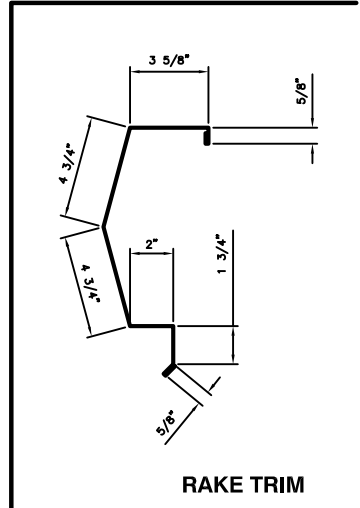




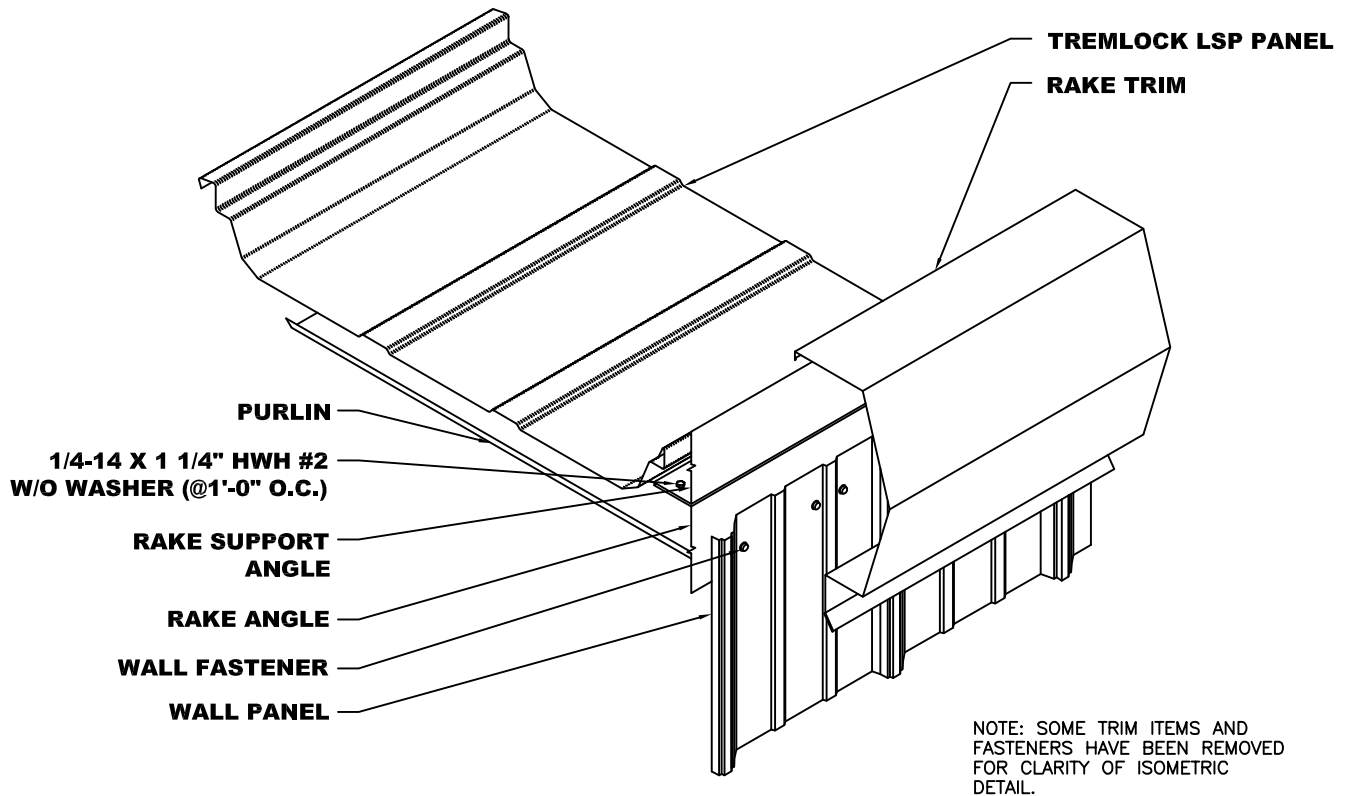
- NOTES:** 1. Install roof panels in the numbered order sequence.
 2. Refer to page E-10 for a detailed view of the End Lap condition.



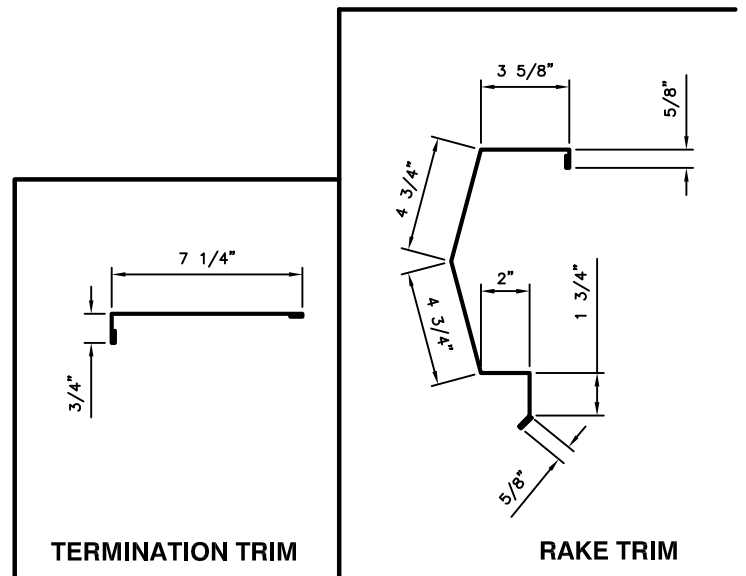
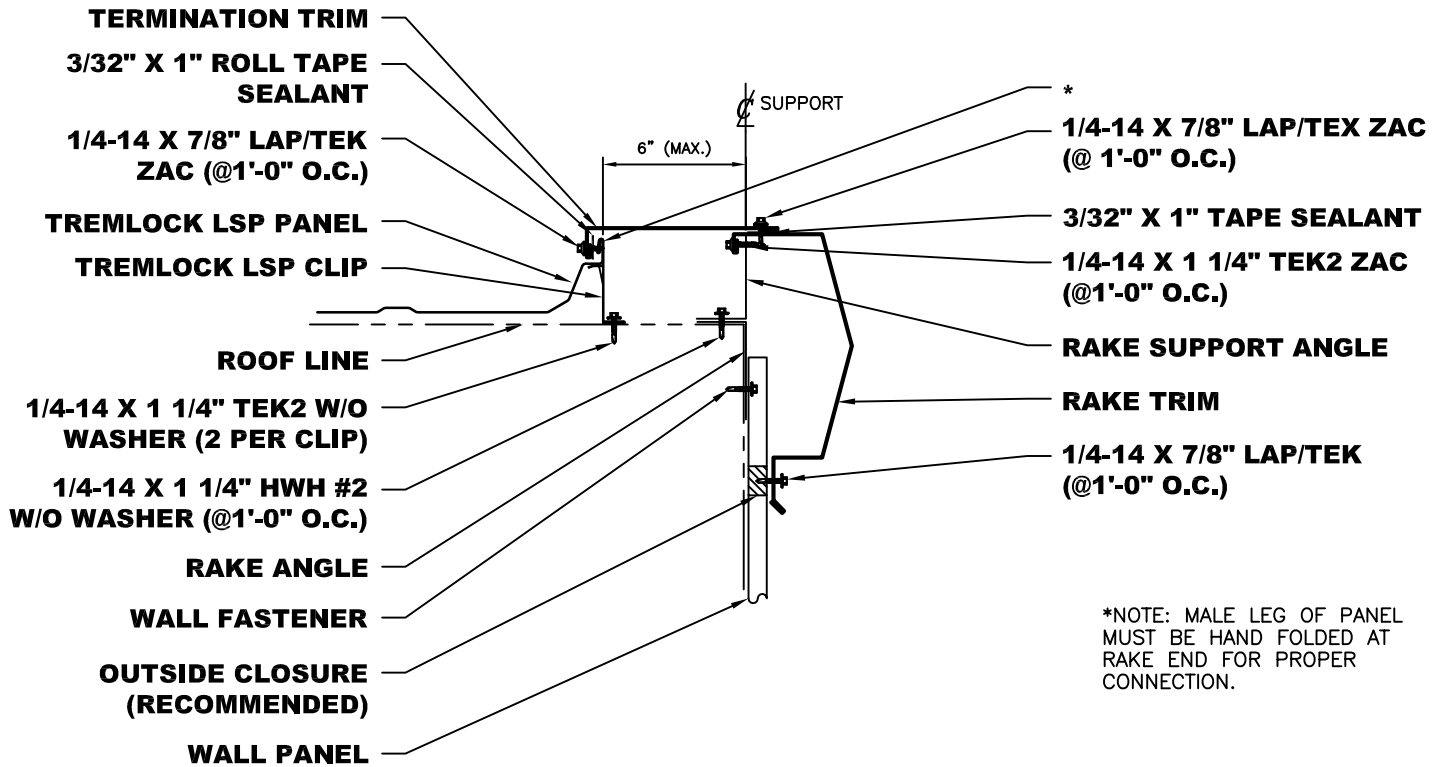
*NOTE: MALE LEG OF PANEL MUST BE HAND FOLDED AT RAKE END FOR PROPER CONNECTION.



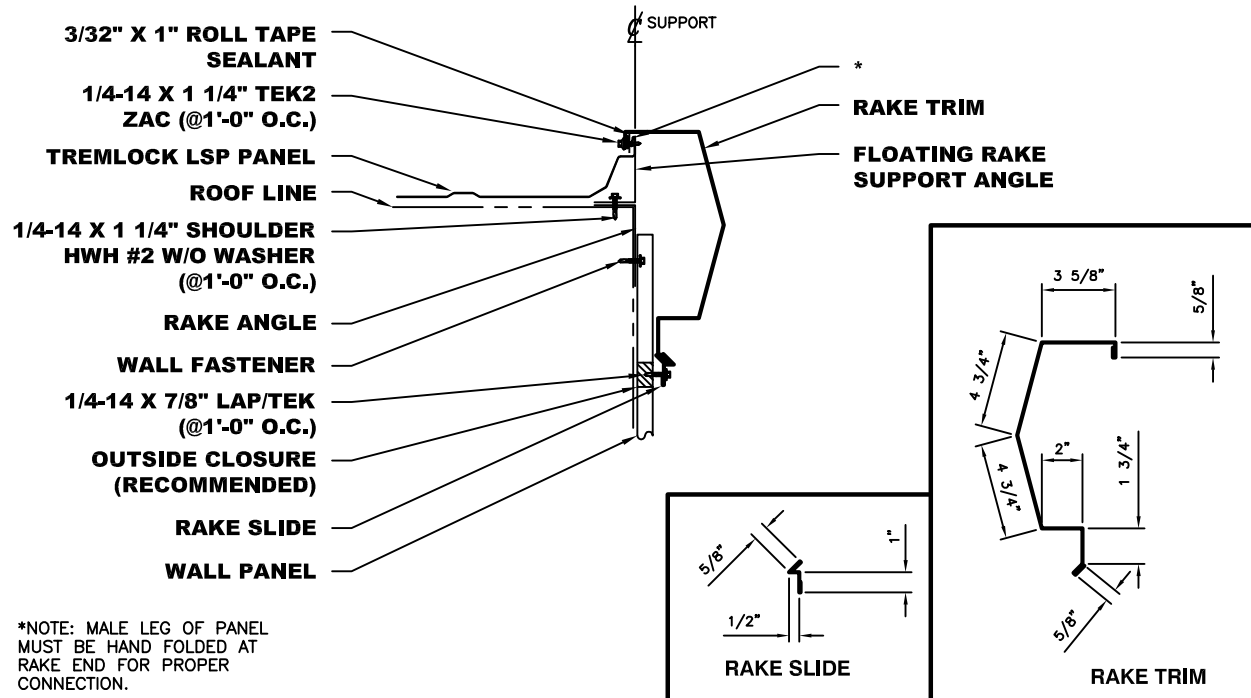
- NOTE:**
1. Rake Support Angle to be installed flush with steel line.
 2. Place roll tape on rib of roof panel.
 3. Attach trim to panel with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Attach trim to wall panels with 1/4-14 x 7/8" Lap/Tek fasteners.
 5. Apply tube sealant to trim before lapping.
 6. Pop-Rivet trim laps.



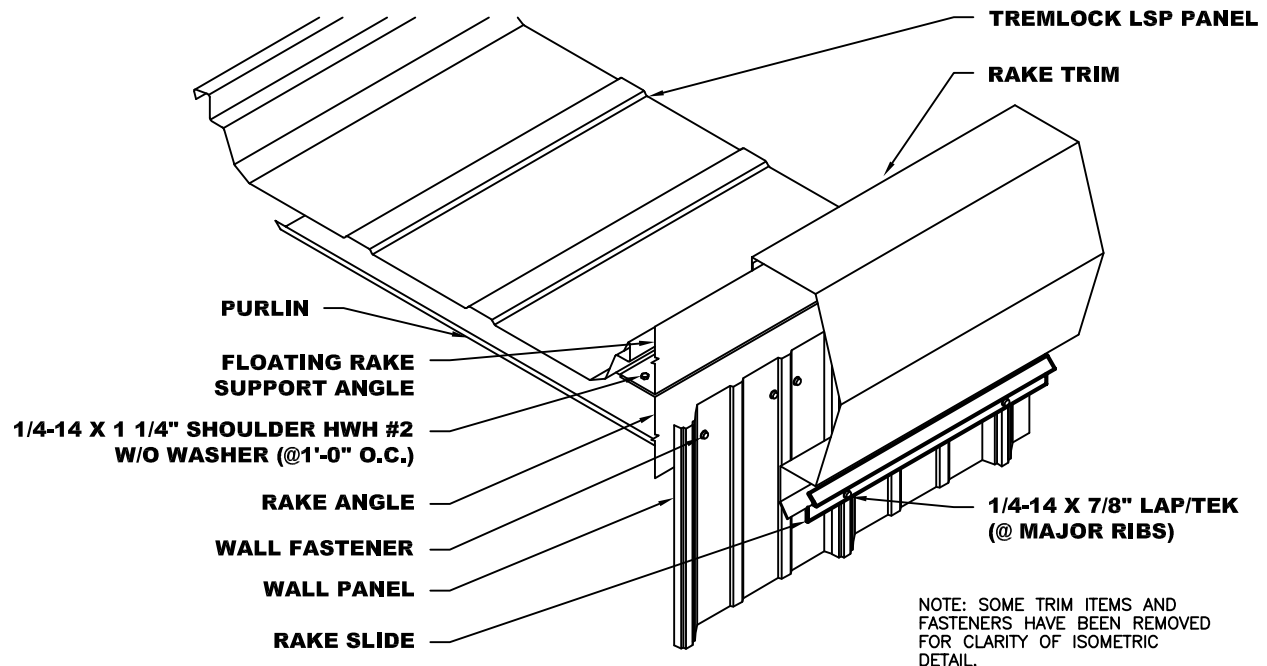
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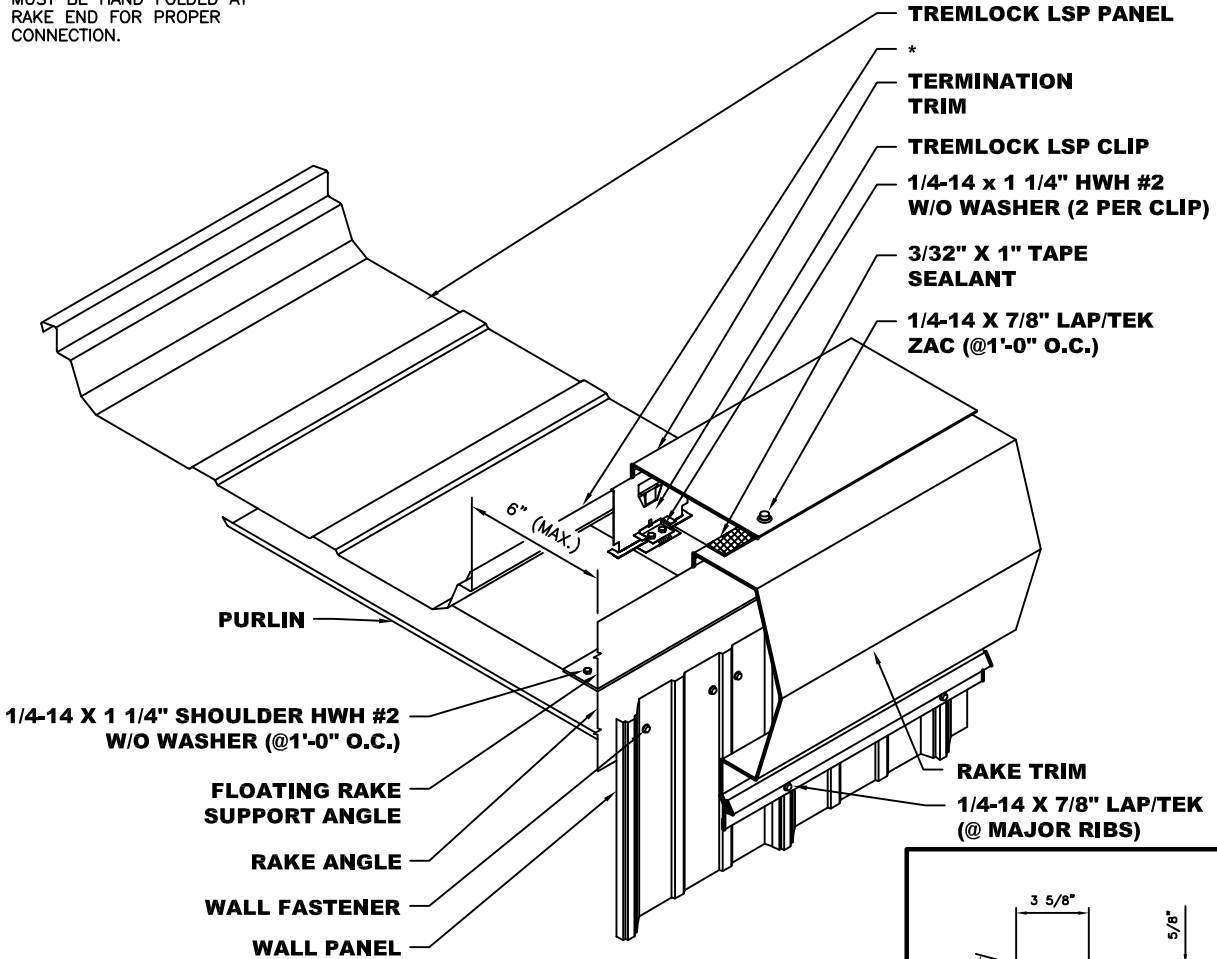
- NOTE:**
1. Rake Support Angle to be installed flush with steel line.
 2. Place roll tape on rib of roof panel and top of Rake Trim.
 3. Attach Rake Trim to support angle with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Attach Termination Trim to panel with 1/4-14 x 7/8" Lap/Tek fasteners.
 5. Attach Rake Trim to wall panels with 1/4-14 x 7/8" Lap/Tek fasteners.
 6. Apply tube sealant to trim before lapping.
 7. Pop-Rivet trim laps.



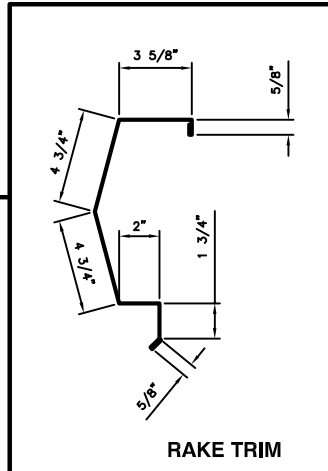
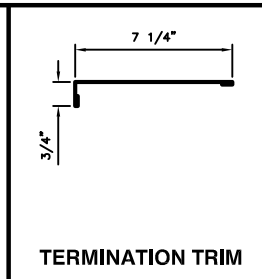
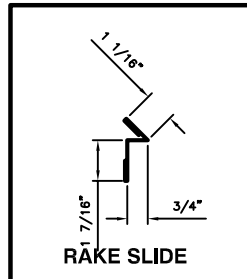
- NOTE:**
1. Rake Support Angle to be installed flush with steel line.
 2. Place roll tape on rib of roof panel.
 3. Attach trim to panel with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Attach Rake Slide to wall panels with 1/4-14 x 7/8" Lap/Tek fasteners.
 5. Apply tube sealant to trim before lapping.
 6. Pop-Rivet trim laps.



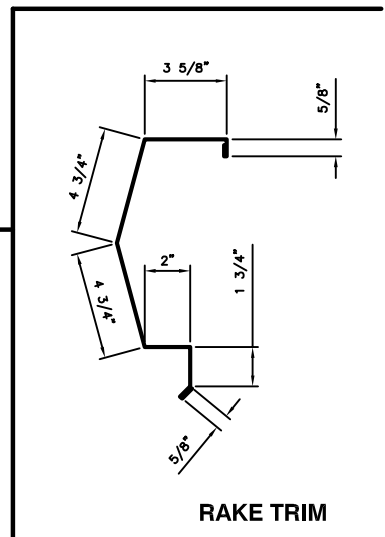
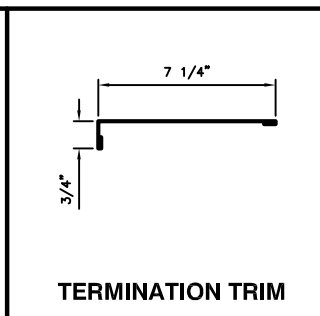
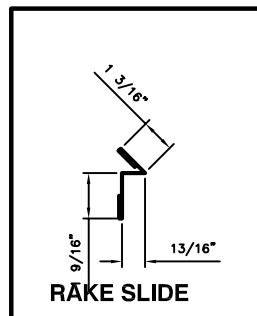
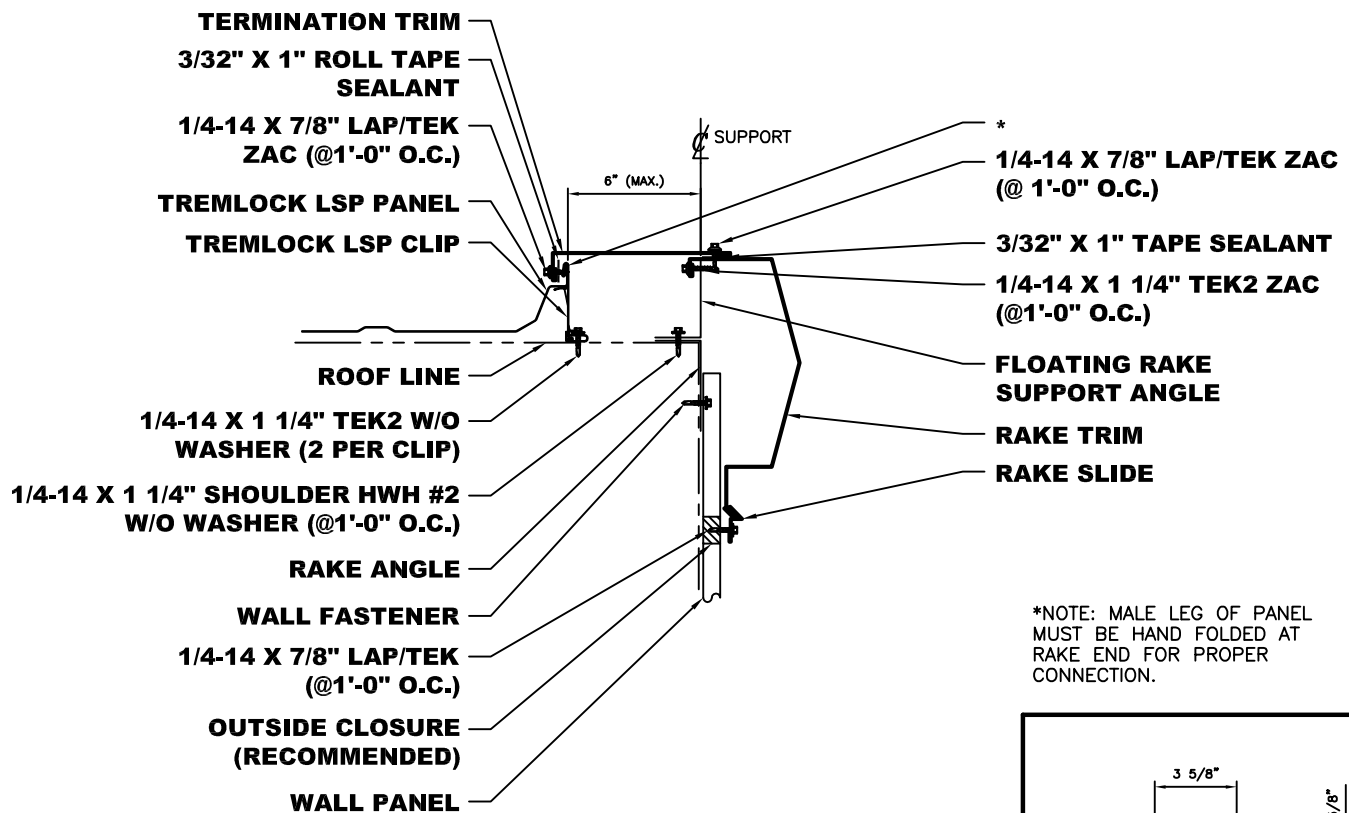
*NOTE: MALE LEG OF PANEL
MUST BE HAND FOLDED AT
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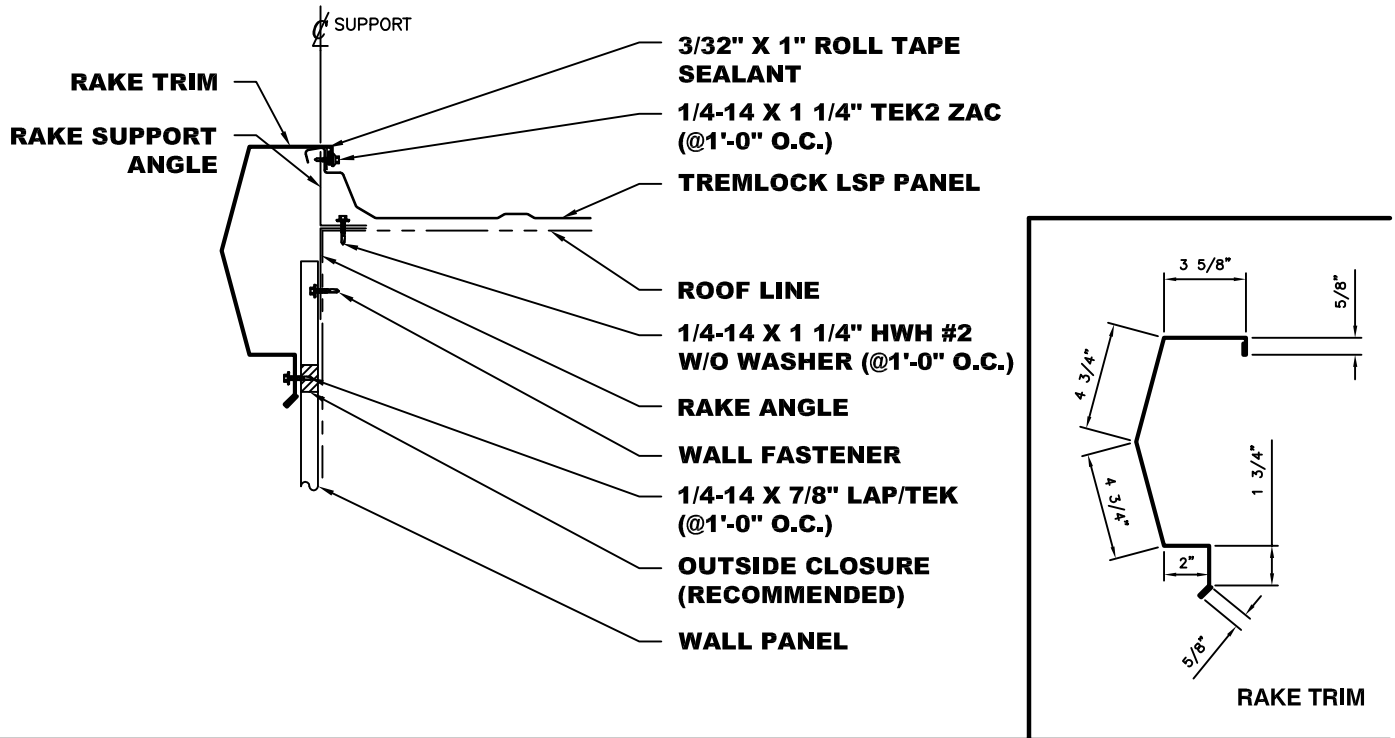
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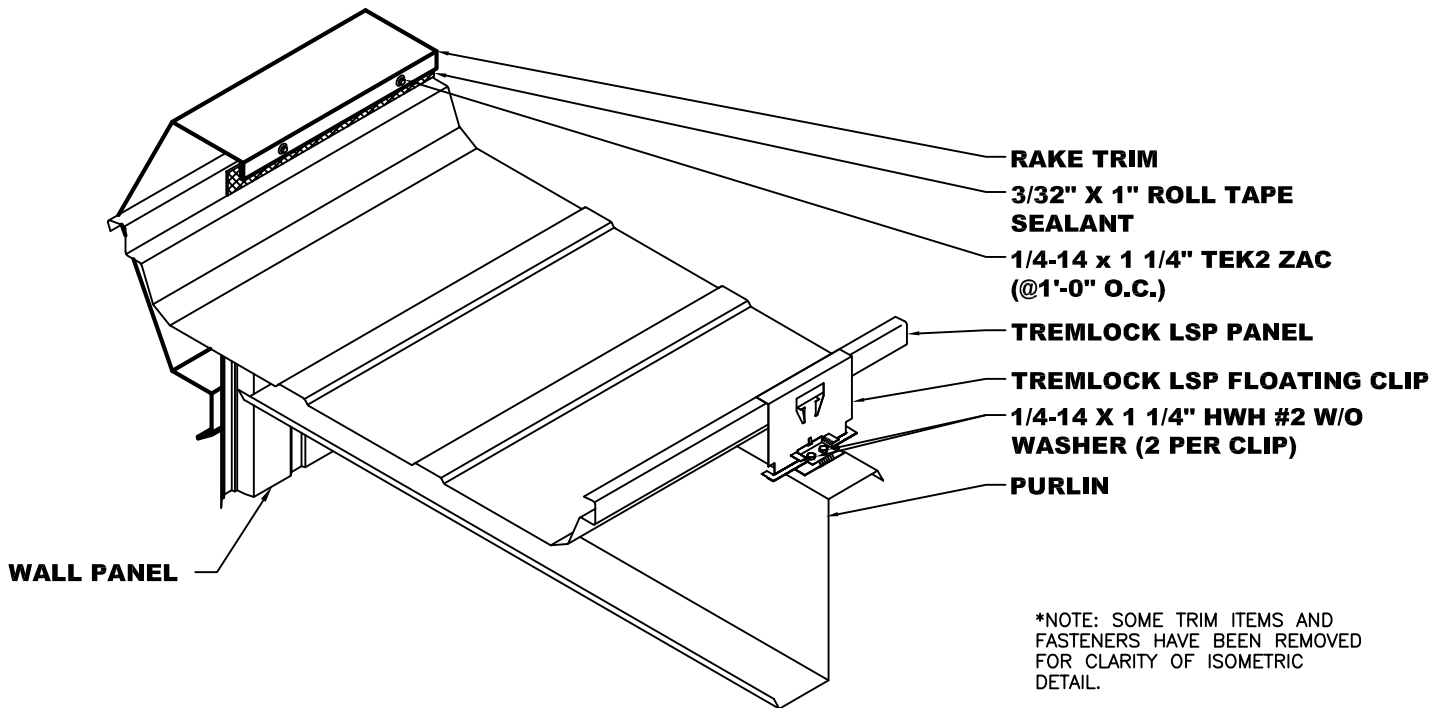
- NOTE:**
1. Rake Support Angle to be installed flush with steel line.
 2. Place roll tape on rib of roof panel and top of Rake Trim.
 3. Attach Rake Trim to support angle with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Attach Termination Trim to panel with 1/4-14 x 7/8" Lap/Tek fasteners.
 5. Attach Rake Slide to wall panels with 1/4-14 x 7/8" Lap/Tek fasteners.
 6. Apply tube sealant to trim before lapping.
 7. Pop-Rivet trim laps.



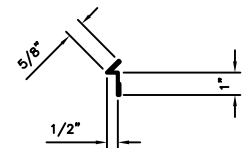
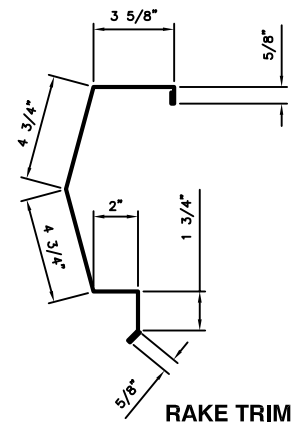
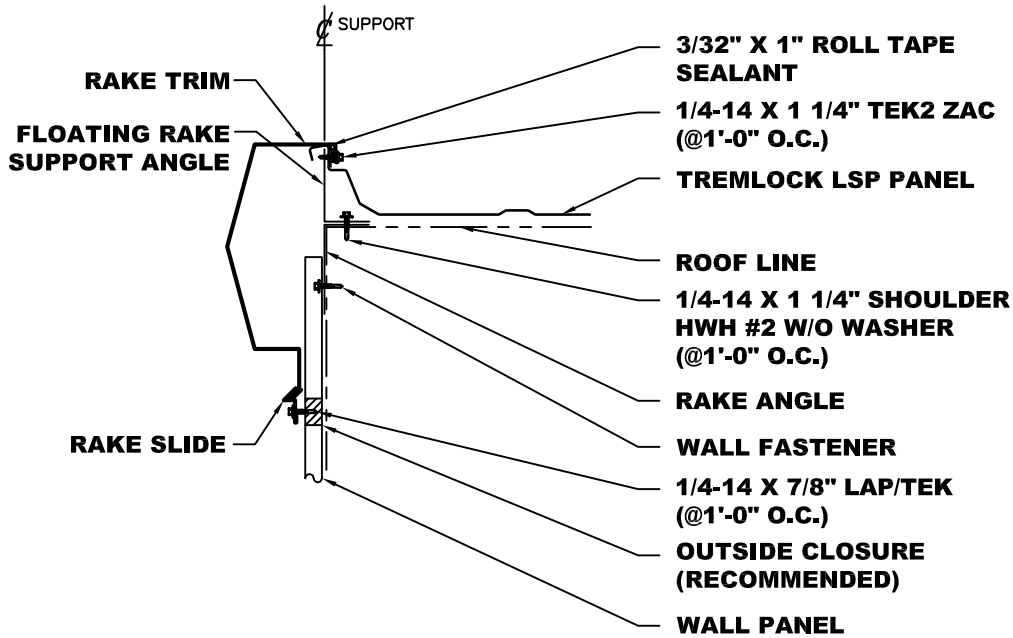
- NOTE:**
1. Rake Support Angle to be installed flush with steel line.
 2. Place roll tape on rib of roof panel and top of Rake Trim.
 3. Attach Rake Trim to support angle with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
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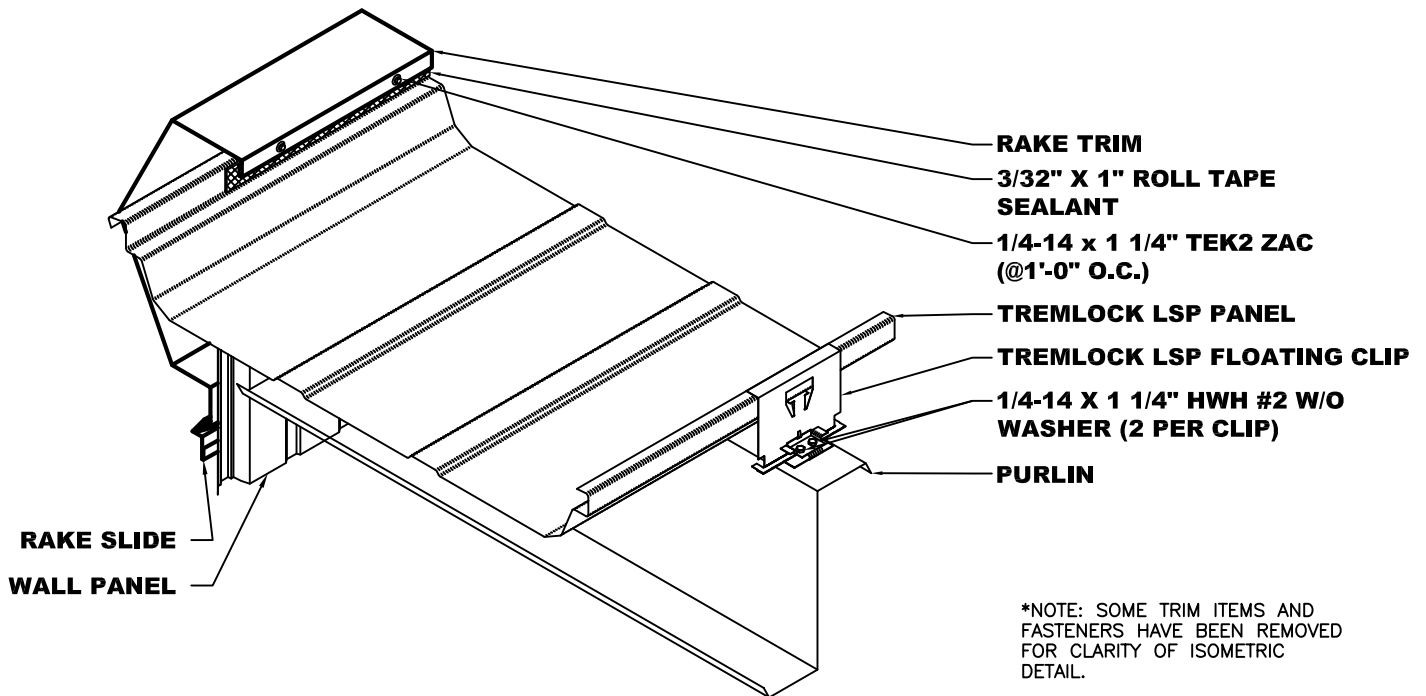
- NOTE:**
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 2. Place roll tape on rib of roof panel.
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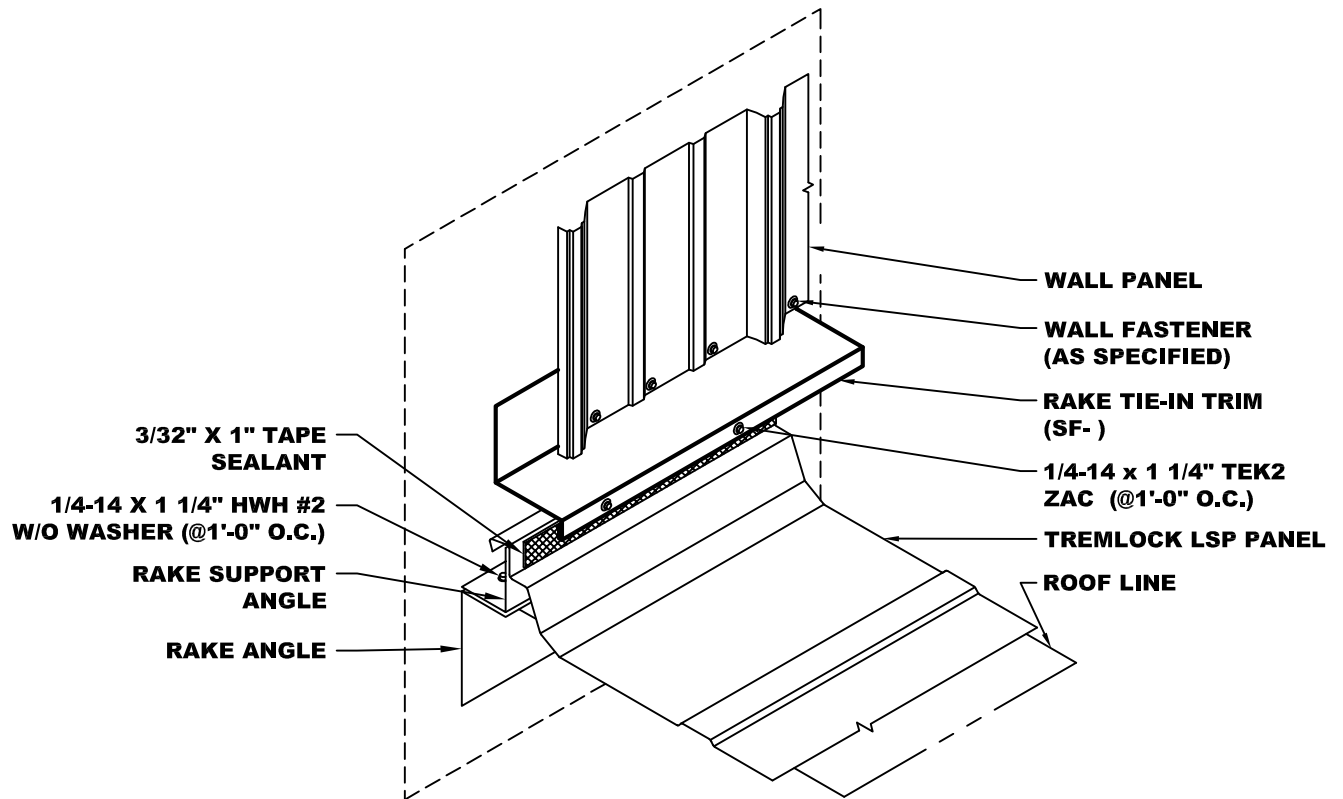


- NOTE:**
1. Rake Support Angle to be installed flush with steel line.
 2. Place roll tape on rib of roof panel.
 3. Attach trim to panel with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Attach Rake Slide to wall panels with 1/4-14 x 7/8" Lap/Tek fasteners.
 5. Apply tube sealant to trim before lapping.
 6. Pop-Rivet trim laps.

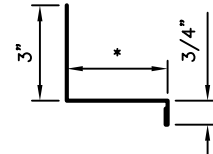


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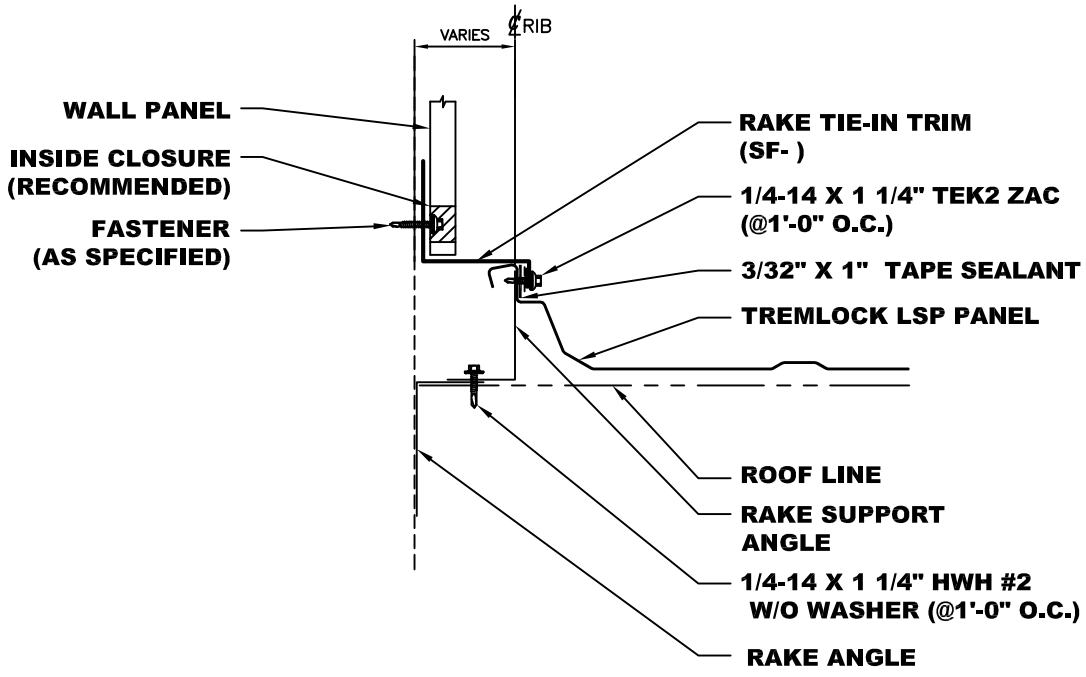


*NOTE:
1 1/2" (MIN.) TO 8" (MAX.)
DIMENSION VARIES WITH
PANEL LAYOUTS.

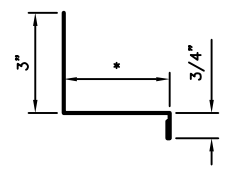


RAKE TIE-IN TRIM

- NOTE:**
1. Attach Rake Support Angle to Rake Angle at required location with 1/4-14 x 1 1/4" Shoulder Tek2 @ 1'-0" O.C.
 2. Place Roll Tape Sealant on rib of roof panel.
 3. Attach Rake Tie-In Trim to Rake Support Angle with 1/4-14 x 1 1/4" Tek2 ZAC fasteners @1'-0" O.C.
 4. Apply tube sealant to trim before lapping.



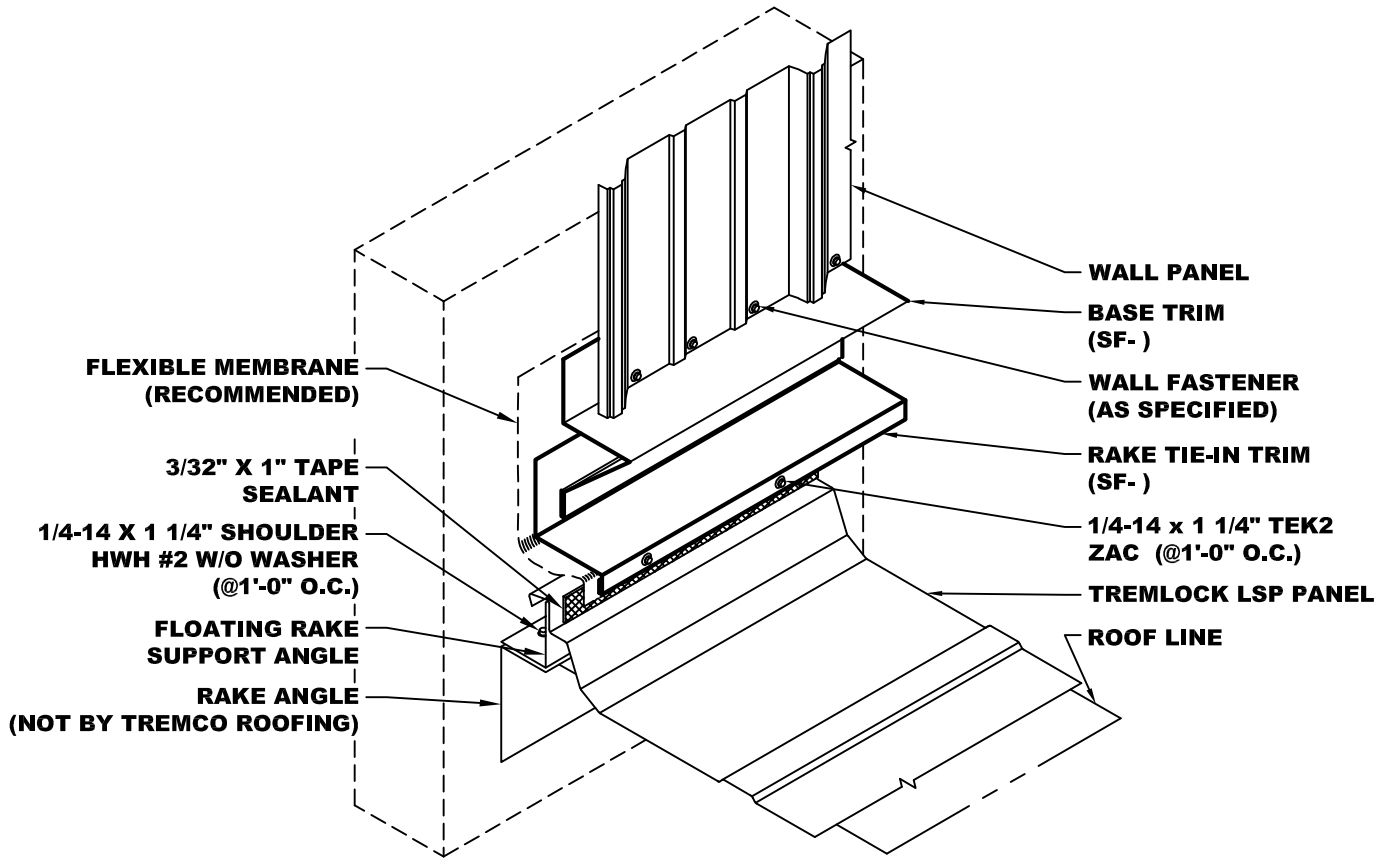
*NOTE:
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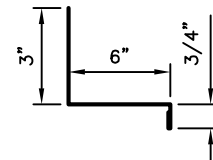
RAKE TIE-IN TRIM

- NOTE:**
1. Attach Rake Support Angle to Rake Angle at required location with 1/4-14 x 1 1/4" Shoulder Tek2 @ 1'-0" O.C.
 2. Place Roll Tape on rib of roof panel.
 3. Attach Rake Tie-In Trim to Support Angle with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Apply tube sealant to trim before lapping.

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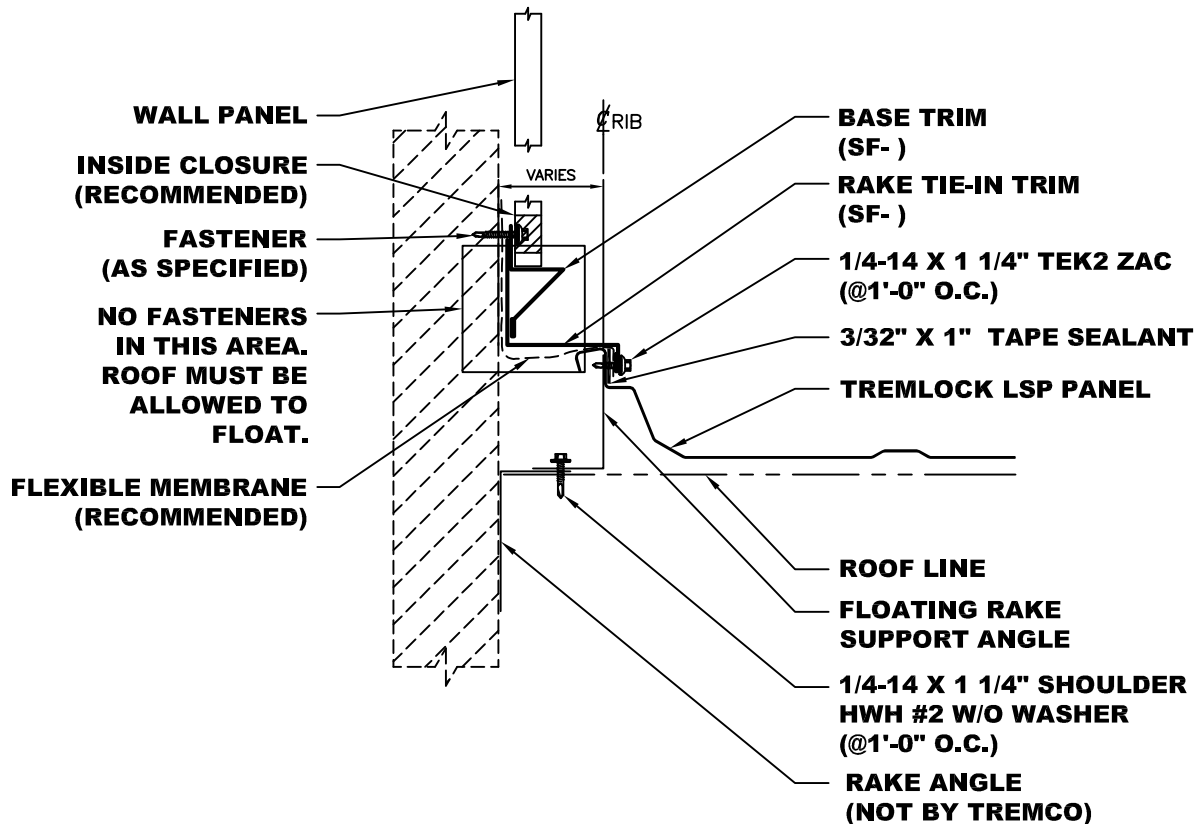


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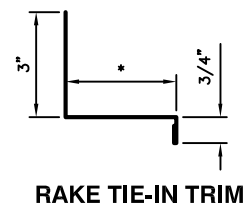


RAKE TIE-IN TRIM

- NOTE:**
1. Attach Rake Support Angle to Rake Angel at required location with 1/4-14 x 1 1/4" Shoulder Tek2 @ 1'-0" O.C.
 2. Place roll tape on rib of roof panel.
 3. Attach Rake Tie-In Trim to Support Angle with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Apply tube sealant to trim before lapping.

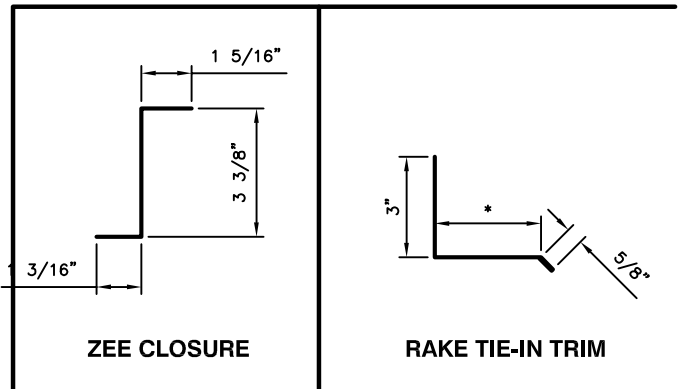
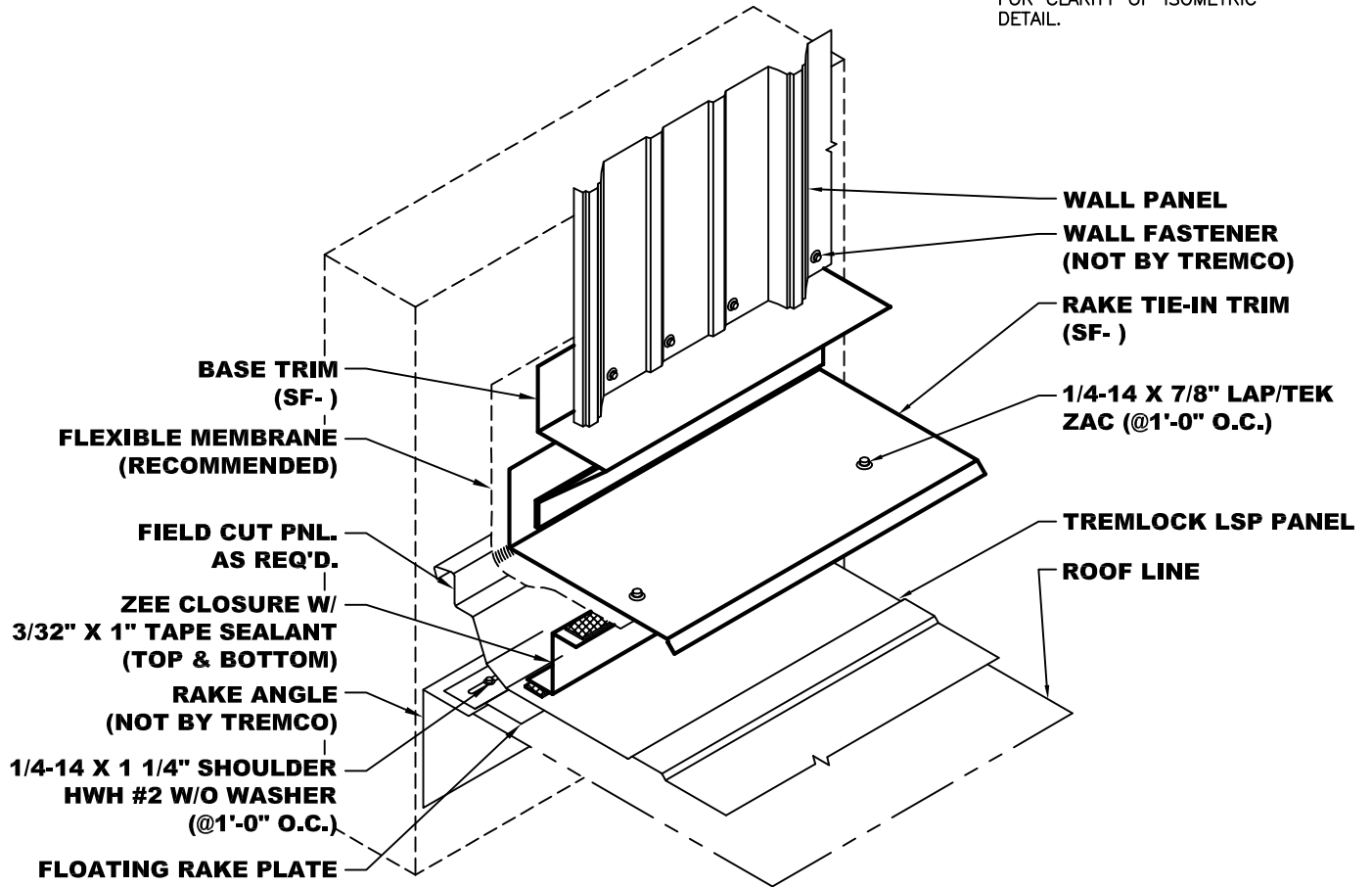


*NOTE:
1 1/2"(MIN.) TO 8"(MAX.)
DIMENSION VARIES WITH
PANEL LAYOUTS.

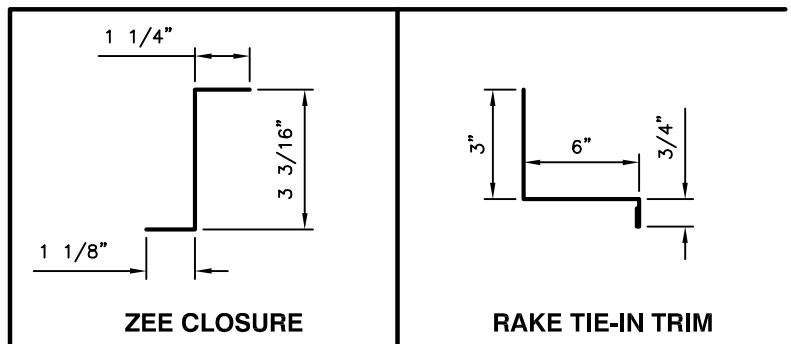
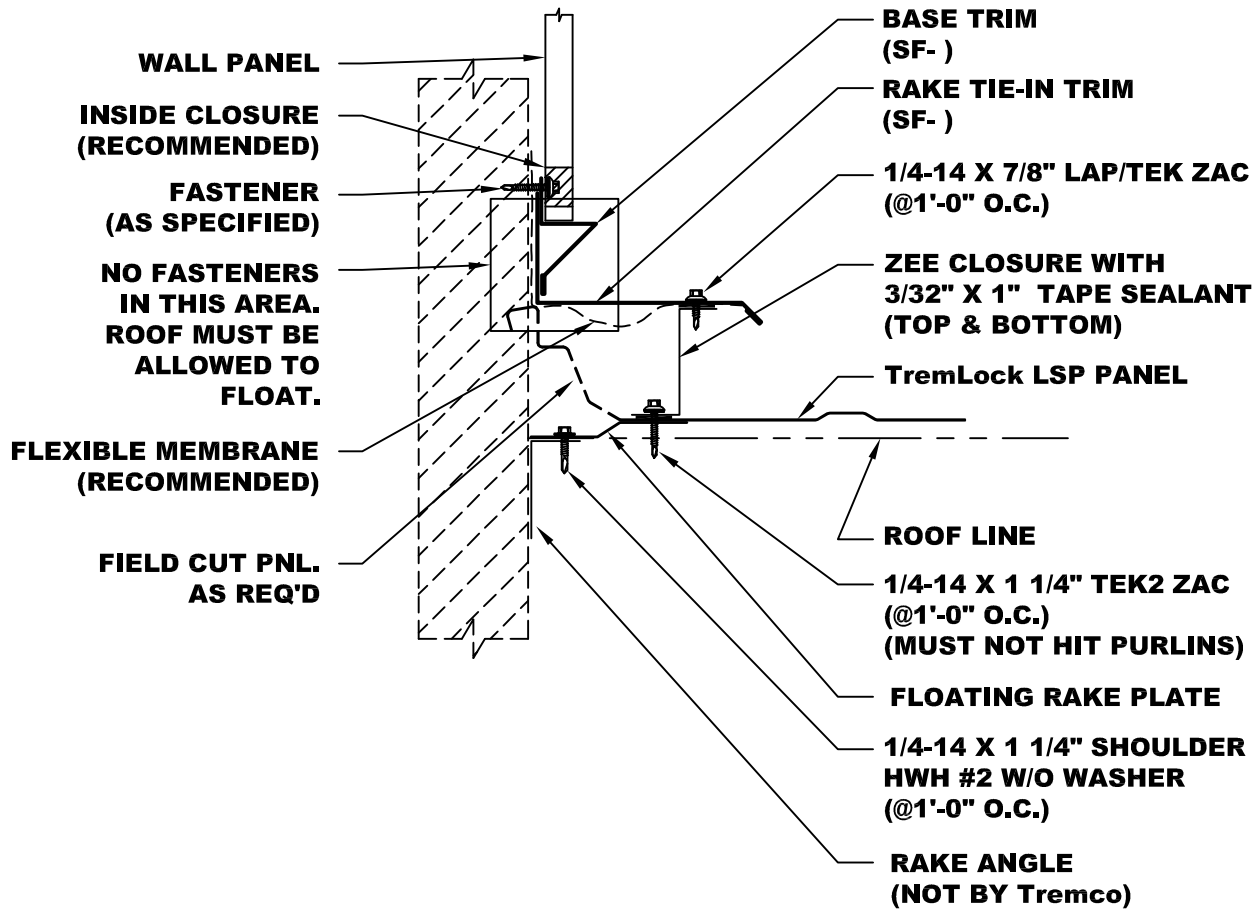


- NOTE:**
1. Attach Rake Support Angle to Rake Angel at required location with 1/4-14 x 1 1/4" Shoulder Tek2 @ 1'-0" O.C.
 2. Place roll tape on rib of roof panel.
 3. Attach Rake Tie-In Trim to Support Angle with 1/4-14 x 1 1/4" Tek2 Zac fasteners @1'-0" O.C.
 4. Apply tube sealant to trim before lapping.

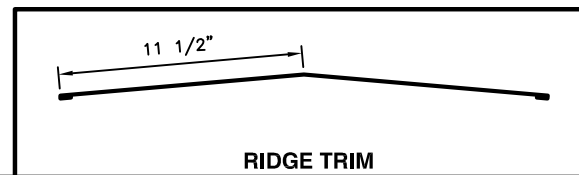
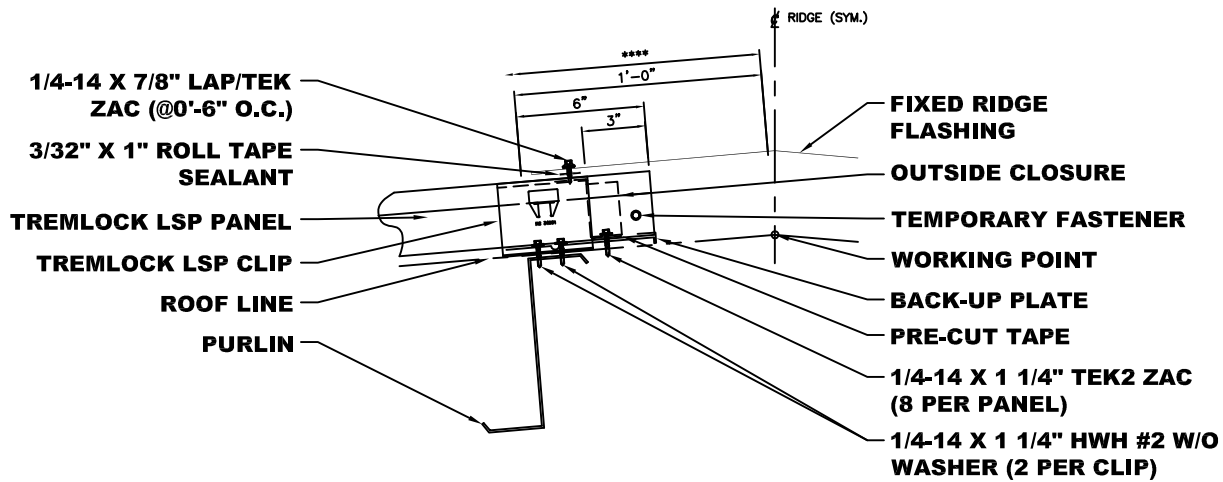
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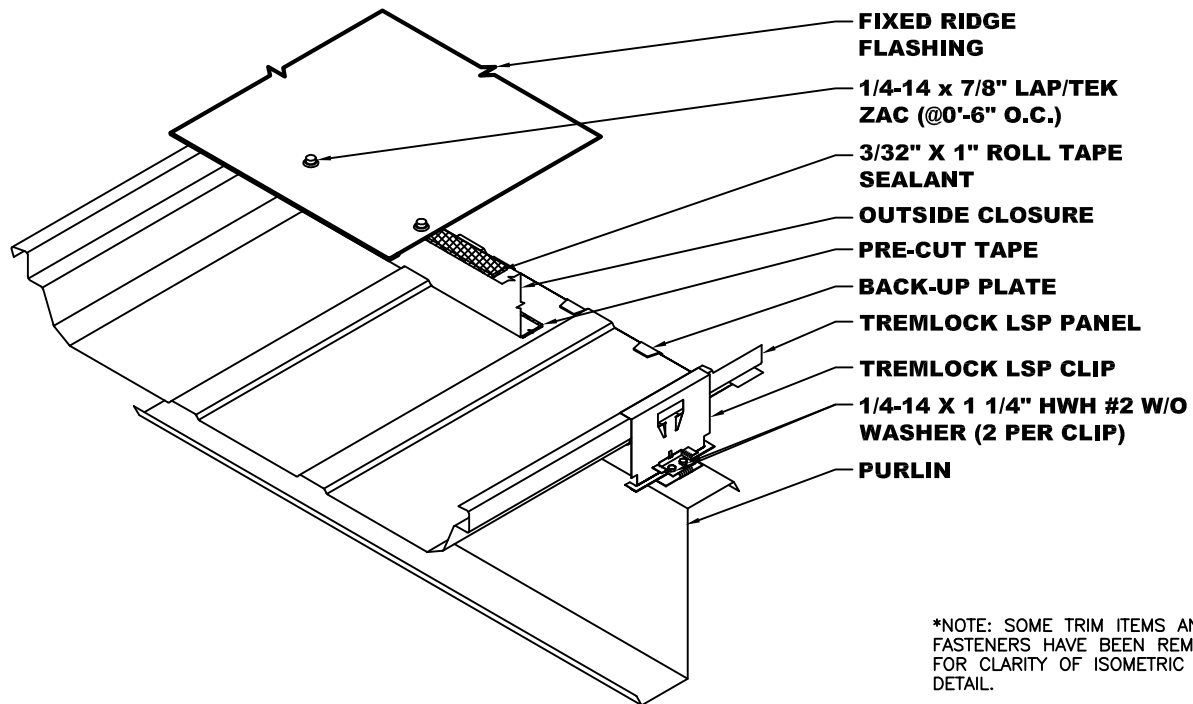
- NOTE:**
1. Attach Rake Plate to Rake Angel at required location with 1/4-14 x 1 1/4" Shoulder Tek2 @ 1'-0" O.C.
 2. Attach Zee Closure to the Rake Plate with 1/4-14 x 1 1/4" Tek2 ZAC @1'-0" O.C.
 3. Attach Rake Tie-In Trim to Zee Closure with 1/4-14 x 7/8" Lap/Tek Zac fasteners @1'-0" O.C.
 4. Apply tube sealant to trim before lapping.



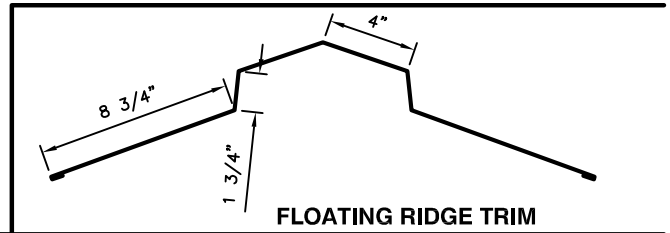
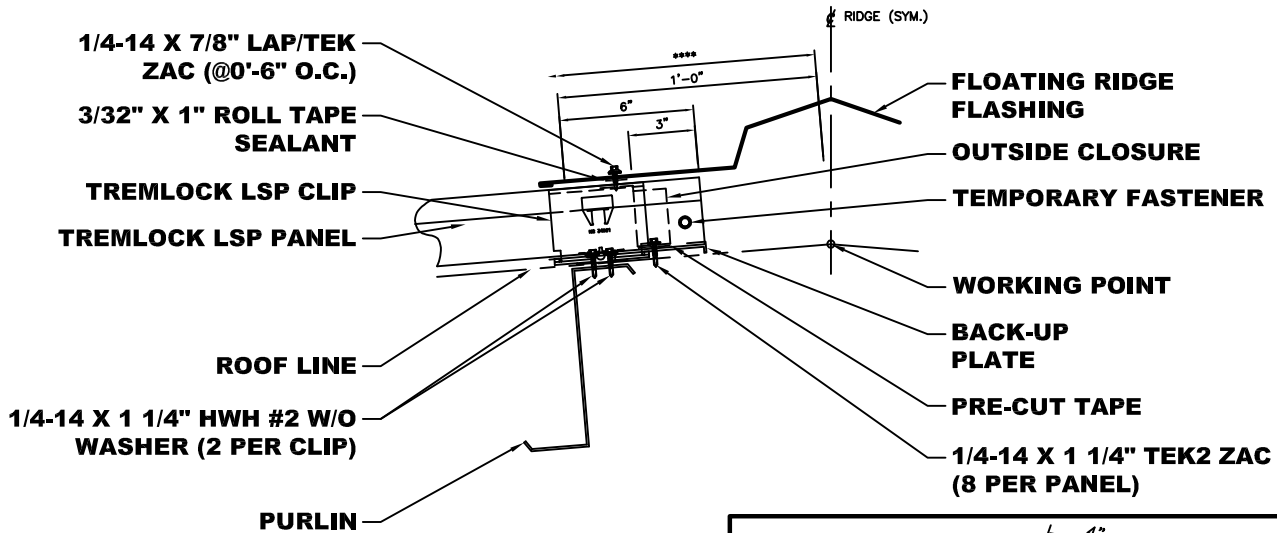
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 2. Attach Zee Closure to the Rake Plate with 1/4-14 x 1 1/4" Tek2 ZAC @1'-0" O.C.
 3. Attach Rake Tie-In Trim to Zee Closure with 1/4-14 x 7/8" Lap/Tek Zac fasteners @1'-0" O.C.
 4. Apply tube sealant to trim before lapping.



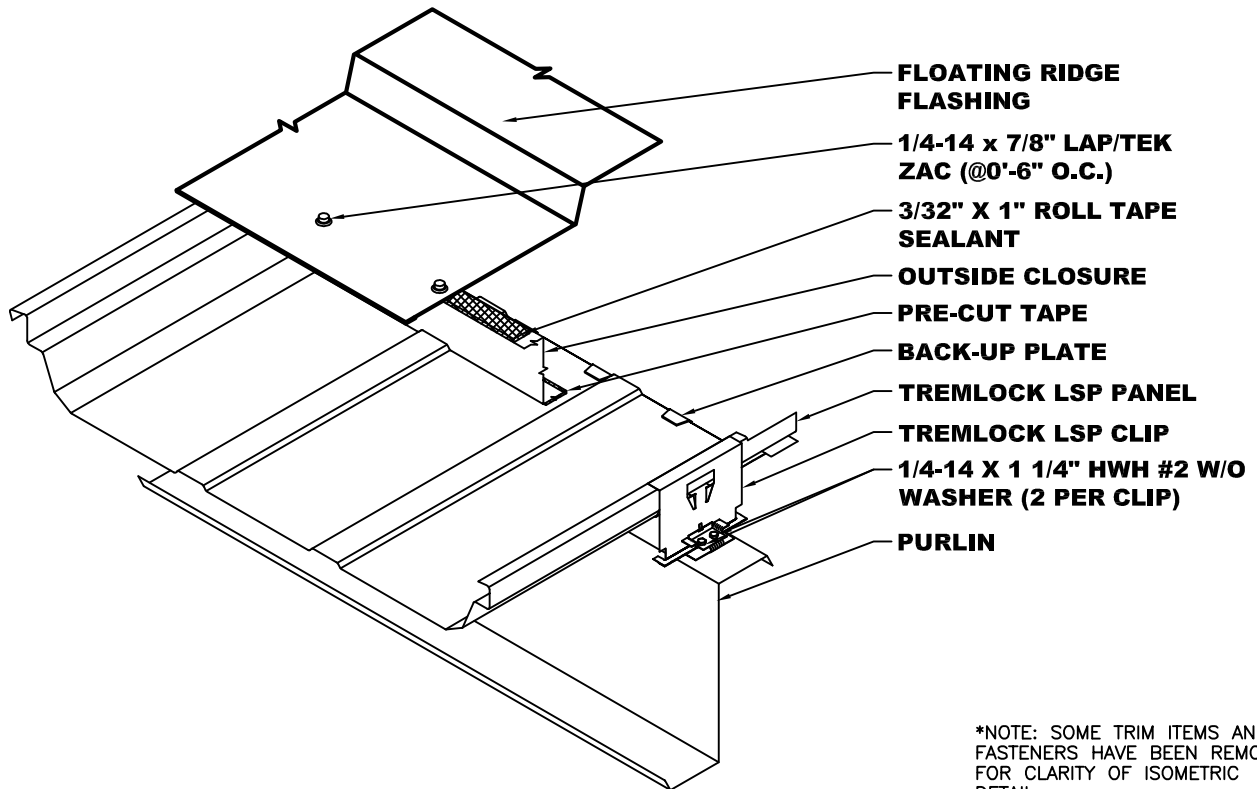
- NOTES:**
1. Install Back-up Plates with panels.
 2. Use a temporary fastener at each side of panel to hold Back-up Plate.
 3. Panel must be fully seamed (180°) before installing Outside Closure.
 4. Check for voids, fill with Butyl Tube Sealant.



*NOTE: SOME TRIM ITEMS AND FASTENERS HAVE BEEN REMOVED FOR CLARITY OF ISOMETRIC DETAIL.



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