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Introduction

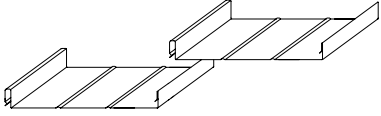
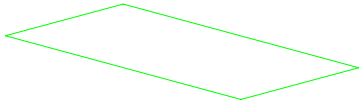
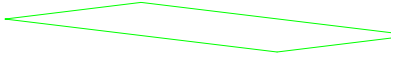
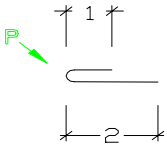
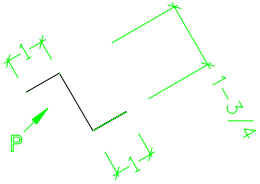
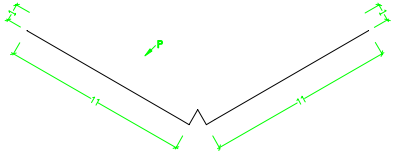
Our goal at Summit Pacific Metal Sales is to provide you with a highly qualified manufacturing, sales, and design team and furnish products and services that are second to none.

This product information and installation guide is designed to assist in the installation process and aid in the general understanding of Summit Pacific Metal Sales' *Snap-Lock Standing Seam* metal roofing.

Snap-Lock Standing Seam is renowned for its durability and performance. It has earned a long track record proving its economy, durability, and weathertightness. Should you have any questions or need clarification on any detail, please do not hesitate to contact Summit Pacific Metal Sales.

Note: “” indicates the painted side of the component.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
1		18" Snap-Lock Standing Seam Roofing Panels	
2		Flat Stock 48.25" x 120"	
3		Flat Stock 24" x 120"	
20		Termination Strip Use at gables..... 8, 9 Use at sidewalls..... 30	
21		"Z" Closure Use at ridges..... 3, 4 Use at nosings..... 16-19 Use at endwalls..... 20, 21 Use at skylights..... 24 Use at chimneys..... 27 Use at knee transitions..... 22 Use at elbow transitions..... 23	
26		"W" Valley Use at valleys..... 5 (With #920 joggle)	

Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
30		Elbow Roof Transition, Std.	
		Use at transition 23 (With #920 joggle, #21 "Z" closure) (Specify BOTH roof pitches)	
31		Elbow Roof Transition, Oversized	
		Use at transition 23 (With #920 joggle and #21 "Z" closure) (Specify BOTH roof pitches)	
32		Knee Roof Transition, Std.	
		Use at transition 22 (With #920 joggle and #21 "Z" closure) (Specify BOTH roof pitches)	
33		Knee Roof Transition, Oversized	
		Use at transition 23 (With #920 joggle and #21 "Z" closure) (Specify BOTH roof pitches)	
36		Skylight Top Saddle	
		Use at skylights..... 26 (With #920 joggle)	
37		Chimney Top Saddle	
		Use at chimneys..... 29 (With #920 joggle) (Specify roof slope)	

Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

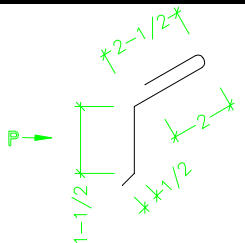
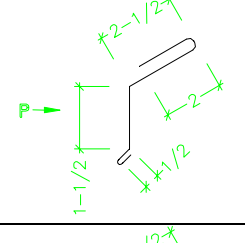
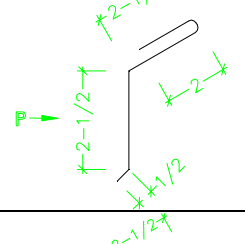
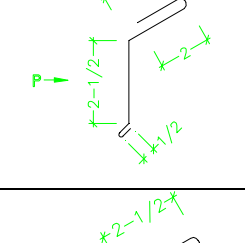
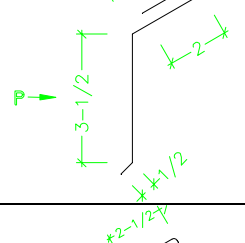
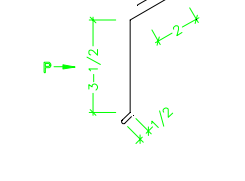
Part #	Profile	Description / Uses	Sheet #
40		Standard 2" Eave	
		Use at eave, uncleated (With #920 joggle)	15
		<i>(Specify roof slope)</i>	
40H		Hemmed 2" Eave	
		Use at eave, cleated..... (Use with #917 fascia cleat and #920 joggle)	14
		<i>(Specify roof slope)</i>	
41		Standard 3" Eave	
		Use at eave, uncleated (With #920 joggle)	15
		<i>(Specify roof slope)</i>	
41H		Hemmed 3" Eave	
		Use at eave, cleated..... (Use with #917 fascia cleat and #920 joggle)	14
		<i>(Specify roof slope)</i>	
42		Standard 4" Eave	
		Use at eave, uncleated (With #920 joggle)	15
		<i>(Specify roof slope)</i>	
42H		Hemmed 4" Eave	
		Use at eave, cleated..... (Use with #917 fascia cleat and #920 joggle)	14
		<i>(Specify roof slope)</i>	

Note: These part numbers

14

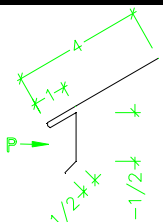
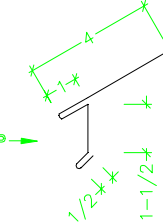
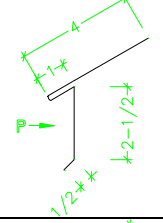
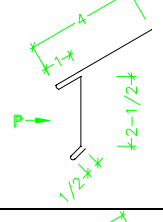
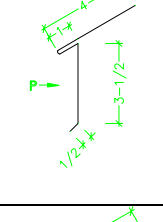
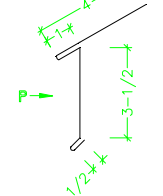
indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
44		Std. 2" Eave Trim w/ Hook Use at eave, uncleated 11 <i>(Specify roof slope)</i>	
44H		Hemmed 2" Eave Trim w/ Hook Use at eave, cleated..... 12 (Use with #917 fascia cleat) <i>(Specify roof slope)</i>	
45		3" Eave Trim w/ Hook Use at eave, uncleated 11 <i>(Specify roof slope)</i>	
45H		Hemmed 3" Eave Trim w/ Hook Use at eave, cleated..... 12 (Use with #917 fascia cleat) <i>(Specify roof slope)</i>	
46		4" Eave Trim w/ Hook Use at eave, uncleated 11 <i>(Specify roof slope)</i>	
46H		Hemmed 4" Eave Trim w/ Hook Use at eave, cleated..... 12 (Use with #917 fascia cleat) <i>(Specify roof slope)</i>	

Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
47		2" Drip Eave	
		Use at eave, uncleated 13 <i>(Specify up to 4/12 roof slope)</i>	
47H		Hemmed 2" Drip Eave	
		Use at eave, cleated..... 12 (Use with #917 fascia cleat) <i>(Specify up to 4/12 roof slope)</i>	
48		3" Drip Eave	
		Use at eave, uncleated 13 <i>(Specify up to 4/12 roof slope)</i>	
48H		Hemmed 3" Drip Eave	
		Use at eave, cleated..... 12 (Use with #917 fascia cleat) <i>(Specify up to 4/12 roof slope)</i>	
49		4" Drip Eave	
		Use at eave, uncleated 13 <i>(Specify up to 4/12 roof slope)</i>	
49H		Hemmed 4" Drip Eave	
		Use at eave, cleated..... 12 (Use with #917 fascia cleat) <i>(Specify up to 4/12 roof slope)</i>	

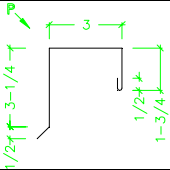
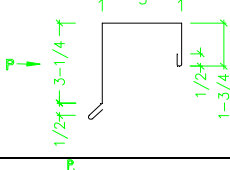
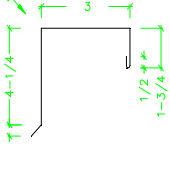
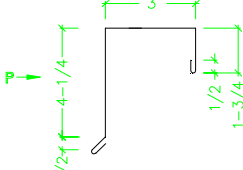
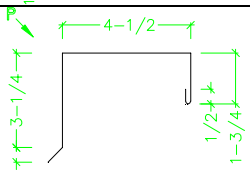
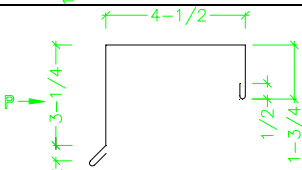
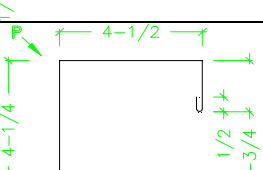
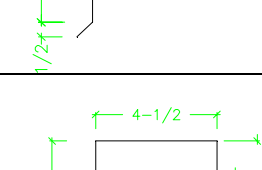
Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
50		Std. 2" Gable Trim Use at gable, uncleated..... 9 (Use with #20 termination strip)	
50H		Hemmed 2" Gable Trim Use at gable, cleated..... 8 (Use with #917 fascia cleat and #20 termination strip)	
51		3" Gable Trim Use at gable, uncleated..... 9 (Use with #20 termination strip)	
51H		Hemmed 3" Gable Trim Use at gable, cleated..... 8 (Use with #17 fascia cleat and #920 termination strip)	
52		4" Gable Trim Use at gable, uncleated..... 9 (Use with #20 termination strip)	
52H		Hemmed 4" Gable Trim Use at gable, cleated..... 8 (Use with #917 fascia cleat and #20 termination strip)	

Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
53		Old-Style Gable 3-3/4" Vertical, 3" Across Use at gable, uncleated.....	7
53H		Hemmed Old-Style Gable 3-3/4" Vertical, 3" Across Use at gable, cleated..... (Use with #917 fascia cleat)	6
54		Old-Style Gable 4-3/4" Vertical, 3" Across Use at gable, uncleated.....	7
54H		Hemmed Old-Style Gable 4-3/4" Vertical, 3" Across Use at gable, cleated..... (Use with #917 fascia cleat)	6
55		Old-Style Gable 3-3/4" Vertical, 4-1/2" Across Use at gable, uncleated.....	7
55H		Hemmed Old-Style Gable 3-3/4" Vertical, 4-1/2" Across Use at gable, cleated..... (Use With #917 fascia cleat)	6
56		Old-Style Gable 4-3/4" Vertical, 4-1/2" Across Use at gable, uncleated.....	7
56H		Hemmed Old-Style Gable 4-3/4" Vertical, 4-1/2" Across Use at gable, cleated..... (Use with #917 fascia cleat)	6

Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
70		"Z" Sidewall, Narrow 3" Across Use at sidewalls.....	31
71		"Z" Sidewall, Wide 4-1/2" Across Use at sidewalls.....	31
75		"L" Metal	
76		"L" Metal with Hem Use at skylight bottom saddles... Use at skylight sides..... Use at chimney sides..... (With #21 "Z" closure)	24 25 28
77		"L" Metal with Hook Use at sidewalls..... (With #20 termination strip)	30
80		Endwall, Std. Use at endwalls..... Use at chimney bottom saddles... (With #21 "Z" closure) (Specify roof slope)	20 27
81		Vented Endwall Use at walls with vent systems.. (With #918 vent strip and #21 "Z" closure) (Specify roof slope)	21
84		Nosing, Std. 4" Vertical Use at walls, uncleated..... (With #21 "Z" closure) (Specify roof slope)	17
84H		Hemmed Nosing, Std. 4" Vertical Use at walls, cleated..... (With #917 fascia cleat and #21 "Z" closure) (Specify roof slope)	16

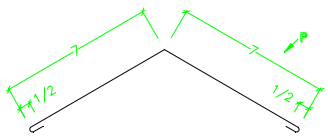
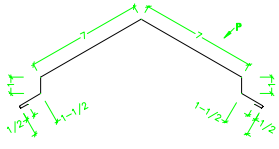
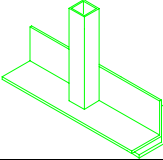
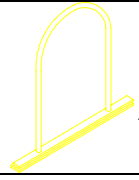
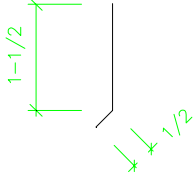

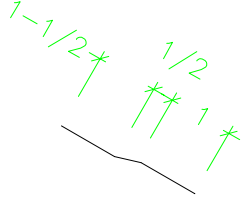

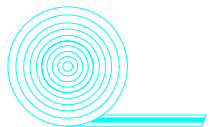
Note: These part numbers **14** indicate immediate availability.

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Part #	Profile	Description / Uses	Sheet #
85		Nosing, Std. 5" Vertical Use at walls, uncleated..... 17 (With #21 "Z" closure) <i>(Specify roof slope)</i>	
85H		Hemmed Nosing, Std. 5" Vertical Use at walls..... 16 (With #917 fascia cleat and #21 "Z" closure) <i>(Specify roof slope)</i>	
86		Vented Nosing 5-1/2" Vertical Use at walls with vent systems, uncleated..... 19 (With #918 vent strip and #21 "Z" closure) <i>(Specify roof slope)</i>	
86H		Hemmed Vented Nosing 5" Vertical Use at walls with vent systems, cleated..... 18 (With #918 vent strip, #917 fascia cleat, and #21 "Z" closure) <i>(Specify roof slope)</i>	
87		Vented Nosing 6-1/2" Vertical Use at walls with vent systems, uncleated..... 19 (With #918 vent strip and #21 "Z" closure) <i>(Specify roof slope)</i>	
87H		Hemmed Vented Nosing 6" Vertical Use at walls with vent systems, cleated. 18 (With #918 vent strip, #917 fascia cleat, and #21 "Z" closure) <i>(Specify roof slope)</i>	

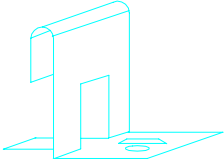
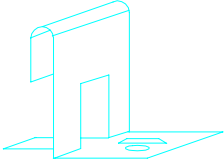
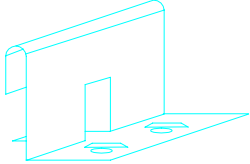
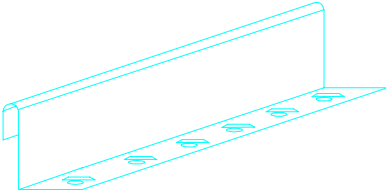
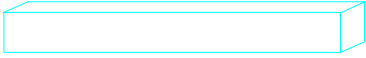
Note: These part numbers **14** indicate immediate availability.

Quick Find Reference Guide

Part #	Profile	Description / Uses	Sheet #
90		Std. Ridge / Hip Cap	
		Use at ridge..... 3 (With #21 "Z" closure) <i>(Specify roof slope)</i>	
91		Vented Ridge / Hip Cap	
		Use at ridge w/ vented systems.. 4 (With #918 vent strip and #21 "Z" closure) <i>(Specify roof slope)</i>	
910		Panel Head Bender Tool	
		Use at panel head..... 1	
912		Eave / Valley Bender Tool	
		Use at eaves and valleys..... 2	
917		Fascia Cleat	
		Use at Old-style gable..... 6	
		Use at std. gable..... 8	
		Use at std. eave..... 10, 14	
		Use at drip eave..... 12	
		Use at nosing..... 16, 17	
918		1" x 3" Vent Strip	
		Use at endwall..... 21	
		Use at nosing..... 18, 19	
		Use at ridge..... 4	
919		20 Ga. Joggle Cleat	
		Use at eaves..... 14, 15	
		Use at valleys..... 5	
		Use at skylights..... 26	
		Use at chimneys..... 27	
		Use at knee transitions..... 22	
		Use at elbow transitions..... 23	
923		Latex Paint (1 Qt.)	
		(See Instructions)	
926		Butyl Mastic Tape 3/32" x 1/2" x 50'	

Note: These part numbers **14** indicate immediate availability.

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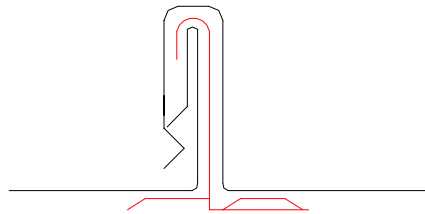
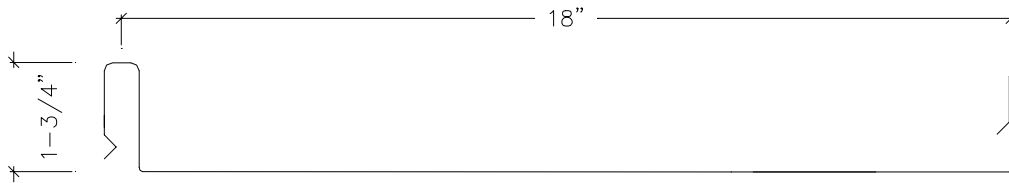
Part #	Profile	Description / Uses
920		18 Ga. Std. Non-UL Clips (Uses 1 screw per clip)
920 SS		20 Ga. Stainless Steel Non-UL Clips (Uses 1 stainless screw per clip)
921		18 Ga. UL Rated Clips (Uses 2 screws per clip)
922		18 Ga. 22" Seam Stiffener (Uses 6 screws per piece)
924		18" Polyethylene Closure

Note: These part numbers **14** indicate immediate availability.

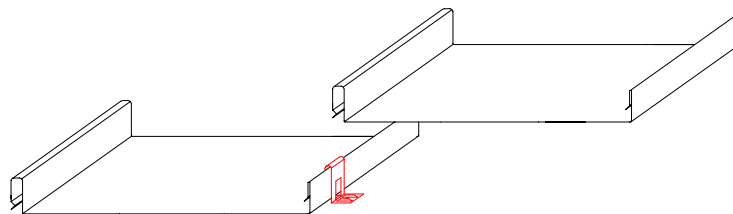
Snap-Lock Panel Profiles

Snap-Lock Roofing Panel

(Standard width is 18"; custom widths are available)

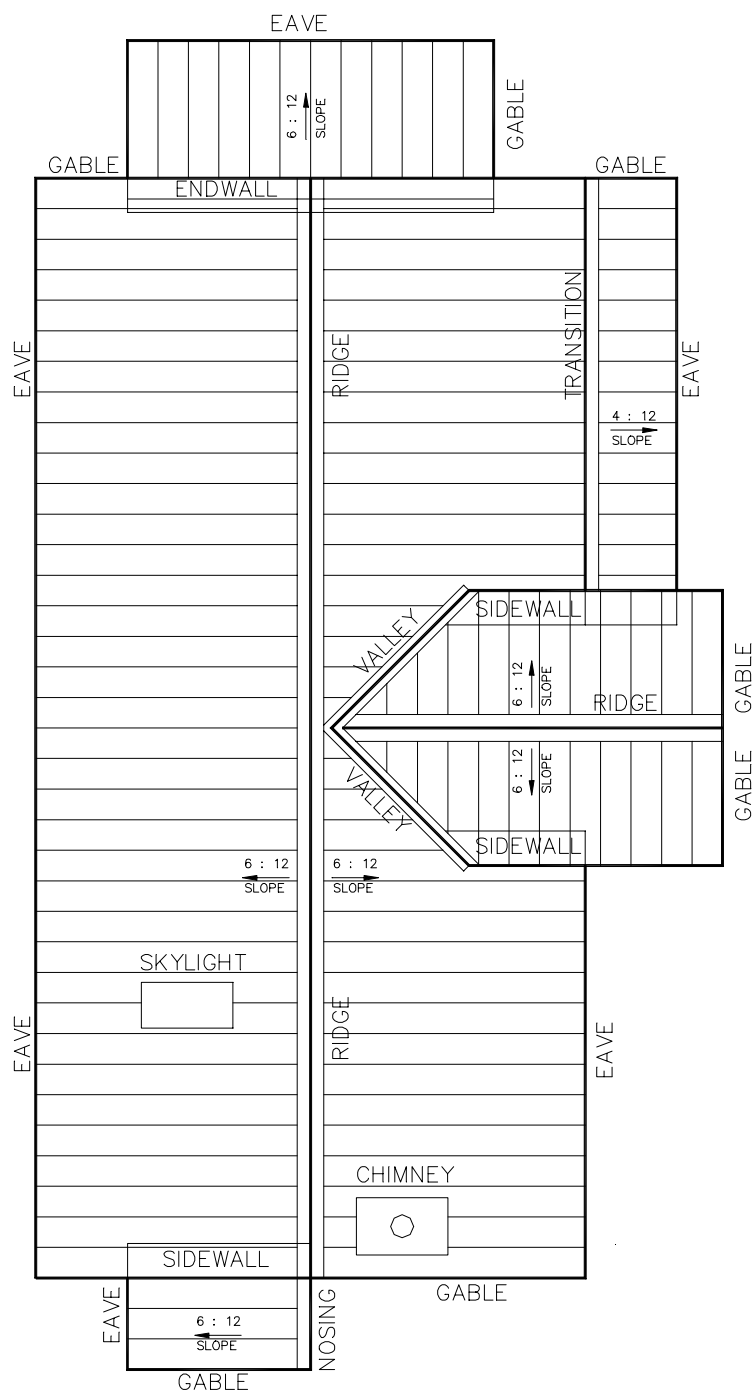


Snap-Lock Engaged Seam Interlock With Clip



Snap-Lock Profile Showing Clip Location

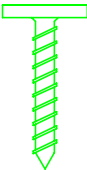
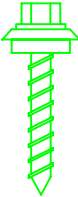
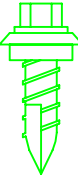

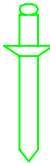
Typical Roof Plan



Flashing	Detail Sheet #(s)	Quick Find (Part #'s)
Chimney	27-29	37, 76-80
Eave	10-15	40-49H
Endwall	20, 21	80-81
Gable	6-9	50-56H
Nosing	16-19	84-87H

Flashing	Sheet #(s)	Quick Find (Part #'s)
Ridge	3-4	90-91
Sidewall	30, 31	70-76
Skylights	24-26	36, 76
Transition	22, 23	30-33
Valley	5	26

Fastener Guidelines

Profile	Description	Part #	Uses
	Clip & Panel Screws #10-12 x 1" & 2" Phillips Pancake Head (Requires a #2 Phillips driver)	# 8 C 10 (1") # 8 C 20 (2") Packaged 250 or 500 / Bag	Use for concealed attachment of panels (centered into slots), also for attaching joggle cleats at eaves and valleys, and certain trim components.
	#10 Woodgrip Screws (With Washer) #10 x 1", 1-1/2", & 2" In stock, all colors #10 x 2-1/2" & 3" Special Order (Requires a 1/4" nut driver)	# 8 W 10 (1") # 8 W 15 (1 1/2") # 8 W 20 (2") # 8 W 25 (2 1/2") # 8 W 30 (3") Packaged 250 or 500 / Bag (Specify Color and Length)	Use for exposed fastener applications into a wood substrate. If it is attaching two layers of metal to the substrate, use of sealant between the metals is recommended.
	#14 Woodgrip Screws (With Washer) #14 x 1 1/2" Plated Steel (Requires a 5/16" nut driver)	# 8 H Packaged 250 or 500 / Bag	Use head fasteners to pin panels to substrate. See instructions.
	Stitch Screws (With Washer) #12 x 3/4" (Requires a 1/4" nut driver)	# 8 S Packaged 250 or 500 / Bag (Specify Color)	Use when attaching metal to metal, but <i>not</i> to a wood substrate, e.g., attaching ridge cap or endwall to a panel rib top.
	Pop Rivets 1/8" x 1/8" Steel (Requires a 1/8" rivet setter)	# 8 R Packaged 1,000 / Bag (Specify Color)	Use in the same manner as stitch screws above. Pre-drilling is required.

- These are the standard fasteners recommended for *Snap-Lock Standing Seam* metal roofing.
- Refer to Notes For the Designer / User for fastener spacing.
- In all details where fasteners are used to attach components to a wood substrate, fasteners must penetrate into the decking a minimum of 1", or penetrate through the decking.
- Roofing nails, used to attach trim components, must be corrosion resistant. They are not provided by Summit Pacific Metal Sales.
- Exposed fasteners must match the color of the roofing, and have a rubber sealing washer.

Proper Setting of Washered Screws

(Woodgrips and Stitch Screws)



Important Notes For the Designer / User

Please read and understand the installation guide carefully and completely before starting work.

- Steel Substrates:** Snap-Lock uses a 24 gauge steel substrate, and it is protected with either a G-90 galvanized Zinalume[®], or Galvalume[®] coating. The steel is Grade D or AZ50, providing excellent strength and durability for long life standing seam roofing systems. You must isolate roofing and flashings from contact with dissimilar metals. A special 26 gauge steel substrate is available in certain colors and configurations.
- Paint Finishes:** Summit Pacific Metal Sales provides an array of standard low gloss colors. Custom colors are available with certain minimums and cost considerations. We offer the following paint coating:

Kynar-500[®] (70% resin) is *the* top-of-the-line paint finish for metal roofing products. Known chemically as polyvinylidene fluoride, it offers the greatest resistance to fading and chalking, maintaining its rich luster for decades. It is baked on the steel substrate at 475° in a continuous coating process. Our standard colors are available in low gloss formulations, dramatically lowering the glare common with metal roofing finishes, and have a Thirty-year limited warranty when certain site and installation criteria are met. Ask Summit Pacific Metal Sales for warranty details.
- Maintenance:** Very little, if any, maintenance is needed for the properly installed Snap-Lock Standing Seam roof system. All roof areas will need a fresh rainwater shower occasionally and removal of debris falling from trees, etc. Contact Summit Pacific Metal Sales should you wish more information regarding cleaning of the finish. As with all roofs, common sense suggests very heavy snowloads be lessened to reduce the likelihood of damage.
- Trim Components and Accessories:** A wide array of matching trim, accessories and fasteners as shown in this installation guide, is available in matching steel and colors. Many of these items are readily available, while others will take additional time. Custom trim flashings, chase caps, beam caps, crickets, plumbing and heating jacks, and a wide variety of other accessories are available. In this guide the drawings detail both cleated and uncleated fascia trim attachments. For optimum performance, holddown, and concealed fastener appearance, select the cleated attachment methods. See your Summit Pacific Metal Sales representative for pricing and details.
- Technical Services:** You may need some additional assistance with your project. For example, unusual roof layouts, wind loading, etc., will require special attention. We have over twenty years of experience in the metal roofing installation industry. Consult your Summit Pacific Metal Sales representative for prompt, professional assistance in your project applications.
- Scope:** All details, recommendations and suggestions in this manual are general in nature, and the details and drawings herein are correct to the best of our knowledge and experience. This is not intended to cover all instances, building requirements, designs or codes. The details may require adaptations, changes or revisions for each project since conditions will vary from one project to another and may be unique for each application. This guide is no substitute for common sense and experience. It is solely the installer's responsibility to follow local and state building codes and any other job requirements, as well as observe all safety procedures.

Important Notes For the Designer / User (Cont'd.)

7. **Orders:** Ordering and purchasing of Summit Pacific Metal Sales' products are subject to our Standard Terms and Conditions Of Sale and Order Guide. We offer a template to assist in ordering that will help you generate a complete list of what you'll need for your project the first time. Panel and trim dimensions are nominal.
8. **Deliveries:** Check deliveries at the time of shipment and note any shortages or damage with the shipper. Check quantities against the packing slip. Panels over 30' long will require special handling. Contact Summit Pacific Metal Sales for further information regarding long panel handling. Proper handling will avoid damage due to bending and twisting.
9. **Material Storage:** Store materials out of the weather in a clean, dry place. One end of each container should be slightly elevated to allow any moisture to run off. Care should be taken to prevent contact with the ground or any substance which may cause a discoloration in the finish during storage. Store materials to provide ventilation and prevent bending, twisting or abrasion. Strippable film shall not be left exposed to the sunlight, and should be removed immediately prior to trim installation.
10. **Slope:** The minimum recommended slope is 3:12. Consult Summit Pacific Metal Sales regarding lower slope applications. Avoid areas where ponding or standing water occur as it will void the product warranty.
11. **Snow Area Considerations:** Careful consideration should be given to metal roofing in snow areas. The best building designs using metal roofing take into account building use, safe snow shed areas (particularly at ingress and egress), and roof penetrations (plumbing and heating vents, chimneys, skylights, etc.) which should be located near the top of the roof and away from snow shed areas. Use snow retention systems, if necessary. 18 gauge steel seam stiffeners, used to increase the lateral strength of seams under loads imposed by valley areas and perpendicular roof layouts (creating impact zones) are available to help reduce the likelihood of snow damage. Use of valleys and gutter systems should be minimized or eliminated altogether. In areas of heavy snow, excessive snow buildup should be removed to prevent damage. A rubberized ice and water type membrane suitable for metal roofing should be used in all areas subject to ice buildup. Certain geographic areas and jurisdictions may require this type of membrane for proper waterproofing performance. Follow the recommendations of the membrane manufacturer. Snow diverters or crickets may be necessary behind chimneys, skylights, plumbing vents and heating flues. Consult the local building official for requirements for crickets and underlayments.
12. **Installation Tools:** Summit Pacific Metal Sales recommends the use of standard installation tools such as safety glasses, hammer, scratch awl, tape measure, left- and right-hand aviation snips, sheet metal shears, rubber mallet, sheet metal vice grips, rivet setter, eave hemming and ridge turn-up tools, screw gun with depth-sensing nose, caulking gun, chalk line, and drill. A 1/4" nut setter and #2 Phillips driver will also be needed for setting screws. Tools equipped with a depth locating nosepiece must be used to prevent overdriving. Special custom bending tools for panel heads and eave are available from Summit Pacific Metal Sales.
13. **Drag Load Resistance:** **Panels must be attached with an adequate number of head fasteners** to the substructure at top of the panel to prevent them from sliding down the slope of the roof. Head fasteners are typically located at the top of all panels, including panels adjacent to ridges, endwalls, skylights, and chimney chases. The head fasteners must be staggered, penetrate into solid framing, and not compromise the structure. Use bare #14 x 1-1/2" Woodgrips for head fasteners. Consult Summit Pacific Metal Sales for more details.

Important Notes For the Designer / User (Cont'd.)

14. **Prior to Roof Installation:** Never install any material if its quality, or the quality of the subframing, is in question. Substructure must be on an even plane from eave to ridge to avoid panel distortion. The installer shall examine the substrate to ensure that it and all supporting members are straight, level, plumb and true. Report any variations and potential problems to the general contractor or architect in writing. Do not start work until unsatisfactory conditions have been corrected. Installation of any products shall deem acceptance of products and substrate. We recommend solid plywood sheathing minimum 5/8" thick. Do not install roofing over decks with structural damage or trapped moisture. Make sure the building is square and plumb to maintain proper roof alignment and coverage. The rake angles must be straight and square with roof plane.
15. **Underlayments:** After verifying that the roof is true and square, the roof deck is ready for underlayments. A 30# asphalt saturated felt underlayment is recommended, and should be used in conjunction with rubberized ice and water shield type membranes as necessary. Apply underlayments starting at the eave of the roof, and continue upwards to the top of the roof, and over the ridge or nosing, or up the endwall. Follow underlayment manufacturer's installation recommendations. Do not allow underlayments to be exposed for prolonged periods of time, as they may wrinkle and warp, creating an uneven substrate that may telegraph through the metal roofing panels. Underlayments are not shown in all locations in all drawings for clarity.
16. **Fasteners:** Fasteners for trim components must be a corrosion resistant steel that provides adequate penetration into the roof deck, and are typically installed at 16" on center (o.c). Panels are attached with clips and #10-12 x 1" "Clip & Panel" Phillips pancake head screws. For normal environments over a wood deck, maximum spacing of non-UL clips is 24" O.C., with clips no greater than 6" from all panel terminations; consult Summit Pacific Metal Sales for attachment details with UL rated clips and attachment over purlin and steel decks. Use one screw per non-UL clip, two screws for UL clip. We recommend reducing the clip spacing by 50% in areas exposed to high winds or heavy snows.

Use care to ensure fasteners are installed perpendicular into the roof substrate. Consult Summit Pacific Metal Sales for further details. Exposed fasteners used to attach components to wood substrates, shall be "Woodgrip" screws with an integrated washer, and shall be painted to match. "Stitch" screws or pop rivets, painted to match, should be used when attaching metal to metal, e.g., when attaching a ridge cap to a rib top. See Page 11, "Fastener Guidelines" for further details. Tools equipped with a depth locating nose piece (2,000-2,500 RPM) must be used to prevent overdriving.

17. **Panel Installation:** Order panels in continuous lengths to eliminate end laps. Integrate trim accessories with underlayments and panels as shown. Panel and trim component installation should always start at the leeward side of the building, and be applied into the direction of the *source* of the prevailing winds. Begin installation once alignment of the panels and squareness of the roof is determined. Panel installations shall be held true, plumb, and straight. Periodic checks and measurements should be made during installation to ensure panels series are not gaining or losing width.

Important Notes For the Designer / User (Cont'd.)

18. **Thermal Expansion Considerations:** Remember to never pull the panel up tight to the eave hook or joggle cleat, as it will restrict thermal movement. The amount of thermal movement extremes (which increases when roof has sun exposure) is a function of panel material, panel length, and seasonal temperature swings. Generally, panel movement is about 1/10" per 10' of panel. The gap between the panel hem and the cleat or hook must take this expansion into consideration, and must be increased when the roof is installed in warmer weather conditions. Check this gap prior to snapping panels into place and installing fasteners. When panel is properly attached to the roof, snap the female rib of the next panel down onto the male rib. Begin snapping at the bottom of the panel and work up the roof plane. Never snap the panel down at the top and the bottom and work your way to the middle, as this will stress the panel.
19. **Ventilation:** Metal roofing is subject to condensation and provisions for ventilation should be considered. Designs in this guide are only a part of a complete ventilation system. It is up to the designer to create a system that will address condensation problems, including flow-through ventilation. Consult the architect and a qualified HVAC contractor for assistance.
20. **Panel End Detailing:** The ends of all panels must be attached to the roof substrate, including eaves and valleys. Panel ends must either be held down with concealed joggle cleats or hooks integrated into the trim component. Failure to properly attach panels will allow damage due to wind uplift, ice and snow damage, etc. See Item 18 (Thermal Expansion Considerations) and Item 13 (Drag Load Resistance) for related information.
18. **Sealants:** Sealants are recommended in the installation of metal roofing systems. A high-grade butyl caulking and butyl sealant tape help ensure the weathertight integrity of the roof. Sealants should be used as noted in the guide, and should be applied to the "wet side" of fasteners at joints and overlap conditions to prevent water intrusion. Sealants are not shown in all drawings for clarity.
21. **Roof Traffic:** During installation, use rubber-soled safety shoes while working on metal roofs. When walking on the roof panels is unavoidable, walk only in the flat. Walking on the ribs can cause damage to the panels. Step in the center of the panel only and never on top of a rib or immediately next to a rib. Ensure that workers' shoes do not pick up abrasive materials that could damage roofing materials.
22. **Clean-Up:** All product surfaces shall be free of debris at all times. Installed surfaces should be wiped clean at the end of each work period. Never cut panels over metal surfaces. Metal shavings will rust on the surface - possibly voiding any warranty.
23. **Touch Up:** Touching up of panels is not recommended by Summit Pacific Metal Sales. If desired, only minor scratches should be touched up, and should be done only with a very fine tipped hobby painter's brush. The original baked on finish cannot be restored with field touch up, so panels with excessive scratches or damage should be completely replaced. Touch up paint does not have the same durability as the factory finish, as it will fade at a greater rate than the factory finish.

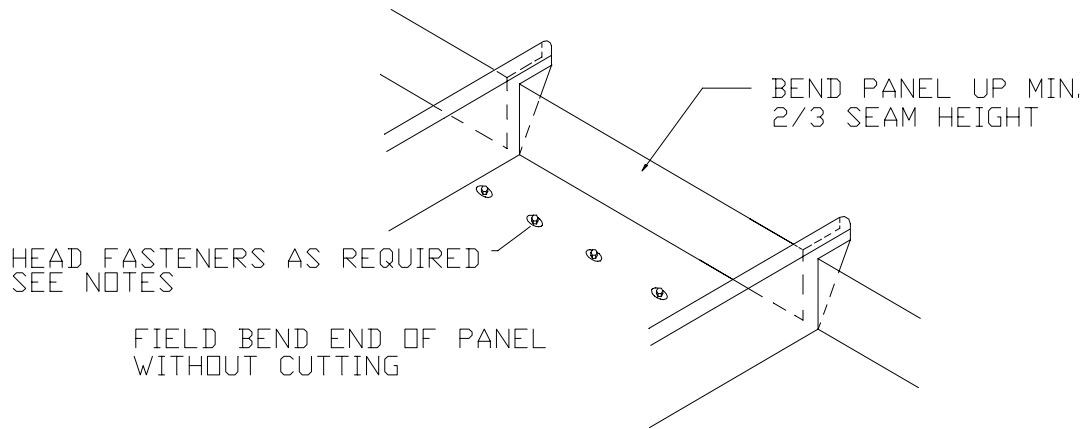
Important Notes For the Designer / User (Cont'd.)

25. **Limitation of Liability:** We (Summit Pacific Metal Sales) are providing the information regarding installation an advisory capacity only and do not warrant the details, recommendations, and suggestions provided in this capacity. Summit Pacific Metal Sales is not liable for damages resulting from improper use or installation procedures. Summit Pacific Metal Sales reserves the right to change, modify or eliminate any and all details, components, recommendations and suggestions used in this manual without notice and without incurring any obligation. Complete Standard Limited Warranty information is available from Summit Pacific Metal Sales upon request. No other warranty, whether express or implied, applies. Summit Pacific Metal Sales shall not be liable for special, indirect, or consequential damages. Remedies of the purchaser set forth therein are exclusive, and the liability of Summit Pacific Metal Sales with respect to any sale or anything done in connection therewith, will in no case exceed the invoice price of the production on which such liability is based.
26. **Oil Canning:** Because of the inconsistencies in the base steel tolerances, alloys and the galvanizing process of light gauge steel products and uneven substrates over which they are applied, it is commonly accepted in the industry that a certain amount of waviness, or "oil canning," may be evident in the rollformed product. This is more evident with longer and wider panels, and is reduced when Low-Gloss paint finishes are used. Oil canning shall not be construed as a product defect and shall not be cause for product refusal.
27. **Standards:** Standards of the following societies should be strictly adhered to in the design and installation stages of any project using metal panels, light-gauge framing members, and associated accessories:
- American Iron and Steel Institute (AISI), "Light Gauge Cold-Formed Steel Design Manual"
 - American Society of Testing Materials (ASTM), A-446 Structural, Physical Quality for Galvanized Steel Sheet
 - National Roofing Contractors Association (NRCA), "The NRCA Construction Details"
 - Sheet Metal and Air Conditioning Contractors National Association (SMACNA), "Architectural Sheet Metal Manual"

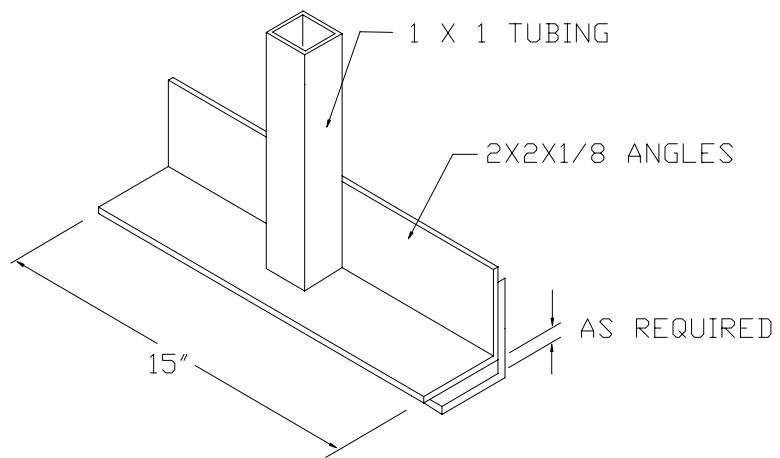
Review the *Snap-Lock Standing Seam Metal Roofing Guide Specifications* and the *Ordering Guide* provided by Summit Pacific Metal Sales for additional details.

Snap-Lock Standing Seam Metal Roofing Detail Drawings

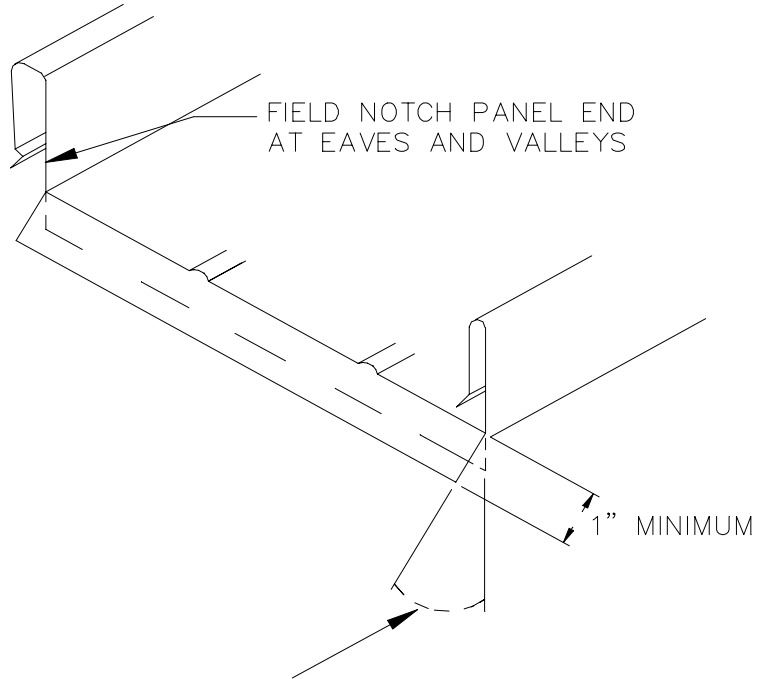
<u>Detail Drawing</u>	<u>SHEET #</u>	<u>Detail Drawing</u>	<u>SHEET #</u>
Panel Head Detailing.....	1	Std. Nosing, Uncleated	17
Eave and Valley Hook Detail.....	2	Vented Nosing, Cleated	18
Std. Ridge / Hip	3	Vented Nosing, Uncleated	19
Vented Ridge.....	4	Std. Endwall.....	20
Valley	5	Vented Endwall.....	21
Old-Style Gable, Cleated	6	Knee Flashing.....	22
Old-Style Gable, Uncleated	7	Elbow Flashing	23
Std. Gable, Cleated.....	8	Skylight Downhill	24
Std. Gable, Uncleated.....	9	Skylight, Side Curb	25
Std. Eave w/ Hook, Cleated	10	Skylight, Top Saddle	26
Std. Eave W/ Hook, Uncleated	11	Chimney, Downhill.....	27
Drip Eave, Cleated	12	Chimney, Side Curb	28
Drip Eave, Uncleated	13	Chimney, Top Saddle	29
Eave W/ Joggle, Cleated	14	"L" Sidewall	30
Eave W/ Joggle, Uncleated	15	"Z" Sidewall	31
Std. Nosing, Cleated	16		



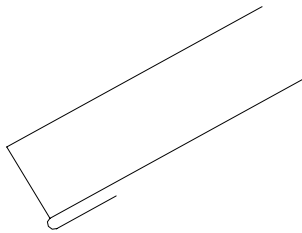
PANEL HEAD TURN-UP DETAIL (FIELD FABRICATE)



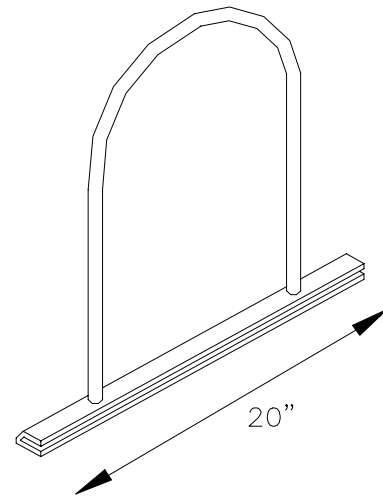
#910 SNAP-LOCK TURN-UP TOOL



FIELD NOTCH, FOLD DOWN, AND BEND PAN UNDERNEATH PANEL WITH #912 BENDER. HOOK ONTO JOGGLE CLEAT / EAVE TRIM HOOK. DO NOT PULL TIGHT TO HOOK SO AS TO ALLOW FOR EXPANSION AND CONTRACTION.

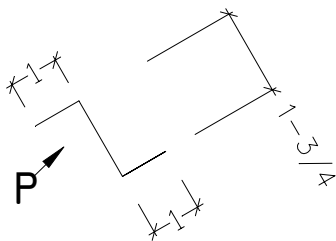
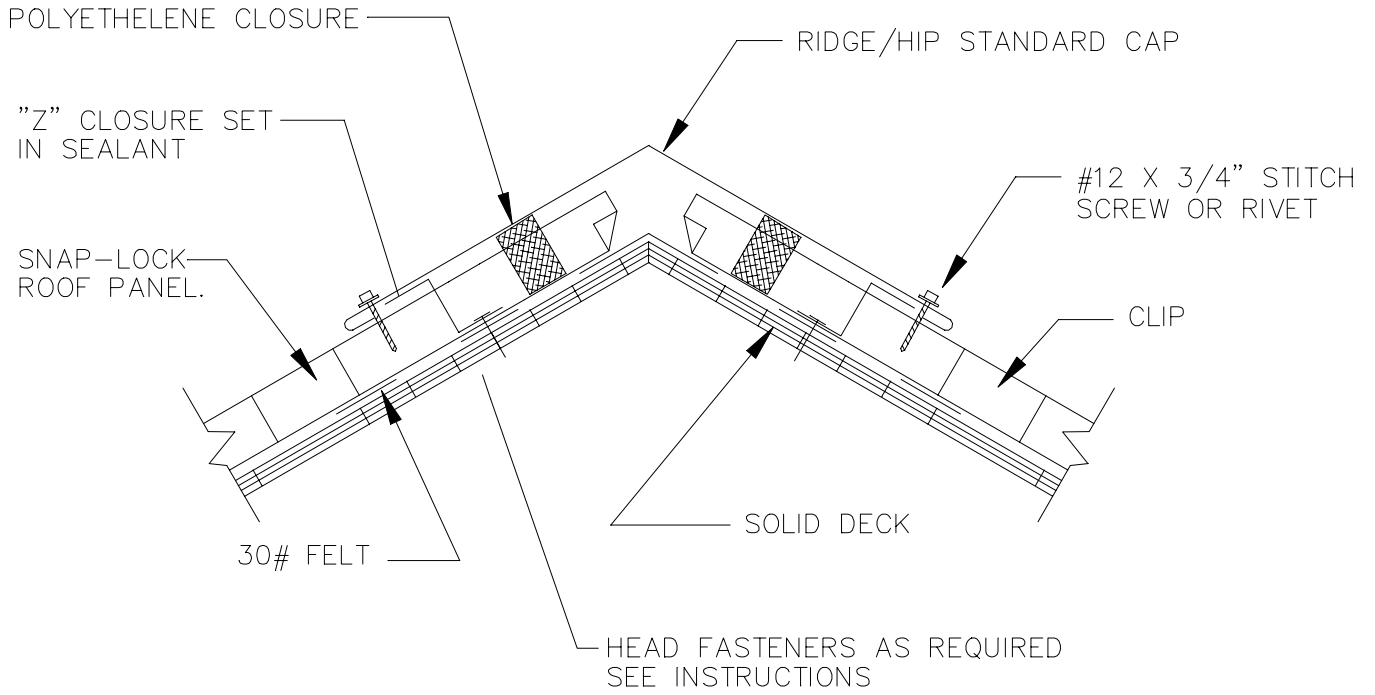


FINISHED PANEL
SIDE VIEW

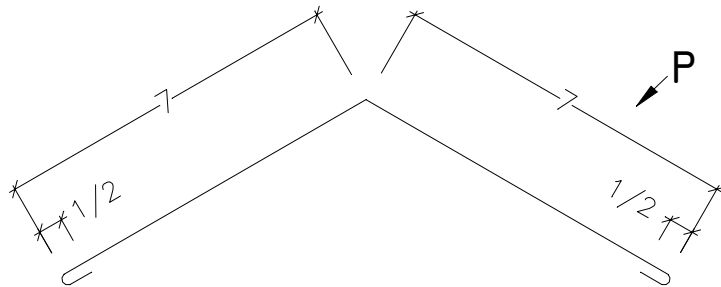


#912 EAVE / VALLEY BENDING TOOL

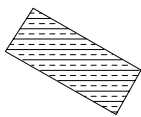
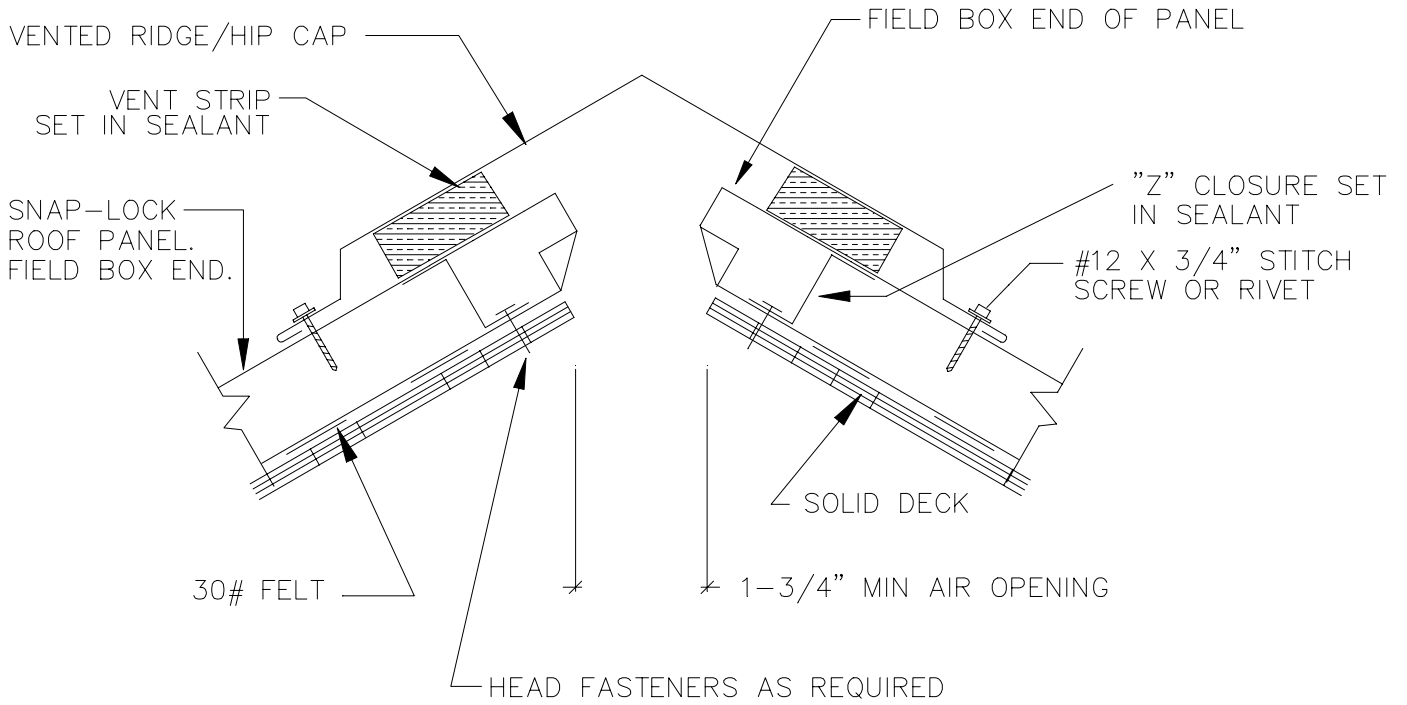
PANEL END HEM DETAIL (FIELD FORM)



#21 "Z" CLOSURE

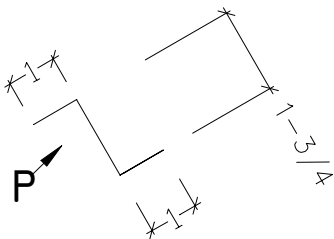


#90 RIDGE/HIP STANDARD CAP
(SPECIFY ROOF SLOPE)

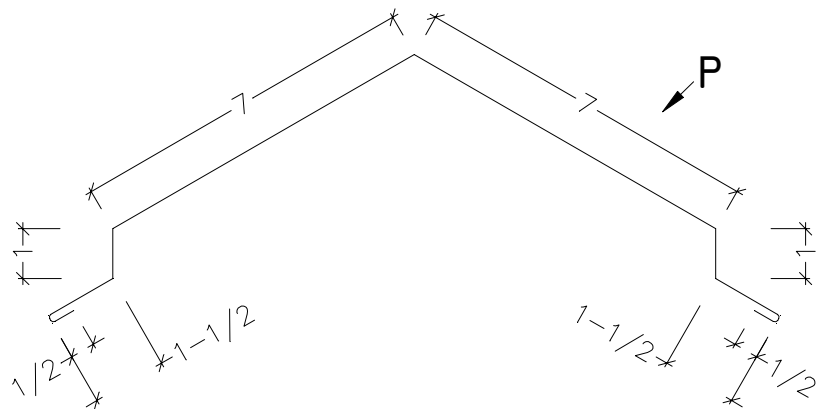


#918 VENT STRIP

SEE ARCHITECT/DESIGNER AND VENT
MANUFACTURER FOR APPROVAL OF
ANY VENTILATION DESIGN

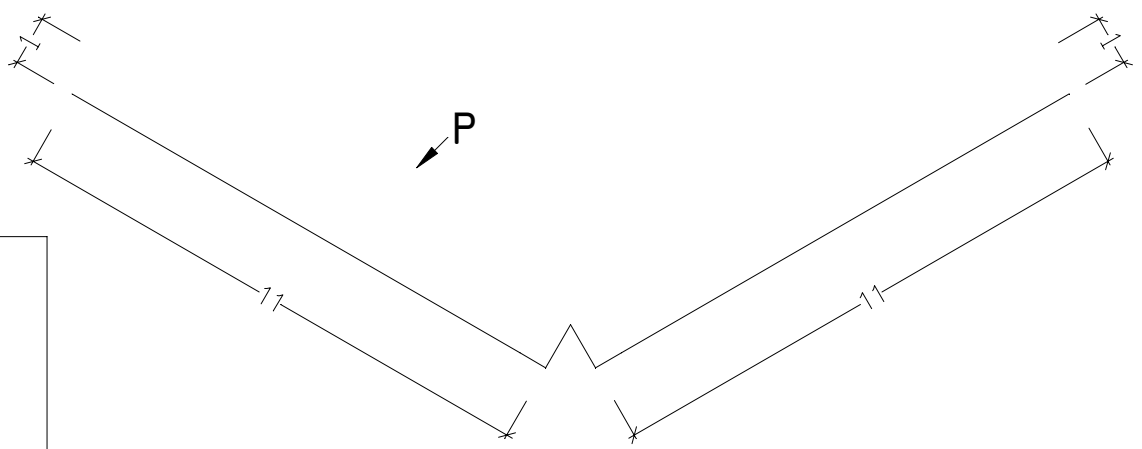
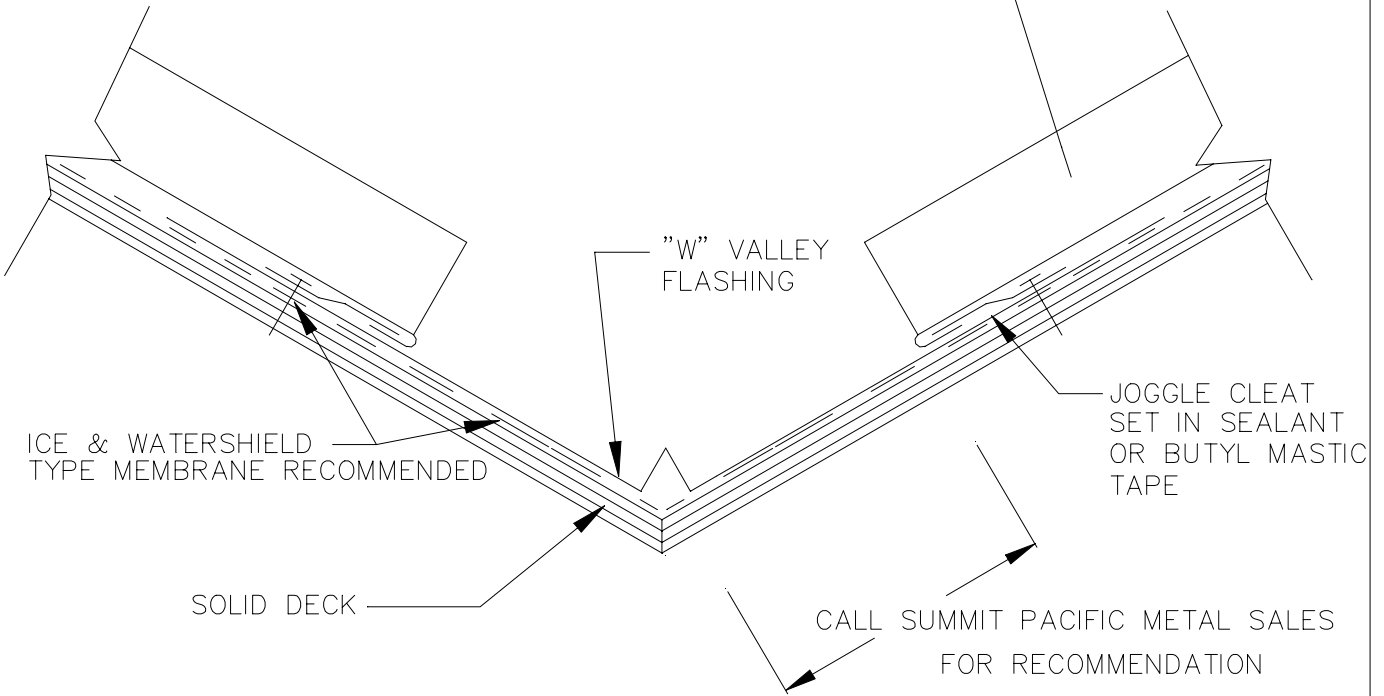


#21 "Z" CLOSURE

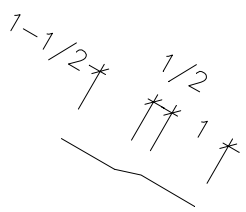


#91 RIDGE/HIP CAP, VENTED
(SPECIFY ROOF SLOPE)

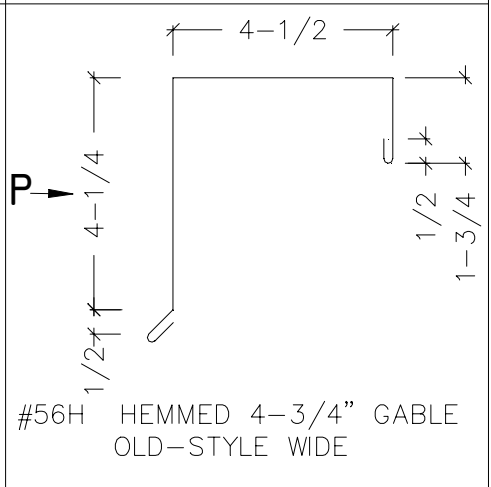
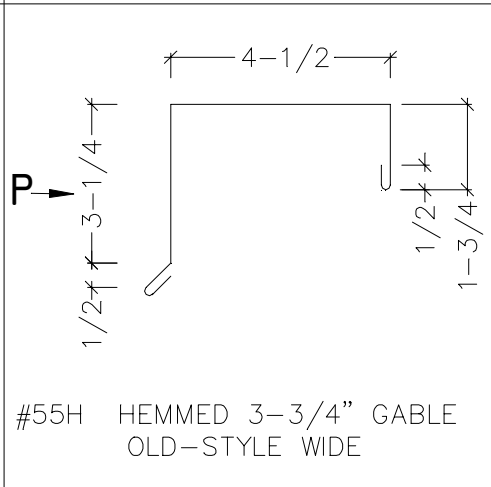
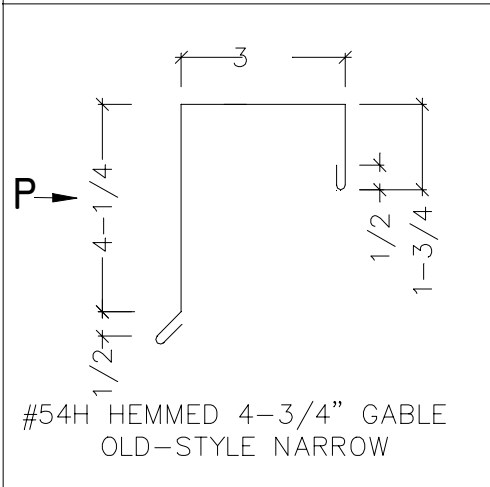
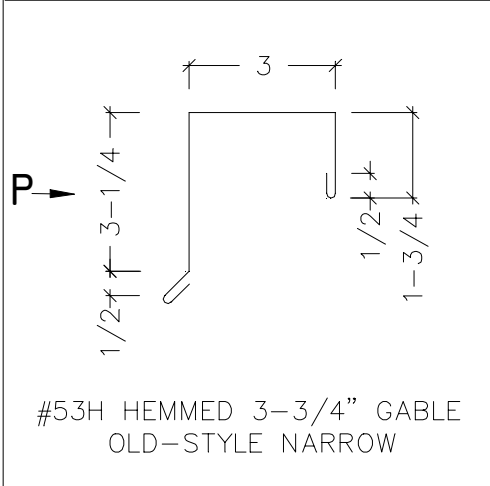
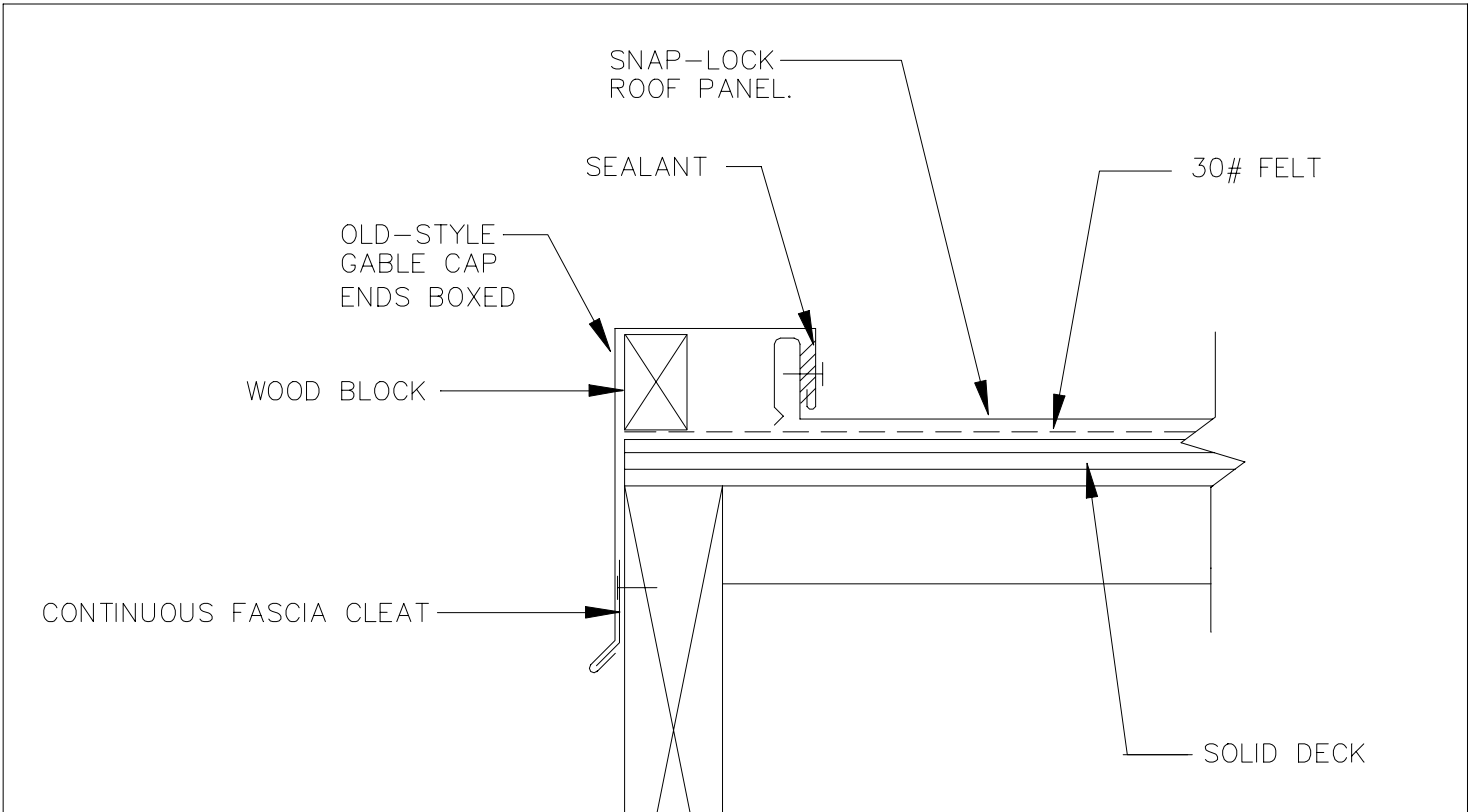
FIELD NOTCH, FOLD DOWN, AND BEND PAN
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NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW FOR
PANEL EXPANSION AND CONTRACTION.

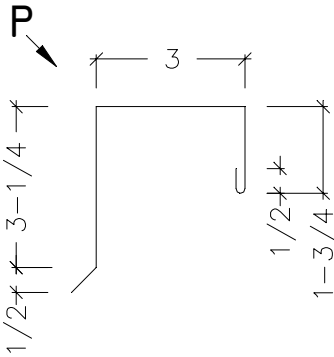
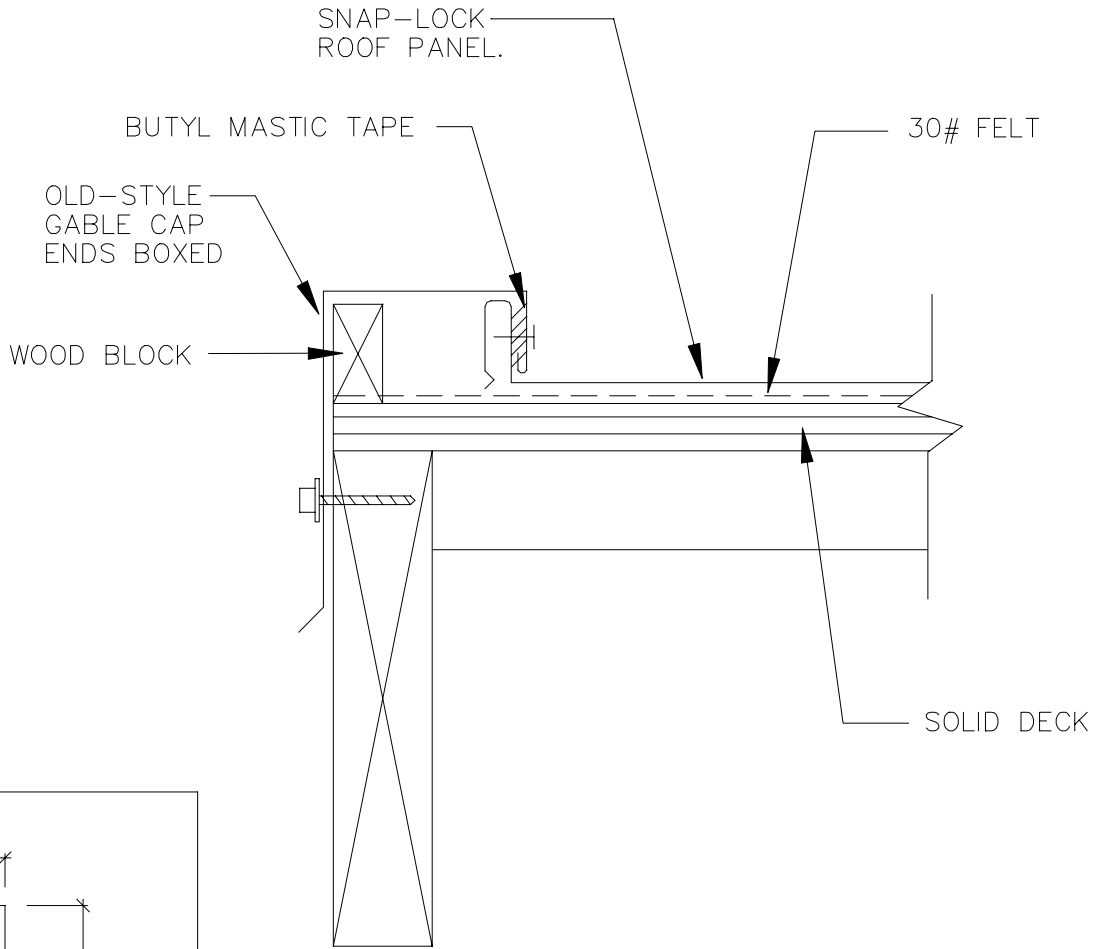


#26 "W" VALLEY FLASHING

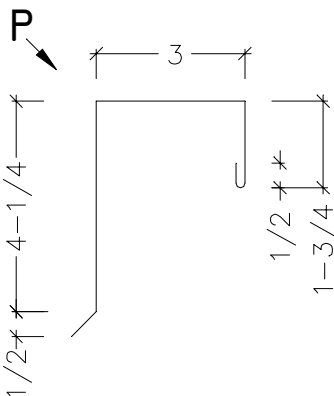


#919 JOGGLE CLEAT

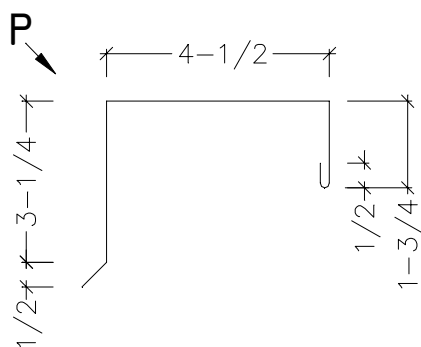




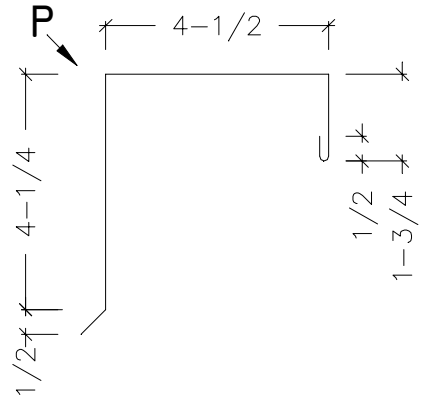
#53 3-3/4" GABLE OLD-STYLE
NARROW



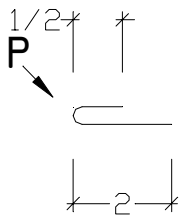
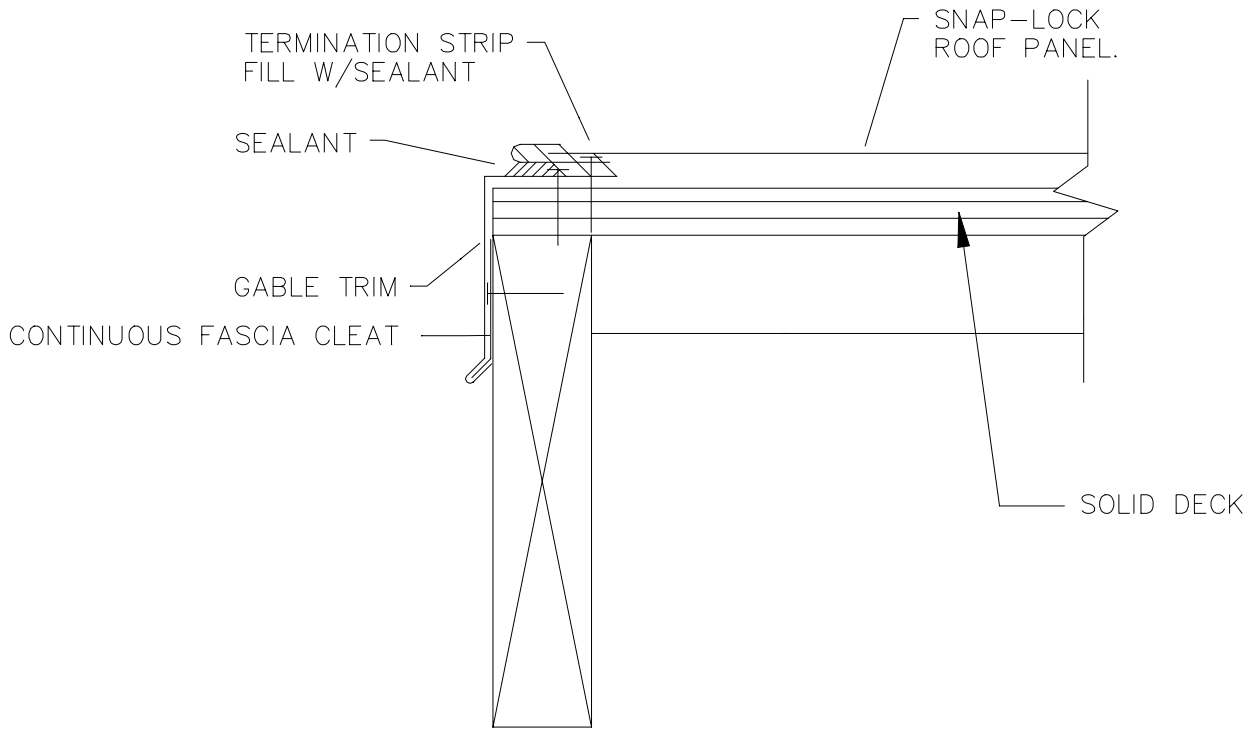
#54 4-3/4" GABLE OLD-STYLE
NARROW



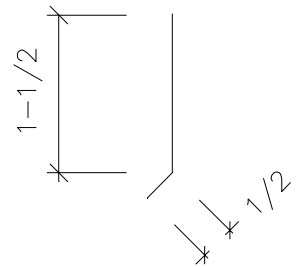
#55 3-3/4" GABLE OLD-STYLE
WIDE



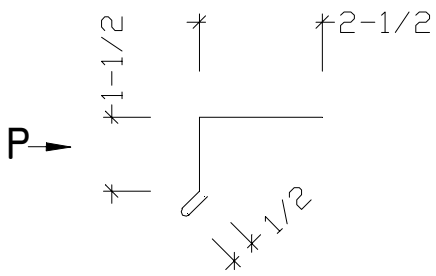
#56 4-3/4" GABLE OLD-STYLE
WIDE



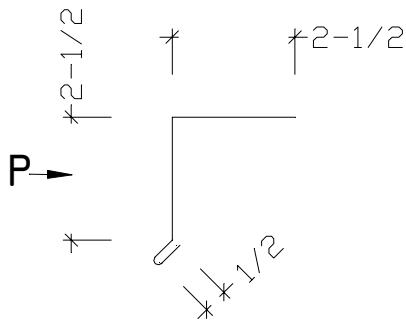
#20 TERMINATION STRIP



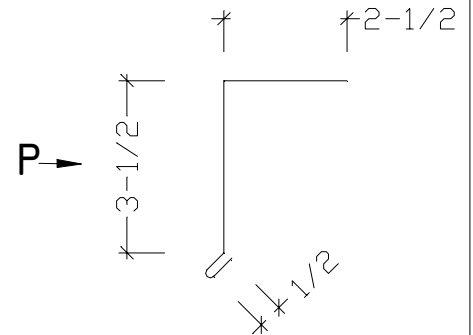
#917 FASCIA CLEAT



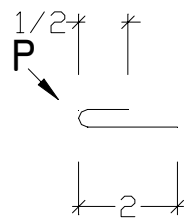
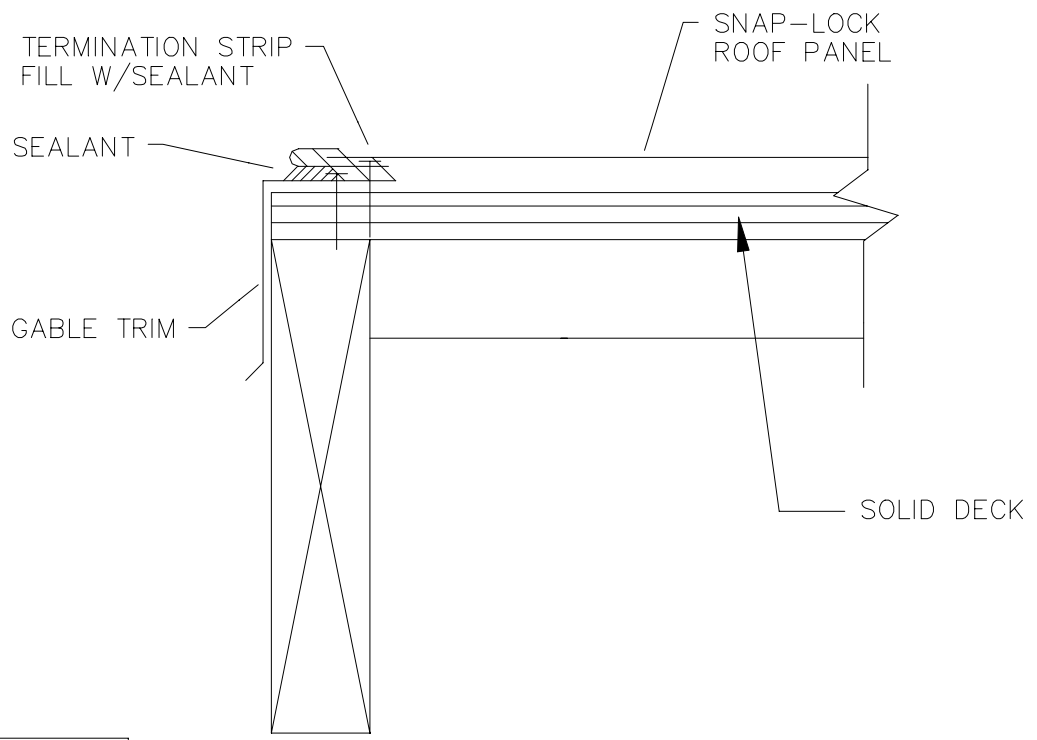
#50H HEMMED 2" GABLE TRIM



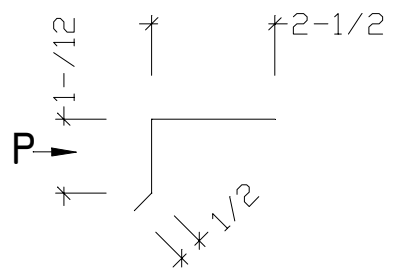
#51H HEMMED 3" GABLE TRIM



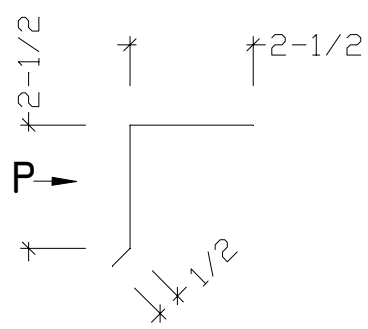
#52H HEMMED 4" GABLE TRIM



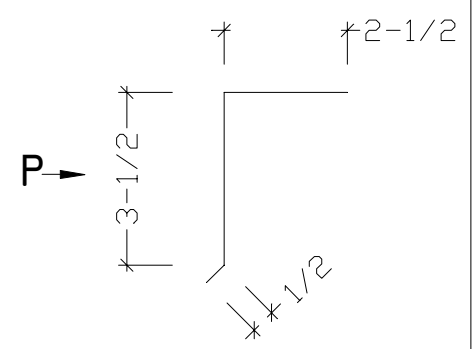
#20 TERMINATION STRIP



#50 2" STD. GABLE TRIM

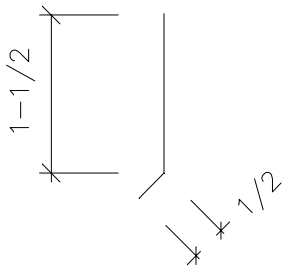
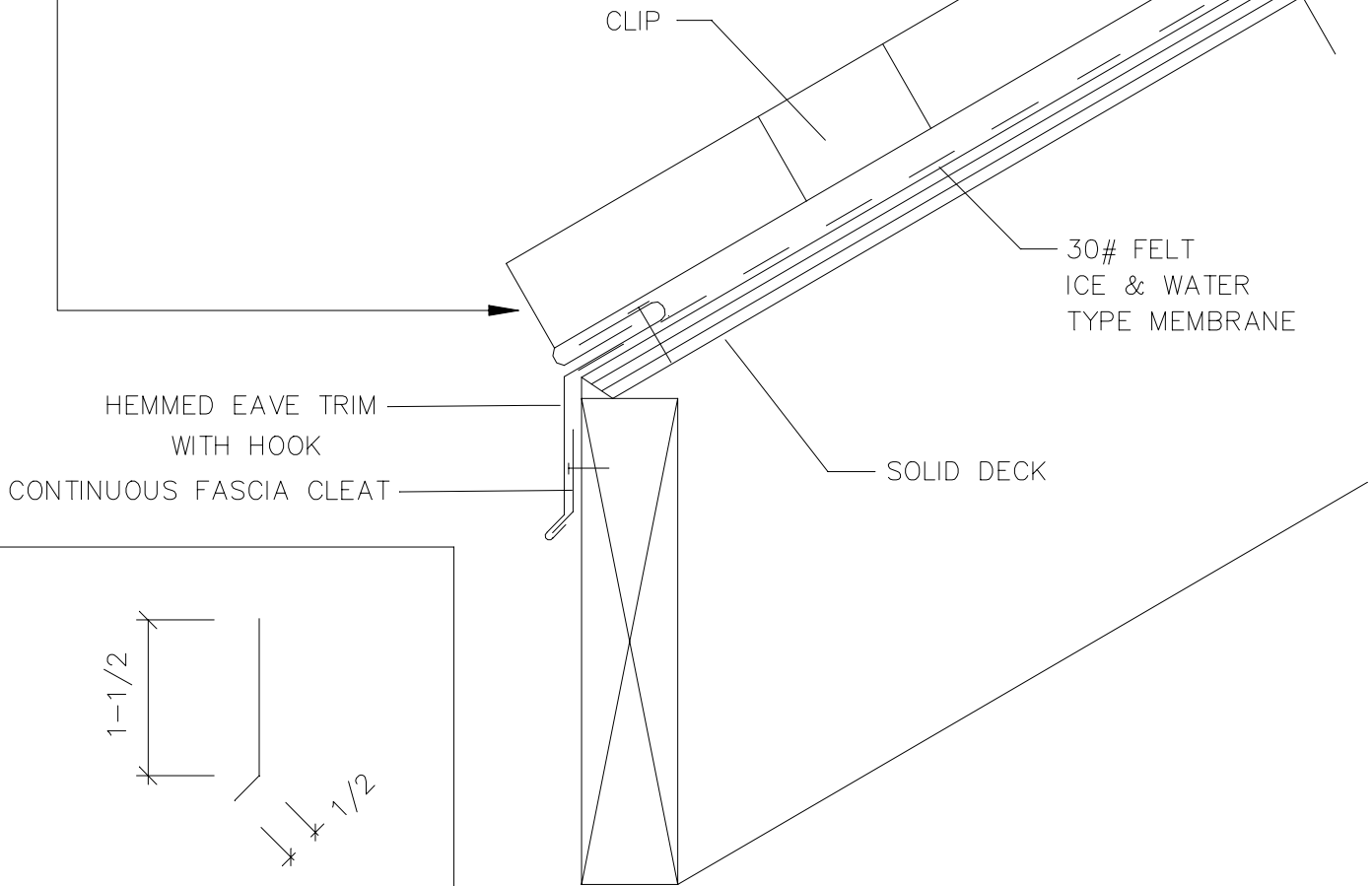


#51 3" STD. GABLE TRIM

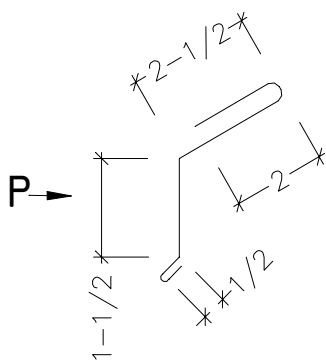


#52 4" STD. GABLE TRIM

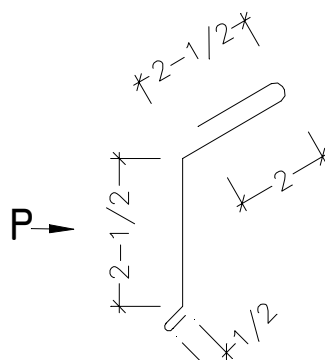
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO EAVE TRIM HOOK.
DO NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW
FOR PANEL EXPANSION AND CONTRACTION.



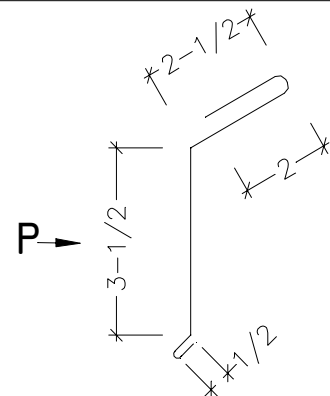
#917 FASCIA CLEAT



#44H HEMMED 2" EAVE TRIM
WITH HOOK
(SPECIFY ROOF SLOPE)

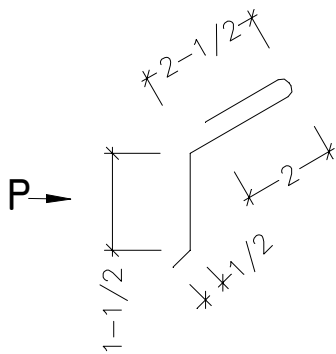
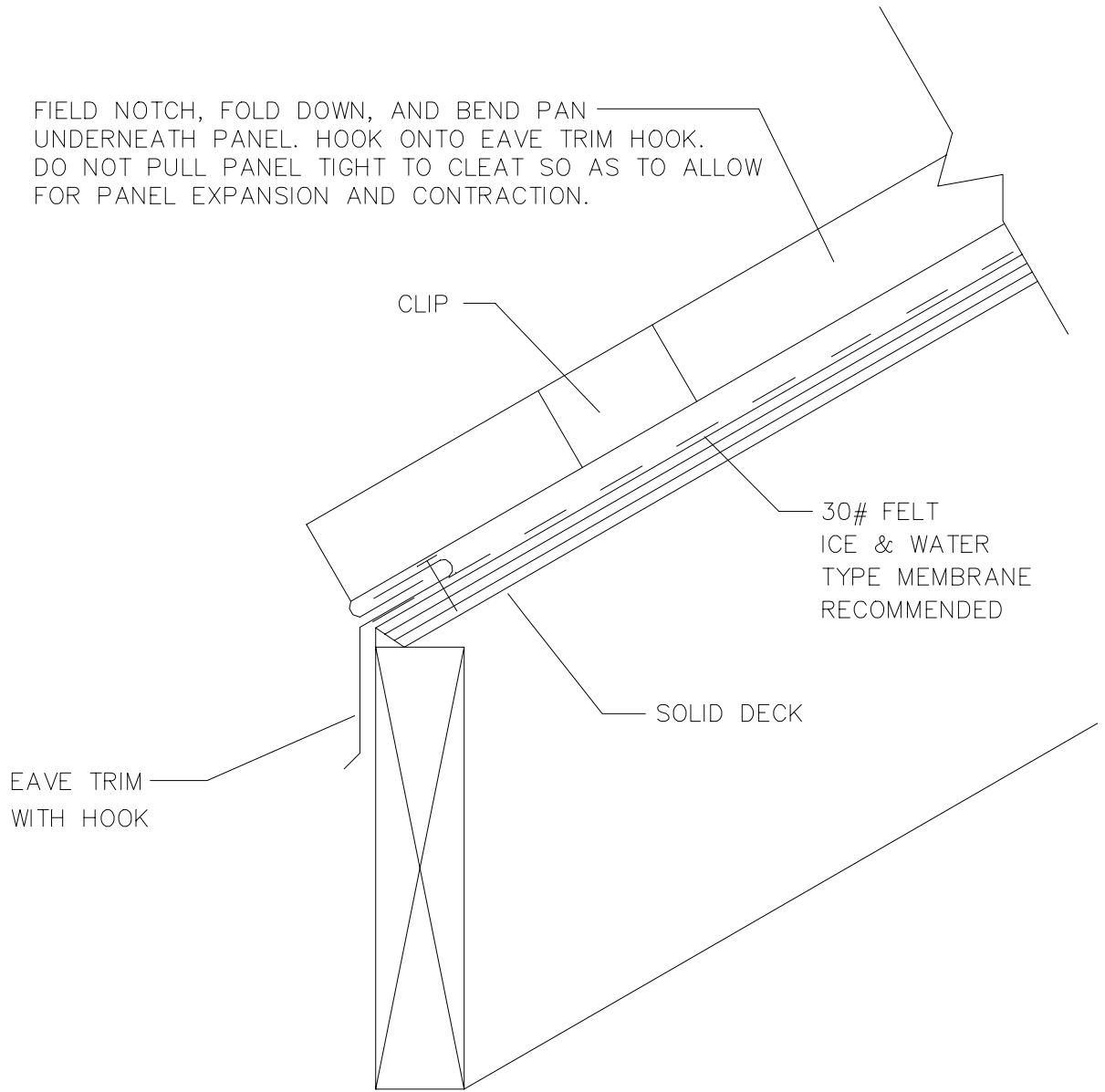


#45H HEMMED 3" EAVE TRIM
WITH HOOK
(SPECIFY ROOF SLOPE)

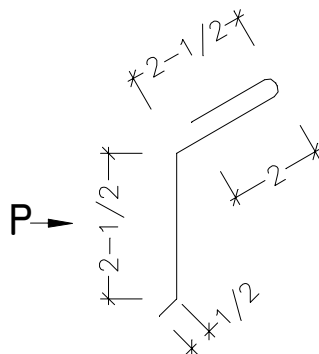


#46H HEMMED 4" EAVE TRIM
WITH HOOK
(SPECIFY ROOF SLOPE)

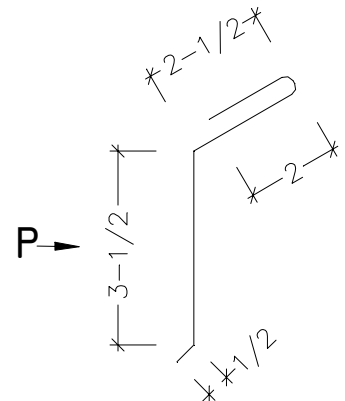
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO EAVE TRIM HOOK.
DO NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW
FOR PANEL EXPANSION AND CONTRACTION.



#44 2" EAVE TRIM W/ HOOK
(SPECIFY ROOF SLOPE)

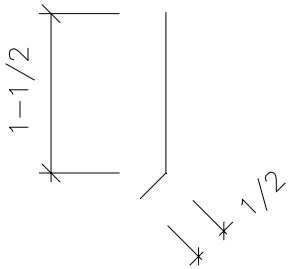
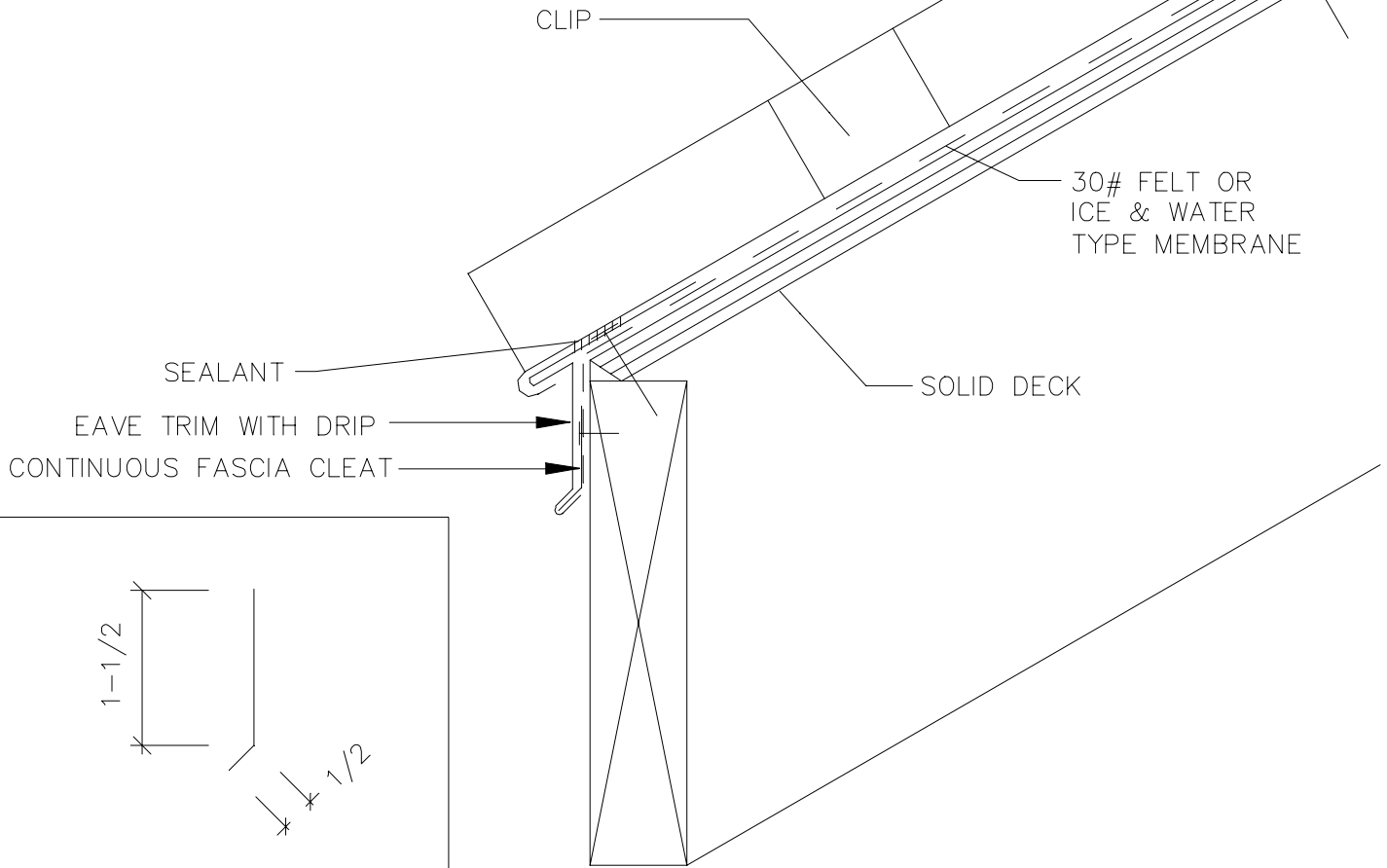


#45 3" EAVE TRIM W/ HOOK
(SPECIFY ROOF SLOPE)

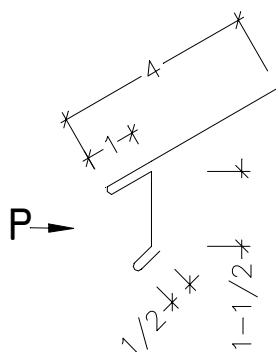


#46 4" EAVE TRIM W/ HOOK
(SPECIFY ROOF SLOPE)

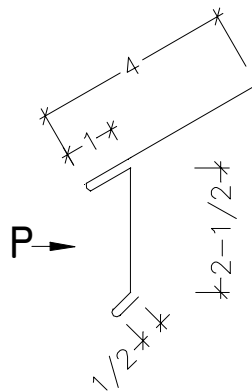
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO EAVE TRIM HOOK.
DO NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW
FOR PANEL EXPANSION AND CONTRACTION.



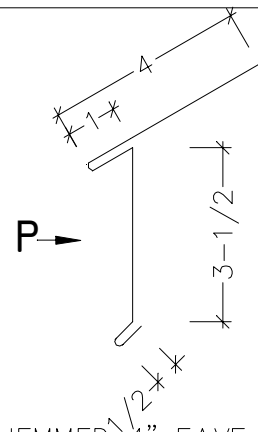
#917 FASCIA CLEAT



#47H HEMMED 2" EAVE W/ DRIP
(SPECIFY MAX. 4/12 SLOPE)

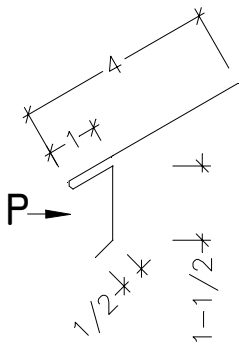
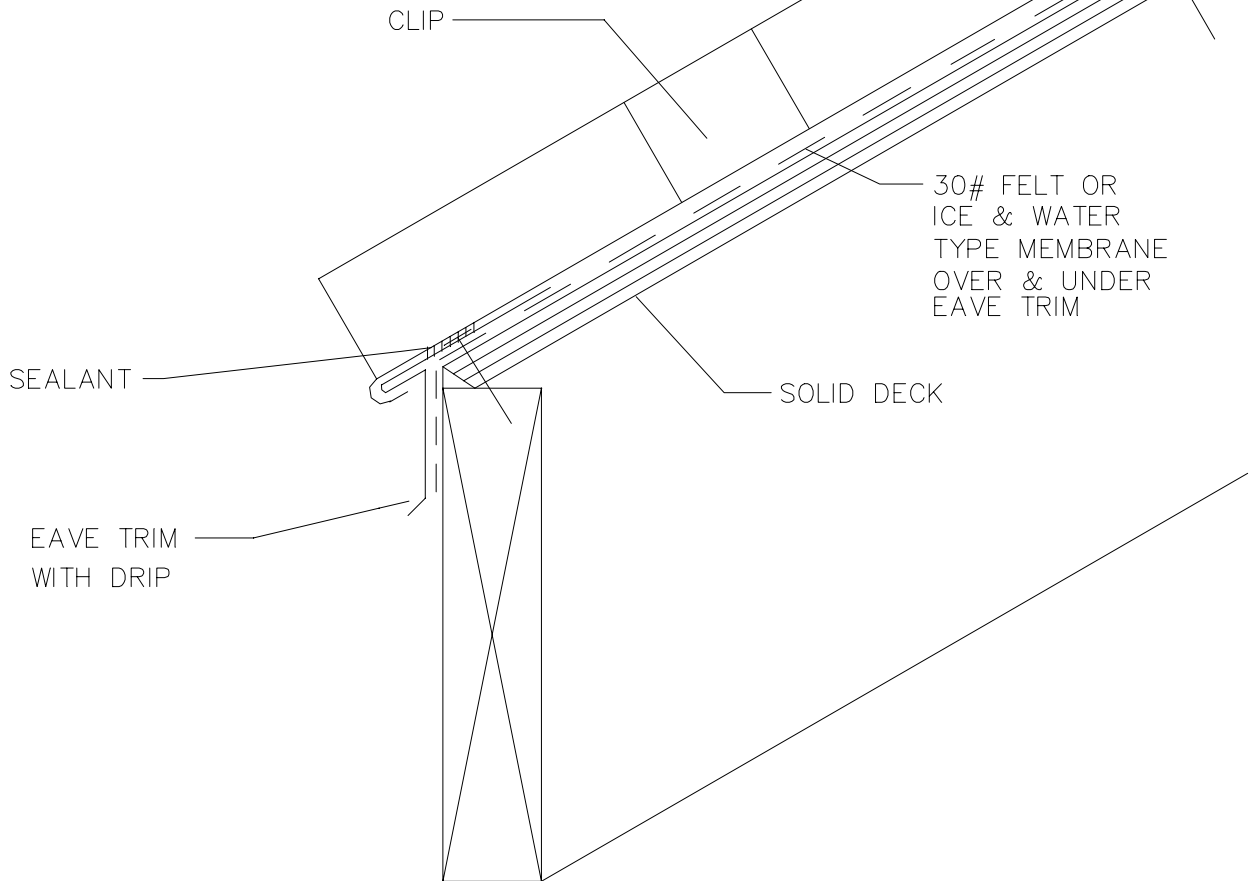


#48H HEMMED 3" EAVE W/ DRIP
(SPECIFY MAX. 4/12 SLOPE)

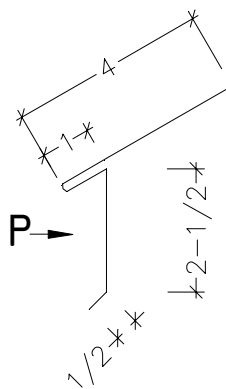


#49H HEMMED 4" EAVE W/ DRIP
(SPECIFY MAX. 4/12 SLOPE)

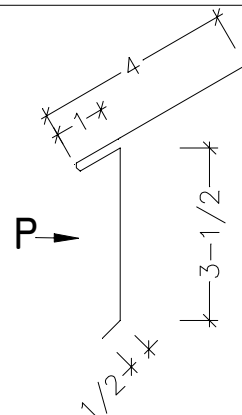
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO EAVE TRIM HOOK.
DO NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW
FOR PANEL EXPANSION AND CONTRACTION.



#47 2" EAVE TRIM W/ DRIP
(SPECIFY MAX. 4/12 SLOPE)



#48 3" EAVE TRIM W/ DRIP
(SPECIFY MAX. 4/12 SLOPE)



#49 4" EAVE TRIM W/ DRIP
(SPECIFY MAX. 4/12 SLOPE)

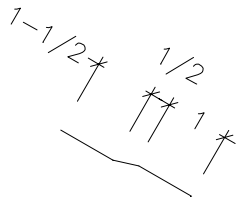
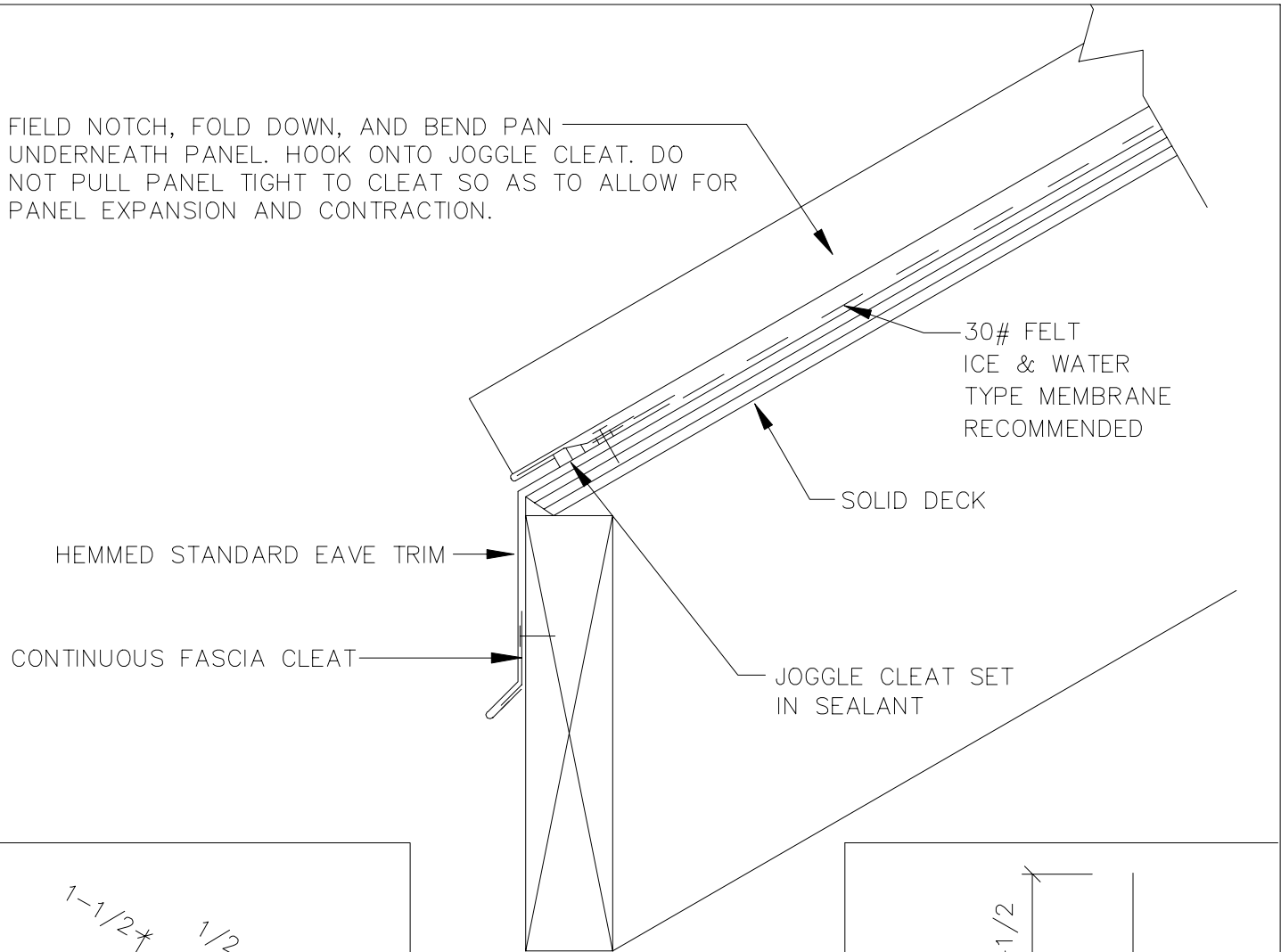
**SUMMIT PACIFIC
METAL SALES**

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TAHOE CITY, CA 96145-6928
530/583-8888 800/338-6763

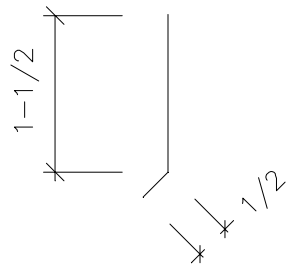
**SNAP-LOCK EAVE W/ JOGGLE
WITH FASCIA CLEAT**

SL-SHEET 14

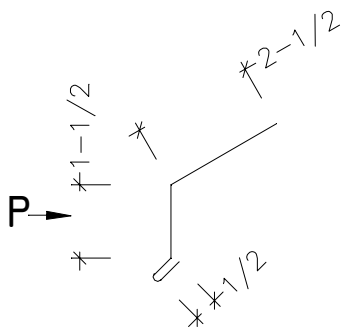
FIELD NOTCH, FOLD DOWN, AND BEND PAN UNDERNEATH PANEL. HOOK ONTO JOGGLE CLEAT. DO NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW FOR PANEL EXPANSION AND CONTRACTION.



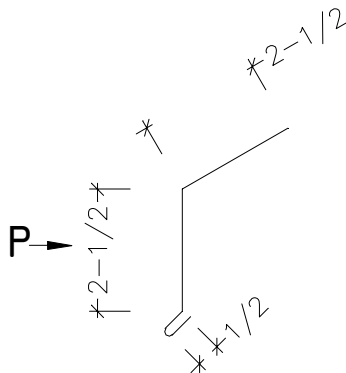
#919 JOGGLE CLEAT



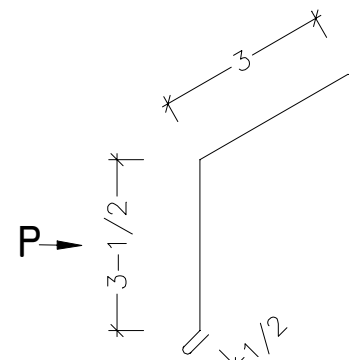
#917 FASCIA CLEAT



#40H HEMMED STD 2" EAVE TRIM (SPECIFY ROOF SLOPE)

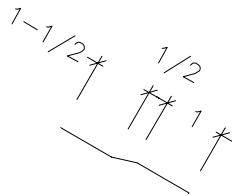
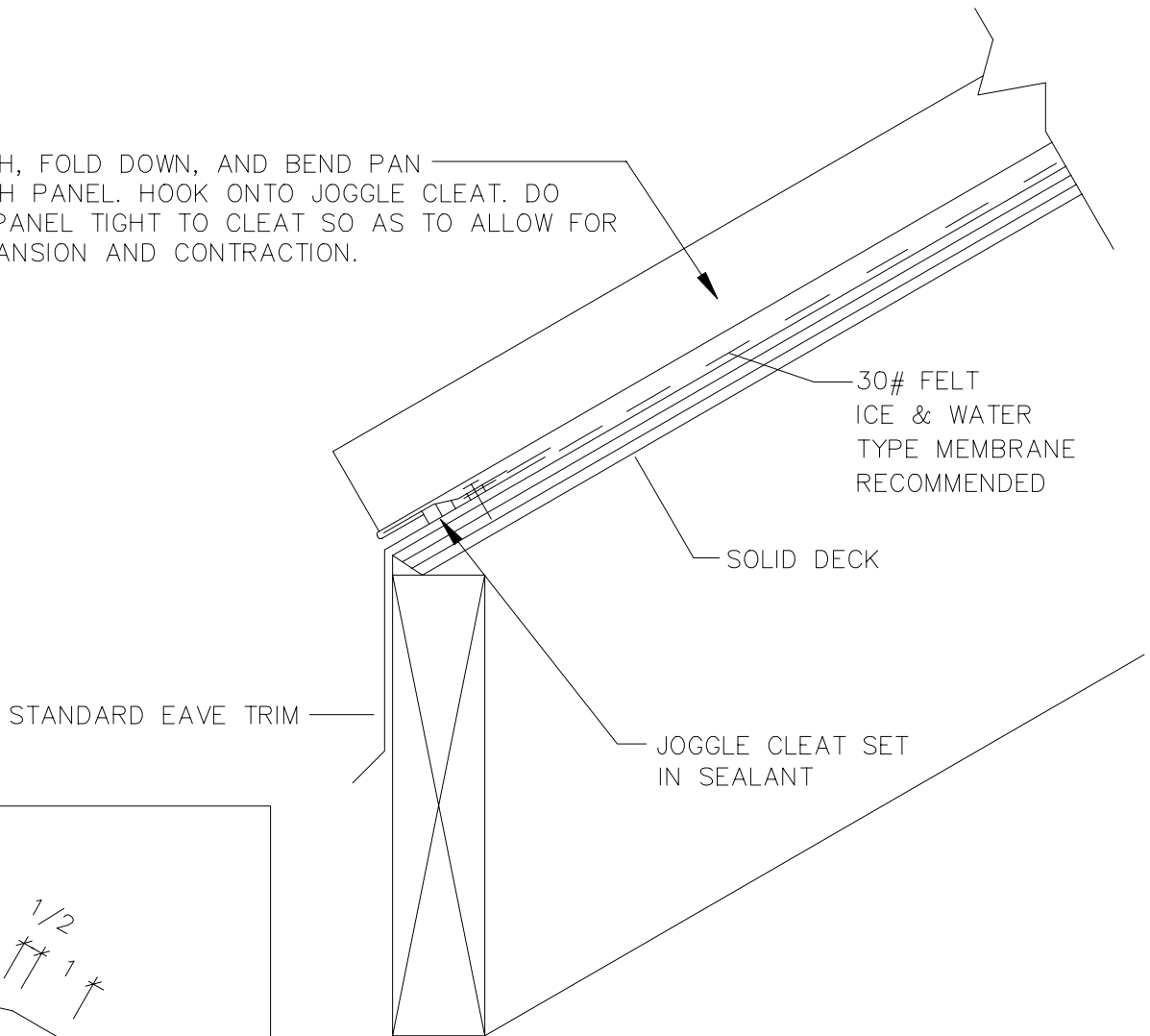


#41H HEMMED STD 3" EAVE TRIM (SPECIFY ROOF SLOPE)

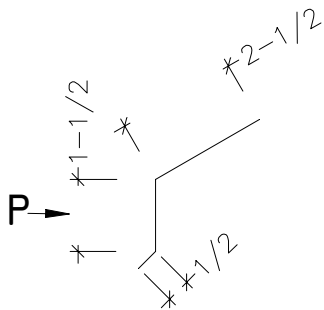


#42H HEMMED STD 4" EAVE TRIM (SPECIFY ROOF SLOPE)

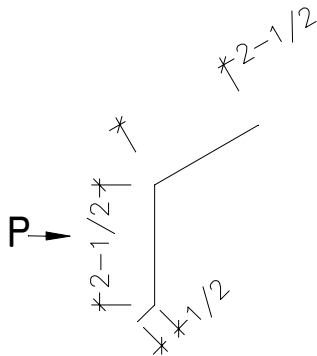
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO JOGGLE CLEAT. DO
NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW FOR
PANEL EXPANSION AND CONTRACTION.



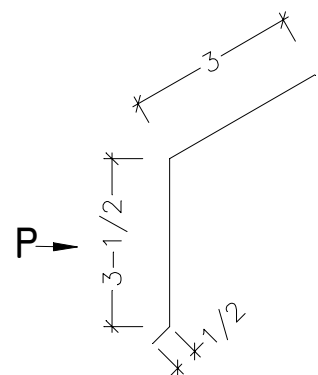
#919 JOGGLE CLEAT



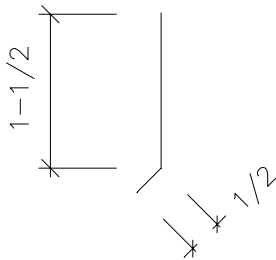
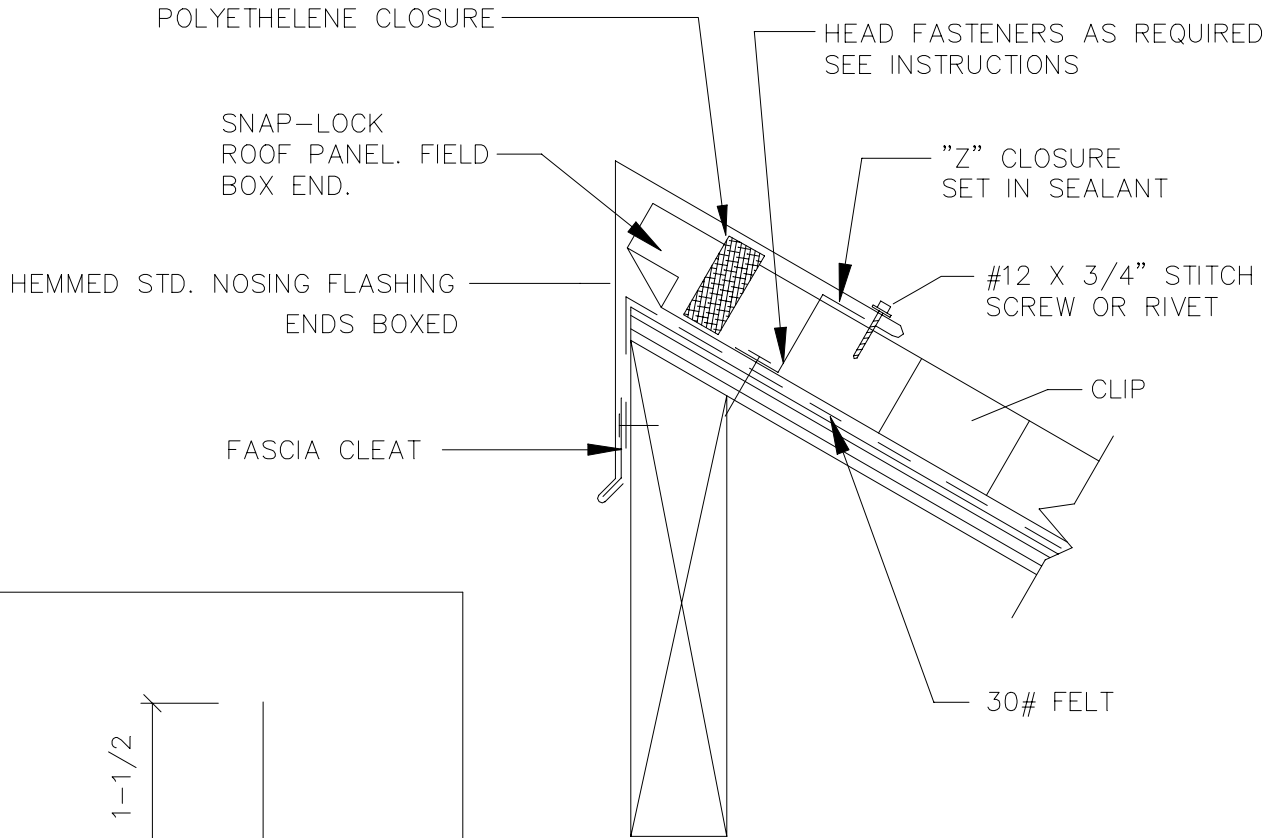
#40 STANDARD 2" EAVE TRIM
(SPECIFY ROOF SLOPE)



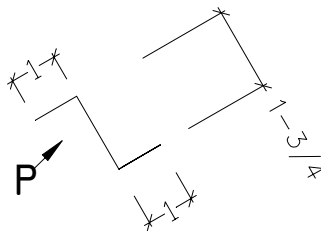
#41 STANDARD 3" EAVE TRIM
(SPECIFY ROOF SLOPE)



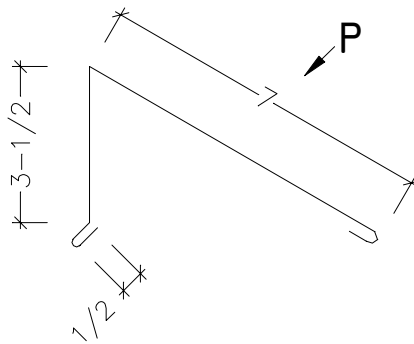
#42 STANDARD 4" EAVE TRIM
(SPECIFY ROOF SLOPE)



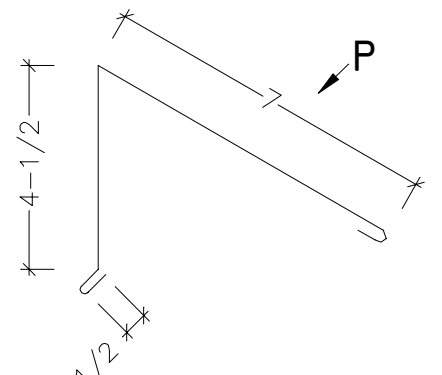
#917 FASCIA CLEAT



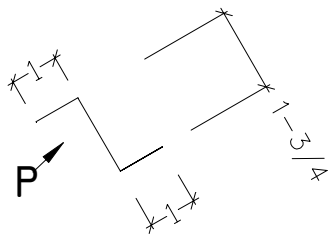
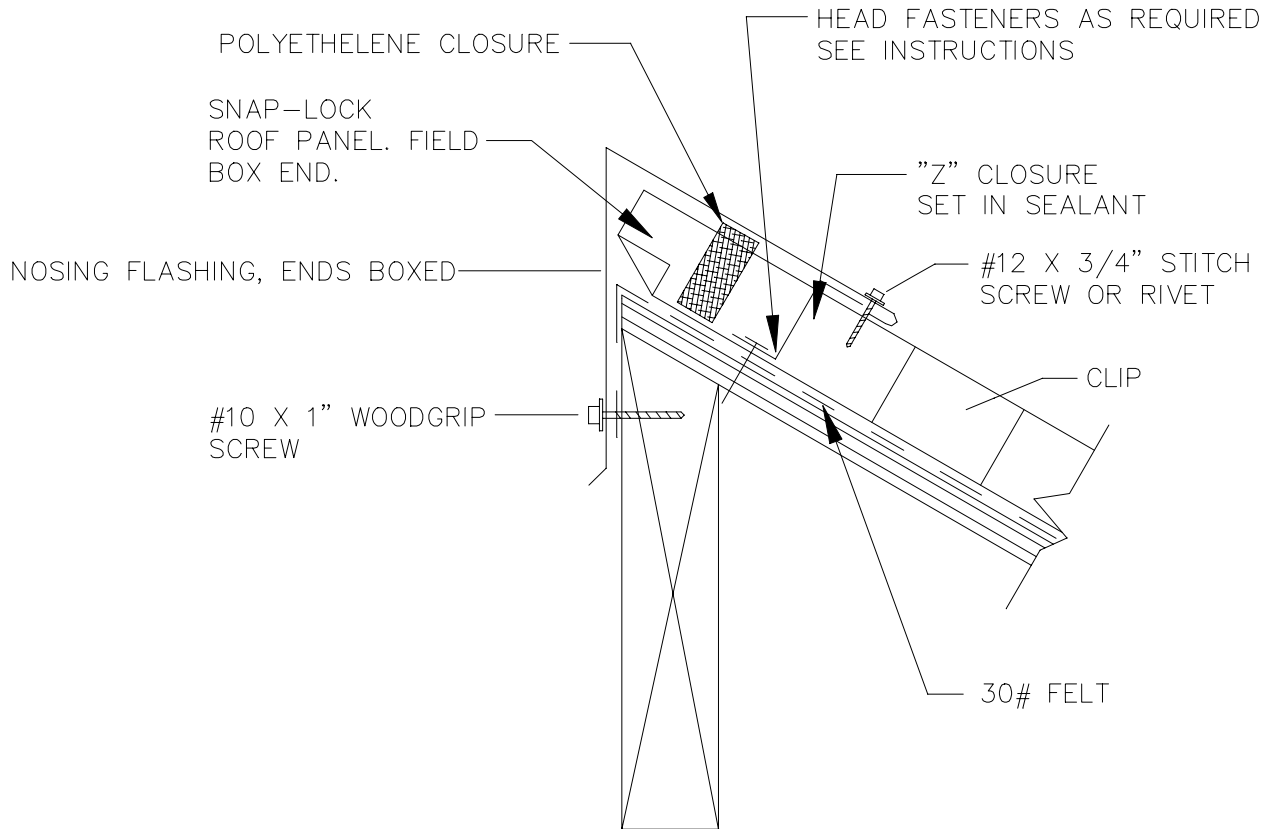
#21 "Z" CLOSURE



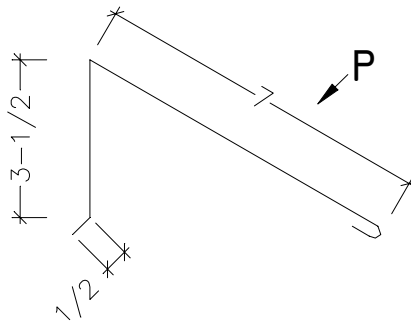
#84H HEMMED 4" NOSING, STD.
(SPECIFY ROOF SLOPE)



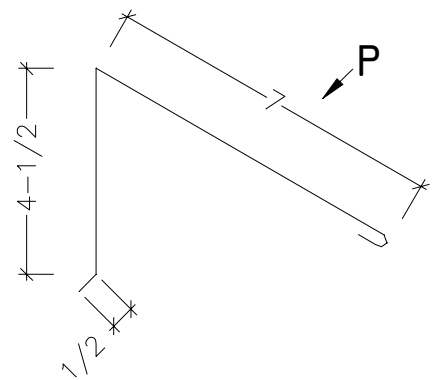
#85H HEMMED 5" NOSING, STD.
(SPECIFY ROOF SLOPE)



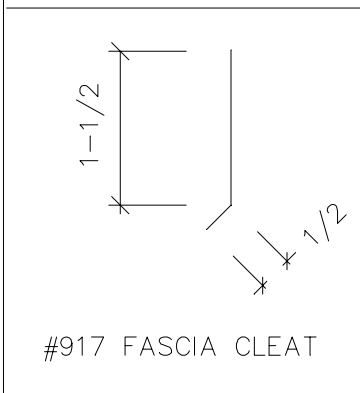
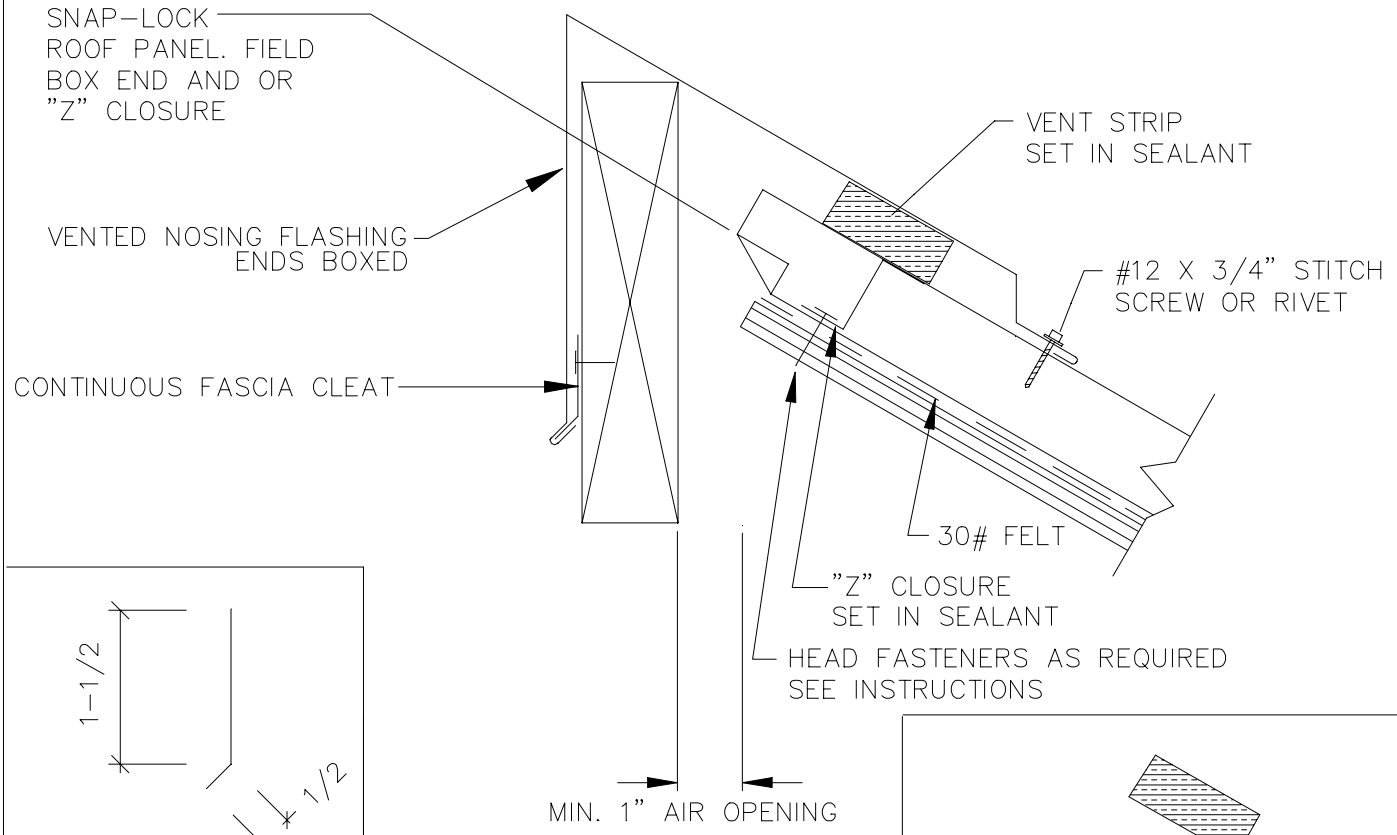
#21 "Z" CLOSURE



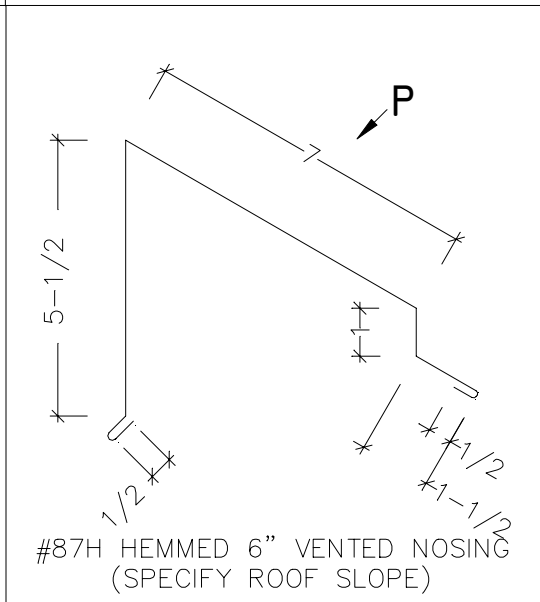
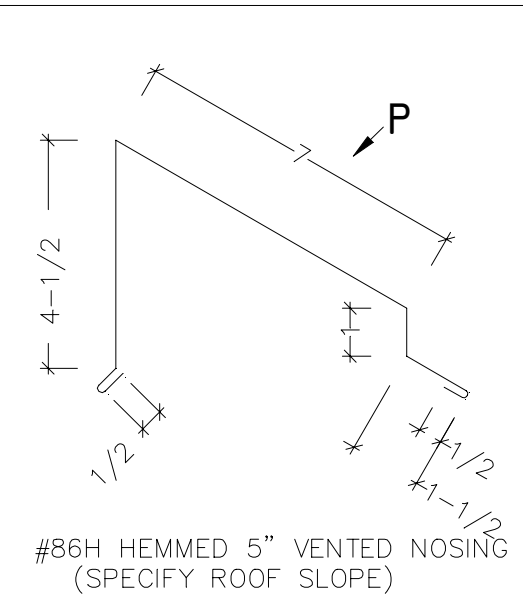
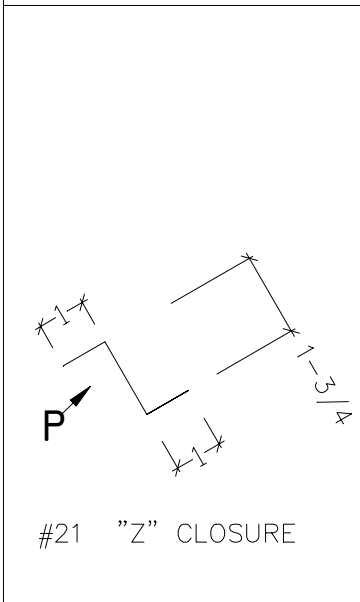
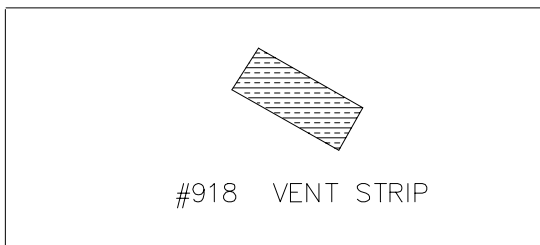
#84 4" NOSING, STANDARD
(SPECIFY ROOF SLOPE)

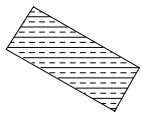
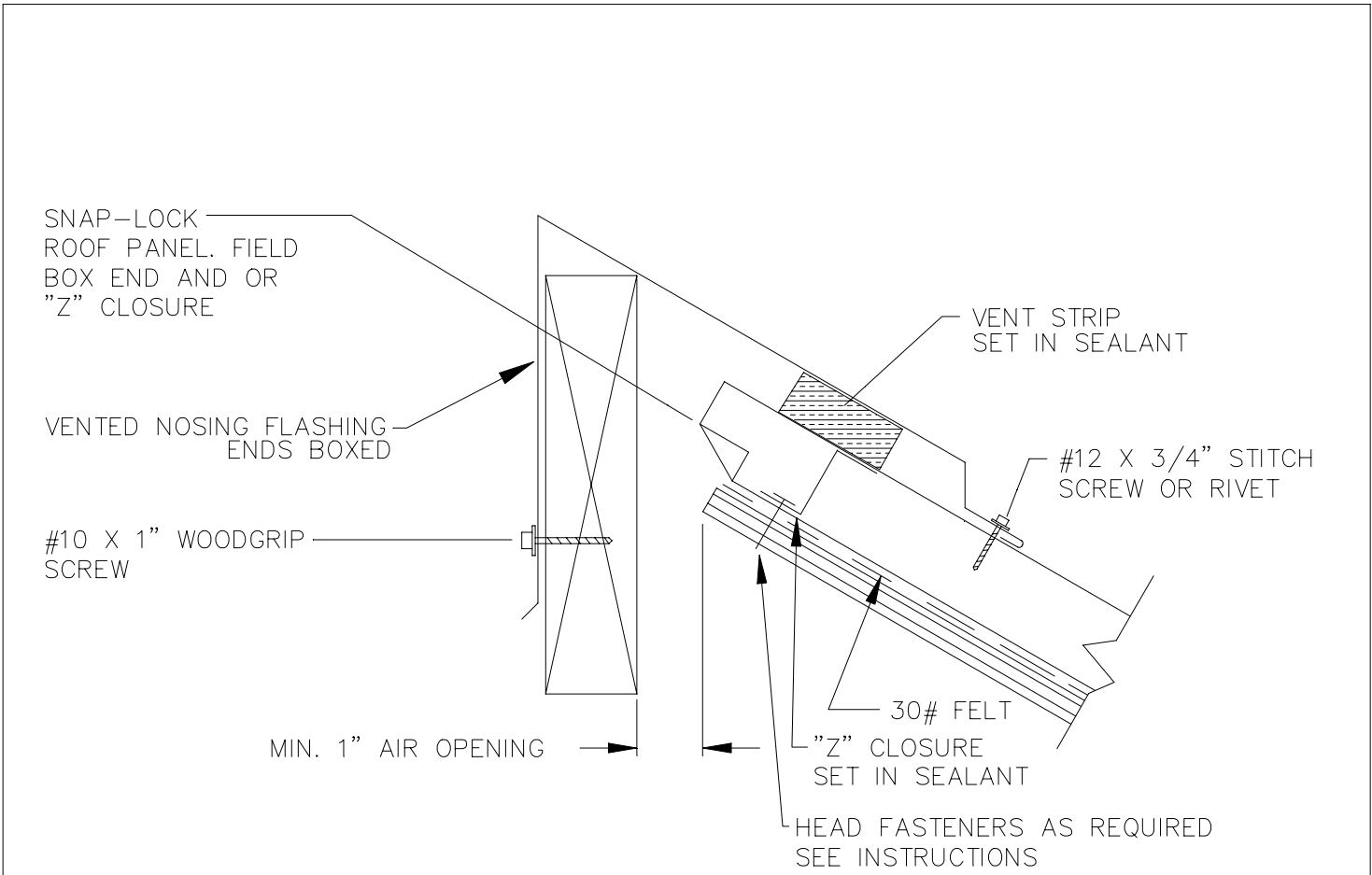


#85 5" NOSING, STANDARD
(SPECIFY ROOF SLOPE)



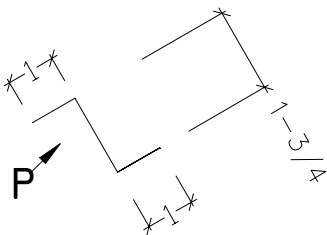
SEE ARCHITECT/DESIGNER AND VENT MANUFACTURER FOR APPROVAL OF ANY VENTILATION SYSTEM



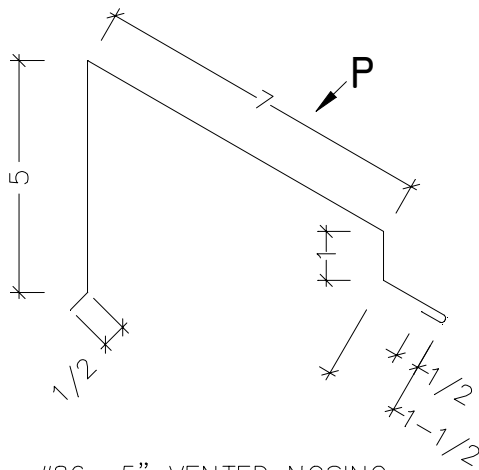


#918 VENT STRIP

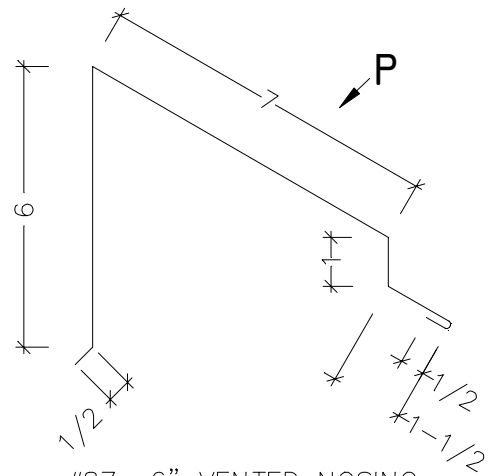
SEE ARCHITECT/DESIGNER AND VENT MANUFACTURER FOR APPROVAL OF ANY VENTILATION SYSTEM.



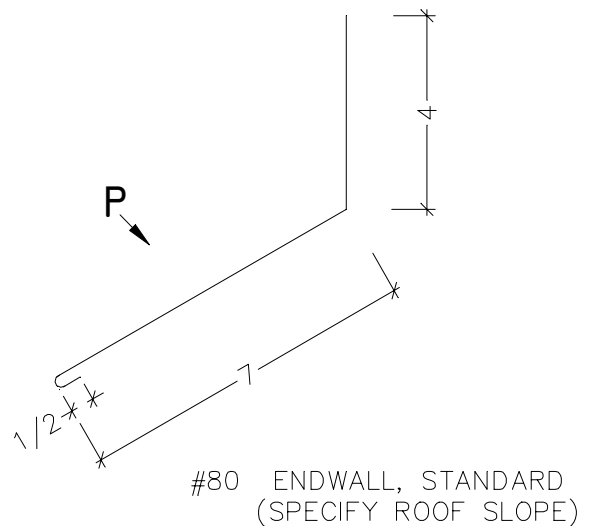
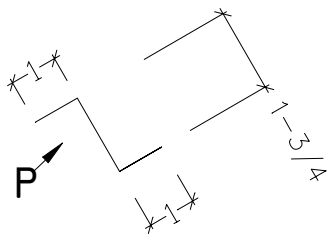
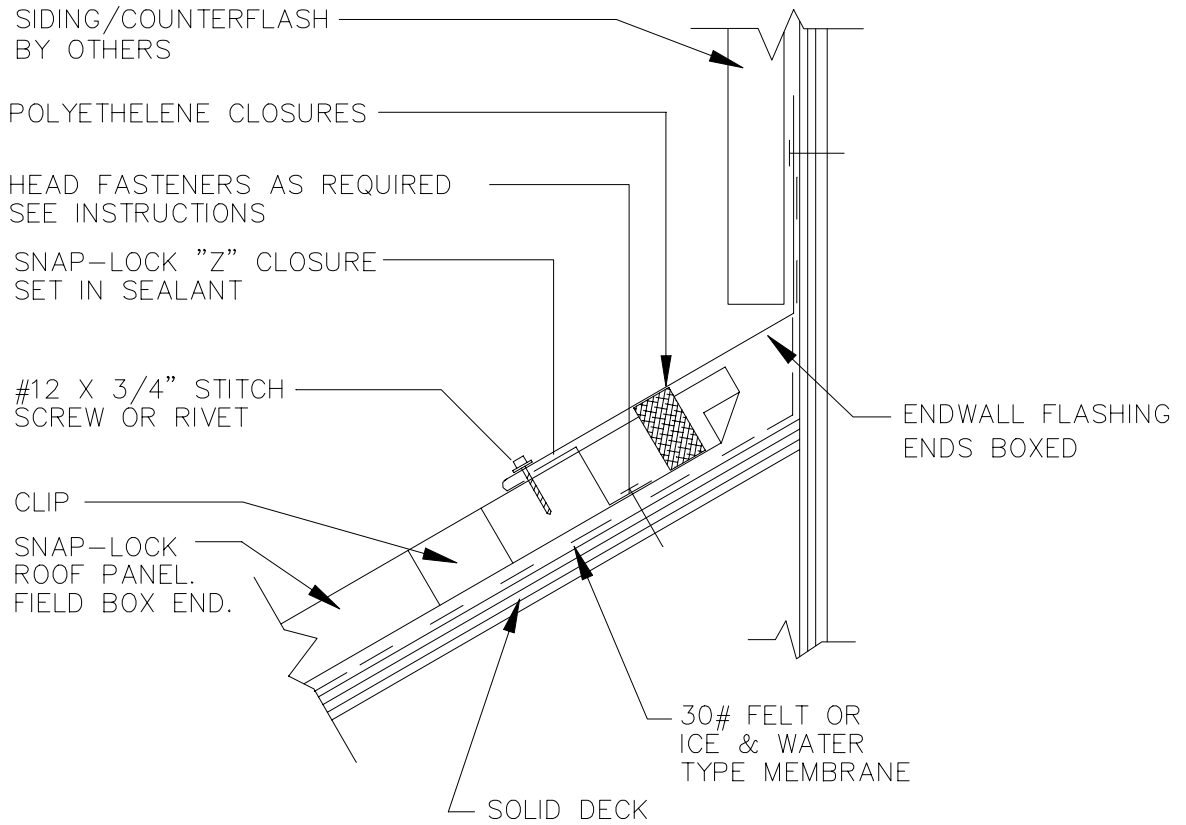
#21 "Z" CLOSURE

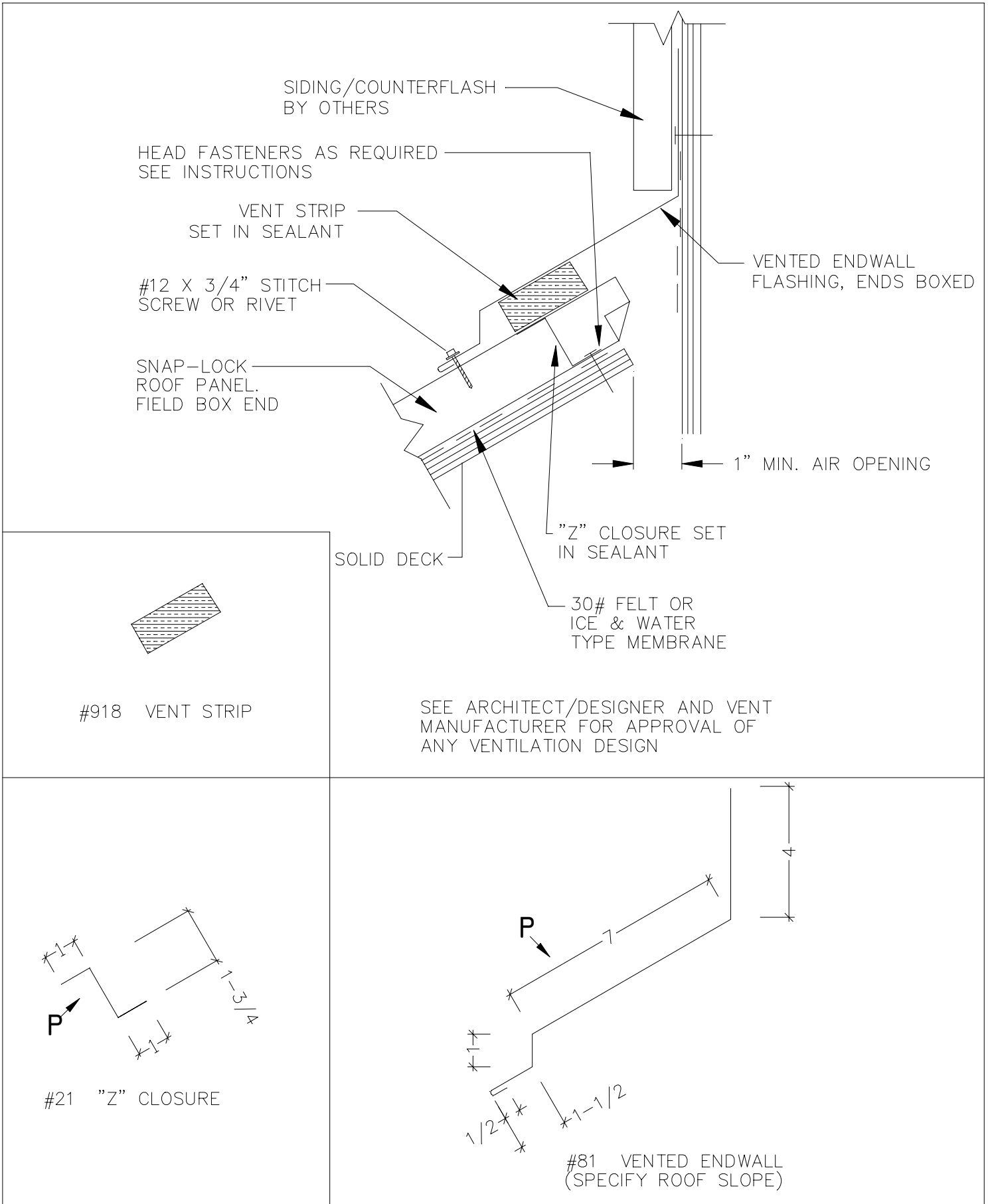


#86 5" VENTED NOSING (SPECIFY ROOF SLOPE)



#87 6" VENTED NOSING (SPECIFY ROOF SLOPE)



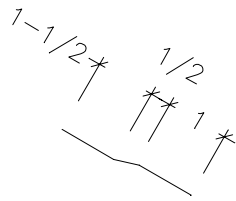
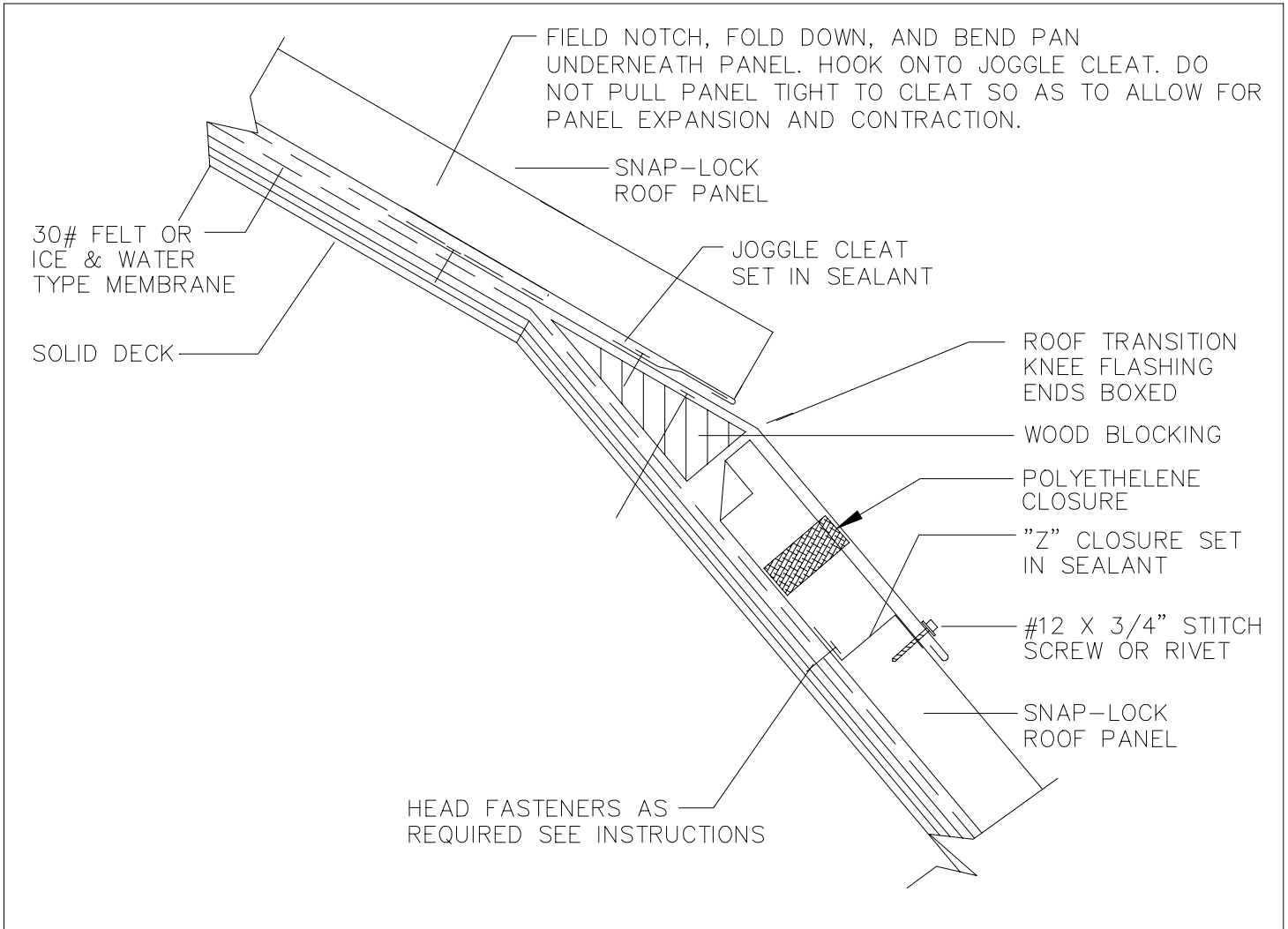


**SUMMIT PACIFIC
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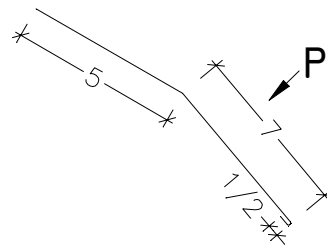
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TAHOE CITY, CA 96145-6928
530/583-8888 800/338-6763

**SNAP-LOCK ROOF TRANSITION
KNEE FLASHING**

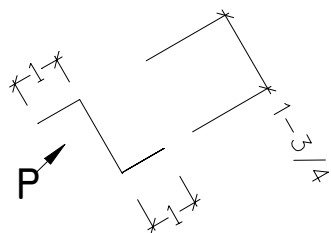
SL-SHEET 22



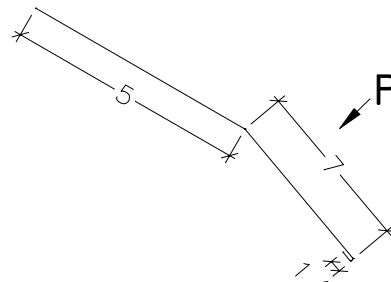
#919 JOGGLE CLEAT



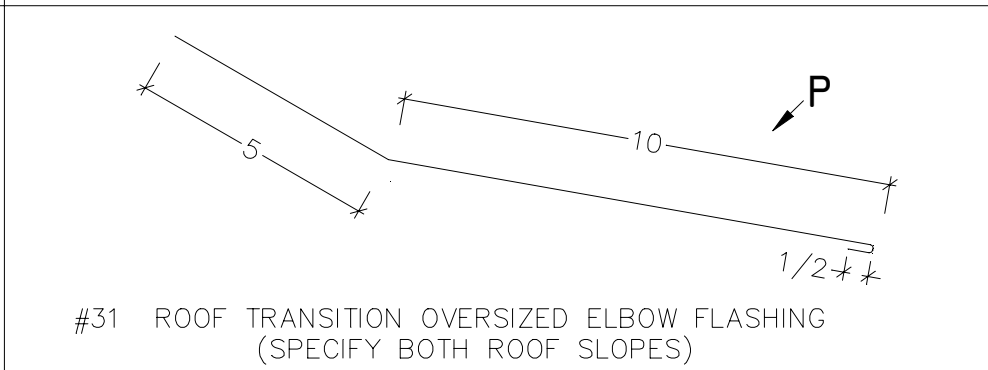
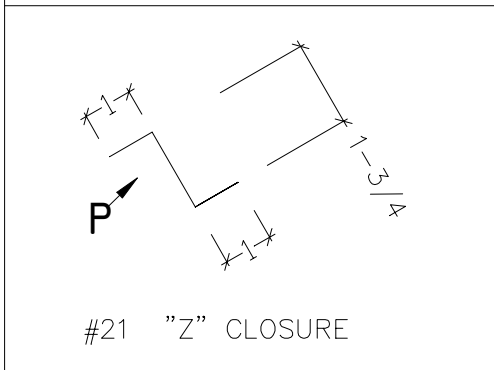
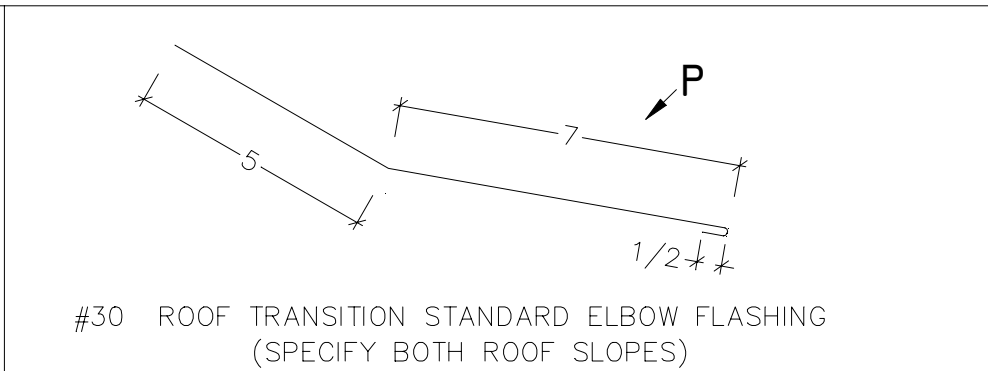
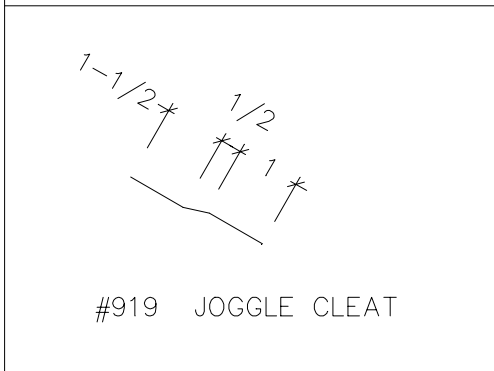
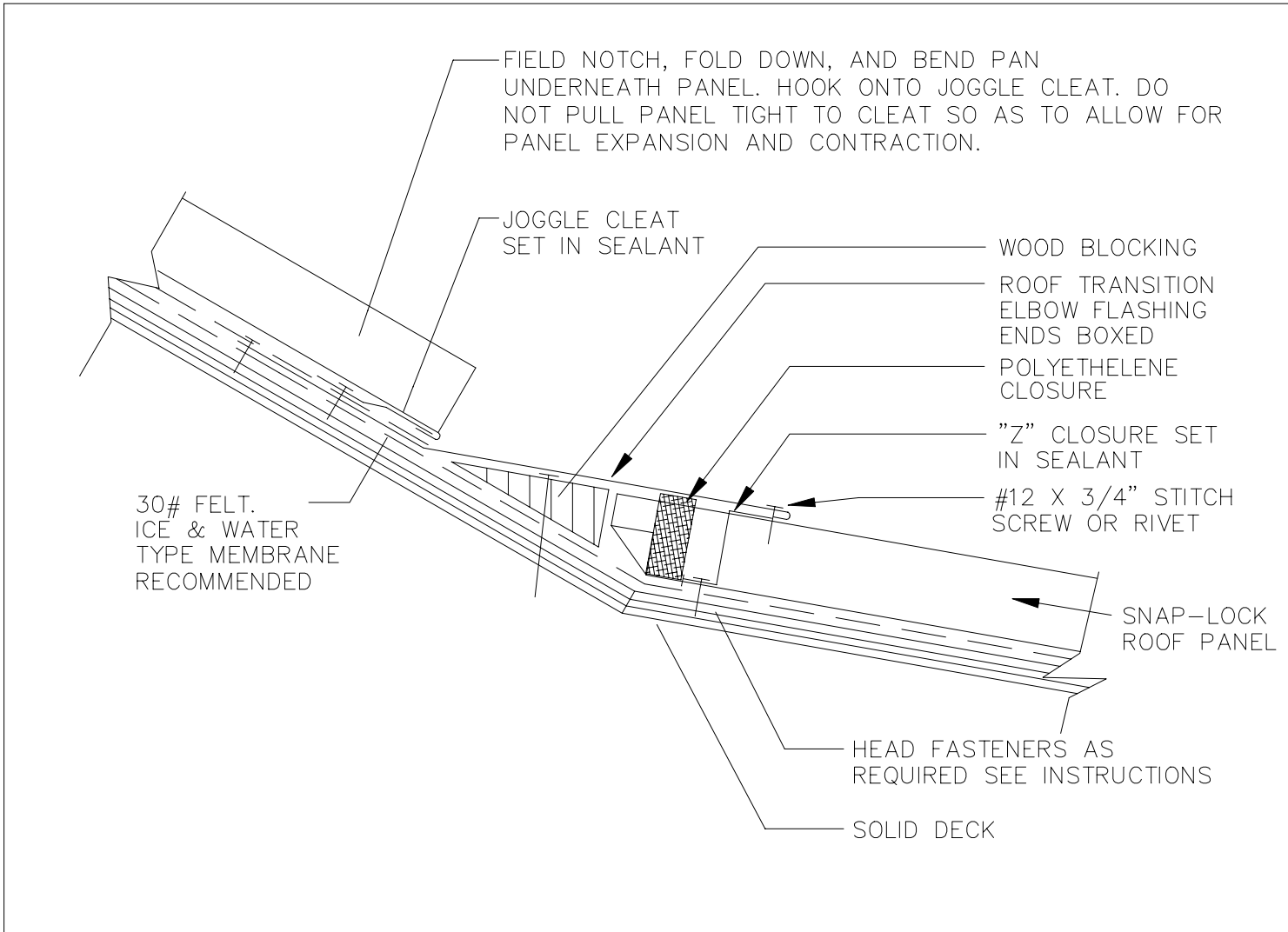
#32 ROOF TRANSITION STANDARD KNEE FLASHING (SPECIFY BOTH ROOF SLOPES)



#21 "Z" CLOSURE



#33 ROOF TRANSITION OVERSIZED KNEE FLASHING (SPECIFY ROOF SLOPES)

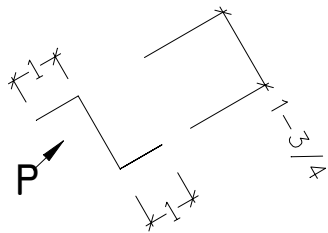
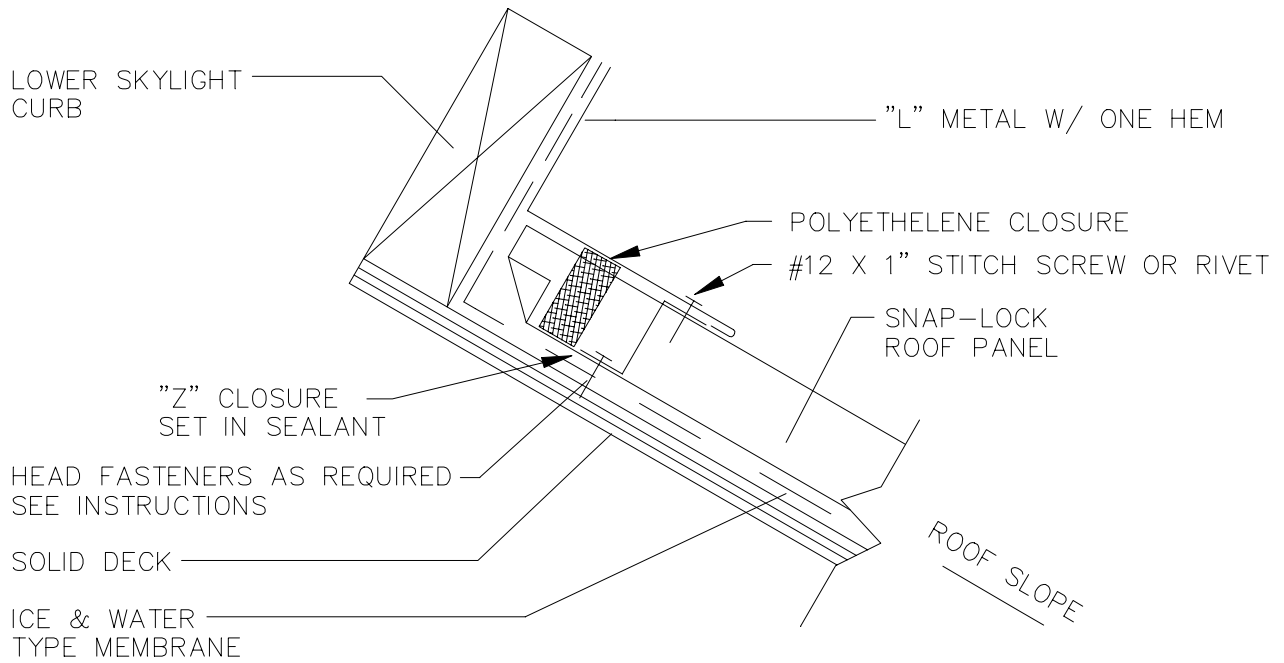


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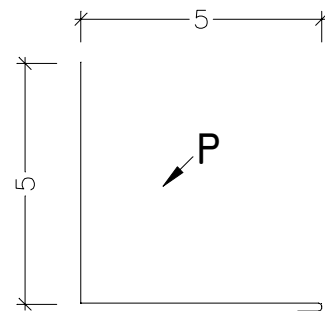
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**SNAP-LOCK SKYLIGHT FLASHING
DOWNHILL SADDLE**

SL-SHEET 24



#21 "Z" CLOSURE



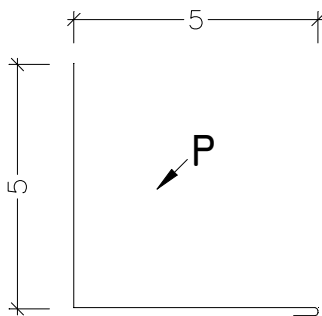
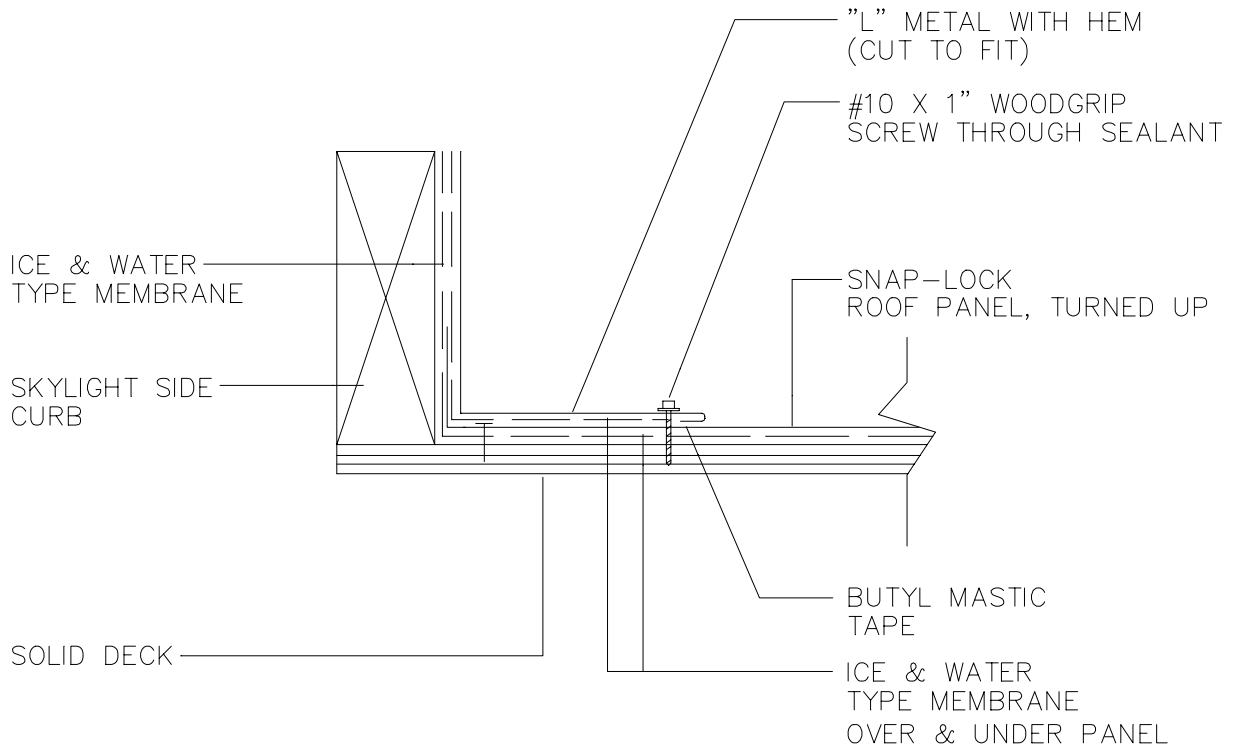
#76 "L" METAL W/ ONE HEM

SUMMIT PACIFIC
METAL SALES

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SNAP-LOCK SKYLIGHT
SIDE CURB

SL-SHEET 25



#76 "L" METAL W/ ONE HEM

**SUMMIT PACIFIC
METAL SALES**

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TAHOE CITY, CA 96145-6928
530/583-8888 800/338-6763

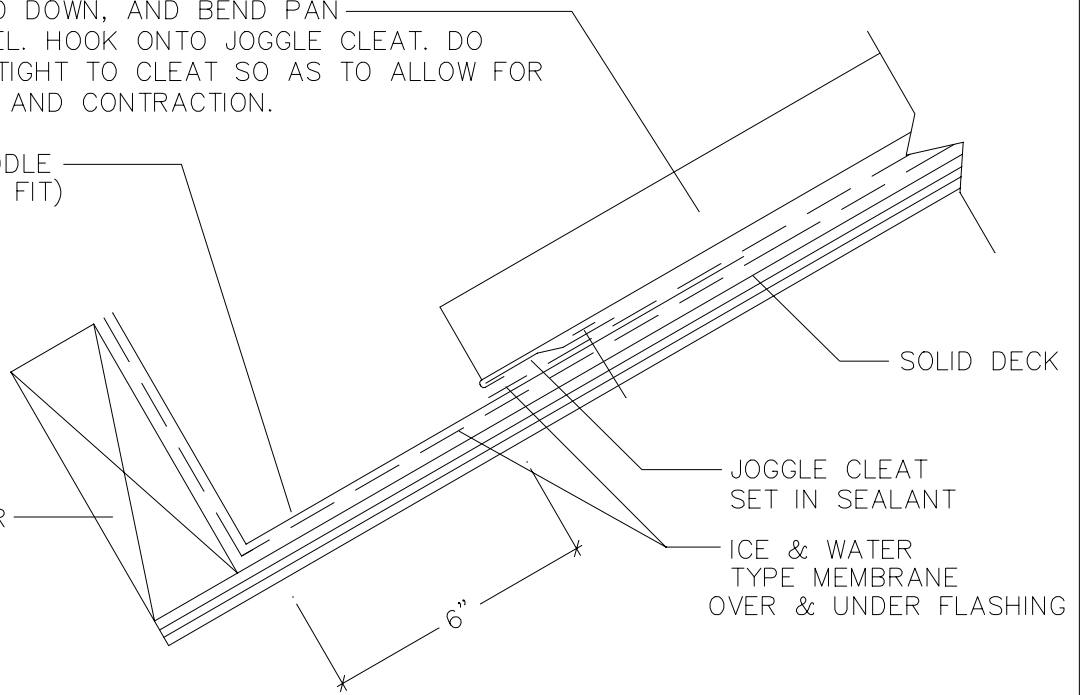
**SNAP-LOCK SKYLIGHT
TOP SADDLE FLASHING**

SL-SHEET 26

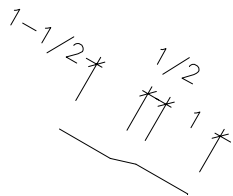
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO JOGGLE CLEAT. DO
NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW FOR
PANEL EXPANSION AND CONTRACTION.

SKYLIGHT TOP SADDLE
FLASHING (CUT TO FIT)

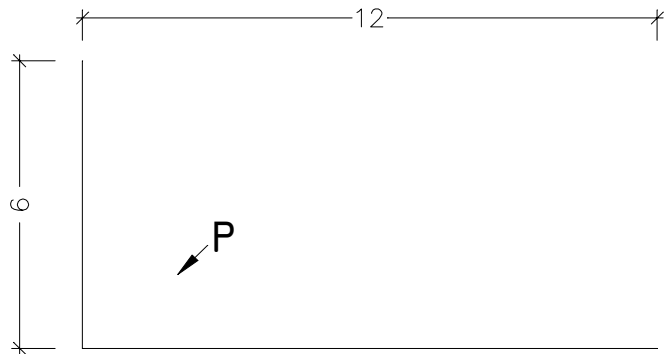
SKYLIGHT UPPER
CURB



NOTE: A CRICKET MAY BE REQUIRED AT CHIMNEY

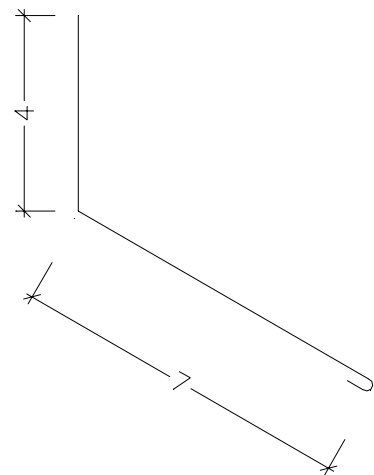
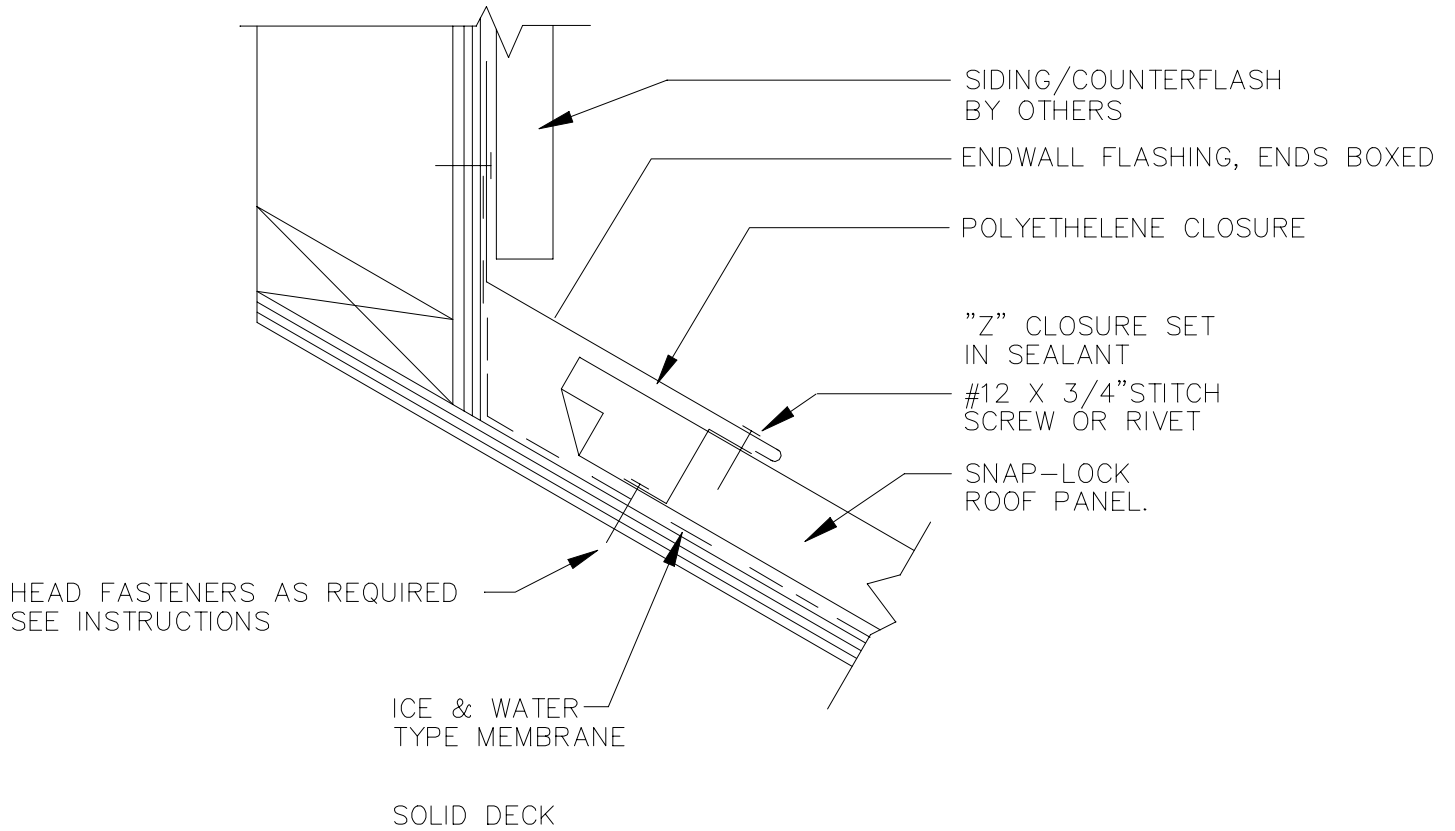


#919 JOGGLE CLEAT



#36 SKYLIGHT TOP SADDLE FLASHING

SNAP-LOCK CHIMNEY FLASHING SL-SHEET 27



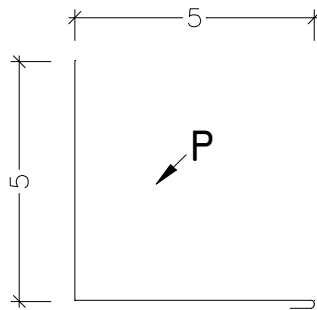
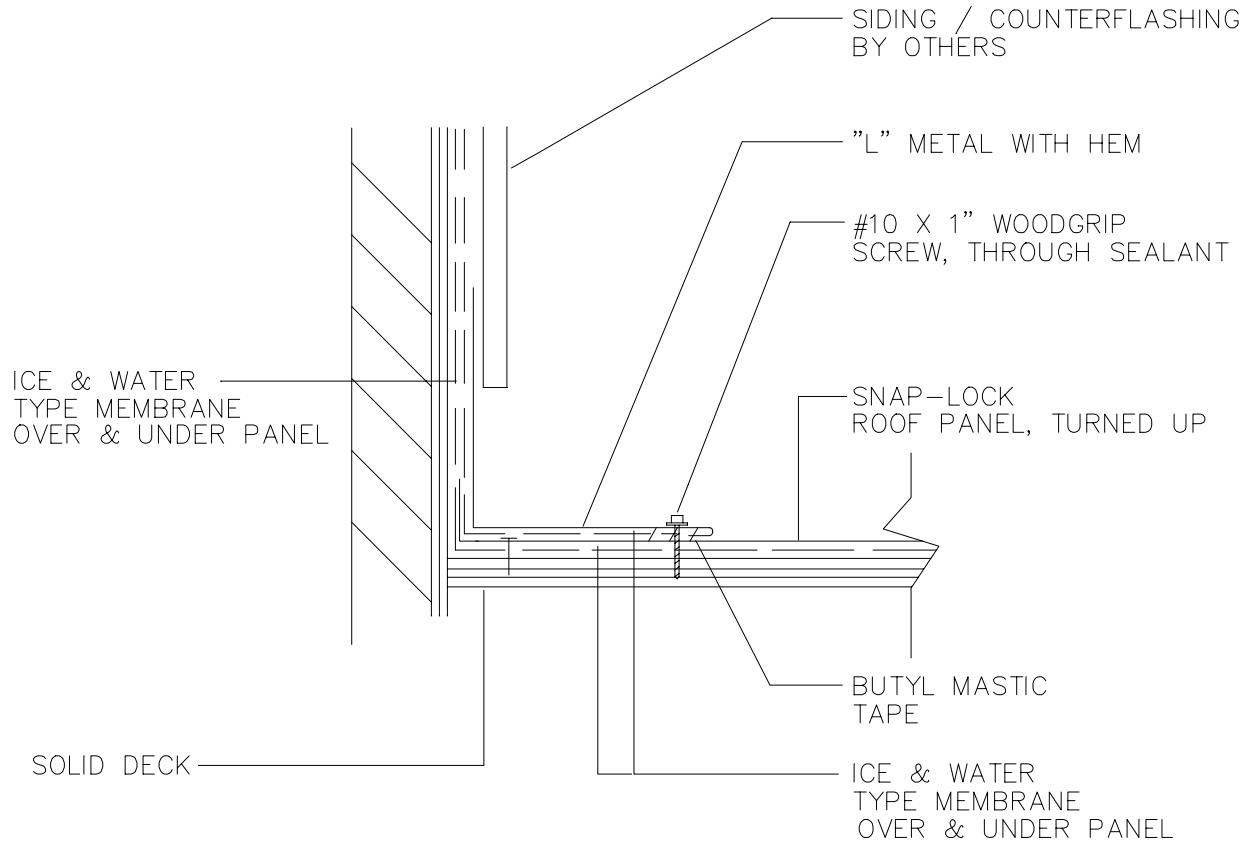
#80 STANDARD ENDWALL
(SPECIFY ROOF SLOPE)

**SUMMIT PACIFIC
METAL SALES**

2911 LAKE FOREST RD., PO BOX 6928
TAHOE CITY, CA 96145-6928
530/583-8888 800/338-6763

**SNAP-LOCK CHIMNEY
SIDE FLASHING**

SL-SHEET 28



#76 "L" METAL W/ ONE HEM

**SUMMIT PACIFIC
METAL SALES**

2911 LAKE FOREST RD., PO BOX 6928
TAHOE CITY, CA 96145-6928
530/583-8888 800/338-6763

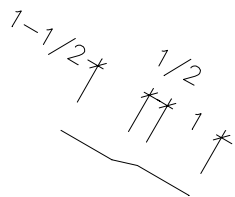
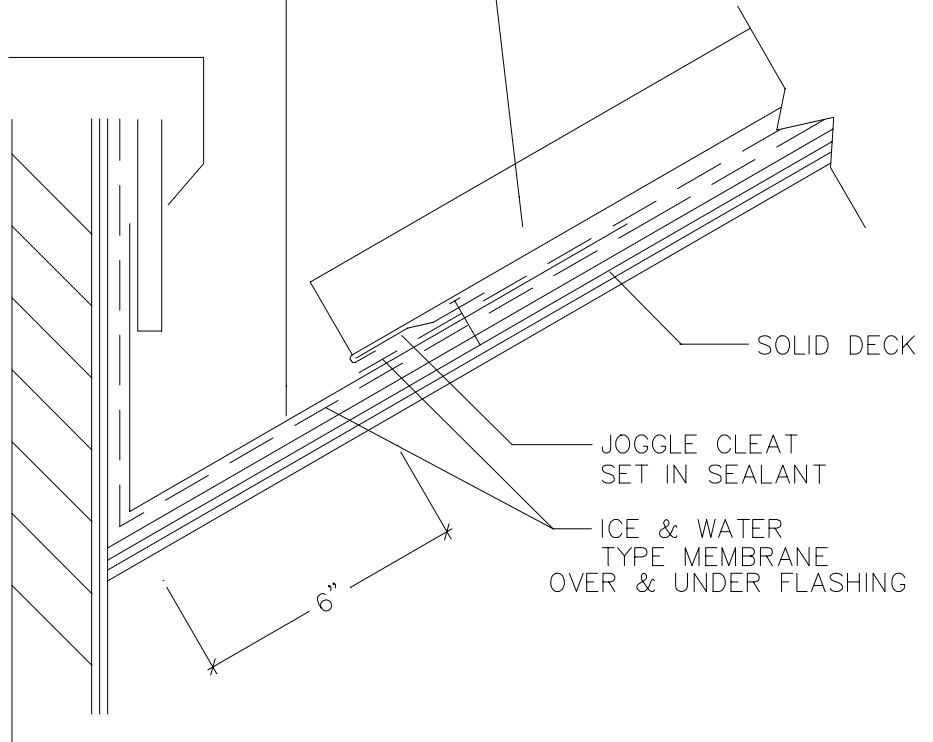
**SNAP-LOCK CHIMNEY
TOP SADDLE FLASHING**

SL-SHEET 29

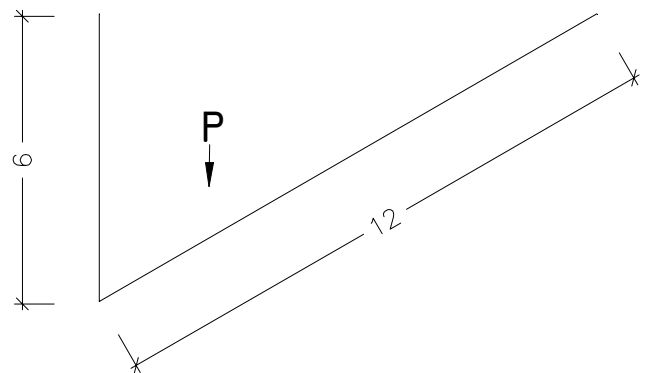
FIELD NOTCH, FOLD DOWN, AND BEND PAN
UNDERNEATH PANEL. HOOK ONTO JOGGLE CLEAT. DO
NOT PULL PANEL TIGHT TO CLEAT SO AS TO ALLOW FOR
PANEL EXPANSION AND CONTRACTION.

CHIMNEY TOP SADDLE
FLASHING

SIDING / COUNTERFLASHING
BY OTHERS



#919 JOGGLE CLEAT



#37 CHIMNEY TOP SADDLE FLASHING
(SPECIFY ROOF SLOPE)