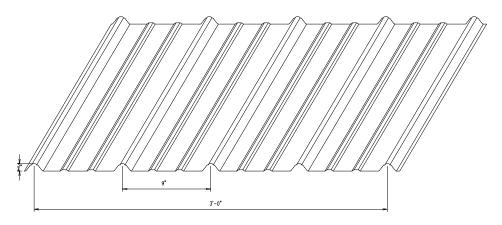
Western States AG Panel

Installation, Flashings & Shop Drawing Detail *Guide*

Table of Contents



3	ection	Page
	Notes to Designer / Installers	1
	Fastener Placement and Selection	.2-3
	Key Roof Plan	4
	Key Flashing / Trims	.5-6-7
	Eave Detail	8
	Mini Eave Detail	9
	Eave Pre Hung Gutter	10
	Eave Post Hung Gutter	11
	Gutter Splice	. 12
	Gable Flashing	13
	Mini Gable Flashing	14
	Universal Gable Flashing	15
	Peak/ High Eave	16
	Sidewall	17
	Endwall	18

Section Page	
Hip and Ridge 19	
Valley 20	
Pitch Break High to Low 21	
Pitch Break Low to High 22	
Chimney 23-24-25-2	6
Pipe Flashing	
Wall Detail 28	
Wall Detail Isometric	
Wall Base Flashing 30	
Outside Corner 31	
Inside Corner 32	
Notes	
Custom Trim Form 34	1
Special Design Considerations	

Western States "AG" Panel

Installation, Flashings & Shop Drawing Detail Guide

Notes to Designer and Installers

The details contained in this guide are proven industry details and are intended to be used as a design aid and installation guide. It does not depict all situations that may be encountered on all projects. Modifications are the responsibility of the designer/ owner/ installer. Consideration should be given for Fit for Purpose, Building use, Climate conditions such as temperature, snow, wind, and moisture, Governing Building Codes, and Maintenance. It is highly recommended that all trims and flashings be of the same material as the panels (metal, gauge, finish) to ensure long term performance and durability. Where possible, flashing edges should be hemmed to strengthen the edge and protect the cut edge from exposure.

Framing and Substrates

"AG" panels are used over all type of substrates like Steel Decking, open purlins, spaced sheathing, and wood decking such as plywood. Most details in this guide are shown with panels attached to Purlins.

Note on underlayment

Not all conditions require an underlayment, However metal roofing is susceptible to Condensation and it is recommended that an appropriate Roofing underlayment be use on all wood substrates to protect the structure during installation. For added protection from rain and snow, it is recommended to use rubberized Ice and water shield on eaves, valleys, and areas of roof penetrations. WSMR Recommends Sharkskin SA Ultra.

Slope Requirements

It is recommended that "AG" panels have a minimum slope requirement of 3:12 on all structures.

Valley and Snow Design

Valley design and dimension must be the proper width to accommodate high snow, rain, ice, and slope conditions. If possible, splices, penetrations, valleys, roof elevation changes, should be minimized in areas of high snow and ice accumulations.

Oil Canning

Oil canning is a condition common with flat metal surfaces. This waviness is caused by steel mill tolerances, forming, variations in the structures surfaces, and hardness of the steel. Measures are taken at the roll forming process, like profile design, steel gauge, corrective leveling, to minimize the effects of oil canning. Oil Canning is a Characteristic of steel and can not be eliminated totally and therefore is not reason for rejection of the panels.

Job Site Storage

While waiting to be installed on the job site, Storage of panels, trim crates, and flat sheet should be sloped in order to allow for proper moisture run off. One end should be elevated so as not to allow ponding of water on the metal surface. When using tarps for protection, proper ventilation should be provided to prevent condensation. Moisture or condensation that is trapped inside a bundle can lead to white rust on sheeting.

References

For other installation techniques and details, The Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA) and NRCA manuals are great resources for working with sheet metal.

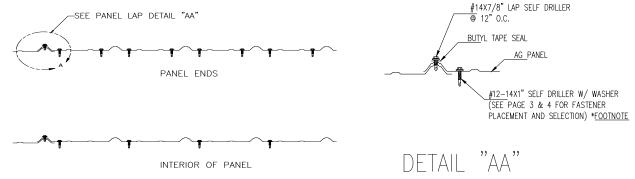
Technical Assistance

Contact your WSDI sales or technical representative for any additional information or assistance.

Western States Metal Roofing "AG" Panel

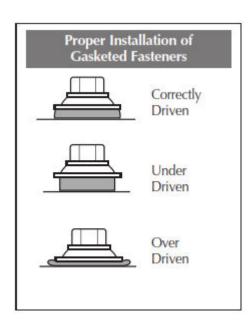
Installation, Flashings & Shop Drawing Detail Guide

Fastener Placement and Selection



Notes to Installers:

- Fastener Selection will vary depending on type and thickness of substrate.
- Space panel lap screws 12" minimum -24" O.C. maximum. Consult with design engineer.
- Spacing of fastener rows to be engineered by others.
- Lap panels away from prevailing winds whenever possible.
- The use of Butyl tape mastic is always recommended on the panel lap when used for roof panels.
- Panels and flashings should never be installed in contact with dissimilar metals.
- Use only those flashings and accessories designed for use with this panel.
- Panel attachment screws must be long enough to fully penetrate through roof deck substrate or penetrate solid lumber at least one inch.
- Exposed Fasteners should have sealing washers and be coated to provide protection against corrosion.
- Screws must be properly driven to ensure holding strength and proper seal. (see diagram)
- Recommended drill speed is 2000rpm. Improper setting of drill speed can lead to snapping of screw heads.
- Pre drilling of screw holes may be necessary with heavy gauge metals.



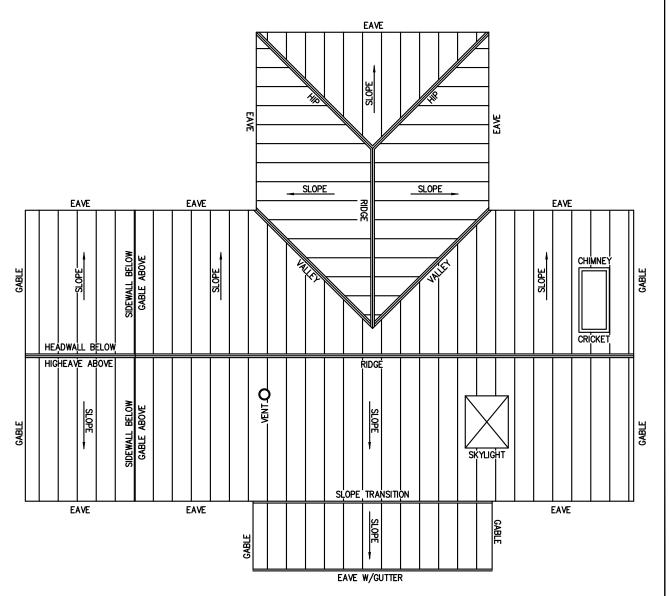
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Installation, Flashings & Shop Drawing Detail Guide

Fastener Selection

Description	Application	
#9 x1" Wood Drillers #9 x 1.5" Wood Drillers #9 x2" Wood Drillers	Used to attach panels to dimensional Lumber and plywood	
#12-14 x 1" SD #12- 14 x1.5" SD #12- 14 x 2" SD #12-24 x1.25 SD	Used to attach panels to Purlins and other metal substrates	
¼ x 7/8" Lap Self tap	Used to attach Trims and panel side laps.	
#10-12 x1" Pancake Wood #10-12 x 1" SD Self Driller	Used to secure trims to substrates. Also available in Stainless Steel.	
1/8" Stainless Rivets	Used for Trim to Trim attachment or trim to wall panels.	
Stainless Screws #10 x1 Wood Drillers #10 x 1.5 Wood Drillers	Used for panel attachment for panels made with	

The table above shows the panel Fasteners provided by WSD. Special order screws are available.



FLASHING TYPE	DETAIL NO.
STANDARD TRIM STANDARD TRIM STANDARD TRIM	WSD-ST5 WSD-ST6 WSD-ST7
EAVE MINE EAVE EAVE—PRE—HUNG GUTTER EAVE—POST—HUNG GUTTER POST—HUNG GUTTER SPLICE GABLE FLASHING MINI GABLE FLASHING	WSD-E1 WSD-ME1 WSD-EPRG1 WSD-EPOG2 WSD-EG3 WSD-GF2 WSD-MGF2
UNIVERSAL GABLE FLASHING PEAK—HIGH EAVE FLASHING SIDEWALL FLASHING ENDWALL FLASHING	WSD-UGF2 WSD-PK3 WSD-SW4 WSD-EW5
RIDGE—HIP VALLEY FLASHING PITCH BREAK HIGH TO LOW PITCH BREAK LOW TO HIGH CHIMNEY FLASHING CHIMNEY FLASHING CHIMNEY CRICKET FLASHING ISOMETRIC DETAIL PIPE FLASHING WALL DETAILS ISOMETRIC WALL DETAIL WALL DETAIL WALL DETAIL WALL DETAIL NOTES CUSTOM TRIM SHEET	WSD-RH6 WSD-V7 WSD-PB8 WSD-CF10 WSD-CF11 WSD-CF12 WSD-CF13 WSD-PF14 WSD-W15 WSD-W16 WSD-W17 WSD-W18 WSD-W19 WSD-N20 WSD-CT21



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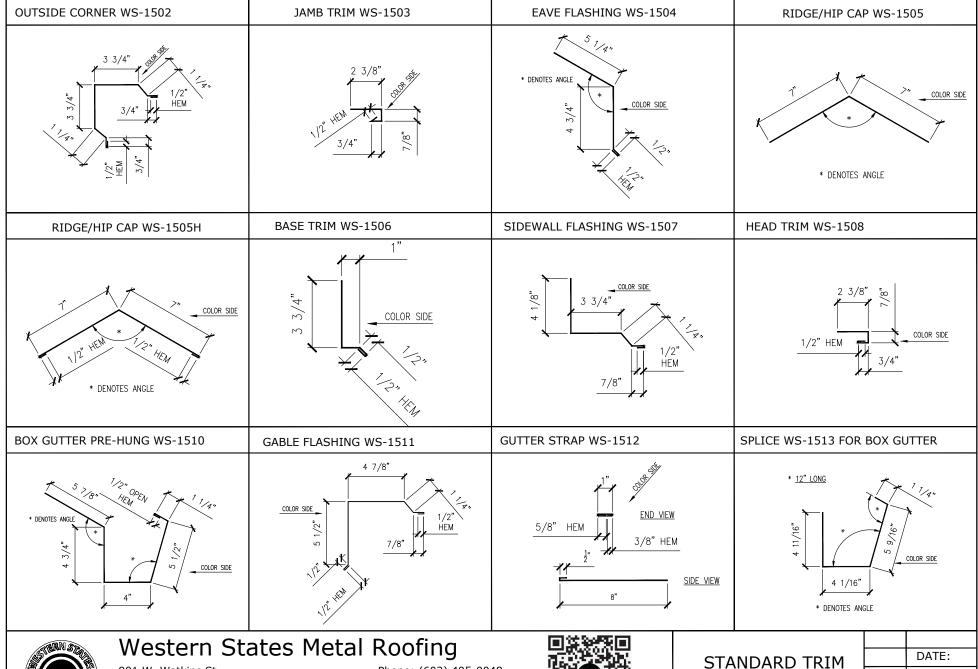
DET	

KEY ROOF PLAN

DATE:
A 10-28-25
REV:

DETAIL #:

PANEL TYPE:





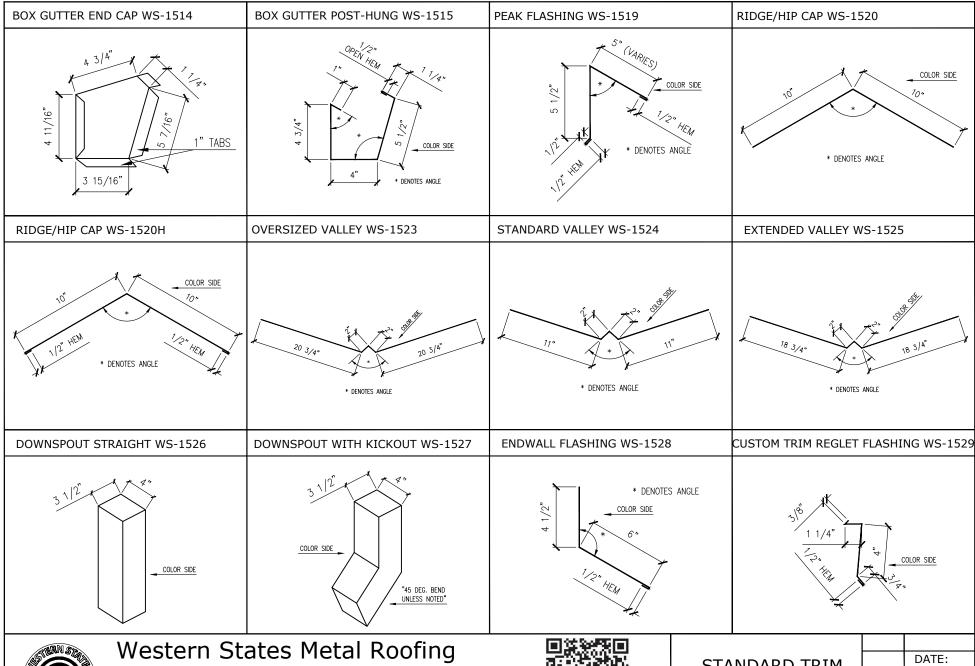
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DATE:
A 10-28-25
REV:
DETAIL #:

AG-WSD-ST5

PANEL TYPE:





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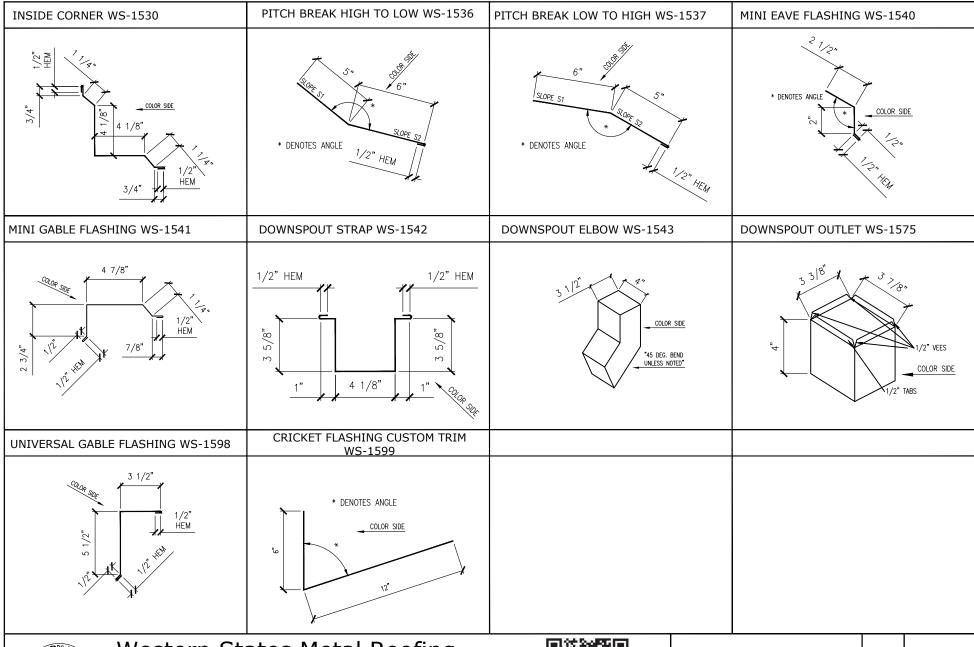


STANDARD TRIM

Α 10-28-25 REV: DETAIL #:

AG-WSD-ST6

PANEL TYPE:





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STANDARD TRIM

DATE: Α 10-28-25 REV: DETAIL #:

AG-WSD-ST7

PANEL TYPE:

** WSMR Recommends Sharkskin ® <u>Ultra SA for Underlayment.</u> ROOF EAVE STRUT -FASTENER AT 12" O.C.

NOTE:

FOR HIGH SNOW AREA THE OVERHANG SHOULD BE 1" MAX.

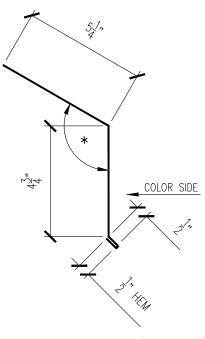
AG-PANEL
INSIDE FOAM CLOSURE
(SET IN SEALANT)

#12-14X1" SELF DRILLER W/ WASHER (SEE PAGE 3 & 4 FOR FASTENER PLACEMENT AND SELECTION) *FOOTNOTE

EAVE FLASHING (WS-1504)

#14X7/8" LAP OR STITCH SCREW @ 24" O.C.

WALL PANEL



EAVE FLASHING (WS-1504)

* DENOTES ANGLE

GAUGE:	COLOR:
BREAKS:	FINISH:
LENGTH:	STRETCH OUT:

MATERIAL:



* FOOTNOTE:

FASTENER

FASTENER TYPE OVER PLYWOOD

TO BE #9X_ WOOD SCREW

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EAVE	DETAIL	
L A V L		

DATE:
A 10-28-25
REV:

PANEL TYPE:

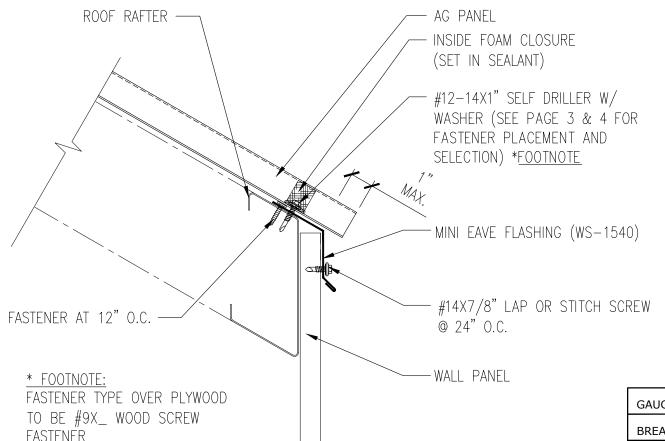
AG-Panel

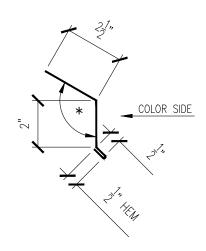
DETAIL #:

AG-WSD-E1

** WSMR Recommends Sharkskin [®] Ultra SA for Underlayment.

NOTE: FOR HIGH SNOW AREA THE OVERHANG SHOULD BE 1" MAX.





MINI EAVE FLASHING (WS-1540)

* DENOTES ANGLE

 GAUGE:
 COLOR:

 BREAKS:
 FINISH:

 LENGTH:
 STRETCH OUT:

MATERIAL:



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MINI EAVE DETAIL

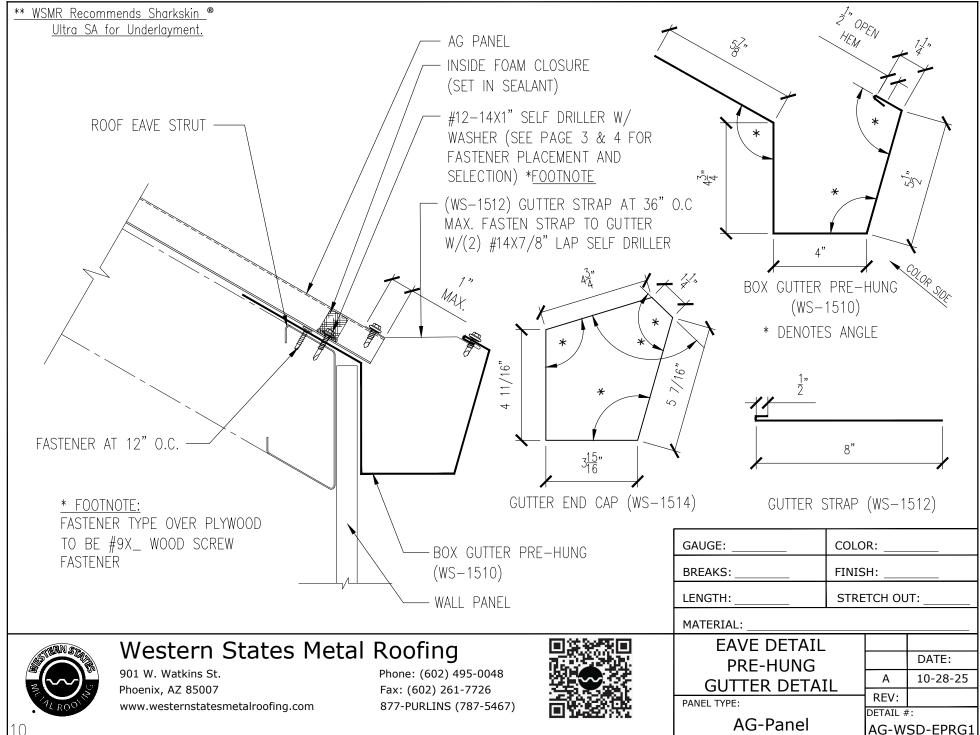
DATE:
A 10-28-25
REV:

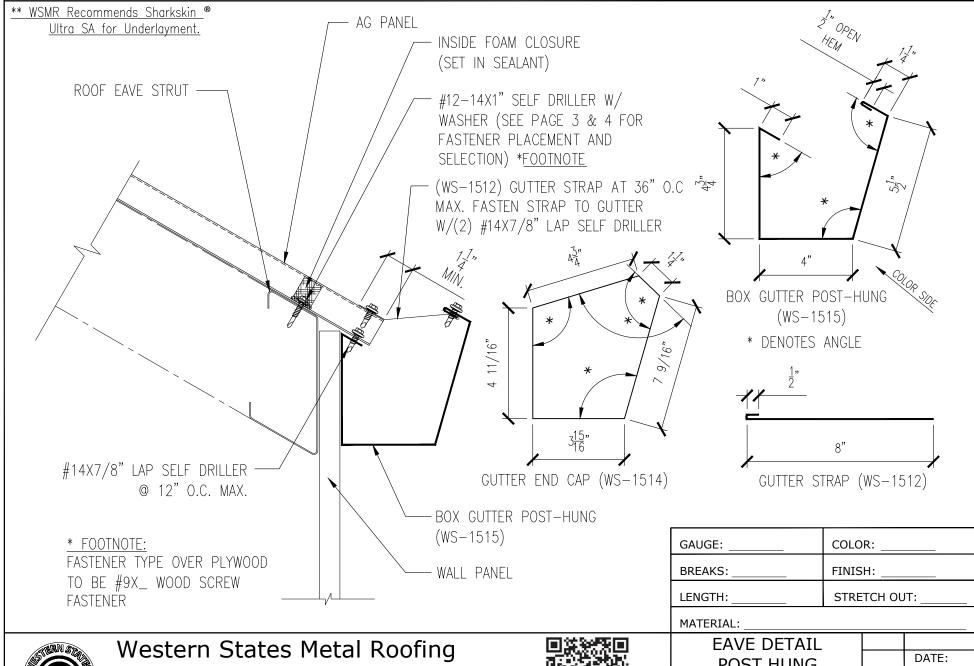
PANEL TYPE:

AG-Panel

DETAIL #:

AG-WSD-ME1







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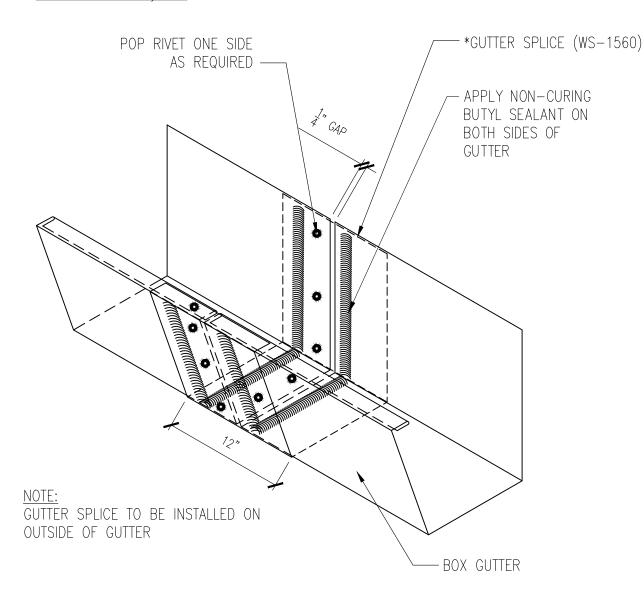
POST HUNG GUTTER DETAIL

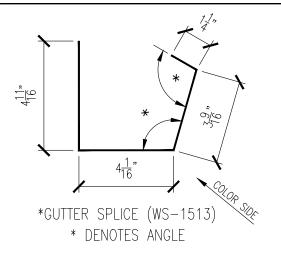
10-28-25 REV:

PANEL TYPE:

AG-Panel

DETAIL #: AG-WSD-EG2 ** WSMR Recommends Sharkskin ** Ultra SA for Underlayment.





"POST/PRE-HUNG GUTTER"

GAUGE:	COLOR:
BREAKS:	FINISH:
LENGTH:	STRETCH OUT:

MATERIAL:



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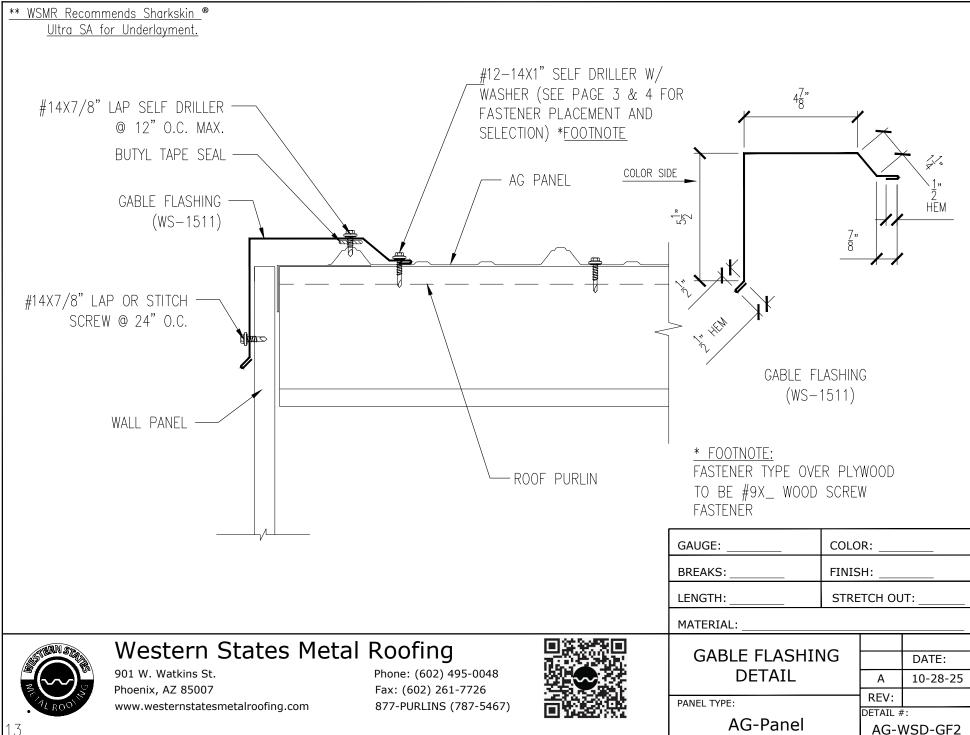


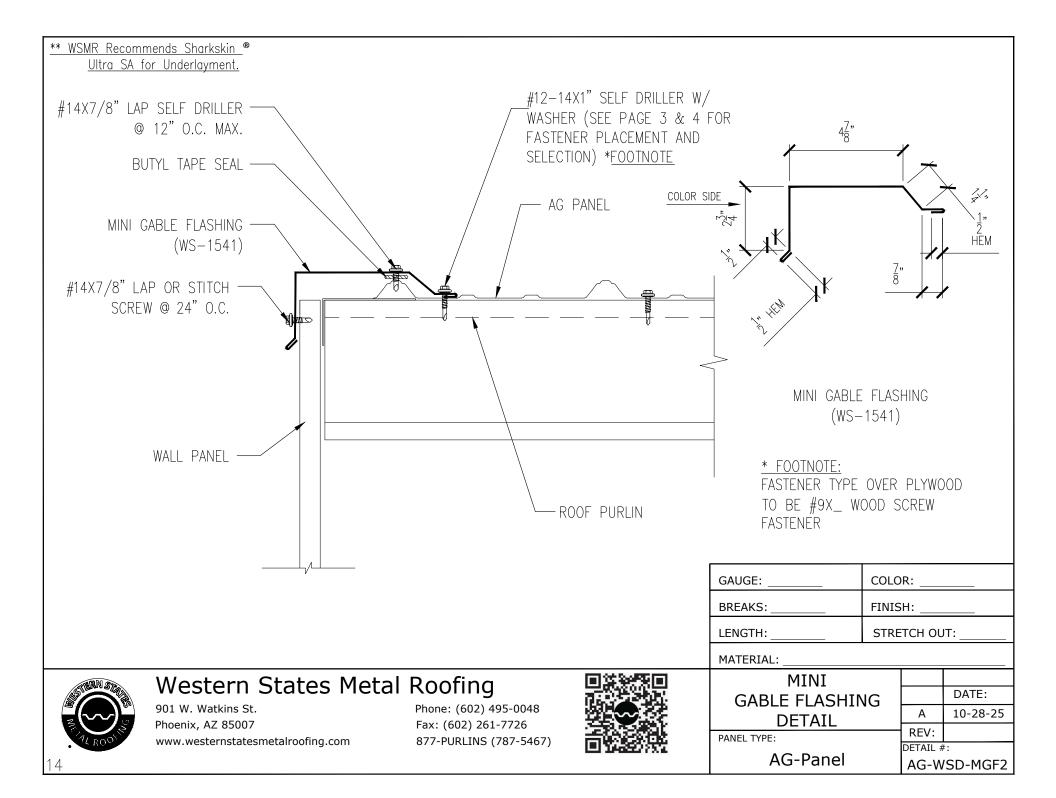
GUTTER	SPLICE
DET	AIL

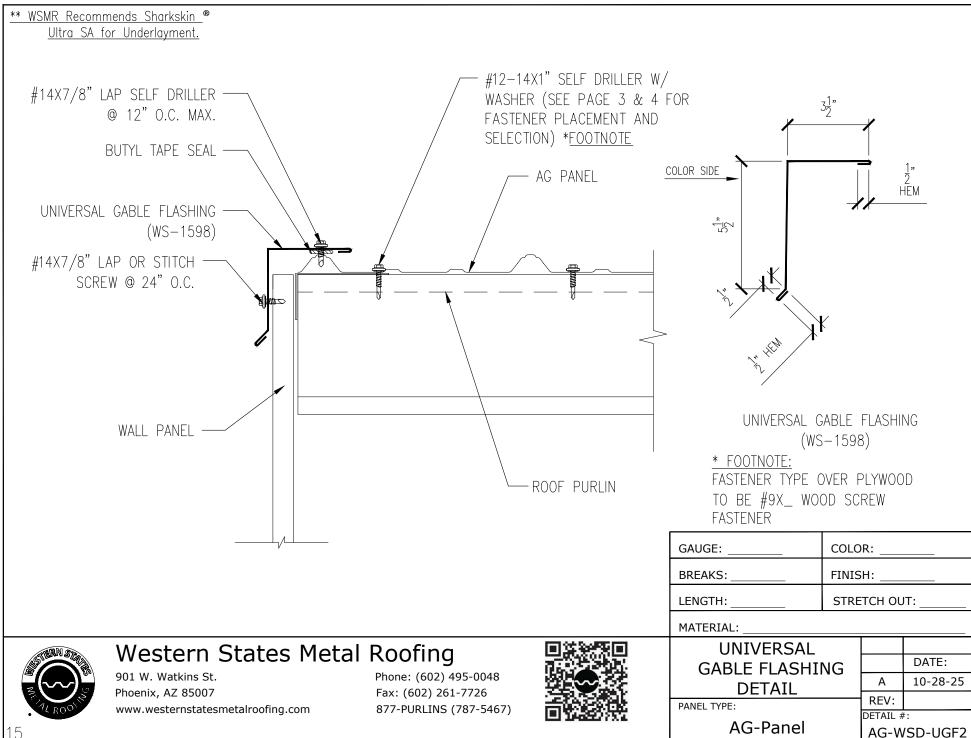
DETAIL

PANEL TYPE:

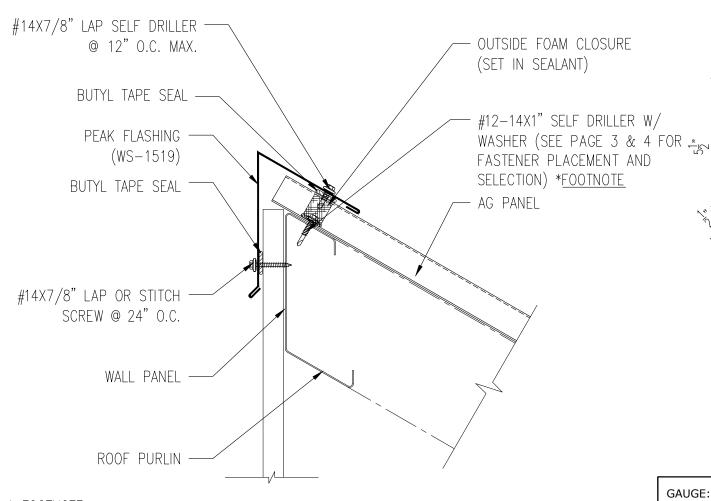
	DATE:
Α	10-28-25
REV:	
DETAIL #	ŧ:
AG-V	VSD-EG3







** WSMR Recommends Sharkskin [®] Ultra SA for Underlayment.



PEAK FLASHING/HIGH EAVE FLASHING
(WS-1519)

* DENOTES ANGLE

* FOOTNOTE:
FASTENER TYPE OVER PLYWOOD
TO BE #9X_ WOOD SCREW
FASTENER

GAUGE:	COLOR:
BREAKS:	FINISH:
LENGTH:	STRETCH OUT:

MATERIAL:



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PEAK FLASHING/
HIGH EAVE DETAIL

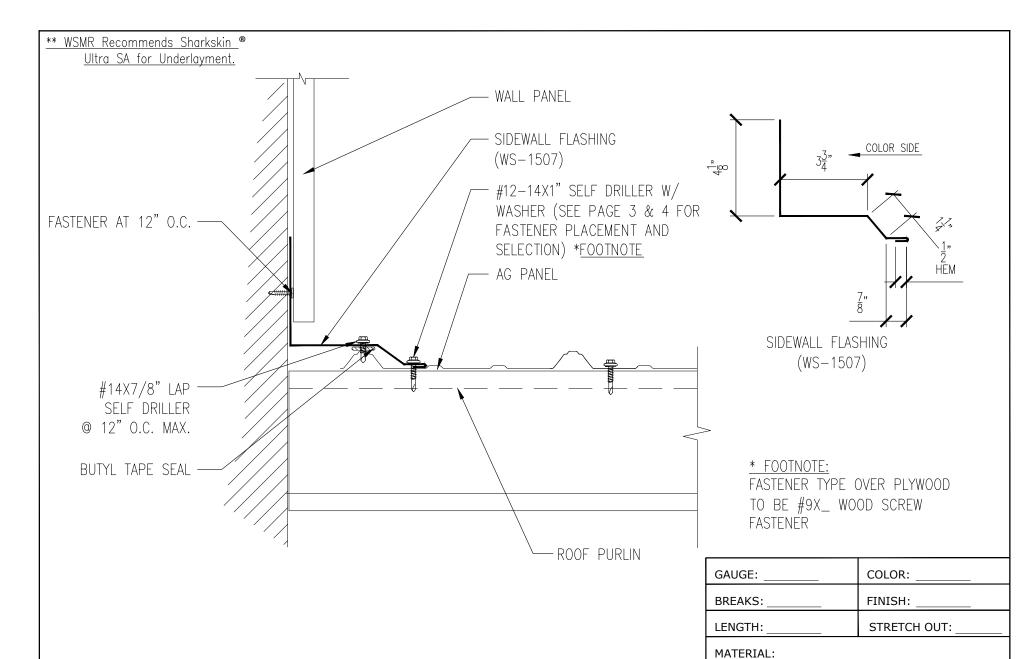
DATE:
A 10-28-25
REV:

PANEL TYPE:

AG-Panel

DETAIL #:

AG-WSD-PK3





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SIDEWALL FLASHING DETAIL

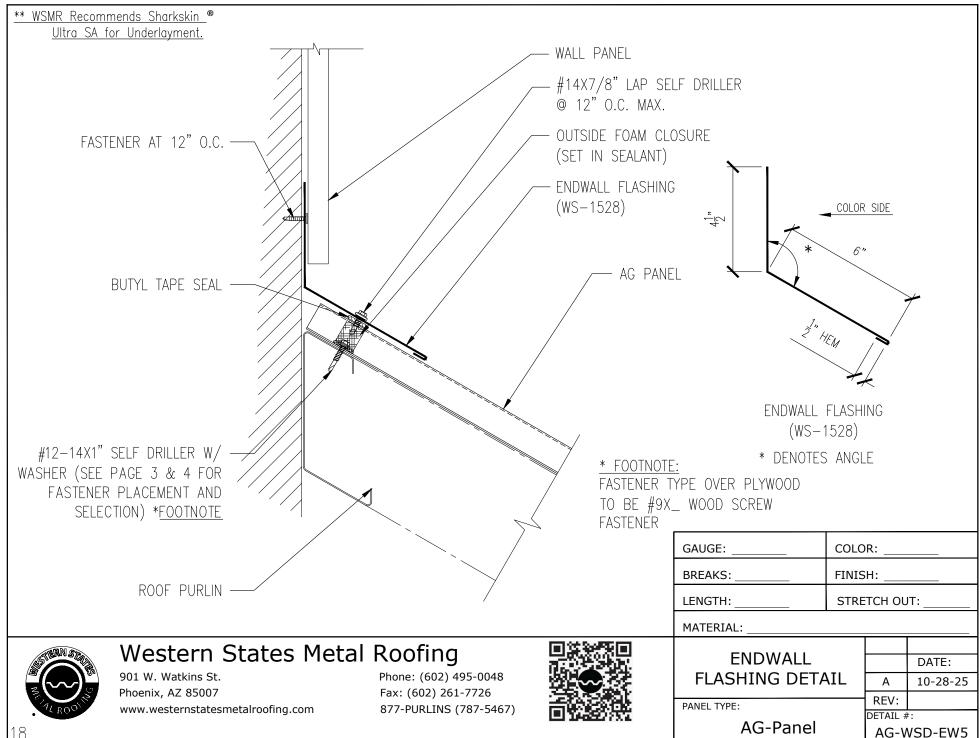
PANEL TYPE:

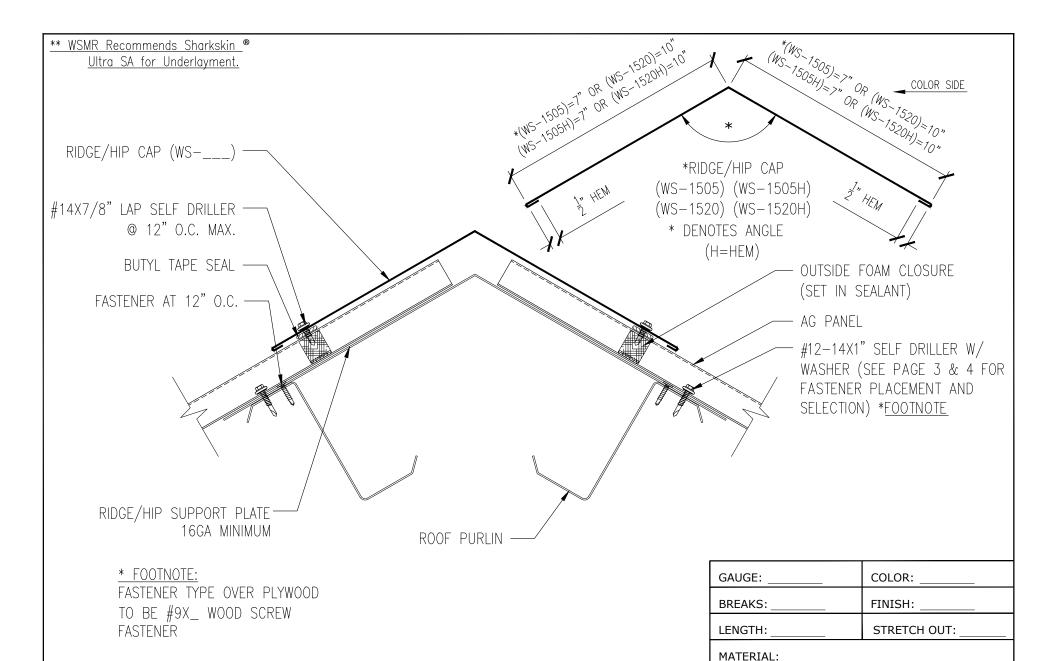
AG-Panel

		DATE:
	Α	10-28-25
	REV:	
	DETAIL #:	

AG-WSD-SW4

17







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RIDGE/HIP CAP DETAIL

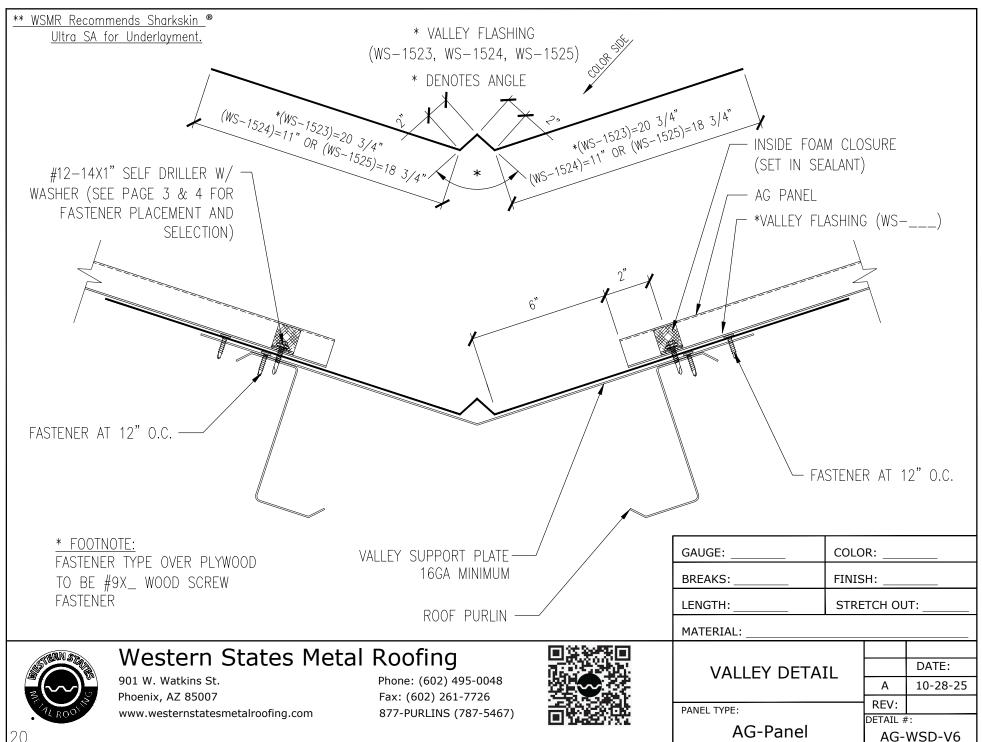
DATE: 10-28-25 Α

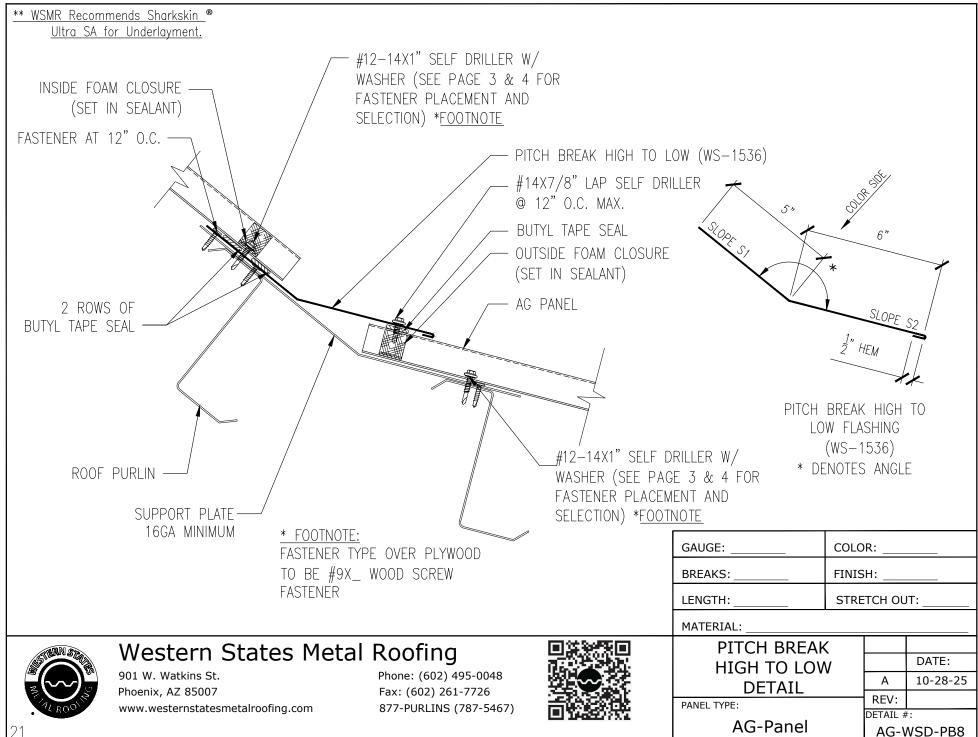
PANEL TYPE:

AG-Panel

REV: DETAIL #:

AG-WSD-RH6

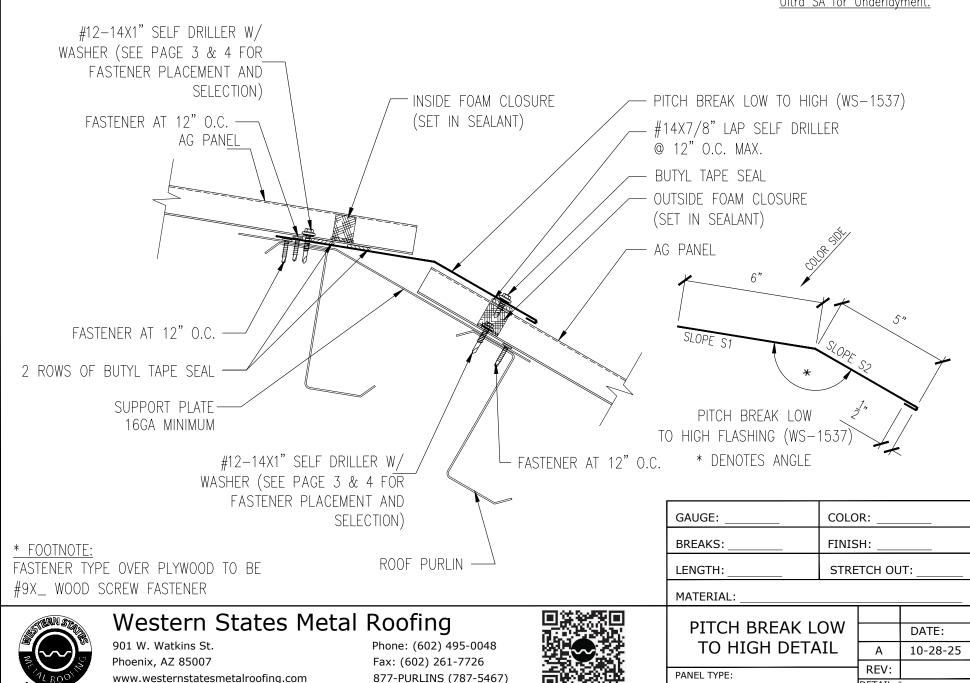


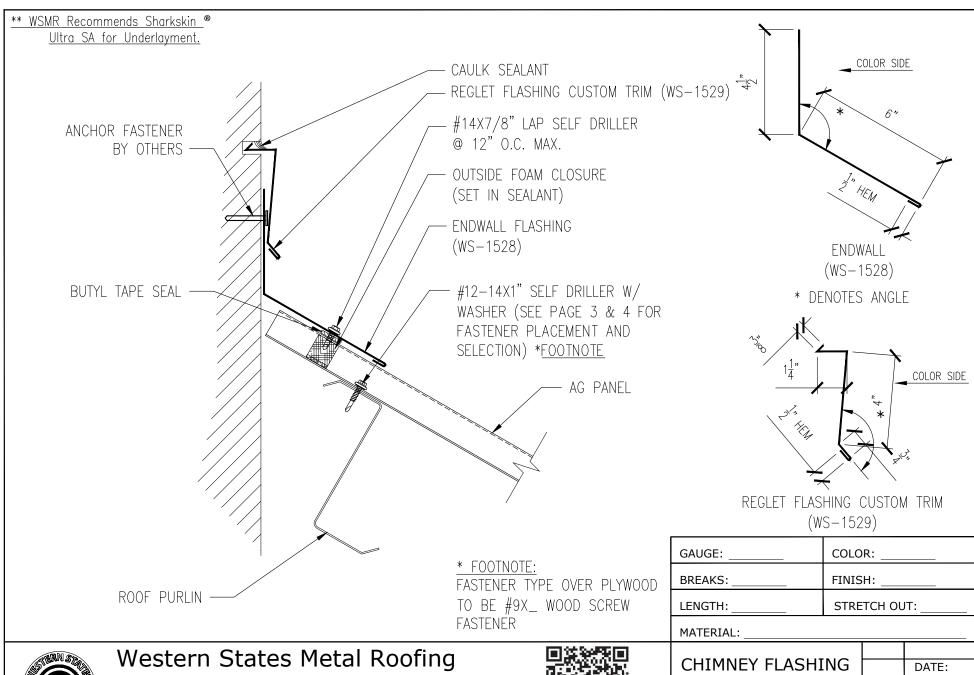


** WSMR Recommends Sharkskin ® Ultra SA for Underlayment.

DETAIL #:

AG-WSD-PB9







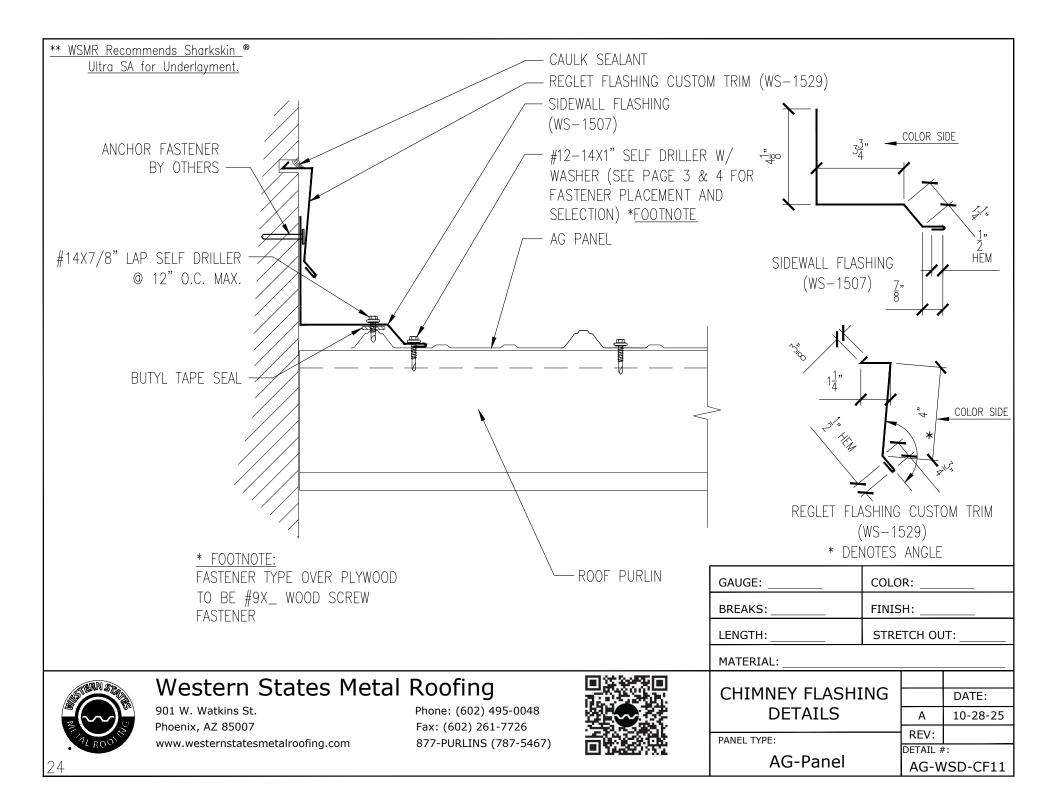
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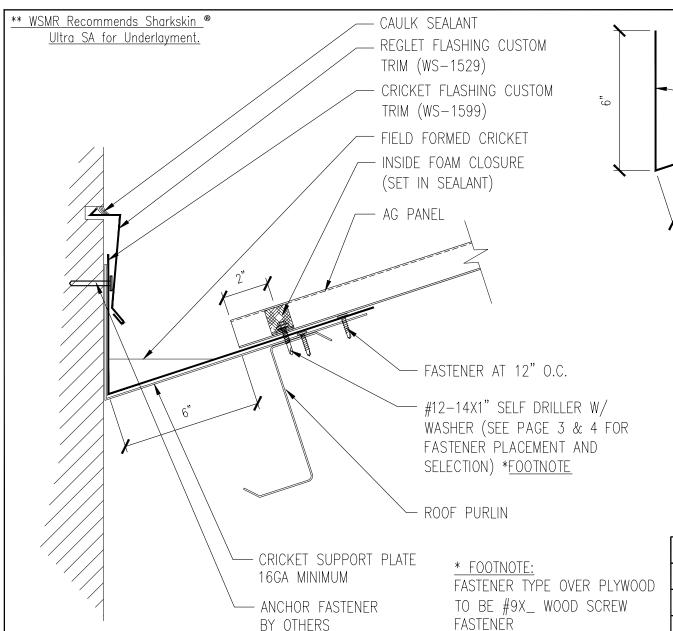


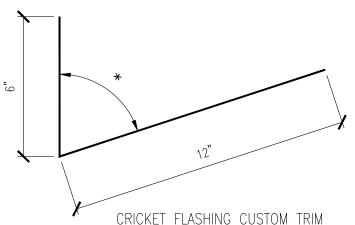
DETAILS

PANEL TYPE:

G		DATE:
	Α	10-28-25
	REV:	
	DETAIL #:	
	AG-WSD-CF10	

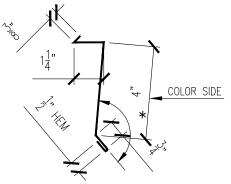






(WS-1599)

* DENOTES ANGLE



REGLET FLASHING CUSTOM TRIM (WS-1529)

* DENOTES ANGLE

GAUGE:	COLOR:
BREAKS:	FINISH:
LENGTH:	STRETCH OUT:

MATERIAL:

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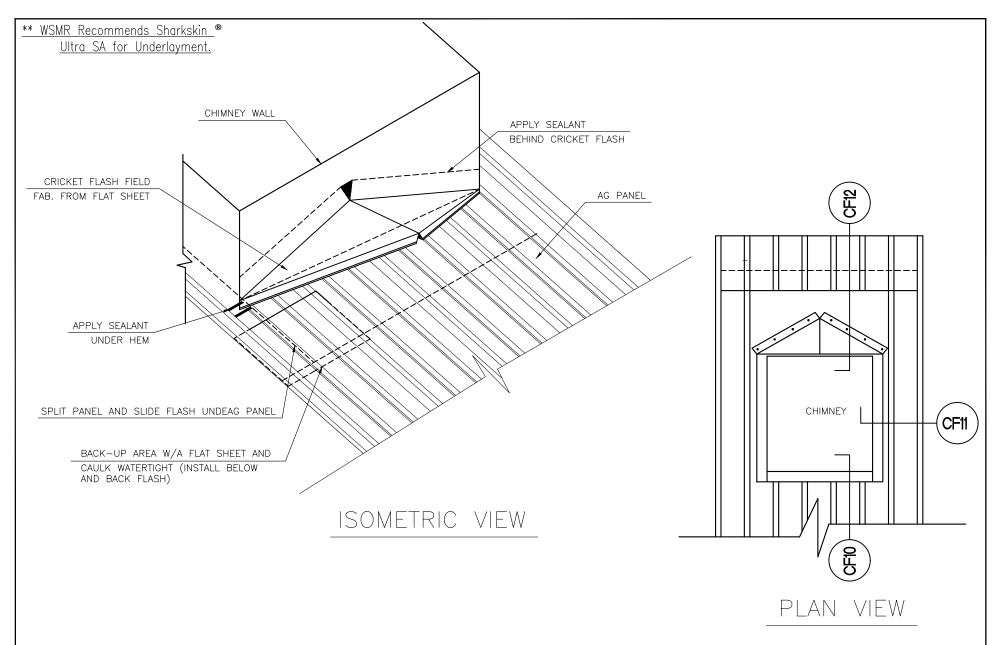
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CHIMNEY FLASHING
DETAILS

PANEL TYPE:

ì		DATE:
	Α	10-28-25
	REV:	
	DETAIL #:	
	AG-WSD-CF12	





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ISOMETRIC CRICKET DETAIL @ CHIMNEY

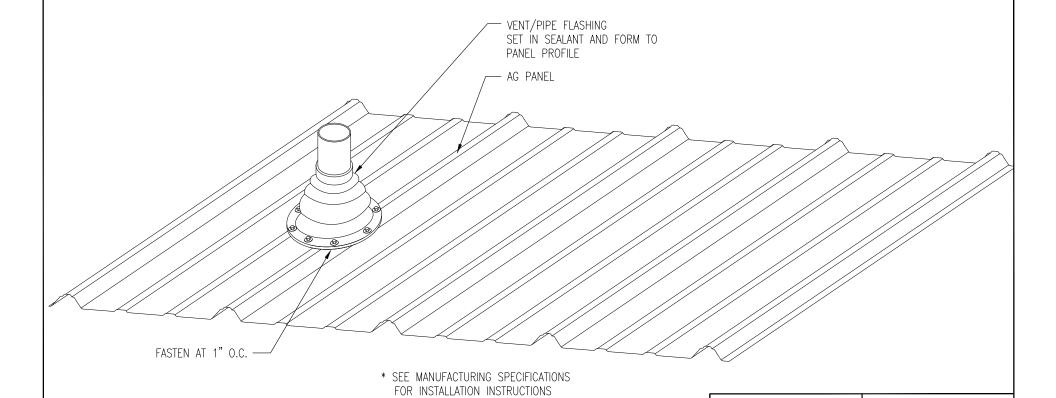
PANEL TYPE:

AG-Panel

·		
	DATE:	
Α	10-28-25	
REV:		
DETAIL # ·		

AG-WSD-CF13

** WSMR Recommends Sharkskin ** Ultra SA for Underlayment.





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PIPE FLASHING DETAIL

PANEL TYPE:

GAUGE: BREAKS:

LENGTH: __ MATERIAL:

AG-Panel

	·	
		DATE:
	Α	10-28-25
	REV:	
	DETAIL 4	

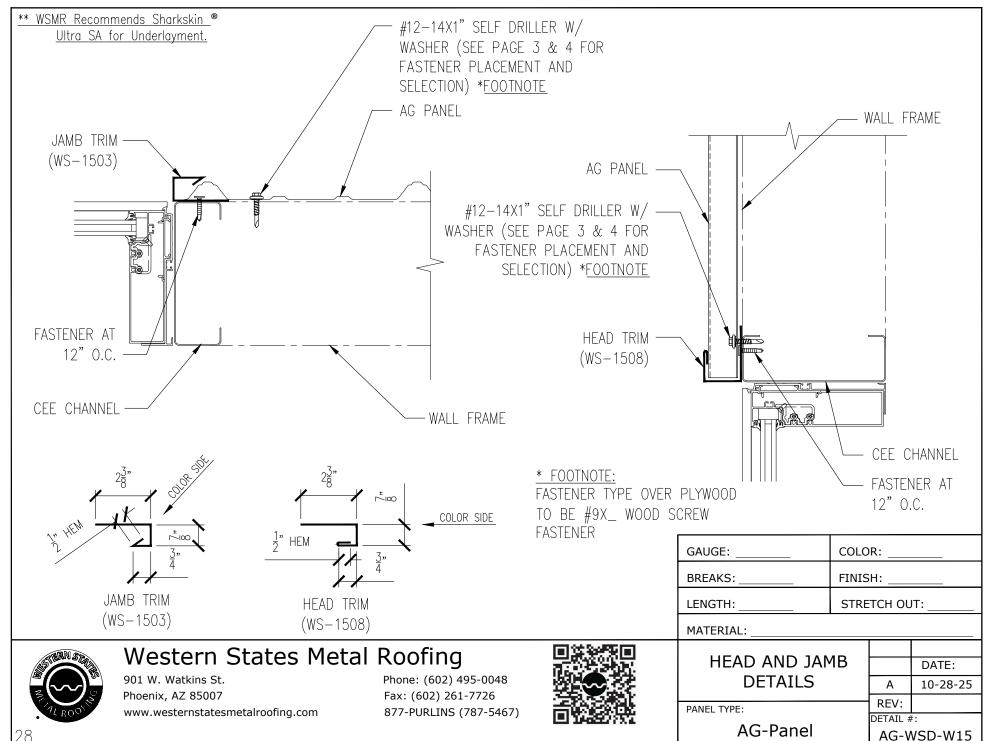
COLOR:

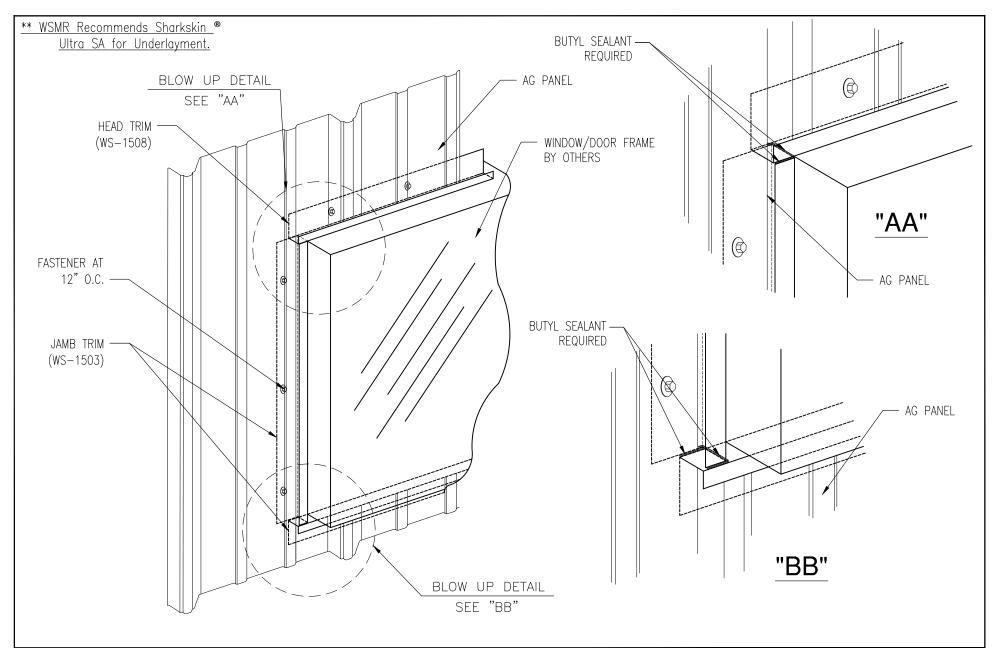
FINISH:

STRETCH OUT:

DETAIL #:

AG-WSD-PF14







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ISOMETRIC WALL		
DETAIL		

PANEL TYPE:

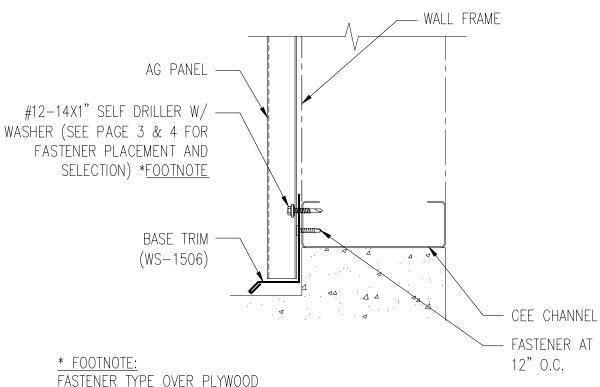
AG-Panel

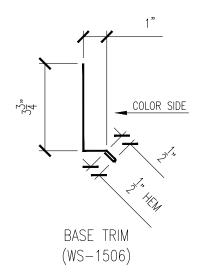
	DATE:
Α	10-28-25
REV:	

DETAIL #:

AG-WSD-W16

** WSMR Recommends Sharkskin ® <u>Ultra SA for Underlayment.</u>





TO BE #9X_ WOOD SCREW **FASTENER**

GAUGE:	COLOR:
BREAKS:	FINISH:
LENGTH:	STRETCH OUT:

MATERIAL:



Western States Metal Roofing

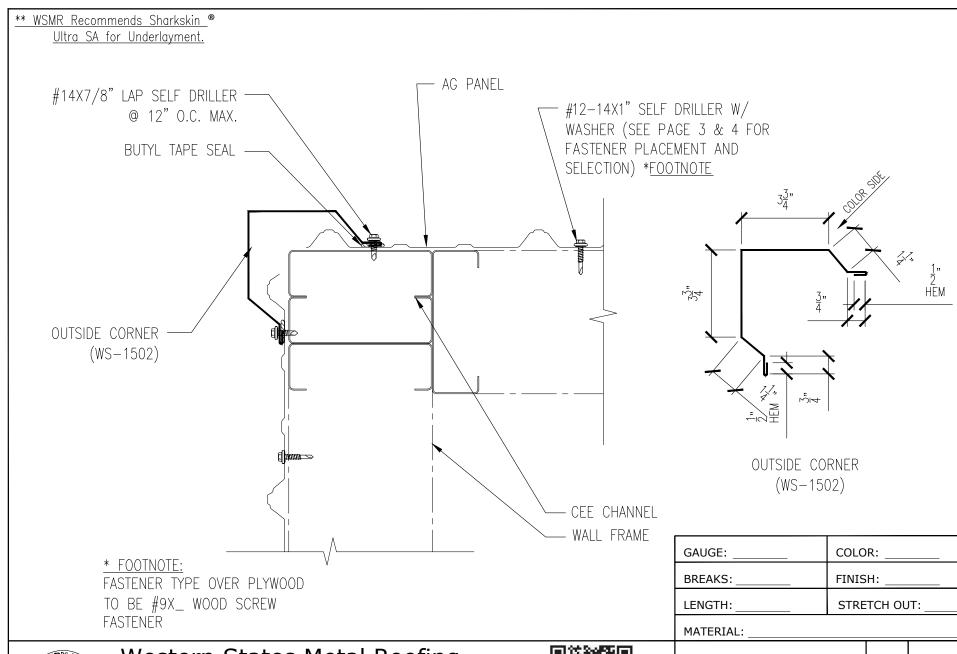
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BASE DETAIL		DATE
5, 132 52 1, 112	Α	10-28
PANEL TYPE:	REV:	
	DETAIL #	t :

AG-Panel

AG-WSD-W17





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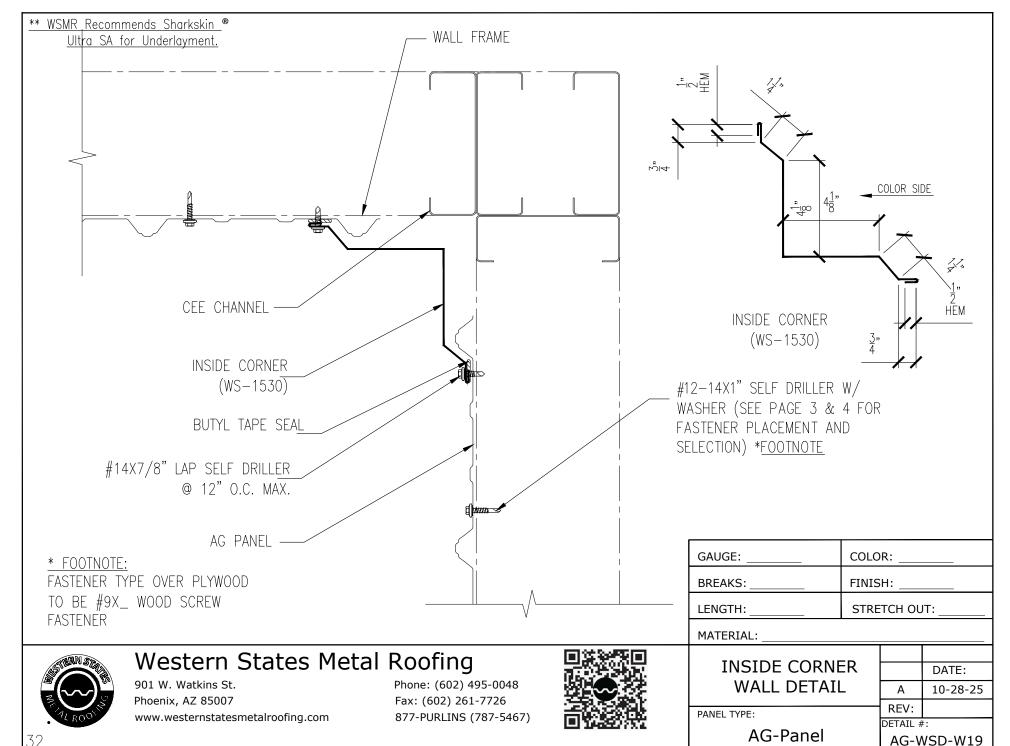
OUTSIDE CORNER WALL DETAIL

PANEL TYPE:

AG-Panel

		DATE:
	Α	10-28-25
	REV:	
	DETAIL #:	

AG-WSD-W18



NOTES:	
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NOTES

DATE: Α 10-28-25 REV:

PANEL TYPE:

AG-Panel

DETAIL #: AG-WSD-MN19

CUSTOM TRIM

GAUGE:	COLOR:
BREAKS:	FINISH:
LENGTH:	STRETCH OUT:

MATERIAL:

CUSTOM TRIM NAME:

DATE: 10-28-25 REV:

AG-WSD-CT20

PANEL TYPE: DETAIL #:

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Western States "AG" Panel

Installation, Flashings & Shop Drawing Detail Guide

Special Design Considerations

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Consideration should be given for Fit for Purpose, Building use, Climate conditions such as temperature, snow, wind, and moisture, Governing Building Codes, and Maintenance.

It is highly recommended that all trims and flashings be of the same material as the panels (metal, gauge, finish) to ensure long term performance and durability. Where possible, flashing edges should be hemmed to strengthen the edge and protect the cut edge from exposure.

Acceptance

Use of this manual is strictly voluntary. Details that are provided are to be used as a guide only. Details may not be applicable for all situations. This guide provides one standard detail and WSDI accepts that other installation details may be needed and other details may exist. WSDI makes no guarantee as to the Weather Tightness of the system or details found with in this guide. The information in this manual is believed to be correct and accurate at the time of printing. WSDI reserves the right to change details, discontinue products, change designs at any time without incurring obligation. It is best to consult your Design Engineer for recommendations.

Underlayment

There are many types of underlayment's on the market today. All designed with a special purpose depending on the type of Metal and profile. Many different types of metal will require a different type of underlayment, Metal requires a High Temperature underlayment. It is best to consult your Design Engineer for recommendations. WSMR Recommends the use of Sharkskin SA Ultra for underlayment.

Valley and Snow Design

Valley design and dimension must be the proper width to accommodate high snow, rain, ice, and slope conditions. If possible, splices, penetrations, valleys, roof elevation changes, should be minimized in areas of high snow and ice accumulations. Details found in this manual may not pertain in areas of high snow and ice accumulations.

Panel Coverage and Fastening

Normal panel width of "AG" Panel. However depending on the finish selected and the required coil feed, it may be necessary for WSD to shorten the width of the panel. Please consult with your WSDI representative for details and fastening recommendations.

Safety and Maintenance

Walking on and installing any roof is dangerous! Extreme care should always be used when walking on roofs. Safety should always be a top priority and approved fall protection and equipment as approved by OSHA should always be used.

No roof is immune to severe weather or is completely maintenance free. To keep your roof performing as it was designed; an inspection and comprehensive maintenance program should be implemented.

Limited Warranty Information

Copies of Limited Warranty can be found on WSMR website www.westernstatesmetalroofing.com WSMR Recommends the use of the Eco Edge Sealer or equal for all exposed cut edges.

Limited Warranty will not cover Failures or damages resulting from edge corrosion.



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