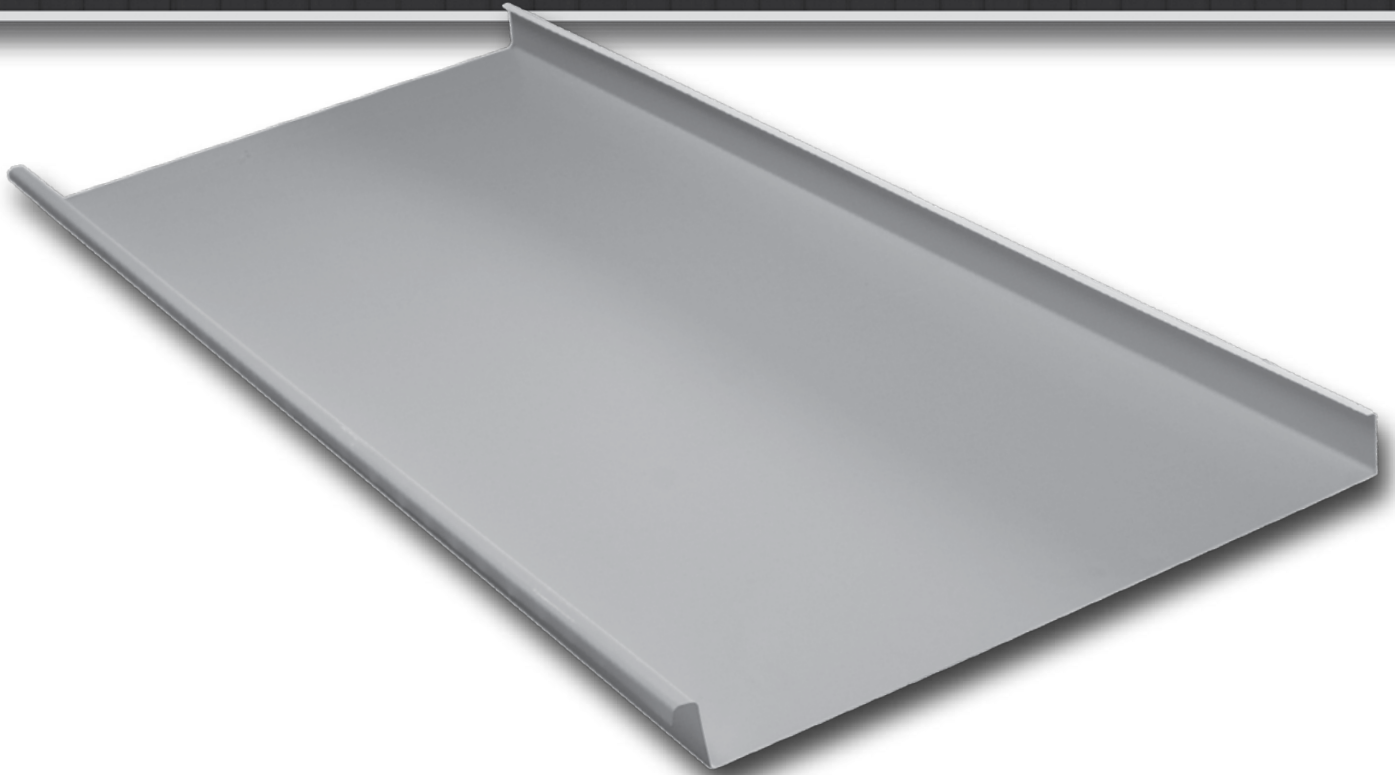


# TRIAD CORRUGATED METAL, INC.

COMMERCIAL | RESIDENTIAL | AGRICULTURAL



## MS-216

## MS-218

# Panel Guide

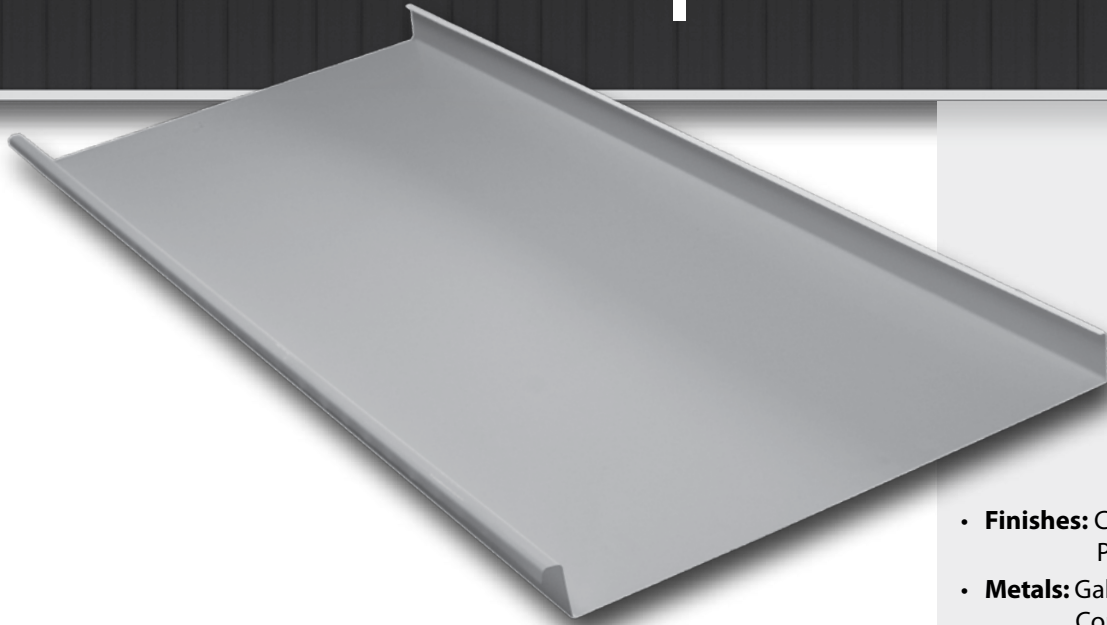
This guide describes the design and performance characteristics of the MS-216 and MS-218 Roof panel system. The intent is that this guide, together with the specific roof application requirements, will allow the designer to determine how to best incorporate this TCM Roof System into a specific project.

This guide describes only the MS -216 and MS-218 systems and does not make any recommendations for the application of these systems on any specific project. Professional designers may request all performance and test data for complete system evaluation.

### Table of Contents

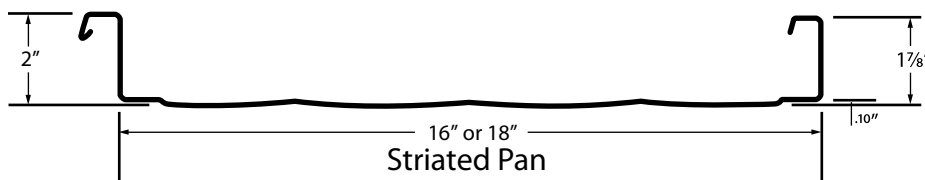
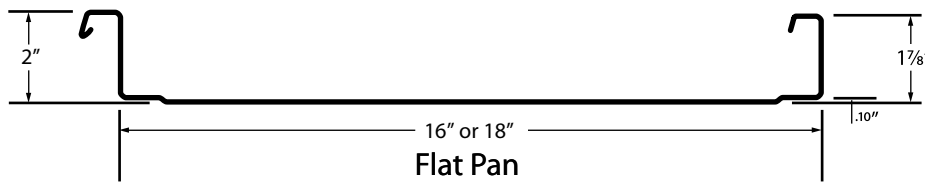
General Information	1
MS-216/218 Panel Description & Summary Test Data	2
Eave Section - Gutter	3
High Eave Section	4
Ridge Section	5
Rake Section Starting Rake	6
Hip Section	7
Roof Panel Seam Sections	8
Transition Section - Endwall	9
Transition Section - Sidewall	10
Valley Section	11

# MS-216 | MS-218



The MS-216 incorporates superior performance with a traditional flat pan, vertical rib appearance and is often preferred by traditional designers. It is available with a flat pan or a striated pan.

The MSA-218 features traditional appearance, superior performance and outstanding manufacturing economy compared to the traditional 2" high, 16" wide panel. It comes in a flat pan or striated pan similar to the traditional 16" wide panel but 2" wider for manufacturing and erection economy. The material cost for the MS-218 is less because you get 12 1/2% more coverage (18/16) for 8 1.2% more material (24/22).



- **Finishes:** Classic Sil-Poly & Premium Kynar
- **Metals:** Galvanized, Galvalume®, Copper and Aluminum
- **Gauges:** 26ga and 24ga
- **Features:**
  - Δ Architectural/ structural integral standing seam panel
  - Δ Applies over open framing or solid substrate
  - Δ Mechanically seamed panel system
  - Δ Specially designed clip for thermal movement
  - Δ Minimum roof slope: 1/2:12
  - Δ Cut to the inch

## ACCESSORIES



Number in circles refer to page numbers in TCM Metal Roofing Guide.





# MS-216

## Panel Description & Summary Test Data

**PANEL DESCRIPTION:** 2" Mechanical Seam Panel, 24 gauge (0.023" min.), MSG coated steel, 16" or 18" max. width, 2" tall rib, painted or unpainted. (material complies with FBC 2007, Sections 1504.3.2). Bare galvanized limited warranty - 20 years for integrity and corrosion perforation, "Galvalume" limited warranty - 25 years.

**PAINT SYSTEMS:** Silicone polyester (Limited warranty 40 year for integrity and adhesion, 30 year for chalking, 30 year for fade resistance.) Kynar Fluoropon (Limited warranty 35 years for integrity and adhesion, 30 years for chalking, 30 years for fade resistance.)

**PANEL CLIP & FASTENER:** Clips -One piece 22 GA,G90 Galvanized, 3.75" long @ each purlin spacing. Fastener (2) #10-12 X 1", #2 Phillips Drive, Pancake head per clip. Alternate -Two piece floating, 22GA(upper) 16GA(lower), G90 galvanized, 4.9" long @ each purlin spacing, Fastener (2) #10-12 X 1", #2 Phillips Drive, Pancake head per clip. (Corrosion resistant per FBC 2007 Section 1507.4.4)

**MAXIMUM ALLOWABLE PANEL UPLIFT PRESSURE:** Per testing below based on UL 580/UL 1897 testing, ASTM E-1592 testing, FM 4471 testing.

**ROOF PANEL FIRE RATING:** Panel has a Class A fire exposure rating in accordance with FBC Section 1505.3 without an additional fire barrier.

**MINIMUM ROOF SLOPE:** .25:12 Minimum slope, 6:12 Maximum recommended.

**SUBSTRATE:** Steel purlins spaced 5'-0" O.C. Purlins support capacity is not addressed in this testing.

**VAPOR BARRIER:** N/A

### TESTING ( Dated July, 2005) \*\*

TEST BASIS: Based on 24 gauge 16" wide panel with 2" rib installed over steel purlin @ 5', and 2.5' spacing. Underwriters Laboratories Inc. Construction # 506, 506A, 506B. UL 580/UL1897 test. Factory Mutual 4471 Uplift Test. ASTM E 1592 Uplift Test

2" 24 GA. MECHANICAL SEAM, 16" WIDE								
PANEL WIDTH	PANEL GAUGE	PURLIN SPACING	SEAM	UPLOAD TEST RESULTS - lb/SF			AIR INFILTRATION	WATER LEAKAGE
				UL	FM 4471	ASTM E-1592 Allowable Uplift	ASTM E 1680	ASTM E 1646
16"	24 GA.	5'-0"	TRIPLE LOCK	UL-90	1-90	56.6	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		TRIPLE LOCK		1-90	56.6	.005 CFM/sq.ft.	NONE @ 12PSF.
	24 GA.		QUAD LOCK	UL-90	1-90	78.8	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		QUAD LOCK		1-165	65.0	.005 CFM/sq.ft.	NONE @ 12PSF.
16"	24 GA.	2'-6"	TRIPLE LOCK		1-90	113.2	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		TRIPLE LOCK		1-90	85.8	.005 CFM/sq.ft.	NONE @ 12PSF.
	24 GA.		QUAD LOCK			157.6	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		QUAD LOCK		1-165	96.2	.005 CFM/sq.ft.	NONE @ 12PSF.

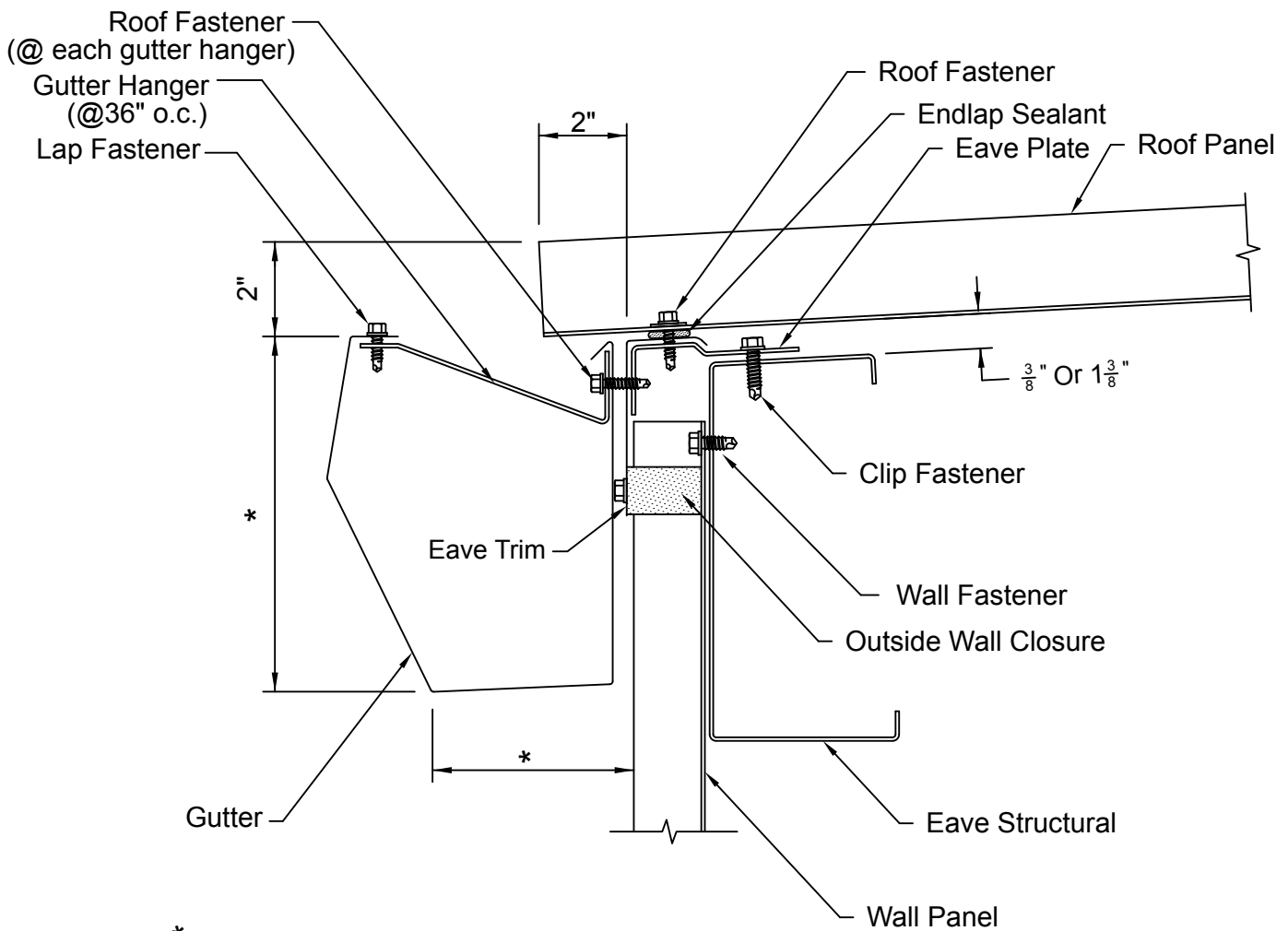
2" 24 GA. MECHANICAL SEAM, 18" WIDE								
PANEL WIDTH	PANEL GAUGE	PURLIN SPACING	SEAM	UPLOAD TEST RESULTS			AIR INFILTRATION	WATER LEAKAGE
				UL	FM 4471	ASTM E-1592 Allowable Uplift	ASTM E 1680	ASTM E 1646
18"	24 GA.	5'-0"	TRIPLE LOCK	UL-90	1-90	36.4	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		TRIPLE LOCK		1-90	52.0	.005 CFM/sq.ft.	NONE @ 12PSF.
	24 GA.		QUAD LOCK	UL-90	1-90	46.8	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		QUAD LOCK		1-165	52.0	.005 CFM/sq.ft.	NONE @ 12PSF.
18"	24 GA.	2'-6"	TRIPLE LOCK		1-90	78.0	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		TRIPLE LOCK		1-90	78.0	.005 CFM/sq.ft.	NONE @ 12PSF.
	24 GA.		QUAD LOCK			78.0	.005 CFM/sq.ft.	NONE @ 12PSF.
	22 GA.		QUAD LOCK		1-165	91.0	.005 CFM/sq.ft.	NONE @ 12PSF.

\*\* Additional design criteria and performance testing available on request.



# MS-216 | MS218

## Eave Section - Gutter

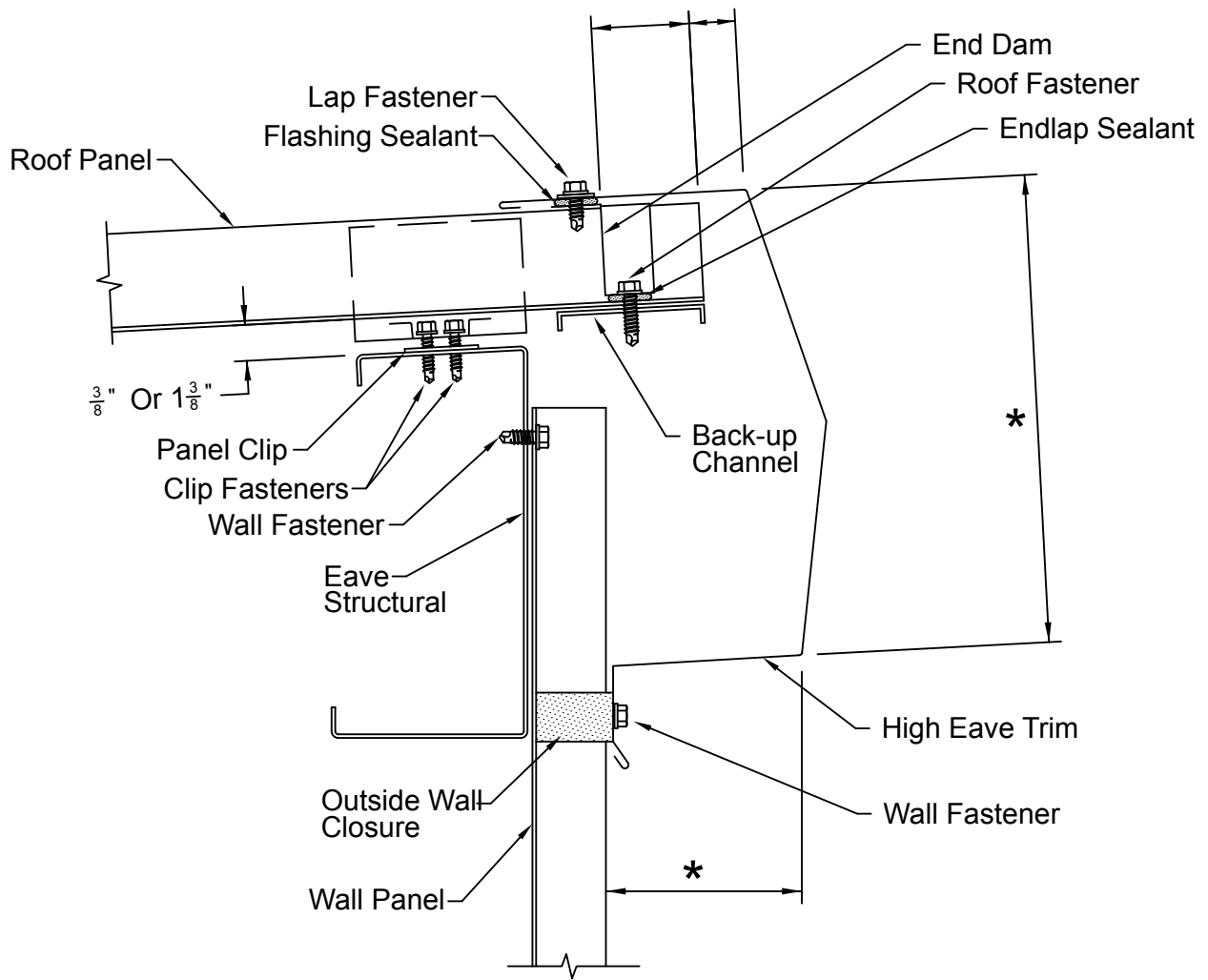


\* See TCM trim design



# MS-216 | MS218

## High Eave Section

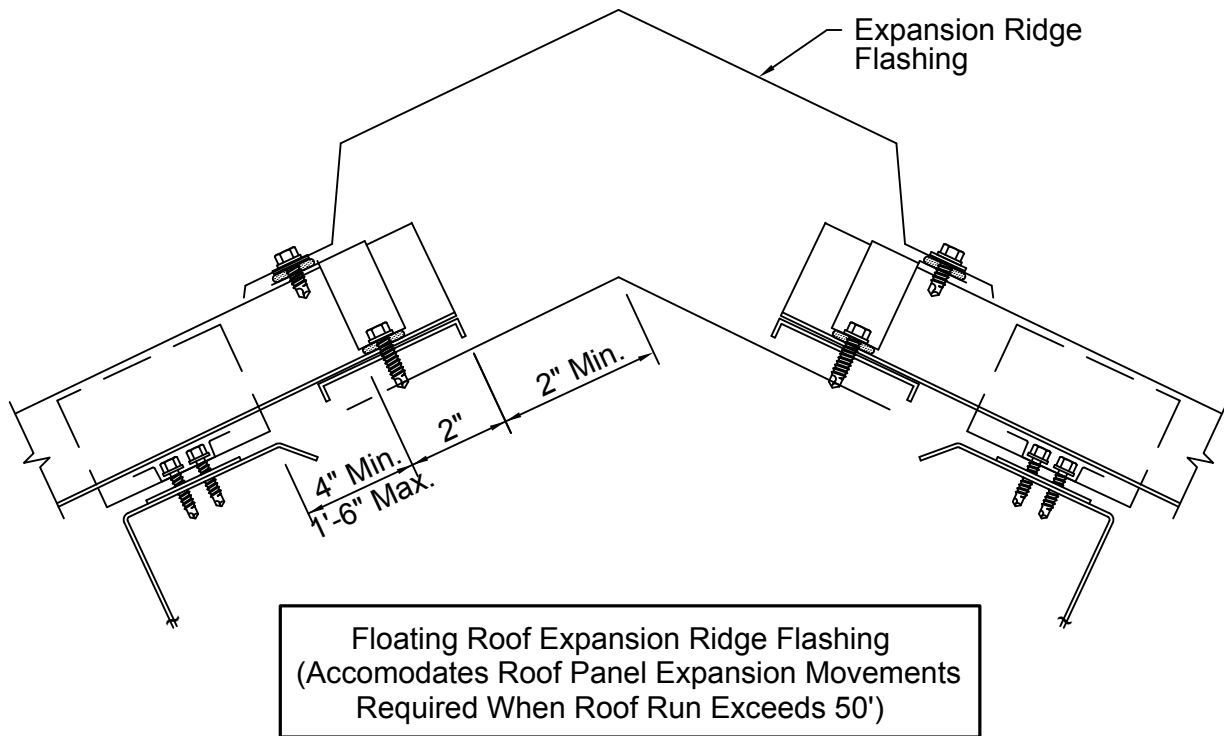
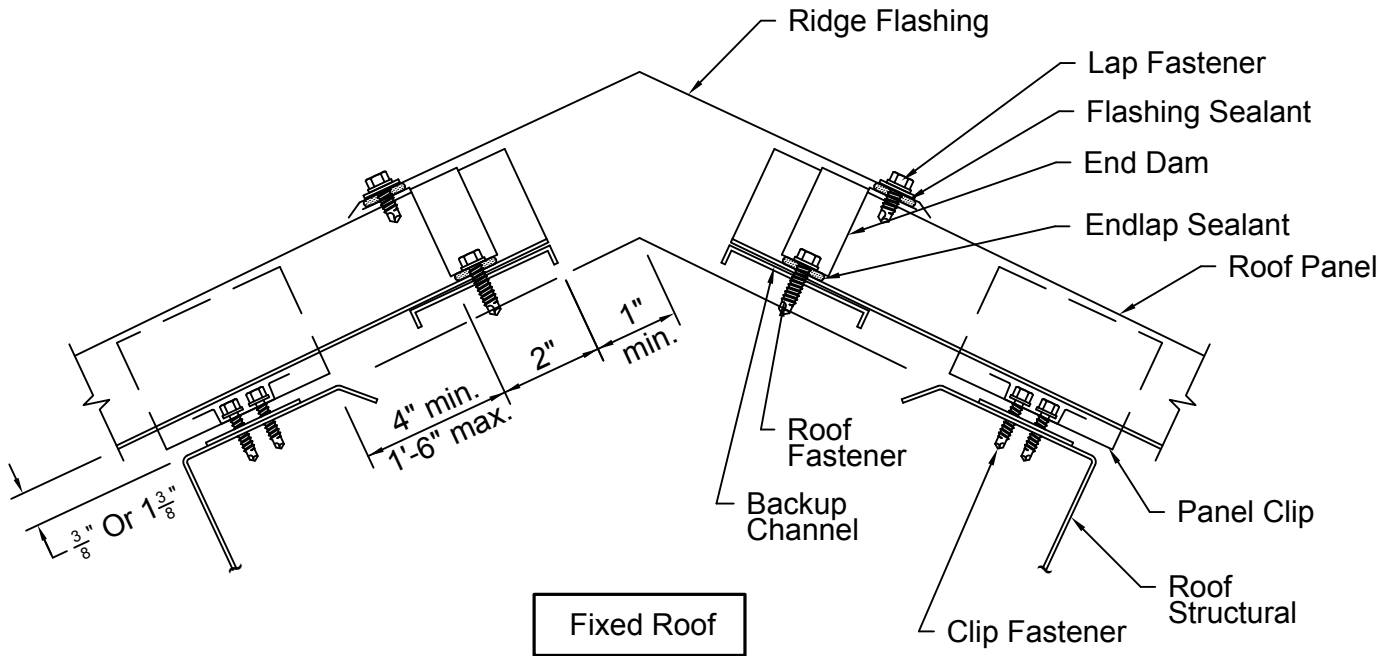


*\*Determined By TCM trim design*



# MS-216 | MS218

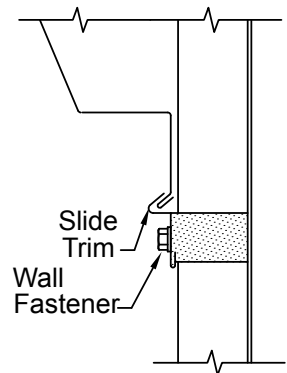
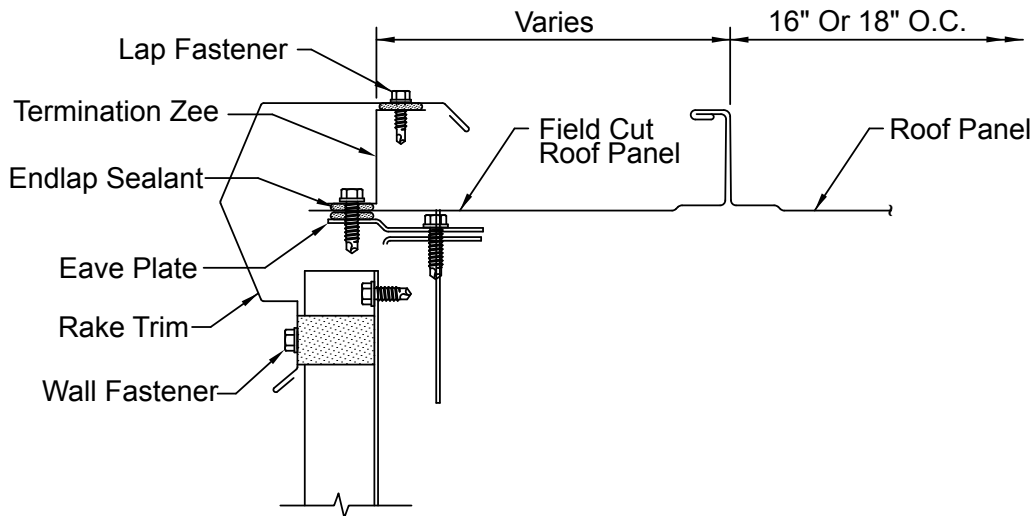
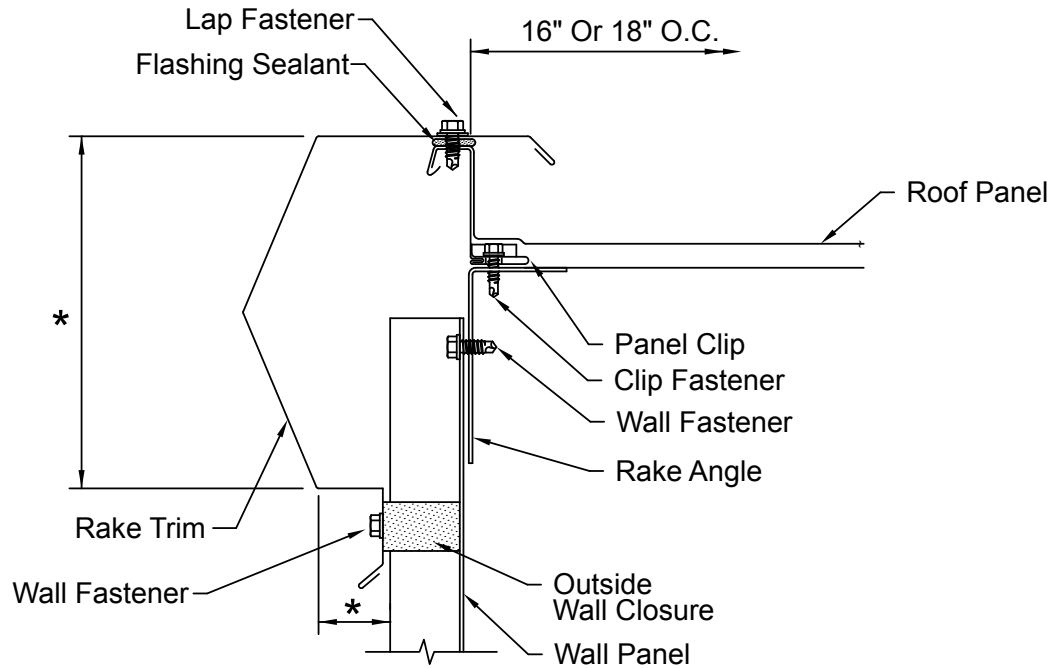
## Ridge Section





# MS-216 | MS218

## Rake Section Starting Rake



Alternate Field Cut Roof Pane

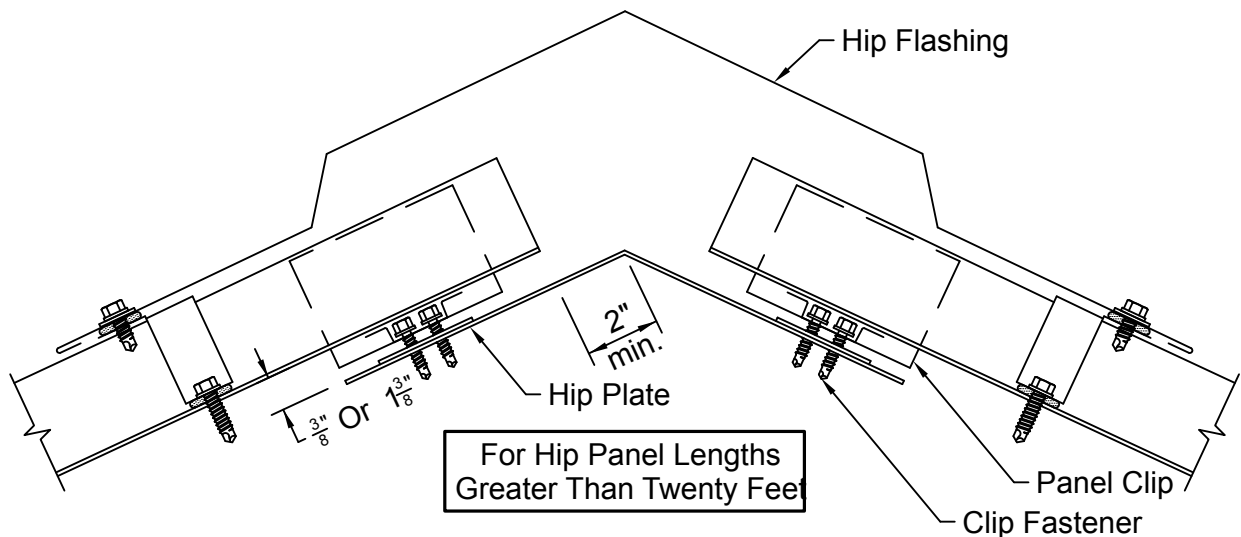
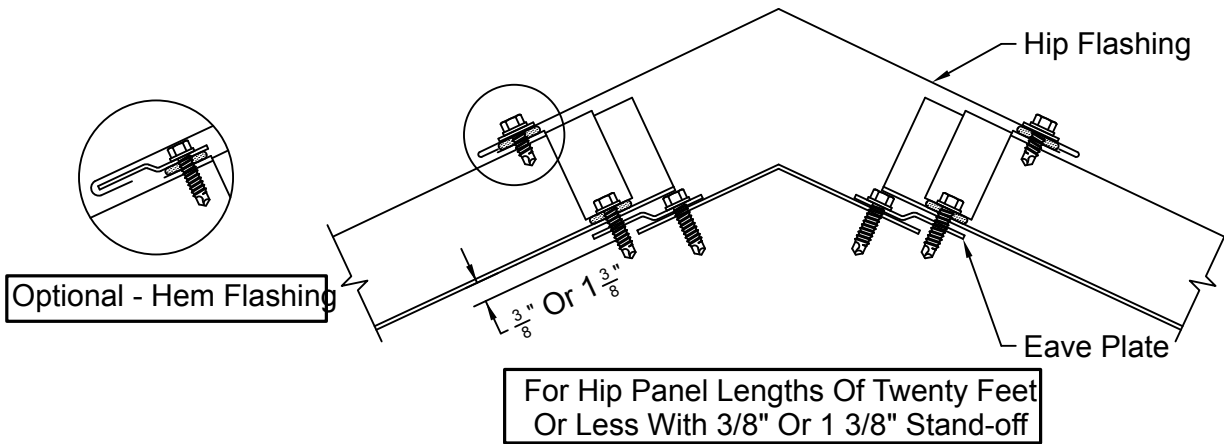
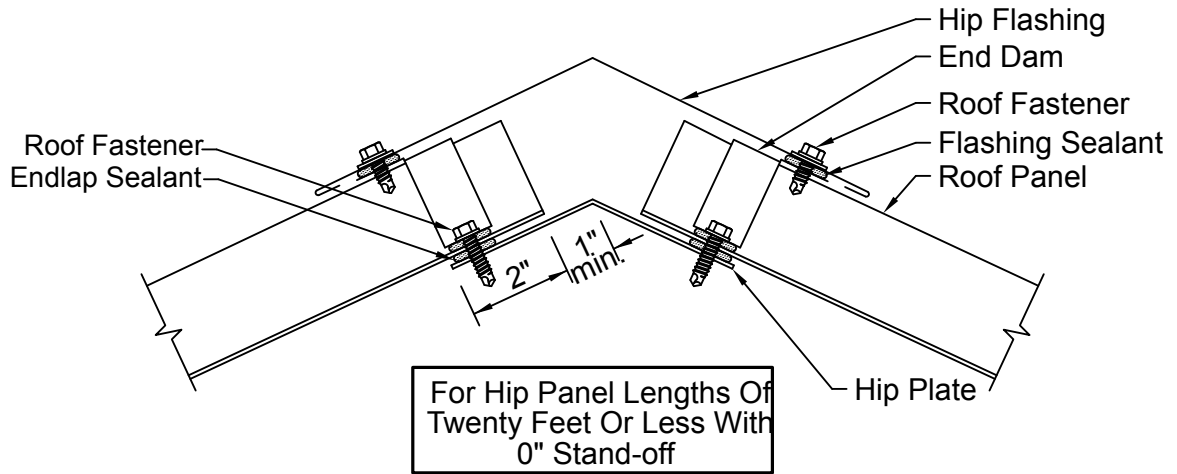
Alternate Sliding Rake Trim  
(Allows Expansion Movement Of Rake Trim,  
Required When Roof Run Exceeds 50')

\* See TCM trim design



# MS-216 | MS218

## Hip Section

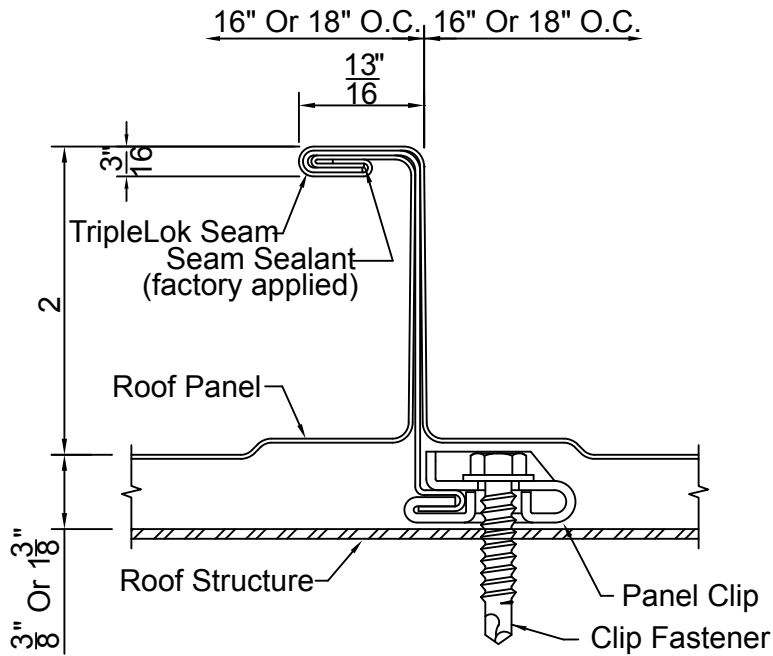






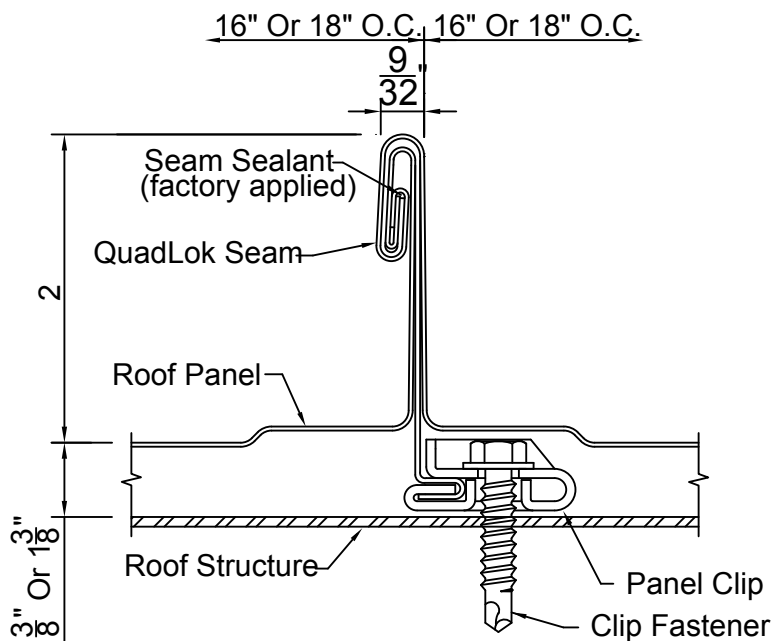
# MS-216 | MS218

## Roof Panel Seam Sections



Double-Lok Seam  
*(seam only at clips)*

Triple-Lok Seam  
*(seam full length)*

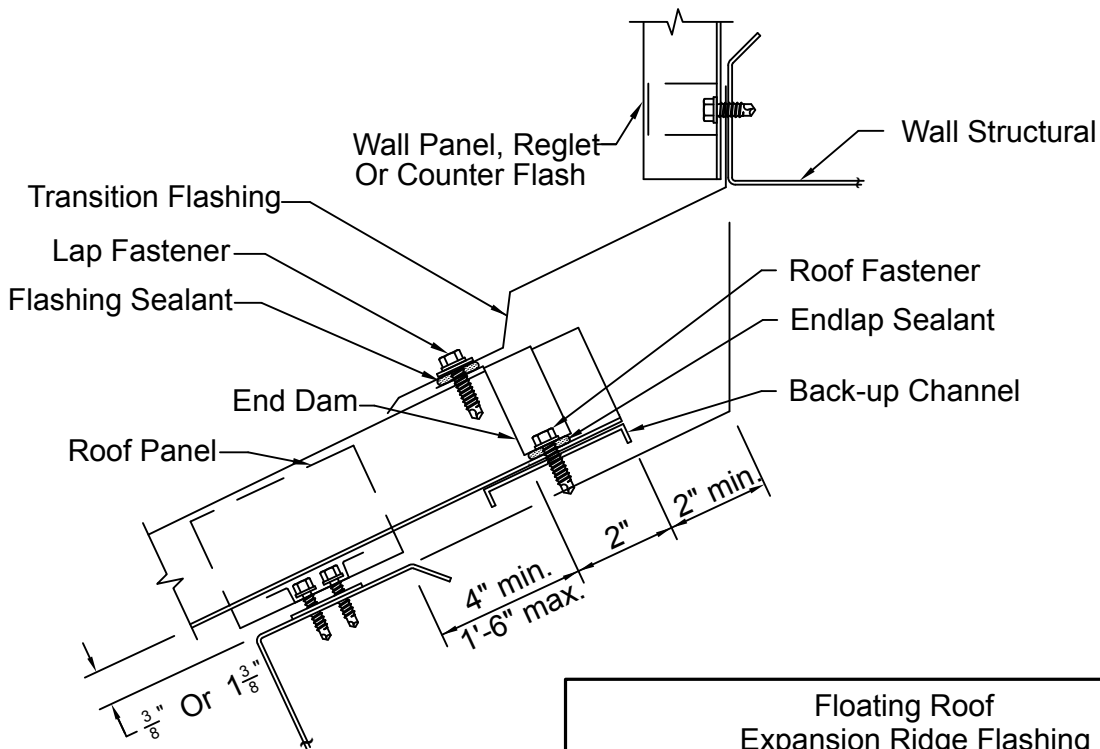
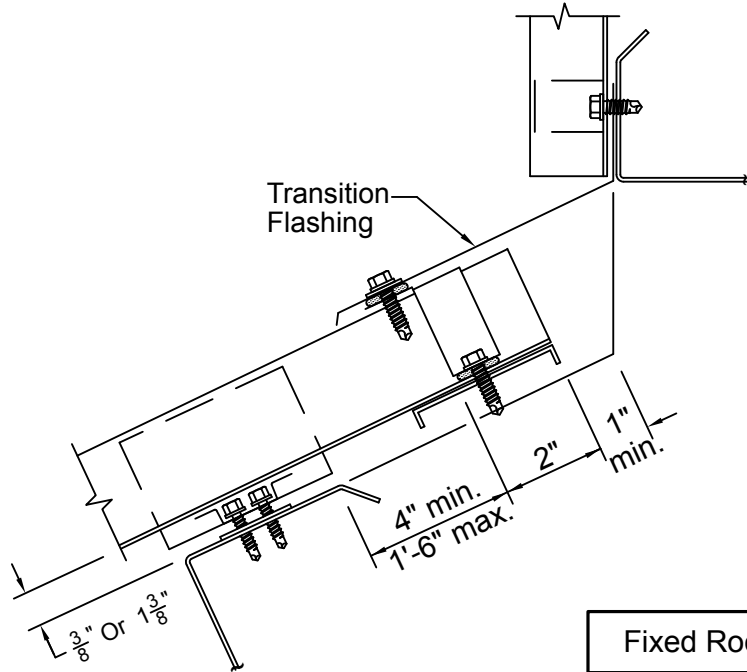


Quad-Lok Seam  
*(additional fold in seam full length)*



# MS-216 | MS218

Transition Section  
- Endwall

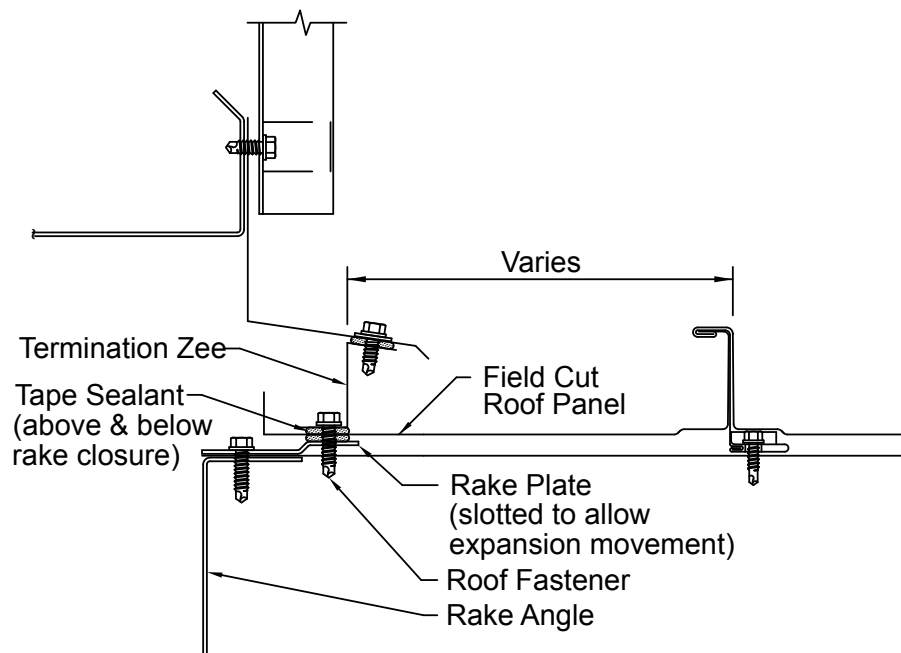
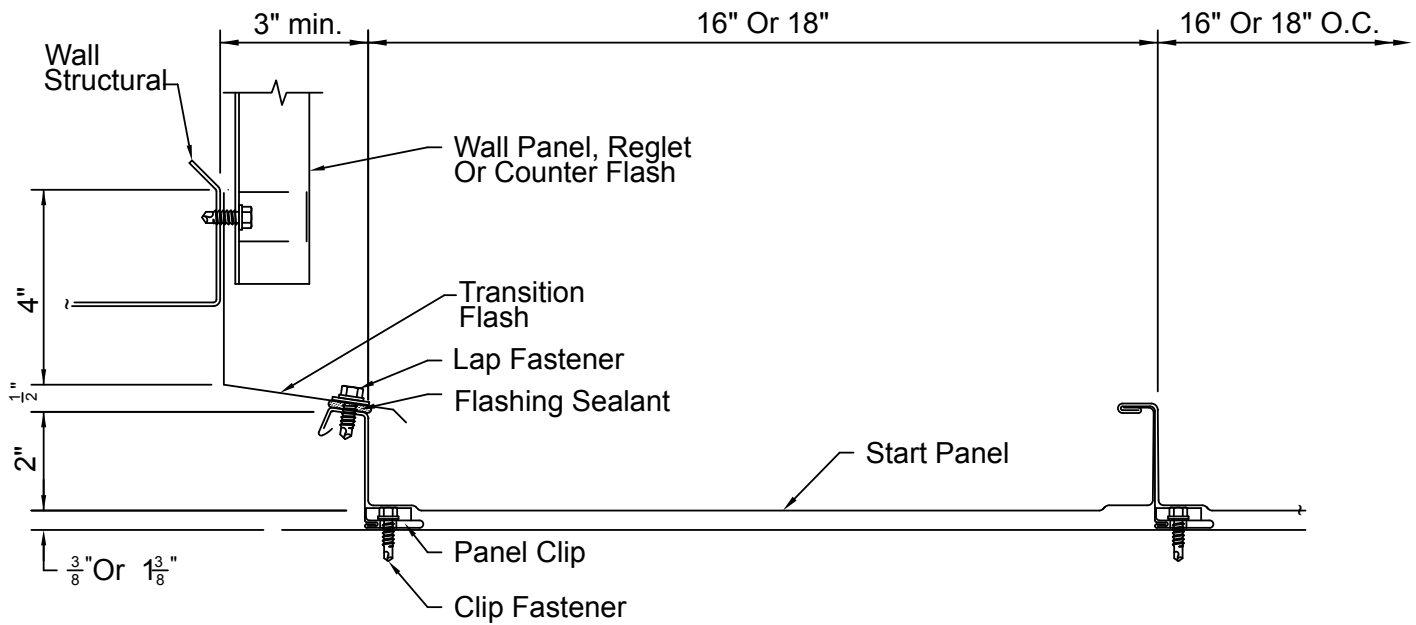


Floating Roof  
Expansion Ridge Flashing  
(Accommodates Roof Panel Expansion Movements  
Required When Roof Run Exceeds 50')



# MS-216 | MS218

## Transition Section - Sidewall

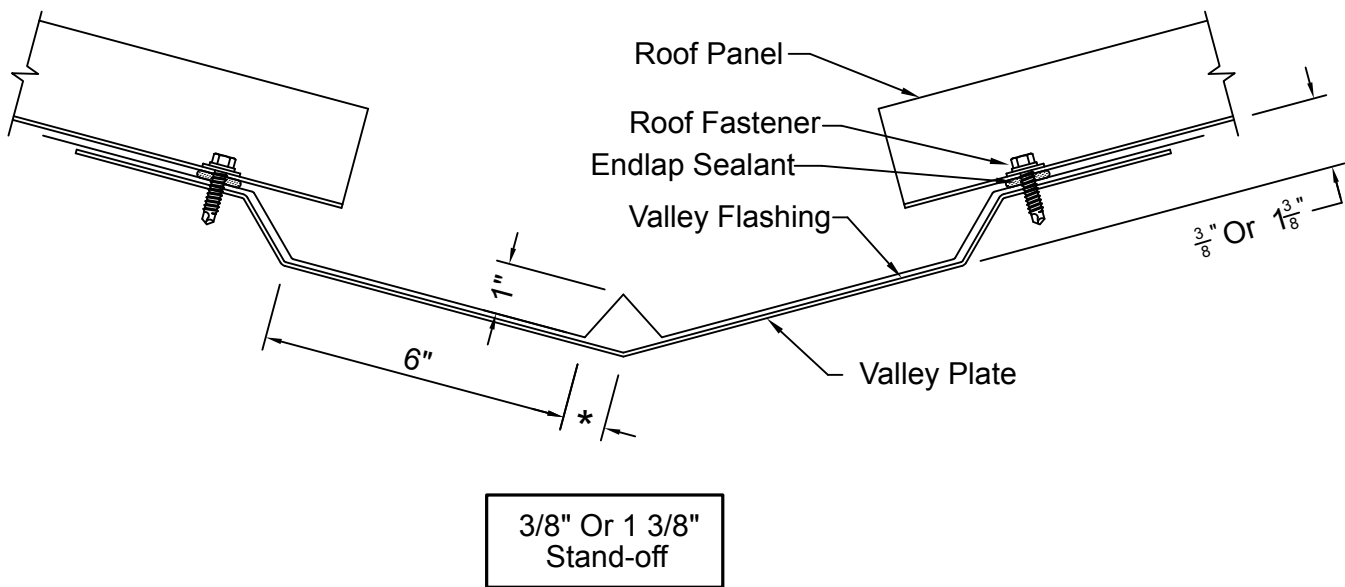
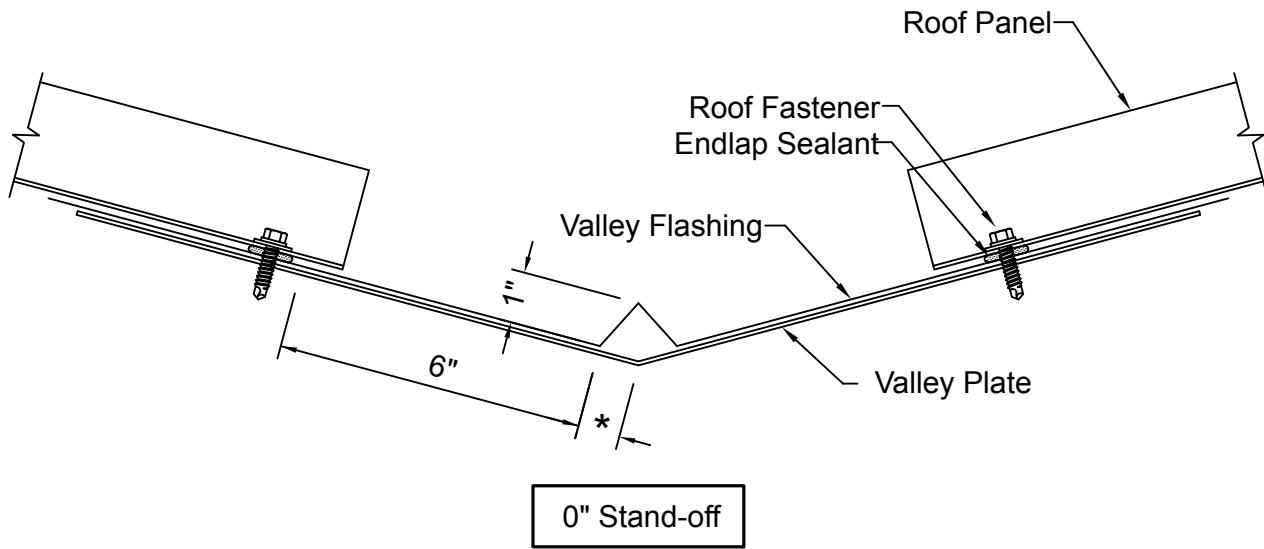


ALTERNATE  
Field Cut Roof Panel



# MS-216 | MS218

## Valley Section












**A  Greener Choice for Your Metal  
Roofing and Building Systems!**

**TRIAD CORRUGATED METAL, INC.**

208 Luck Road Asheboro, NC 27205

Phone: 336 625 9727 • Fax: 336 625 9722

[www.triadmetalroof.com](http://www.triadmetalroof.com)