



CHAMPION METAL

a Taylor Metal Company



MS200™ Flashings and Details Guide



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MS-200™ MECHANICALLY SEAMED



- 12" to 18" options available
- 24 & 22 gauge Tru-Gauge™ and .032 Aluminum
- Floating clip system: allows for expansion/contraction of panels in longer lengths
- 2" Mechanical seam rib, 90° or 180°
Factory notching available
- Factory injected Butyl sealant
- Structural panel that will span up to 5'
- Concealed fasteners: fasteners cannot leak
- Manufactured in Sacramento, CA & Salem, OR
- ~~9~~ Code compliance UL Evaluation Report UL ER 25913-01
- UL580 Class 90 wind uplift, UL Class A fire rated
- UL Construction No. 90, 176, 180, 238, and 238A
- ASTM E-1592 - Structural uniform static air pressure*
ASTM 1646 - Water infiltration*
ASTM E-2140 - Water infiltration*
ASTM 1680 - Air infiltration*
**requires approved Champion Metal details, consult Champion Metal rep. with application/specification questions*
- Weather tightness warrantly available
(Contact Champion Metal representative for details)
- 1/2:12 minimum pitch recommended:
For lower pitches please inquire
- Standard panel lengths 2' to 65':
For longer pitches please inquire
- Onsite roll forming available for long lengths
- Pan options: Flat pan, Accent ribs, Striations
- Retro-fit systems available



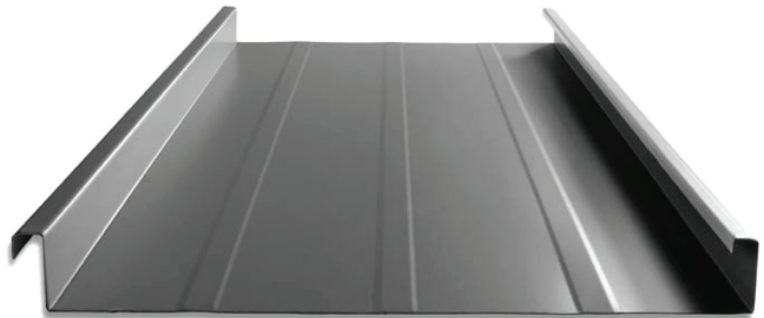
Factory-notched panels

- Prevents crowning
- No visible screws required
- Sharp, professional appearance

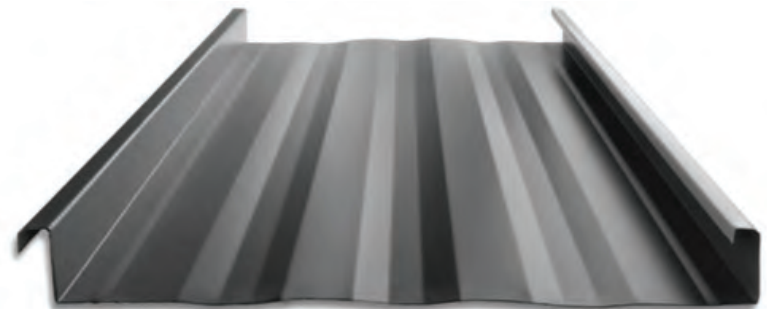


FLAT PAN

12" to 18" coverage options

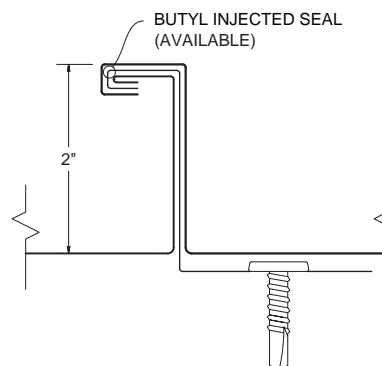


ACCENT RIBS 2 Accent ribs for 12" to 14-5/8" panel
3 Accent ribs for 16" & 18" panel

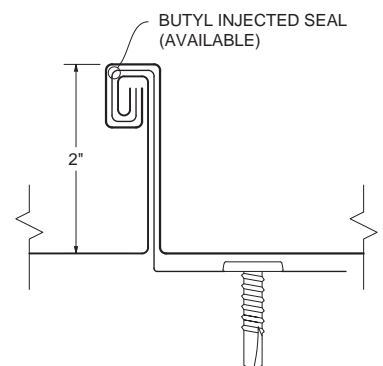


STRIATED

90° SEAM DETAIL



180° SEAM DETAIL

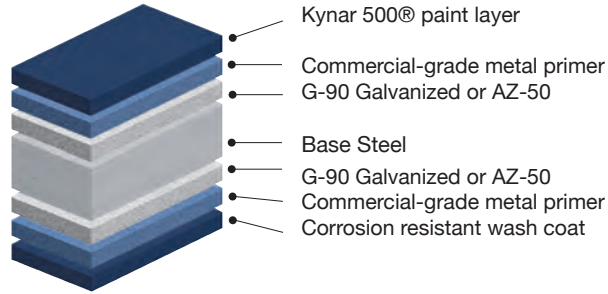


MATERIAL SPECIFICATIONS

- 26 gauge Kynar 500® Painted Steel
.019" (thickness prior to painting)
G-90 Galvanized or AZ-50
- 24 gauge Kynar 500® Painted Steel
.0236" (thickness prior to painting)
G-90 Galvanized or AZ-50
- 24 gauge bare Zincolume® Plus with Clear Acrylic Coating - AZ-55
- ▲ 22 gauge Kynar 500® Painted Steel
.029" (thickness prior to painting)
- ◆ .032 Kynar 500® Painted Aluminum
- 22 gauge Rusteel™ (cold-rolled)
- 22 gauge Rusteel Plus™ (A606)
- 24 gauge Bonderized (G-90)
- 16 and 20 ounce Copper (please inquire)
- Kynar and substrate testing data available (see website)

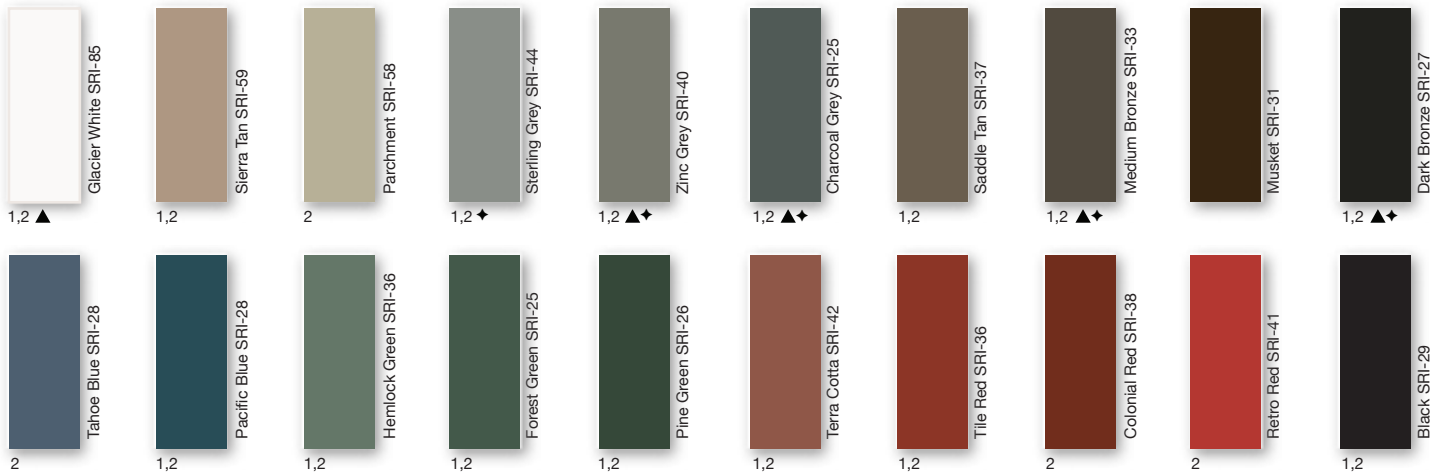
KEY FEATURES

- 20 Standard Colors, 5 Metallic Colors and 4 Specialized Colors
- Kynar 500® Paint System - the ultimate in exterior durability and color retention
- "Cool" color pigments are specially designed to reflect infrared light, reducing heat gain to dwelling, and conform with ENERGY STAR® criteria
- Superior Quality, two coat, 70% resin finish, applied at a 1mm thickness
- 40 year residential paint warranty
- 20 and 30 year commercial paint warranty
(contact Champion Metal for warranty specifications)

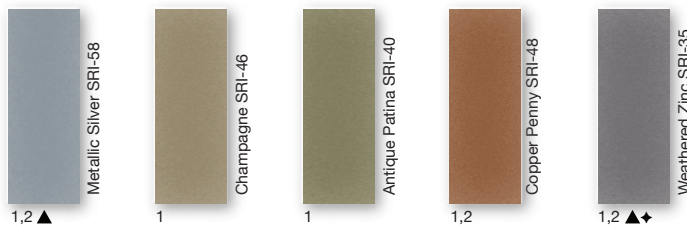


40-Year Residential/20 and 30 Year Commercial Manufacturer's Limited Warranty

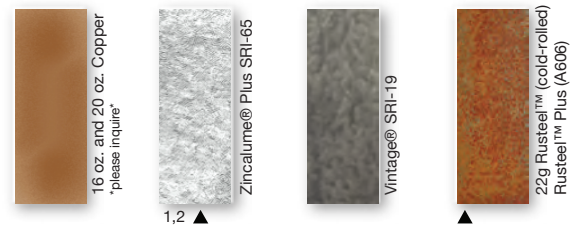
STANDARD 24g COOL KYNAR 500® COLORS



PREMIUM METALLIC COOL KYNAR® COLORS



SPECIALIZED MATERIAL



These printed chips provide a close representation of the colors.

Metal samples are available upon request. Coatings are low gloss 10-15% sheen. SRI = Solar Reflective Index. SRI values listed above are in accordance with ASTM E 1980 and are based on actual testing.***Oil canning is not a cause for material rejection***

Standard Panels				
Width	Gauge	Color	LBS SQFT	LBS LF
14-5/8"	24	1	1.36	1.65
18"	24	2	1.28	1.93
18"	22	▲	1.61	2.42
15-3/8"	.032 Alum	◆	0.6	0.9





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Ventilation/Insulation

It is the responsibility of the designer to determine the material types needed to control condensation and to insulate and ventilate the roof system. Applications over rigid insulation may require blocking for solid attachment and framing the perimeter for installation of perimeter flashings.

Oil Canning

Flat metal surfaces will display waviness commonly referred to as "oil canning." Oil canning is caused by a variety of conditions: Steel mill tolerances, variations in or uneven substrates and roofing underlayments. Oil canning is a characteristic of metal roofing, not a defect and is not a cause for rejection. Champion Metal offers MS200™ with striations or accent ribs to help minimize oil canning.

Thermal Movement

The Panels and the flashings must be allowed to expand and contract, especially with longer length panels. The panel may need to have a slight gap where the panel hooks the offset cleat to allow for thermal movement of the panels.

Snow Design

The following details do not address all conditions for snow environments. Consult with the designers, engineers, and others for acceptable details to accommodate your project and climate conditions.

When possible, gutters, valleys, pitch changes or other penetrations should be minimized in snow areas.

All roof penetrations should be located as close to the ridge or top of roof. Snow country requires special designs for valleys to accommodate accumulation of snow and ice from uphill panels. Roof design should be considered in snow areas. Roof design should help resist the melting and freezing of snow and ice. A fit for purpose roof design has the greatest impact on maintaining a damage free roof system in snow areas. Please contact a Champion Metal representative for assistance in detail designs and appropriate panel selection for specific climate and building conditions.



Handling / Storage & Safety

Handle materials with care when off-loading or moving materials to avoid damage to panels or flashings. Long panels may require two or more pick-up points, properly spaced to avoid damaging panels. Plan ahead; contact Champion Metal for recommendations on handling/hoisting long panels.

Store the panels, flashings and accessories in a dry, well ventilated area, off the ground. If covering, allow ventilation around panels. Elevate one end of bundle to allow drainage of wet materials.

Wear clean, soft-soled shoes when walking on roofing panels to avoid damage to the painted finish.

Take care that sand, gravel, dirt, etc. sticking to your shoes is not carried onto the roof, scratching or otherwise damaging the finish on the roofing material. Walking on asphalt impregnated felt paper, especially on a hot day, can cause the asphalt to stick to your shoes and be tracked on to the roofing material

Take care when painting to avoid getting over spray on the roofing material. Remember that wind can carry paint particles some distance. Over spray can cause the finish of the roofing material to look dull and may void your warranty.

Secure materials, especially when leaving the site, on the ground or roof to prevent winds from moving the materials. Wind-blown materials may cause damage to the material, property or persons.

Always use proper safety equipment and attire to minimize risk of cuts or other injuries.

Do not walk on panels that have not been completely installed.

Do not walk on major ribs of panels.

Metal roofs that are wet or dusty can be extremely slippery. Wear soft soled shoes and a safety harness to minimize risk of falling.

Avoid installing metal panels in windy conditions.

Safety considerations are the responsibility of the installer and his crew. Be sure to and use common sense generally accepted safety practices when installing roofing materials.



Notes to Designer/Installer

Champion Metal is providing the following details as an aid in design. The details in this guide are not inclusive to all design situations. The designer/installer is responsible for modifications and should take into consideration all aspects of the project including climate conditions, such as, snow and wind, as well as, building code requirements, building design, building usage and maintenance requirements.

Installation should be performed only by qualified installers familiar with metal roofing systems and industry standards. For details not shown in this guide, refer to the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) architectural sheet metal manual for proper design.

The Standard gauge for all products in this guide is 24 gauge and the standard finish is Kynar 500®/Hylar 5000®. We recommend specifying all flashings be the same gauge, color, and finish as the panels to insure long-term durability and color match.

Substrates

Details in the manual are all shown over solid substrate. MS 200™ can be used over spaced purlins. For solid substrate, Champion Metal recommends 5/8" plywood or metal decking.

Underlayments

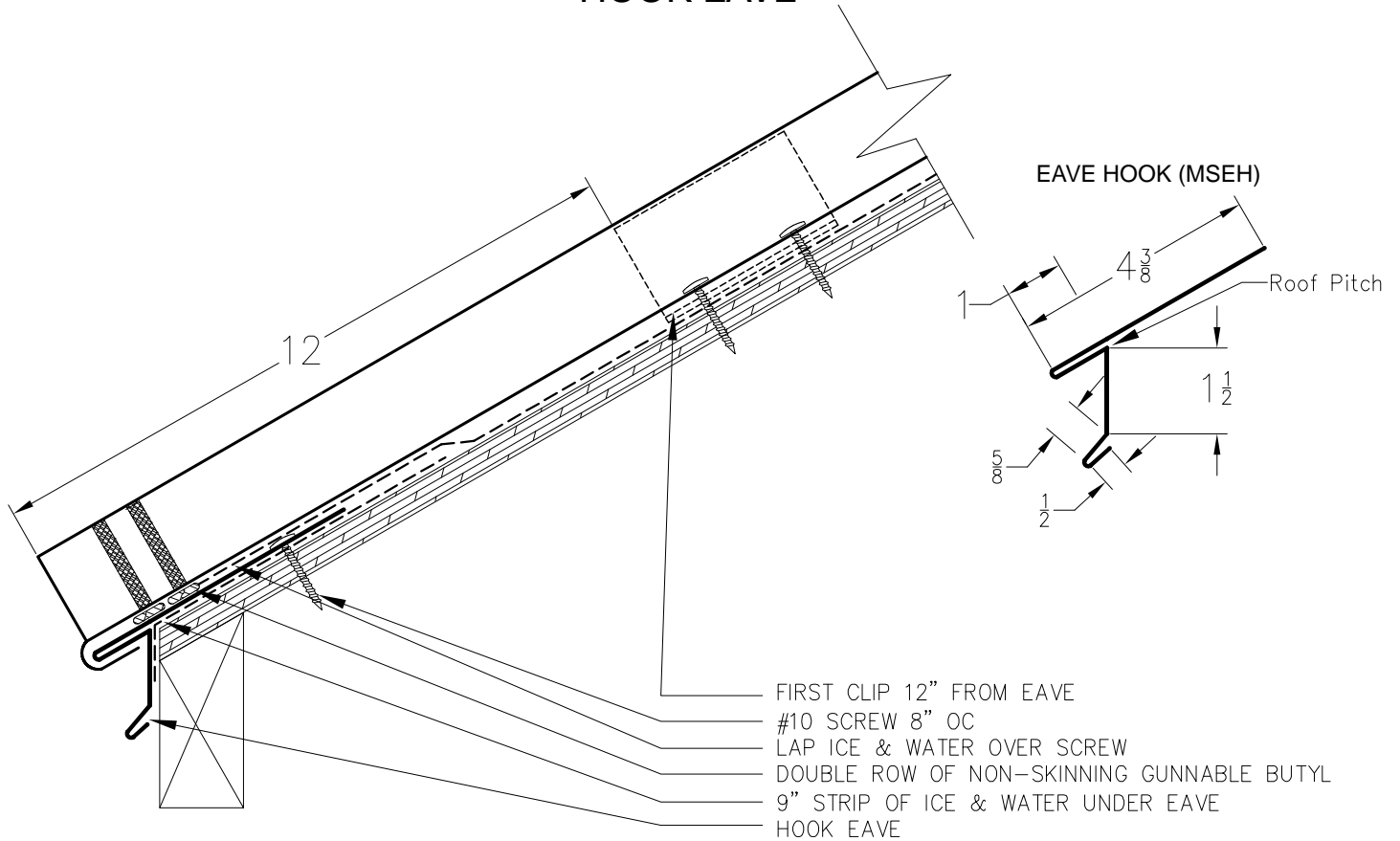
Minimum underlayment requirements are 30 lb. ASTM rated felt, a synthetic underlayment with Class A and ASTM UV protection technology or a high temperature self-adhering rubberized membrane. When choosing the underlayment, consider the roof slope, roof design, roof panel, and the climate.

Drag Load Requirements

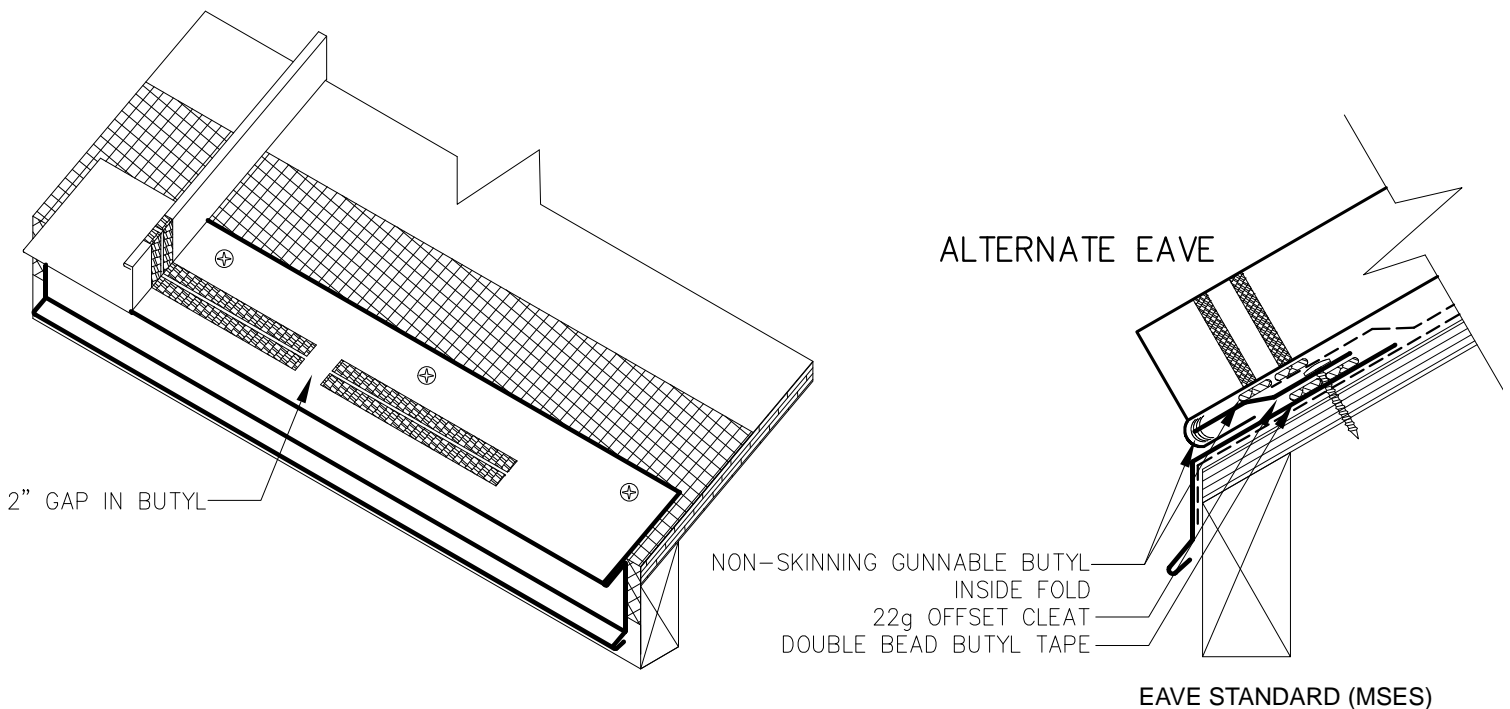
All panels must be pinned at the top to resist the drag load caused by snow loads, live loads, and the weight of the panel. Drag load is a function of roof slope, actual load and length of panels. Contact Champion Metal for specific drag load requirements.



HOOK EAVE



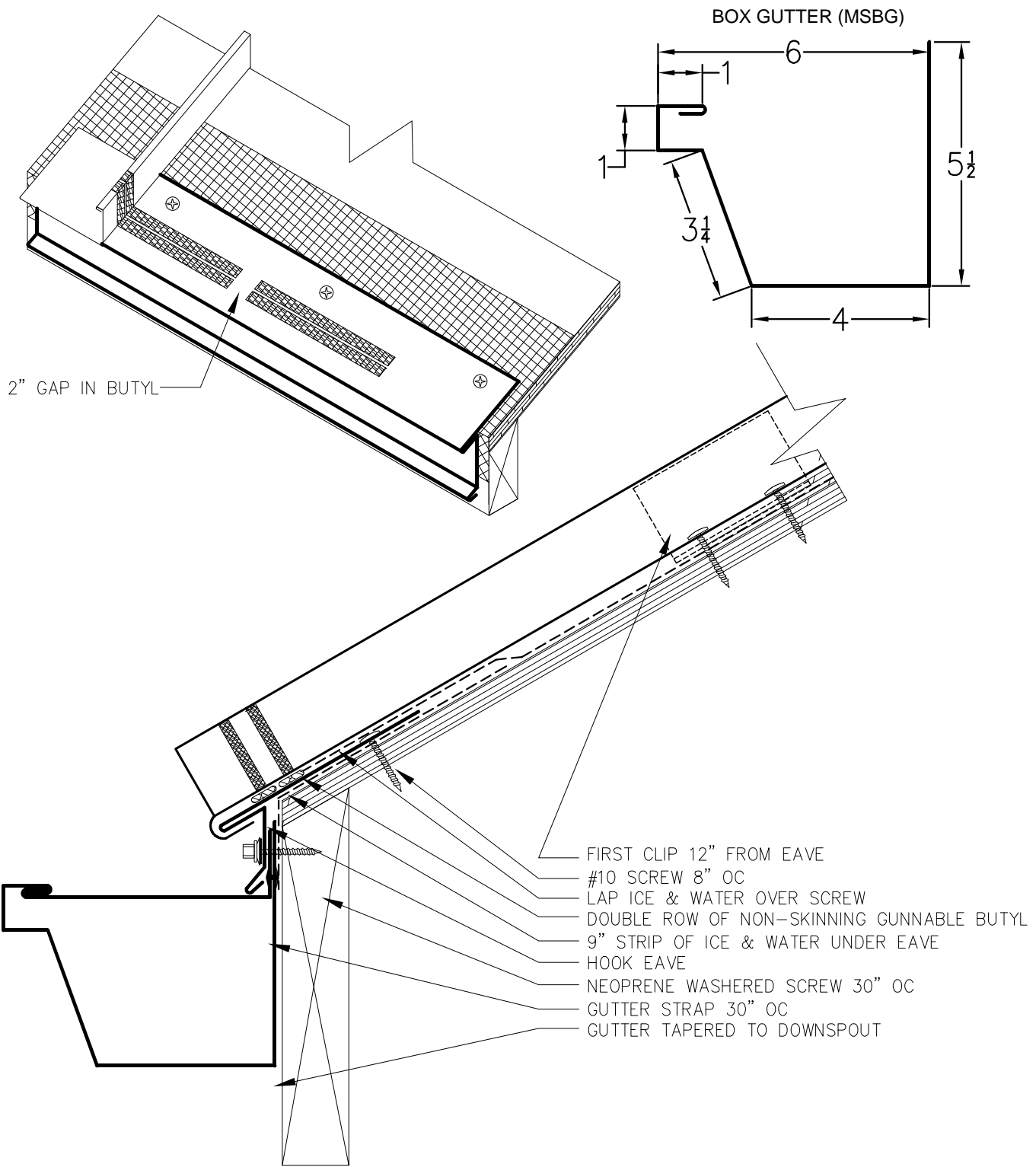
ALTERNATE EAVE



NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



HOOK EAVE WITH GUTTER

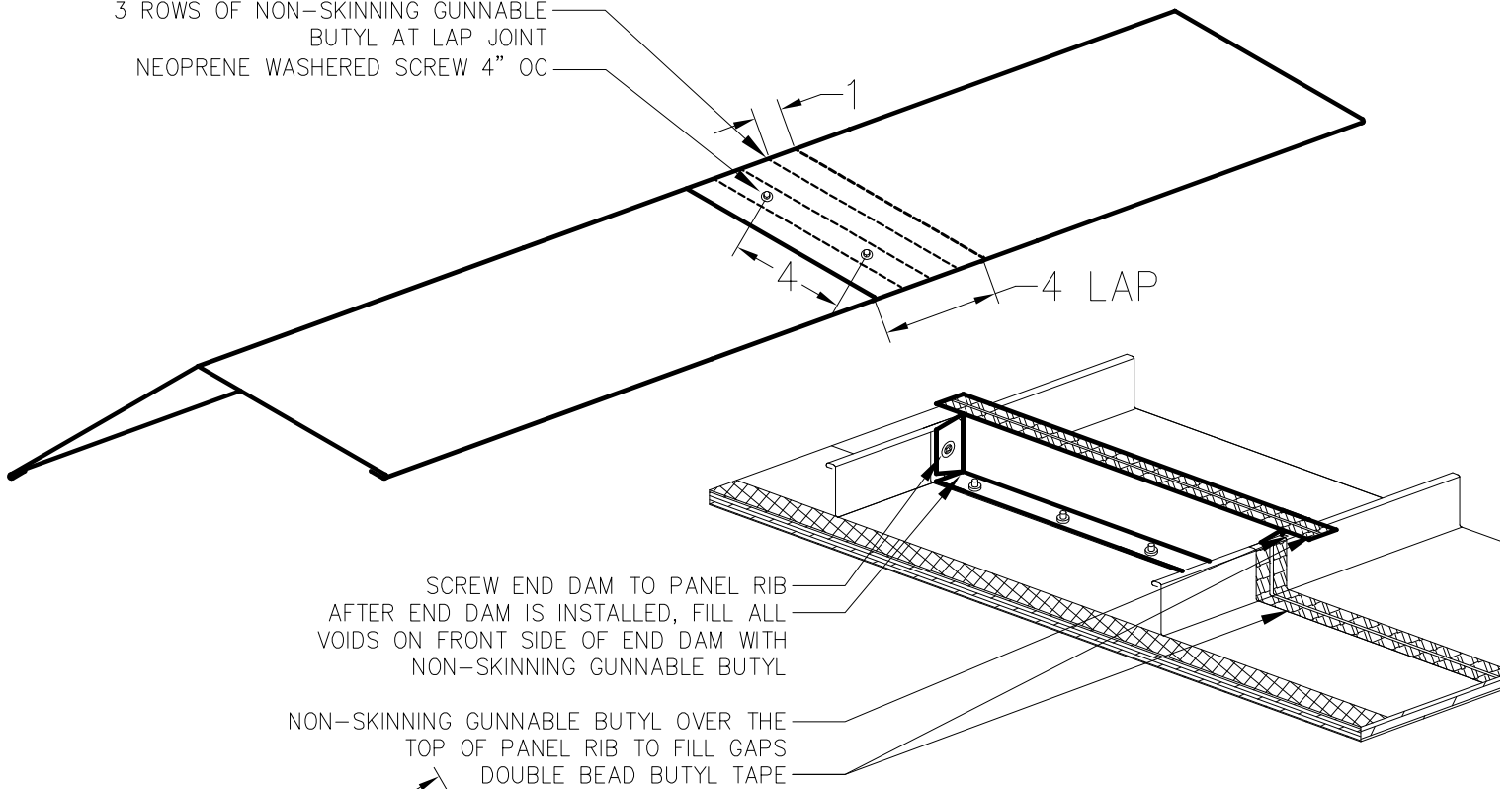


NOTE: All screws must be into solid substrate
 Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



STANDARD RIDGE

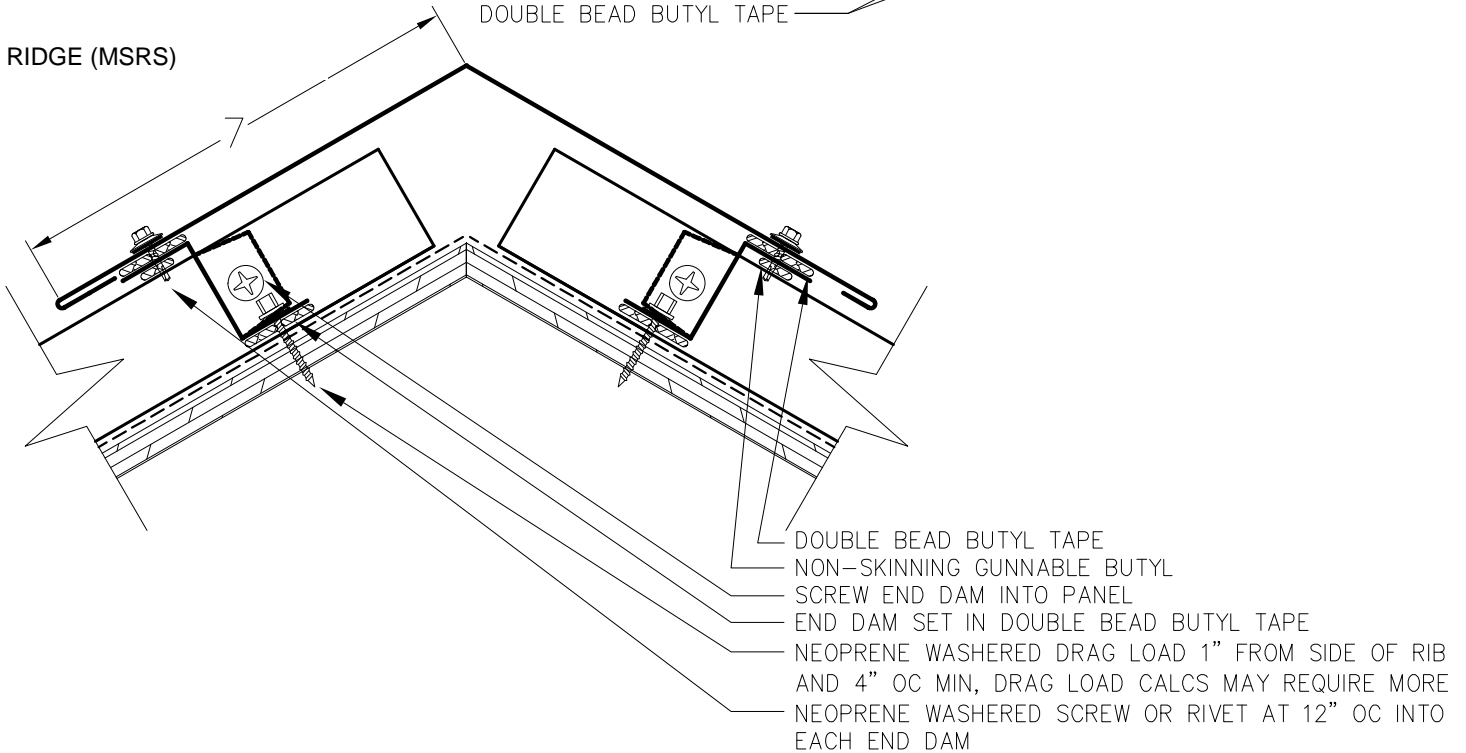
3 ROWS OF NON-SKINNING GUNNABLE BUTYL AT LAP JOINT
NEOPRENE WASHERED SCREW 4" OC



SCREW END DAM TO PANEL RIB
AFTER END DAM IS INSTALLED, FILL ALL
VOIDS ON FRONT SIDE OF END DAM WITH
NON-SKINNING GUNNABLE BUTYL

NON-SKINNING GUNNABLE BUTYL OVER THE
TOP OF PANEL RIB TO FILL GAPS
DOUBLE BEAD BUTYL TAPE

RIDGE (MSRS)



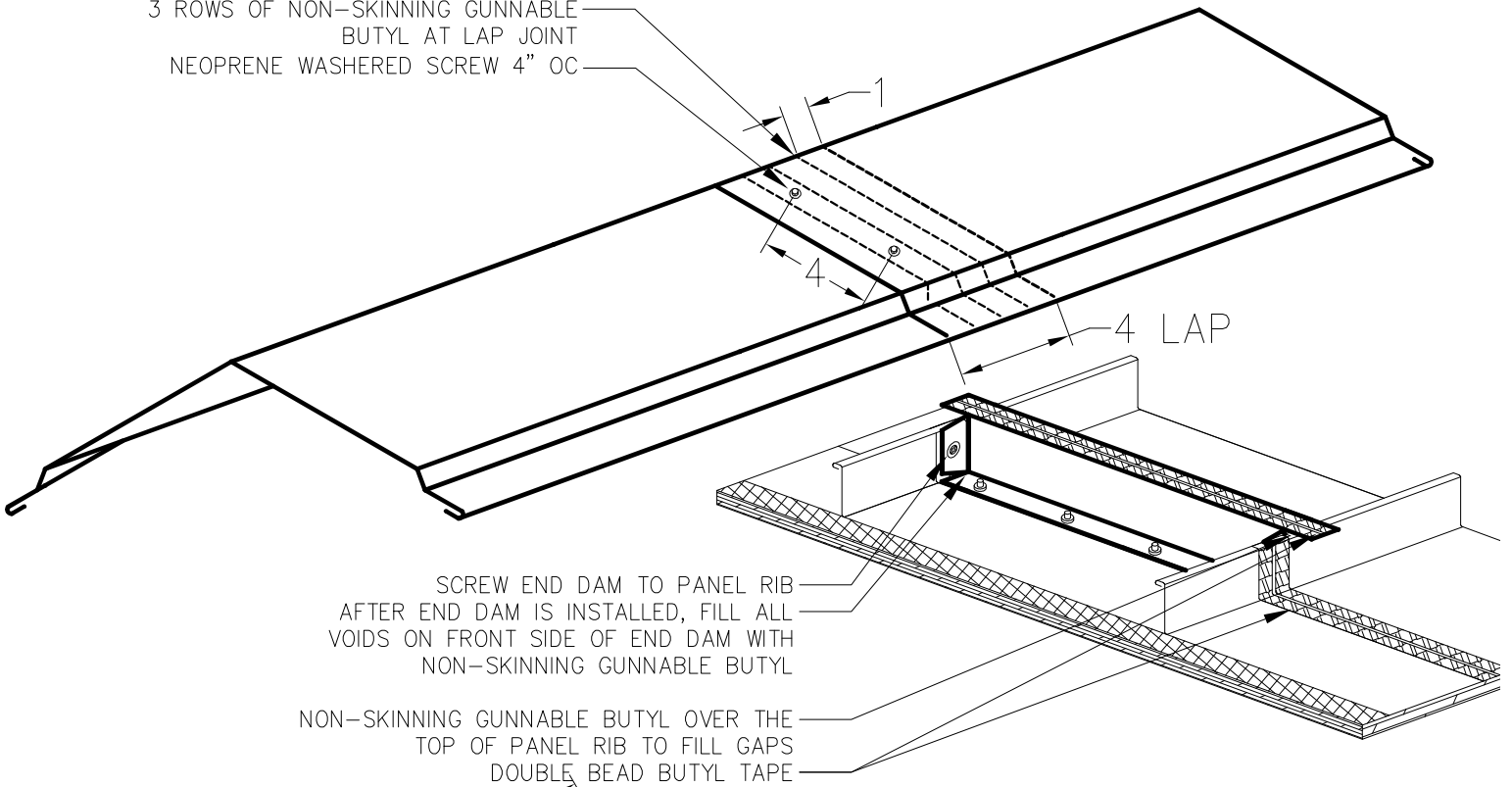
DOUBLE BEAD BUTYL TAPE
NON-SKINNING GUNNABLE BUTYL
SCREW END DAM INTO PANEL
END DAM SET IN DOUBLE BEAD BUTYL TAPE
NEOPRENE WASHERED DRAG LOAD 1" FROM SIDE OF RIB
AND 4" OC MIN, DRAG LOAD CALCS MAY REQUIRE MORE
NEOPRENE WASHERED SCREW OR RIVET AT 12" OC INTO
EACH END DAM

NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 3 rows of non-skinning gunnable butyl

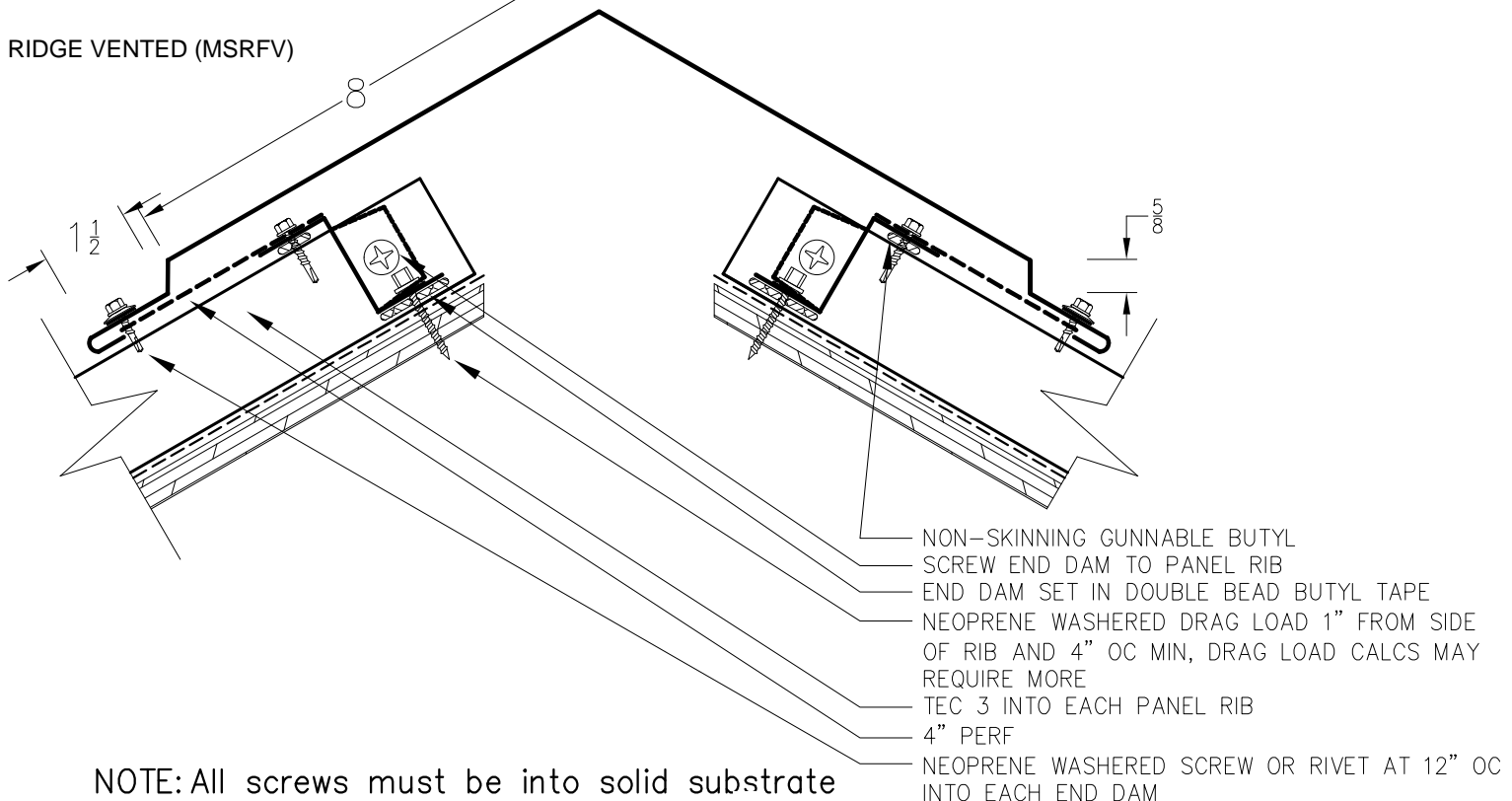


VENTED RIDGE

3 ROWS OF NON-SKINNING GUNNABLE BUTYL AT LAP JOINT
NEOPRENE WASHERED SCREW 4" OC



RIDGE VENTED (MSRFV)

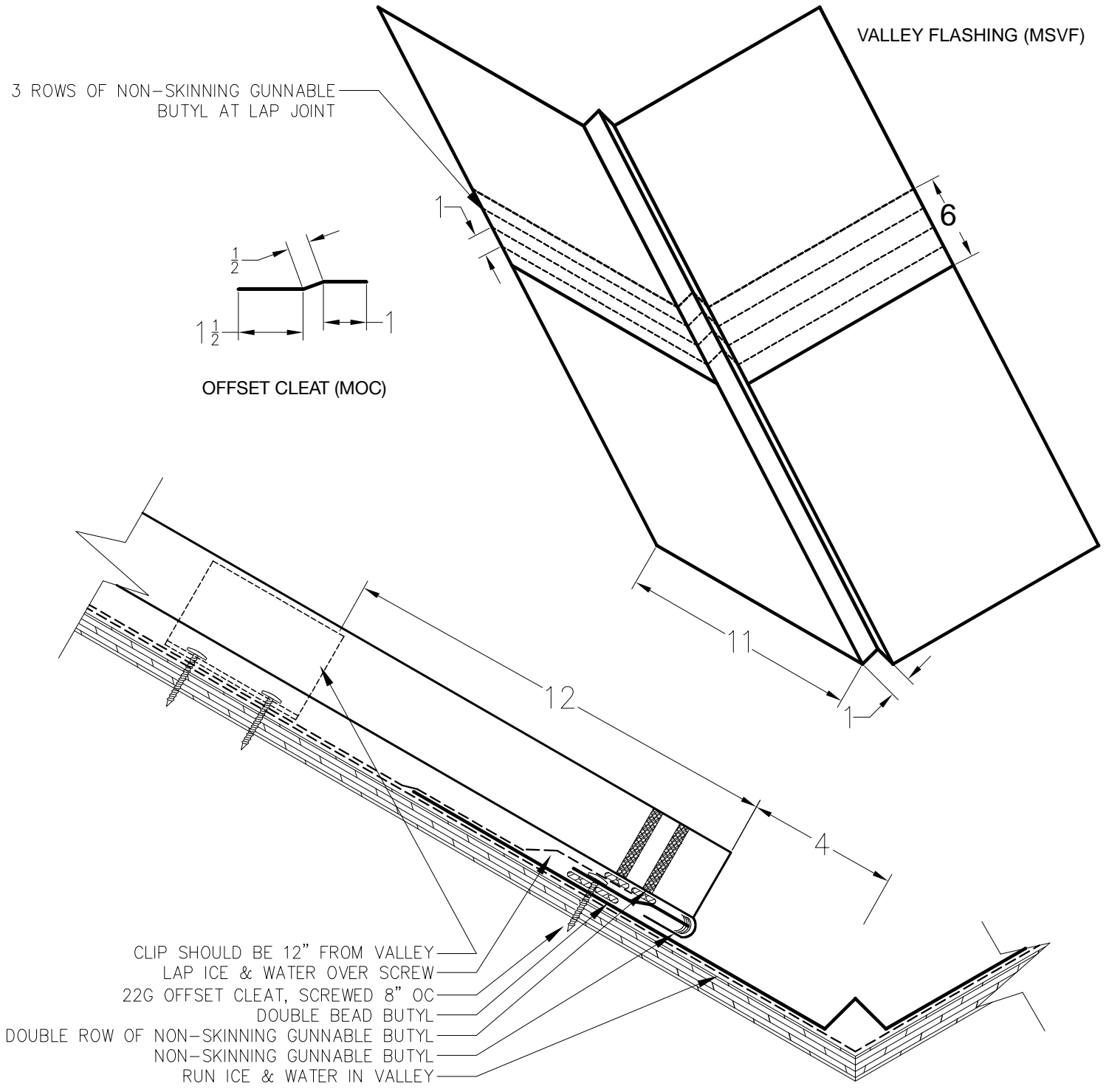


NOTE: All screws must be into solid substrate

Flashing must be lapped 4" with 3 rows of non-skinning gunnable butyl



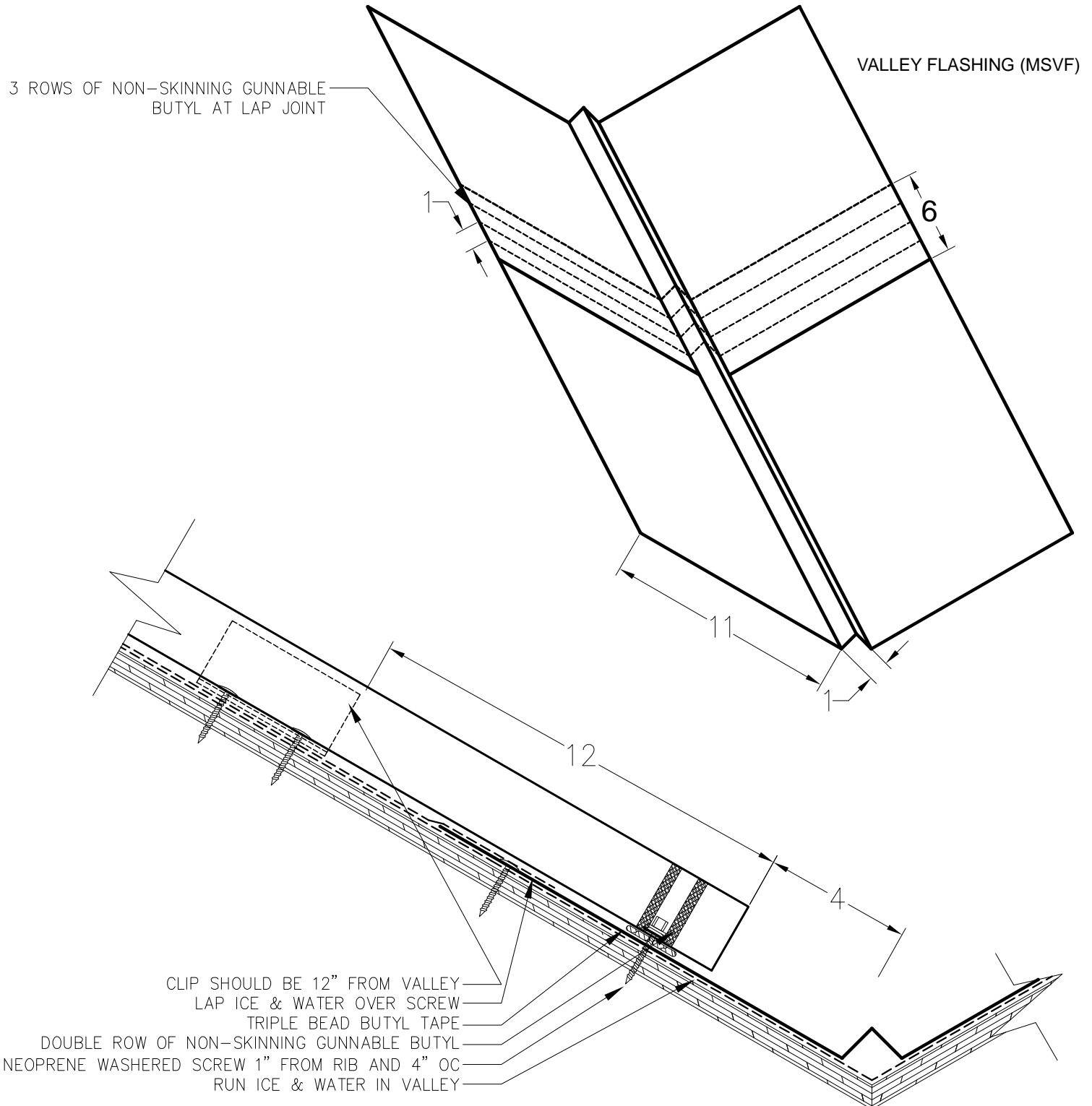
STANDARD VALLEY



NOTE: All screws must be into solid substrate
Flashing must be lapped 6" with 3 rows of non-skinning gunnable butyl



ALTERNATE VALLEY

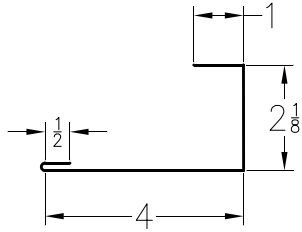


NOTE: All screws must be into solid substrate
Flashing must be lapped 6" with 3 rows of non-skinning gunnable butyl

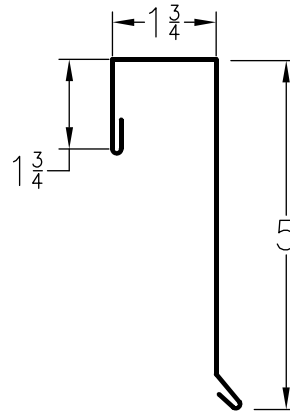


STANDARD GABLE

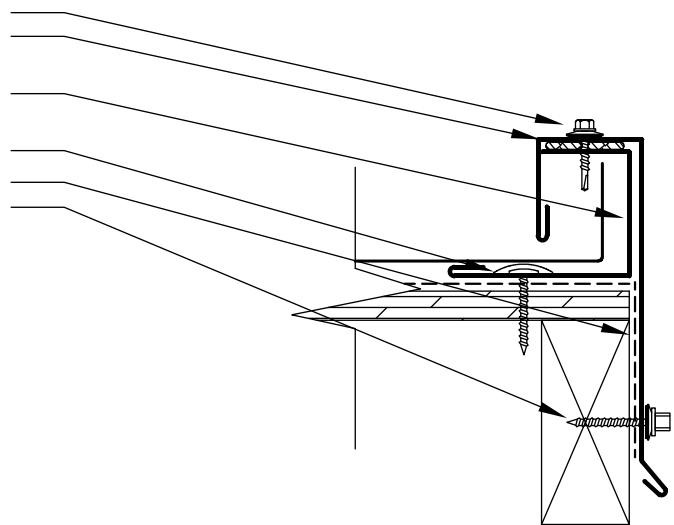
SUPPORT FLASHING (MSSF)



GABLE STANDARD (MSGS1)



- NEOPRENE WASHERED SCREW 12" OC OR RIVET
- DOUBLE BEAD BUTYL TAPE
- SUPPORT FLASHING WITH BACK HEM
- SCREW 8" OC WITH SEALANT OVER THE TOP
- ICE AND WATER WRAP DOWN FACE 3" MIN
- NEOPRENE WASHERED SCREW 12" OC

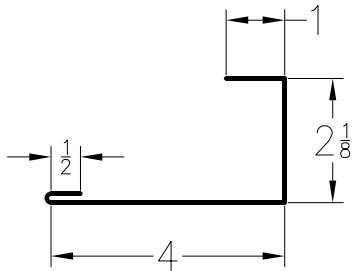


NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl

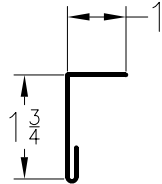


ALTERNATE GABLE

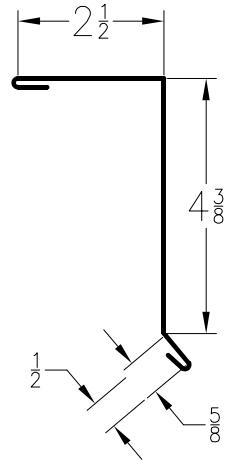
SUPPORT FLASHING (MSSF)



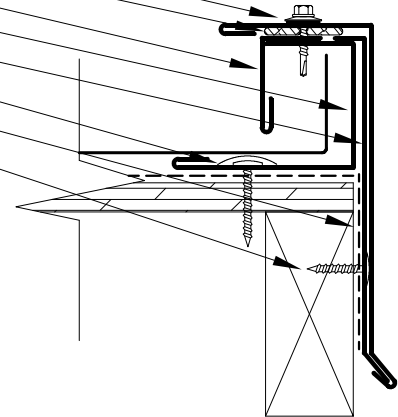
ALT CLOSURE (MSLF)



ALT GABLE (MSG2)



- NEOPRENE WASHERED SCREW 12" OC OR RIVET
- DOUBLE BEAD BUTYL TAPE
- CLOSURE TRIM
- SUPPORT FLASHING WITH BACK HEM
- CONTINUOUS CLEAT
- SCREW 8" OC WITH SEALANT OVER THE TOP
- ICE AND WATER WRAP DOWN FACE 3" MIN
- CLEAT SCREW 8" OC



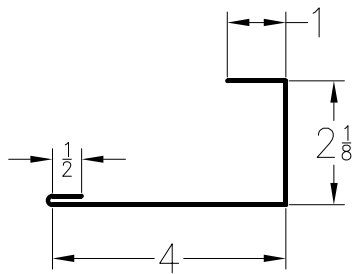
NOTE: All screws must be into solid substrate

Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl

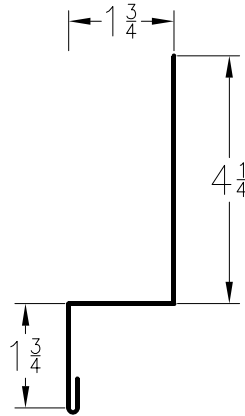


SIDE WALL

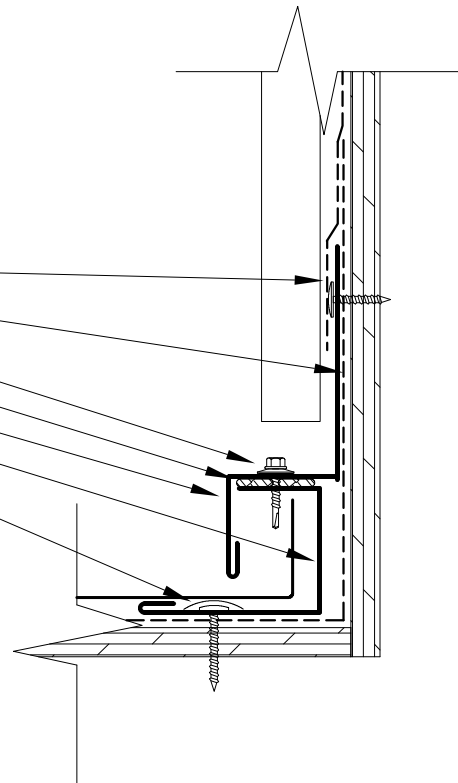
SUPPORT FLASHING (MSSF)



SIDE WALL (MSSW)



- LAP UNDERLAYMENT OVER SCREW
- ICE & WATER TURN UP WALL 8"
- NEOPRENE WASHERED SCREW 12" OC OR RIVET
- DOUBLE BEAD BUTYL TAPE
- CLOSURE TRIM
- SUPPORT FLASHING WITH BACK HEM
- SCREW 8" OC WITH SEALANT OVER THE TOP

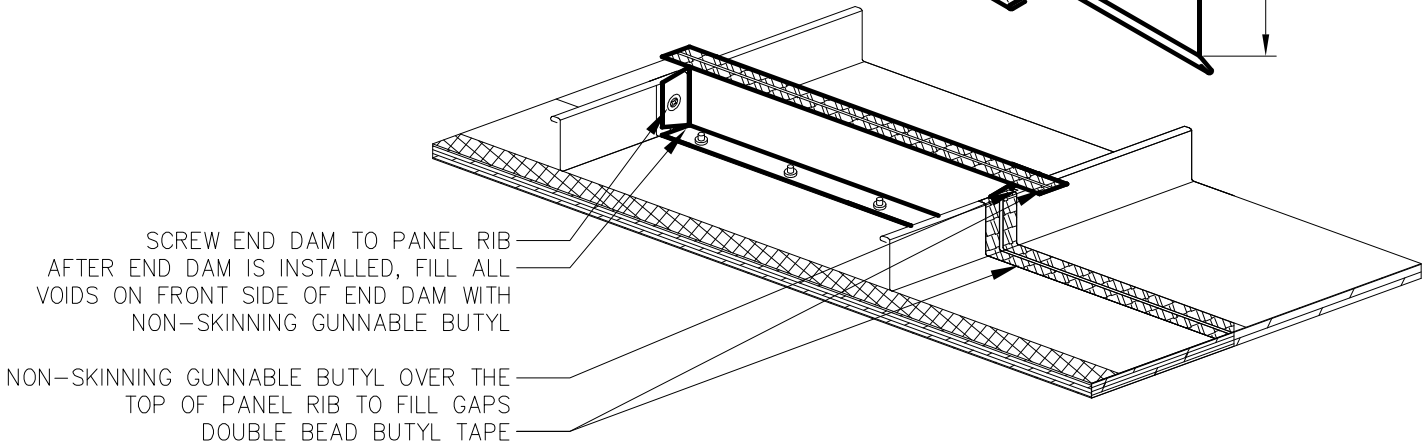
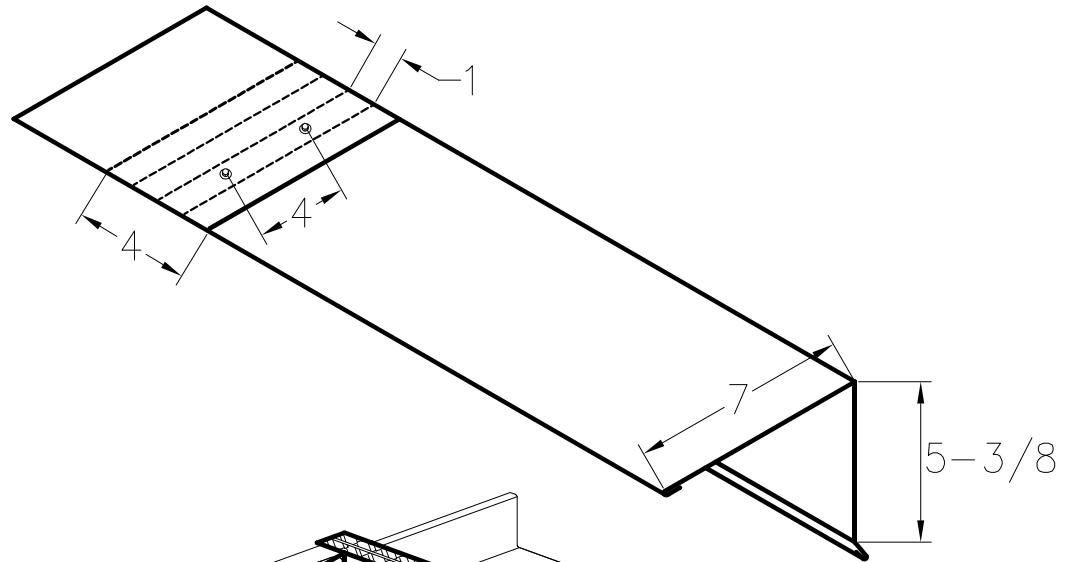


NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



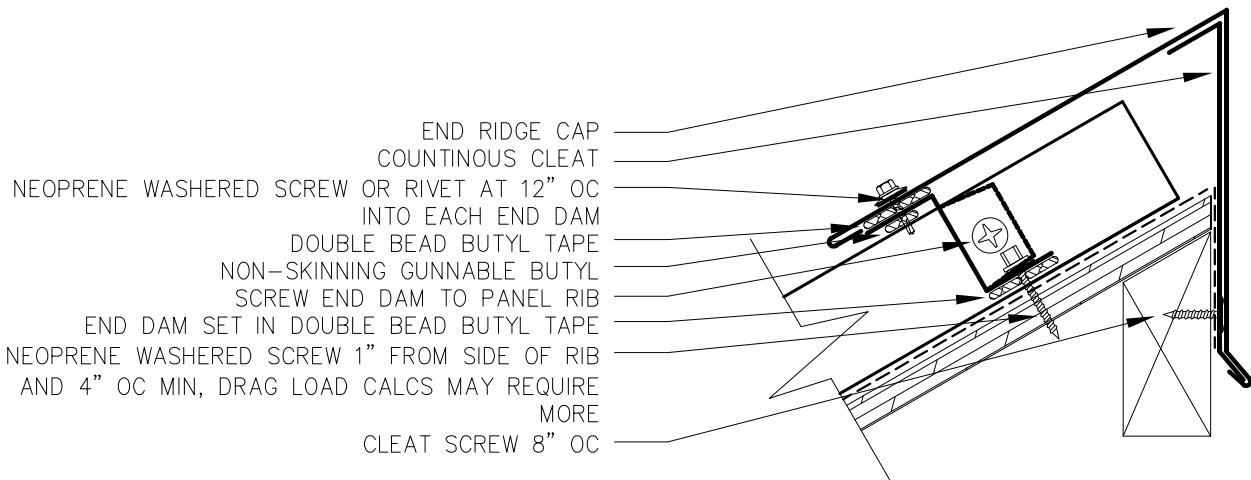
RIDGE END CAP

RIDGE END CAP (MSREC)



SCREW END DAM TO PANEL RIB
AFTER END DAM IS INSTALLED, FILL ALL
VOIDS ON FRONT SIDE OF END DAM WITH
NON-SKINNING GUNNABLE BUTYL

NON-SKINNING GUNNABLE BUTYL OVER THE
TOP OF PANEL RIB TO FILL GAPS
DOUBLE BEAD BUTYL TAPE



END RIDGE CAP
CONTINUOUS CLEAT
NEOPRENE WASHERED SCREW OR RIVET AT 12" OC
INTO EACH END DAM
DOUBLE BEAD BUTYL TAPE
NON-SKINNING GUNNABLE BUTYL
SCREW END DAM TO PANEL RIB
END DAM SET IN DOUBLE BEAD BUTYL TAPE
NEOPRENE WASHERED SCREW 1" FROM SIDE OF RIB
AND 4" OC MIN, DRAG LOAD CALCS MAY REQUIRE
MORE
CLEAT SCREW 8" OC

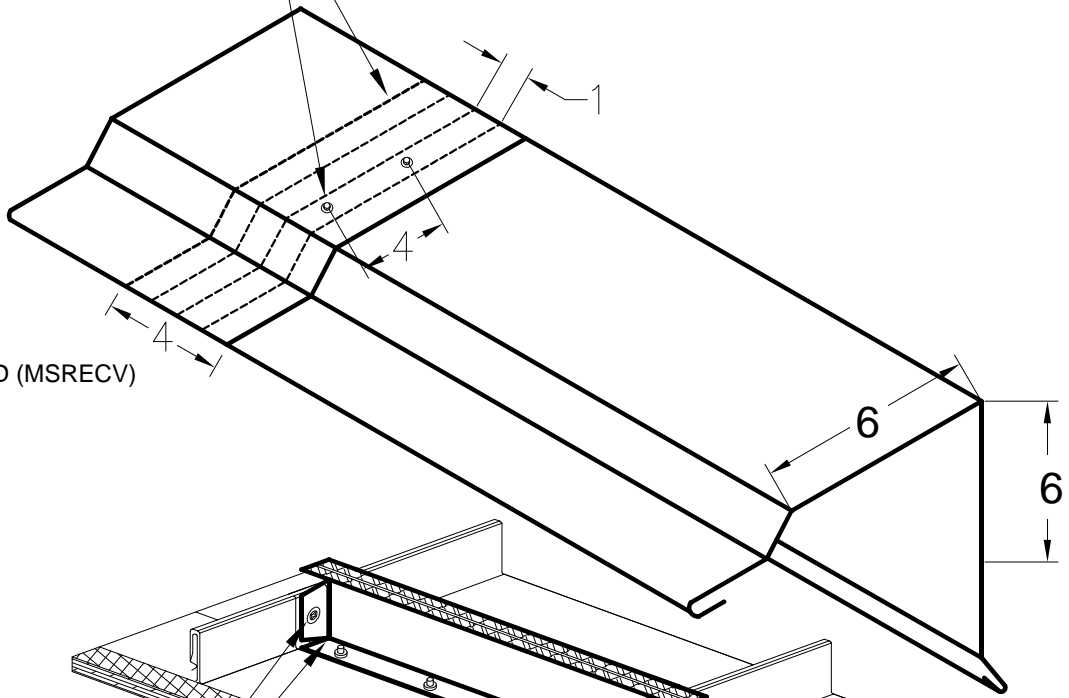
NOTE: All screws must be into solid substrate

Flashing must be lapped 4" with 3 rows of non-skinning gunnable butyl



VENTED RIDGE END CAP

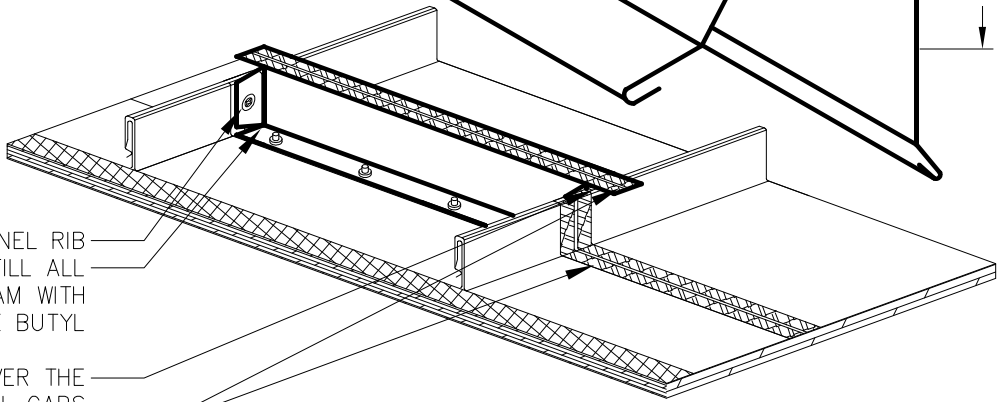
3 ROWS OF NON-SKINNING GUNNABLE BUTYL AT LAP JOINT
NEOPRENE WASHERED SCREW 4" OC



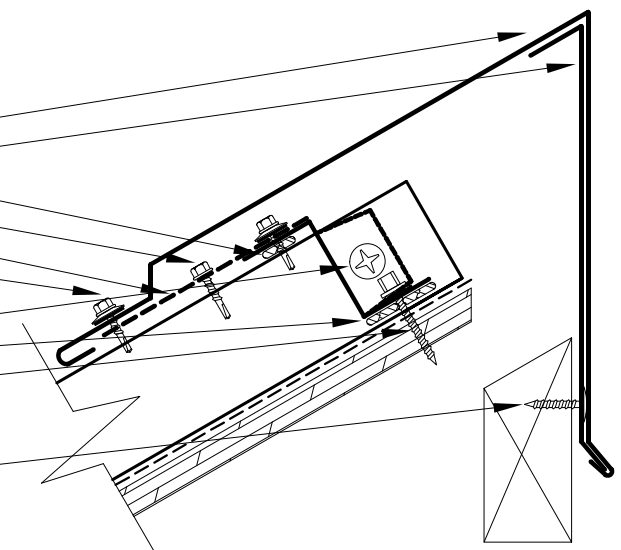
VENTED RIDGE END (MSRECV)

SCREW END DAM TO PANEL RIB
AFTER END DAM IS INSTALLED, FILL ALL VOIDS ON FRONT SIDE OF END DAM WITH NON-SKINNING GUNNABLE BUTYL

NON-SKINNING GUNNABLE BUTYL OVER THE TOP OF PANEL RIB TO FILL GAPS
DOUBLE BEAD BUTYL TAPE



END RIDGE CAP
CONTINUOUS CLEAT
NON-SKINNING GUNNABLE BUTYL
TEC 3 SCREW INTO PANEL RIB 4" PERF
NEOPRENE WASHERED SCREW OR RIVET AT CENTER OF EACH END DAM
SCREW END DAM TO PANEL RIB
END DAM SET IN DOUBLE BEAD BUTYL TAPE
NEOPRENE WASHERED SCREW 1" FROM SIDE OF RIB AND 4" OC MIN, DRAG LOAD CALCS MAY REQUIRE MORE
CLEAT SCREW 8" OC

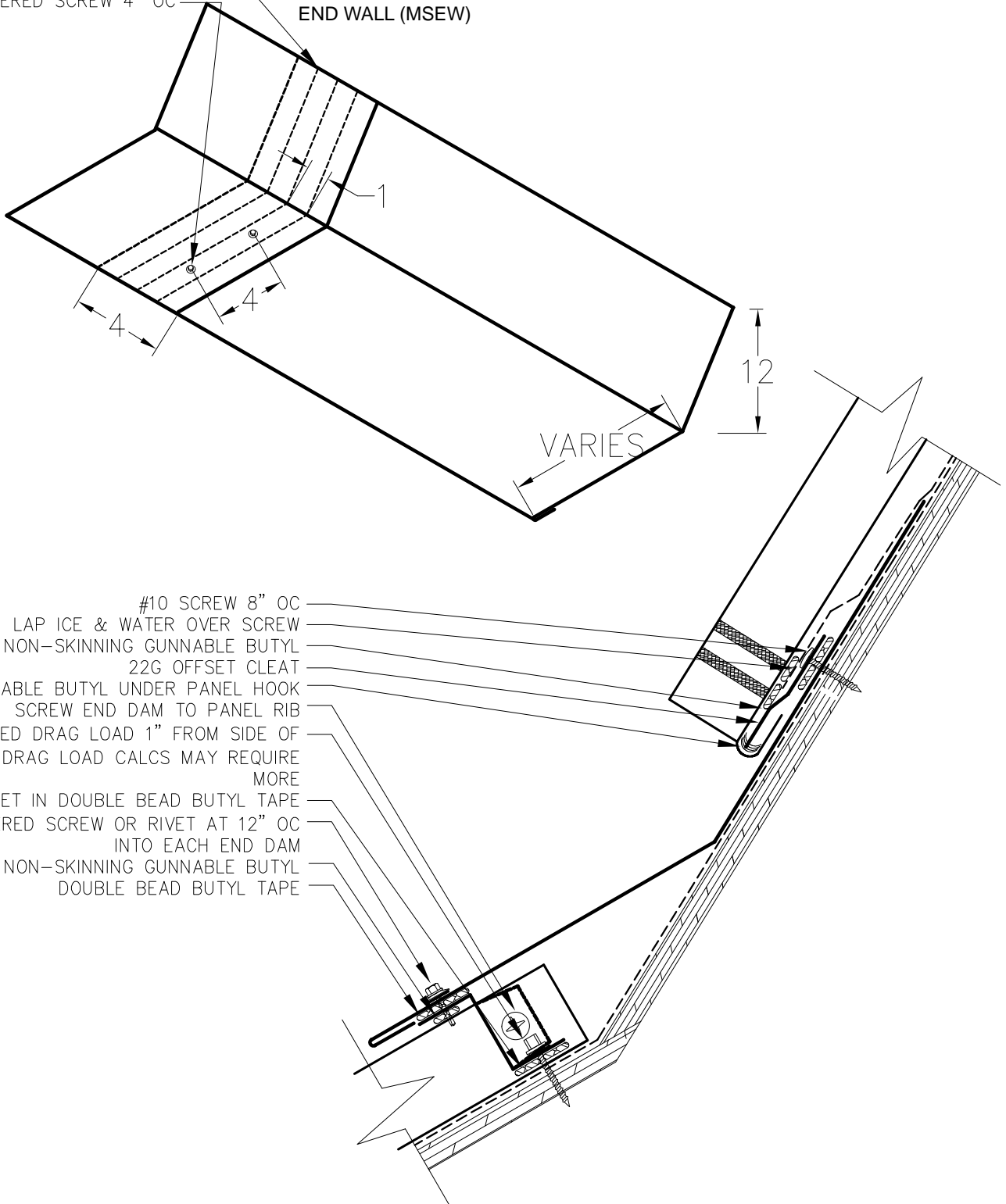




ROOF PITCH TRANSITION

3 ROWS OF NON-SKINNING GUNNABLE BUTYL AT LAP JOINT
NEOPRENE WASHERED SCREW 4" OC

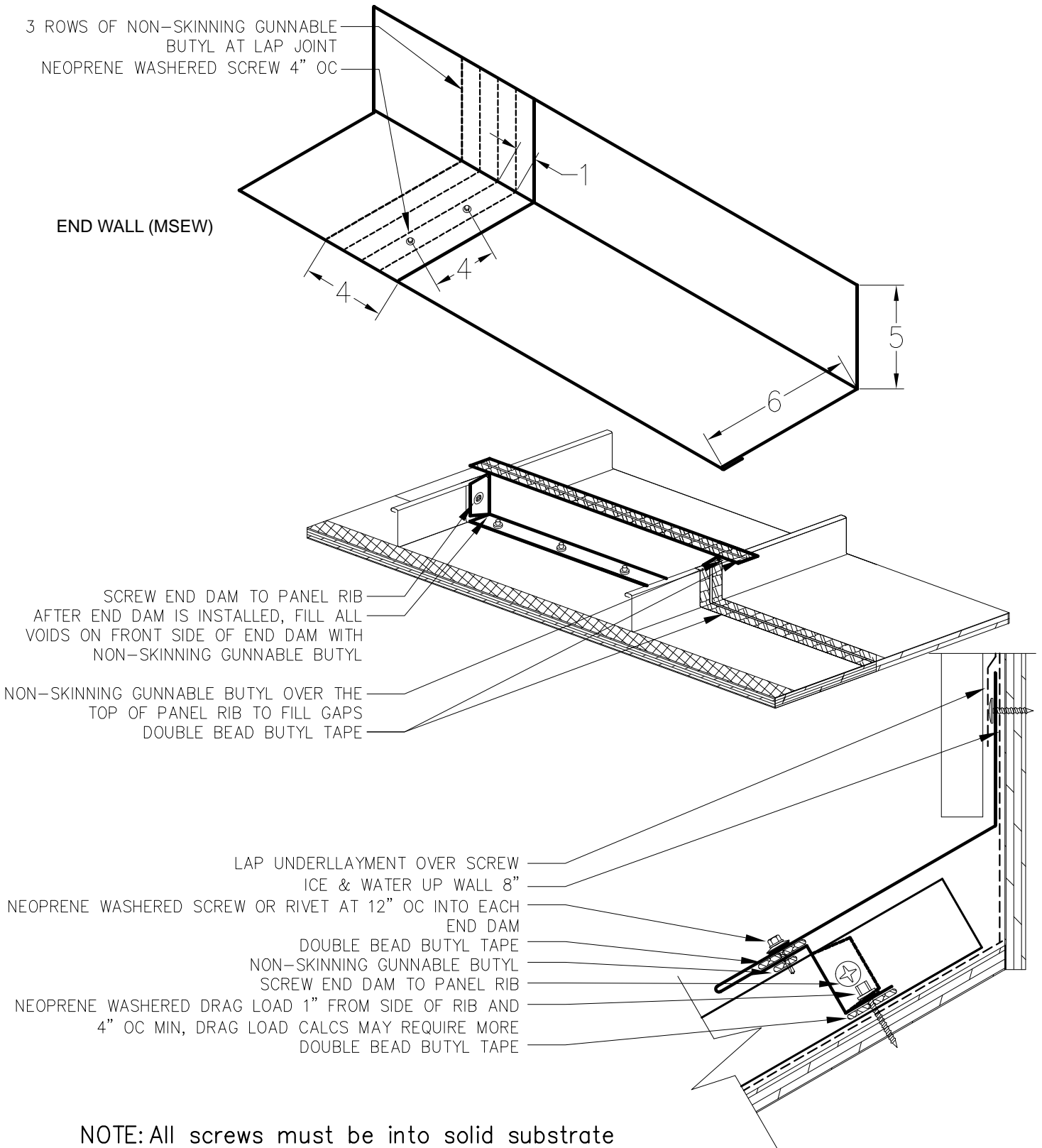
END WALL (MSEW)



#10 SCREW 8" OC
LAP ICE & WATER OVER SCREW
DOUBLE ROW OF NON-SKINNING GUNNABLE BUTYL
22G OFFSET CLEAT
NON-SKINNING GUNNABLE BUTYL UNDER PANEL HOOK
SCREW END DAM TO PANEL RIB
NEOPRENE WASHERED DRAG LOAD 1" FROM SIDE OF RIB AND 4" OC MIN, DRAG LOAD CALCS MAY REQUIRE MORE
END DAM SET IN DOUBLE BEAD BUTYL TAPE
NEOPRENE WASHERED SCREW OR RIVET AT 12" OC INTO EACH END DAM
NON-SKINNING GUNNABLE BUTYL
DOUBLE BEAD BUTYL TAPE



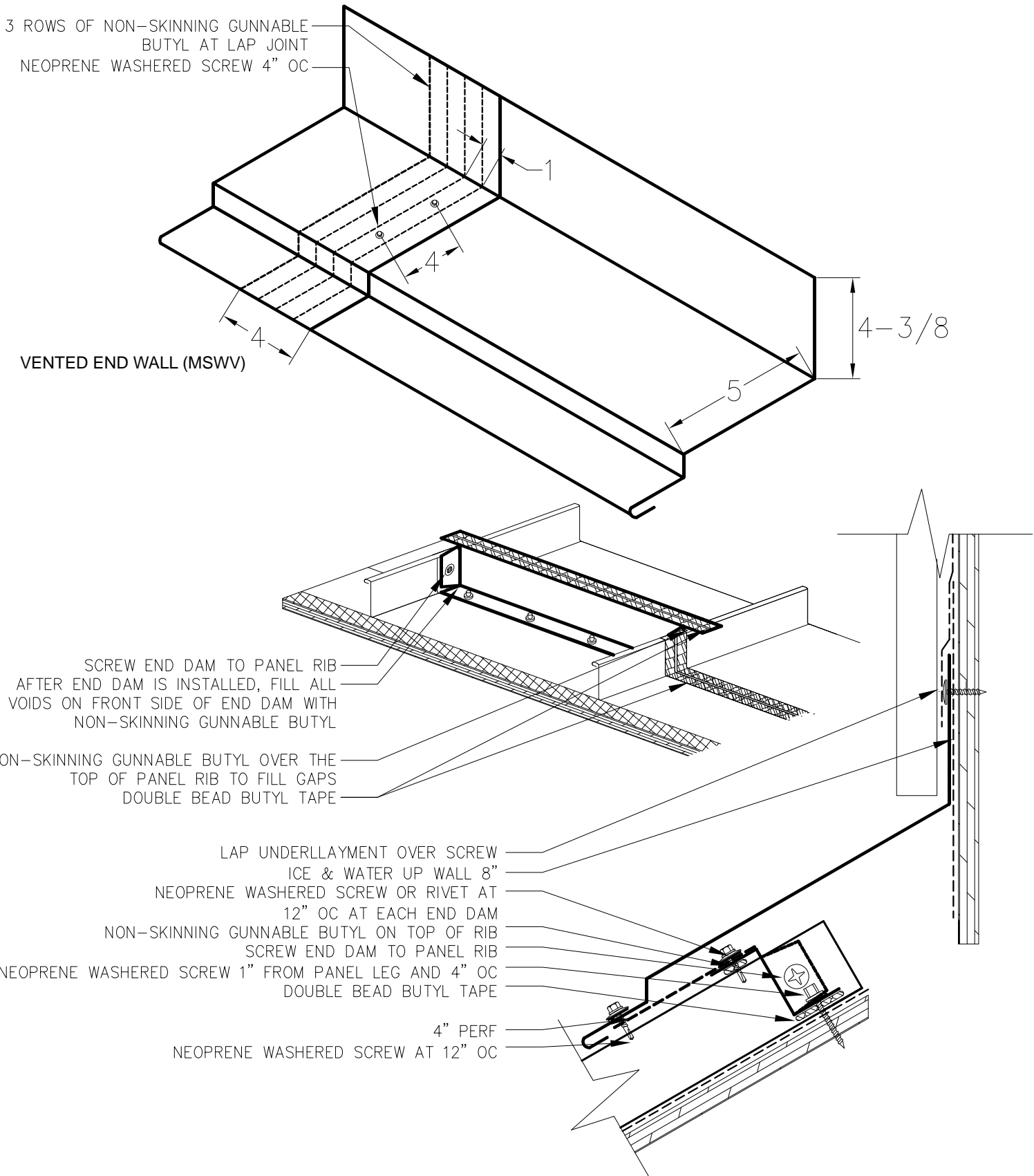
ROOF HEAD



NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



VENTED ROOF HEAD



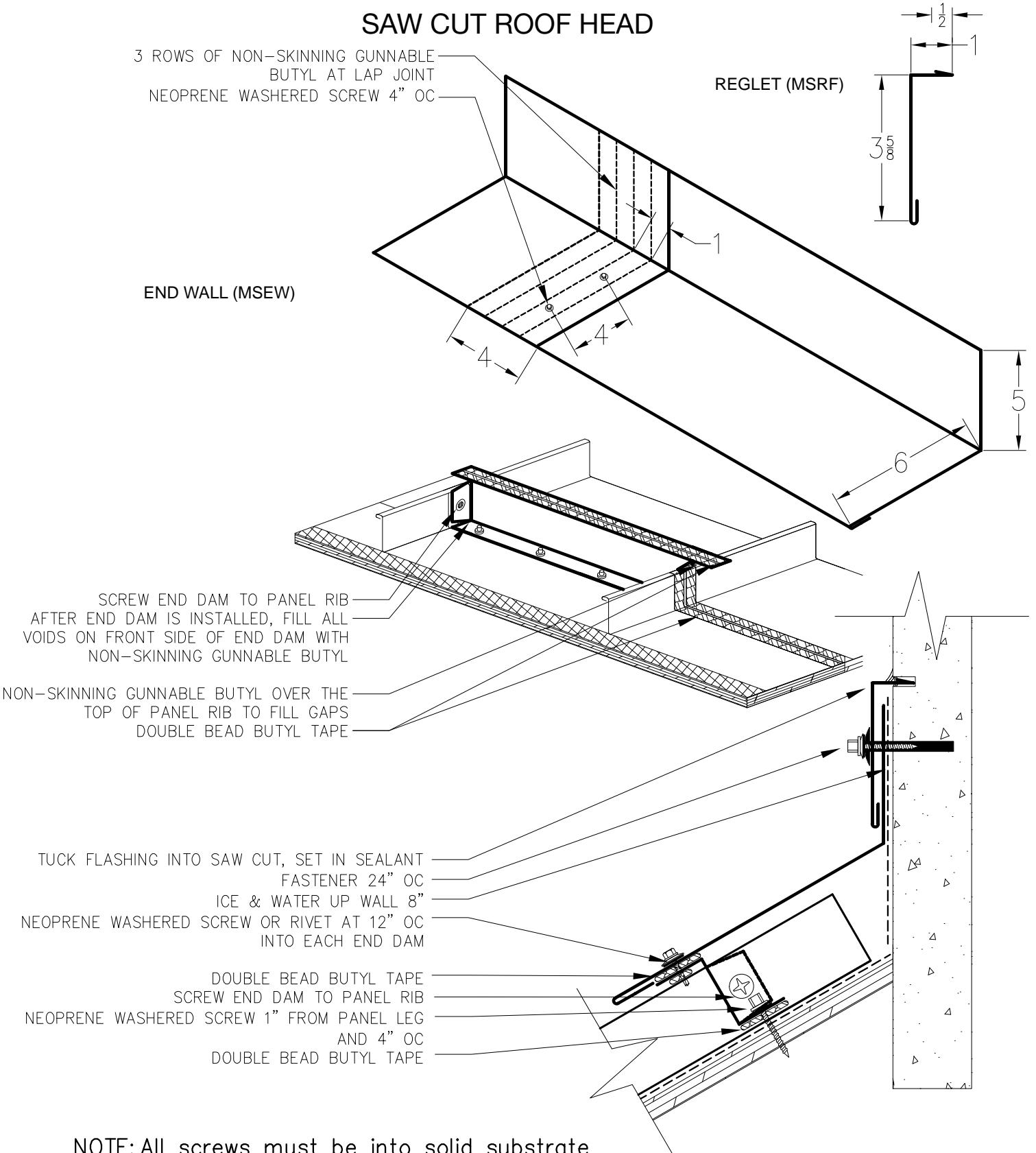


SAW CUT ROOF HEAD

3 ROWS OF NON-SKINNING GUNNABLE BUTYL AT LAP JOINT
NEOPRENE WASHERED SCREW 4" OC

REGLET (MSRF)

END WALL (MSEW)

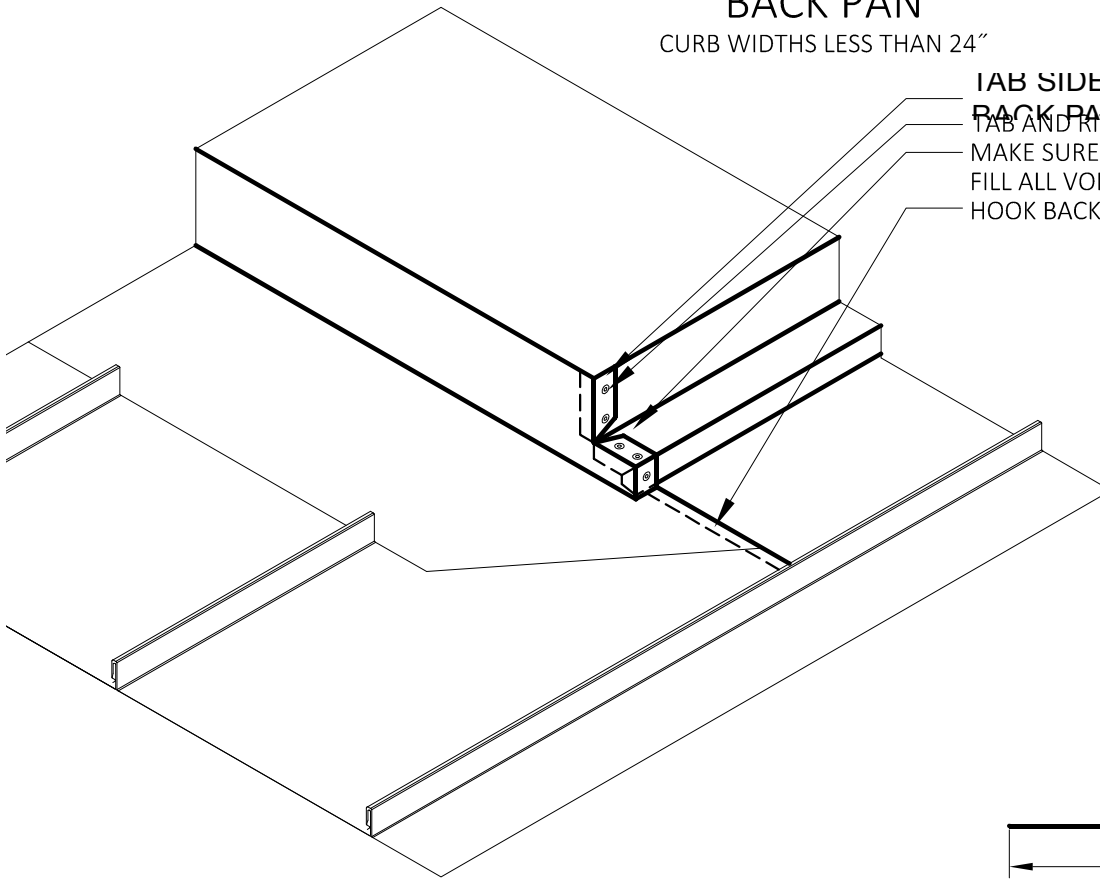


NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 3 rows of non-skinning gunnable butyl



BACK PAN

CURB WIDTHS LESS THAN 24"



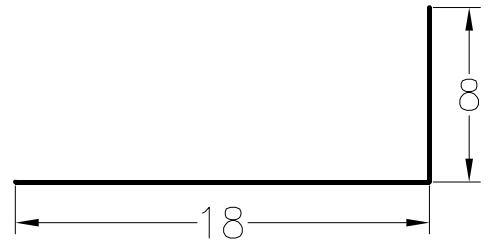
TAB SIDE WALL TO RECEIVE

BACK PAN

TAB AND RIVET BACK PAN

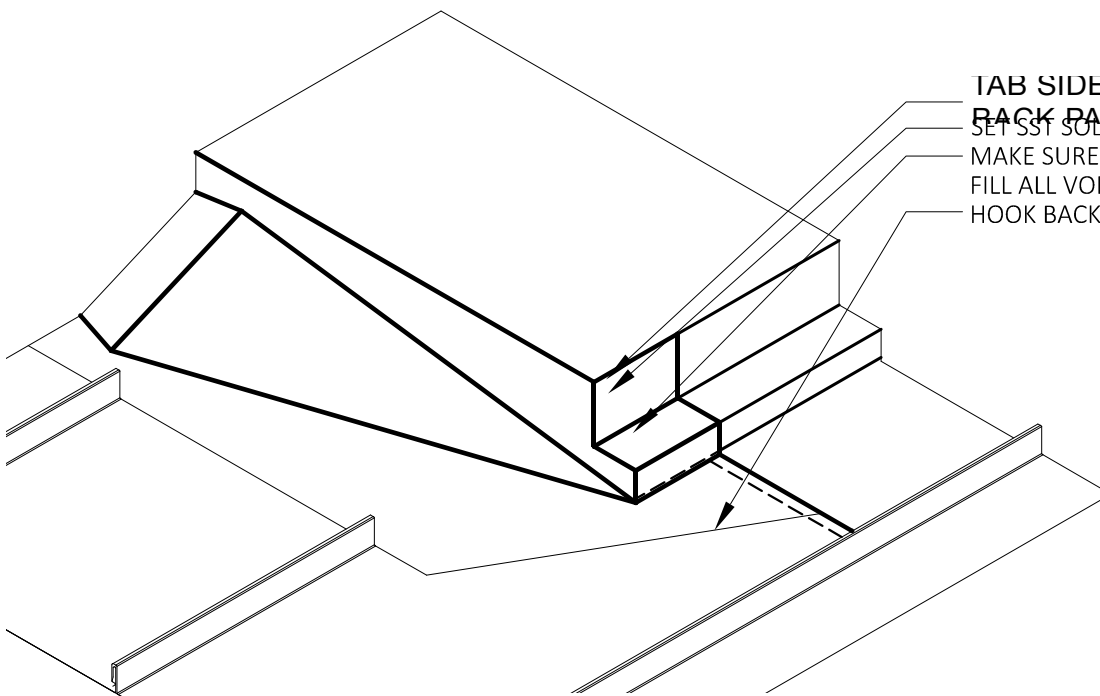
MAKE SURE END DAM UNDER SIDE WALL IS SEALED,
FILL ALL VOIDS WITH NON-SKINNING GUNNABLE BU
HOOK BACK PAN TO OFFSET CLEAT

BACK PAN (MSPAN)



SOLDERED BACK PAN

CURB GREATER THAN 24"



TAB SIDE WALL TO RECEIVE

BACK PAN

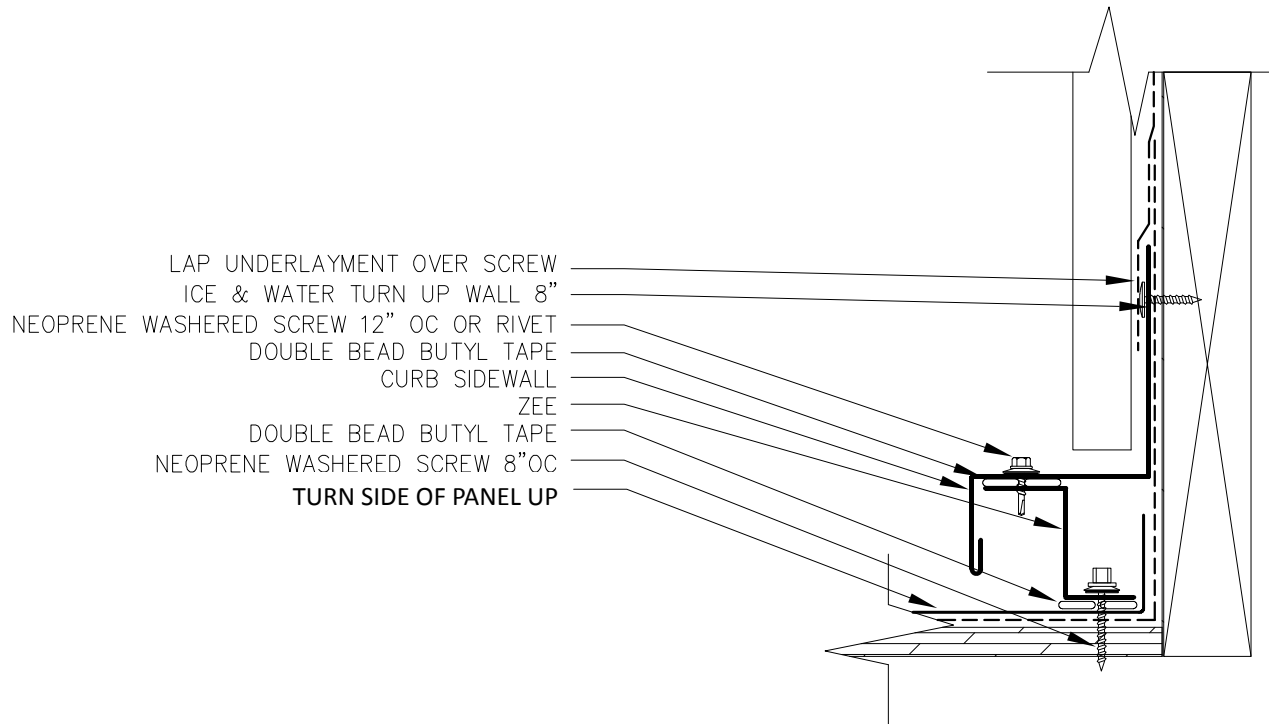
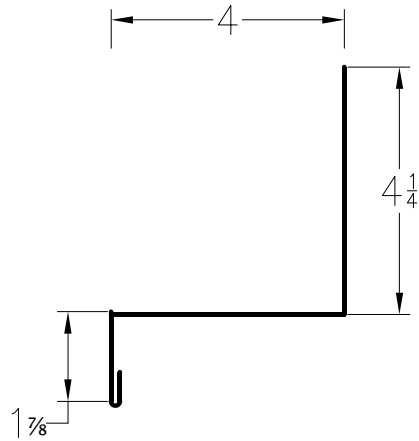
SET SST SOLDERED PAN IN NON-SKINNING BUTYL

MAKE SURE END DAM UNDER SIDE WALL IS SEALED,
FILL ALL VOIDS WITH NON-SKINNING GUNNABLE BU
HOOK BACK PAN TO OFFSET CLEAT



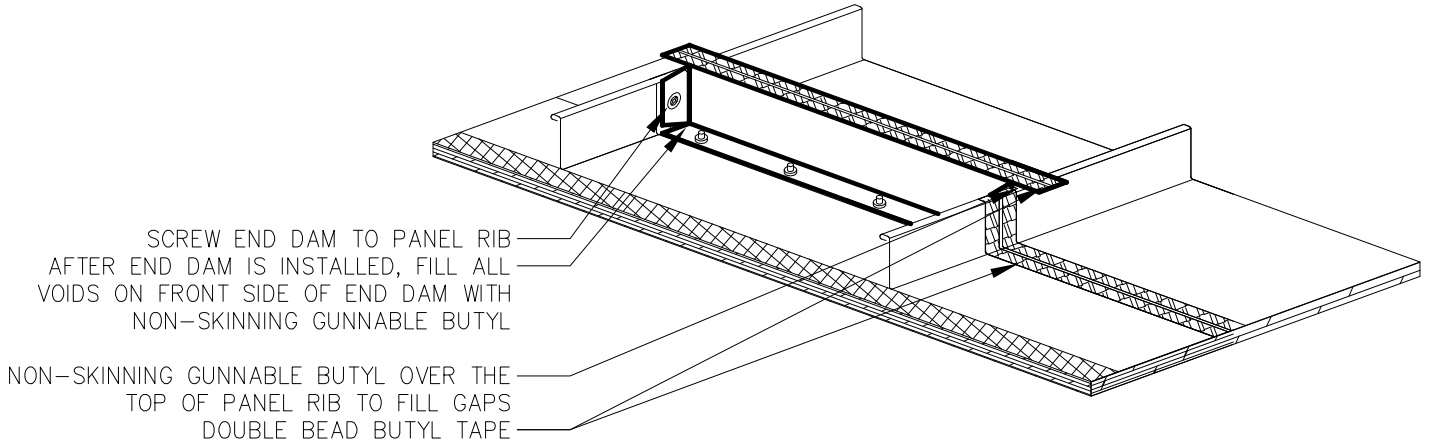
CURB SIDE WALL

CURB SIDE WALL (MSSWC)

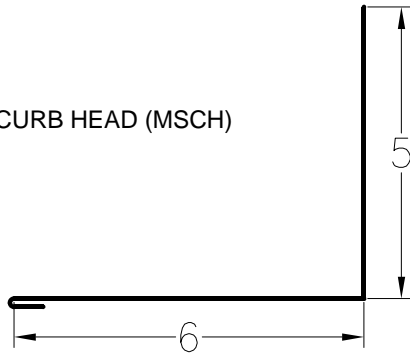




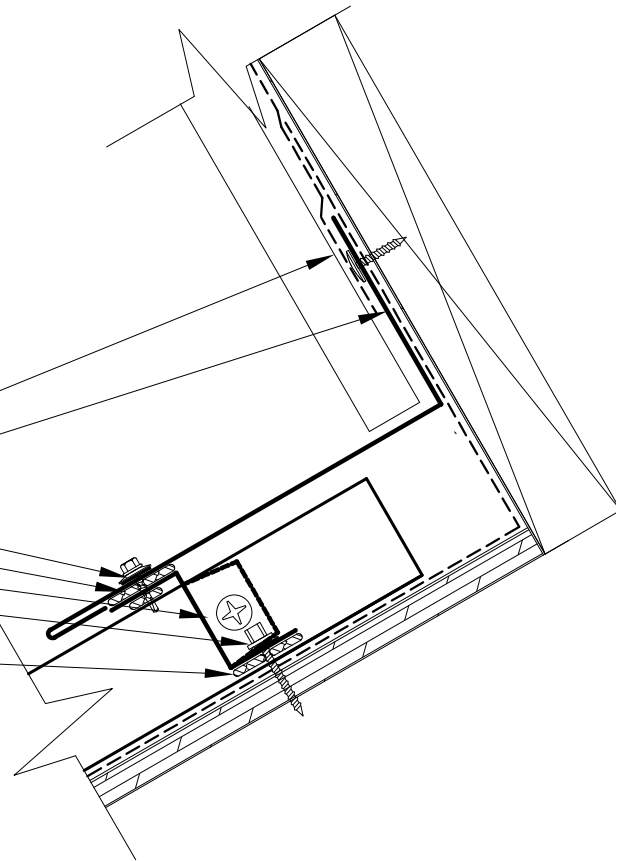
CURB HEAD



CURB HEAD (MSCH)



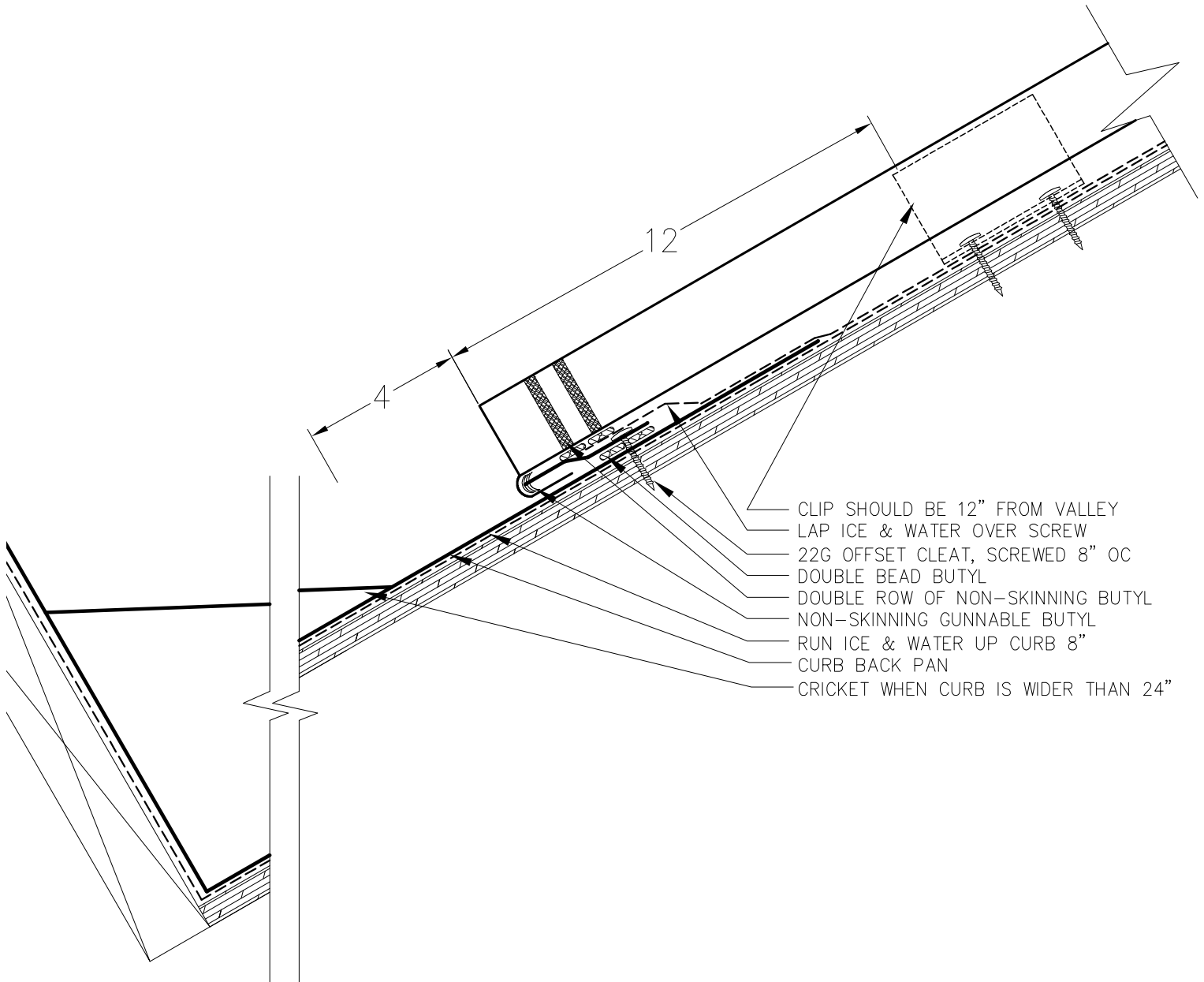
- LAP UNDERLAYMENT OVER SCREW
- ICE & WATER UP WALL 8"
- NEOPRENE WASHERED SCREW OR RIVET AT 12" OC INTO EACH END DAM
- DOUBLE BEAD BUTYL TAPE
- SCREW END DAM TO PANEL RIB
- NEOPRENE WASHERED SCREW 1" FROM PANEL LEG AND 4" OC
- DOUBLE BEAD BUTYL TAPE



NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



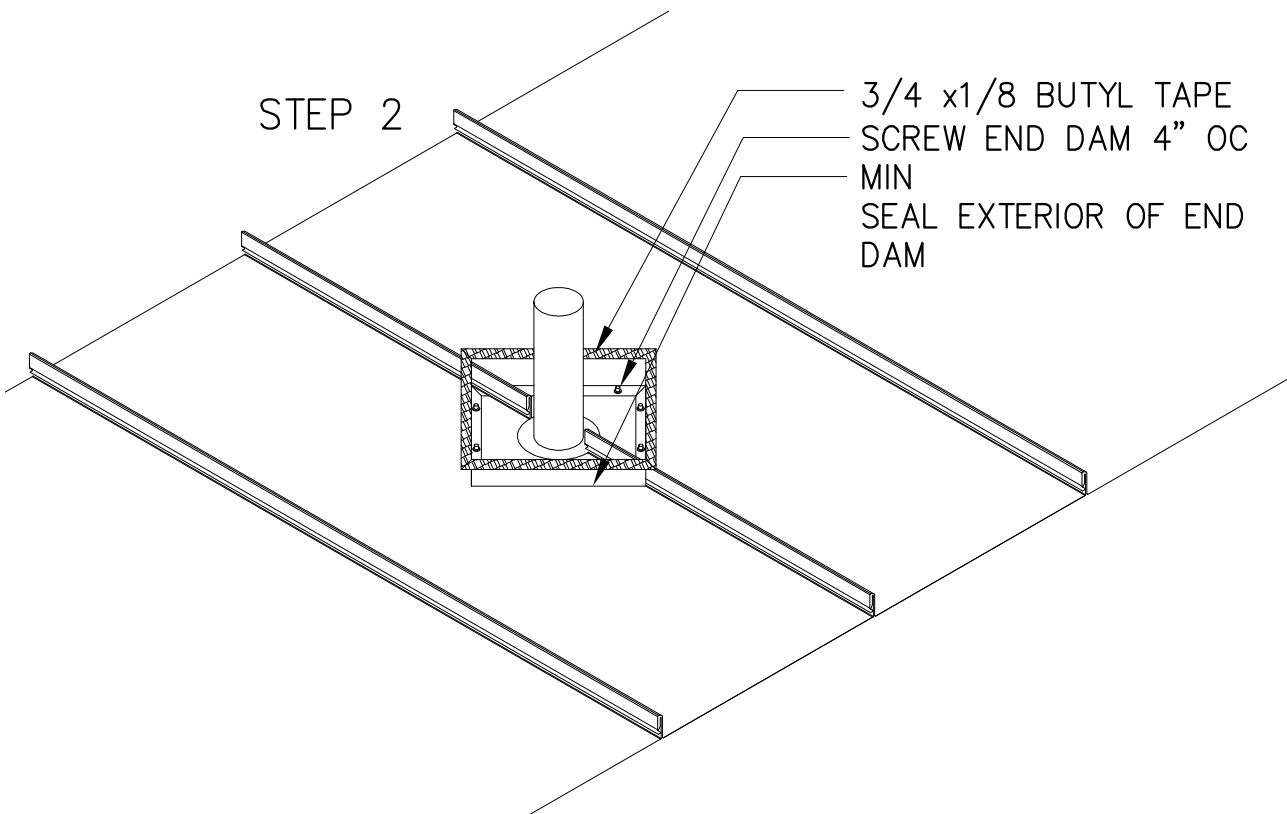
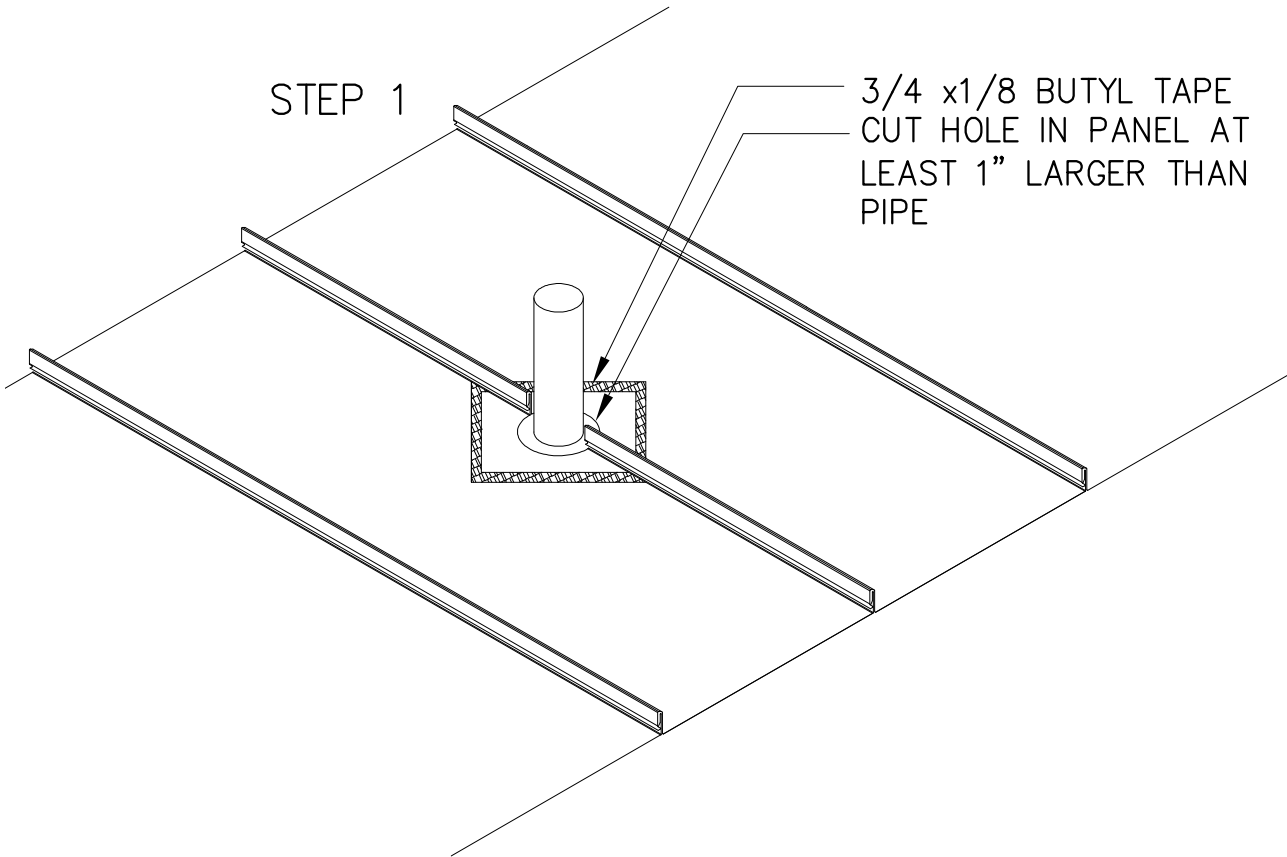
CURB PAN/CRICKET



NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



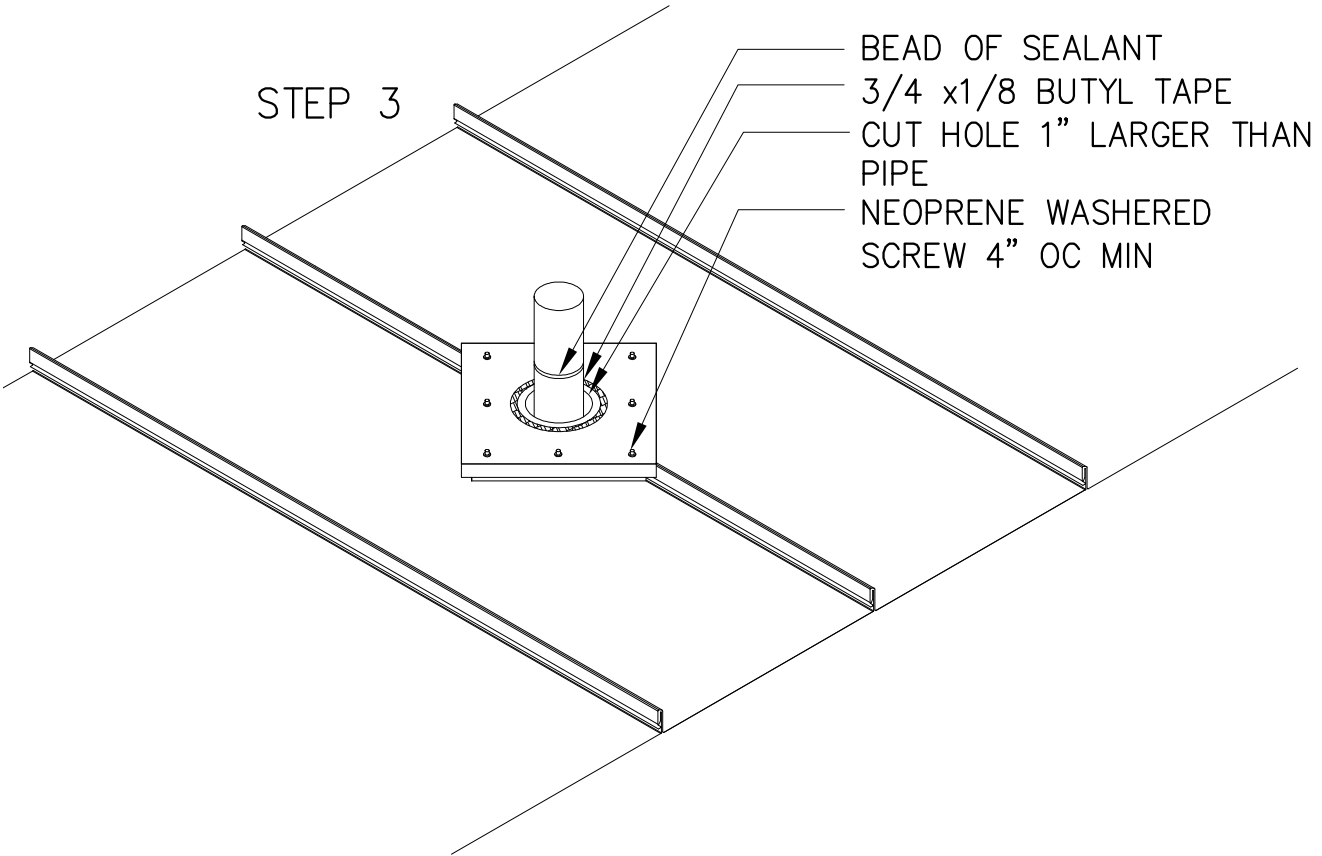
PIPE PENETRATION



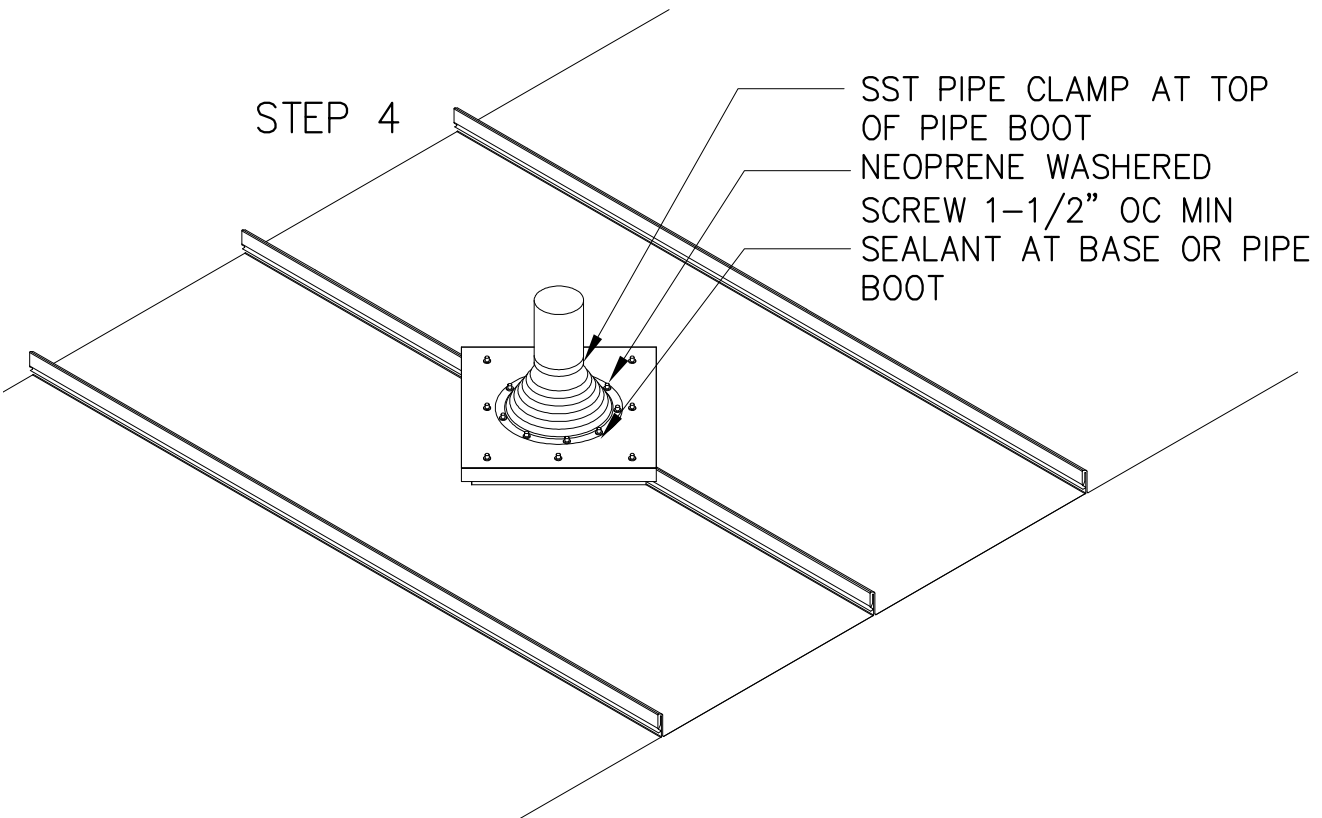


PIPE PENETRATION

STEP 3



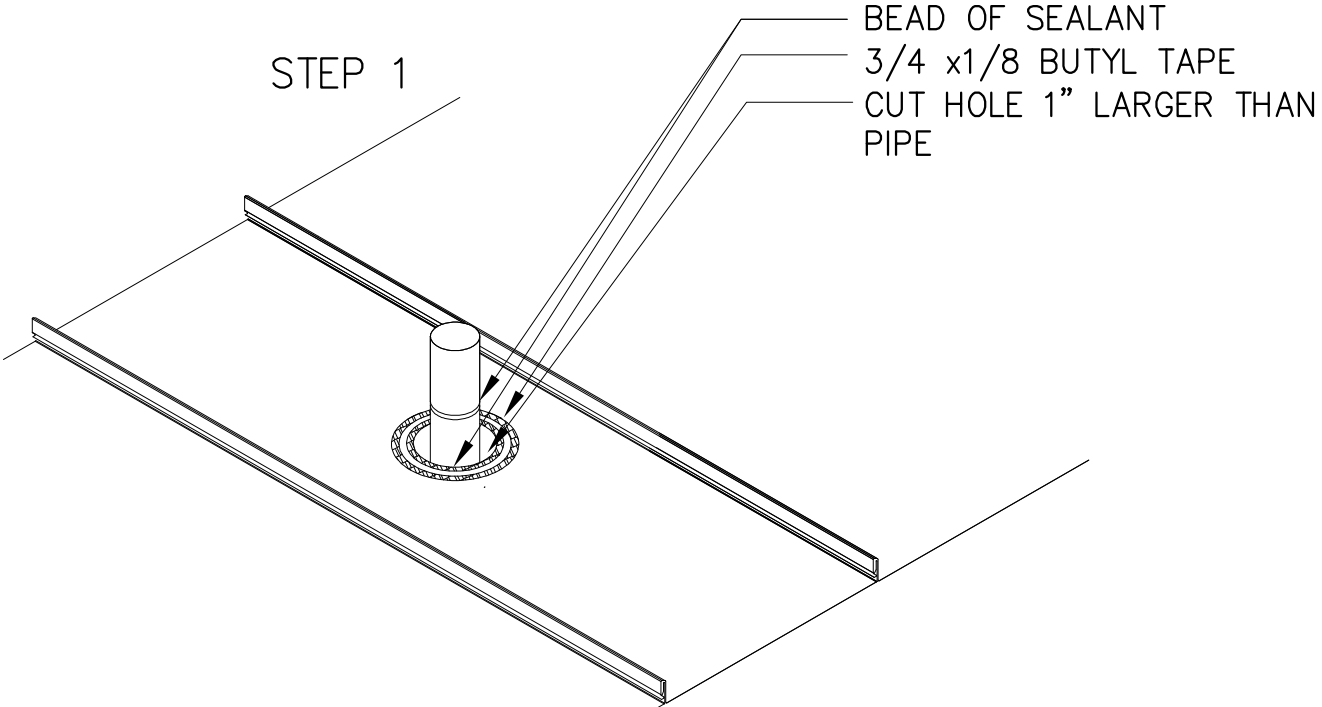
STEP 4



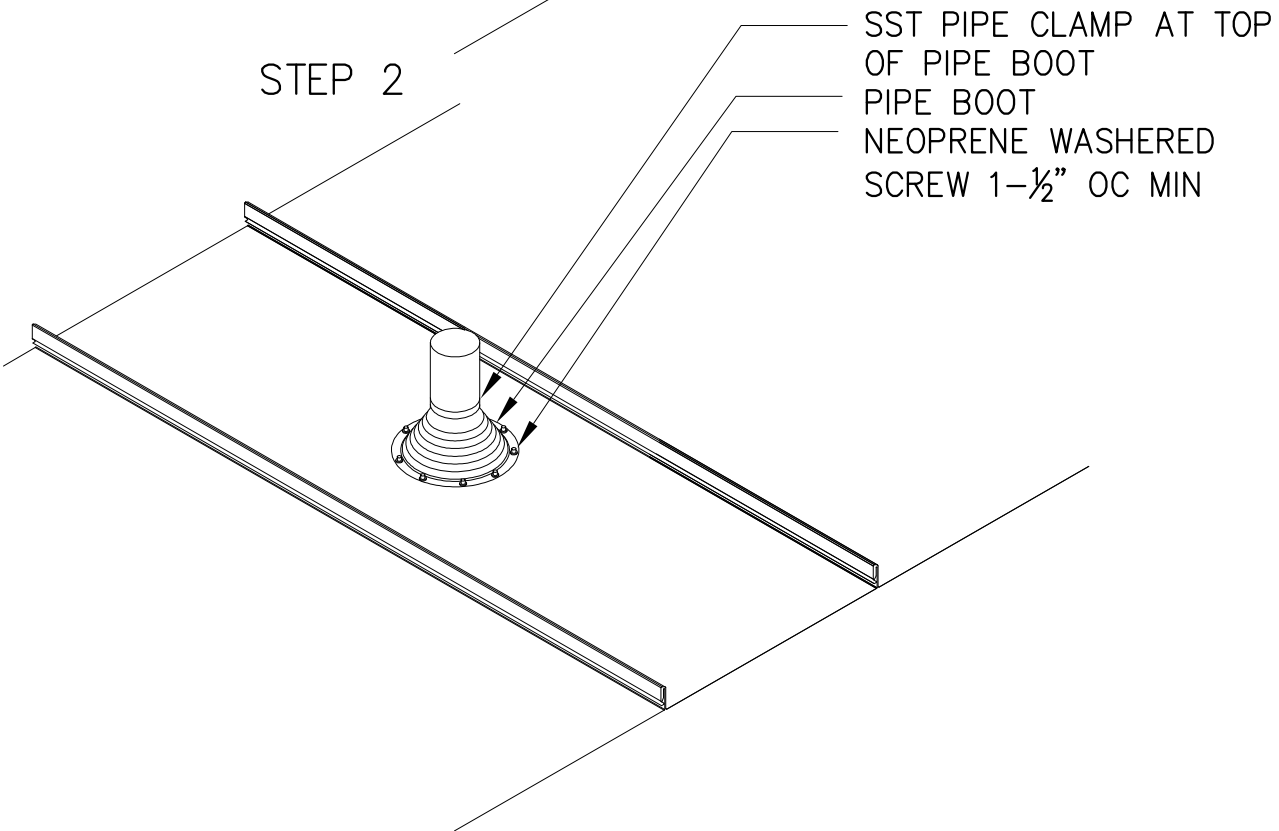


PIPE PENETRATION

STEP 1

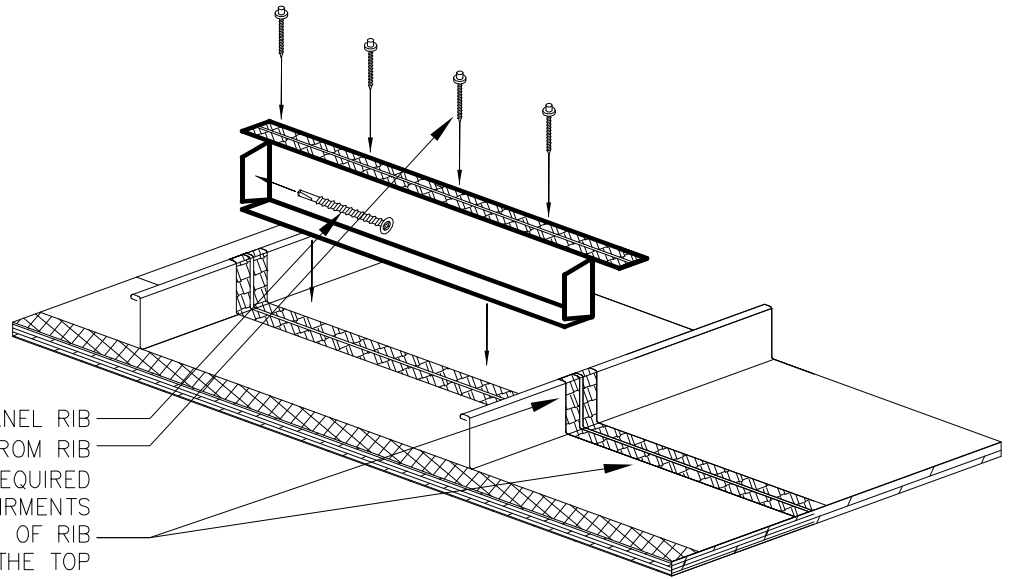


STEP 2

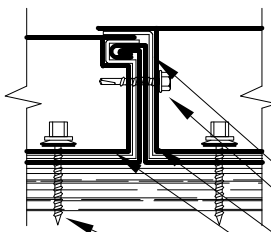




END DAM



SCREW END DAM TO PANEL RIB
NEOPRENE WASHERED SCREW 1" FROM RIB
AND 4" OC. MORE MAY BE REQUIRED
DEPENDIN ON DRAGLOAD REQUIRMENTS
DOUBLE BEAD BUTYL TAPE, UP SIDES OF RIB
AND OVER THE TOP

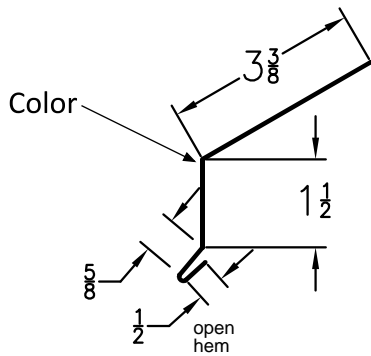


DOUBLE BEAD BUTYL TAPE
SCREW END DAM TO PANEL RIB
NON-SKINNING GUNNABLE BUTLE TO FILL ALL GAPS
END DAM SET IN DOUBLE BEAD BUTYL TAPE
NEOPRENE WASHERED DRAG LOAD 1" FROM SIDE OF RIB
AND 4" OC MIN, DRAG LOAD CALCS MAY REQUIRE MORE

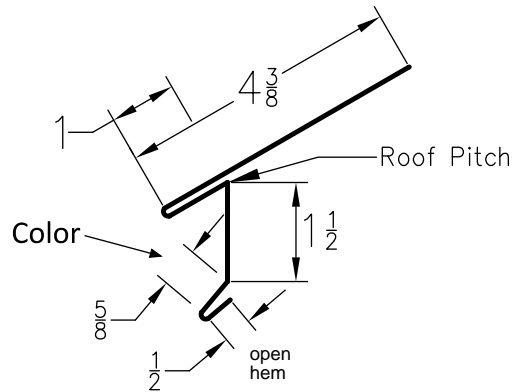
NOTE: All screws must be into solid substrate
Flashing must be lapped 4" with 2 rows of non-skinning gunnable butyl



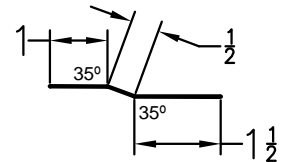
EAVE STANDARD (MS200ES)



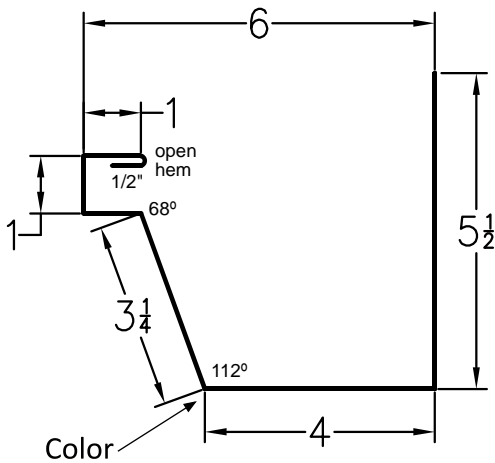
EAVE HOOK (MS200EH)



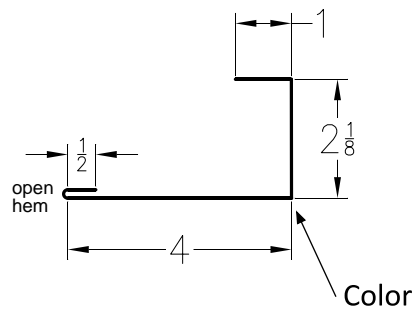
OFFSET CLEAT (MS200OC)



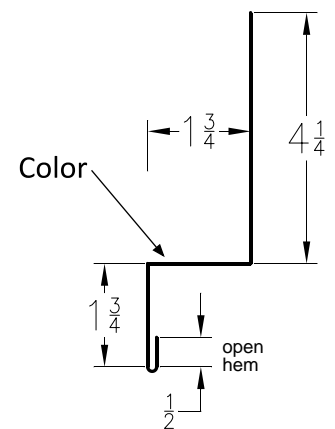
BOX GUTTER (MS00BG)



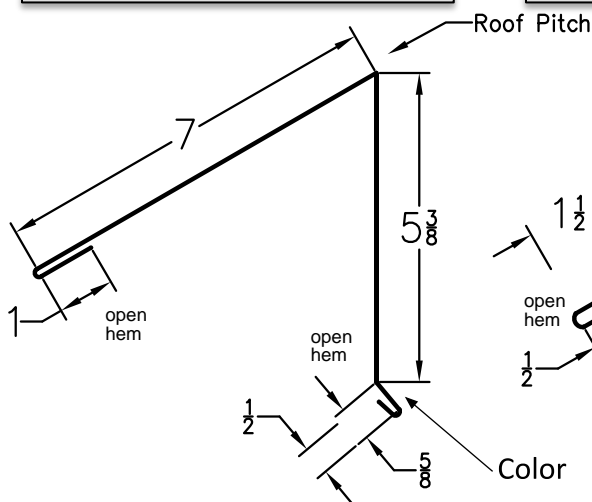
SUPPORT FLASHING (MS200SF)



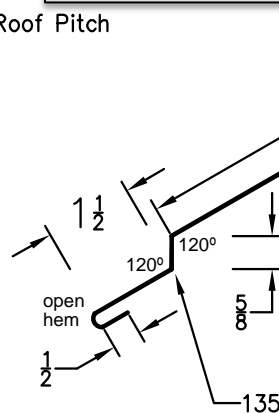
SIDE WALL (MS200SW)



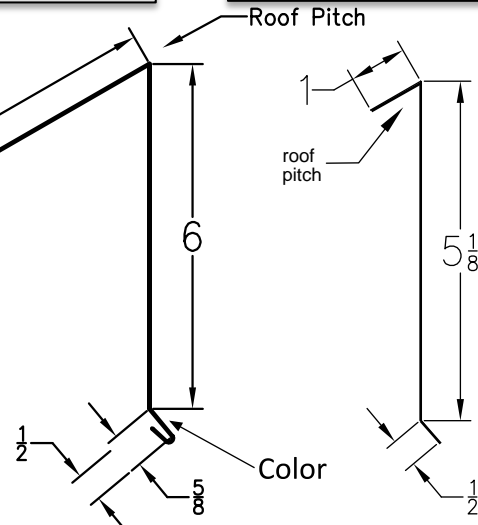
RIDGE END CAP (MS200REC)



VENTED RIDGE END (MS200RECV)

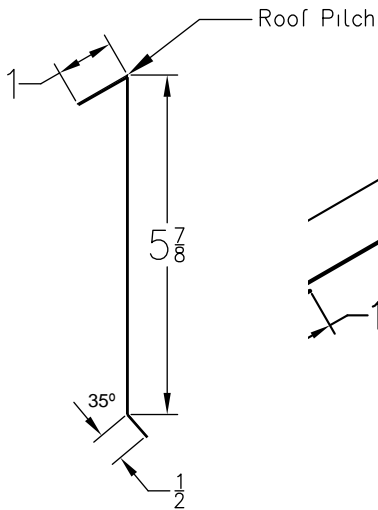


RIDGE END CAP CLEAT (MS200RECC)

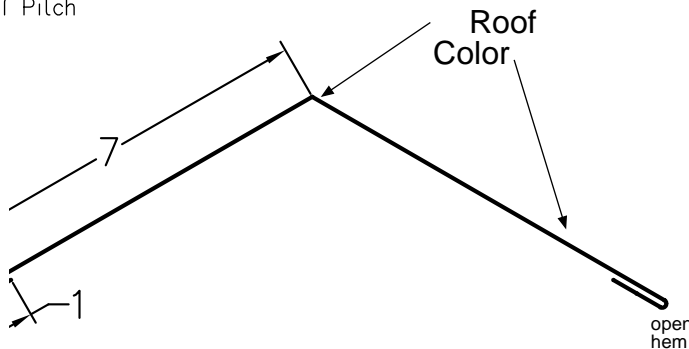




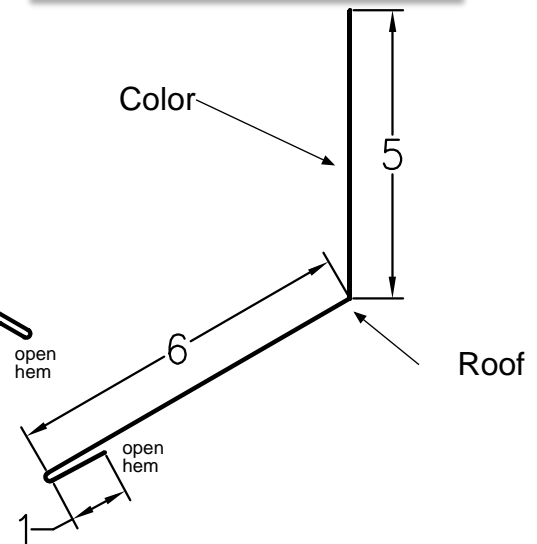
VENTED RIDGE END CAP CLEAT (MS200VRECC)



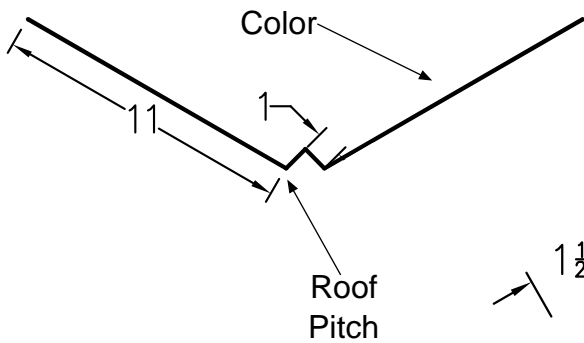
RIDGE (MS200RS)



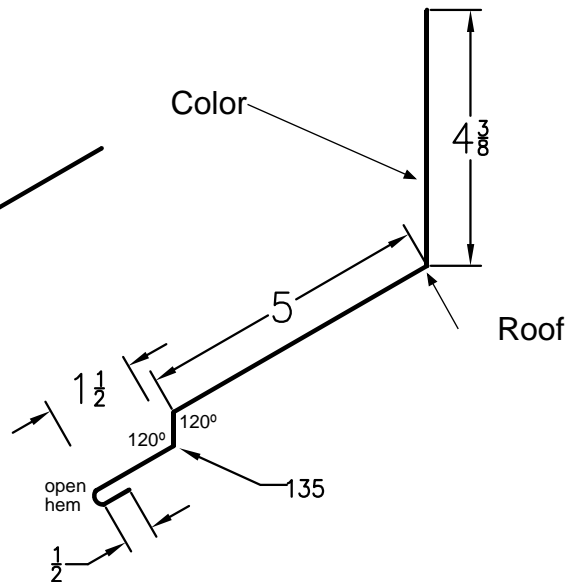
ENDWALL (MS200EW)



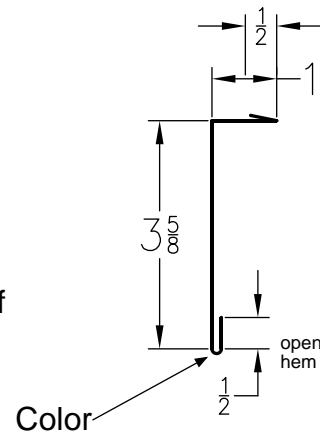
VALLEY FLASHING (MS200VF)



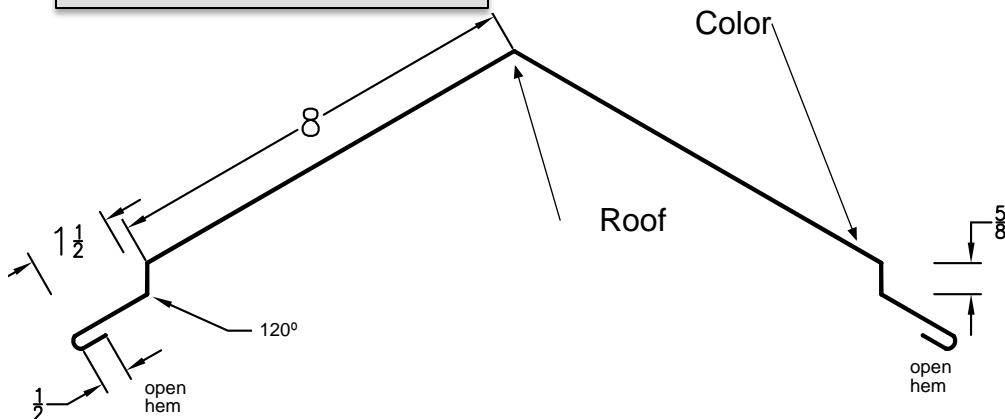
VENTED ENDWALL (MS200WW)



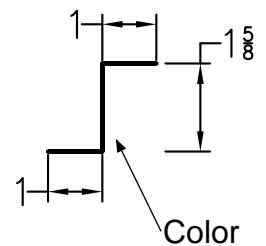
REGLET (MS200RF)



VENTED RIDGE (MS200RFV)

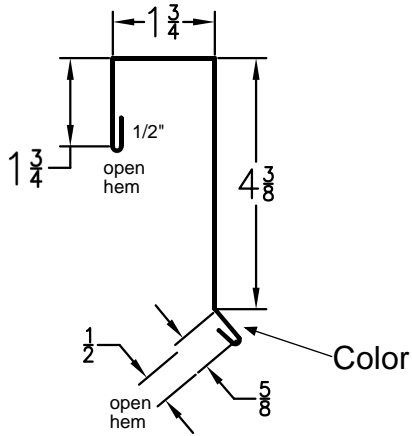


ZEE CLOSURE (MS200ZF)

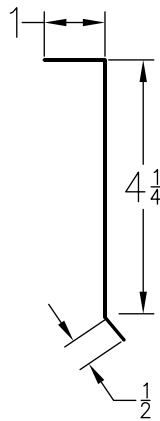




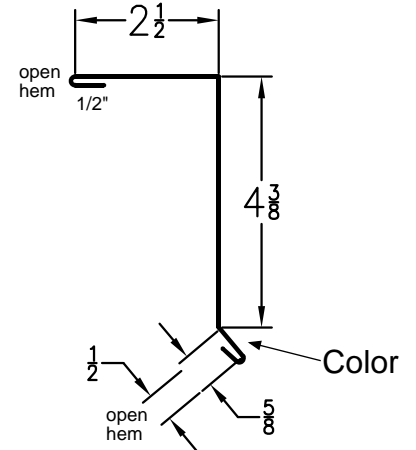
STANDARD GABLE



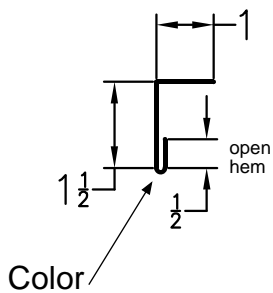
GABLE CLEAT (MS200GC)



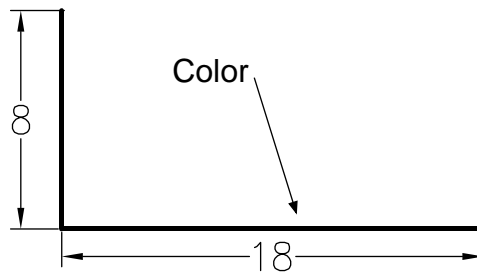
ALT GABLE (MS200AG)



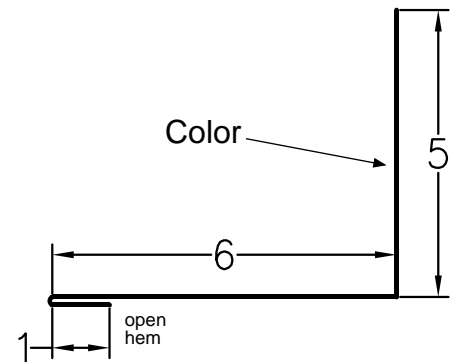
ALT L CLOSURE (TMS200ALC)



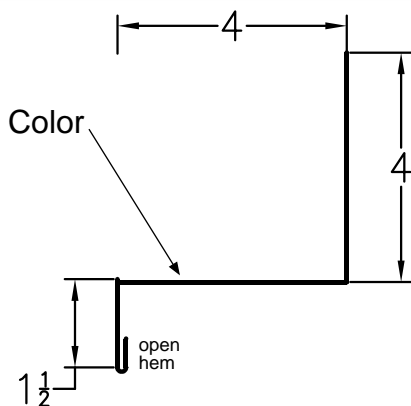
BACK PAN (MS200PAN)



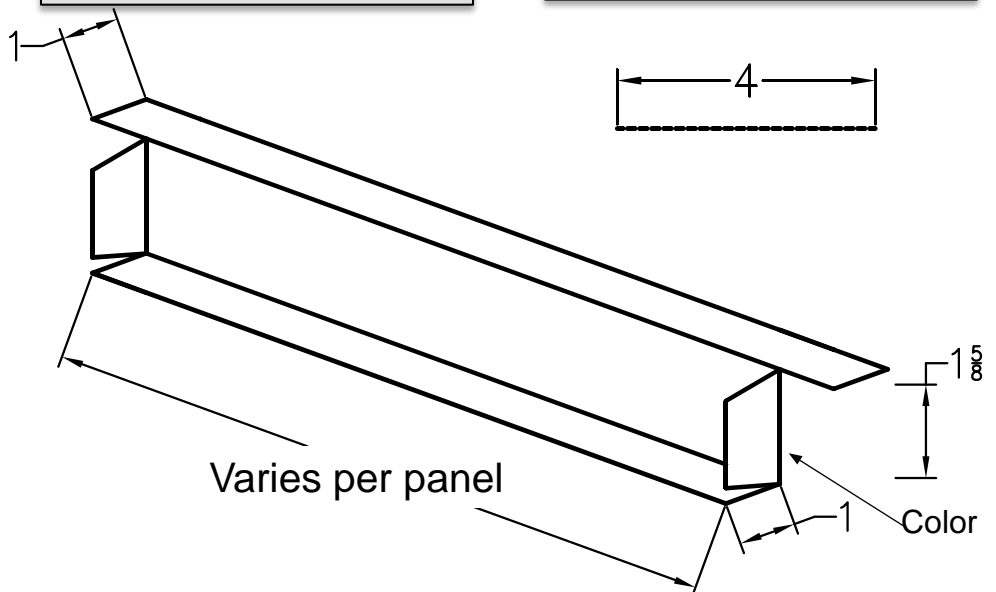
CURB HEAD (MS200CH)



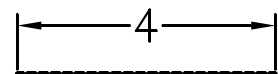
CURB SIDEWALL (MS200CSW)



END DAM (MS200ED)



4" PERFORATED STRIP (MS200PS)





Customer Name: _____ Job Name: _____

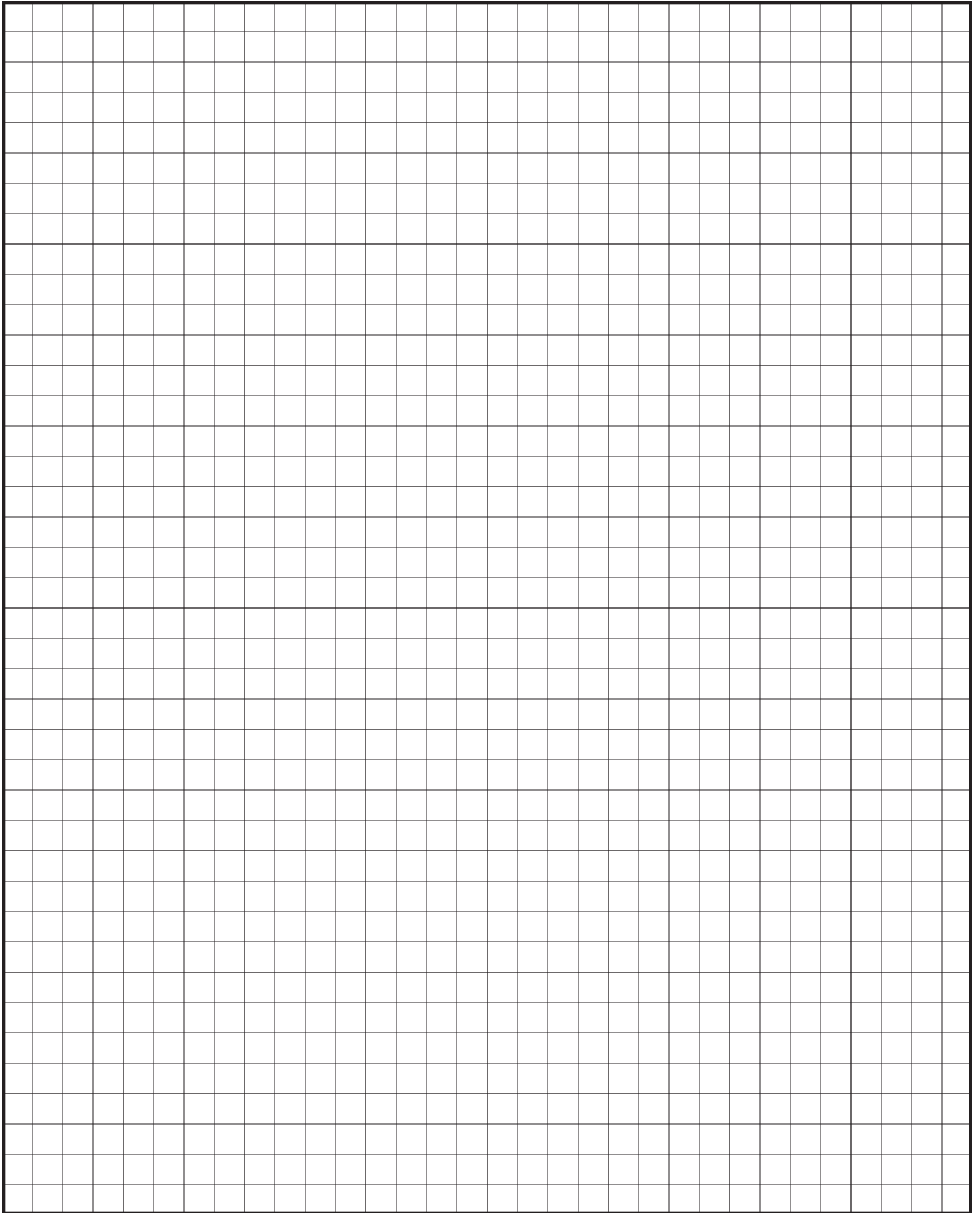
Drawing #: _____ Pitch: _____ # of Pieces: _____
 Description: _____
 Hems: Open Closed Slightly Open

Drawing #: _____ Pitch: _____ # of Pieces: _____
 Description: _____
 Hems: Open Closed Slightly Open

Drawing #: _____ Pitch: _____ # of Pieces: _____
 Description: _____
 Hems: Open Closed Slightly Open

Drawing #: _____ Pitch: _____ # of Pieces: _____
 Description: _____
 Hems: Open Closed Slightly Open

Please provide a drawing for each flashing with precise measurements and angles
Fax to: 425-485-2710



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