



## Box Rib™ Installation Guide

## Table of Contents

### General

Notes .....	i - ii
Panel details .....	1

Fasteners .....	2
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### Wall Installation Details (Vertical Install.)

Base .....	4
Sill .....	5
Eave / Fascia .....	6
Endwall .....	7
Outside Corner .....	8
Inside Corner .....	9
Soffit, Front .....	10
Soffit, Back .....	11
Parapet .....	12
Door / Window (Head) .....	13

Opening, Head (Nail Fin) .....	14
Door / Window (Jamb) .....	15
Opening, Jamb (Nail Fin) .....	16
Door / Window (Sill) .....	17
Opening, Sill (Nail Fin) .....	18
Lap Detail .....	19
Penetration, 3D .....	20
Penetration, 2D .....	21
Penetration Examples .....	22

### Wall Installation Details (Horizontal Install.)

Base .....	24
Sill .....	25
Eave / Fascia .....	26
Endwall .....	27
Outside Corner .....	28
Inside Corner .....	29
Soffit, Front .....	30
Soffit, Back .....	31
Parapet .....	32
Door / Window (Head) .....	33

Opening, Head (Nail Fin) .....	34
Door / Window (Jamb) .....	35
Opening, Jamb (Nail Fin) .....	36
Door / Window (Sill) .....	37
Opening, Sill (Nail Fin) .....	38
Lap Detail .....	39
Penetration, 3D .....	40
Penetration, 2D .....	41
Penetration Examples .....	42

## GENERAL NOTES

The attached installation details are intended to be a design aid and do not depict all situations. Modifications are the responsibility of the designer/user and should consider climate conditions such as wind and snow, wildfire, governing code requirements, and the actual usage and maintenance of the structure.

### Applications:

Box Rib is acceptable for use as a wall panel installed in the vertical or horizontal orientation. Box Rib can be installed over solid substrates or over spaced supports. This installation guide depicts Box Rib installed over mixed substrates. It is the responsibility of the designer/user to make proper installation adjustments to address the installation conditions on the project.

### Flashings:

Where feasible, flashings should be lapped away from prevailing winds. Certain flashings should be supported if it is likely that equipment (ladder, etc.) will be used against them. Check with AEP Span any time you intend to specify a prefinished flashing in a gauge or finish different than the Box Rib panels. It is good practice to specify that all flashings be of the same material (gauge, color, finish) as the roof & wall panels to ensure long-term durability. Painted flashings rarely equal the durability and colorfastness of factory baked-on paint systems. The enclosed details have minimized the use of exposed fasteners where possible. The edges of flashings have also been shown hemmed to strengthen and to minimize the exposure of cut edges.

Flashing design and fabrication is generally the responsibility of the contractor. For convenience, we

have provided typical flashing drawings on our website. Applicable Box Rib flashing part numbers are referenced within this installation guide. Note that flashing shapes and dimensions may vary greatly based on project requirements. Installation details and flashings referenced within are for general design guidance only.

### Condensation, Insulation, & Ventilation:

It is the designer's responsibility to determine the need and composition of moisture control materials including insulation and vapor retarders, as well as ventilation requirements. Metal roof and wall products are susceptible to condensation, and its control should be carefully considered.

For metal roofing panels, an underlayment should be installed over the roof substrate. AEP Span recommends using AEP Span Underlayment HT, which is specifically engineered for all AEP Span roofing systems and suitable for use under any metal roofing system or coping. AEP Span Underlayment HT is a high-temperature, self-healing, self-adhering, peel-and-stick underlayment with a non-abrasive surface that will not mar, scratch, or abrade the underside of metal panels and flashings. Please note that additional protection may be required to achieve Class A fire ratings as defined in UL 790 classified assemblies.

### Thermal Movement:

Both panels and flashings must allow for thermal movement (expansion and contraction) of the materials, especially where long lengths are used. Appropriate gaps or provisions must be provided to accommodate thermal movement.

#### Designing for Snow:

If possible, valleys, gutters, roof elevation changes and penetrations should be minimized or eliminated in snow areas. Roof penetrations should be located as close to the ridge or peak of the roof as possible to minimize accumulations of ice and snow.

#### Building Code Compliance:

Box Rib is compliant with the IBC, IRC, CBC, and CRC building codes. Refer to IAPMO-UES Code Compliance Report #ER-0550 for further details. Box Rib is also approved as part of a Class A Fire rated assembly when installed in accordance to UL790 listings.

#### Panel Attachment / Structural Performance:

The structural performance of Box Rib is documented in IAPMO-UES Code Compliance Report #ER-0550. Published performance data includes: Panel section properties, inward (gravity) load capacities, outward (wind uplift) load capacities, shear tables, and other product information and limitations.

#### Oil Canning:

Flat metal surfaces often display waviness commonly referred to as 'oil canning'. This can be caused by variations in raw material, processing variations, product handling, or variations in the installation substrate. Oil canning is a characteristic, not a defect, of panels manufactured from light-gauge metal. To reduce potential for oil canning, substrates should not deviate from a flat plane more than 1/4 inch in 20 feet, or 1/8 inch in 5 feet. Oil canning is not a cause for panel rejection. Additional technical information is available for review on our website.

#### Protecting the Panels:

Proper handling, storage, installation, and keeping work surfaces clean are key to protecting metal roofing and siding. Regular washing and maintenance after installation further help ensure panel longevity. For detailed guidance, refer to the technical resources on AEP Span's website.

#### References:

The Sheet Metal and Air Conditioning Contractors' National Association Inc. (SMACNA) manual is an excellent reference for sheet metal contractors. It's guidelines for underlayments, gutter and downspout size requirements, and expansion/contraction of metals and flashing joints should be followed.

#### Technical Assistance:

Contact your AEP Span Sales Representative for additional information.

#### Online Product Page:

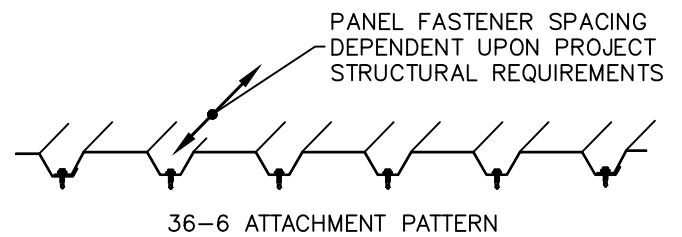
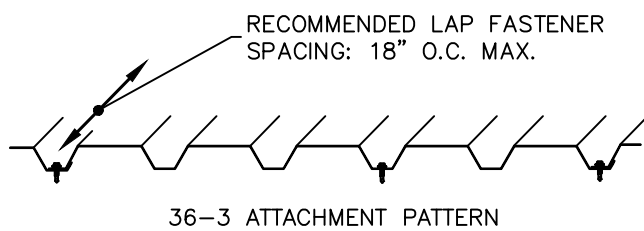
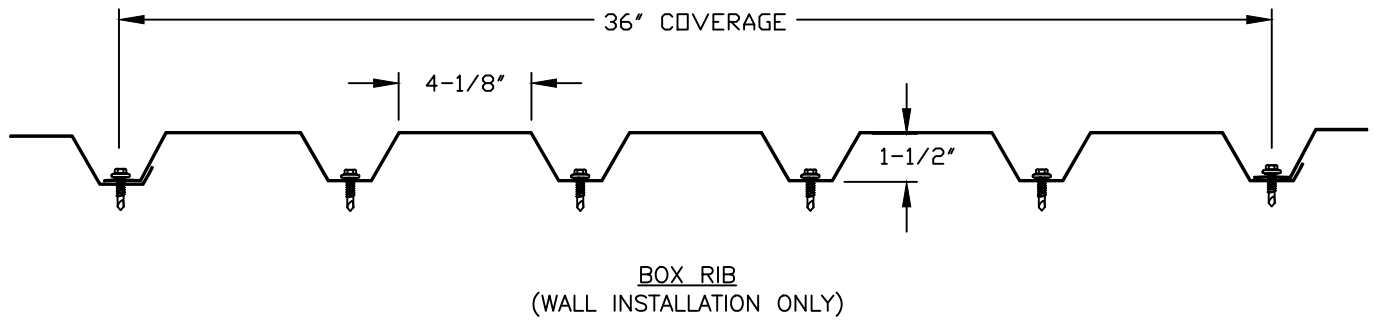


#### Technical Resources:

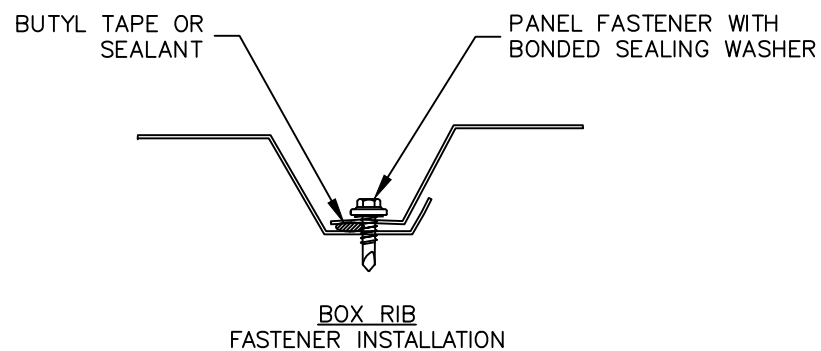


#### ER-0550 Code Compliance Report:

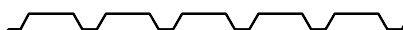




NOTE: PANEL FASTENER ATTACHMENT (TYPE, SIZE, AND LOCATION) IS DEPENDENT UPON SUBSTRATE USAGE AND STRUCTURAL REQUIREMENTS FOR EACH SPECIFIC PROJECT. DESIGN PROFESSIONAL TO DESIGN OR CONFIRM ADEQUATE PANEL ATTACHMENT. REFER TO GENERAL NOTES SECTION FOR ADDITIONAL GUIDANCE.







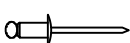
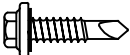

BOX RIB



PANEL DETAILS



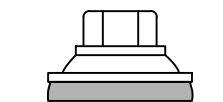
BR-01

Description		Length(s)	Use
	#9 Hex Head Wood Screw (1/4" Drive) with Sealing Washer	1", 1-1/2" 2", 2-1/2" 3"	Panel to dimensional lumber attachments. Color matched.
	#14 Hex Head Wood Screw (5/16" Drive) with Sealing Washer	1" 1-1/2"	Panel to plywood/OSB attachments (7/16" minimum thickness). Color matched.
	#12 Stitch Screw (1/4" Hex Drive) with Sealing Washer	3/4"	Exposed trim and panel lap attachments. Visible head size matches Item #1 wood screw. Color matched.
	#14 Lap Self Driller (5/16" Hex Drive) with Sealing Washer	7/8"	Exposed trim and panel lap attachments. Visible head size matches Item #2 wood screw. Color matched.
	1/8" Diameter Stainless Steel Rivet	1/8" Max Grip Length	Trim to trim, or trim to panel attachments. Color matched.
	#12 Hex Head Self Drill Screw (1/4" Drive)	1", 1-1/2" 2", 2-1/2"	Panel to steel deck or steel framing attachment. Color matched.
	#10 Pan Head Screw	1"	For non-exposed trim to substrate attachments.

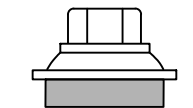
**Notes:**

- The table above shows the fasteners commonly required for AEP Span panel installations. Refer to the enclosed installation details for further guidance.
- Panel attachment screws into plywood/OSB must be long enough to fully penetrate through at least 3/8", or penetrate into solid lumber by at least one inch.
- Exposed fasteners must have sealing washers and should be the same color as the panels and trims they attach.
- Screws must be properly driven to ensure proper seal and holding strength. Do not underdrive or overdrive the screws.
- Note that rivets are not considered watertight.

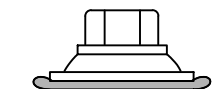
**Proper Installation of Fasteners with Sealing Washers**



Correctly Driven



Under Driven



Over Driven



**BOX RIB**



**FASTENERS**

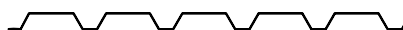


**BR-02**

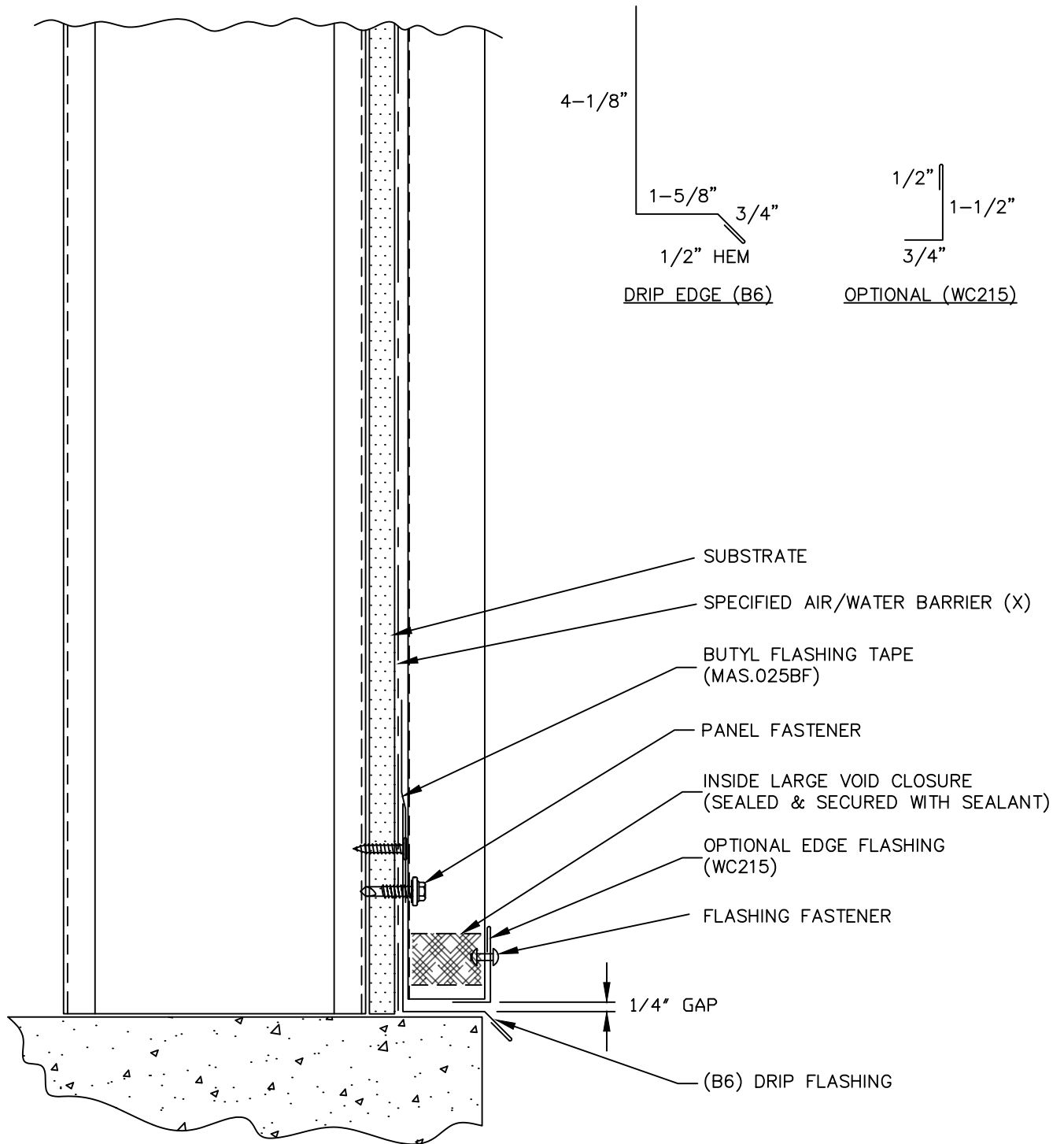
# VERTICAL WALL DETAILS



BOX RIB



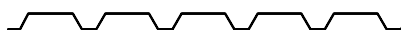
BR-03



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BOX RIB

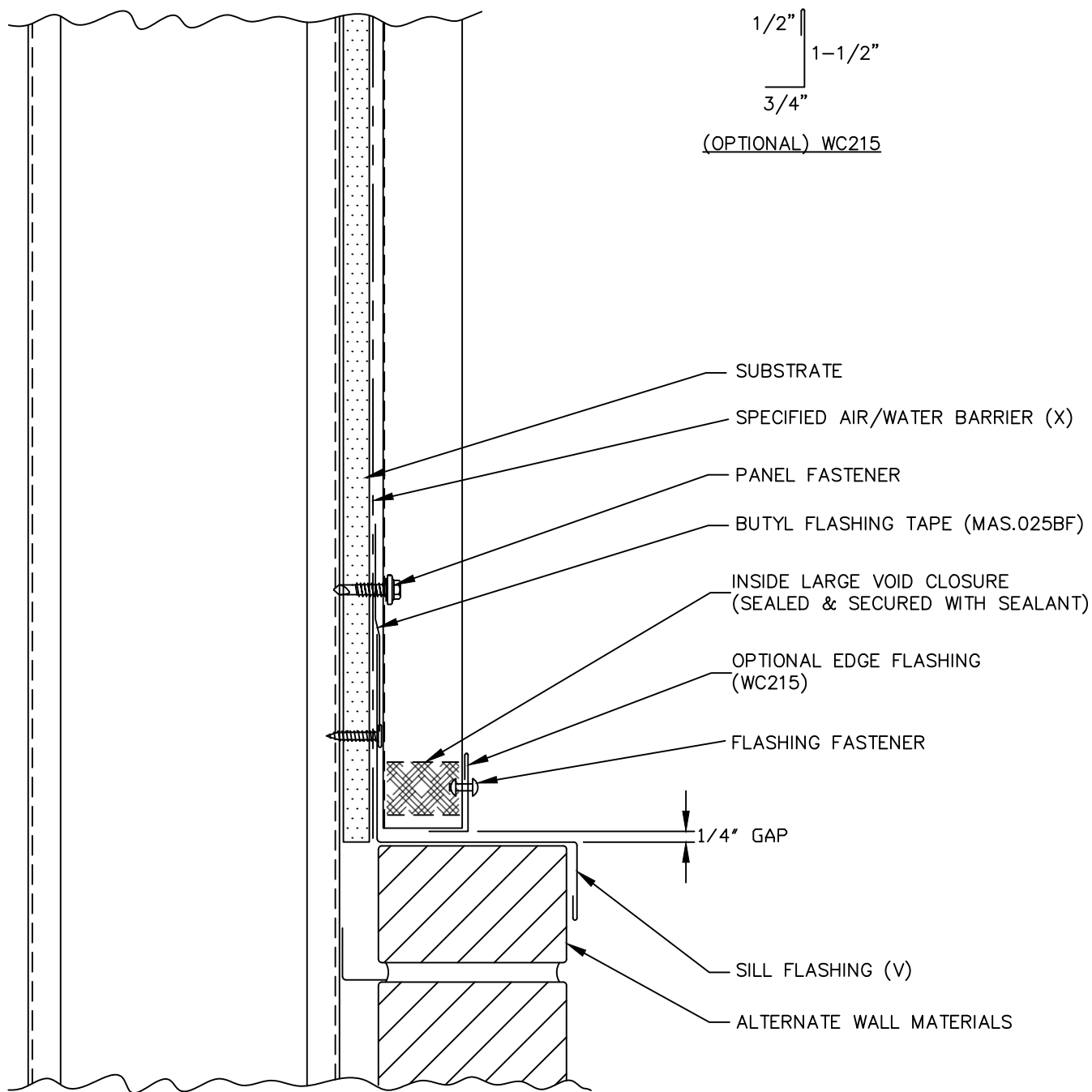


BASE



BR-04

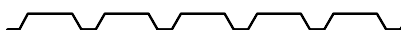




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(V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



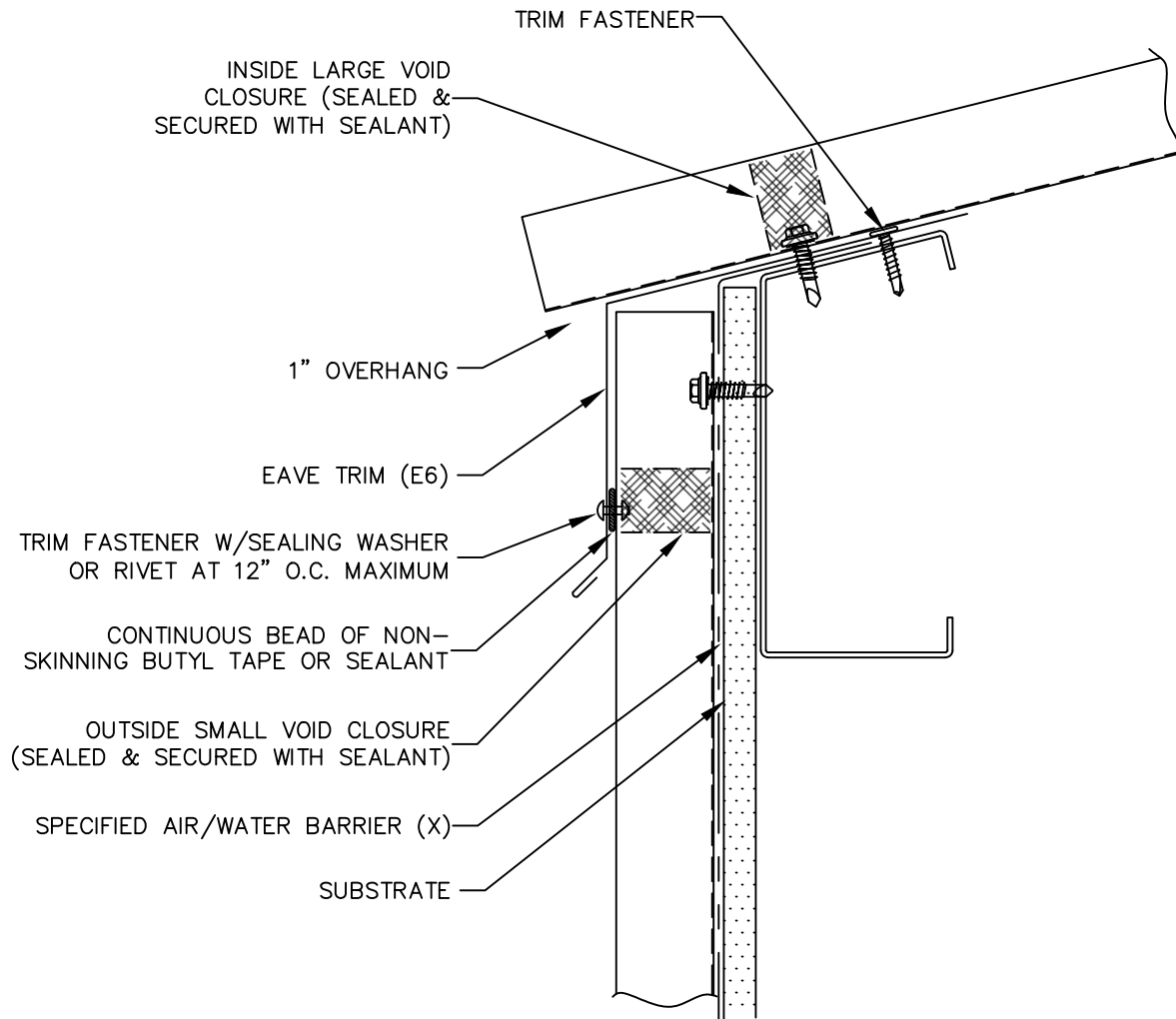
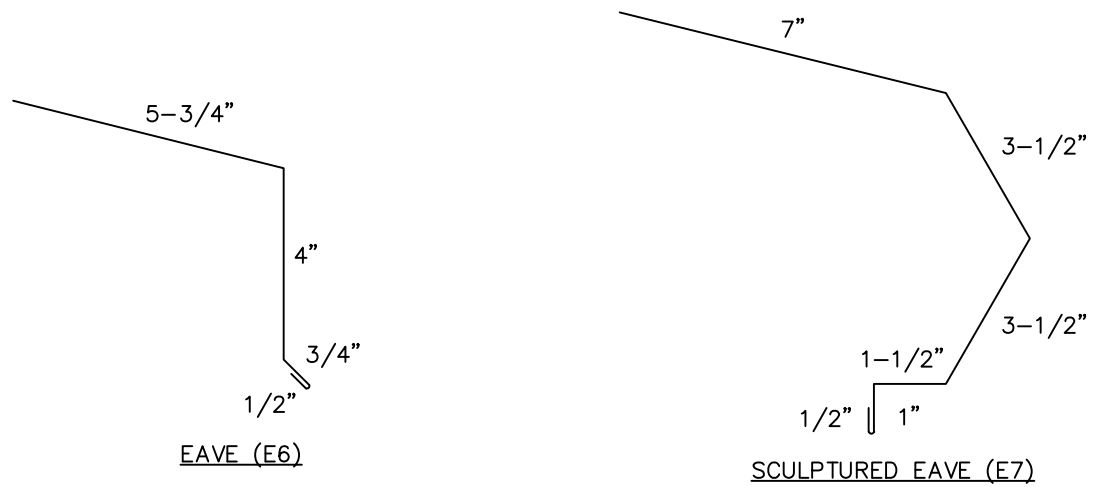
BOX RIB



SILL



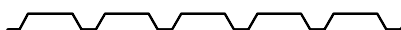
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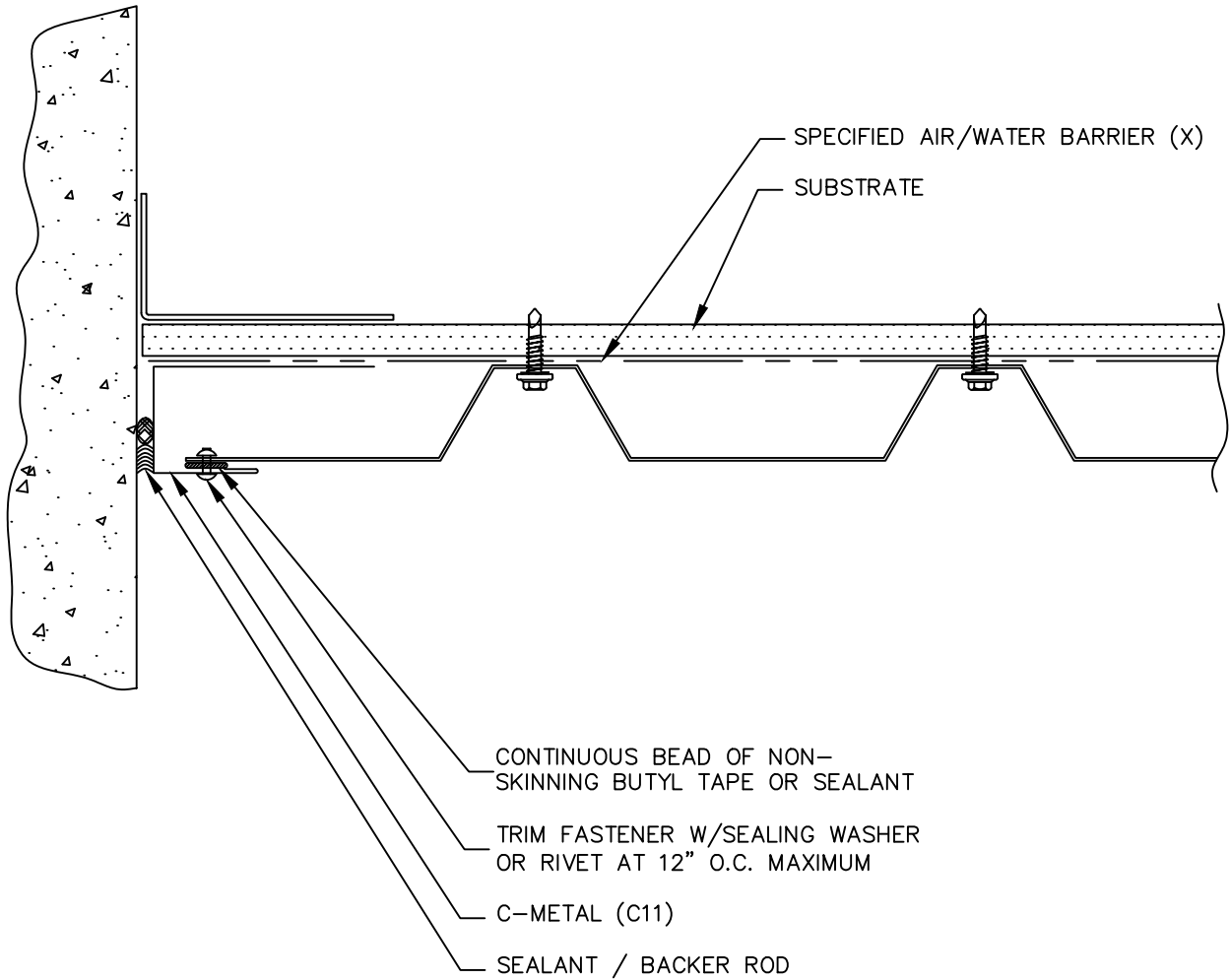
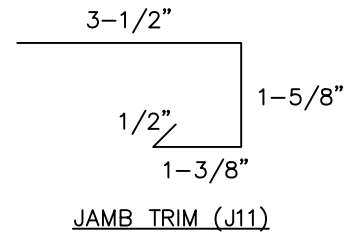
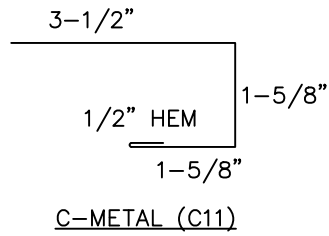
**BOX RIB**



**EAVE / FASCIA**



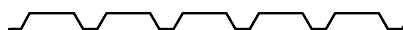
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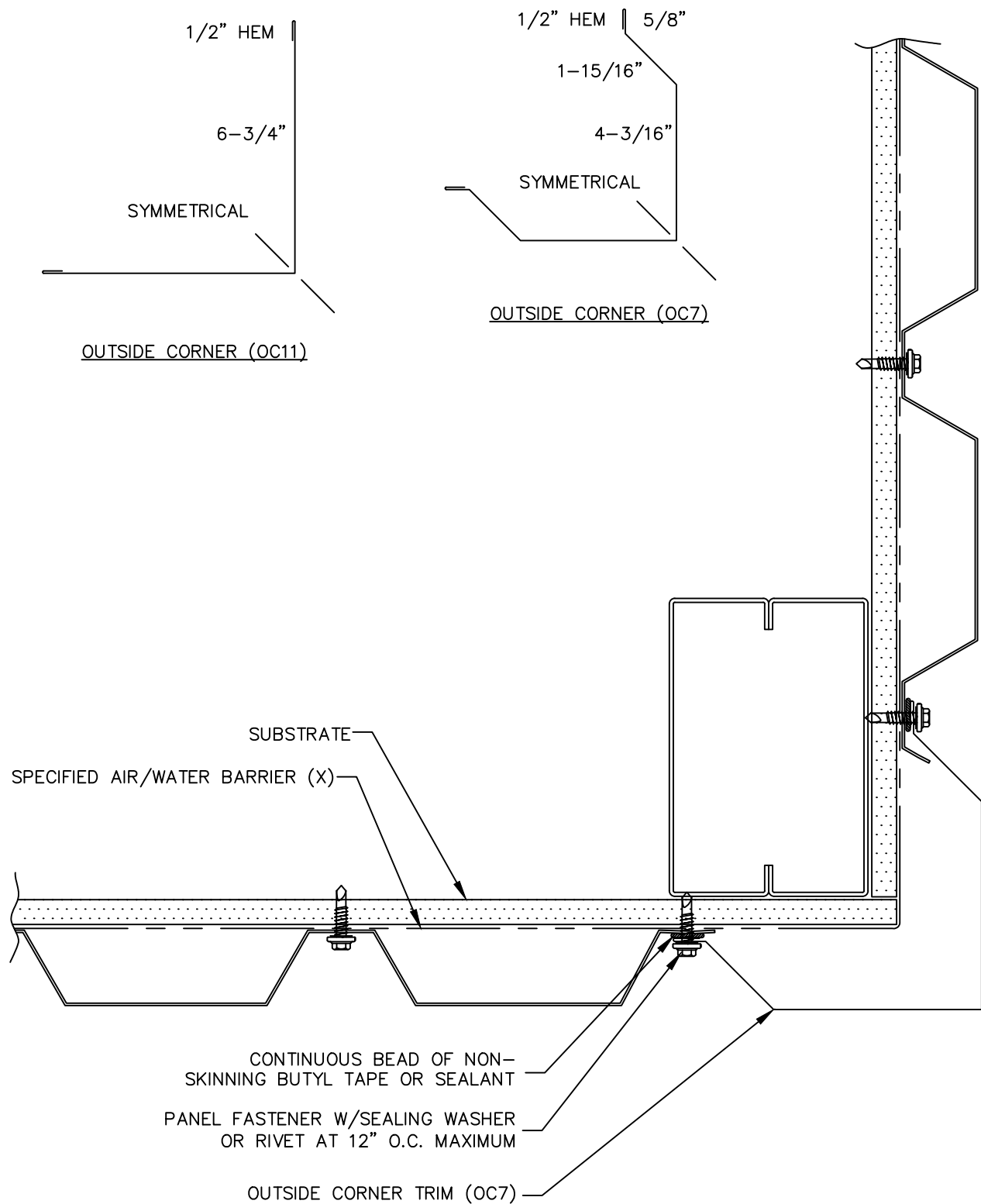
BOX RIB



END WALL



BR-07



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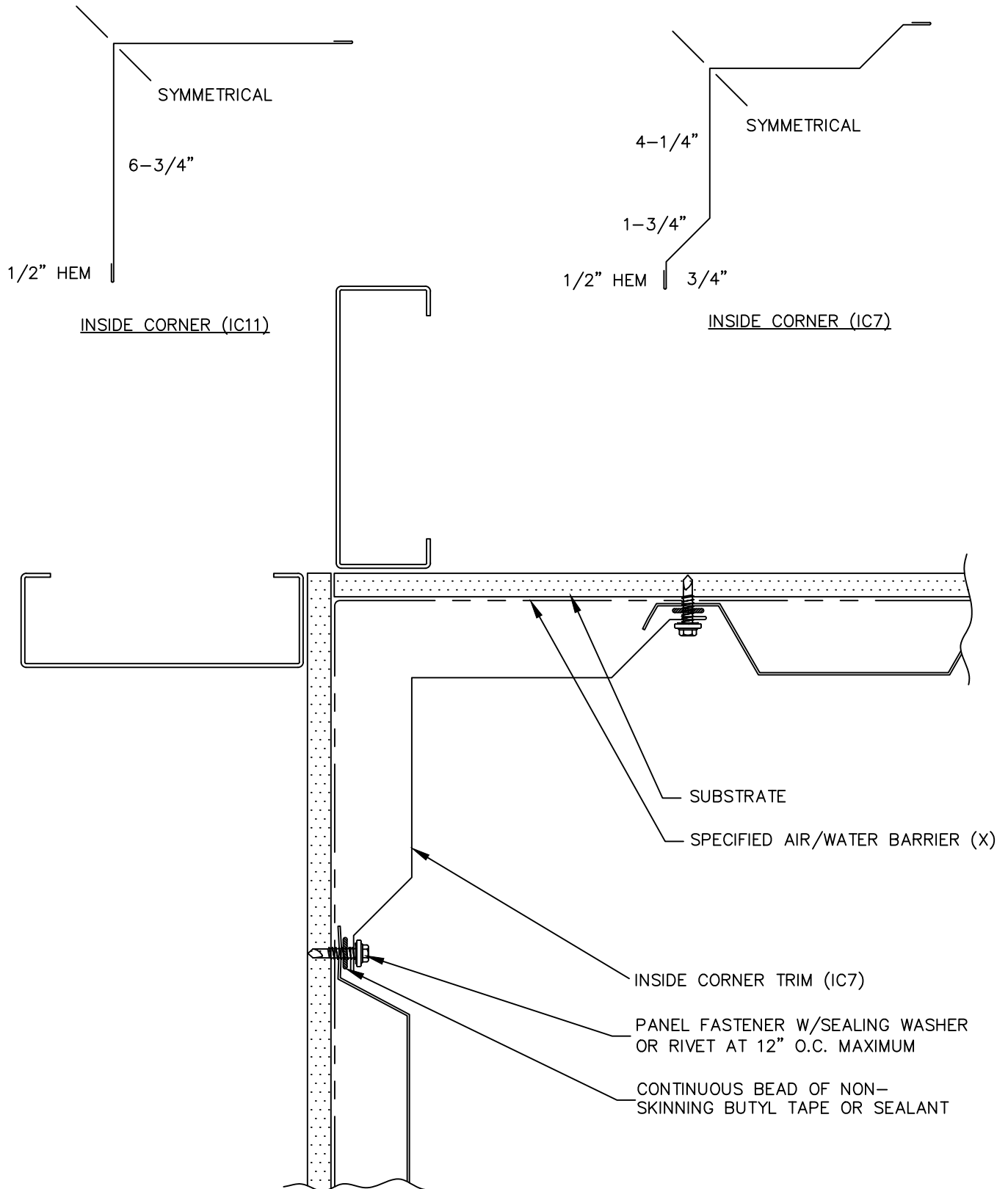
BOX RIB



OUTSIDE CORNER



BR-08



(X) - NOT BY AEP SPAN



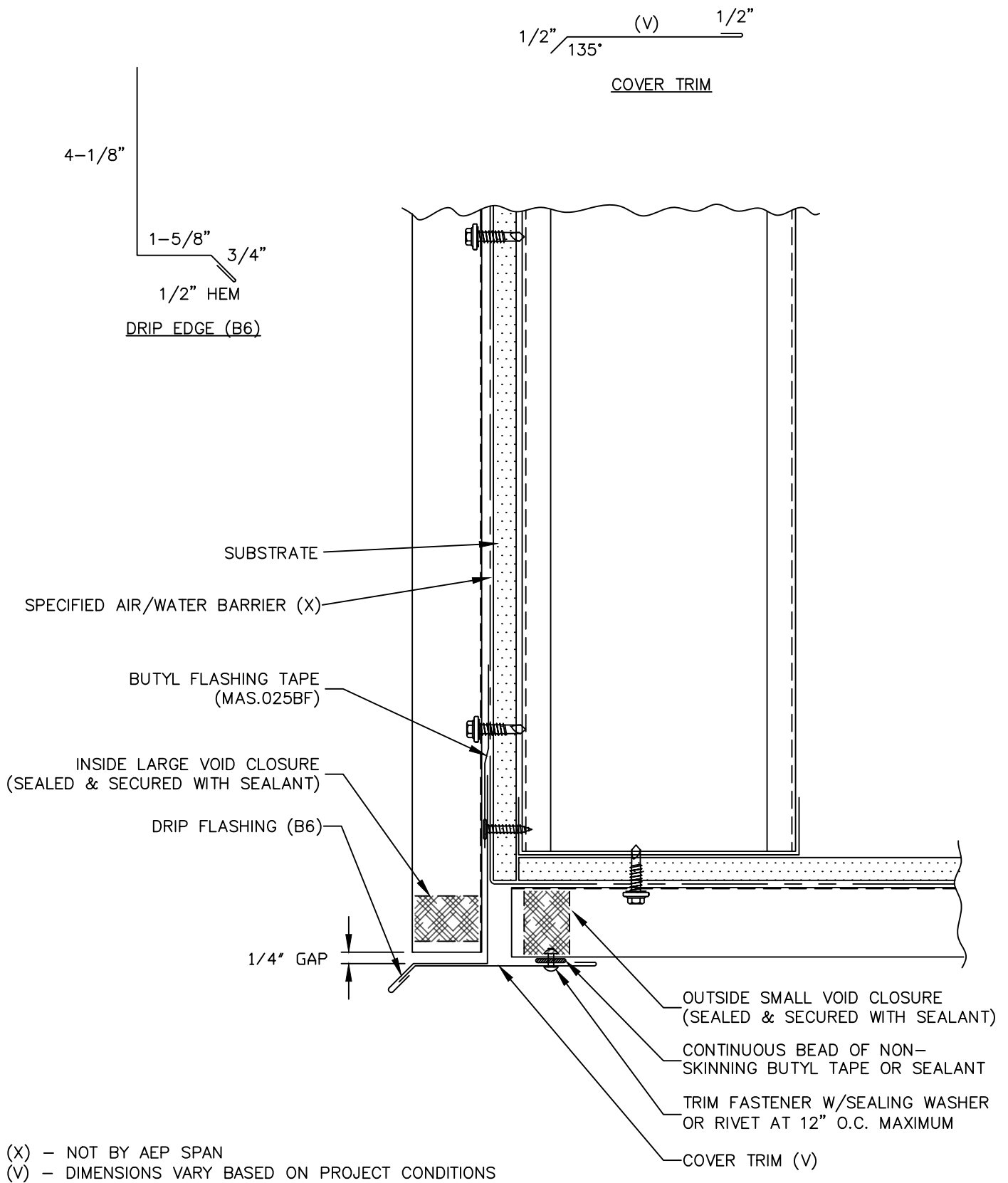
BOX RIB



INSIDE CORNER



BR-09



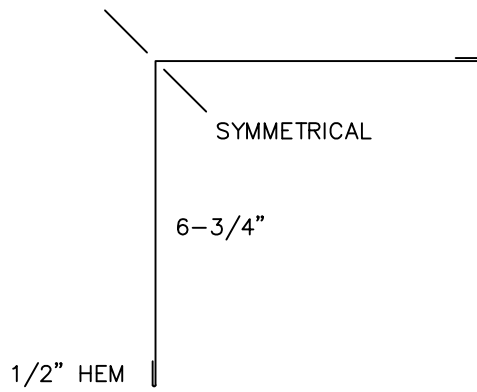
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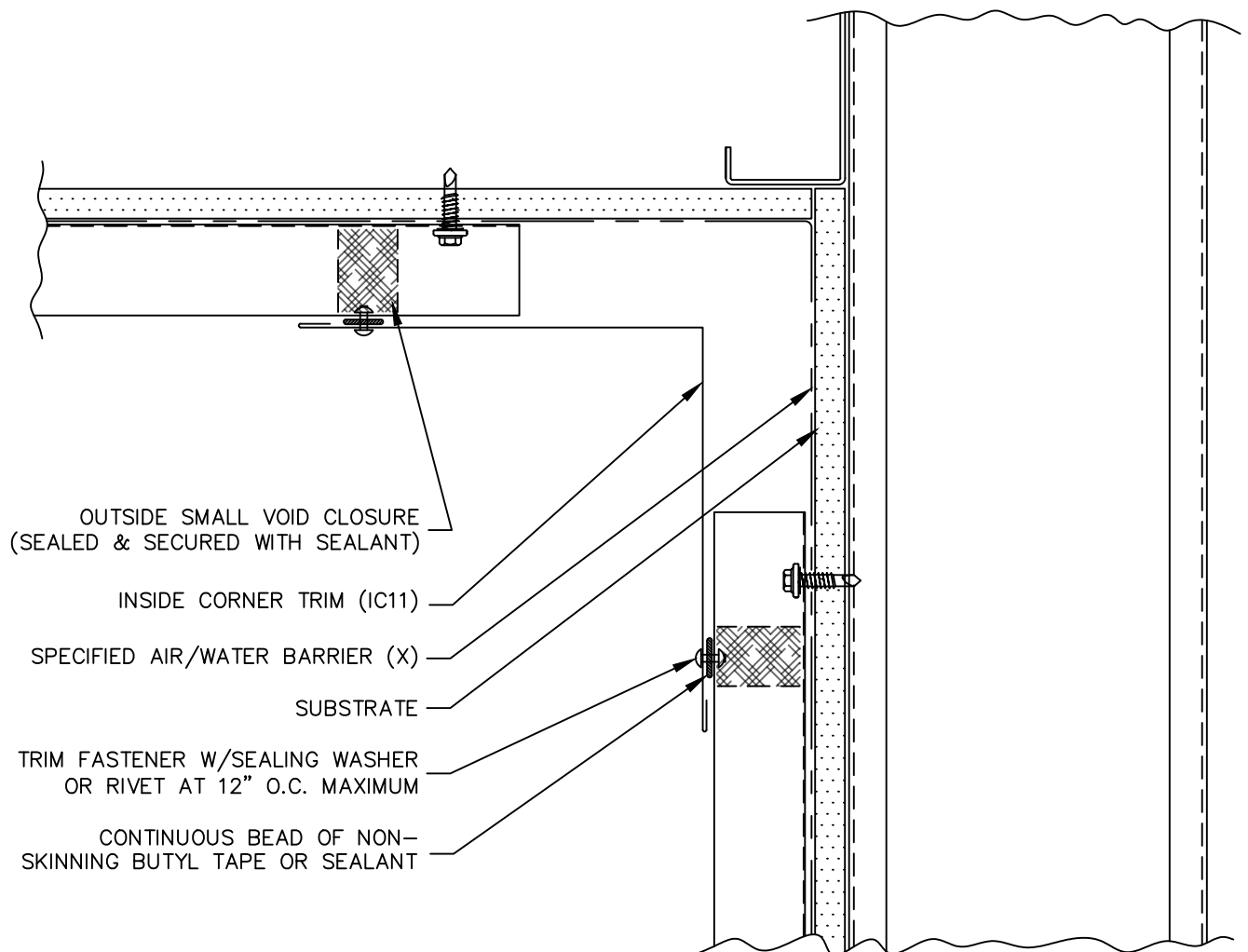
SOFFIT (FRONT)



BR-10



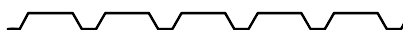
INSIDE CORNER (IC11)



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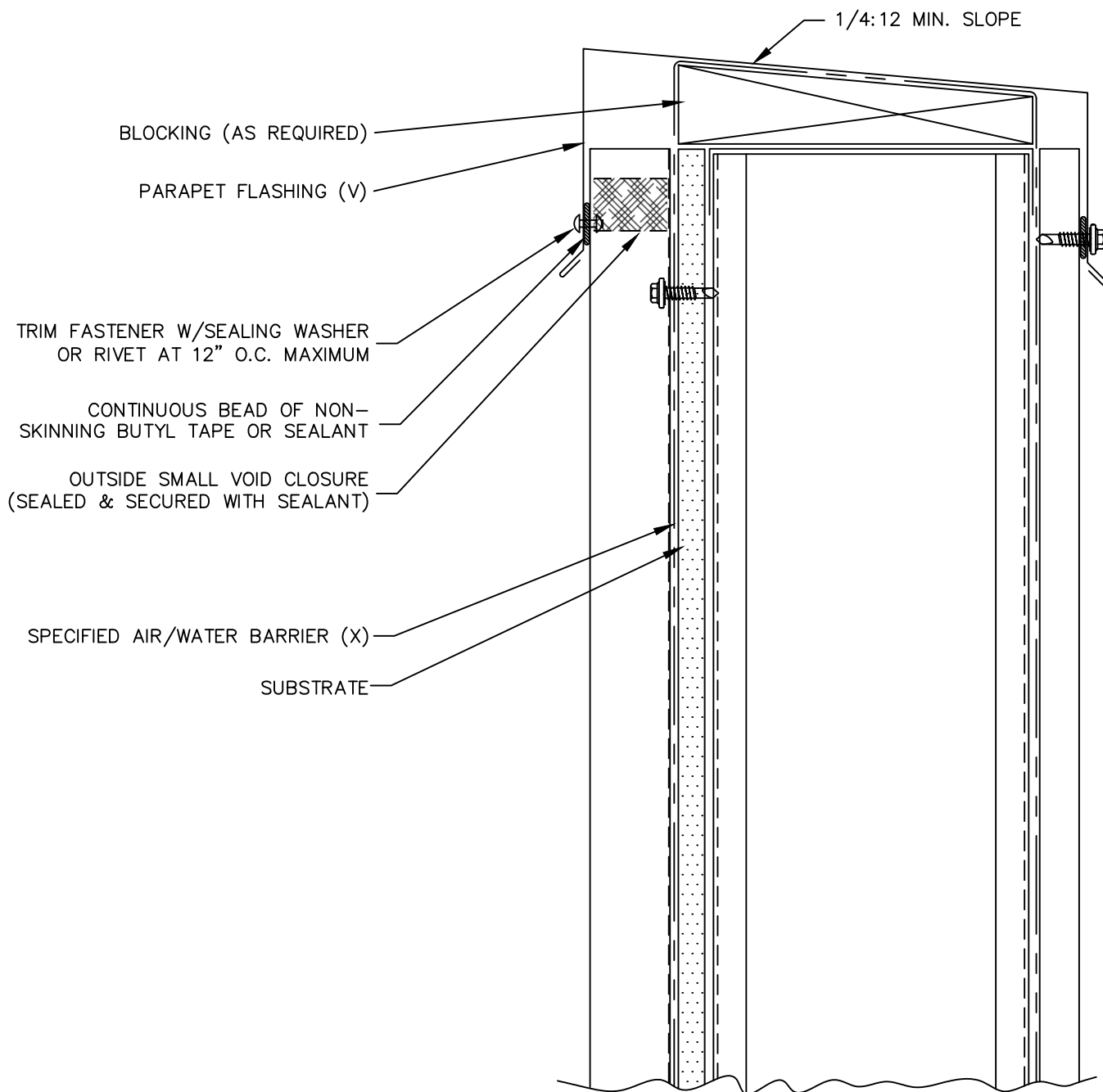
**BOX RIB**



**SOFFIT (BACK)**



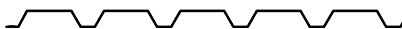
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(V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



BOX RIB

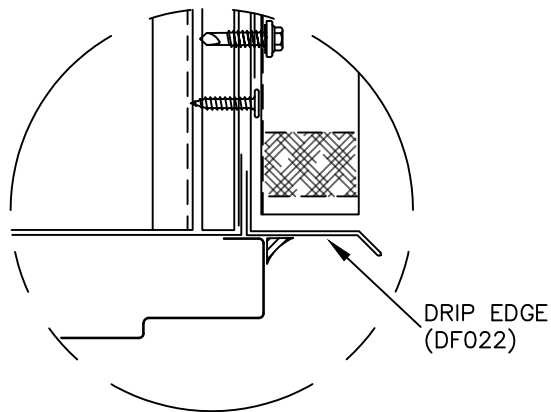
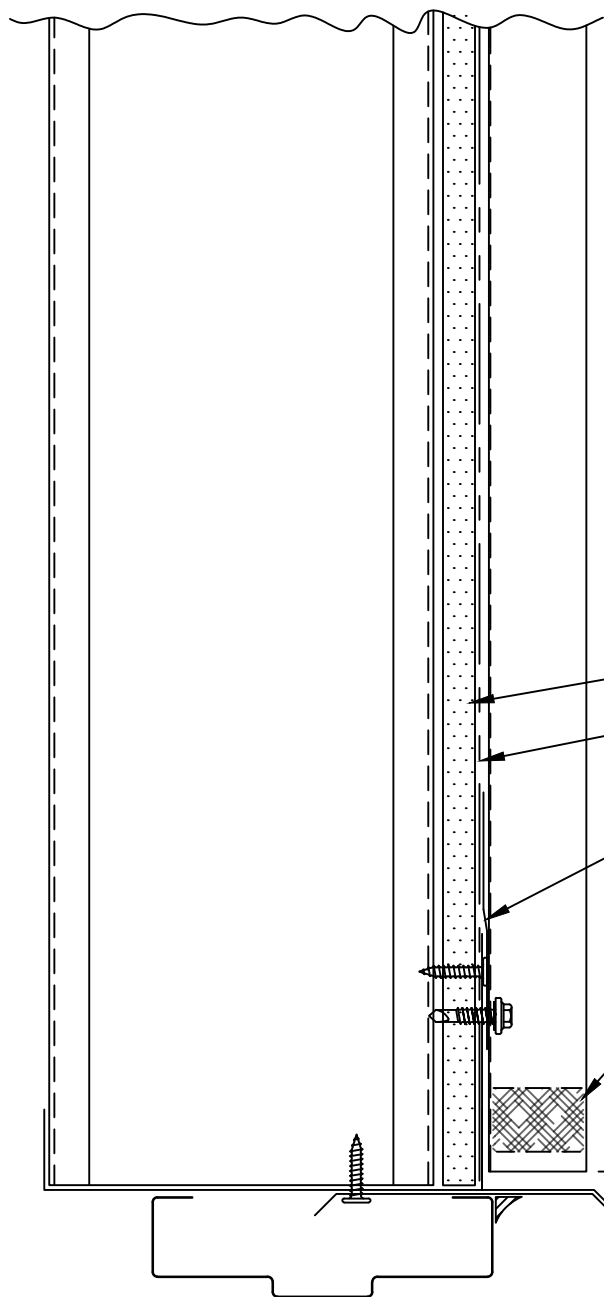


PARAPET



BR-12





ALTERNATE DETAIL

SUBSTRATE

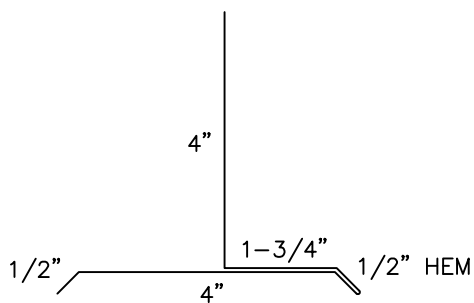
SPECIFIED AIR/WATER BARRIER (X)

BUTYL FLASHING TAPE (MAS.025BF)

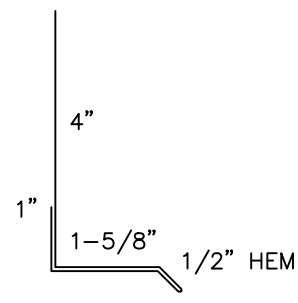
INSIDE LARGE VOID CLOSURE  
(SEALED & SECURED WITH SEALANT)

HEADER TRIM (HT091)

1/4" GAP



HEADER TRIM (HT091)

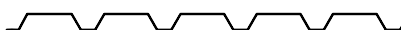


DRIP EDGE (DF022)

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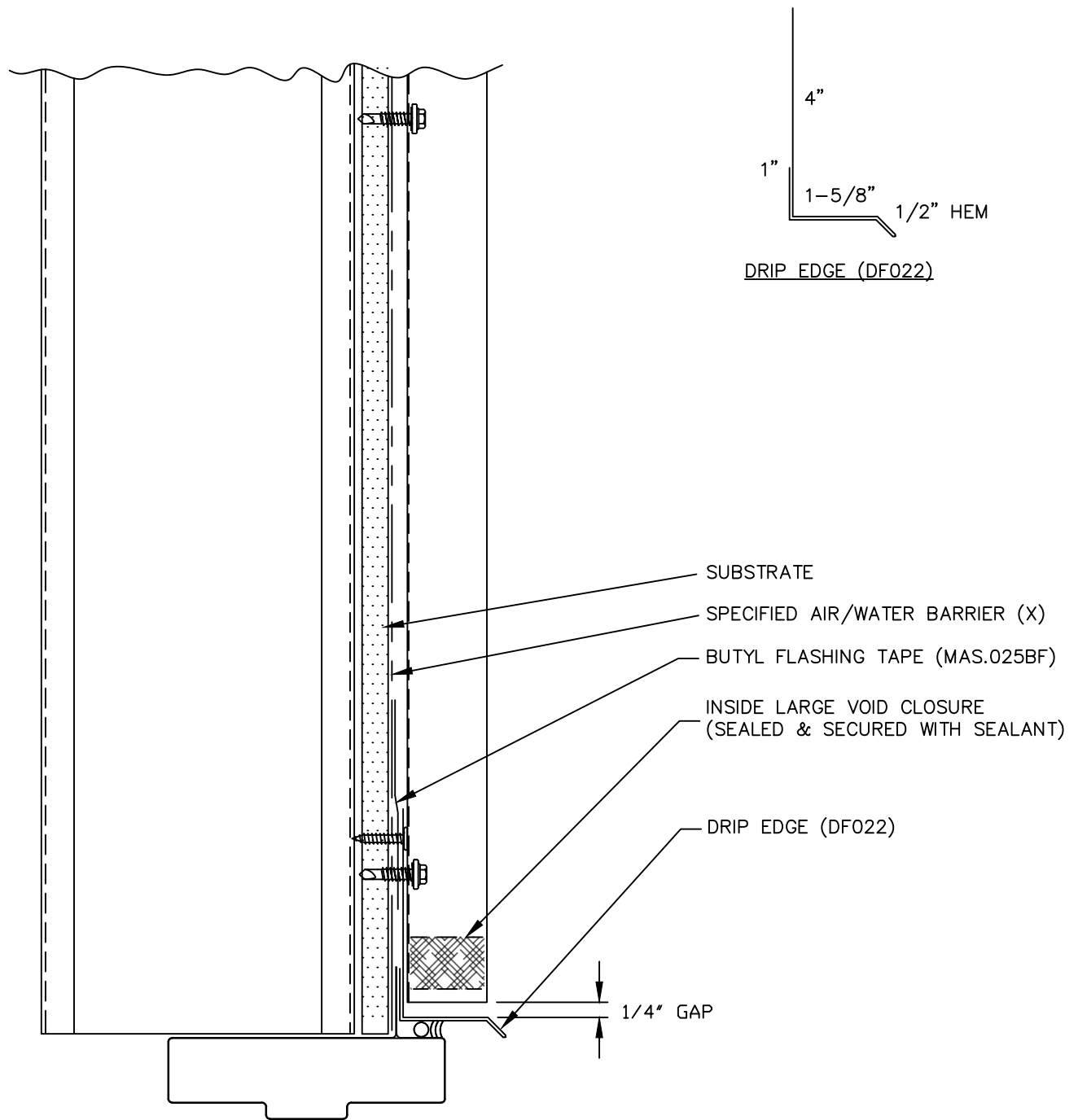
BOX RIB



DOOR / WINDOW  
(HEAD)



BR-13



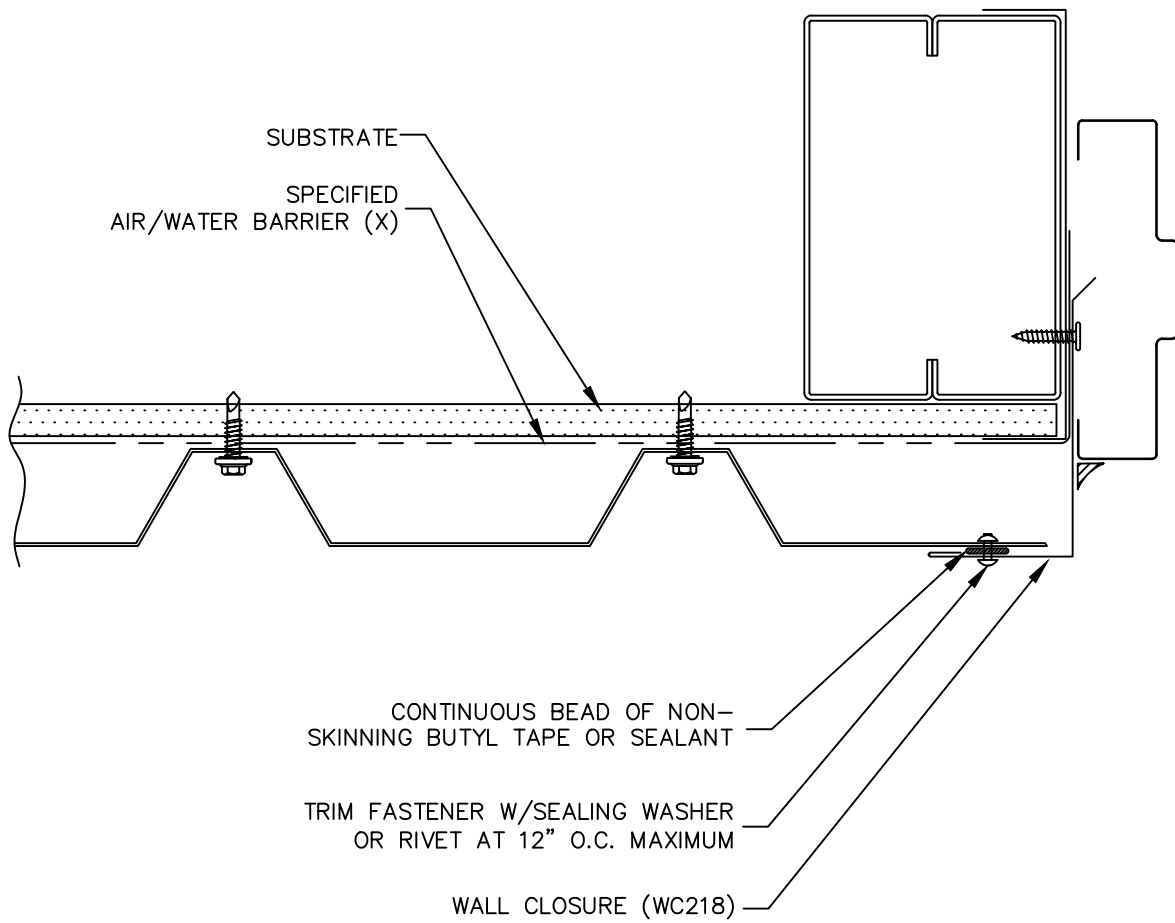
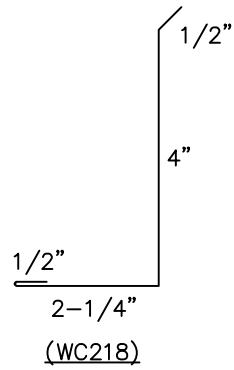
BOX RIB



OPENING, HEAD  
(NAIL FIN)



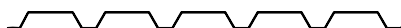
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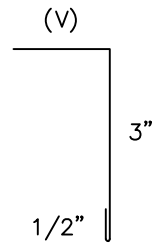
BOX RIB



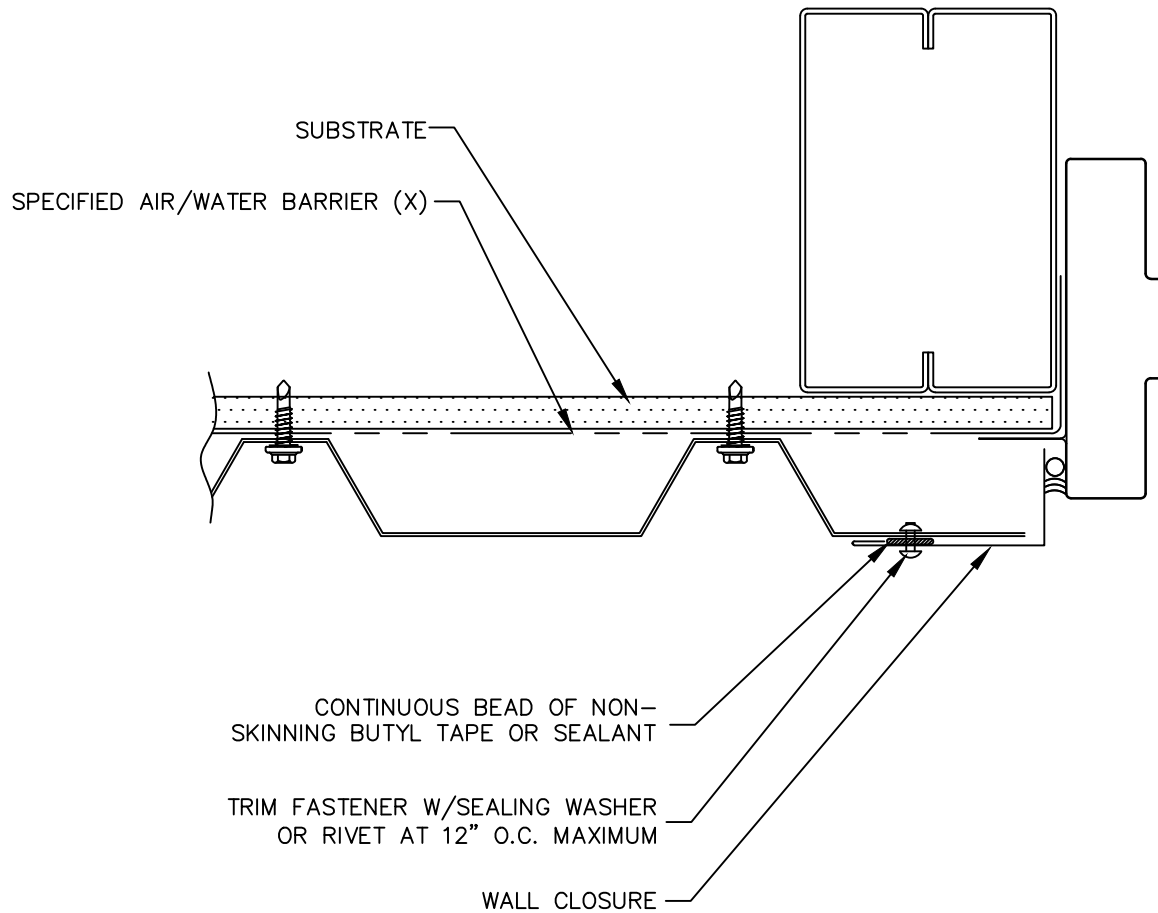
DOOR / WINDOW  
(JAMB)



BR-15



WALL CLOSURE

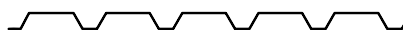


(X) - NOT BY AEP SPAN

(V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



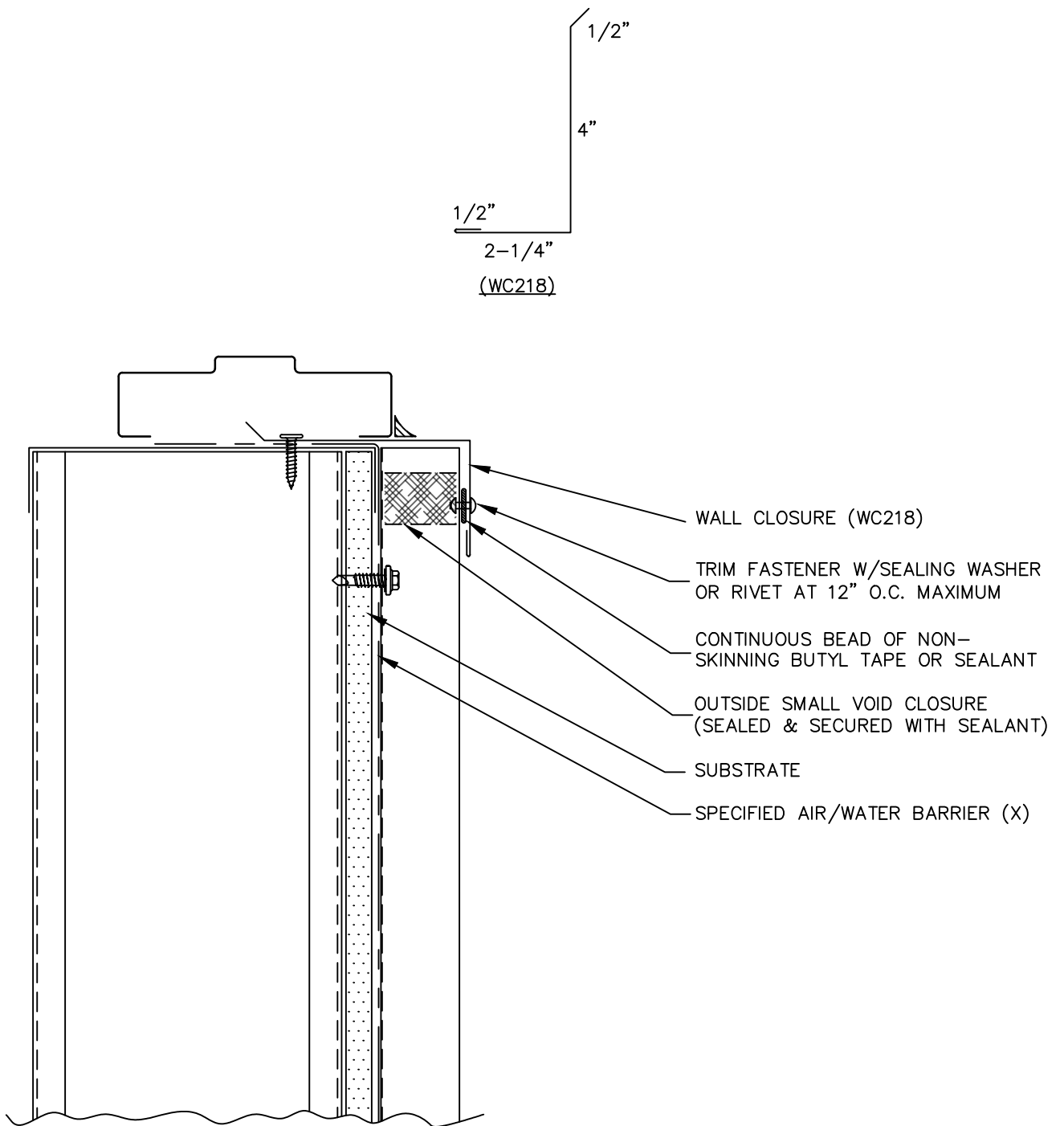
BOX RIB



OPENING, JAMB  
(NAIL FIN)



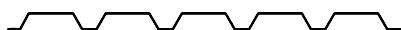
BR-16



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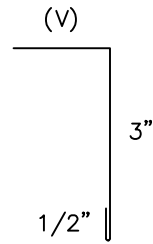
BOX RIB



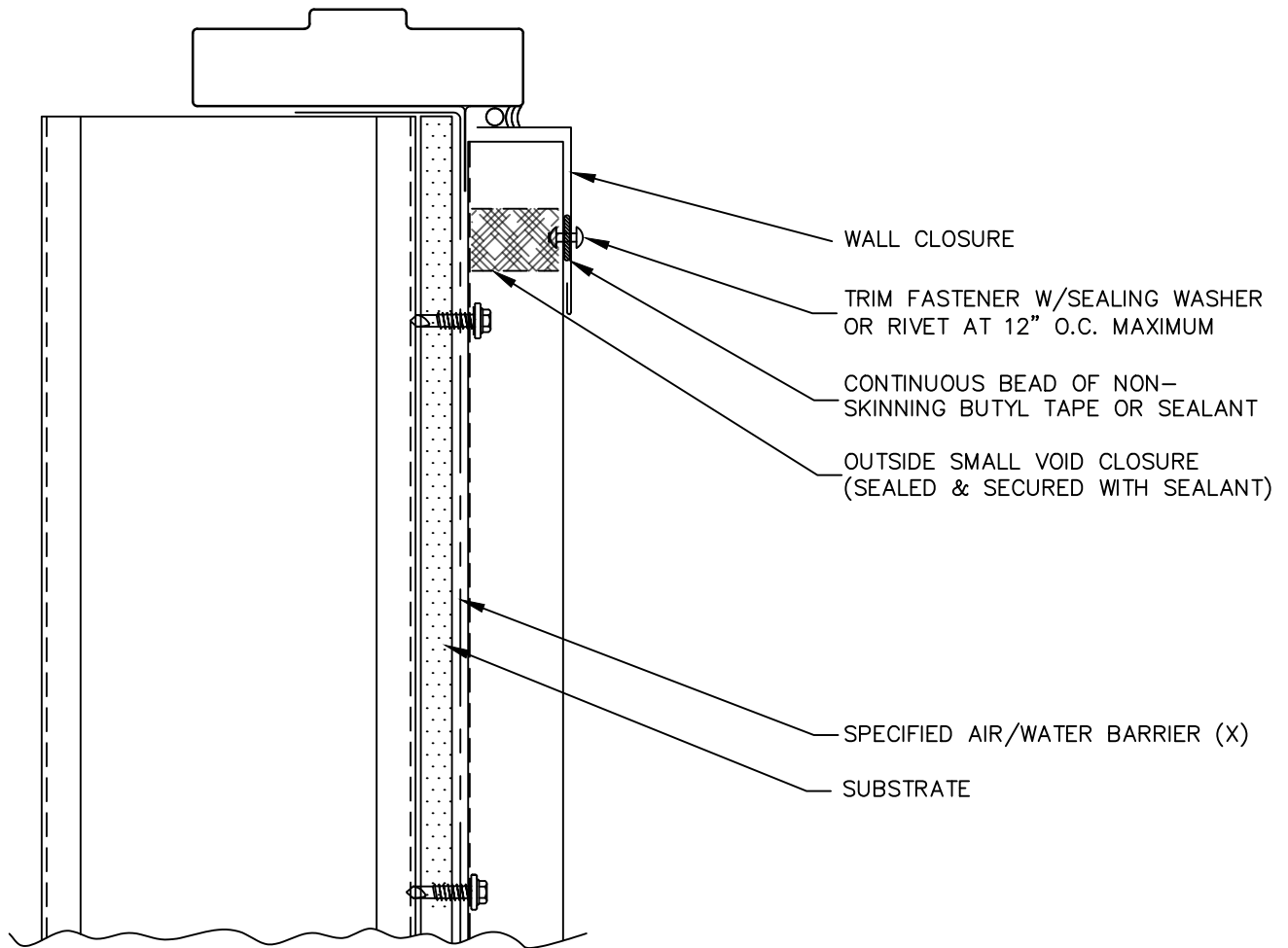
DOOR / WINDOW  
(SILL)



BR-17



WALL CLOSURE

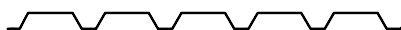


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(V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



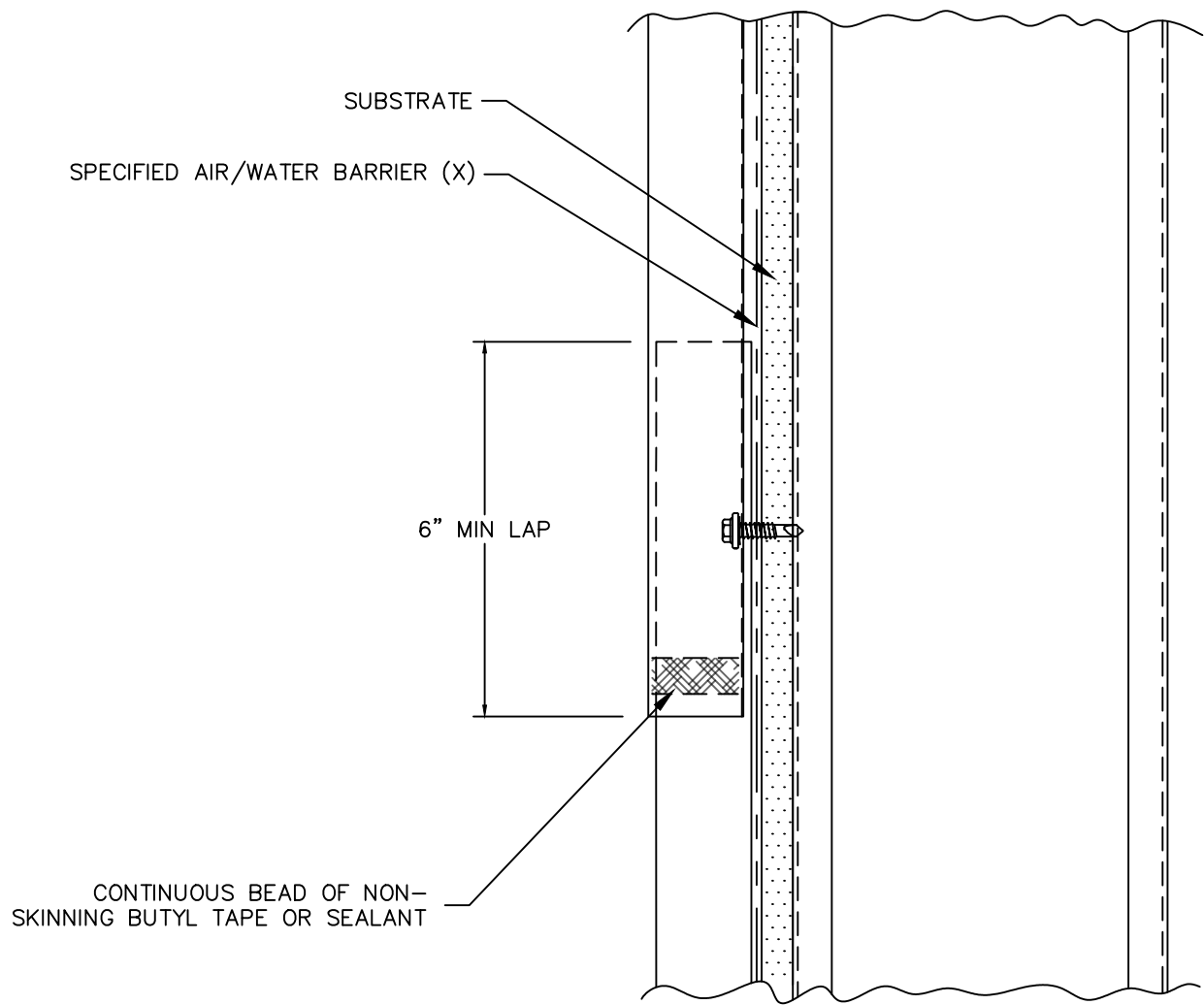
BOX RIB



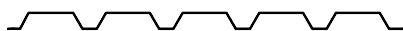
OPENING, SILL  
(NAIL FIN)



BR-18



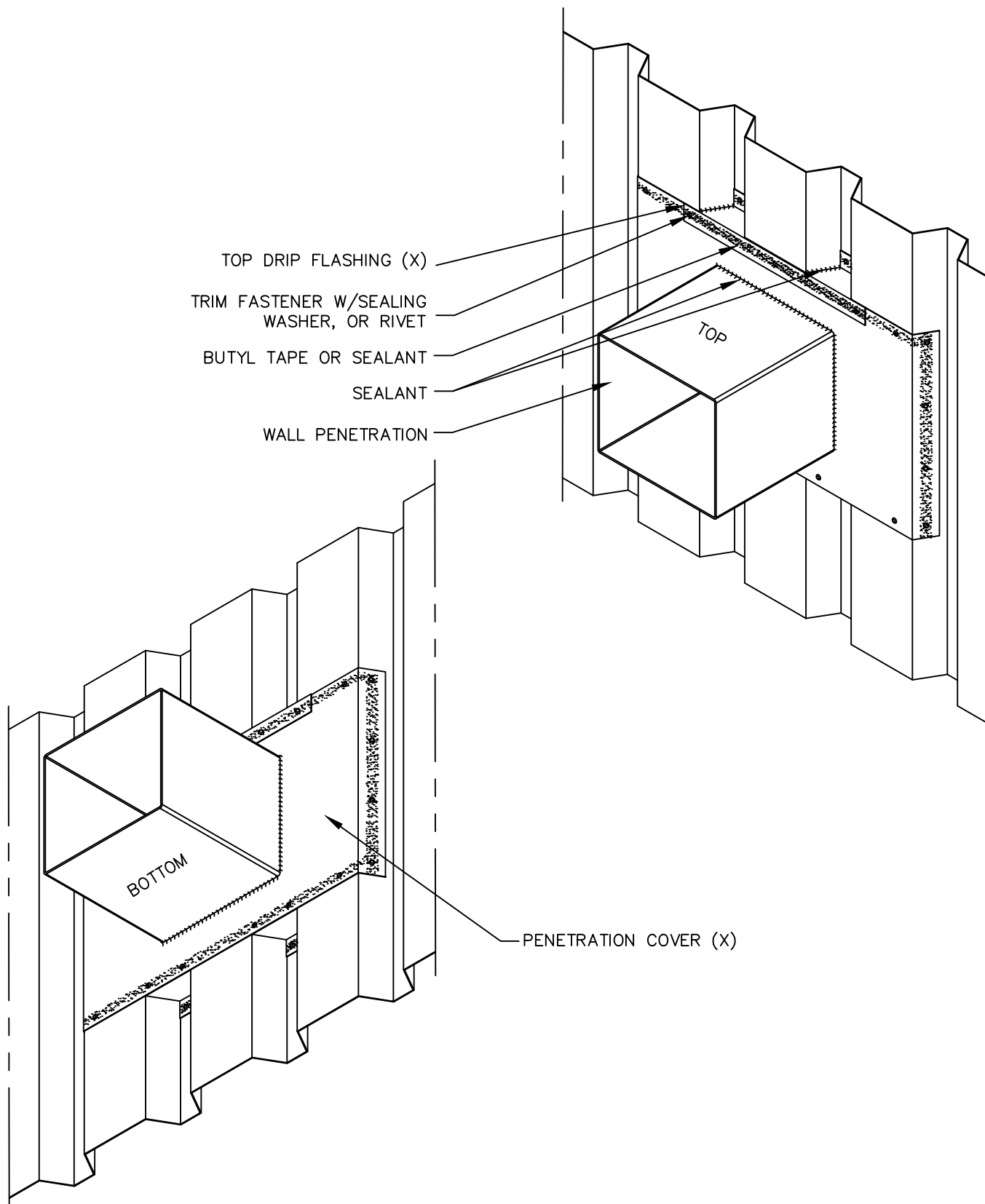
BOX RIB



LAP DETAIL



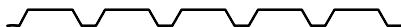
BR-19



(X) – NOT BY AEP SPAN



BOX RIB

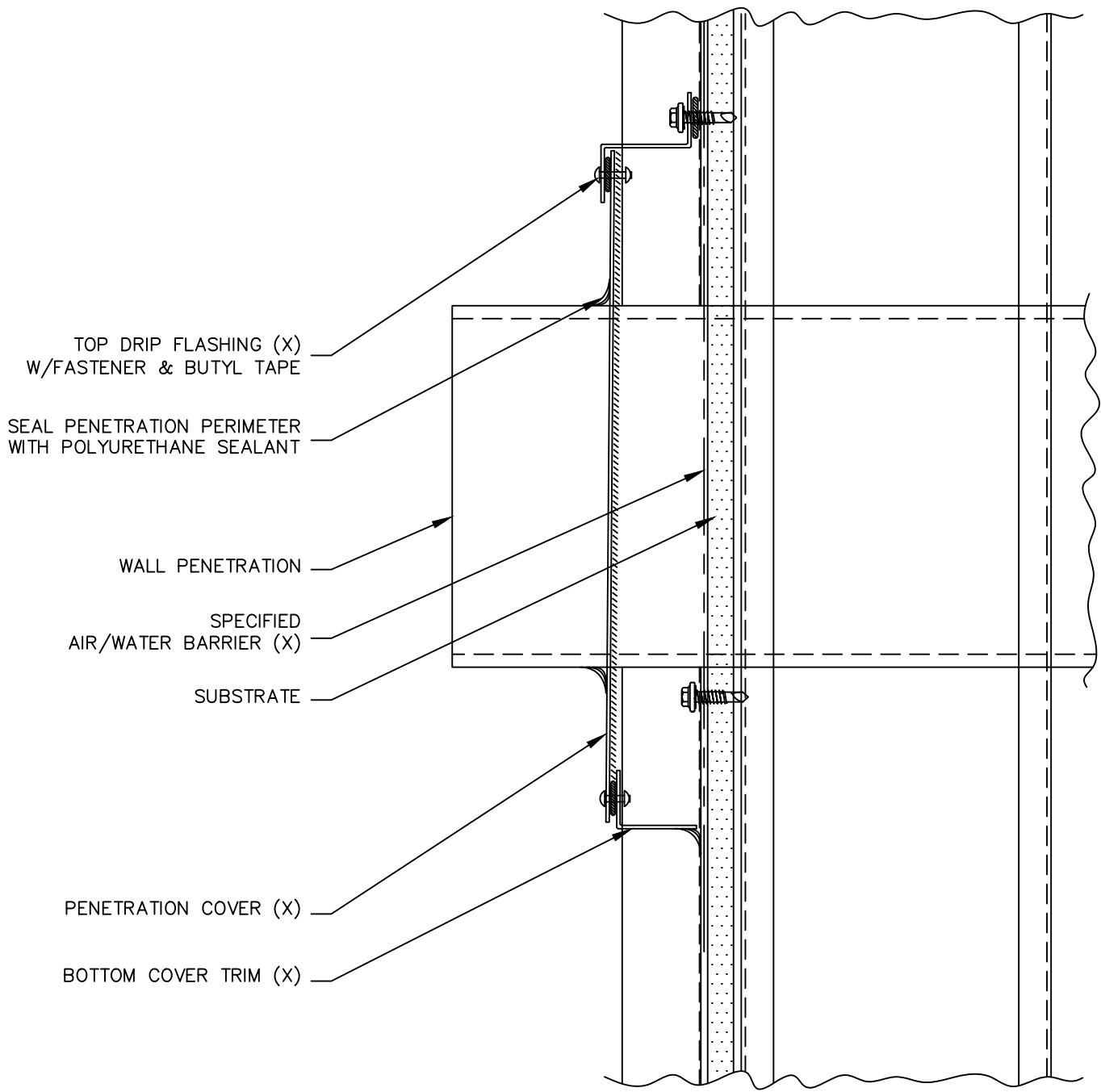


PENETRATION (3D)



BR-20

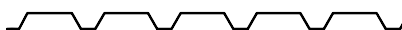




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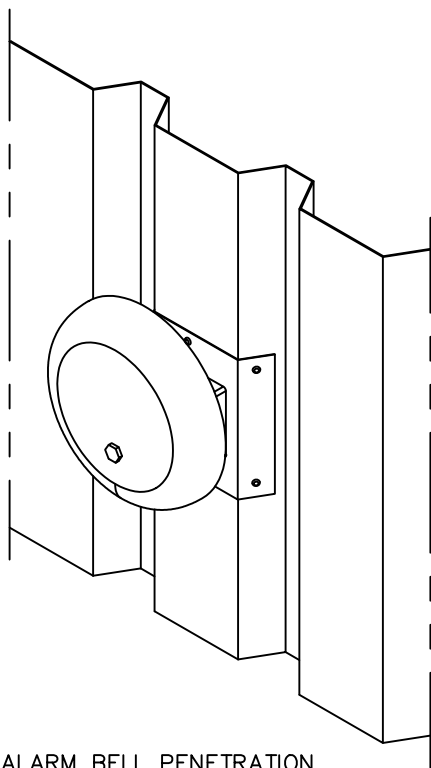
BOX RIB



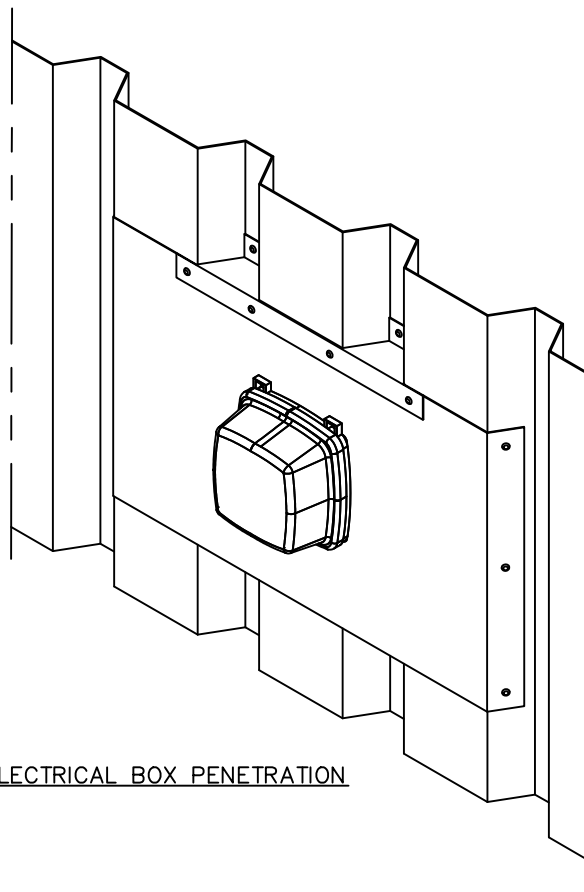
PENETRATION (2D)



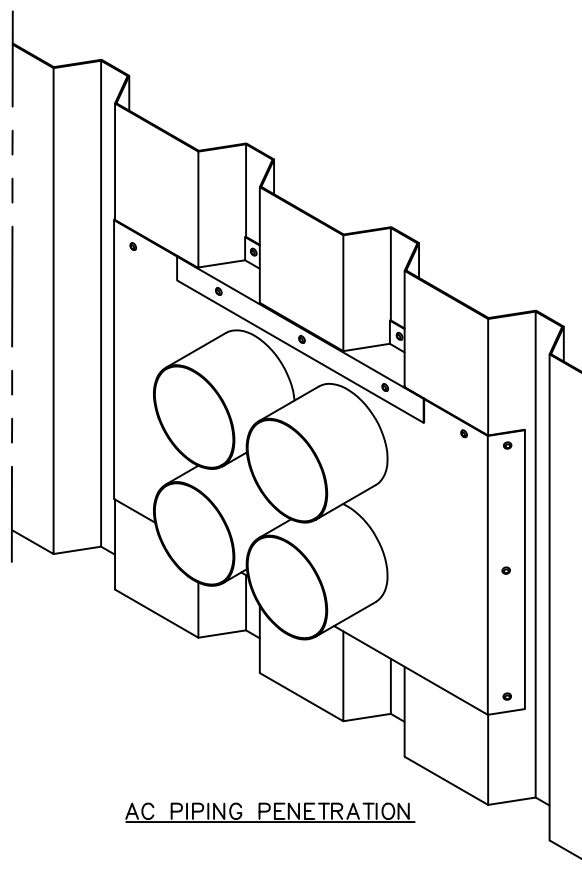
BR-21



ALARM BELL PENETRATION



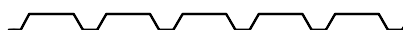
ELECTRICAL BOX PENETRATION



AC PIPING PENETRATION



BOX RIB



PENETRATION (3D)  
EXAMPLES

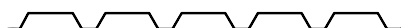


BR-22

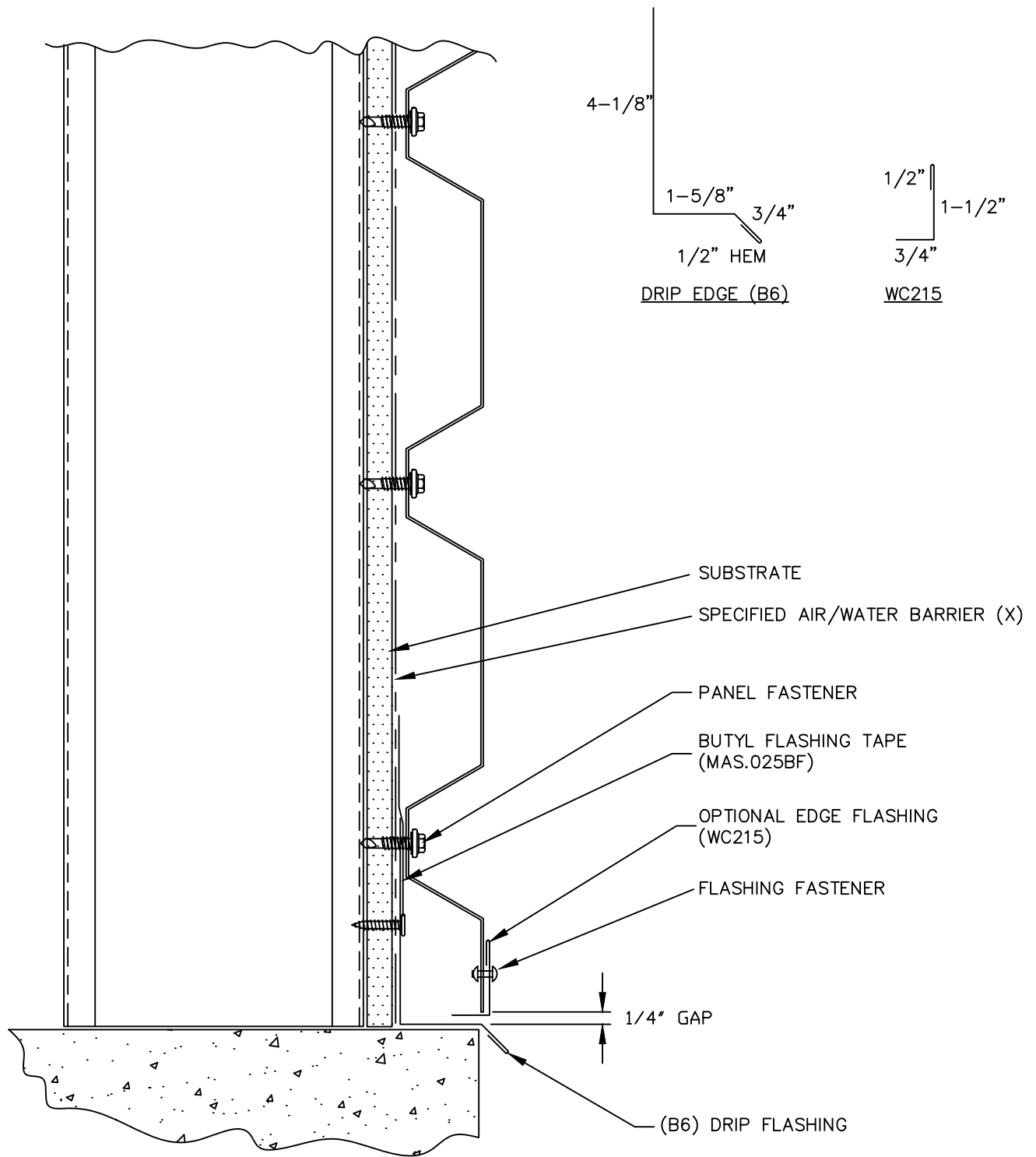
# HORIZONTAL WALL DETAILS



BOX RIB



BR-23

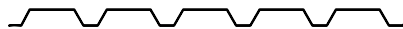


HORIZONTAL BOX RIB IS INSTALLED FROM GROUND TO EAVE.

(X) - NOT BY AEP SPAN



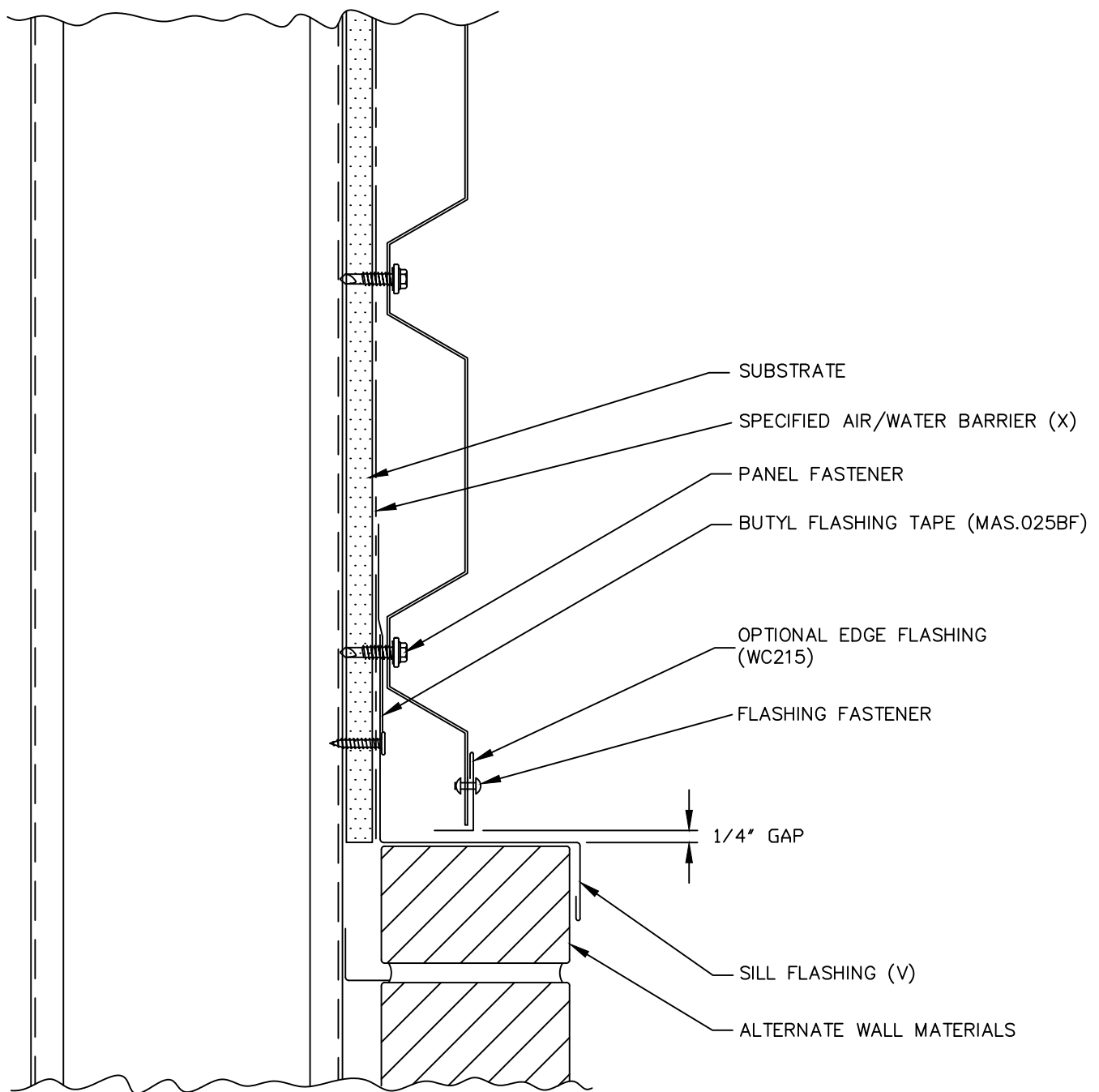
BOX RIB



BASE



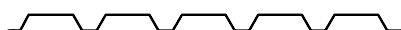
BR-24



(X) - NOT BY AEP SPAN  
 (V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



BOX RIB



SILL



BR-25

INSIDE LARGE VOID CLOSURE  
(SEALED & SECURED WITH SEALANT)

EAVE FLASHING (V)

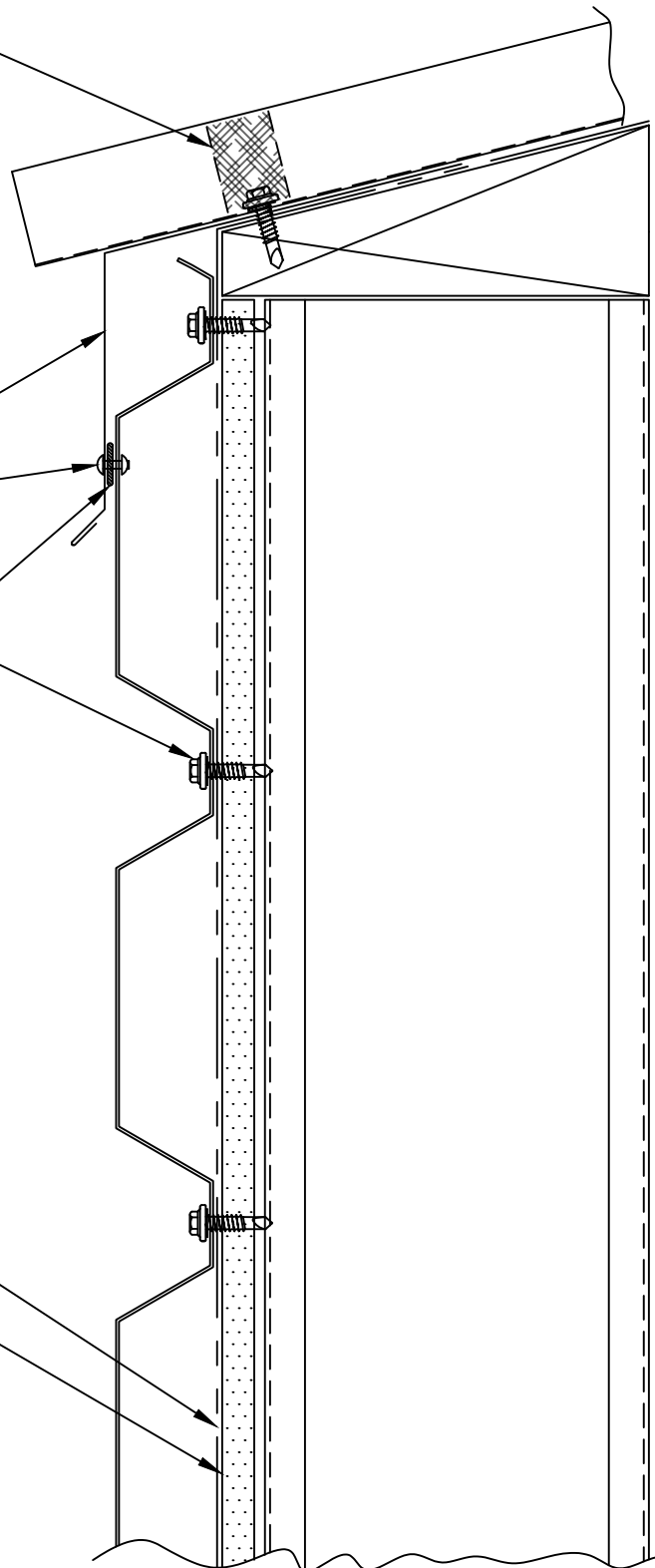
TRIM FASTENER W/SEALING WASHER  
OR RIVET AT 12" O.C. MAXIMUM

CONTINUOUS BEAD OF NON-  
SKINNING BUTYL TAPE OR SEALANT

PANEL FASTENER

SPECIFIED AIR/WATER BARRIER (X)

SUBSTRATE



(X) - NOT BY AEP SPAN

(V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



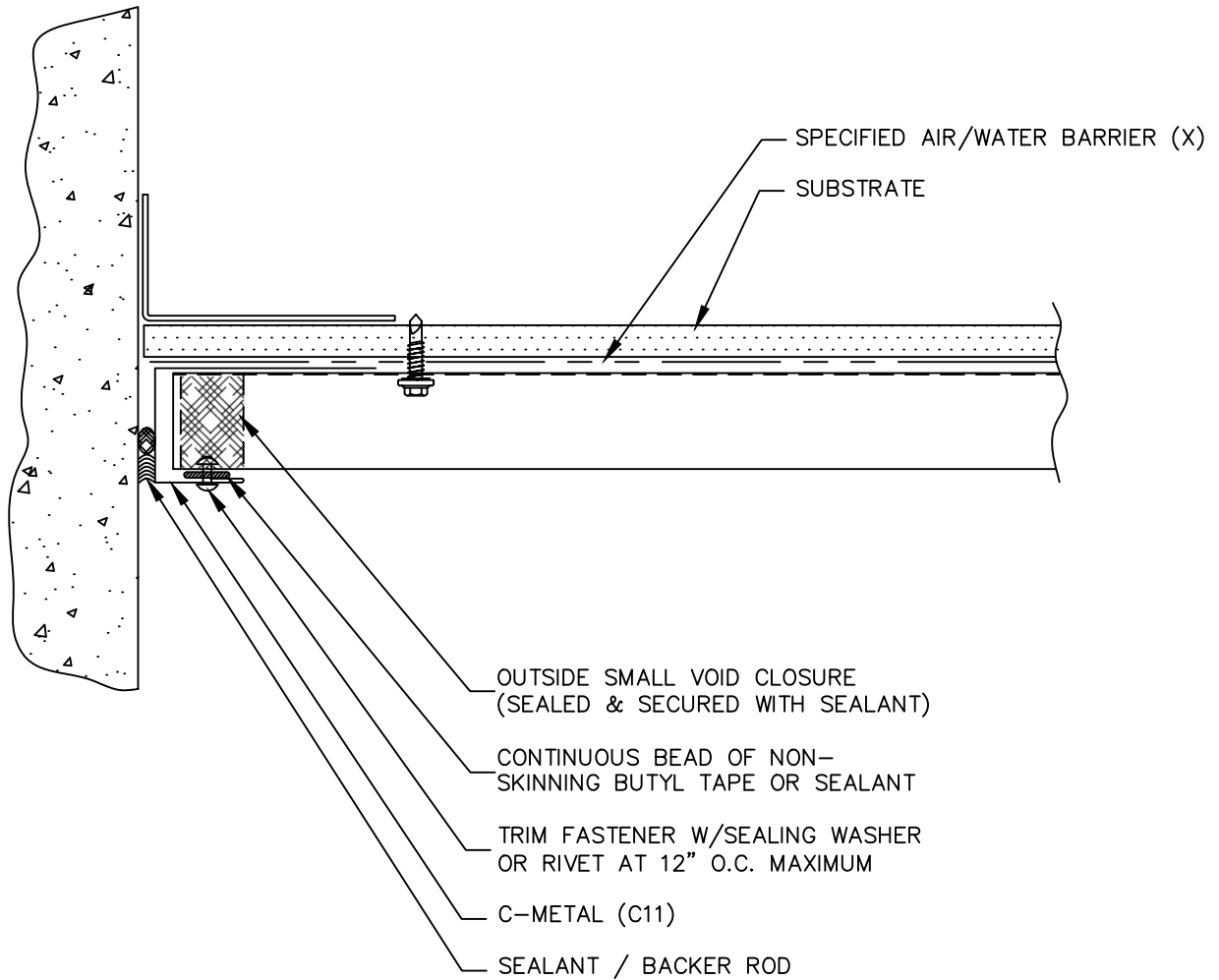
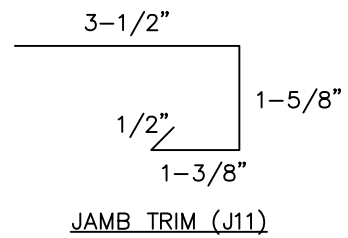
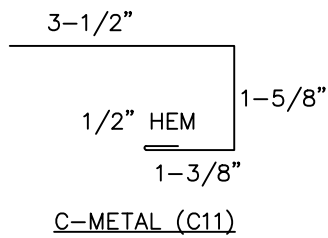
BOX RIB



EAVE / FASCIA



BR-26



(X) - NOT BY AEP SPAN



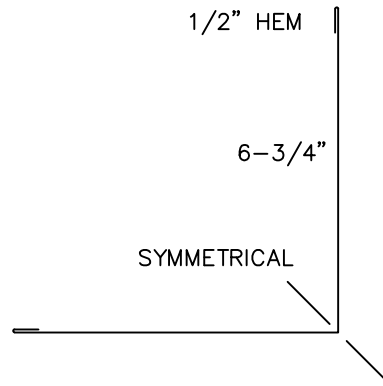
BOX RIB



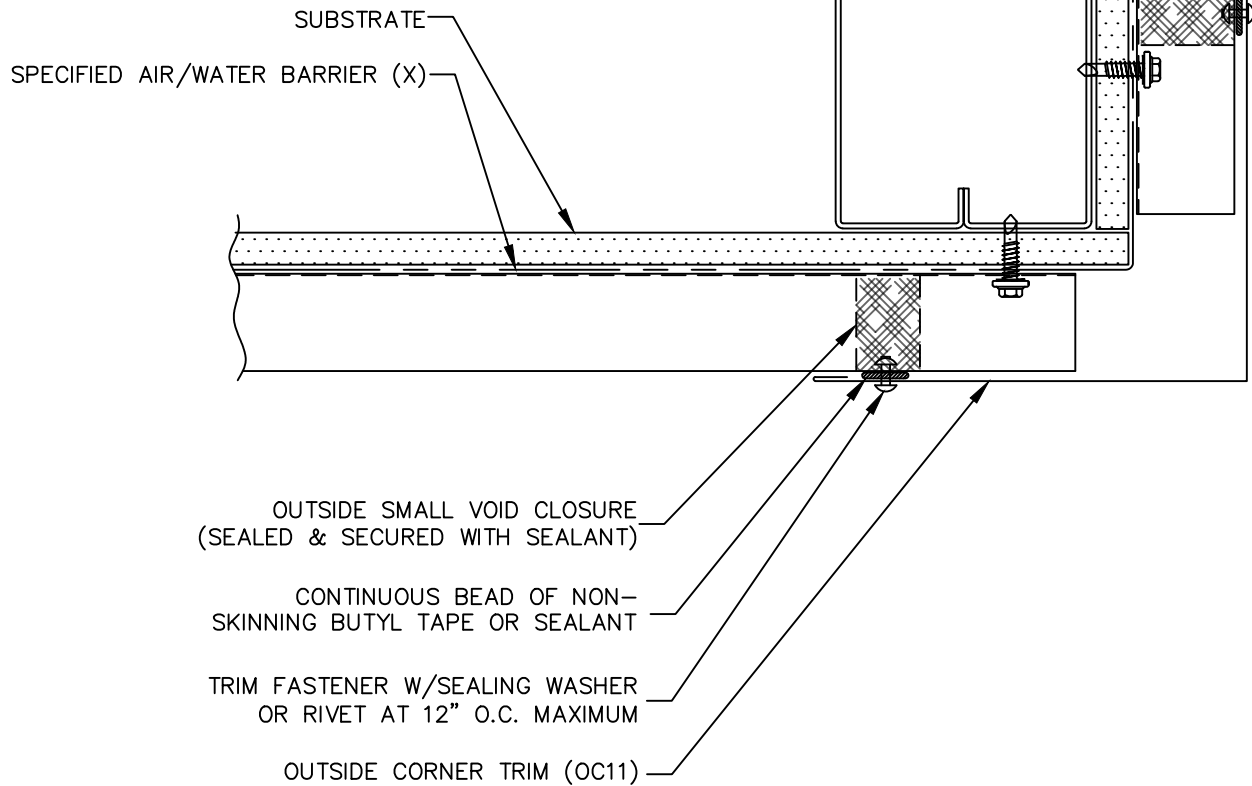
END WALL



BR-27



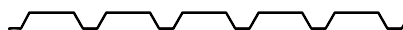
OUTSIDE CORNER (OC11)



(X) – NOT BY AEP SPAN



BOX RIB

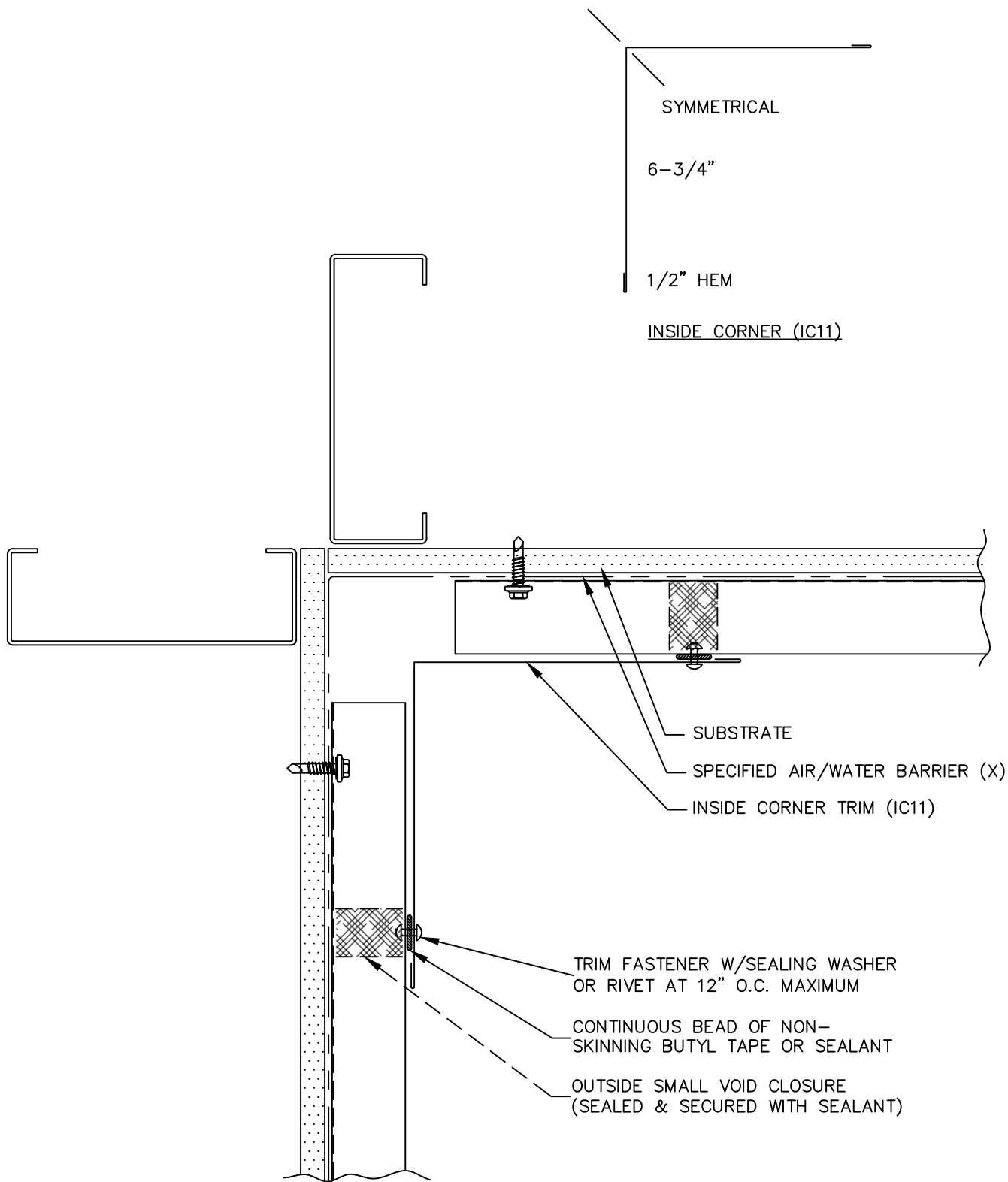


OUTSIDE CORNER



BR-28





(X) - NOT BY AEP SPAN



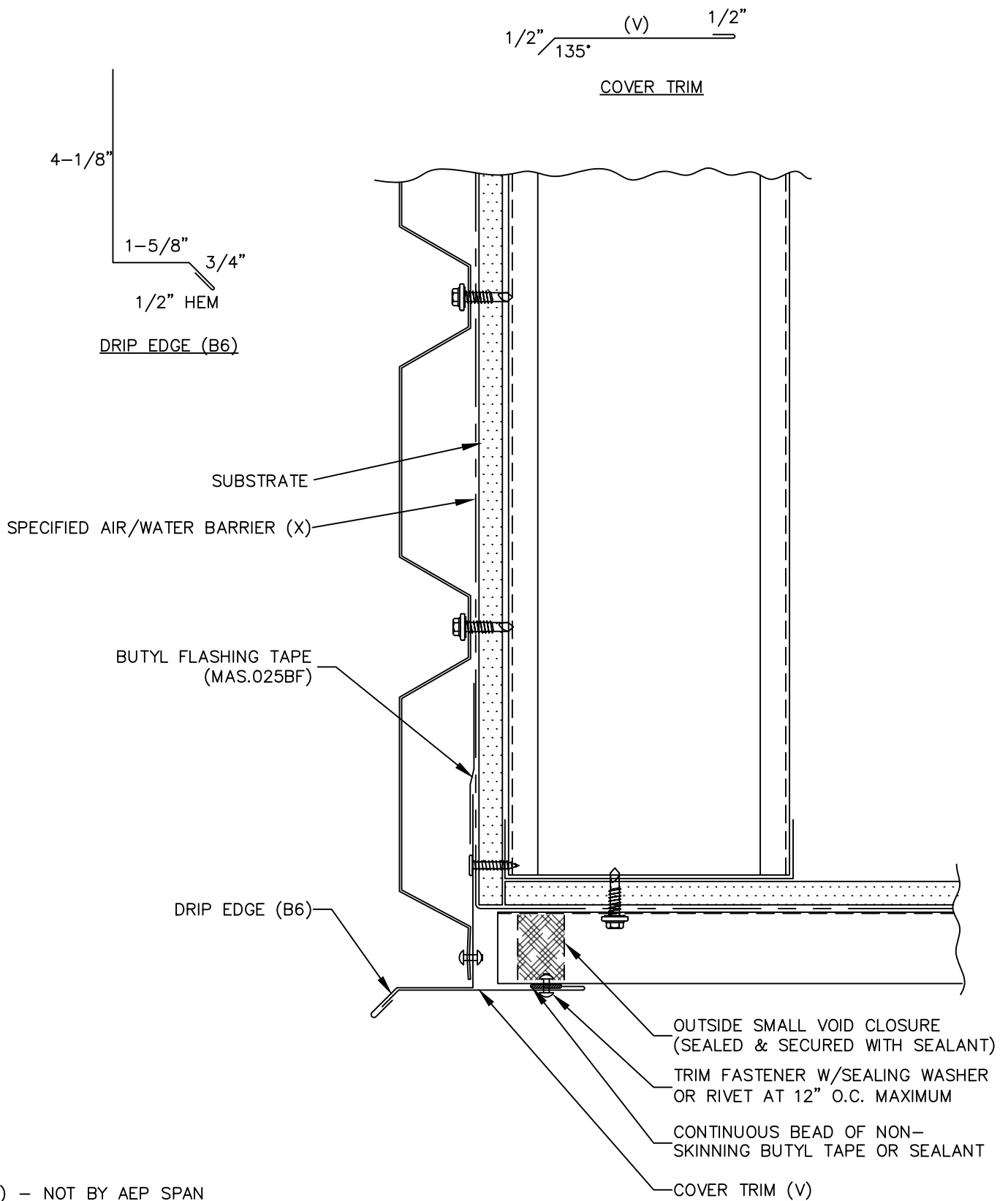
BOX RIB



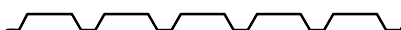
INSIDE CORNER



BR-29



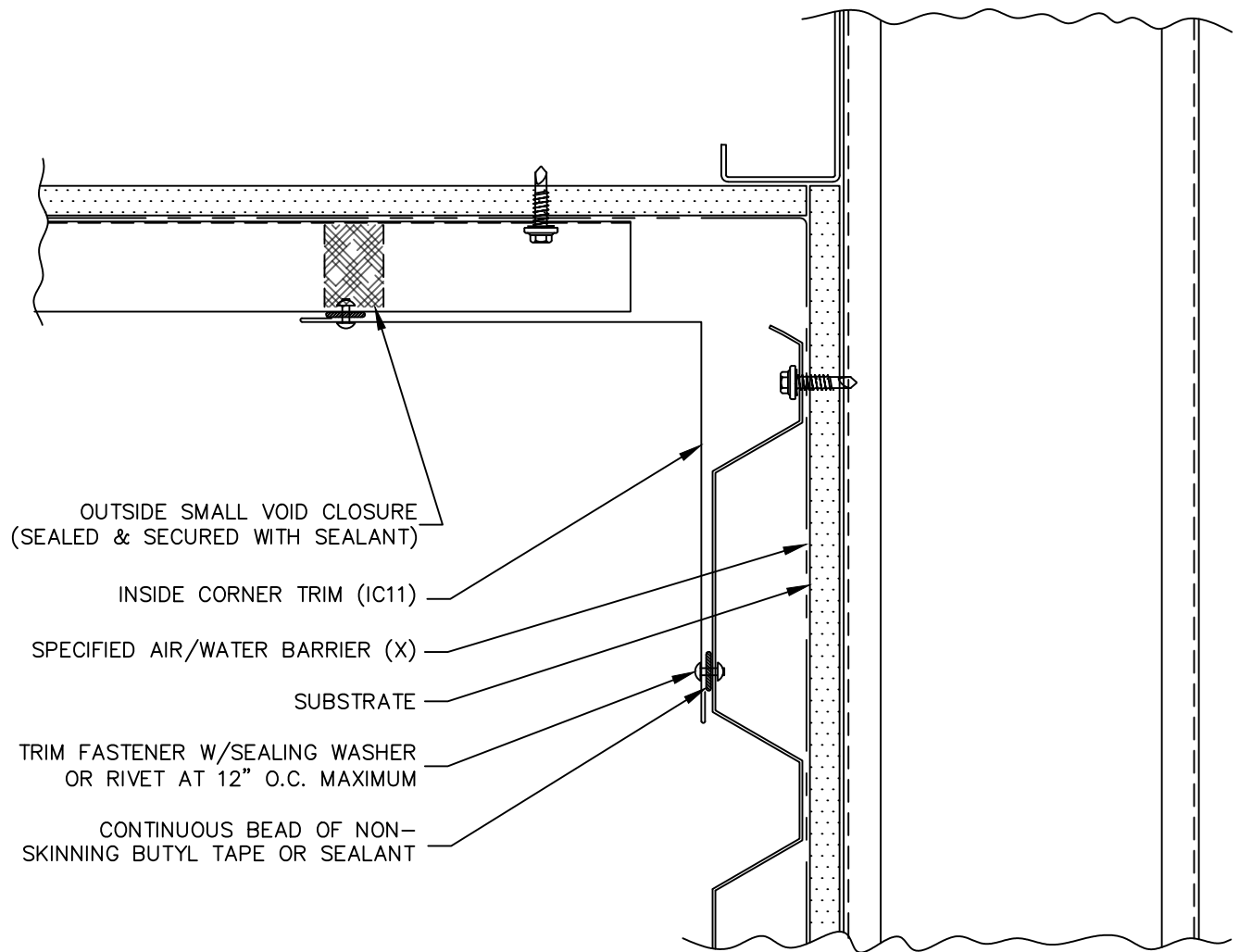
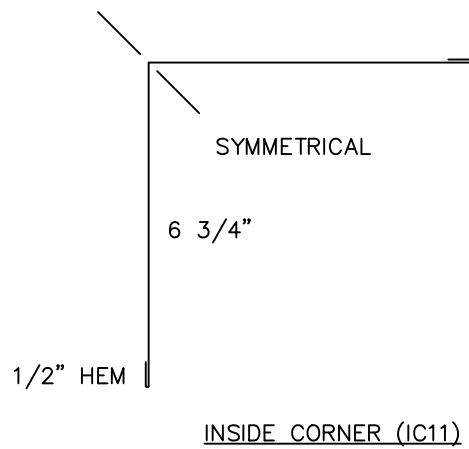
BOX RIB



SOFFIT (FRONT)



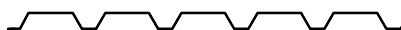
BR-30



(X) – NOT BY AEP SPAN



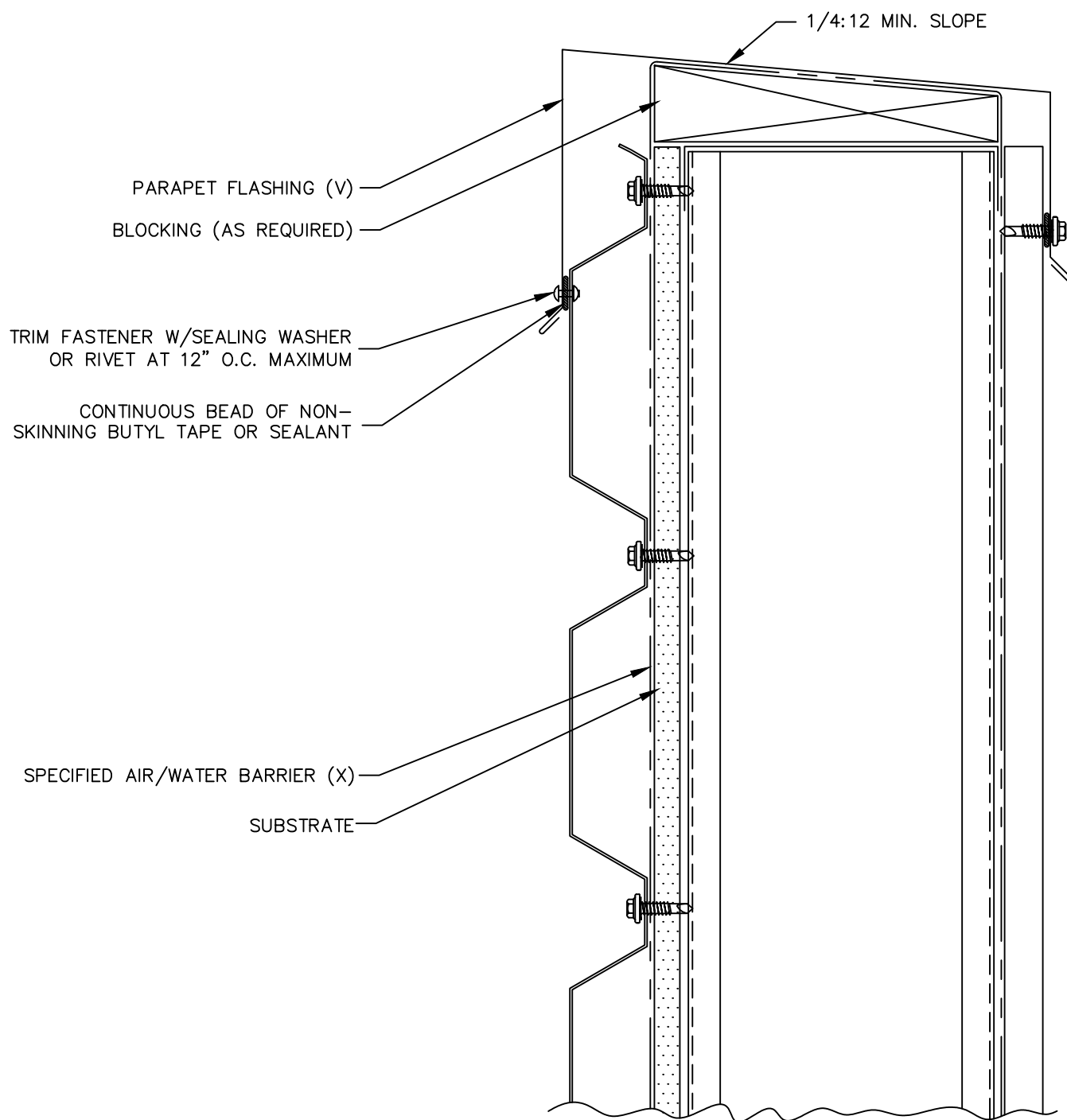
BOX RIB



SOFFIT (BACK)



BR-31



(X) - NOT BY AEP SPAN  
 (V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



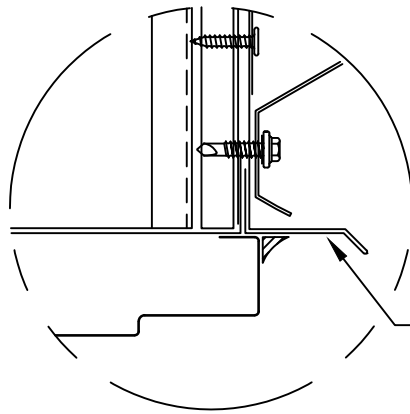
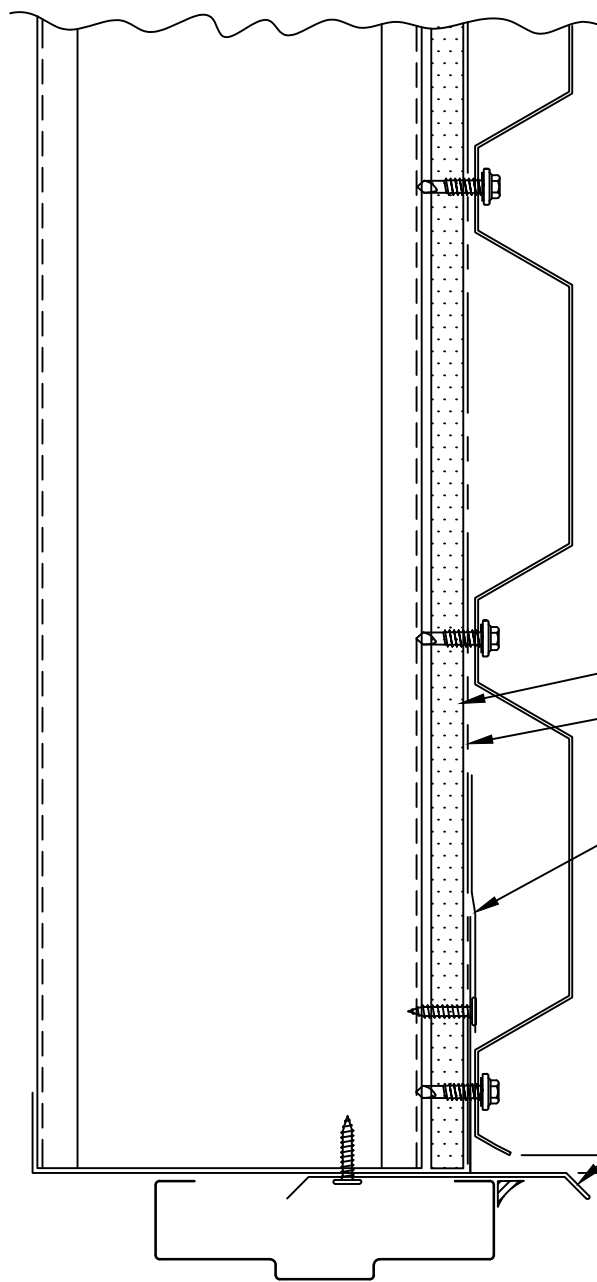
BOX RIB



PARAPET



BR-32



DRIP EDGE  
(DF008)

ALTERNATE DETAIL

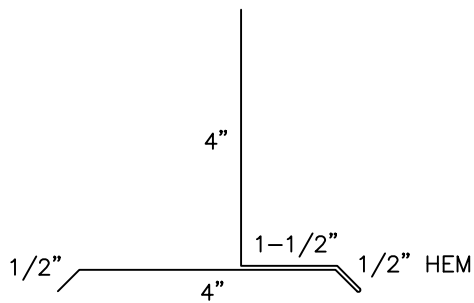
SUBSTRATE

SPECIFIED AIR/WATER BARRIER (X)

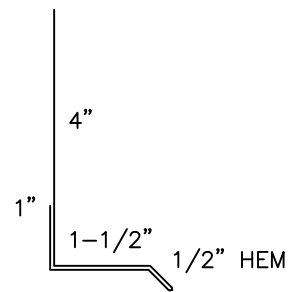
BUTYL FLASHING TAPE (MAS.025BF)

HEADER TRIM (HT095)

1/4" GAP



HEADER TRIM (HT095)



DRIP EDGE (DF008)

(X) – NOT BY AEP SPAN



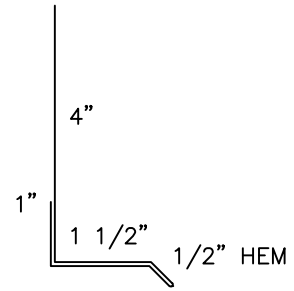
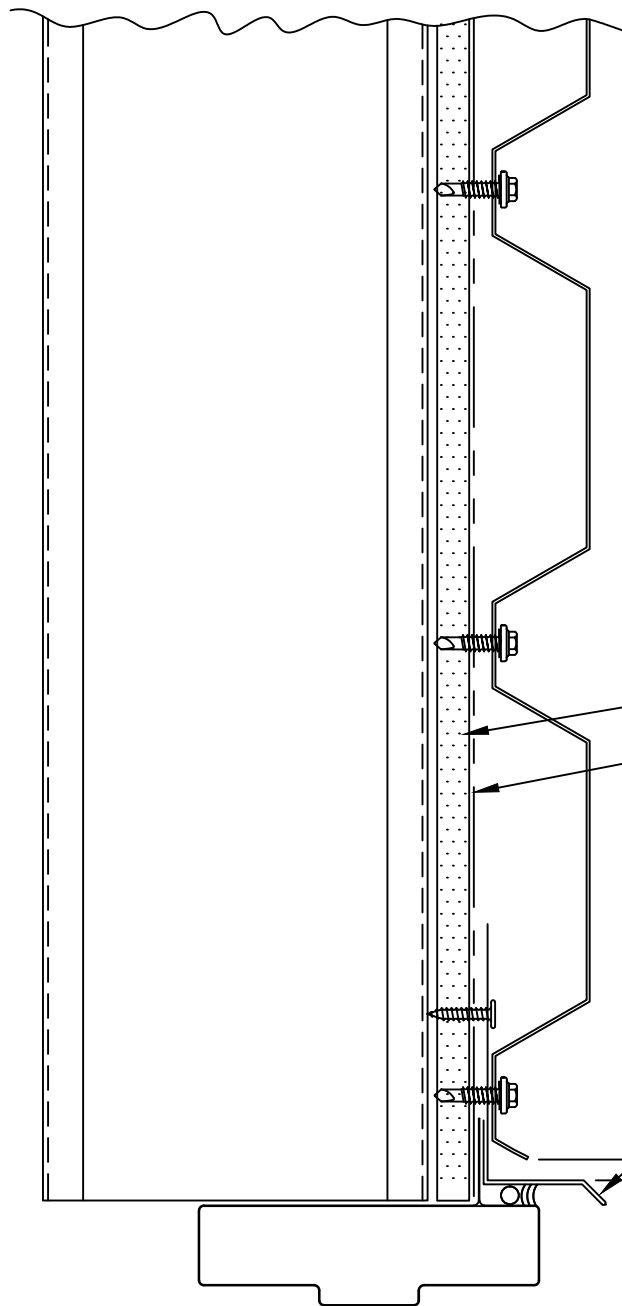
BOX RIB



DOOR / WINDOW  
(HEAD)



BR-33



DRIP EDGE (DF008)

SUBSTRATE

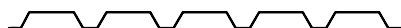
SPECIFIED AIR/WATER BARRIER (X)

DRIP EDGE (DF008)

1/4" GAP



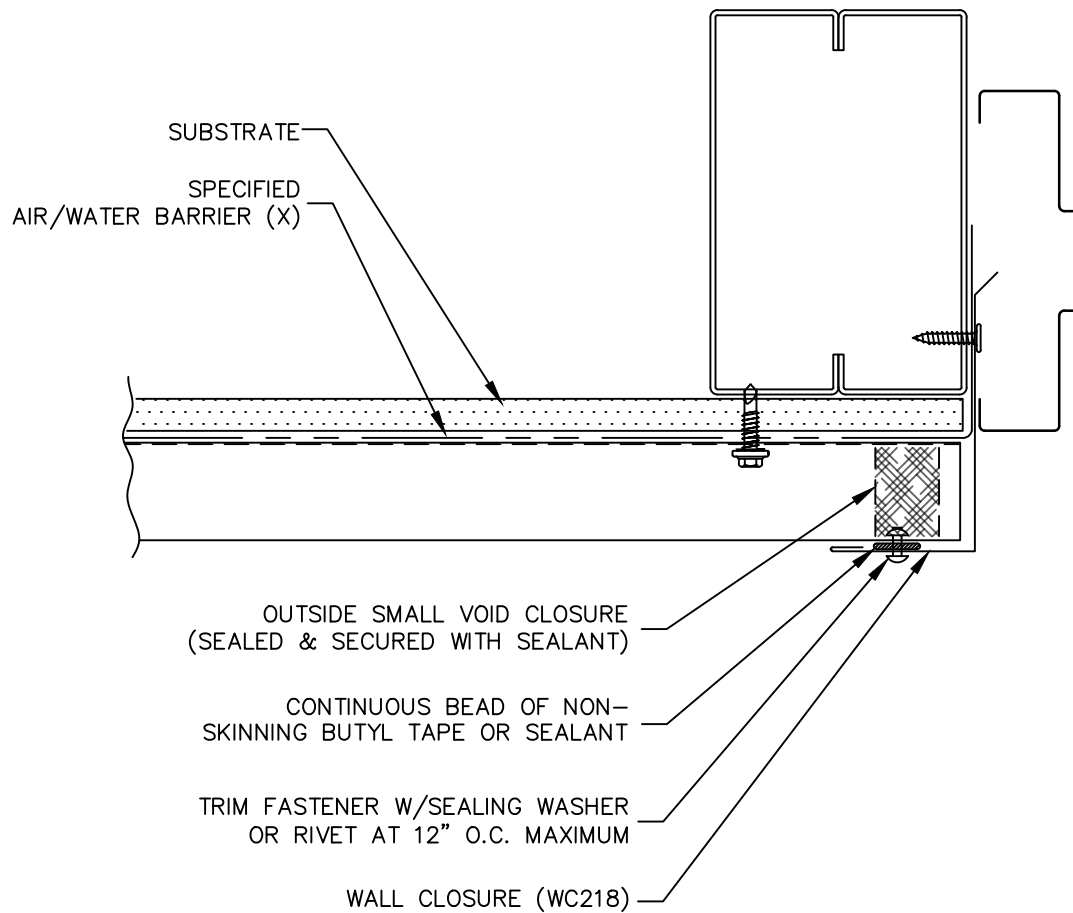
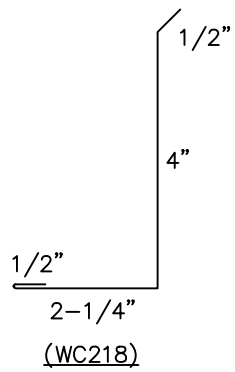
BOX RIB



OPENING, HEAD  
(NAIL FIN)



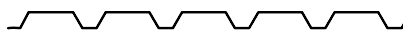
BR-34



(X) – NOT BY AEP SPAN



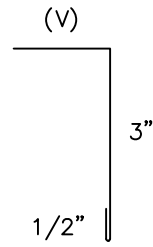
BOX RIB



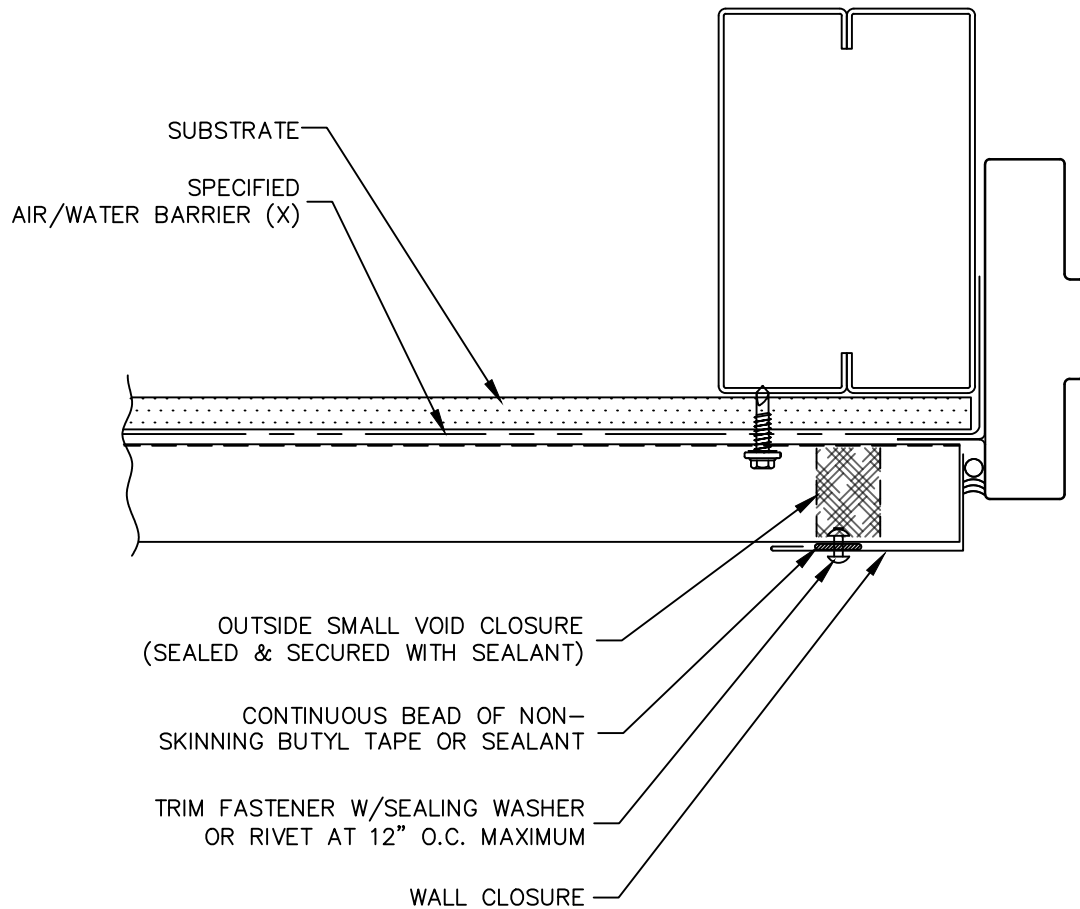
DOOR / WINDOW  
(JAMB)



BR-35



WALL CLOSURE

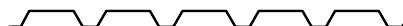


(X) - NOT BY AEP SPAN

(V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



BOX RIB

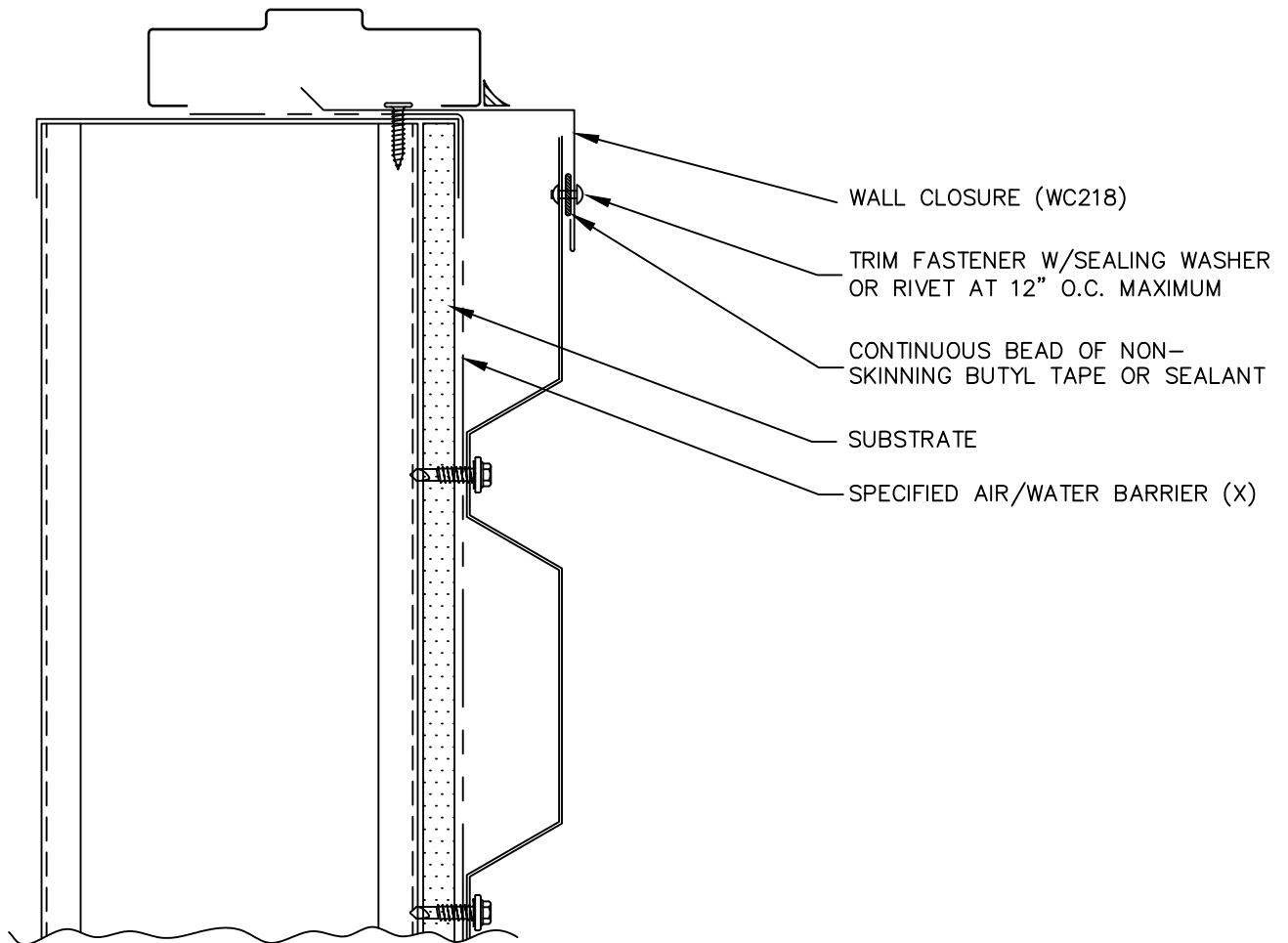
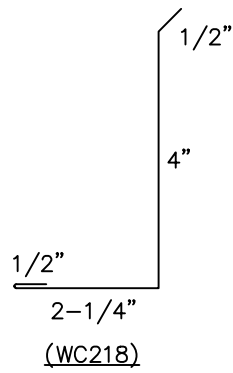


OPENING, JAMB  
(NAIL FIN)



BR-36





(X) – NOT BY AEP SPAN



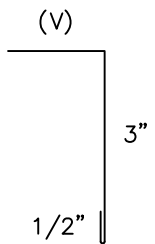
BOX RIB



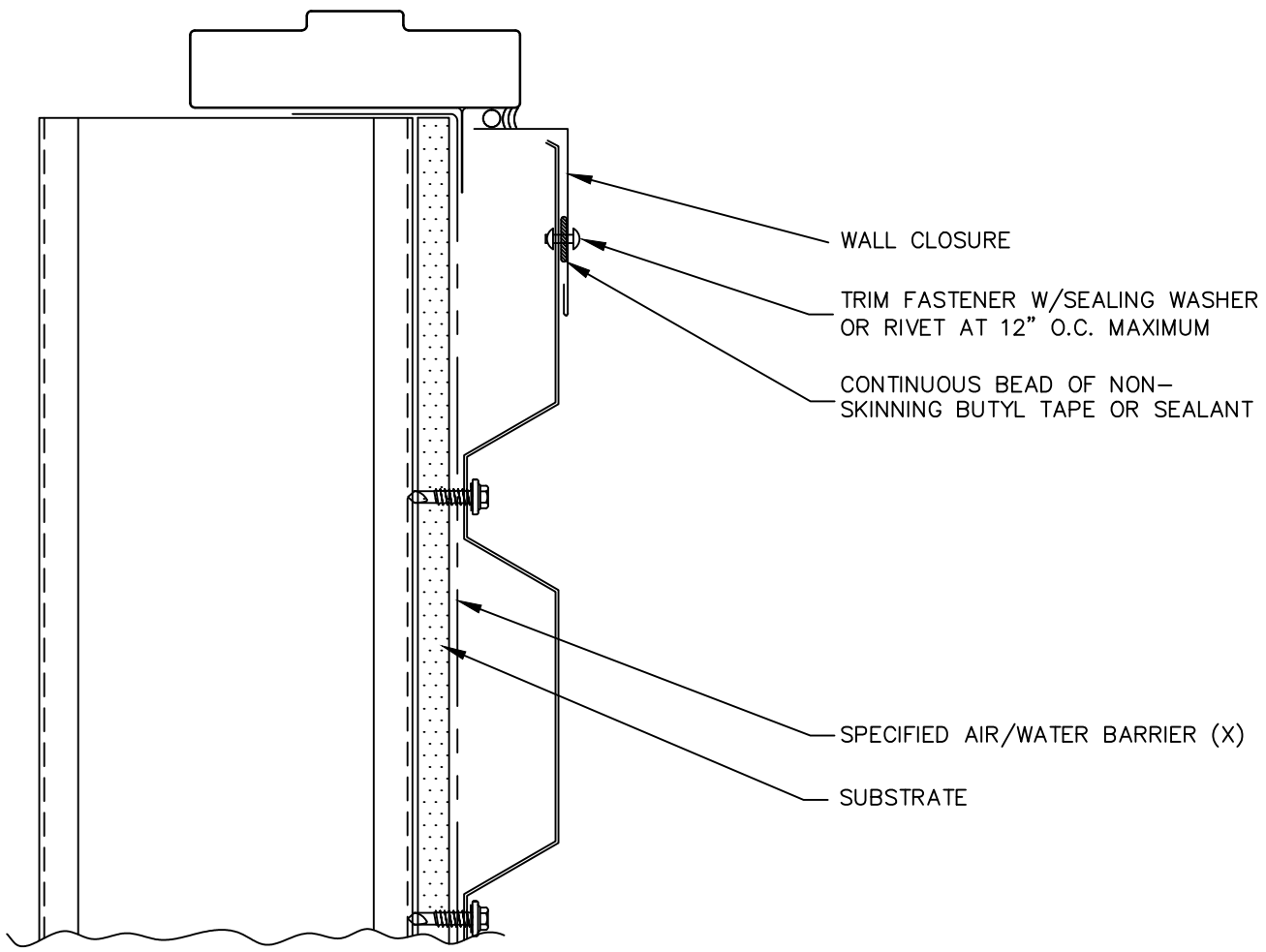
DOOR / WINDOW  
(SILL)



BR-37



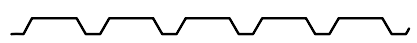
WALL CLOSURE



(X) - NOT BY AEP SPAN  
 (V) - DIMENSIONS VARY BASED ON PROJECT CONDITIONS



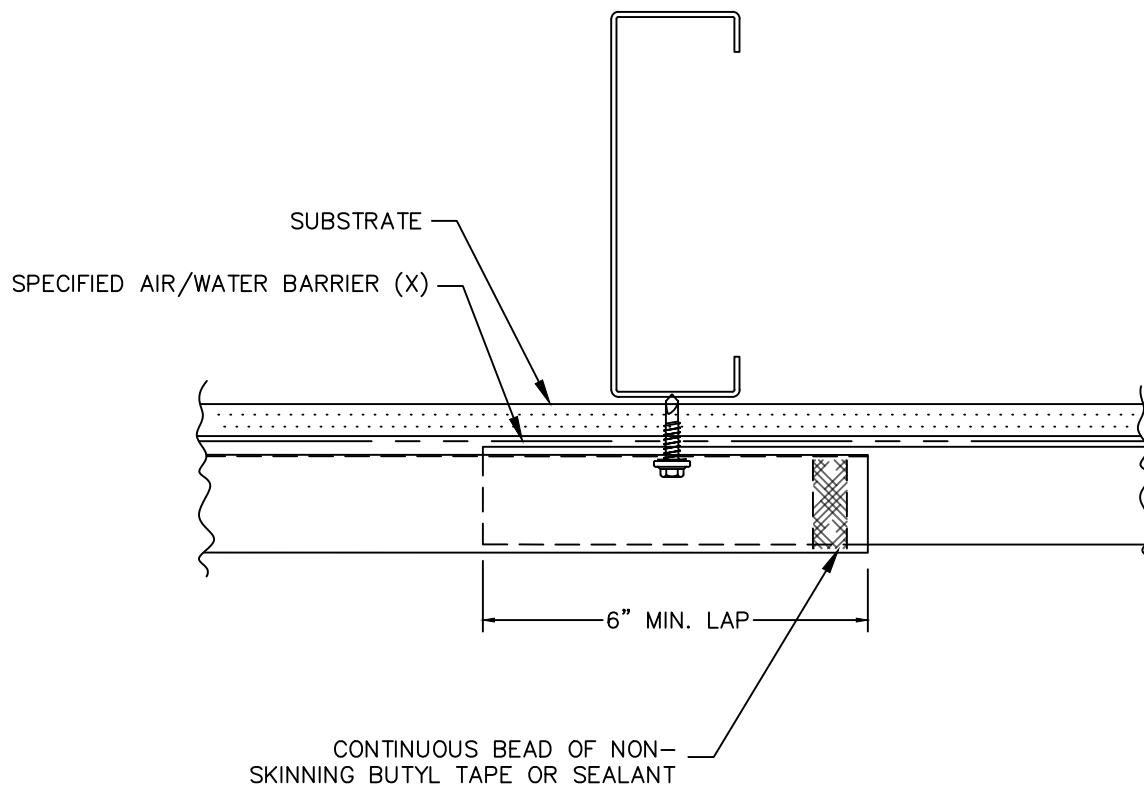
BOX RIB



OPENING, SILL  
 (NAIL FIN)



BR-38



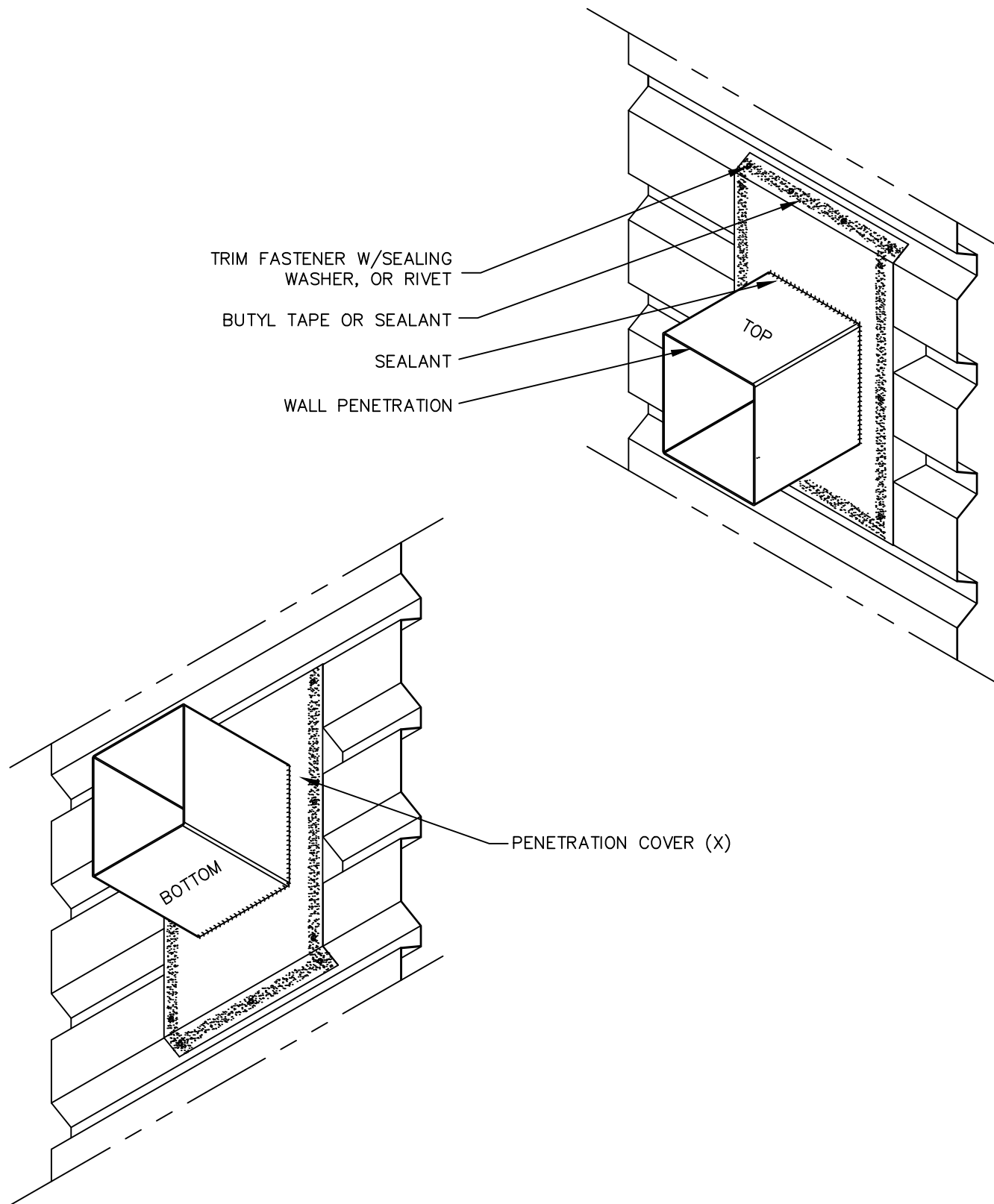
BOX RIB



LAP DETAIL



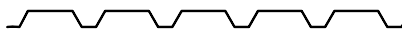
BR-39



(X) – NOT BY AEP SPAN



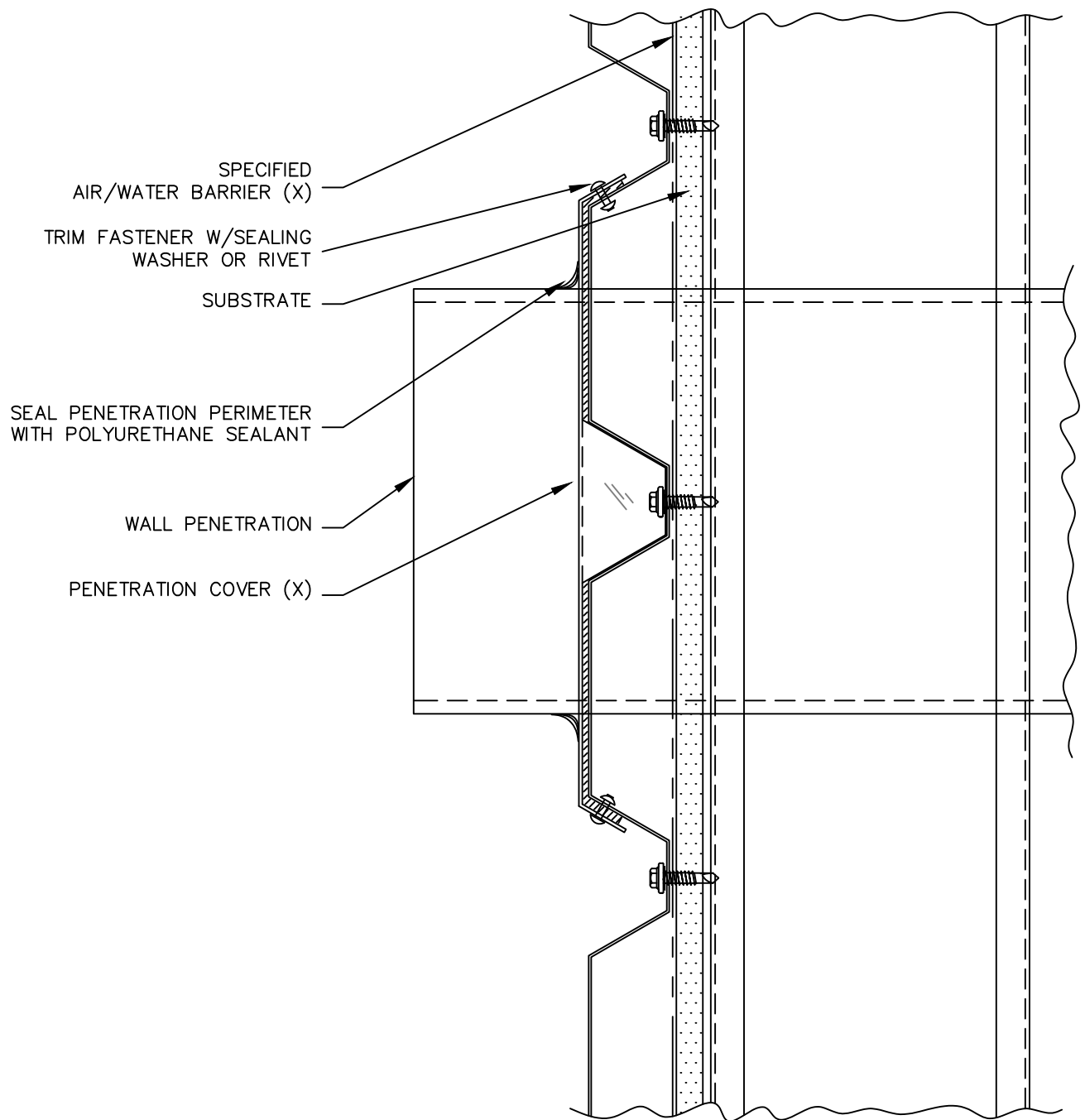
BOX RIB



WALL PENETRATION (3D)



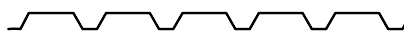
BR-40



(X) – NOT BY AEP SPAN



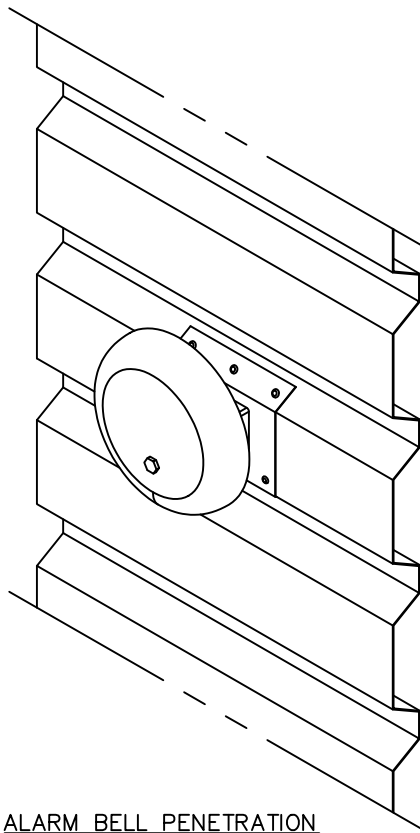
BOX RIB



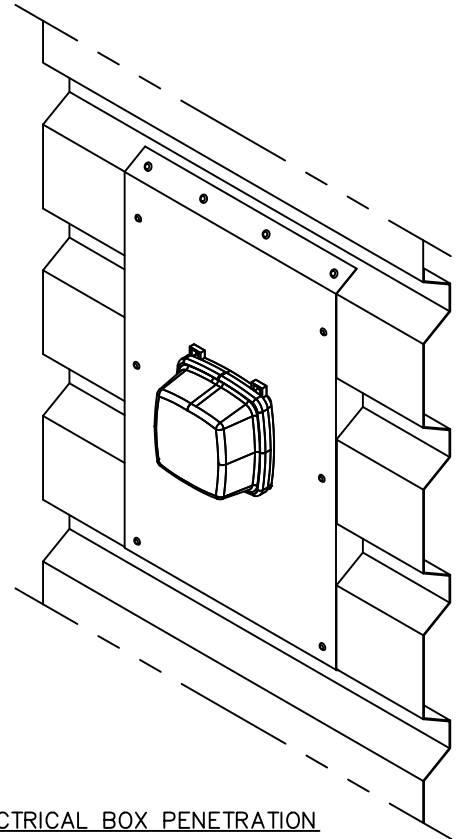
PENETRATION (2D)



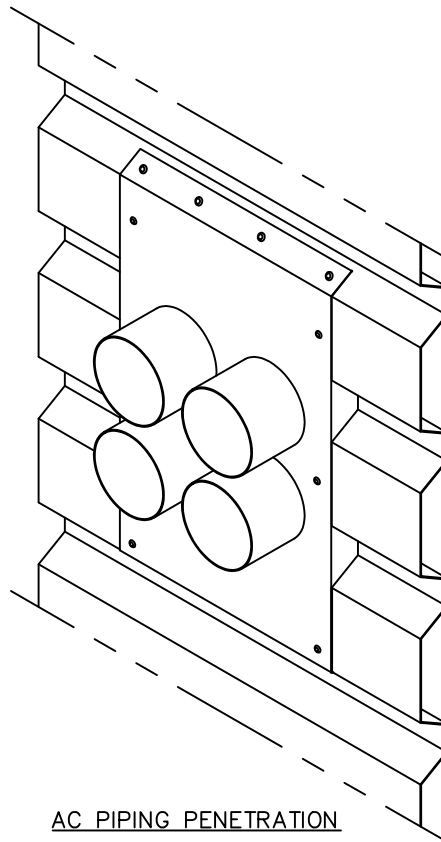
BR-41



ALARM BELL PENETRATION



ELECTRICAL BOX PENETRATION



AC PIPING PENETRATION



BOX RIB



PENETRATION (3D)  
EXAMPLES



BR-42

MANUFACTURING FACILITY:

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West Sacramento, CA 95691

**Tacoma, Washington**

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Tacoma, WA 98421

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**800-733-4955**

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