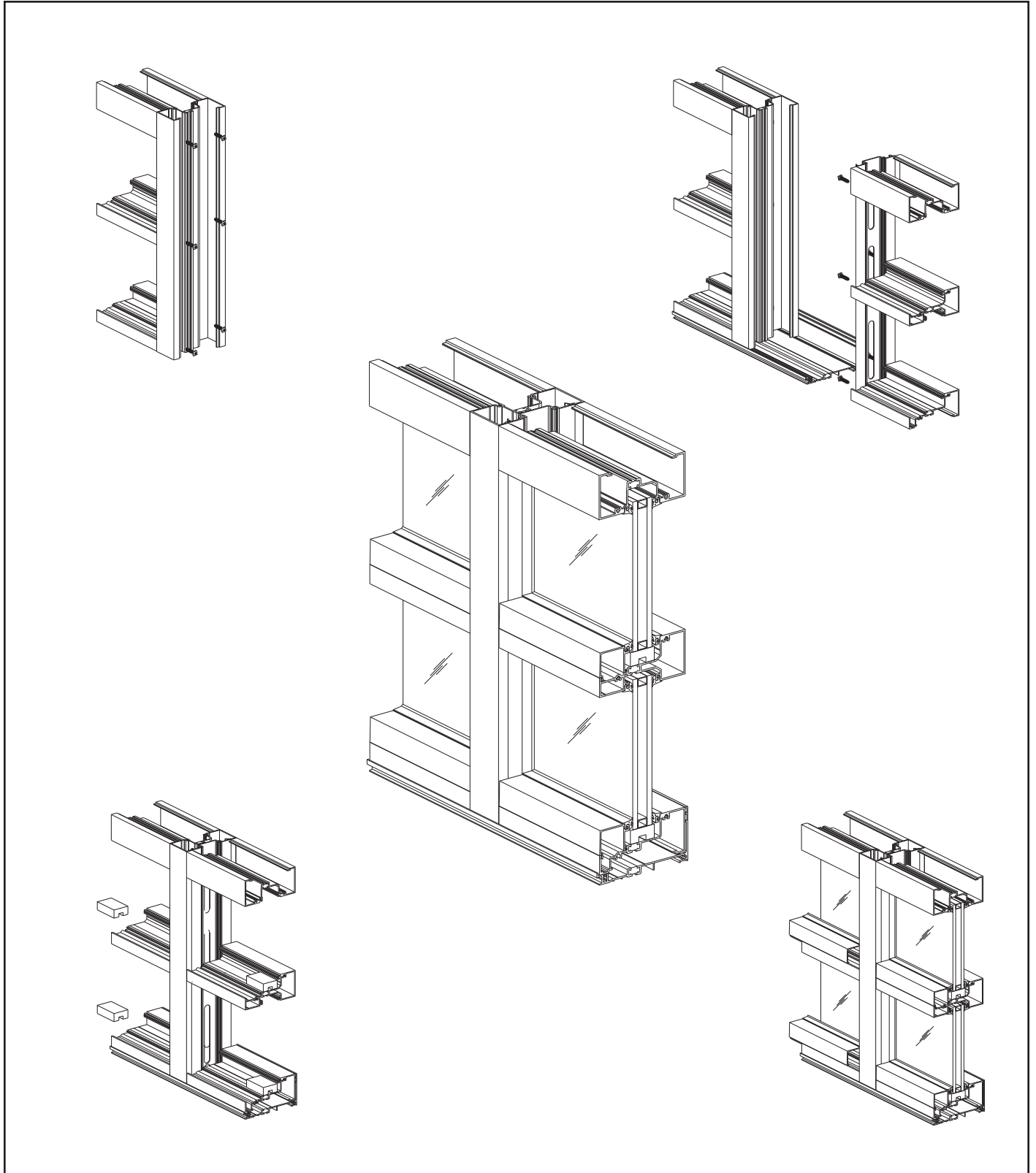


YES 45 TU Center Set Storefront System



Installation Manual

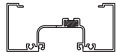
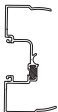
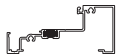
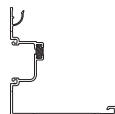
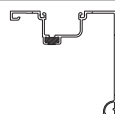
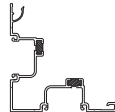
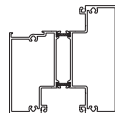
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Installation Notes

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor and may stain aluminum finishes and paints.
3. All materials should be checked for quality and quantity upon receipt, YKK AP must be notified immediately of any discrepancies in shipment. Check to make sure that you have the required shims, sealants, supplies and tools necessary for the installation.
4. Carefully check the openings and surrounding conditions that will receive your material. Remember, if the construction is not per the construction documents, it is your responsibility to notify the general contractor in writing. Any discrepancies must be brought to the general contractor's attention before you proceed with the installation.
5. Gather your shop drawings, materials, packing list, and this installation manual. Carefully review parts location, the sequence it goes therein, when you glaze it and how you seal it. Installation instructions are of a general nature and may not cover every condition you will encounter. The shop drawings and/or installation manuals were prepared specifically for the product.
6. Any material substitutions must be of equal or greater quality.
7. Make certain that material samples have been sent for compatibility testing for all manufacturer's sealants involved. Make certain sealants have been installed in strict accordance with the manufacturer's recommendations and specifications.
8. Remember to isolate, in an approved manner, all aluminum from uncured masonry or other incompatible materials.
9. System-to-structure fasteners are not supplied by YKK AP. Fasteners called out on shop drawings are to indicate minimum sizes for design loading.
10. Entrances are to be installed plumb, square, level, and true.
11. If any questions arise concerning YKK AP products or their installation, contact YKK AP for clarification before proceeding.
12. YKK AP storefront and/or curtain wall framing is typically completed before drywall, flooring and other products which may still be in process. Take the extra time to wrap and protect the work produced.
13. Cutting tolerances are plus zero (0"), minus one thirty second (-1/32") unless otherwise noted.
14. Check our website, www.ykkap.com, for the latest installation manual update prior to commencing work.

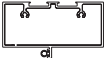
FRAMING MEMBERS (2" x 4-1/2")

	Mullion / Jamb	BE9-2551		Expansion Mullion (Male)	BE9-2565
	Head / Mullion / Jamb	BE9-2553		Hinged Mullion (Male)	BE9-2557
	Horizontal	BE9-2556		Hinged Mullion (Female)	BE9-2558
	Sill	BE9-2579		90° Corner Mullion	BE9-2566
	Glass Stop	E9-1015		90° Corner Mullion	BE9-2567
	Sill Flashing	BE9-2578		3-Way Corner Mullion	BE9-2568
	One Piece Mullion	BE9-2555		135° Corner Mullion	BE9-2569
	Heavy Duty Mullion	BE9-2561		4-1/2" Horizontal/Sill	BE9-1513
	Pocket Filler (Slotted)	BE9-2552		Adaptor for Compound Mullion	BY7-9478
	Head Receptor	BE9-2562		Flat Filler	E9-1038
	Head Receptor Stop	E9-1033		Glazing Adaptor For 1/2", 5/8" & 3/4" glazing	E9-1039
	Deep Pocket Filler Use with BE9-2569	BE9-2559		Glazing Adaptor For 3/16", 1/4", 5/16", & 3/8" glazing	E9-1040
	Expansion Mullion (Female)	BE9-2564			

FRAMING MEMBERS (Cont.)

	2-1/2" x 3/4" Face Cover * For Compound Mullions and Horizontals	E9-1206		5" x 3/4" Face Cover * For Compound Mullions and Horizontals	E9-3542
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DOOR FRAMING MEMBERS

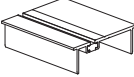
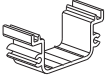
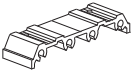
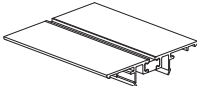
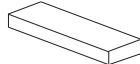
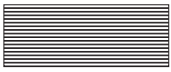
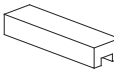
	Single Acting Door Jamb Elastomer weathering E2-0051 included	AS-0411		Door Stop Base Used with AS-0409	E9-1113
	Single Acting Door Head/Transom Bar Elastomer weathering E2-0051 included	AS-0412		Transom Glass Stop For 1/4" glazing	E9-0403
	Double Acting Door Jamb	E9-0415		Transom Glass Stop For 1" glazing	E9-0413
	Double Acting Door Head/Transom Bar Pile weathering E2-0062 included	AS-0426		Transom Glazing Pocket For 1/4" glazing	E9-0434
	Intermediate Door Jamb 2" x 4-1/2" Tube Use with AS-0409	E9-9312		Transom Glazing Pocket For 1" glazing	E9-0435
	Deep Pocket Filler Use with door jambs	E9-1019		Sash Base Use with E9-0403 or E9-0413 glass stops	E9-0408
	Door Stop O/P Assembly Elastomer weathering E2-0051 included Used with E9-1113	AS-0409		Threshold 1/2" x 4"	E9-0407

* Other sizes available. Contact YKK AP for more information.

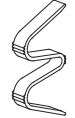
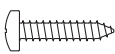
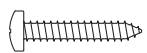
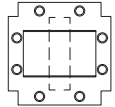
THERMAL DOOR FRAMING MEMBERS

	Single Acting Door Jamb For 25T/35T/50T Doors Elastomer Weathering E2-0051 Not Included	BE9-2581		Transom Glazing Pocket For 1" Glazing	BE9-2583
	Deep Pocket Filler	BE9-2609		Flat Filler	BE9-2571
	Transom Bar For 25T/35T/50T Doors Elastomer Weathering E2-0051 Not Included	BE9-2582		Threshold 1/2" x 4-1/2" For 25T/35T/50T Doors	BE9-0465
	Transom Glass Stop For 1" Glazing	E9-1592			

ACCESSORIES

	Shear Block For Sill/Horizontal	E1-1058		Head Anchor 4" Long	E1-2602
	Shear Block For Head	E1-1059		Flat Filler Use at all anchor locations	E1-1054
	Shear Block For Transom Bar AS-0426	E1-0317		Adaptor for High Sill For compound horizontals, 4" Long	E1-9836
	End Dam For Sill Flashing BE9-2578	E1-0199		Setting Block For outside glazed Horizontal & sill	E2-0020
	End Cap for Head Receptor BE9-2562	E1-2603		Setting Block For inside glazed Intermediate horizontal	E2-0611
	Splice Sleeve For Sill Flashing BE9-2578 & Head Receptor BE9-2562	E2-0070		Setting Block For 4-1/2" Horizontal	E2-0628

ACCESSORIES (Cont.)

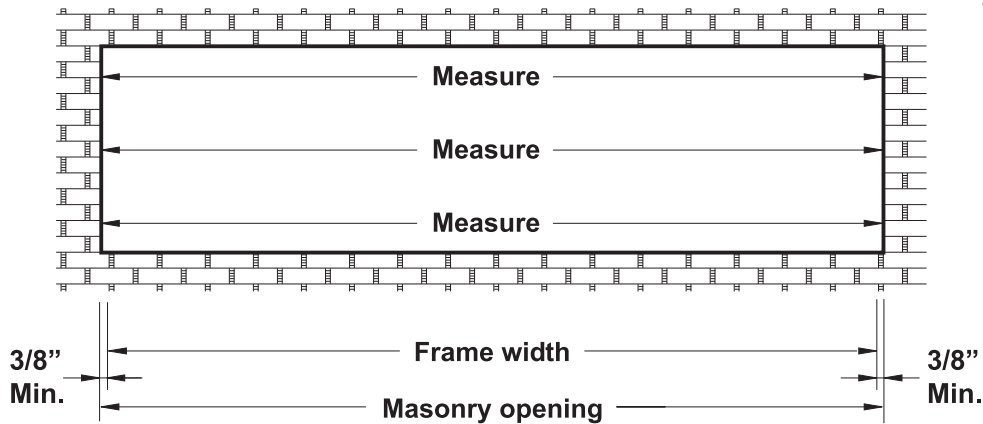
	Water Deflector	E2-0047		#10-24 x 1/2" PHMS Stainless Steel For Attachment of Sill to Sill Flashing	PM-1008- SS
	"W" Side Block For Deep Pocket	E2-0153		#10 x 1-3/4" PHSMS Type AB , Zinc Plated Steel For Attach. of Shear Blocks E1-1058 & E1-1059 to Vert.	PC-1028
	Pile Weathering Seal	E2-0062		#12 x 3/4" UFHSMS Type A , Zinc Plated Steel For End Dam Attachment	UA-1212
	Glazing Gasket	E2-0052		#12 x 5/8" PHSMS Type AB , Zinc Plated Steel For Attach. of Horiz. & Sill to Shear Block E1-1058	PC-1210
	Glazing Gasket	E2-0053		#12 x 1/2" FHSMS Type AB , Zinc Plated Steel For Attachment of E1-2603 End Cap to Head Receptor	FC-1208
	Glazing Gasket	E2-0064		#12 x 3/4" FHSMS Type AB , Zinc Plated Steel For Attachment of Head to Shear Block E1-1059	FC-1212
	Elastomer Weathering For Head Receptor	E2-0051		#12 x 1" PHSMS Type AB , Zinc Plated Steel For Screw Spline Attachment	PC-1216
	Weathering Gasket For Expansion Mullion	K2-2441		#12 x 1-1/4" PHSMS Type AB , Zinc Plated Steel, For Screw Spline Attach. When Using BE9-2553 as Vertical	PC-1220
	Foam Backer Tape 1" x 1-1/4" (Roll)	E2-0259		#12 x 1-3/4" PHSMS Type AB , Zinc Plated Steel For Attachment of Shear Block E1-0317 to Vertical	PC-1228
	#10 x 3/4" FHSMS Type AB , Zinc Plated Steel For Attach. of Horizontal to Shear Block E1-0317	FC-1012		Drill Fixture	H-7201

FRAME FABRICATION

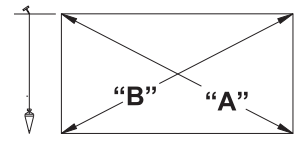
STEP 1

DETERMINE FRAME SIZE

Determine Frame Width:



Note: Check the opening for squareness and plumb at both ends. Units must be installed in a true rectangle.



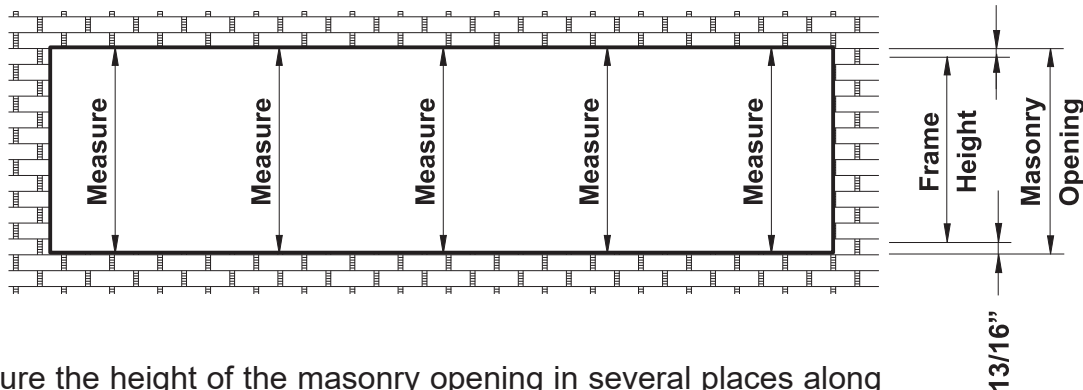
Detail 1

- Measure the width of the masonry opening at the top, middle and bottom.
- Select the smallest dimension measured and subtract $\frac{3}{4}$ " to the determine the frame width to be used.

See **Detail 1**.

NOTE: Frame widths over 24'-0" require expansion mullions every 12 to 15 feet (best location at vertical next to the door jamb.)

Determine Frame Height:



Detail 2

- Measure the height of the masonry opening in several places along the entire length of the opening.
- Select the smallest dimension measured and subtract $1\frac{3}{16}$ " to determine the frame height to be used:

Minimum $\frac{3}{8}$ " shim/caulk joint at the head.

$\frac{7}{16}$ " for sill flashing.

Minimum $\frac{3}{8}$ " shim/caulk joint below the sill flashing.

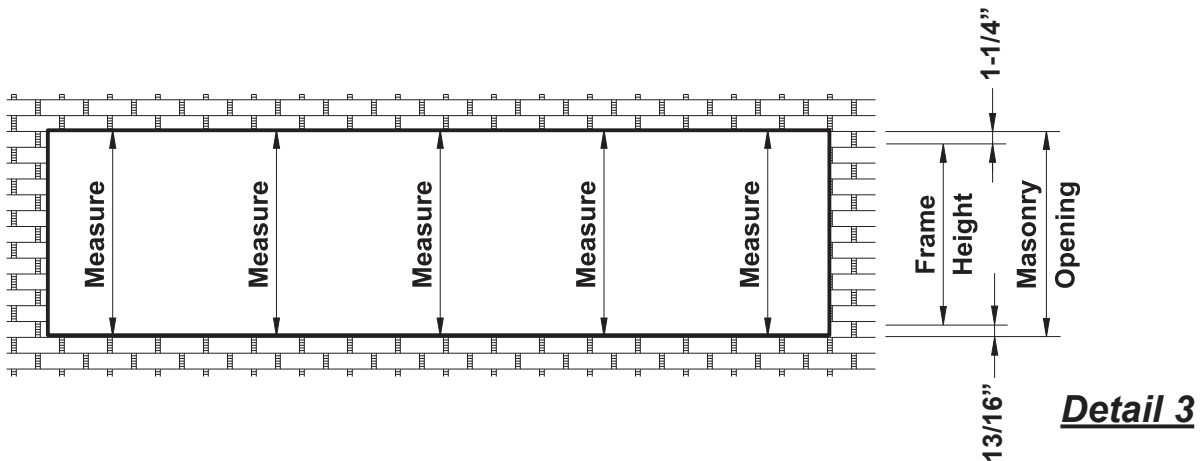
See **Detail 2**.

FRAME FABRICATION

STEP 1

DETERMINE FRAME SIZE

Determine Frame Height for Receptor Conditions:



-Measure the height of the masonry opening in several places along the entire length of the opening.

-Select the smallest dimension measured and subtract 2-1/16\"

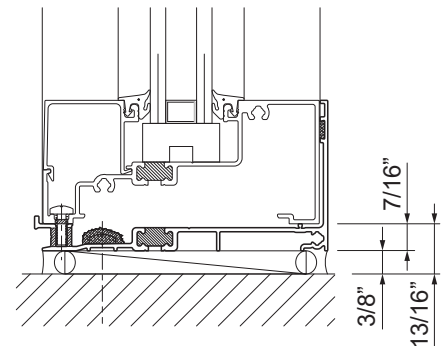
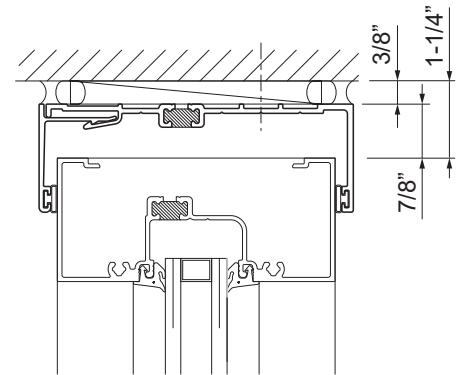
Minimum 3/8\"

7/8\"

7/16\"

Minimum 3/8\"

See **Details 3 & 4**.



Detail 4

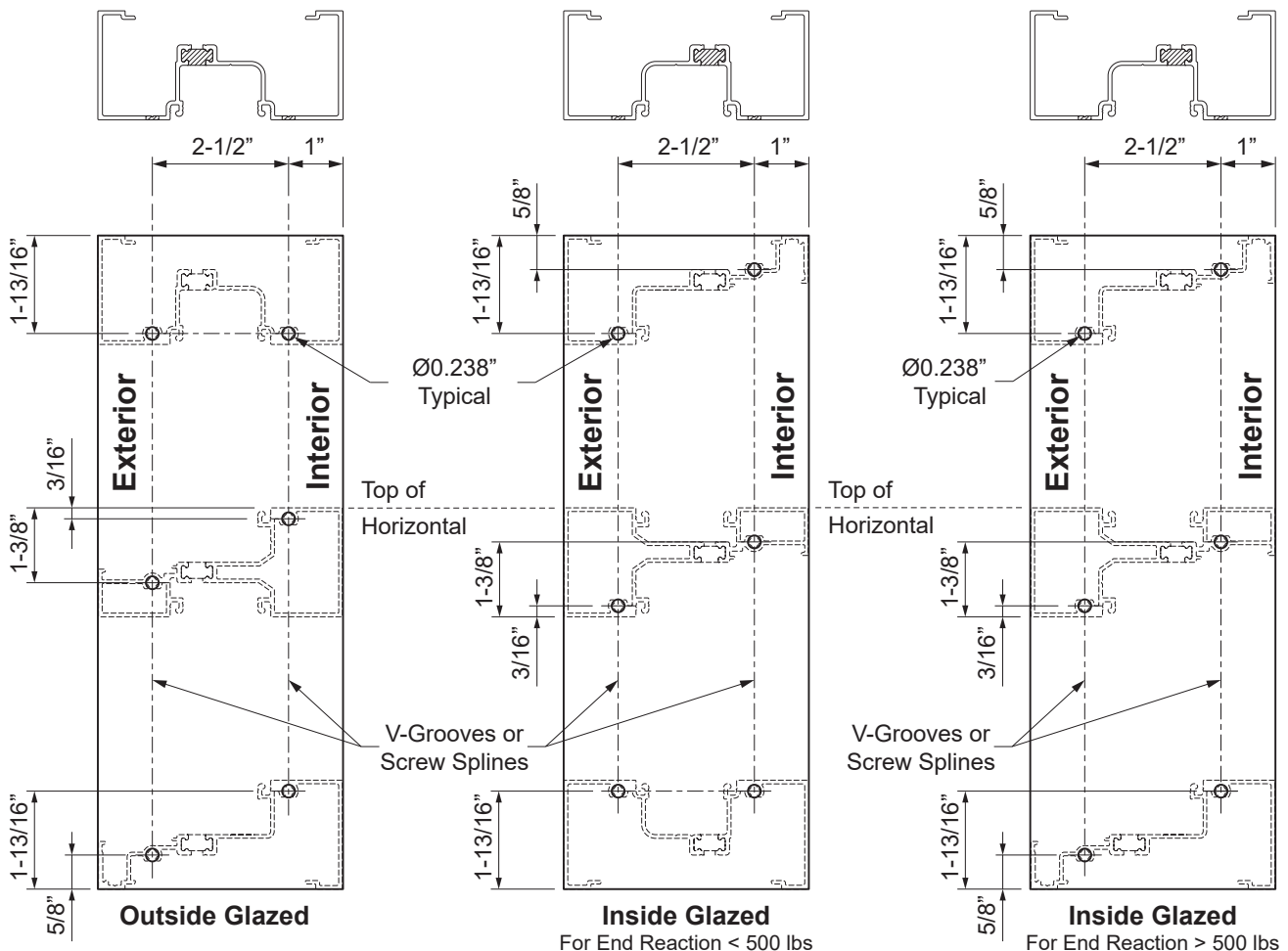
FRAME FABRICATION

STEP 2

FABRICATE TWO PIECE VERTICAL MULLIONS FOR SCREW SPLINE ASSEMBLY

-Cut the two piece vertical and jamb members to the frame height determined in **Step 1**.
-Fabricate holes in vertical members for screw spline attachment using one of the methods below:

1. Layout the hole locations as shown in **Detail 5** and drill a $\varnothing 0.238"$ (#B drill bit) clearance hole at each location marked.
2. Use the YKK AP drill fixture, H-7201, to drill the holes.
3. Use punch press with appropriate die set.



Detail 5

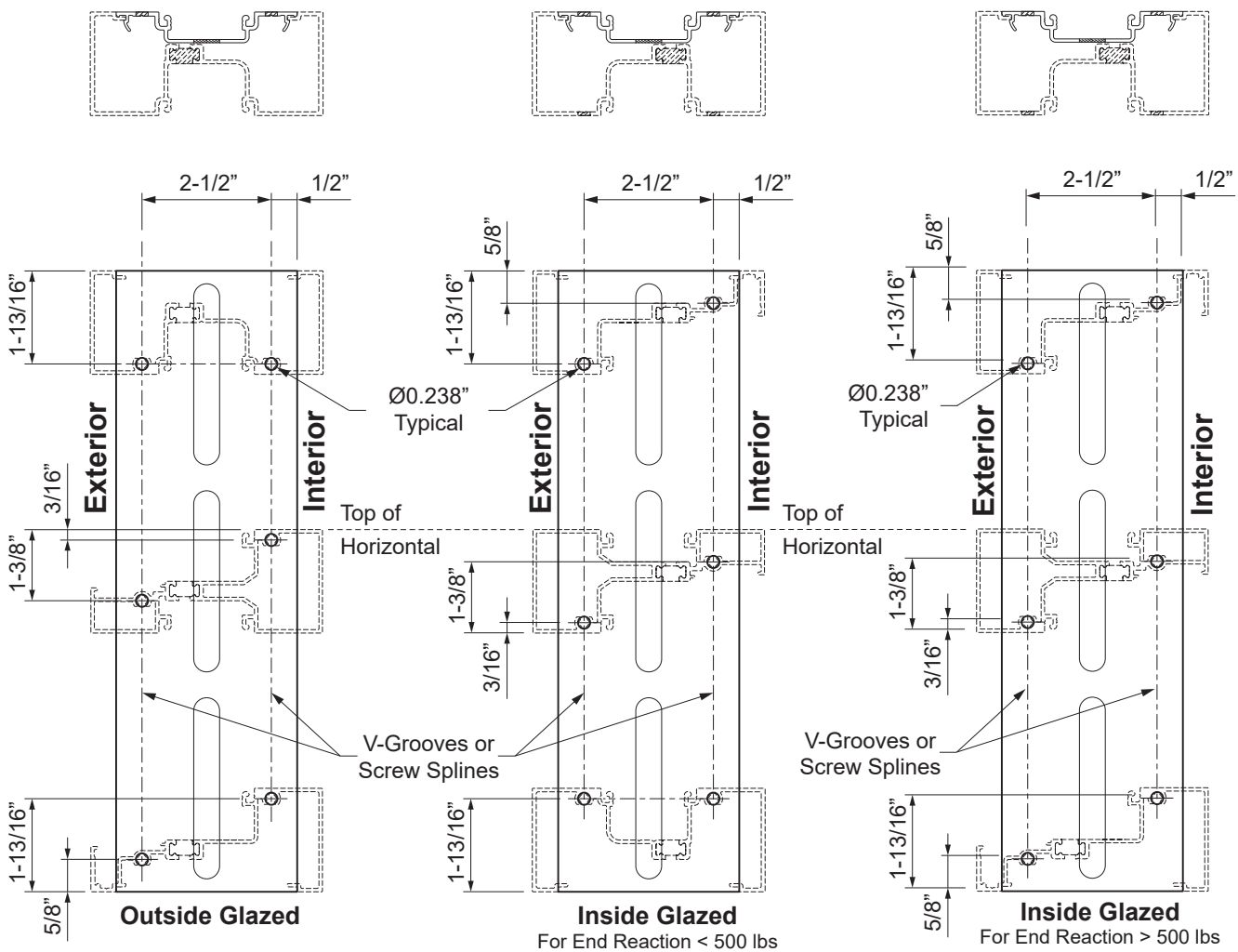
FRAME FABRICATION

STEP 2 (Continued)

**FABRICATE TWO PIECE VERTICAL MULLIONS
FOR SCREW SPLINE ASSEMBLY**

-Fabrication of shallow pocket fillers is similar to that of the mullions.

See **Detail 6**.



Detail 6

FRAME FABRICATION

STEP 2 (Continued)

FABRICATE TUBULAR MULLIONS FOR SHEAR BLOCK ASSEMBLY

- Cut the vertical and jamb members to the frame height determined in Step 1.
- Tubular verticals require shear blocks for the attachment of head, horizontal and sill members:

Note: Shear Block E1-1059 must be used with open back head BE9-2553.

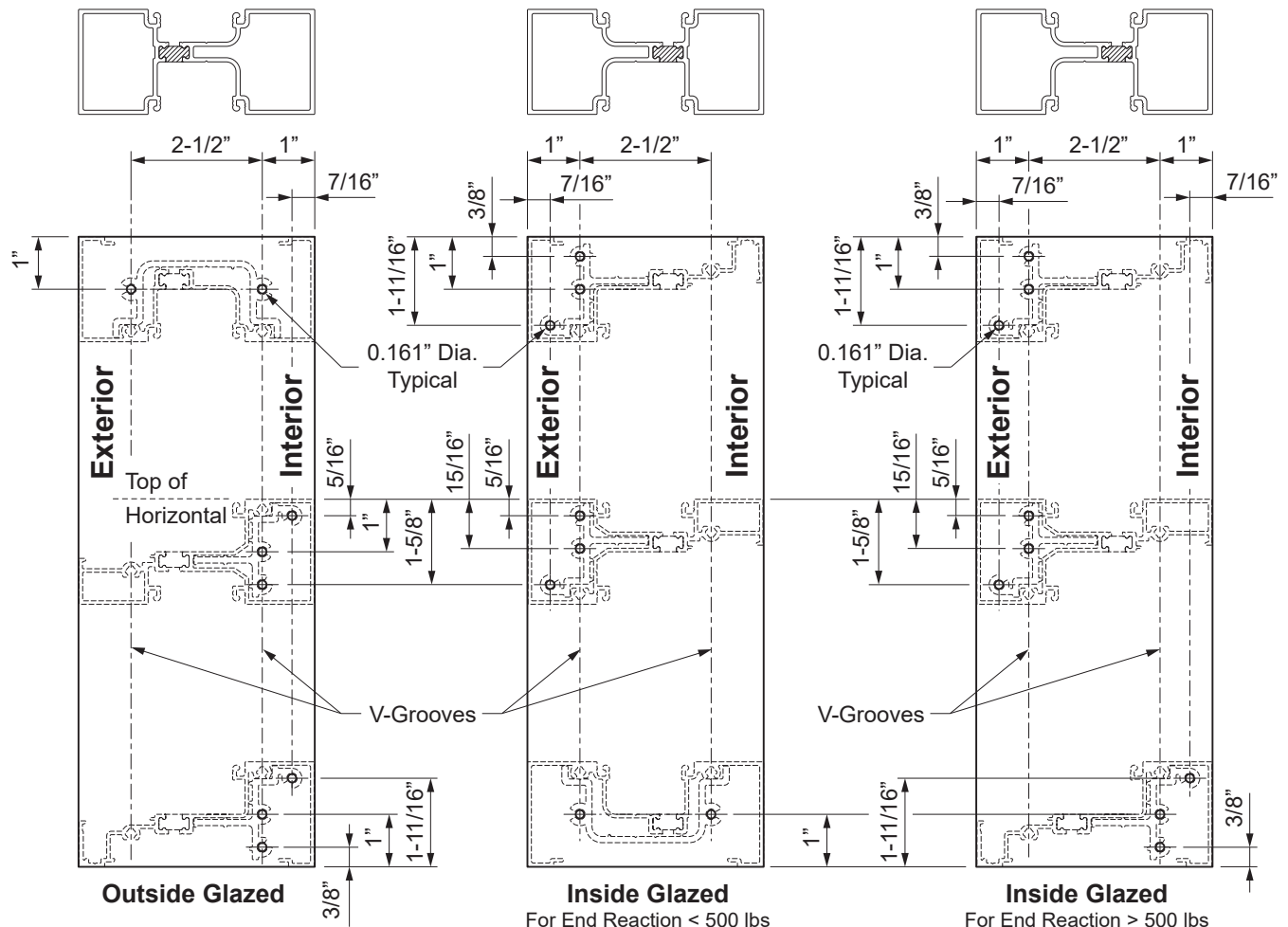
Shear Block E1-1058 must be used with open back horizontal BE9-2579.

Optional Installation: Shear Block E1-1058 may be used with tubular horizontal BE9-2556.

- Mark the location for each shear block using one of the methods below:

1. Layout the hole locations as shown in **Detail 7** and drill a $\varnothing 0.161"$ (#20 drill bit) clearance hole at each location marked.
2. Use a short piece of each horizontal member with a shear block installed as a template. Center the template on the face of the vertical and mark each hole location.

- Attach the shear blocks to the verticals using PC-1028 fasteners.



Detail 7

FRAME FABRICATION

STEP 3

FABRICATE HEAD, HORIZONTAL & SILL MEMBERS

-Cut head, horizontal, and sill members to the daylight opening (D.L.O.) as indicated on the shop drawings.

-Horizontal members that will be attached to shear blocks require additional fabrication:

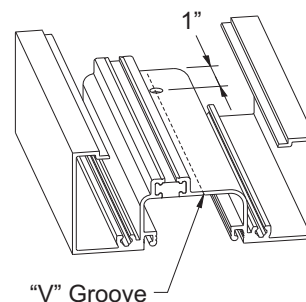
BE9-2553 Head Members:

- Mark hole location at each end, 1" from the ends and centered along the "V"-groove.
- Drill a Ø0.238" hole (# B drill bit) at each location marked and countersink for a #12 flathead fastener (FC-1212).

See **Detail 8**.

BE9-2553

Detail 8

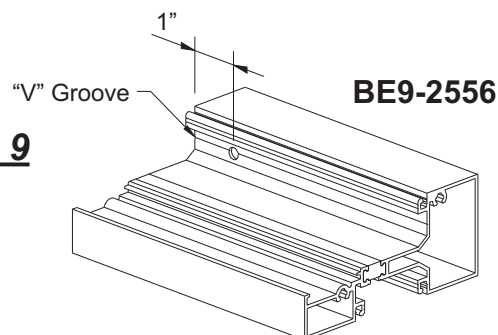


BE9-2556 Horizontal Members:

- Mark a hole location at each end, 1" from the ends centered along the "V"-groove.
- Drill a Ø0.238" hole (# B drill bit) at each location marked.

See **Detail 9**.

Detail 9



STEP 4

FABRICATE GLASS STOPS & GLAZING ADAPTORS

-Cut glass stops to the same dimensions as their respective horizontals minus(-) 1/32".

-Cut vertical glazing adaptors to the frame height.

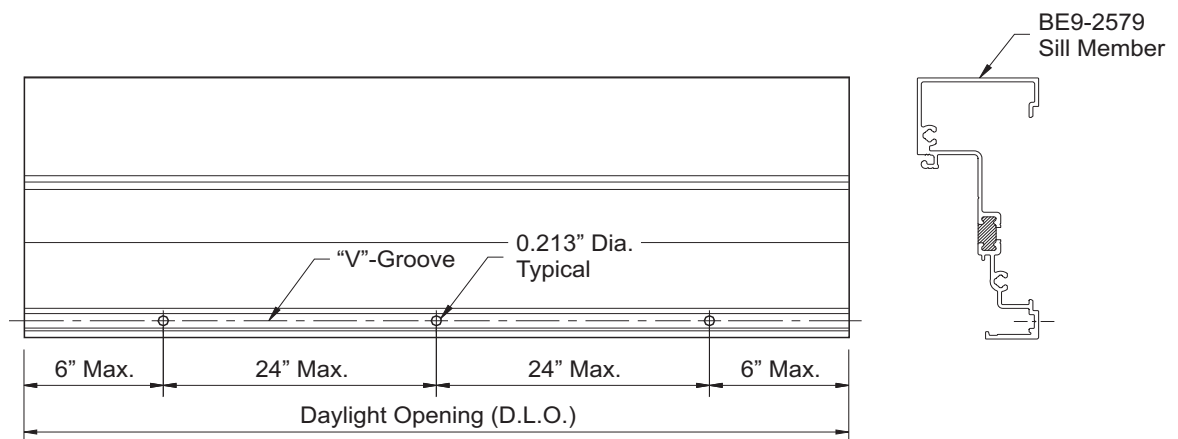
-Cut horizontal glazing adaptors to the daylight opening minus(-) 1/32".

FRAME FABRICATION

STEP 5

FABRICATE HOLES FOR SILL MEMBERS

- For mullion end reactions over 500 lbs., fabricate sill members for anchoring to sill flashing:
 - Measure in 6" from each end of the sill member and mark hole locations along the "V"-groove as shown in **Detail 10**.
 - Mark additional hole locations a maximum of 24" on center (O.C.).
 - Drill a 0.213" diameter (#3 drill bit) hole at each location marked.
 - If mullion end reaction is under 500 lbs., one (1) 0.213" dia. weep hole is required at the center of each daylight opening.



DETAIL 10

STEP 6

FABRICATE SILL FLASHING

For elevations without door framing:

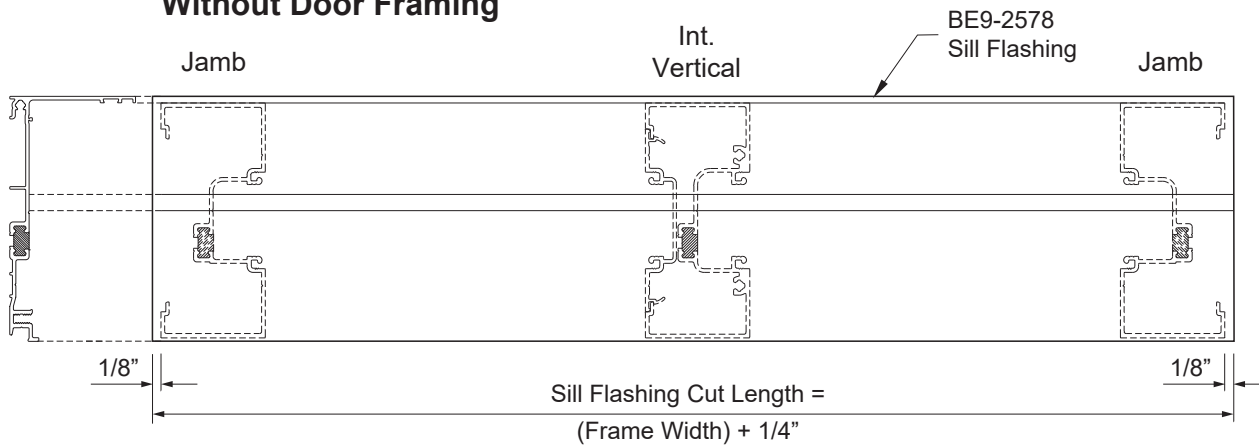
- Cut sill flashing, BE9-2578 to the end of the frame plus (+) 1/4".

For elevations with door framing:

- Cut the sill flashing to length as shown in **Detail 11** and or as shown in the approved shop drawings.

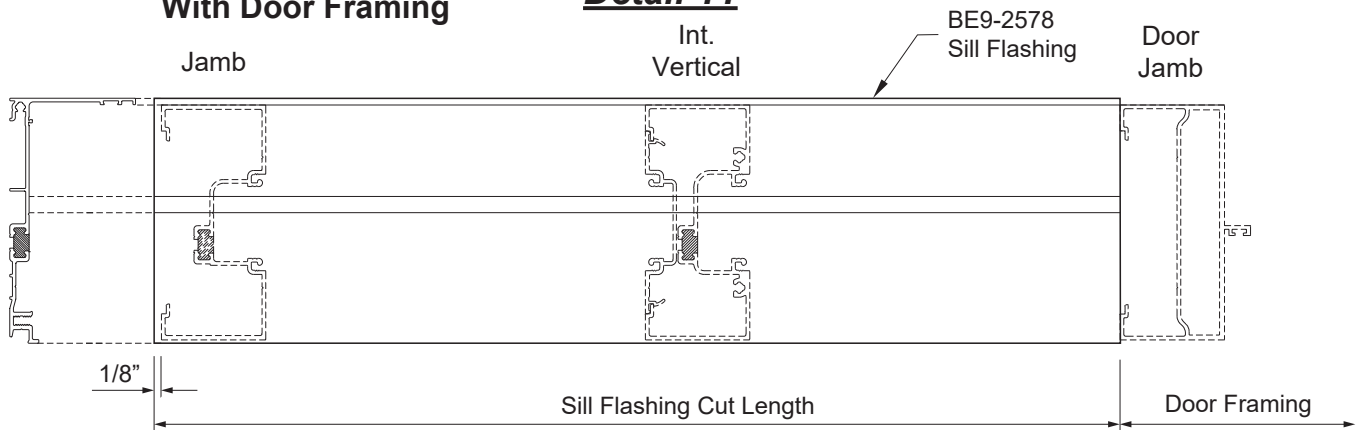
FRAME FABRICATION

Without Door Framing



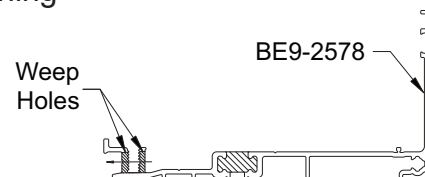
With Door Framing

Detail 11

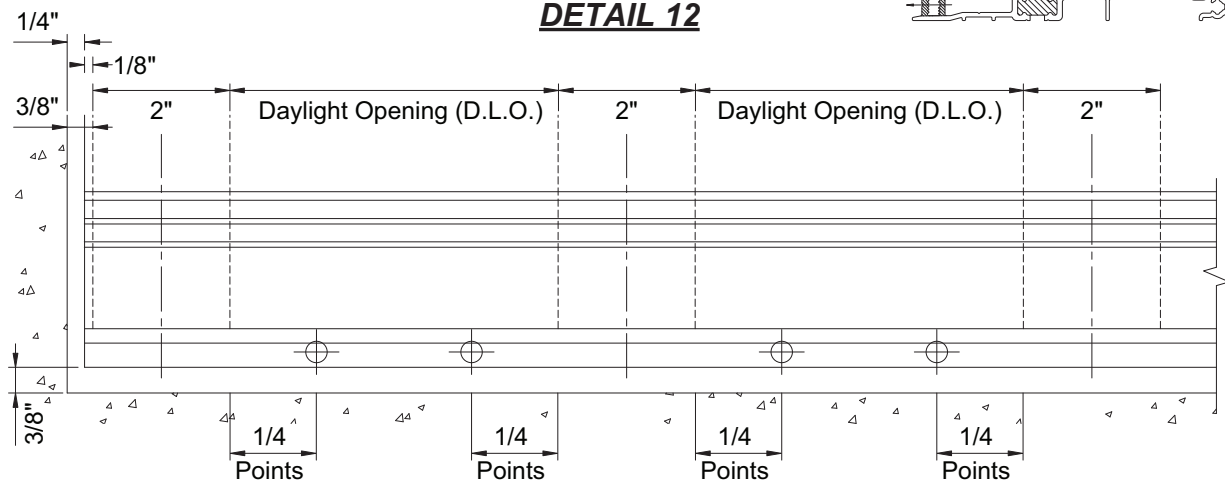


-Drill two 5/16" diameter weep holes in the front of the sill flashing at each D.L.O. quarter point.

See **Detail 12.**



DETAIL 12

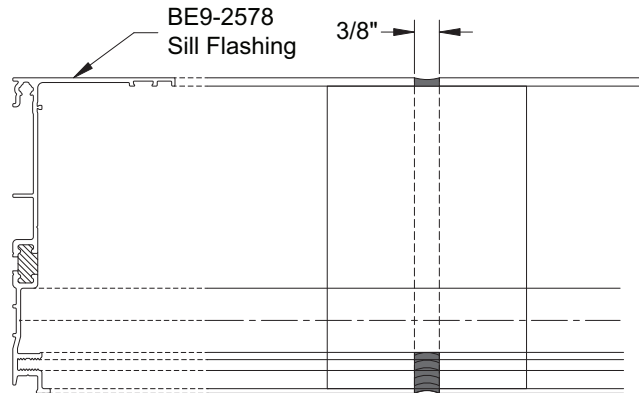


FRAME FABRICATION

STEP 6 (Continued) FABRICATE SILL FLASHING

- For openings longer than 24'-0" the sill flashing needs to be spliced every twelve to fifteen feet at the center of a D.L.O.
- Allow for a 3/8" joint for expansion between sill flashing members.

See **Detail 13**.



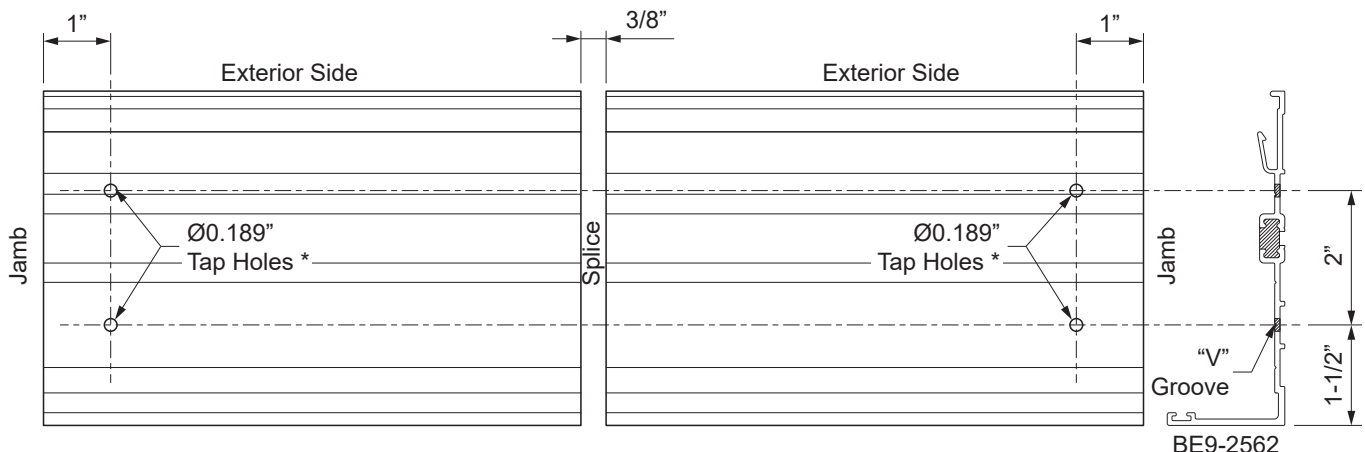
DETAIL 13

STEP 6A FABRICATE HEAD RECEPTOR

- Cut the head receptor BE9-2562 and the E9-1033 snap cover to the frame width + 1/8" at each jamb or as indicated on the approved shop drawings.
- At each jamb, drill two Ø0.189" tap holes in to the BE9-2562 head receptor as shown.
- For openings longer than 24'-0" the head receptor needs to be spliced every twelve to fifteen feet at the center of a D.L.O.
- Allow for a 3/8" joint for expansion between head receptor members.

See **Detail 14**.

* **Note:** The Ø0.189" tap hole in the exterior side of the receptor will be slightly off the V-Groove. Drilling this hole from the top side of the receptor after the interior side hole is recommended.



DETAIL 14

FRAME ASSEMBLY

STEP 7 ASSEMBLE FRAMES

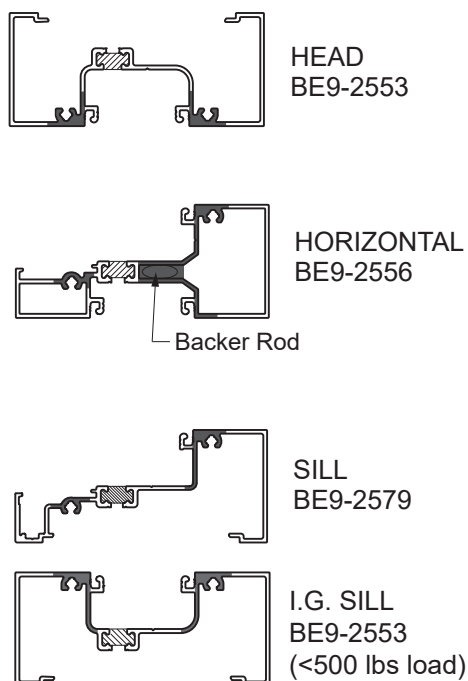
Screw Spline Assembly:

- Clean all joint surfaces using cleaner approved by sealant manufacturer.
- Apply sealant to both ends of head, horizontal and sill members just prior to assembly.
- Install a small piece of backer rod into the hollow area under the glass pocket 1/8" beyond the end of the horizontal. Apply silicone to the hollow section and tool flat to the end of the horizontal as shown.
- Attach head, intermediate horizontal, and sill members to vertical mullions and pocket fillers with two (2) PC-1216 fasteners at each end.

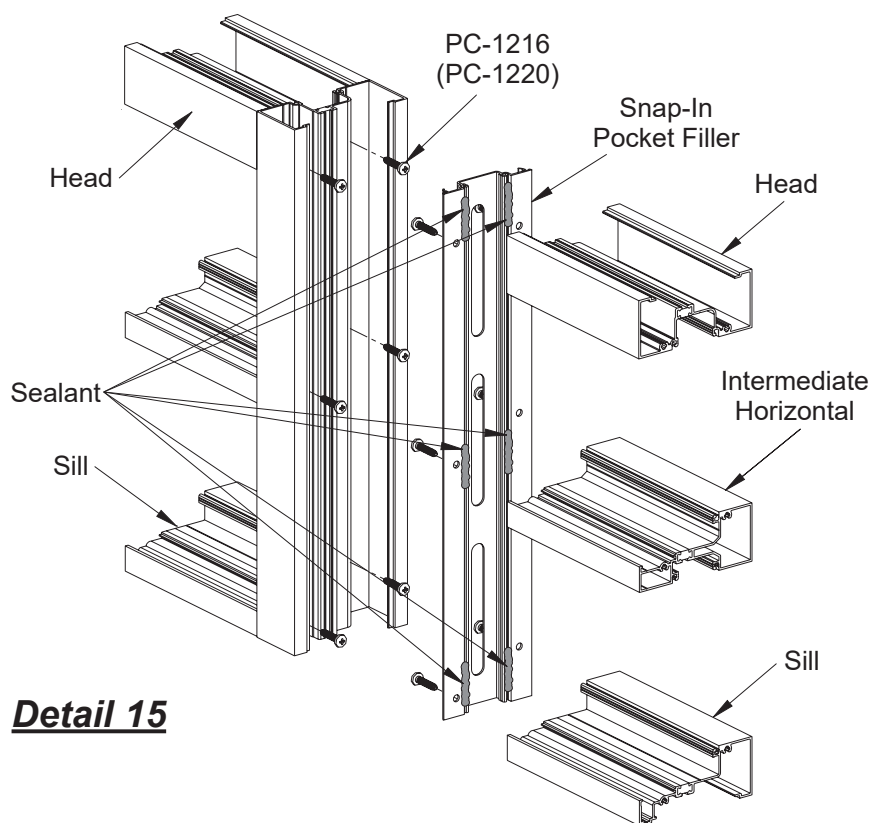
Note: Fastener PC-1220 must be used instead of PC-1216 when the head member (with screw splines) is used as a vertical.

-Tool the sealant into the joints and wipe away any excess sealant.

See **Detail 15**.



Apply sealant to the shaded areas at each end.



Detail 15

CAUTION: Always assemble frames such that each lite of glass will have a minimum of one deep vertical glazing pocket.

FRAME ASSEMBLY

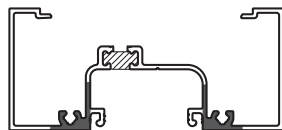
STEP 7 (Continued) ASSEMBLE FRAMES

Shear Block Assembly:

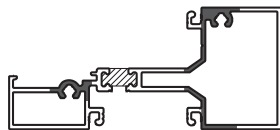
- Attach the shear blocks to the verticals using PC-1028 fasteners.
- Clean all joint surfaces using cleaner approved by sealant manufacturer.
- Apply sealant to both ends of head, intermediate horizontal, and sill members.
- Apply sealant to the shear blocks as shown.
- Attach head members to shear blocks at each end with one (1) FC-1212 fastener.
- Attach horizontal and sill members to shear blocks at each end with one (1) PC-1210 fastener.

Note: Open back horizontals must be used with shear blocks at end bays.

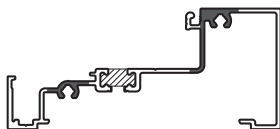
See **Detail 16**.



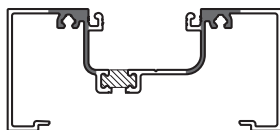
HEAD
BE9-2553



HORIZONTAL
BE9-2556

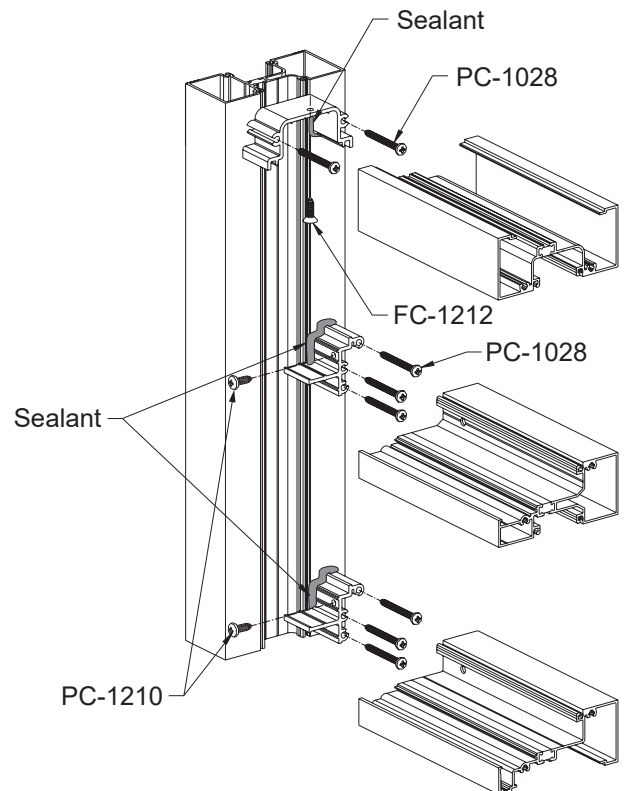


SILL
BE9-2579



I.G. SILL
BE9-2553
(<500 lbs load)

Apply sealant to
the shaded areas
at each end.



Detail 16

CAUTION: Always assemble frames such that each lite of glass will have a minimum of one deep vertical glazing pocket.

FRAME ASSEMBLY

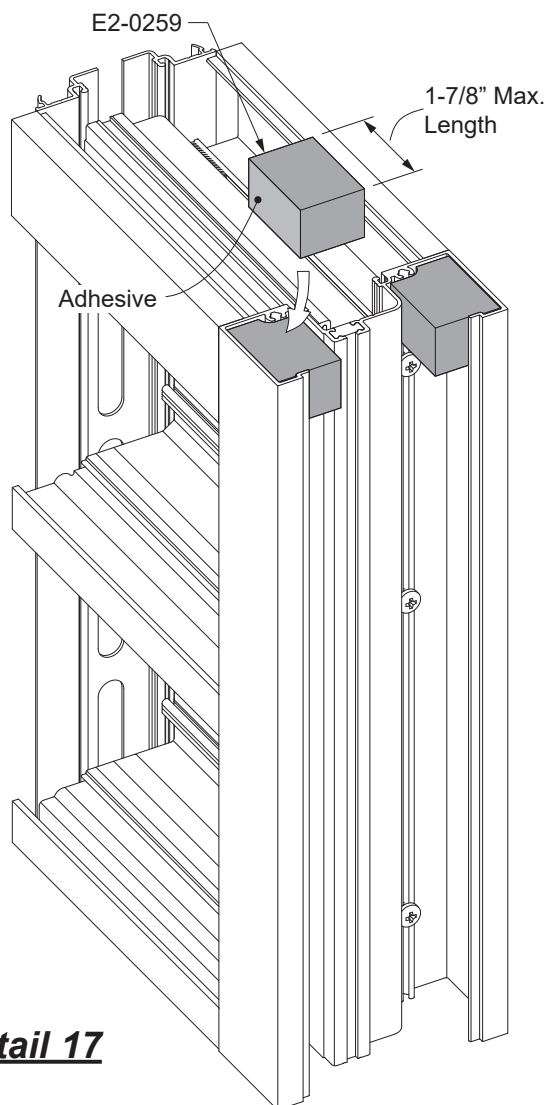
STEP 8 (Not necessary with Head Receptor) INSTALL MULLION END CAP (OPTIONAL)

-Cut pieces of E2-0259 foam backer tape (maximum 1-7/8" long for typical mullion) to be adhered at the head only.

These will serve as end cap support for perimeter backer rods and sealant.

-Peel the adhesive tape from the foam pieces and adhere them to the front and back of the mullion as shown in **Detail 17**. The foam can be easily compressed to accommodate obstacles in the assembled verticals.

Notes: For best adhesion, ensure the contact surfaces of the verticals are clean and dry.
Backer tape application is similar for expansion and corner mullions



Detail 17

FRAME INSTALLATION

STEP 9

INSTALL SILL FLASHING END DAMS

-Bend the end dam tab left or right 90 degrees in order to “hand” the end dam for the left or right end of the flashing.

See **Detail 18 & 19**.

-Clean all joint surfaces using cleaner approved by sealant manufacturer.

-Apply sealant to the end of the sill flashing as shown in **Detail 20**.

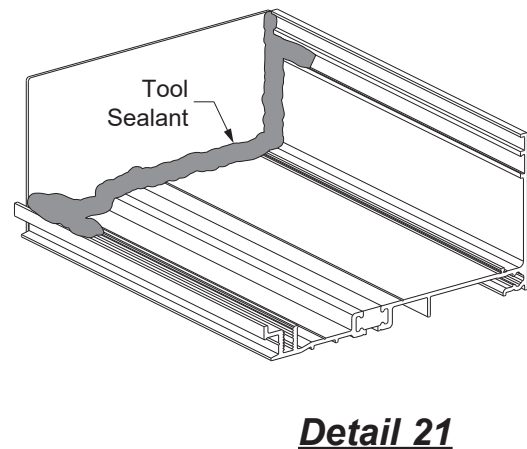
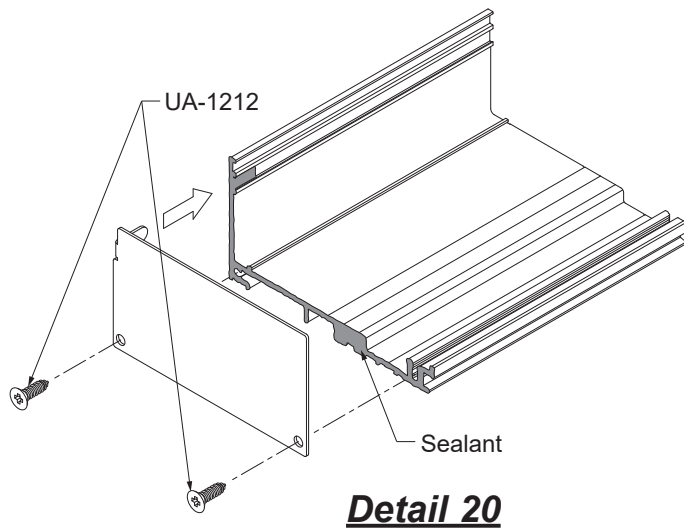
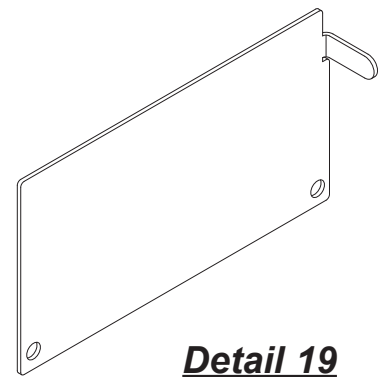
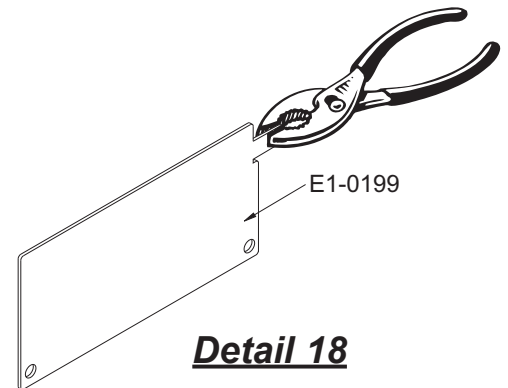
-Slide the tab into the top portion of the sill flashing.

-Tap the tab into place with a small tool until the end dam is snug against the end cut of the flashing.

-Fasten the end dam to the sill flashing with two UA-1212 screws, starting at the back, followed by the front as shown in **Detail 20**.

-Tool sealant along the joint between the end dam and the sill flashing as shown in **Detail 21**.

-Seal over any exposed screw threads.



FRAME INSTALLATION

STEP 10

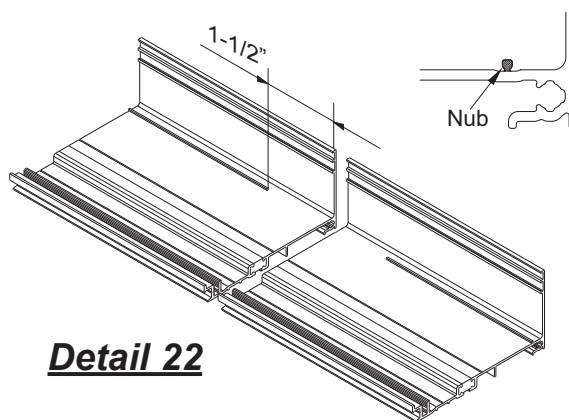
INSTALL SILL FLASHING

- Install the sill flashing with a minimum of 3/8" shim underneath. Sill flashing must be installed level.
- Anchor the sill flashing to the structure a maximum of 4" from each end and then 18" to 24" on center, or per P.E. calculations.
- Apply and tool sealant to cover the heads of all anchors and screws.

STEP 11

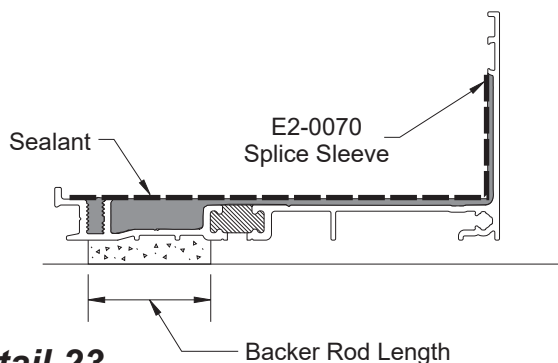
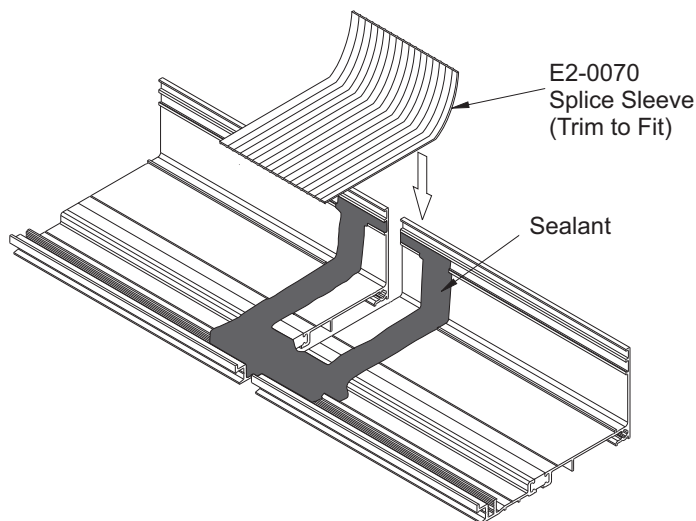
INSTALL SILL FLASHING SPLICE SLEEVE

- Remove the nub with a chisel or pliers on both sides of the splice joint 1-1/2" as shown in **Detail 22**.
- After the sill flashing has been shimmed and installed to the building structure, insert a small backer rod under the sill flashing as shown in **Detail 23**.
- Position the Silicone Splice Sleeve against the back wall below the groove.
- Bend the Silicone Splice Sleeve into the front on the channel as shown. Mark and cut the sleeve at this position.
- Clean Sill Flashing and Silicone Splice Sleeve with isopropyl alcohol at the splice location.
- Seal the flashing at the splice location as shown in **Detail 23**, before positioning the flashing. Set the Silicone Splice Sleeve into the sealant.
- Tool sealant tight as shown in **Detail 24**, squeezing the sheet flat with a seam roller.



Detail 22

When using E2-0070, a compatible Silicone Sealant must be used at the splice. Compatible Silicone Sealants include Tremco® Spectrum 2 and Dow Corning® 795.



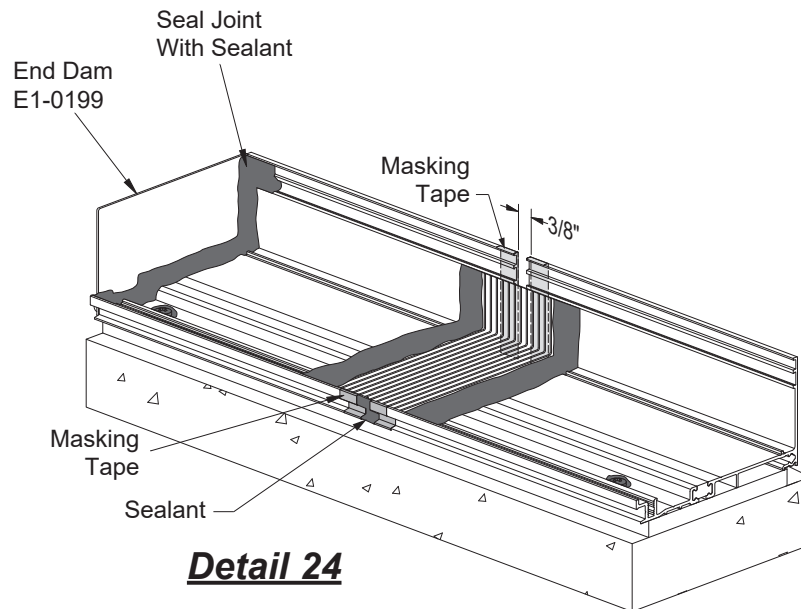
Detail 23

FRAME INSTALLATION

STEP 11

INSTALL SILL FLASHING SPLICE SLEEVE (Continued)

- Apply masking tape to the back of the sill flashing at the splice and at the front as shown in **Detail 24**.
- Thoroughly seal the small joint directly in front of the Silicone Splice Sleeve. Carefully remove masking tape from the front gap before the sealant skins over.

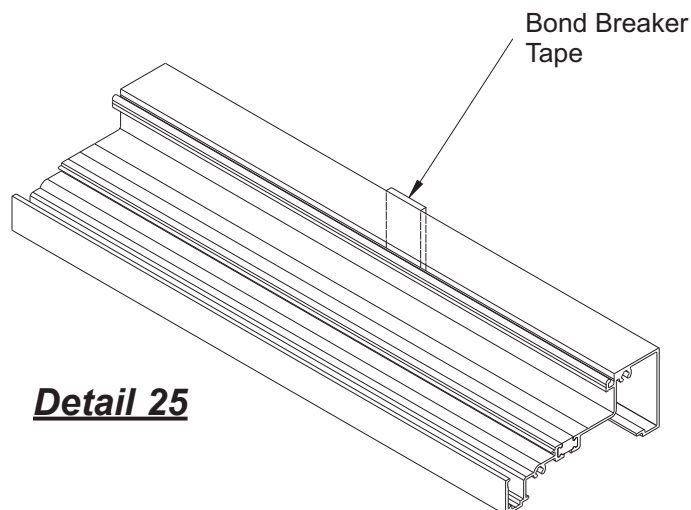


STEP 12

SILL PREPARATION

At every splice condition, apply bond breaker tape to the back of the sill member before the joint is sealed between the sill and sill flashing.

See **Detail 25**.

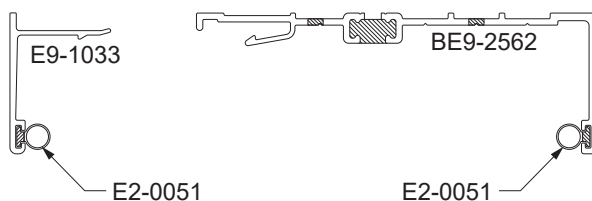


FRAME INSTALLATION

STEP 13

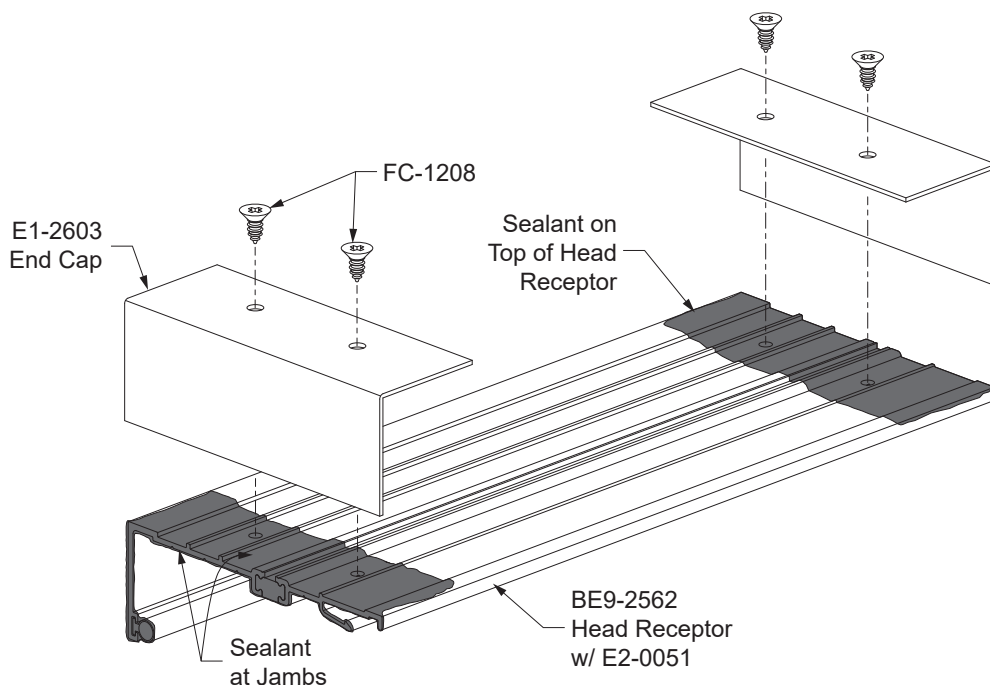
ATTACH HEAD RECEPTOR END CAPS

-Cut E2-0051 bulb gaskets to the same length as the head receptor and insert them into the reglet of both the BE9-2562 head receptor and E9-1033 snap cover. See **Detail 26**.



Detail 26

- Clean all joint surfaces using cleaner approved by sealant manufacturer.
- Apply sealant to the end of the head receptor as shown in **Detail 27**.
- Fasten the E1-2603 end caps to each jamb using two FC-1208 fasteners.
- Tool sealant to the inside of the end caps at the jambs similar to that for the sill flashing end dams (see **Detail 29**). Tape down the top corners to hold the end cap in place until the sealant cures.



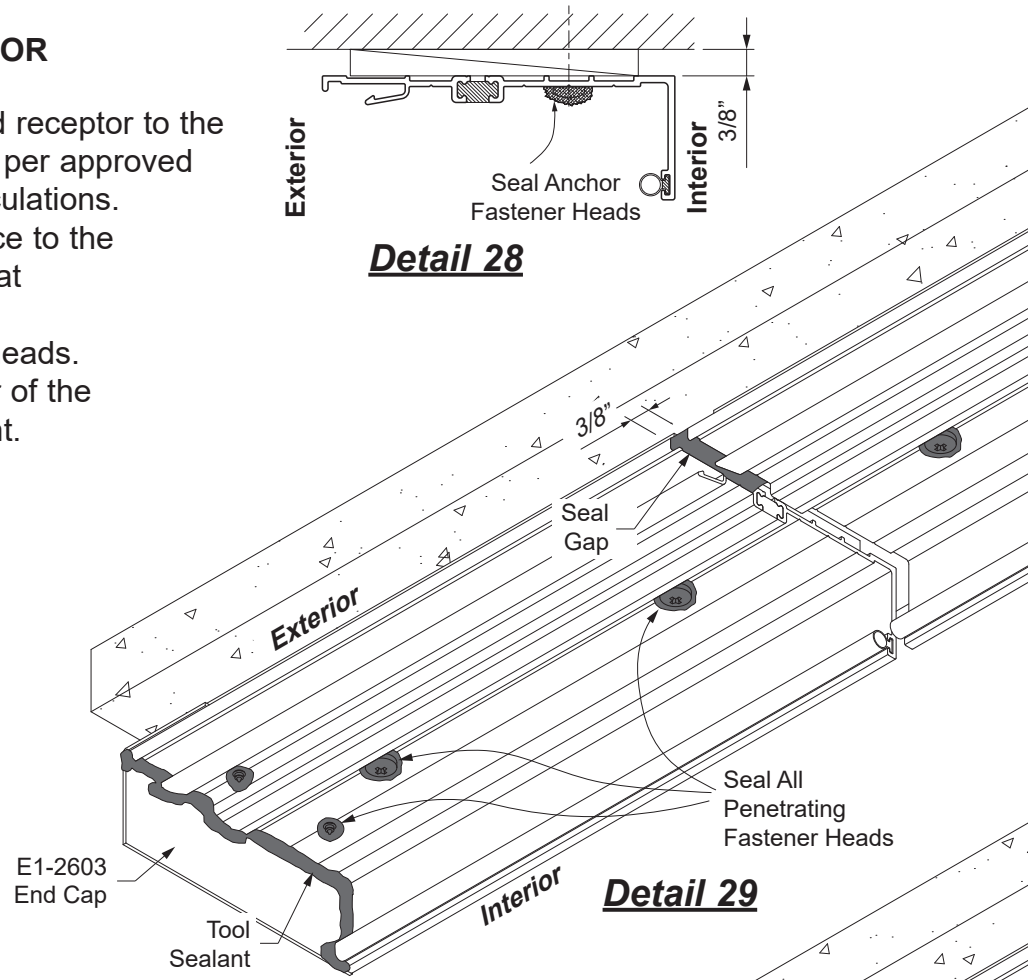
Detail 27

FRAME INSTALLATION

STEP 13A INSTALL HEAD RECEPTOR

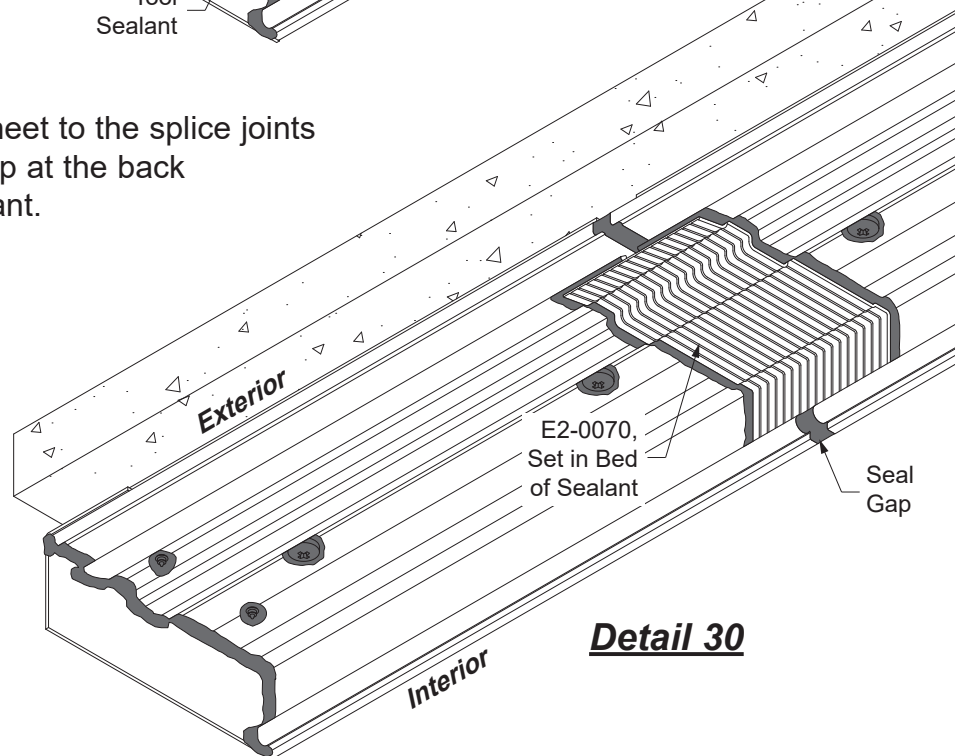
- Install the BE9-2562 head receptor to the substrate using fasteners per approved shop drawing or P.E. calculations. Allow for a 3/8" shim space to the substrate and a 3/8" gap at the splice joints.
- Seal all anchor fastener heads.
- Fill the gap at the exterior of the head receptor with sealant.

See **Details 28 & 29.**



- Adhere an E2-0070 silicone sheet to the splice joints on a bed of sealant. Fill the gap at the back of the head receptor with sealant.

See **Detail 30.**



FRAME INSTALLATION

STEP 14

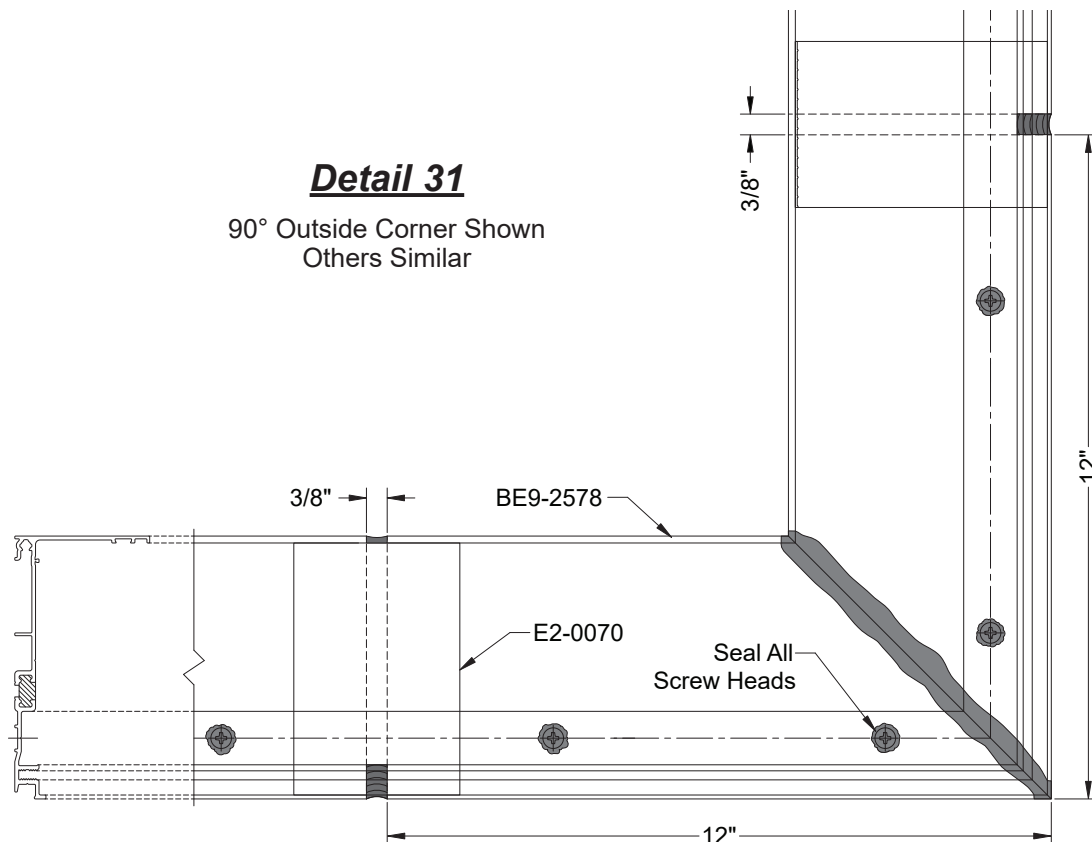
INSTALL SILL FLASHING AT CORNERS *

- Cut two 12" long pieces of sill flashing BE9-2578 and miter (45° for 90° corners and 67.5° for 135° corners).
- Align the two pieces at the corner condition with the mitered ends pushed together tight and anchor the sill flashing as called out on shop drawings.
- Apply and tool sealant to the mitered joint and anchor heads.

See **Detail 31**.

- Continue installing the rest of the sill flashing providing a 3/8" expansion joint at splices as shown in **Step 11** on **Page 18**.

* **Note:** Similar technique required for BE9-2562 head receptor.



FRAME INSTALLATION

STEP 15

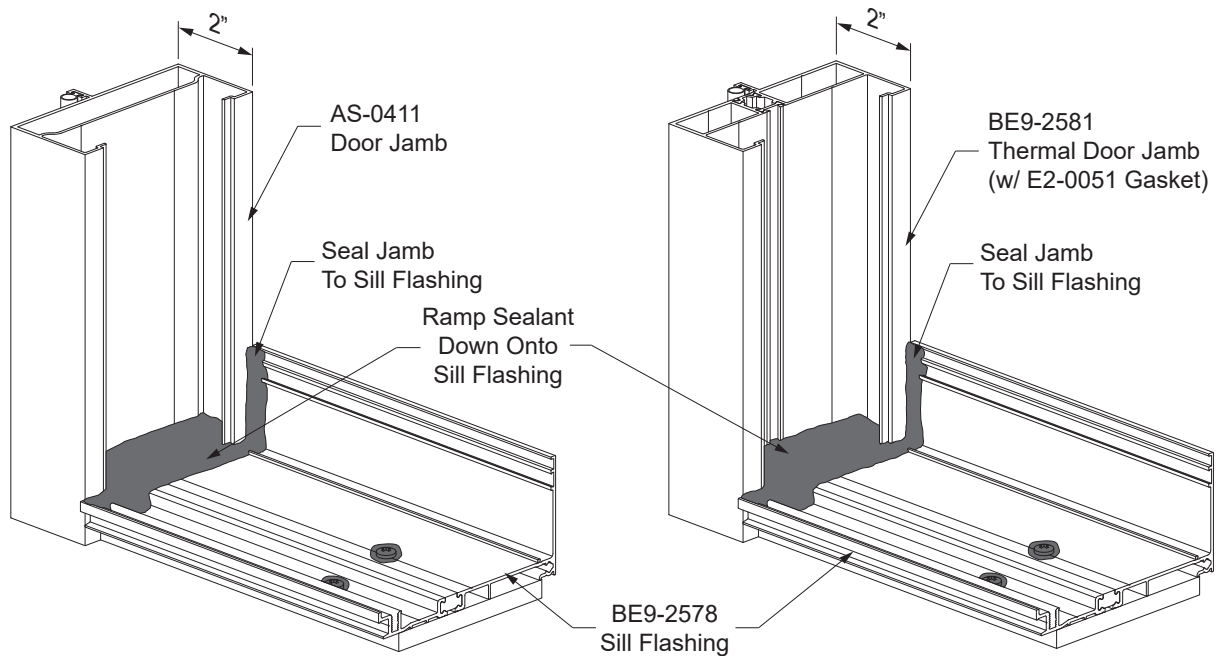
PREPARE DOOR JAMBS

Prior to snapping the assembled frames into the door jamb, the end of the sill flashing needs to be sealed to the door jamb.

- Apply and tool sealant to all sill flashing to door jamb joints.
- Apply sealant to completely fill the door jamb cavity and ramp the sealant down onto the sill flashing.

See **Detail 32**.

Refer to the **Entrances Installation Manual** for door installation instructions.



Detail 32

FRAME INSTALLATION

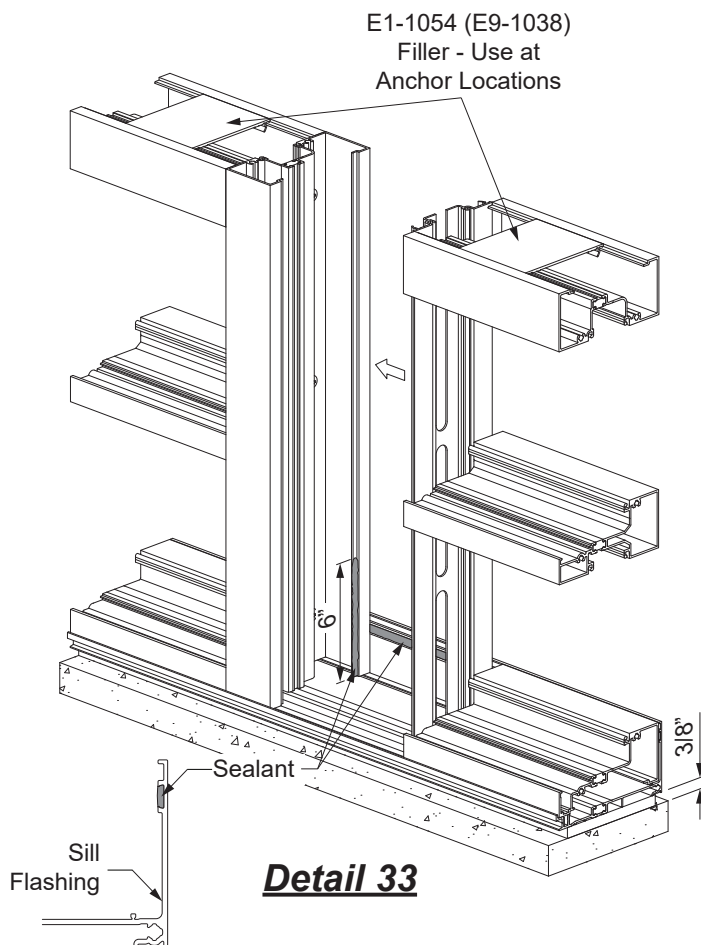
STEP 16 INSTALL FRAMES

- Snap in flat fillers, E1-1054, or 2-1/2" long pieces of E9-1038 at head and jamb anchor locations.
- Prior to snapping the assemble frames together, apply sealant to the interior snap interface of the mullion, 6" up from the bottom.
- Apply sealant continuously to the front of the back leg of the sill flashing and immediately set the frame into the opening.
- Snap assembled frames together if using screw spline assembly.

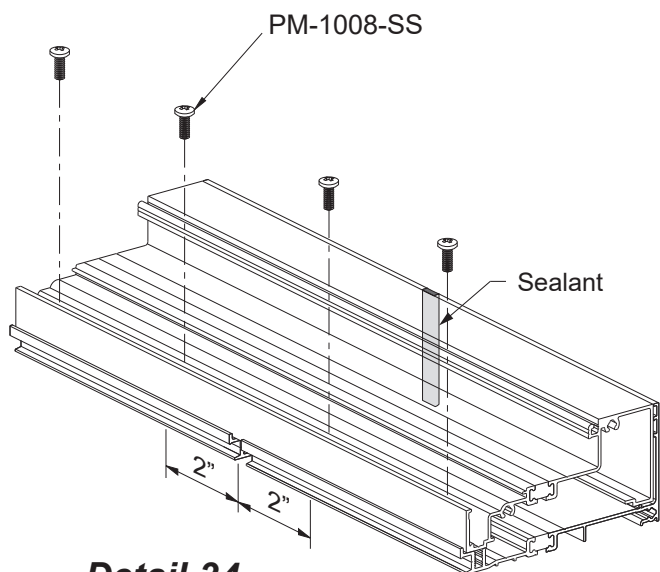
See **Detail 33**.

- Shim jamb and head members with a minimum of 3/8" shim.
- Anchor the frame to the structure at the sill, head, and jamb: 3" from the ends and then 18" to 24" on center, or as required by P. E. calculations.
- Always install a shim at all anchor locations.

Note: Use only flat head fasteners at head and jamb conditions.



Detail 33



Detail 34

- For mullion end load reactions over 500 lbs., attach the sill to the sill flashing using PM-1008-SS screws.
- Also add one (1) PM-1008-SS fastener 2" in both directions from the center line of the splice.

-Apply and tool sealant to the gap in the back of the sill flashing splice. Carefully remove the masking tape before the sealant skins over.

See **Detail 34**.

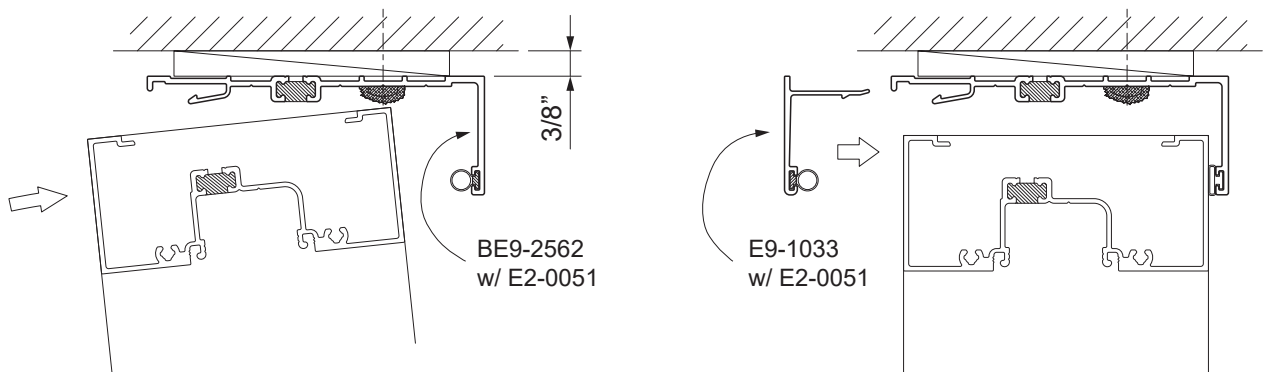
FRAME ASSEMBLY

STEP 16 (Continued)

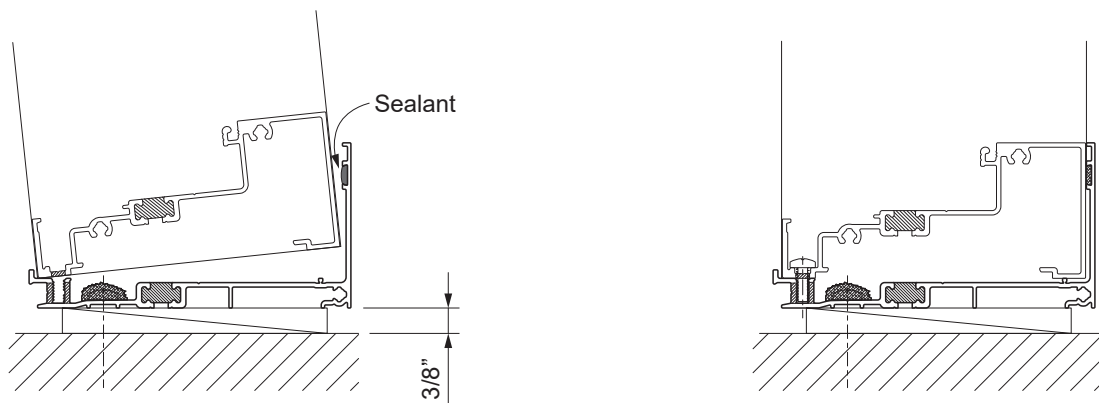
INSTALL FRAMES W/ HEAD RECEPTOR

- Rotate the assembled frames into position from the exterior, ensuring engagement into the sill flashing.
- Snap on the E9-1033 snap cover (with E2-0051 bulb gasket) into the head receptor.
- For mullion end load reactions over 500 lbs., attach the sill to the sill flashing using PM-1008-SS screws. Also add one (1) PM-1008-SS fastener 2" in both directions from the center line of the splice.

See **Detail 35**.



Detail 35



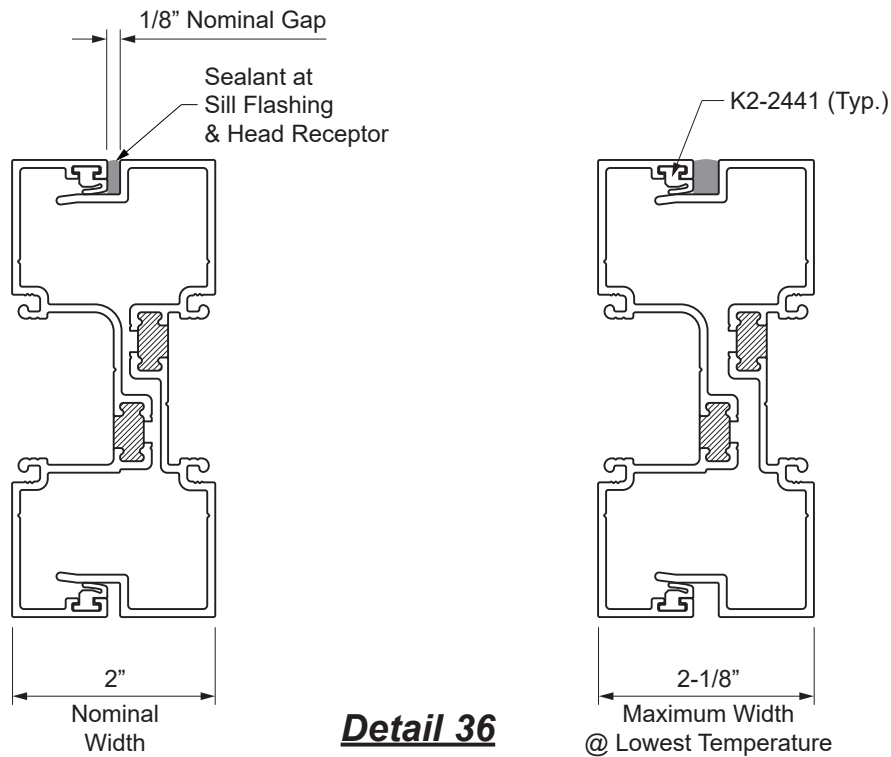
FRAME ASSEMBLY

STEP 16 (Continued)

INSTALL EXPANSION MULLIONS WHERE REQUIRED

- Expansion mullions require the K2-2441 weathering gasket in both front and rear reglets.
- During installation, the current air temperature should be taken into account to determine the proper spacing between the mullion halves such that the expansion mullion stays within its allowable width limits during its service in hot and cold weather conditions.
- Fill the interior gap between the mullion halves with sealant at the sill flashing and head receptor.

See **Detail 36**.

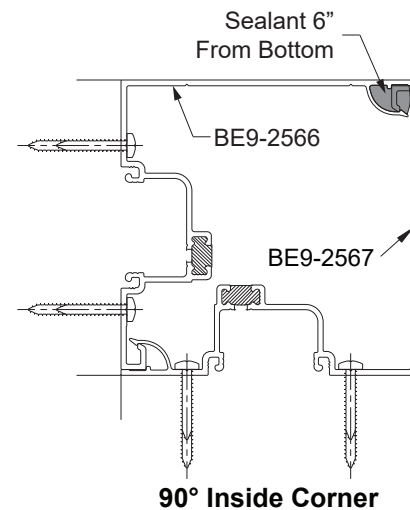
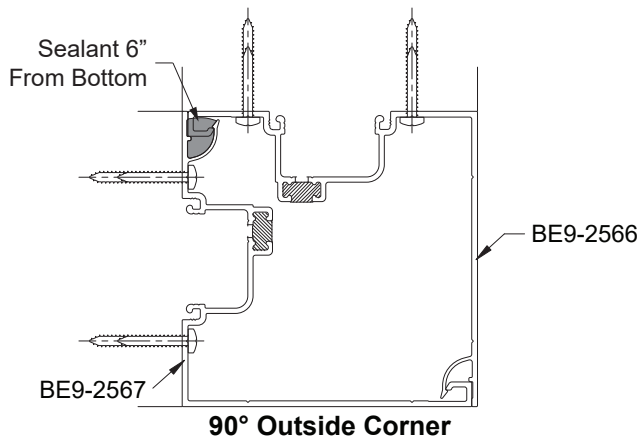


FRAME ASSEMBLY

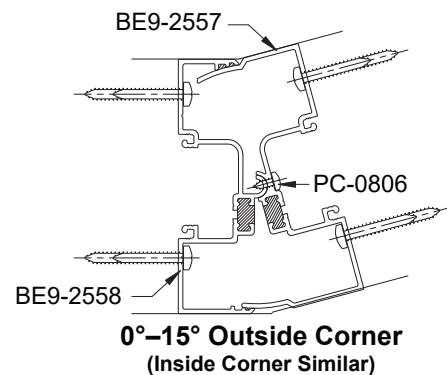
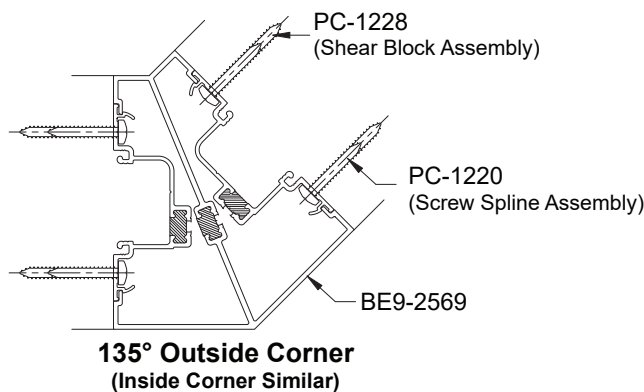
STEP 16 (Continued) INSTALL CORNER ASSEMBLIES

- Attach horizontal members to standard mullions as shown before in **Step 7**.
- Attach the other end of the horizontals to the corner mullions, hinged mullions, or flat fillers using the same technique.
- Apply sealant to the interior snap receptor of the corner mullion, 6" up from the bottom.
- Snap the corner framing members together to form the corner assemblies.
- Hinged mullions must be fastened through the pivot hinge 6" from each end and no more than 18" on center with PC-0806 fasteners.
- Carefully move the corner assembly into place and snap it into the rest of the frame one side at a time.

See **Detail 37**.



Detail 37



FRAME INSTALLATION

STEP 16 (Continued)

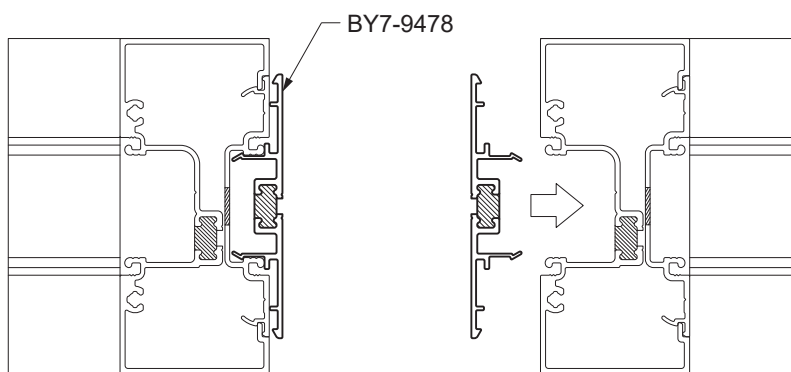
INSTALL OPTIONAL COMPOUND MULLIONS

-Snap in the BY7-9478 adaptors (cut full length of the mullion) into the mullions for each frame as shown in **Detail 38**.

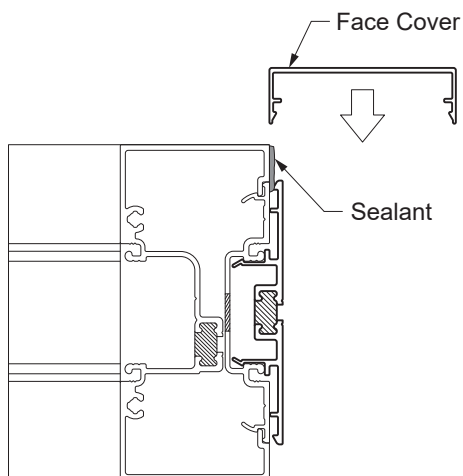
-Apply sealant to the full length of the first mullion for which the rear face cover will snap into.

-Snap the face cover into place.

See **Detail 39**.



Detail 38



Detail 39

FRAME INSTALLATION

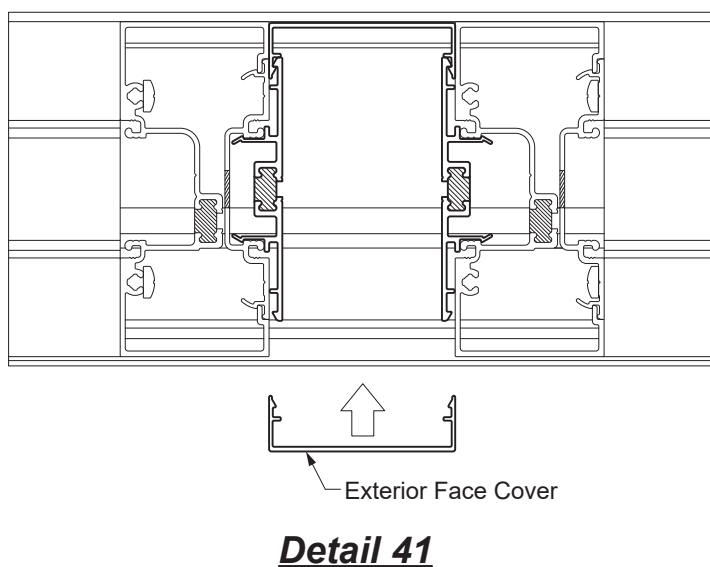
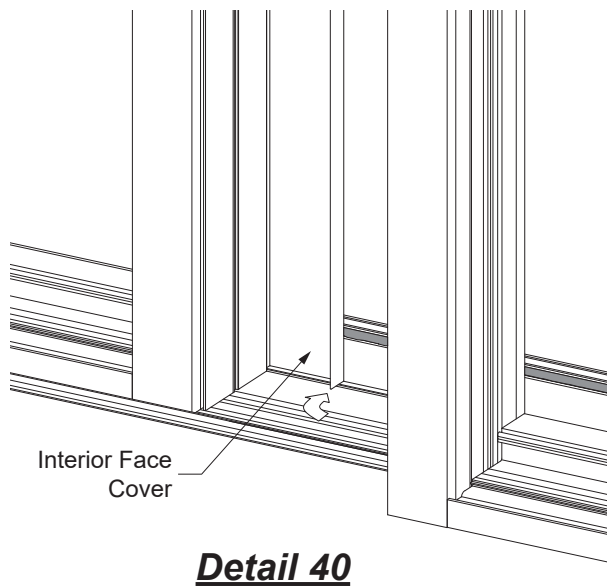
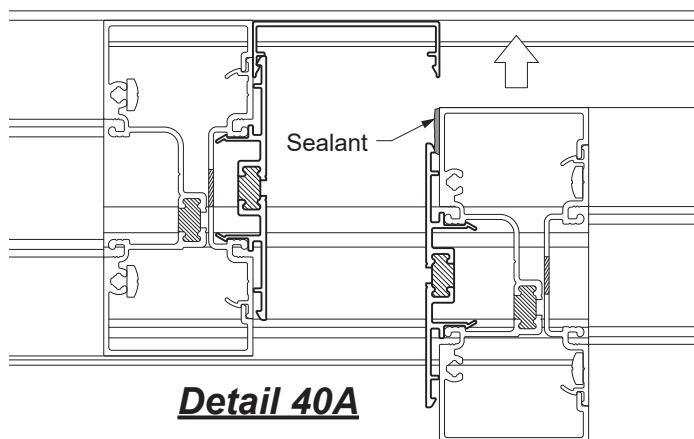
STEP 16 (Continued) INSTALL OPTIONAL COMPOUND MULLIONS

-Apply sealant to the full length of the mullion for the second frame.

-Snap the second frame into place from the front, engaging the face cover as shown in **Details 40 & 40A**.

-Snap the front face cover into both frames. Start at the sill to clear the front lip of the sill flashing.

See **Detail 41**.



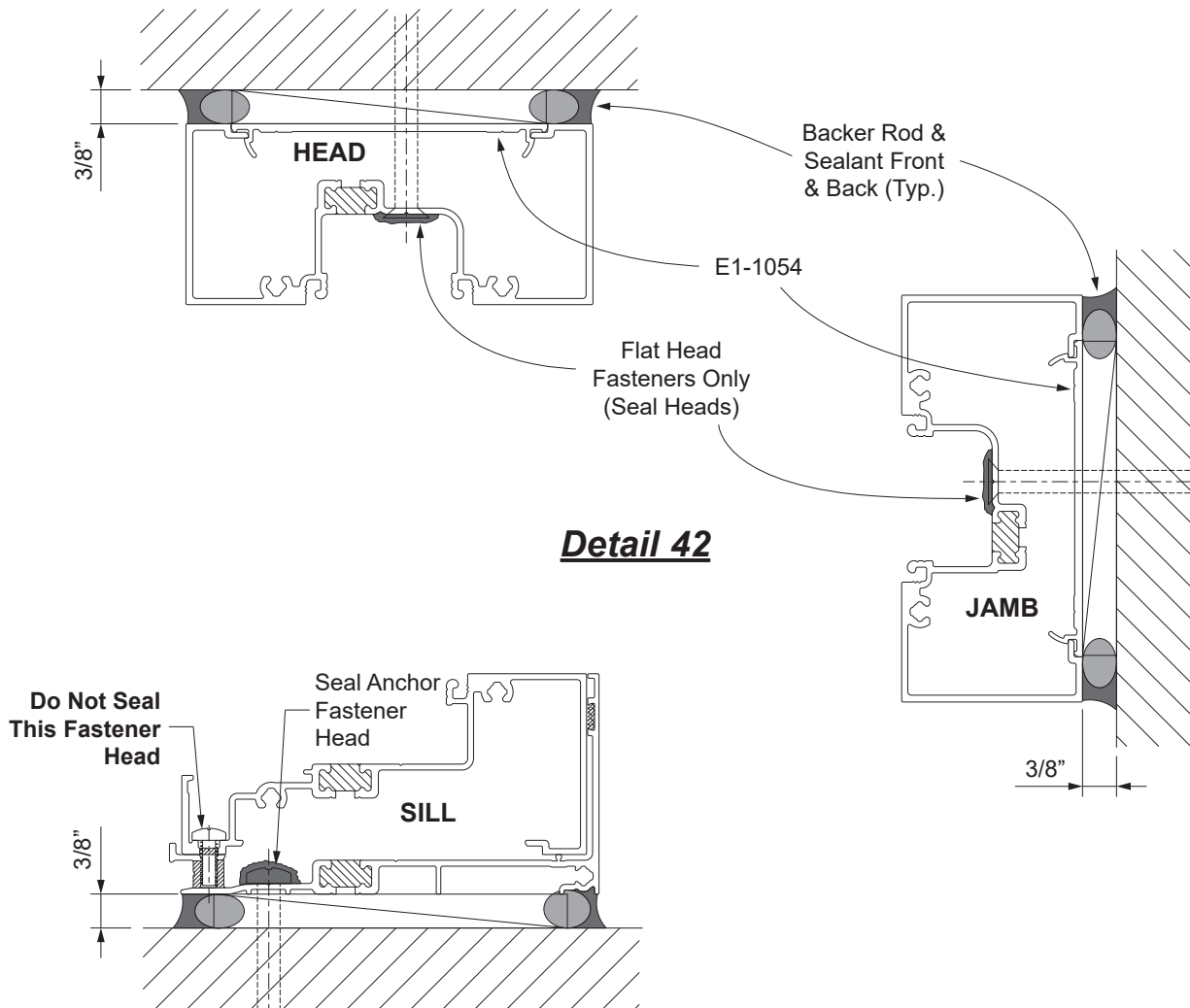
FRAME INSTALLATION

STEP 17

APPLY PERIMETER SEALANT

- Perimeter seal required on interior and exterior.
- Install backer rod around the perimeter of the frame.
- Apply and tool perimeter sealant to the joint between the frame and the structure.
- Do not** seal the anchor that attaches the sill to the sill flashing.
- Seal anchor heads at head and jambs.

See **Detail 42**.



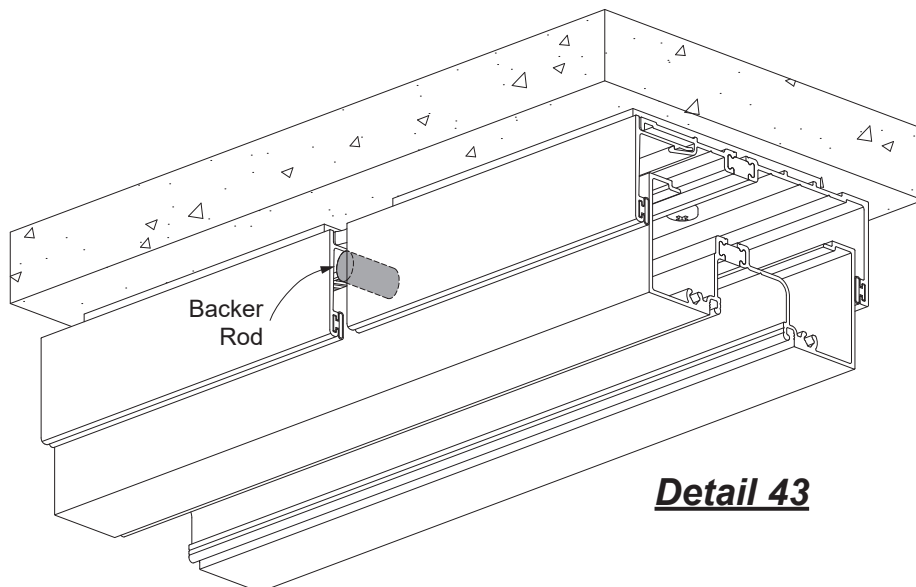
FRAME INSTALLATION

STEP 17A

APPLY PERIMETER SEALANT @ HEAD RECEPTOR

-Insert backer rods as required into the head receptor snap cover to provide support for sealant at the exterior gap.

See **Detail 43**.

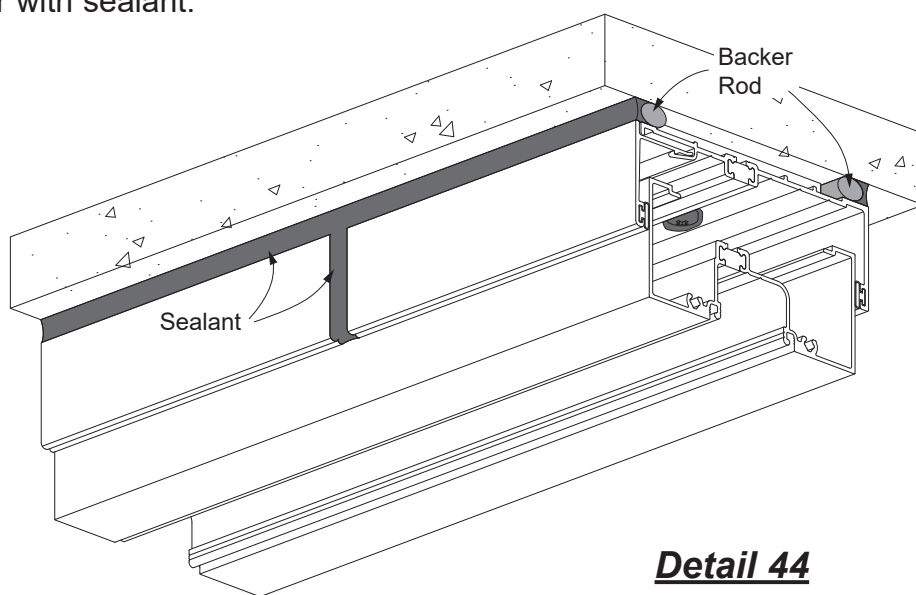


Detail 43

-Insert a continuous backer rod between the head receptor and substrate on both the interior and exterior of the frame.

-Apply and tool continuous sealant along the caulk joint and fill the gap at the exterior snap cover with sealant.

See **Detail 44**.



Detail 44

FRAME INSTALLATION

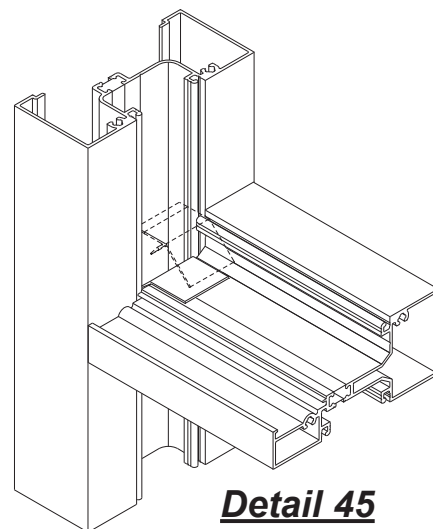
STEP 18 INSTALL WATER DEFLECTORS

YES 45 TU requires the installation of a water deflector, E2-0047, at the ends of every intermediate horizontal to keep water off of the insulating glass units (IGU). Optional compound horizontals require water deflectors at the ends of both horizontal members.

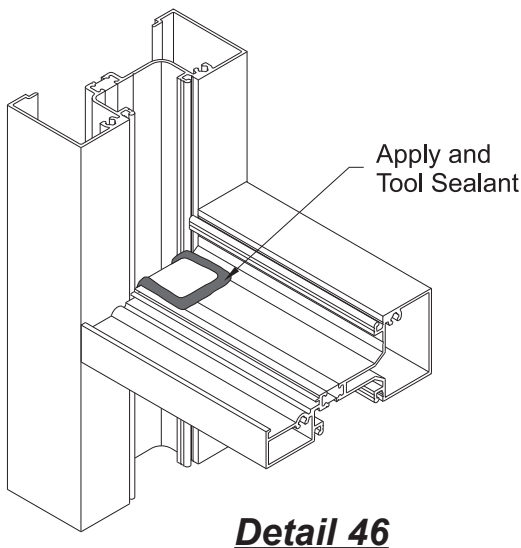
- Peel away the protective paper from the bottom of the water deflector, E2-0047, and install the water deflector by rotating it over each end of the horizontal.
- Position the vertical leg of the water deflector against the end of the horizontal.

Note: For best adhesion, make sure that the horizontal is clean and dry.

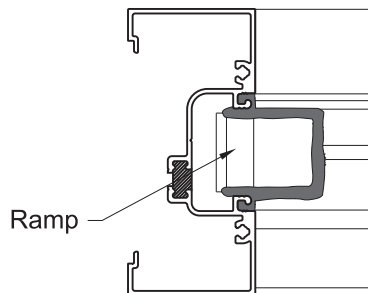
See **Detail 45**.



Detail 45



Detail 46



Detail 47

-Apply and tool sealant along the edges of the water deflector and down onto the horizontal.
See **Detail 46**.

-Seal the ramp of the water deflector to the sides of the vertical gasket reglets.
See **Detail 47**.

FRAME INSTALLATION

STEP 19

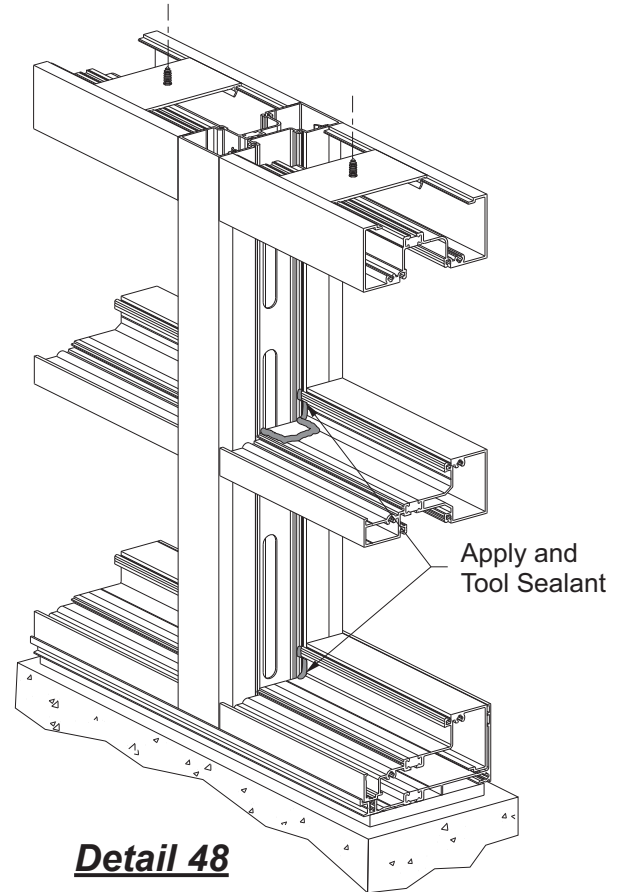
APPLY INTERNAL SEALANT

- Apply sealant to the vertical intersection of the horizontal and vertical members.
- Tool all of the sealant to ensure a water-tight joint.

See **Detail 48**.

Glazing Table: YES 45 TU

Glass Thickness	Adaptor	Exterior Gasket	Interior Gasket
1/8"	E9-1040	E2-0064	E2-0064
3/16"	E9-1040	E2-0052	E2-0064
1/4"	E9-1040	E2-0052	E2-0052
5/16"	E9-1040	E2-0053	E2-0052
3/8"	E9-1040	E2-0053	E2-0053
1/2"	E9-1039	E2-0064	E2-0064
9/16"	E9-1039	E2-0052	E2-0064
5/8"	E9-1039	E2-0052	E2-0052
11/16"	E9-1039	E2-0053	E2-0052
3/4"	E9-1039	E2-0053	E2-0053
7/8"	-	E2-0064	E2-0064
15/16"	-	E2-0052	E2-0064
1"	-	E2-0052	E2-0052
1-1/16"	-	E2-0053	E2-0052
1-1/8"	-	E2-0053	E2-0053



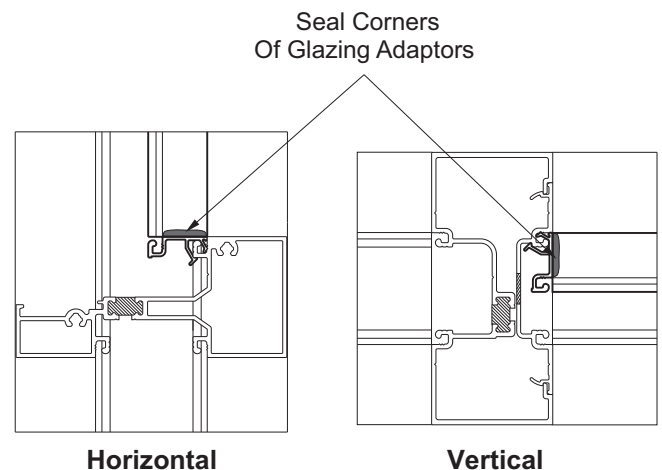
STEP 20 (Optional)

INSTALL GLAZING ADAPTORS

Please refer to the glazing table above for possible adaptor/gasket combinations.

- Snap glazing adaptors into the interior gasket reglets of the verticals.
- Snap glazing adaptors into the interior gasket reglets of the horizontals.
- Apply and tool sealant to the joint between vertical and horizontal glazing adaptors.

See **Detail 49**.



Detail 49

FRAME INSTALLATION

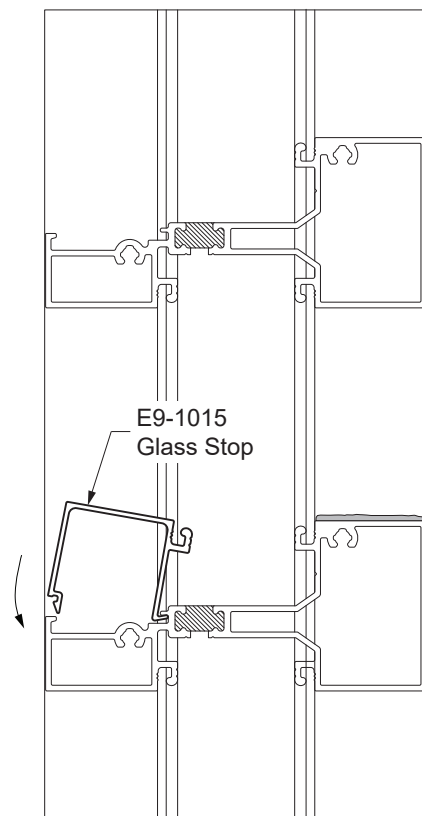
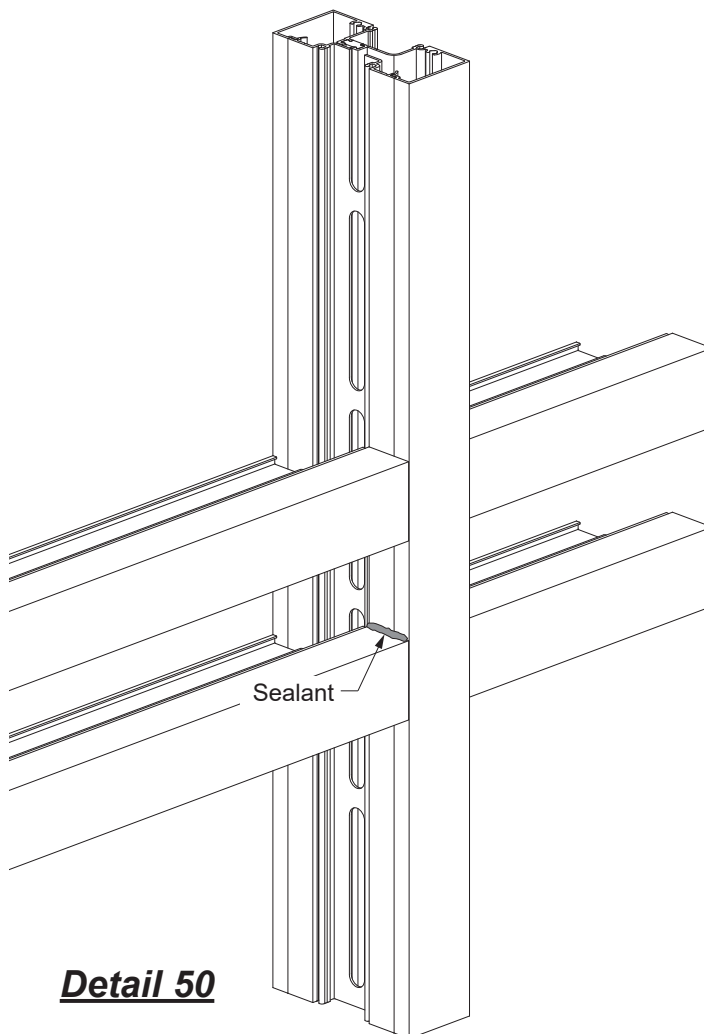
STEP 21 (Optional) INSTALL OPTIONAL COMPOUND HORIZONTALS

-Apply sealant to the top of of the lower horizontals where they intersect with the vertical. Tool the sealant. Do not seal the upper horizontal.

See **Detail 50**.

-Snap the E9-1015 glass stop into the lower horizontal as shown in **Detail 51**. Do not snap glass stops into the upper horizontals yet.

Note: Outside glazing shown, inside glazing similar.



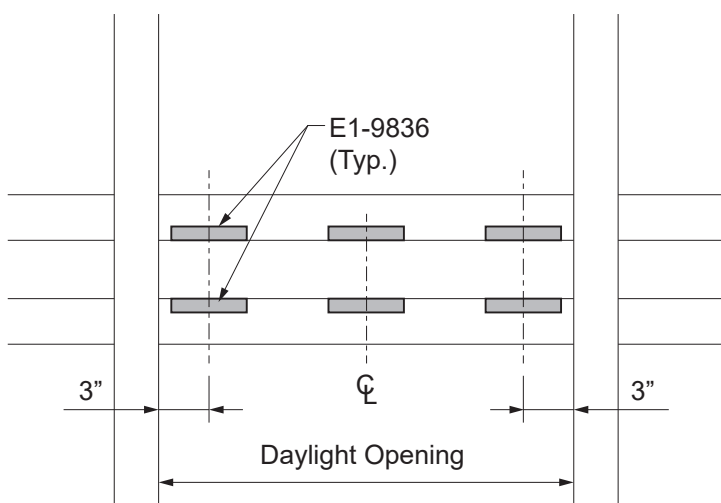
Note: Prior to snapping the glass stops onto an inside glazed storefront, apply sealant to the ends of the glass stops as illustrated in **Step 25A on Page 40**.

FRAME INSTALLATION

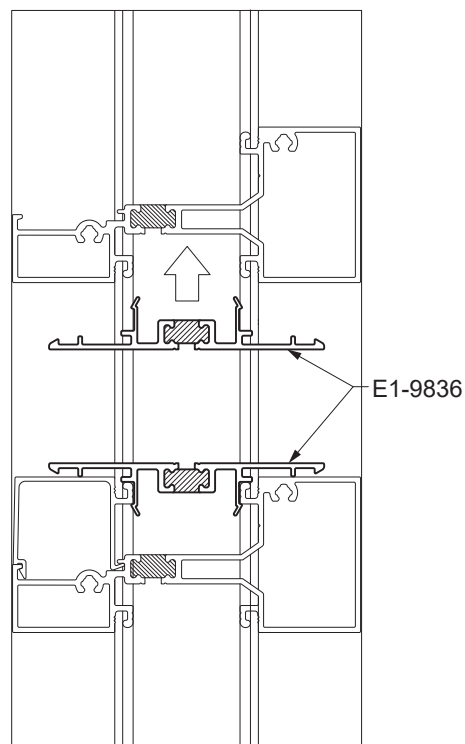
STEP 21 (Optional, Continued)

INSTALL OPTIONAL COMPOUND HORIZONTALS

-Snap in the E1-9836 adaptors into the horizontals, one at 3" from each end of each horizontal and one at the middle of each horizontal as shown in **Details 52 & 53**.



Detail 52



Detail 53

FRAME INSTALLATION

STEP 21 (Optional, Continued)

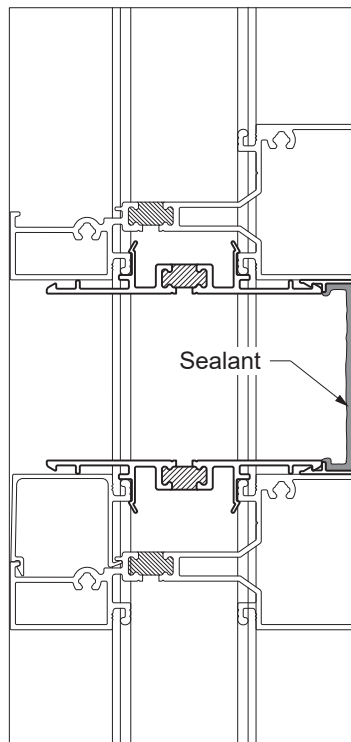
INSTALL OPTIONAL COMPOUND HORIZONTALS

-Cut the front and rear horizontal face covers to Daylight Opening minus(-) 1/16". Apply continuous sealant to the full length of the back of both horizontals where the rear face cover will snap into as shown in **Detail 54**. Snap the rear face cover into place.

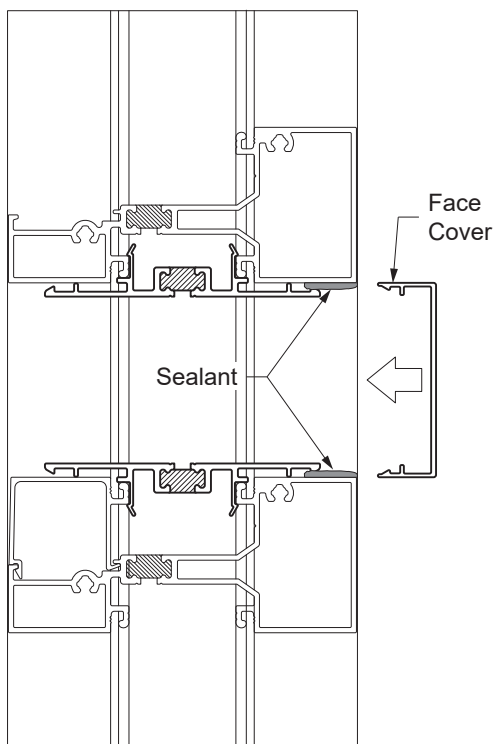
-Seal the joint between the edge of the face cover and the verticals as shown in **Detail 55**.

-Snap the front face cover into place.

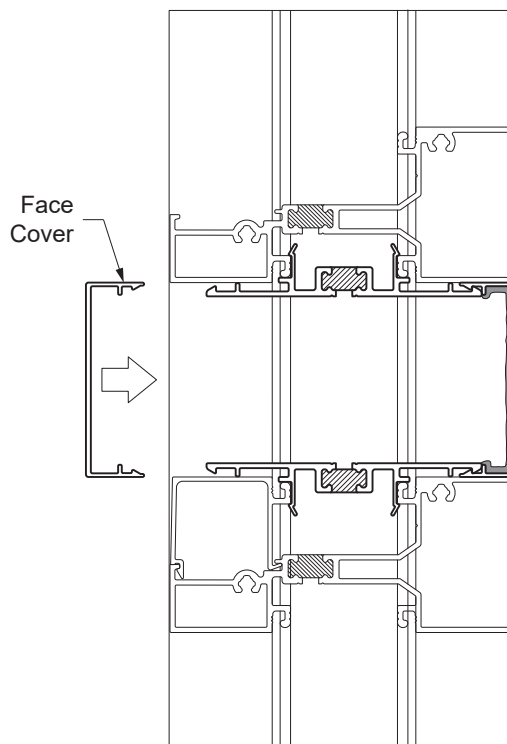
See **Detail 56**.



Detail 55



Detail 54



Detail 56

GLAZING

STEP 22

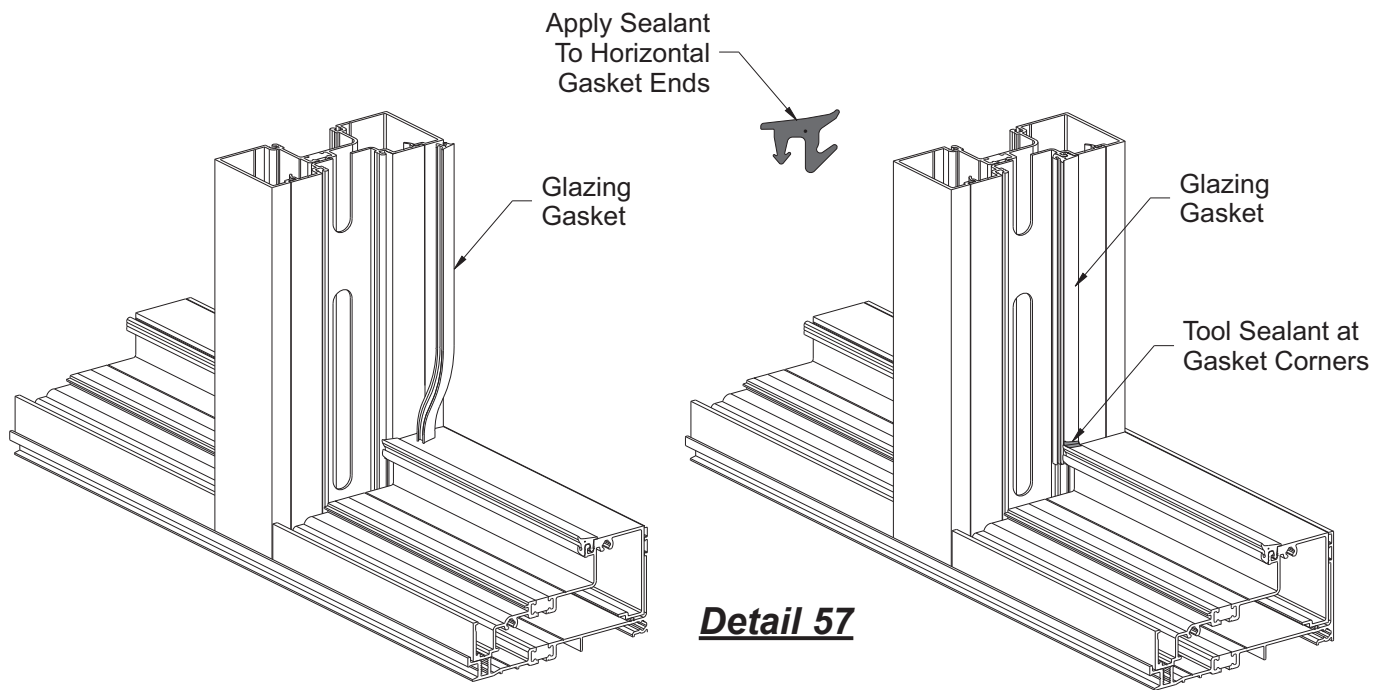
INSTALL INTERIOR GLAZING GASKETS

The interior glazing gaskets must be installed prior to the glazing process.

-Using a small brush clean out any dirt that may have accumulated in the gasket reglets.

Vertical glazing gaskets must be installed first:

- Cut vertical glazing gaskets to Daylight Opening plus(+) 1/4" for each foot of length.
- Insert the gasket into the reglet at each end first, and then insert the gasket at the midpoint of the opening.
- Push the gasket into the reglet starting at the midpoint and work towards each end.



Install horizontal glazing gaskets next:

- Cut horizontal glazing gaskets to Daylight Opening plus(+) 1/4" for each foot of length.
- Apply sealant to each end of the horizontal glazing gasket prior to inserting into the reglet.
- Insert the gasket into the reglet at each end first and push each end tight against the vertical gasket.
- Then insert the gasket at the midpoint of the opening and push the gasket into the reglet starting at the midpoint and work towards each end.
- Tool the excess sealant at the gasket corners to ensure a watertight seal.

See **Detail 57**.

GLAZING

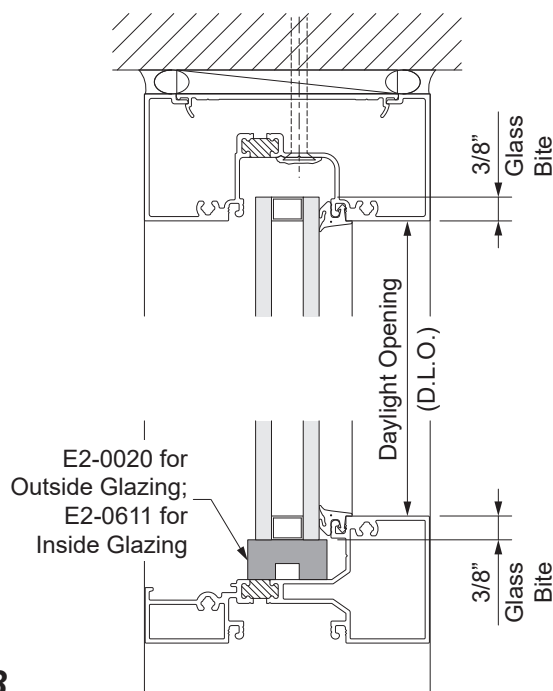
STEP 23 INSTALL GLASS

Determine the glass size:

Horizontal Glass Size = D.L.O. plus(+) 3/4"
Vertical Glass Size = D.L.O. plus(+) 3/4"

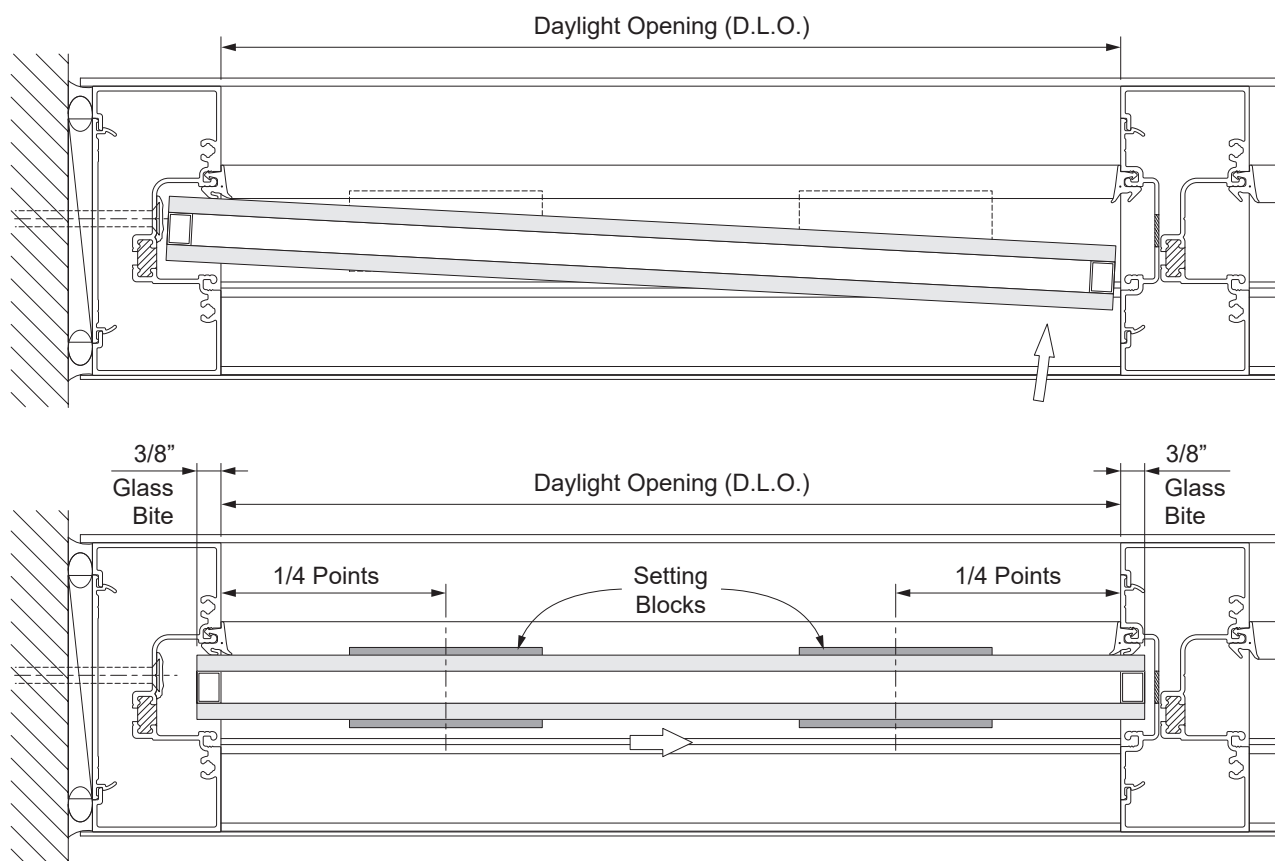
- Insert setting blocks in the glazing pocket of the sill and horizontals at quarter points of the horizontal D.L.O. or according to engineering calculations.
- Carefully install the glass into the opening: insert the leading edge of the lite up and into the deep pocket first and then rotate the trailing edge in place, maintaining a 3/8" glass bite all around.
- Ensure the glass is properly positioned on all setting blocks.

See **Detail 58**.



Detail 58

Outside Glazed Shown
Inside Glazed Similar



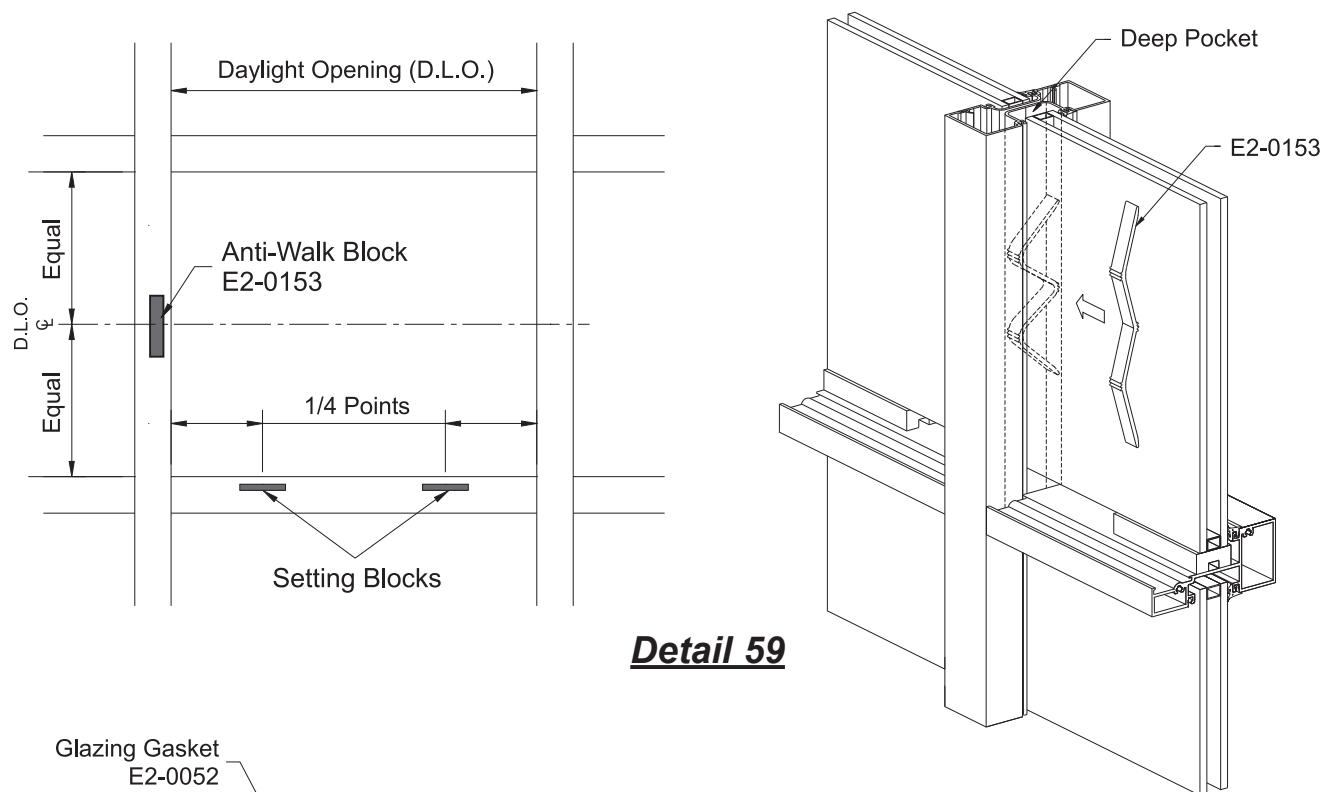
GLAZING

STEP 24 INSTALL ANTI-WALK BLOCKS

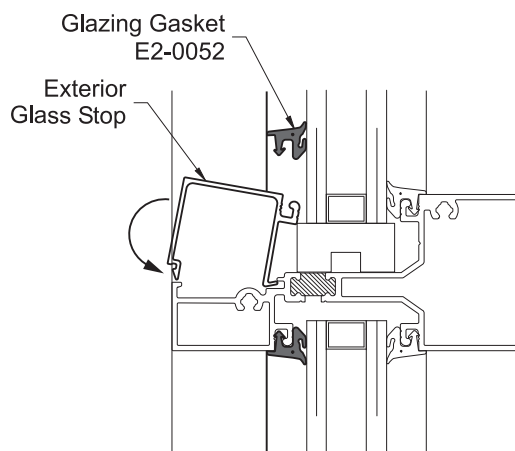
YES 45 TU frames require the installation of an anti-walk block, E2-0153, in the deep mullion glazing pocket of each lite centered on the daylight opening.

- Flatten the anti-walk block against the exterior surface of the glass and push it into the opening between the glass and the mullion until it is released into the glazing pocket.

See **Detail 59**.



Detail 59



Detail 60

STEP 25 INSTALL EXTERIOR GLASS STOPS & GLAZING GASKETS

- Snap the exterior glass stops into place as shown in **Detail 60**.

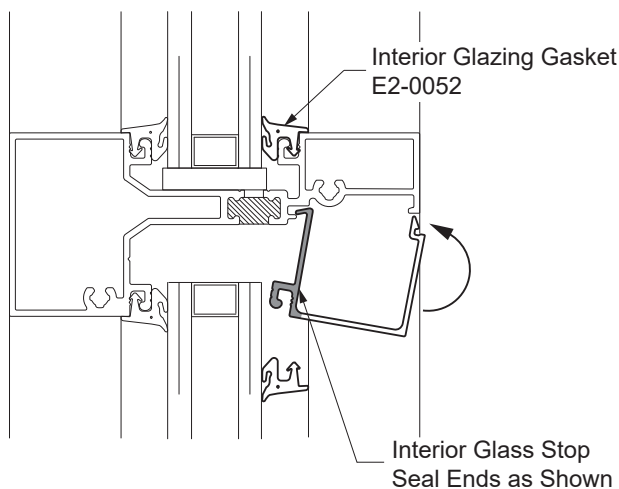
- Install the exterior glazing gaskets using the same technique described in **Step 22** on **Page 37**. Always install the vertical glazing gasket first.

Repeat **Steps 23 through 25** until all lites are installed.

GLAZING**STEP 25A****INSTALL INTERIOR GLASS STOPS & GLAZING GASKETS**

- Apply sealant to the interior glass stops as shown in **Detail 61**.
- Snap the interior glass stops into place. Wipe off excess sealant.
- Install the interior glazing gaskets using the same technique described in **Step 22** on **Page 37**. Always install the vertical glazing gasket first.

Repeat **Steps 23 through 25A** until all lites are installed.



Detail 61



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