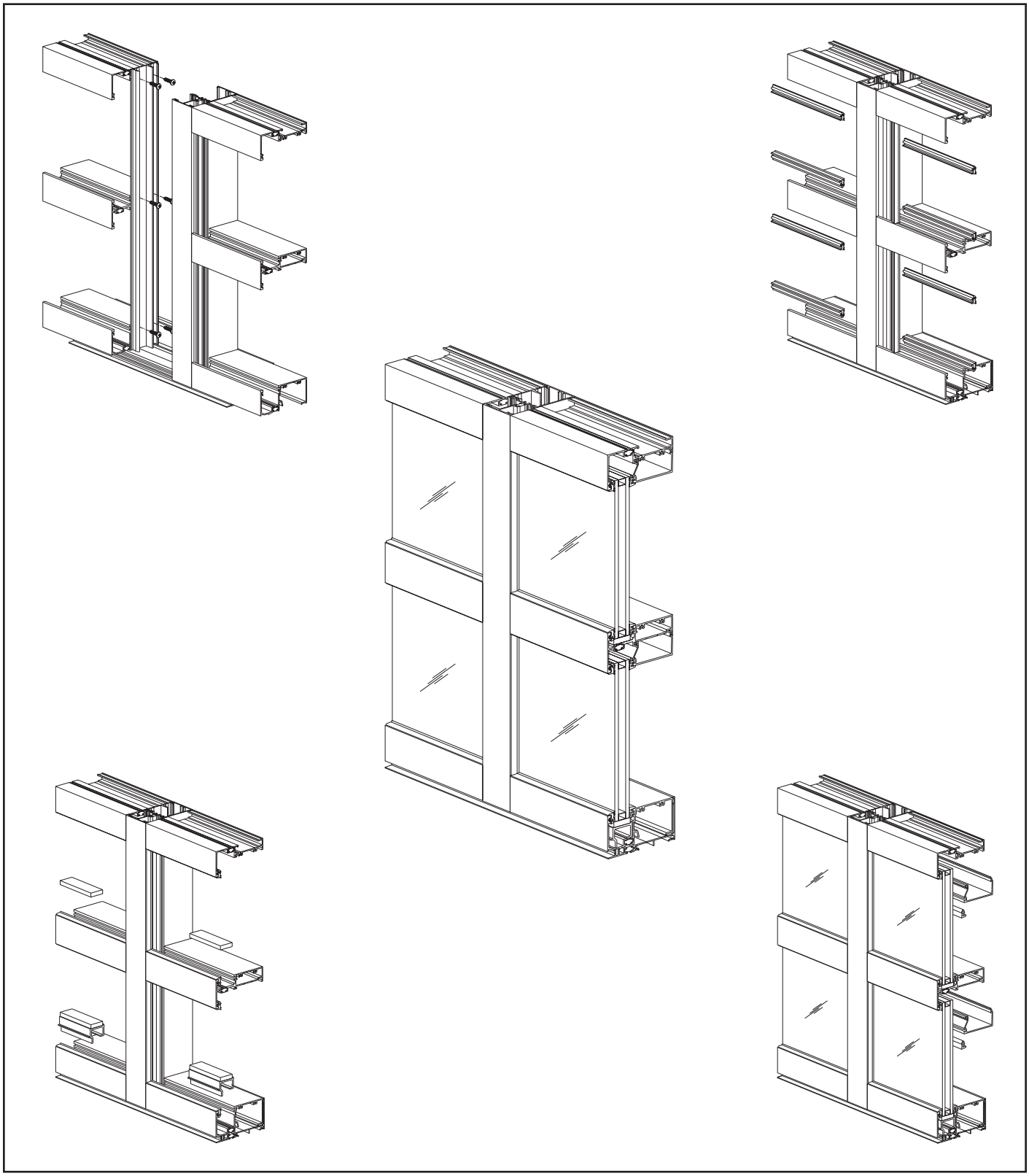
YWW 45 FI/TU Window Wall System



Installation Manual

TABLE OF CONTENTS

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 quantity and quality 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 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 that 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.

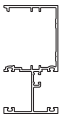
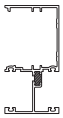
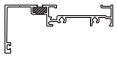
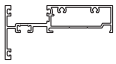
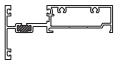
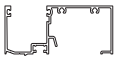
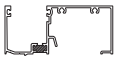
11. If any questions arise concerning YKK AP products or their installation, contact YKK AP for clarification before proceeding.

12. YKK AP store front and/or curtain wall framing is typically completed before drywall, flooring and other products that may still be in process. Take the extra time to wrap and protect work produced.

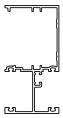
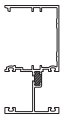
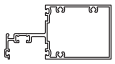
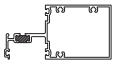
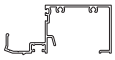
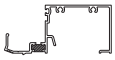
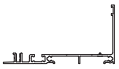
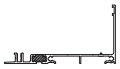
13. Cutting tolerances are plus zero, minus one thirty second unless otherwise noted.

14. Check our website, www.ykkap.com, for the latest installation manual update prior to commencing work.

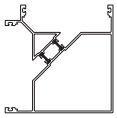
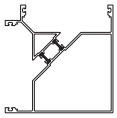
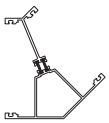
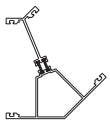
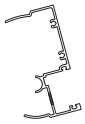
IG VERTICAL THROUGH FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	**Jamb**	**E9-2703**		**Jamb**	**BE9-2703**
	**Two Piece Vertical**	**E9-2701**		**Two Piece Vertical**	**BE9-2701**
	**Vertical Filler** Use with E9-2701	**E9-1702**		**Vertical Filler** Use with BE9-2701	**E9-1702**
	**Expansion Mullion** Female	**E9-2709**		**Expansion Mullion** Female	**BE9-2709**
	**Expansion Mullion** Male	**E9-2710**		**Expansion Mullion** Male	**BE9-2710**
	**Head**	**E9-2720**		**Head**	**BE9-2720**
	**Horizontal**	**E9-2705**		**Horizontal**	**BE9-2705**
	**Interior Glass Stop** For 1” Glazing, Use with E9-2720 & E9-2705	**E9-2707**		**Interior Glass Stop** For 1” Glazing, Use with BE9-2720 & BE9-2705	**E9-2707**
	**Interior Glass Stop** For 1/4” Glazing, Use with E9-2720 & E9-2705	**E9-2708**		**Interior Glass Stop** For 1/4” Glazing, Use with BE9-2720 & BE9-2705	**E9-2708**
	**Sill**	**E9-2706**		**Sill**	**BE9-2706**
	**Glazing Adaptor** For 1/4” Glazing	**E9-3340**		**Glazing Adaptor** For 1/4” Glazing	**E9-3340**
	**Sill Flashing**	**E9-2722**		**Thermal Sill Flashing** E9-2722 May Be Substituted For Economy	**BE9-2722**

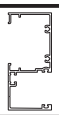
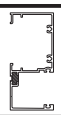
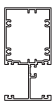
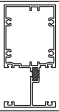
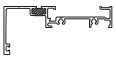
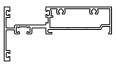
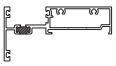
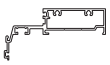
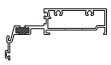
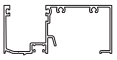
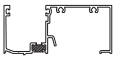
OG VERTICAL THROUGH FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	**Jamb**	**E9-2703**		**Jamb**	**BE9-2703**
	**Two Piece Vertical**	**E9-2701**		**Two Piece Vertical**	**BE9-2701**
	**Vertical Filler** Use with E9-2701	**E9-1702**		**Vertical Filler** Use with BE9-2701	**E9-1702**
	**Expansion Mullion** Female	**E9-2709**		**Expansion Mullion** Female	**BE9-2709**
	**Expansion Mullion** Male	**E9-2710**		**Expansion Mullion** Male	**BE9-2710**
	**Horizontal**	**E9-2712**		**Horizontal**	**BE9-2712**
	Exterior Glass Stop Use with E9-2712	**E9-1715**		**Exterior Glass Stop** Use with BE9-2712	**E9-1715**
	**Sill**	**E9-2713**		**Sill**	**BE9-2713**
	Exterior Glass Stop Use with E9-2713	**E9-2714**		**Exterior Glass Stop** Use with BE9-2713	**E9-2714**
	**Glazing Adaptor** For 1/4” Glazing	**E9-3340**		**Glazing Adaptor** For 1/4” Glazing	**E9-3340**
	**Sill Flashing**	**E9-2722**		**Thermal Sill Flashing** E9-2722 May Be Substituted For Economy	**BE9-2722**

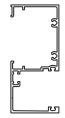
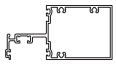
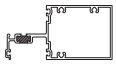
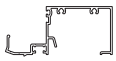
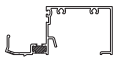
IG/OG CORNER FRAMING MEMBERS (Vertical Through Only)

YWW 45 FI			YWW 45 TU		
	**90° Corner Mullion**	**BE9-1710**		**90° Corner Mullion**	**BE9-1710**
	**135° Corner Mullion**	**BE9-1737**		**135° Corner Mullion**	**BE9-1737**
	**Pocket Filler** Use with BE9-1710 & BE9-1737	**E9-1757**		**Pocket Filler** Use with BE9-1710 & BE9-1737	**BE9-1709**
	**Glazing Adaptor** For 1/4” Glazing Use with E9-1757	**E9-1725**		**Glazing Adaptor** For 1/4” Glazing Use with BE9-1709	**E9-1725**
	**Inside/Outside Hinged Mullion** Male	**E9-1767**		**Inside/Outside Hinged Mullion** Male	**BE9-1727**
	**Outside Hinged Mullion** Female 3° to 20°	**E9-1768**		**Outside Hinged Mullion** Female 3° to 20°	**BE9-1728**
	**Inside Hinged Mullion** Female 3° to 15°	**E9-1769**		**Inside Hinged Mullion** Female 3° to 15°	**BE9-1729**

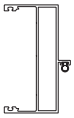
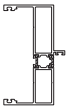
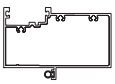
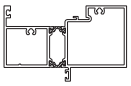
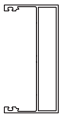
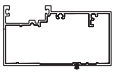
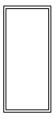
IG CONTINUOUS HEAD & SILL FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	**Jamb / Head**	**E9-2703**		**Jamb / Head**	**BE9-2703**
	**Tubular Vertical**	**E9-2702**		**Tubular Vertical**	**BE9-2702**
	**Head**	**E9-2720**		**Head**	**BE9-2720**
	**Horizontal**	**E9-2705**		**Horizontal**	**BE9-2705**
	**SSG Horizontal**	**E9-2717**		**SSG Horizontal**	**BE9-2717**
	Exterior Glass Stop Use with E9-2717	**E9-1715**		**Exterior Glass Stop** Use with BE9-2717	**E9-1715**
	**Interior Glass Stop** For 1” Glazing, Use with E9-2720, E9-2705 & E9-2717	**E9-2707**		**Interior Glass Stop** For 1” Glazing, Use with BE9-2720, BE9-2705 & BE9-2717	**E9-2707**
	**Interior Glass Stop** For 1/4” Glazing, Use with E9-2720, E9-2705 & E9-2717	**E9-2708**		**Interior Glass Stop** For 1/4” Glazing, Use with BE9-2720, BE9-2705 & BE9-2717	**E9-2708**
	**Sill**	**E9-2706**		**Sill**	**BE9-2706**
	**Glazing Adaptor** For 1/4” Glazing	**E9-3340**		**Glazing Adaptor** For 1/4” Glazing	**E9-3340**
	**SSG Vertical**	**E9-2715**		**SSG Vertical**	**E9-2715**
	**SSG Glazing Adaptor** For 1/4” Glazing Use with E9-2715	**E9-2716**		**SSG Glazing Adaptor** For 1/4” Glazing Use with E9-2715	**E9-2716**
	**SSG 90° Corner Mullion**	**E9-2718**		**SSG 90° Corner Mullion**	**E9-2718**
	**Glazing Adaptor** For 1/4” Glazing Use with E9-2718	**E9-2719**		**Glazing Adaptor** For 1/4” Glazing Use with E9-2718	**E9-2719**
	**Corner Trim Base** For 90° SSG Corner Muillion **Corner Trim Cover**	**E9-2550** **E9-3439**		**Corner Trim Base** For 90° SSG Corner Muillion **Corner Trim Cover**	**E9-2550** **E9-3439**

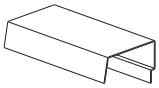
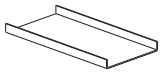
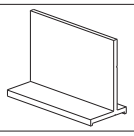
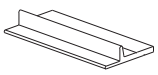
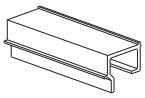
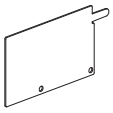
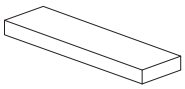
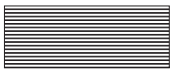
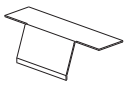
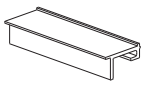
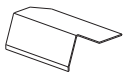
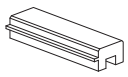
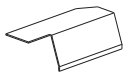
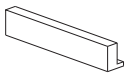
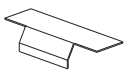
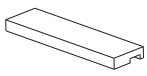
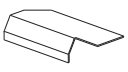
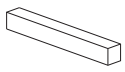
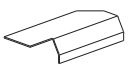
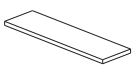
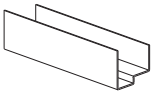
OG CONTINUOUS HEAD & SILL FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	**Jamb**	**E9-2703**		**Jamb**	**BE9-2703**
	**Horizontal**	**E9-2712**		**Horizontal**	**BE9-2712**
	Exterior Glass Stop Use with E9-2712	**E9-1715**		**Exterior Glass Stop** Use with BE9-2712	**E9-1715**
	**Sill**	**E9-2713**		**Sill**	**BE9-2713**
	Exterior Glass Stop Use with E9-2713	**E9-2714**		**Exterior Glass Stop** Use with BE9-2713	**E9-2714**
	**Glazing Adaptor** For 1/4” Glazing	**E9-3340**		**Glazing Adaptor** For 1/4” Glazing	**E9-3340**
	**SSG Vertical**	**E9-2715**		**SSG Vertical**	**E9-2715**
	**SSG Glazing Adaptor** For 1/4” Glazing Use with E9-2715	**E9-2716**		For 1/4” Glazing Use with E9-2715	**E9-2716**
	**SSG 90° Corner Mullion**	**E9-2718**		**SSG 90° Corner Mullion**	**E9-2718**
	Glazing Adaptor For 1/4” Glazing Use with E9-2718	**E9-2719**		**Glazing Adaptor** For 1/4” Glazing Use with E9-2718	**E9-2719**
	**Corner Trim Base** For 90° SSG Corner Muillion **Corner Trim Cover**	**E9-2550** **E9-3439**		**Corner Trim Base** For 90° SSG Corner Muillion **Corner Trim Cover**	**E9-2550** **E9-3439**

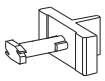
DOOR FRAMING MEMBERS

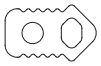
NON THERMAL DOOR FRAMES			THERMAL DOOR FRAMES		
	**Single Acting Door Jamb** 2-1/4” x 4-1/2” Elastomer Weathering E2-0051 included	**AS-1717**		**Single Acting Door Jamb** 2-1/4” x 4-1/2”, For 25T/35T/50T Doors E2-0051 Not Included	**BE9-2831**
	**Single Acting Transom Bar** 2-1/4” x 4-1/2” E2-0051 included	**AS-1718**		**Single Acting Transom Bar** For 25T/35T/50T Doors E2-0051 Not Included Use with E9-2835	**BE9-2832**
	**Double Acting Door Jamb** 2-1/4” x 4-1/2”	**E9-1719**		**Glazing Pocket Flush Filler** For 1” Glazing	**BE9-7856**
	**Double Acting Transom Bar** 2-1/4” x 4-1/2” E2-0062 included	**AS-1720**		**Jamb Filler** For YWW 45 TU Frames	**BE9-1709**
	Glazing Pocket Flush Filler	**E9-1732**		**Transom Glazing Pocket** For 1” Glazing Use with E9-2834	**BE9-2833**
	**Intermediate Door Jamb** 2” x 4-1/2” Tube Use with AS-0409	**E9-9312**		**Transom Glass Stop** For 1” Glazing Use with BE9-2833	**E9-2834**
	**Jamb Filler**	**E9-1757**		**Glass Stop** For 1” Glazing Use with BE9-2832	**E9-2835**
	**Glazing Adaptor** For 1/4” Glazing Use with E9-1757 & E9-1721	**E9-1725**		**Threshold** 1/2” x 4-1/2” For 25T/35T/50T Doors	**BE9-0465**
	**Transom Glazing Pocket** For 1” Glazing	**E9-1721**			
	**Door Stop O/P Assembly** Elastomer Weathering E2-0051 Included	**AS-0409**			
	**Door Stop Base** Used with AS-0409	**E9-1113**			
	Threshold 1/2” x 4”	**E9-0407**			

ACCESSORIES

	**Shear Block** For Outside Glazing Use (2) PC-1228 & (2) FC-1210 Not Included	**E1-1037**		**Sill Joint Sleeve** For Back Chamber Continuous Head & Sill Frames	**E1-1182**
	**Shear Block** For Inside Glazing Use (2) PC-1228 & (2) PC-1208 Not Included	**E1-1170**		**Head Joint Sleeve** For Back Chamber Continuous Head & Sill Frames	**E1-1183**
	**Head Anchor** For Continuous Head & Sill Frames Only	**E1-1171**		**Mullion End Cap** For Jambs & Verticals Vertical Through Frames	**E1-1184**
	**Sill Anchor** For Continuous Head & Sill Frames Only	**E1-1172**		**Setting Block Chair** For Sill E9-2706 & BE9-2706 Inside Glazing	**E1-1173**
	**Sill Flashing End Dam** For Vertical Through Frames Only	**E1-0140**		**Setting Block** For 1” Inside Glazing Use with E1-1173 at Sill	**E2-0178**
	**Sill Flashing Splice Sleeve** For Vertical Through Frames Only	**E2-0070**		**Setting Block** For 1/4” Inside Glazing Use with E1-1173 at Sill	**E2-0192**
	**Horizontal Water Deflector** For SSG Inside Glazing	**E1-1174**		**Setting Block Chair** For Sill E9-2713 & BE9-2713 Outside Glazing	**E1-1177**
	**RH 90° Corner Water Deflector** For SSG Inside Glazing	**E1-1175**		**Setting Block** For 1” Outside Glazing Use with E1-1177 at Sill	**E2-0150**
	**LH 90° Corner Water Deflector** For SSG Inside Glazing	**E1-1176**		**Setting Block** For 1/4” Outside Glazing Use with E1-1177 at Sill	**E2-0190**
	**Horizontal Water Deflector** For SSG Outside Glazing	**E1-1178**		**Setting Block** For Transom Bar	**E2-0184**
	**RH 90° Corner Water Deflector** For SSG Outside Glazing	**E1-1179**		**Side Block** For Vertical Shallow Pocket	**E2-0019**
	**LH 90° Corner Water Deflector** For SSG Outside Glazing	**E1-1180**		**Side Block** For Expansion Mullion Shallow Pocket, 1” Glazing	**E2-0513**
	**Head/Sill Joint Sleeve** For Front Chamber Continuous Head & Sill Frames	**E1-1181**		**Side Block** For Expansion Mullion Shallow Pocket, 1/4” Glazing	**E2-0537**

ACCESSORIES

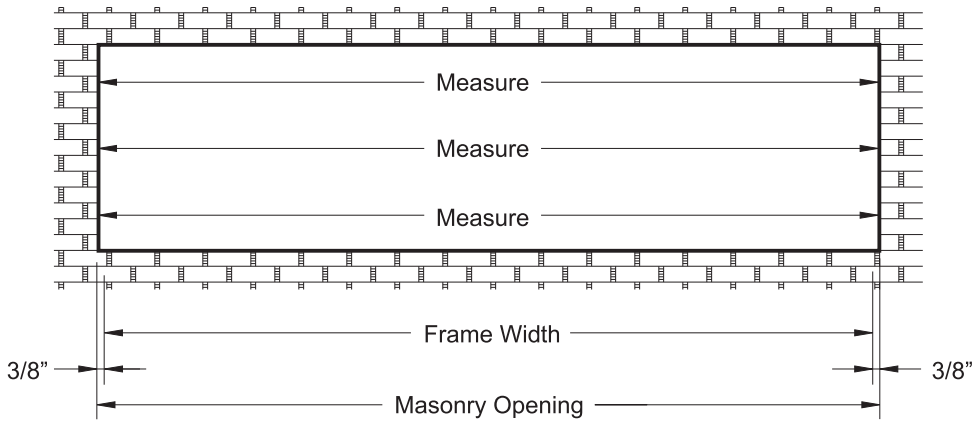
	**Water Deflector** For Intermediate Horizontals	**E2-0047**
	**Anti-Walk Block** For Jamb Deep Pocket 1.125” Wide	**E2-0545**
	**Anti-Walk Block** For Vertical Deep Pocket 0.625” Wide	**E2-0546**
	**Anti-Walk Block** For Expansion Mullion Deep Pocket, 0.531” Wide	**E2-0153**
	**End Dam** For Sill, Continuous Head & Sill Frames	**E2-0547**
	**End Dam** For Head, Continuous Head & Sill Frames	**E2-0548**
	**Weep Baffle**	**E2-0099**
	**Temporary Glass Retainer** For 1” Structural Silicone Glazing	**E3-0001**
	**Temporary Glass Retainer** For 1/4” Structural Silicone Glazing	**E3-0006**
	**Temporary Glass Retainer** For 90° Outside SSG Corner	**E1-3588**
	**Push-In Glazing Gasket**	**E2-0801**
	**Wedge Glazing Gasket**	**E2-0808**
	**Push-In Glazing Gasket** For SSG Glazing	**E2-0541**

	**Wedge Glazing Gasket** For SSG Glazing	**E2-0542**
	**SSG Glazing Spacer** For Inside Glazing	**E2-0543**
	**SSG Glazing Spacer** For Outside Glazing	**E2-0544**
	**Weathering Gasket** For Expansion Mullion	**E2-0065**
	**#10 x 3/8” PHSMS Type AB** Zinc Plated Steel, For Attachment of Mullion End Cap	**PC-1006**
	**#10 x 3/8” PHMS** Stainless Steel For Attachment of Sill to Sill Flashing	**PM-1006 -SS**
	**#1/4”-20 x 1” HWHMS** Zinc Plated Steel For Attachment Corner Temp Glass Retainer	**HM-2516**
	**#12 x 1/2” PHSMS Type AB** Zinc Plated Steel For Attachment of Horizontal to Shear Block E1-1170 (IG)	**PC-1208**
	**#12 x 1/2” PHSMS Type AB** Zinc Plated Steel For Attachment of Horizontal to Shear Block E1-1037 (OG)	**FC-1210**
	**#12 x 1” PHSMS Type AB** Zinc Plated Steel For Screw Spline Attachment at Intermediate Vertical	**PC-1216**
	**#12 x 1” PHSMS Type AB** Zinc Plated Steel For Screw Spline Attachment at Intermediate Vertical	**PC-1220**
	**#12 x 1-3/4” PHSMS Type AB**, Zinc Plated Steel For Attachment of Shear Blocks to Vertical	**PC-1228**
	**#12 x 3/4” UFHSMS Type A,** Zinc Plated Steel For End Dam Attachment	**UA-1212**

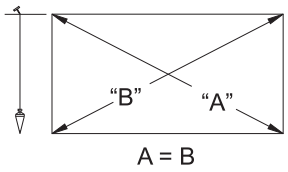
FRAME FABRICATION

STEP 1
DETERMINE FRAME SIZE

Determine Frame Width:



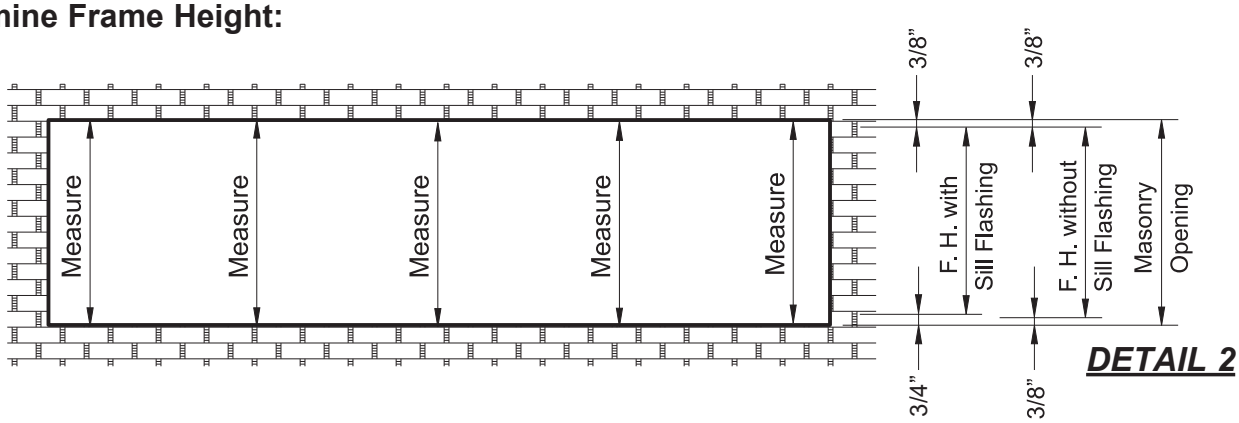
Note: Check opening for squareness of plumb at both ends, units must be installed in a true rectangle.



DETAIL 1

-Measure the width of the masonry opening at the top, middle, and bottom.
-Select the smallest dimension measured and subtract 3/4” to determine the frame width. See **Detail 1**.

Determine Frame Height:



DETAIL 2

-Measure the height of the masonry opening several times along the entire length of opening and select the smallest dimension for the masonry opening height. See **Detail 2**.

To calculate frame height:

VERTICAL THROUGH

-Subtract 1-1/8” from the masonry opening height:
- 3/8” caulk joint at head.
- 3/8” sill flashing.
- 3/8” caulk joint below flashing.

CONTINUOUS HEAD AND SILL

-Subtract 3/4” from the masonry opening height:
- 3/8” caulk joint at head.
- 3/8” caulk joint below sill member

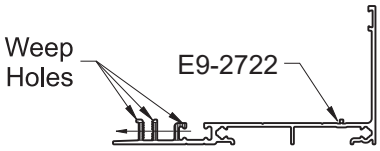
Note: Vertical through frame widths over 24’-0” require expansion mullions every 12 to 15 feet (best location at vertical next to the door jamb.)
YWW 45 FI/TU must be installed with sill flashing, BE9-2722 or E9-2722, for vertical through frames. Sill flashing is not required for continuous head and sill frames.

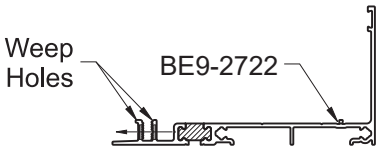
FRAME FABRICATION

STEP 2
FABRICATE SILL FLASHING (VERTICAL THROUGH FRAMES ONLY)

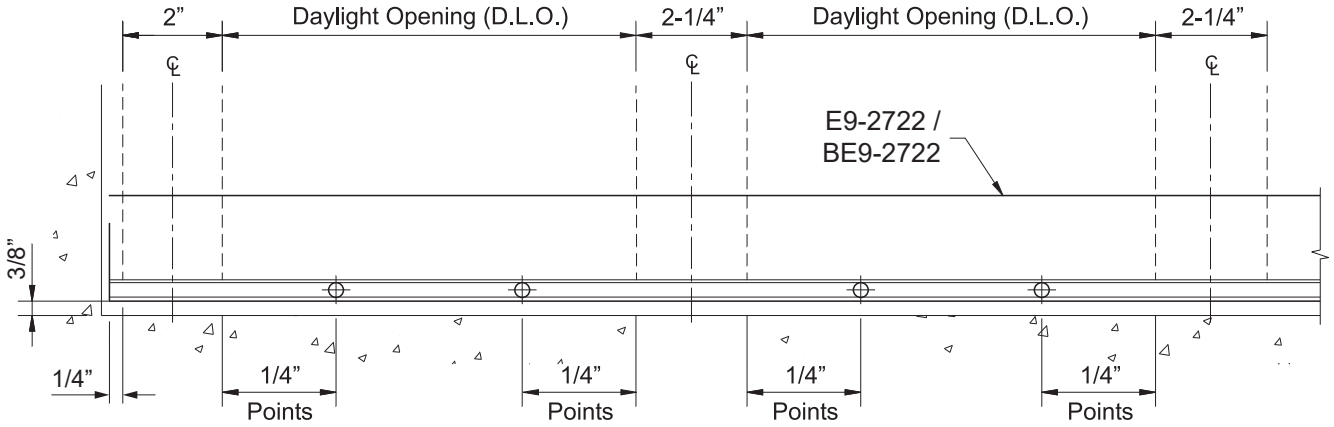
-Cut the sill flashing, E9-2722 or BE9-2722 (thermal), to the frame width determined in **Step 1**: Frame Width plus(+) 1/4" at each jamb.
-Allow for a 3/8" splice joint between sill flashing members every 12' to 15' on runs longer than 24'-0".
-Mark the front face of the sill flashing at quarter points of daylight opening between verticals.
-Drill a 5/16" diameter weep hole in the face of the sill flashing at each location marked. Note that with the E9-2722 economy sill flashing, the weep hole is drilled through the front 3 surfaces.

See **Detail 3.**





DETAIL 3

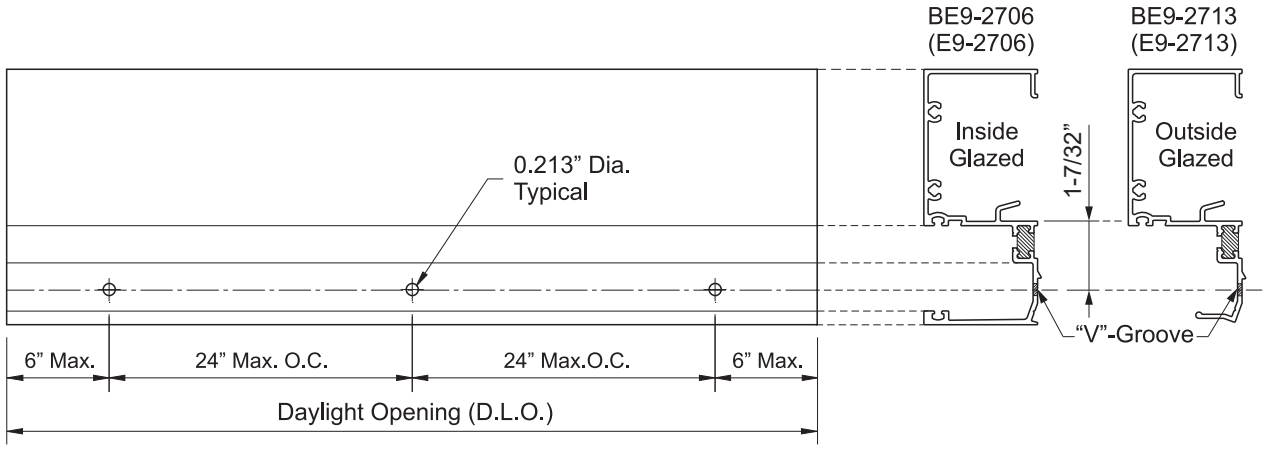


FRAME FABRICATION

STEP 3
FABRICATE HEAD & SILL MEMBERS FOR VERTICAL THROUGH FRAMES

-Cut head and sill members to the daylight opening dimension between verticals.
-Fabricate sill members for anchoring to sill flashing:
- -Measure in 6” from each end of the sill member on the underside “V”-groove for IG members or along the glazing pocket “V”-groove for OG members and mark the hole locations.
- -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.

See **Detail 4**.



DETAIL 4

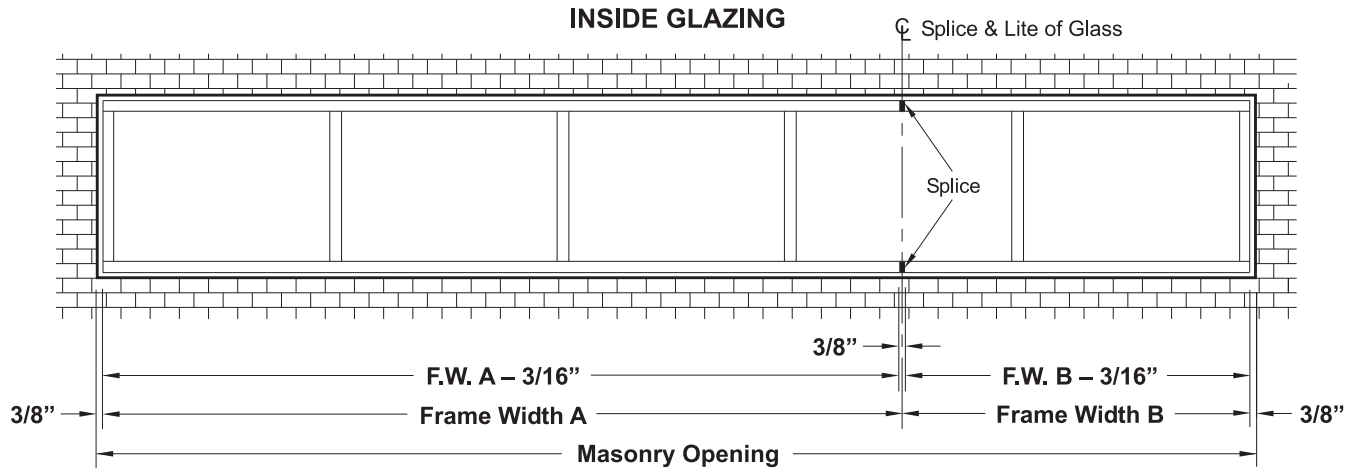
FRAME FABRICATION

STEP 3
FABRICATE HEAD & SILL MEMBERS FOR CONTINUOUS HEAD & SILL FRAMES

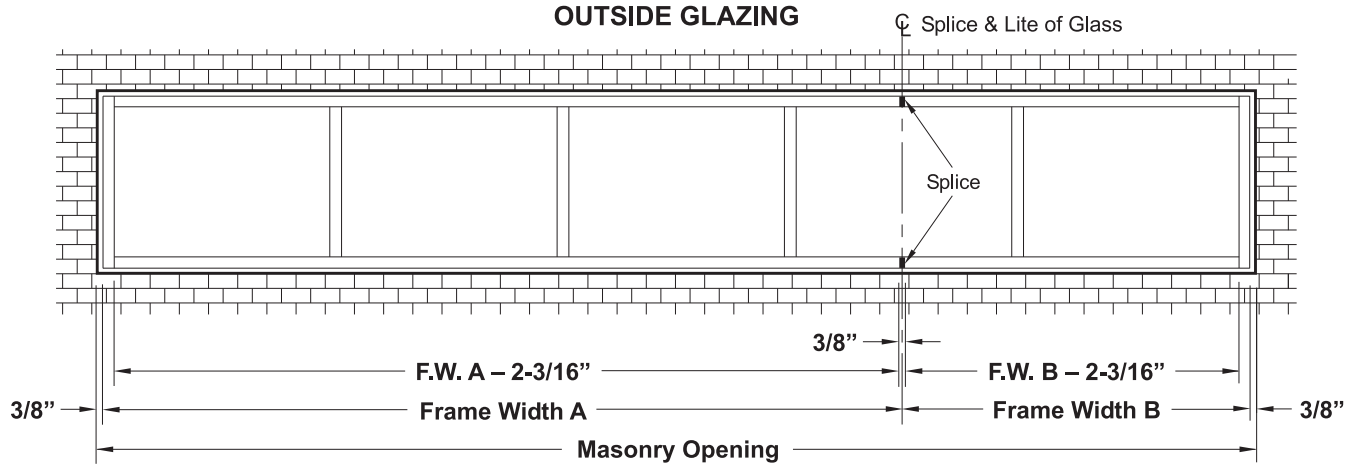
For Frames Less Than 24'-0" (No Splices):

-For **Inside Glazing** cut head and sill members to the frame width determined in **Step 1**.
-For **Outside Glazing** cut head and sill members to the frame width determined in **Step 1** minus(–) 4".

For Frames Greater Than 24'-0" But Less Than 30'-0" (One Splice):
* Note: Intermediate Horizontals cannot be used.
-Splices should occur every 12' to 15' at the center of a lite of glass. Head and sill members must always be spliced at the same location.
-Measure from the ends of the frame to the centerline of the splice.
-For **Inside Glazing** cut head and sill members to this measurement minus(–) 3/16".
-For **Outside Glazing*** cut head and sill members to this measurement minus(–) 2-3/16".
***Note:** OG continuous head and sill members do not run past the jambs.
See **Detail 5**.



DETAIL 5



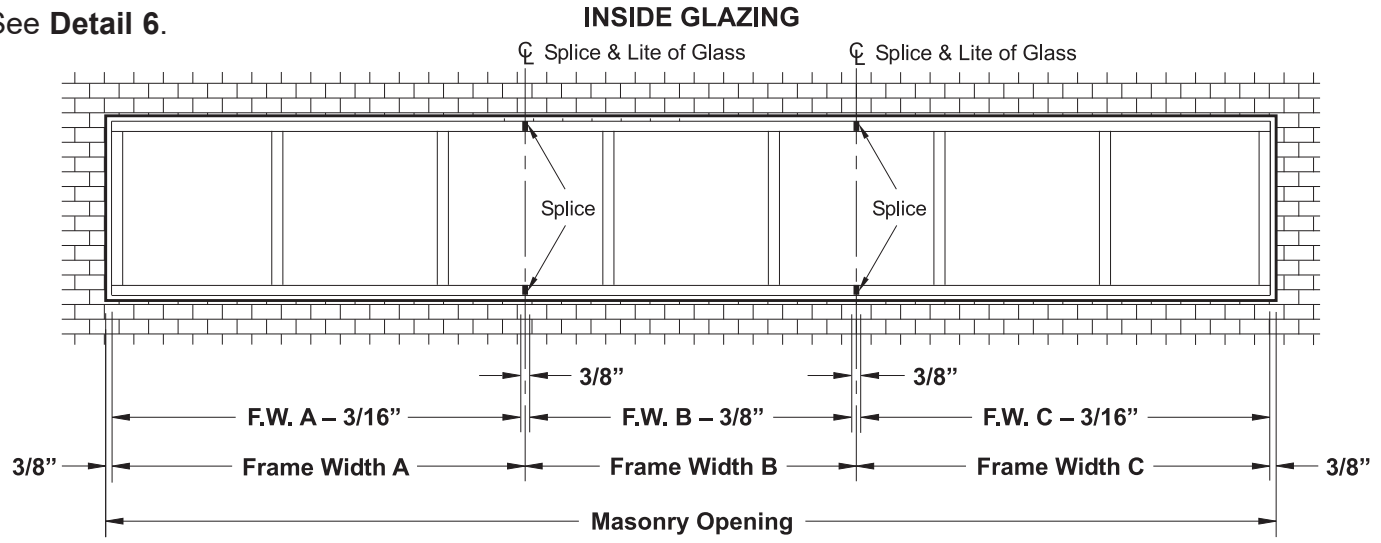
FRAME FABRICATION

STEP 3 (Continued)
FABRICATE HEAD & SILL MEMBERS FOR CONTINUOUS HEAD & SILL FRAMES

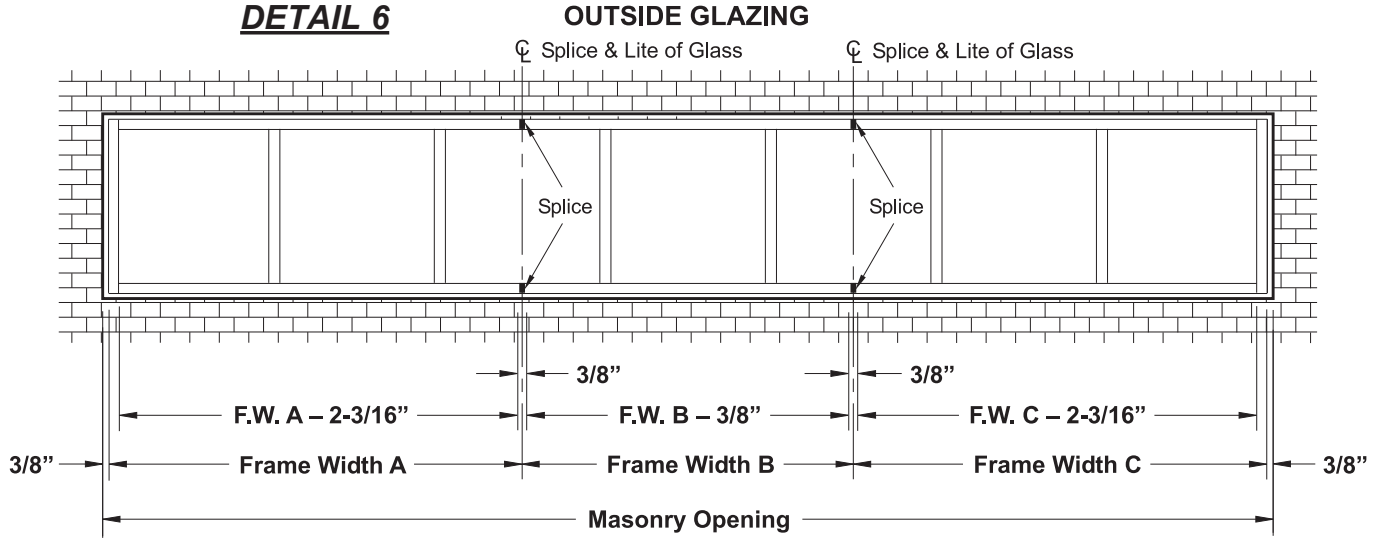
For Frames 30'-0" or Greater (More Than One Splice):
* Note: Intermediate Horizontals cannot be used.
At End Bays:
-Splices should occur every 12' to 15' at the center of a lite of glass. Head and sill members must always be spliced at the same location.
-Measure from the ends of the frame to the centerline of the first splice.
-For **Inside Glazing** cut head and sill members to this measurement minus(–) 3/16".
-For **Outside Glazing** cut head and sill members to this measurement minus(–) 2-3/16".
***Note:** OG continuous head and sill members do not run past the jambs.

At Intermediate Bays:
-Measure from the centerline of one splice to the centerline of the next splice.
-Cut head and sill members to this dimension minus(–) 3/8".

See **Detail 6**.



DETAIL 6



FRAME FABRICATION

STEP 3 (Continued)
FABRICATE HEAD & SILL MEMBERS FOR CONTINUOUS HEAD & SILL FRAMES

Note: Due to framing geometry of the inside glazed system, the horizontal Daylight Openings must be 24” or greater where SSG mullions are used.

Continuous head and sill members must be fabricated for attachment of jamb and/or vertical members.

-Using short pieces of vertical members as a template, line up the glazing pockets and mark hole locations through the screw splines.

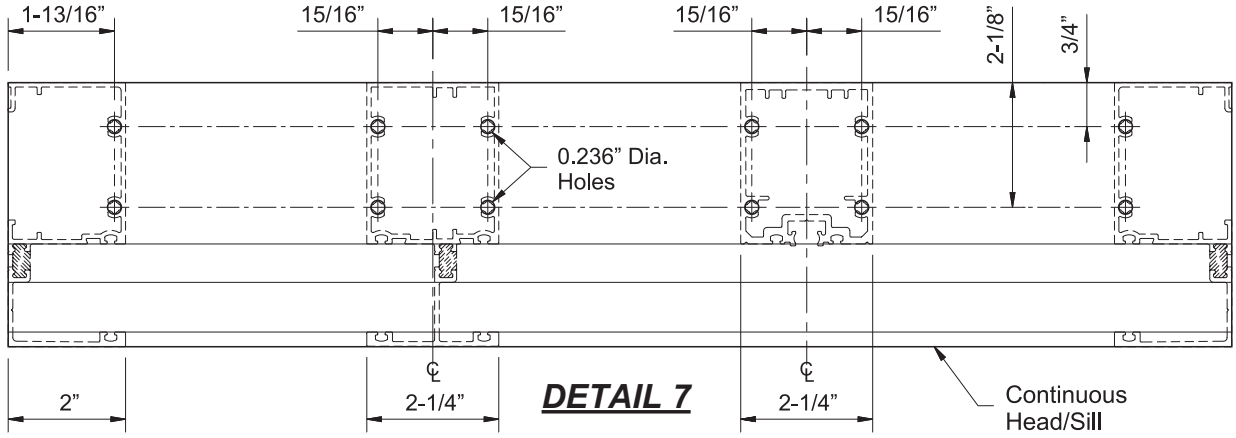
OR

-Layout hole locations on head and sill members as shown below.

-Drill 0.236” diameter (#B drill bit) clearance holes at each location marked.

Note: OG continuous head and sill members only need fabrication for intermediate verticals.

See **Detail 7**.



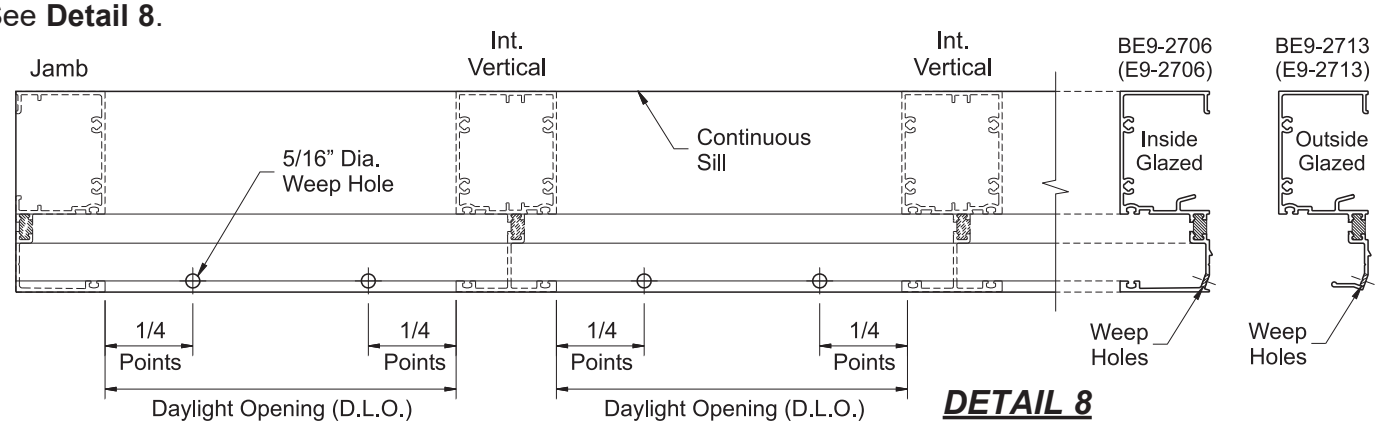
DETAIL 7

Continuous head and sill frames require weep holes at the sill:

-Mark the sill members at 1/4 points of daylight opening between vertical members along the “V”-Groove on the underside of the sill member for inside glazing or along the “V”-groove in the glazing pocket for outside glazing as shown below.

-Drill 5/16” diameter weep holes at each location marked.

See **Detail 8**.



DETAIL 8

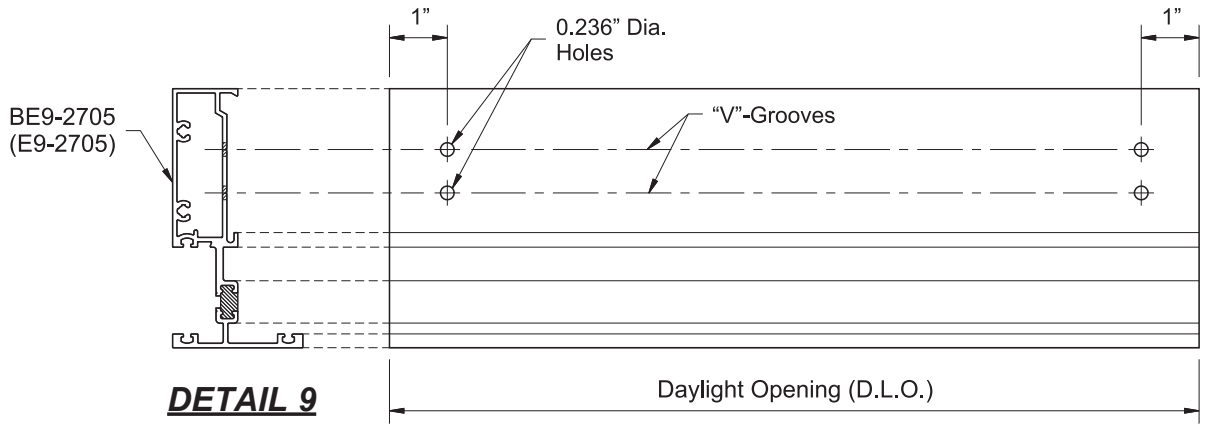
FRAME FABRICATION

STEP 4
FABRICATE INTERMEDIATE HORIZONTAL MEMBERS

-Cut all intermediate horizontal members to the daylight opening between verticals.

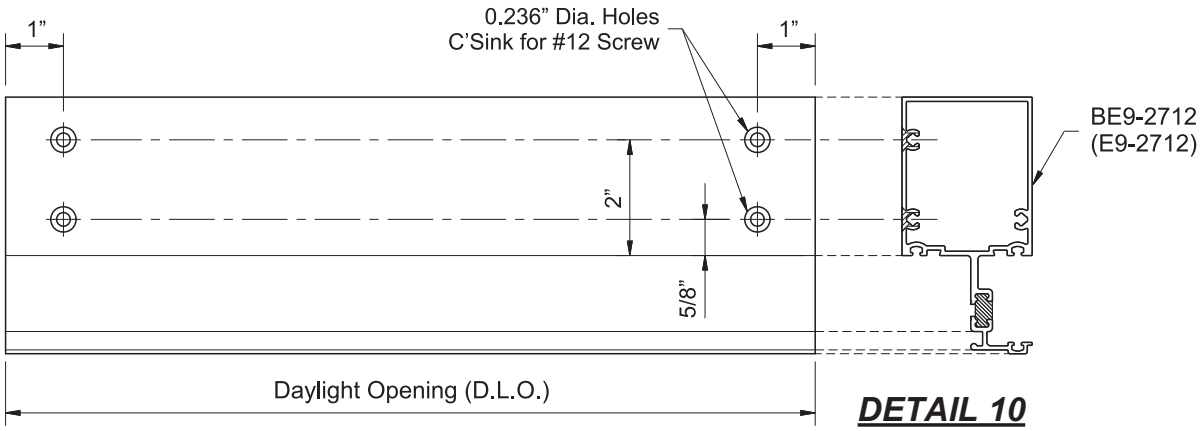
Horizontal members that are attached to one piece verticals by shear blocks require additional fabrication:

For Inside Glazed Horizontals:
-Mark hole locations at each end, 1” from the ends along both V-Grooves on the underside of the horizontal.
-Drill 0.236” diameter (#B drill bit) holes at each location marked.
See **Detail 9**.



DETAIL 9

For Outside Glazed Horizontals:
-Layout hole locations on the top of the horizontal at each end as shown below.
-Drill 0.236” diameter (#B drill bit) holes, countersunk for #12 fasteners, at each location marked.
See **Detail 10**.



DETAIL 10

FRAME FABRICATION

STEP 5
FABRICATE VERTICAL MEMBERS
FOR VERTICAL THROUGH FRAMES

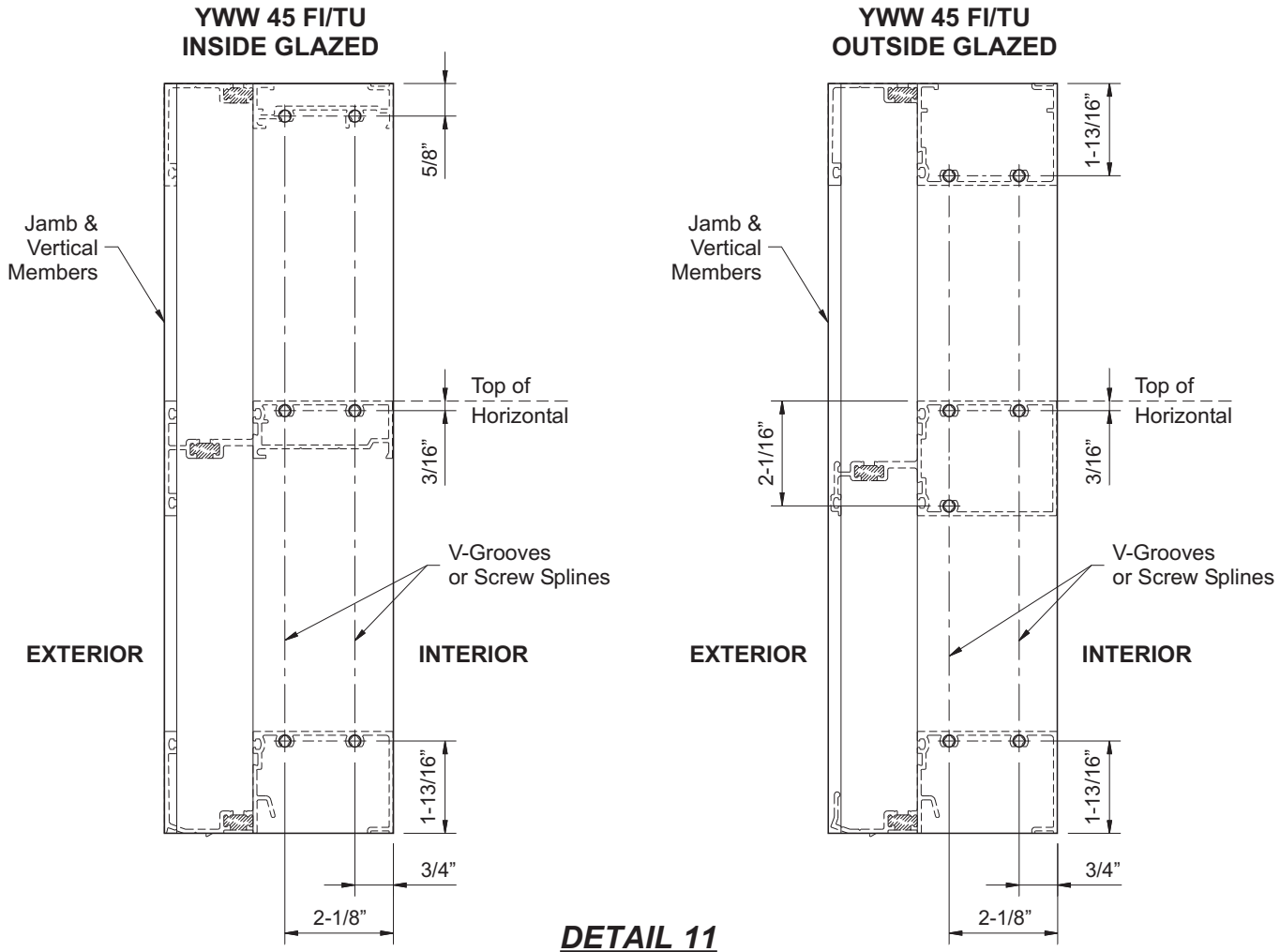
-Cut all jamb and two piece vertical members to the frame height determined in **Step 1**.

-Fabricate holes in the vertical members for screw spline attachment using one of the methods below:
-Using short pieces of horizontal members as a template, line up the glazing pockets and mark hole locations through the screw splines of the templates.

OR

-Layout hole locations on vertical members as shown in **Detail 11**.

-Drill 0.236” diameter (#B drill bit) holes at each location marked.



DETAIL 11
YWW 45 TU Shown
YWW 45 FI Similar

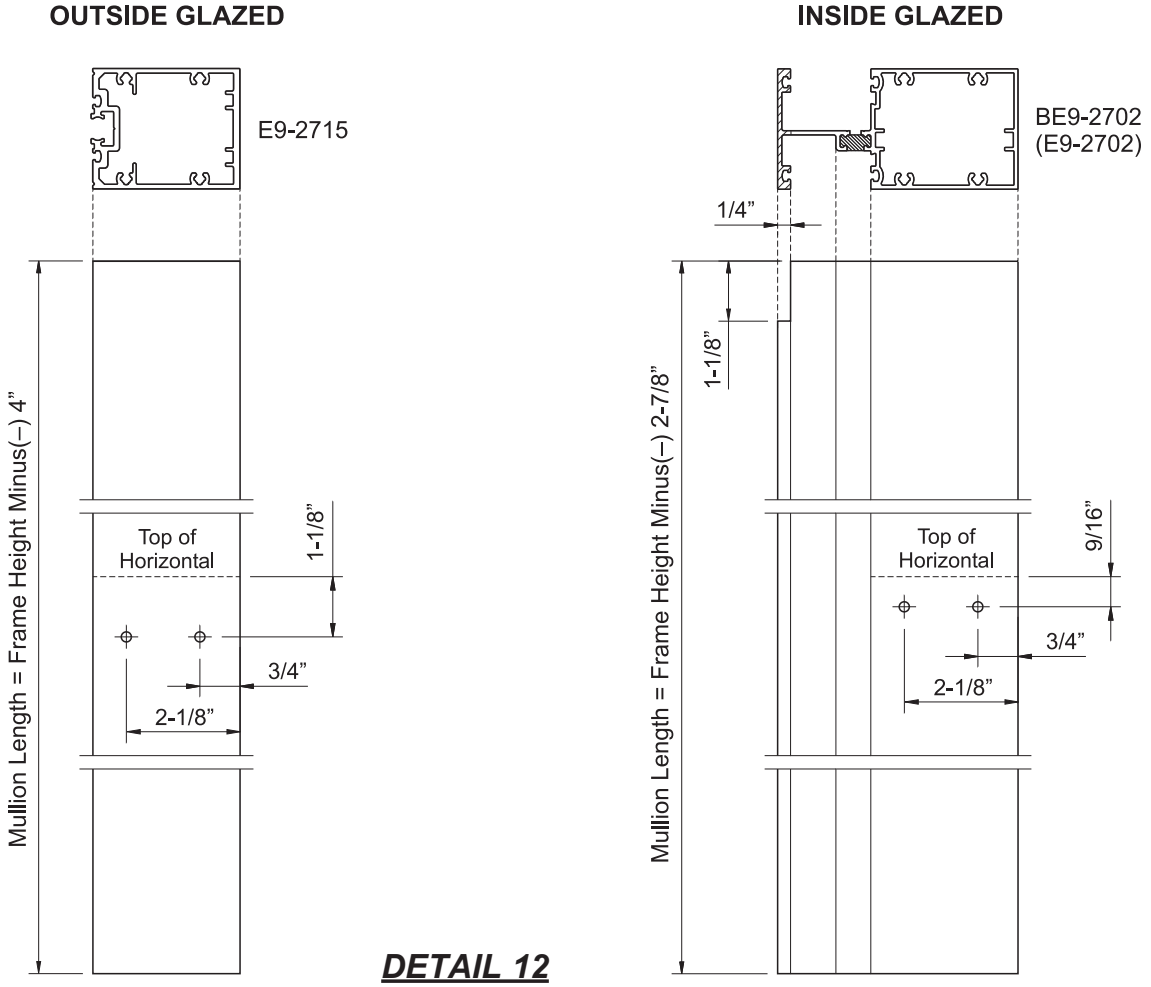
FRAME FABRICATION

STEP 5
FABRICATE VERTICAL MEMBERS
FOR CONTINUOUS HEAD & SILL FRAMES

For Outside Glazing:
-Cut jamb members to the frame height determined in **Step1**.
-Cut the vertical members, E9-2715, to the frame height determined in **Step1** minus(–) 4”.
Caution: Tubular verticals, BE9-2702/E9-2702, cannot be used with OG continuous head & sill frames.

For Inside Glazing:
-Cut all vertical and jamb members to the frame height determined in **Step1** minus(–) 2-7/8”.
-When using IG continuous head and sill frames, the captured verticals (BE9-2702/E9-2702) and jambs must be notched to fit up into the head member.
-Measure down 1-1/8” from the top of the mullion and draw a line across the face of the mullion.
-Notch the mullions down to this line and 1/4” back.

See **Details 12 & 13**.



DETAIL 12

FRAME FABRICATION

STEP 5 (Continued)
FABRICATE VERTICAL MEMBERS
FOR CONTINUOUS HEAD & SILL FRAMES

Verticals that have intermediate horizontals attached to them require additional fabrication:

For Outside Glazing:
-Draw a line across the side of the vertical representing the top of the intermediate horizontal.
-Draw a second line 1-1/8” below the first one and mark a hole location along this line at 3/4” and 2-1/8” from the back of the mullion.

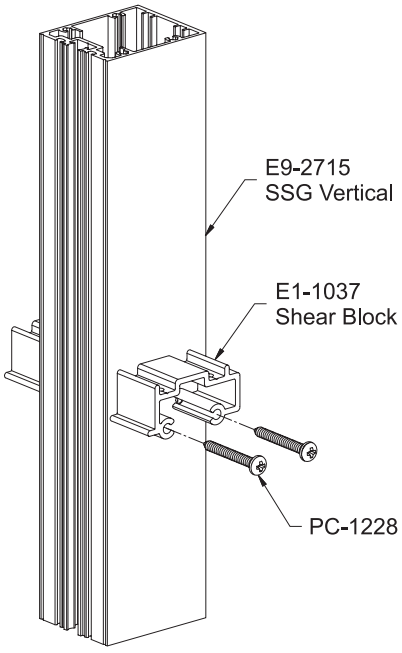
For Inside Glazing:
-Draw a line across the side of the vertical representing the top of the intermediate horizontal.
-Draw a second line 9/16” below the first one and mark a hole location along this line at 3/4” and 2-1/8” from the back of the mullion.

-Drill 0.189” diameter (#12 drill bit) holes at each location marked.
-Attach shear blocks, E1-1037(OG) or E1-1170(IG), using two PC-1228 fasteners.

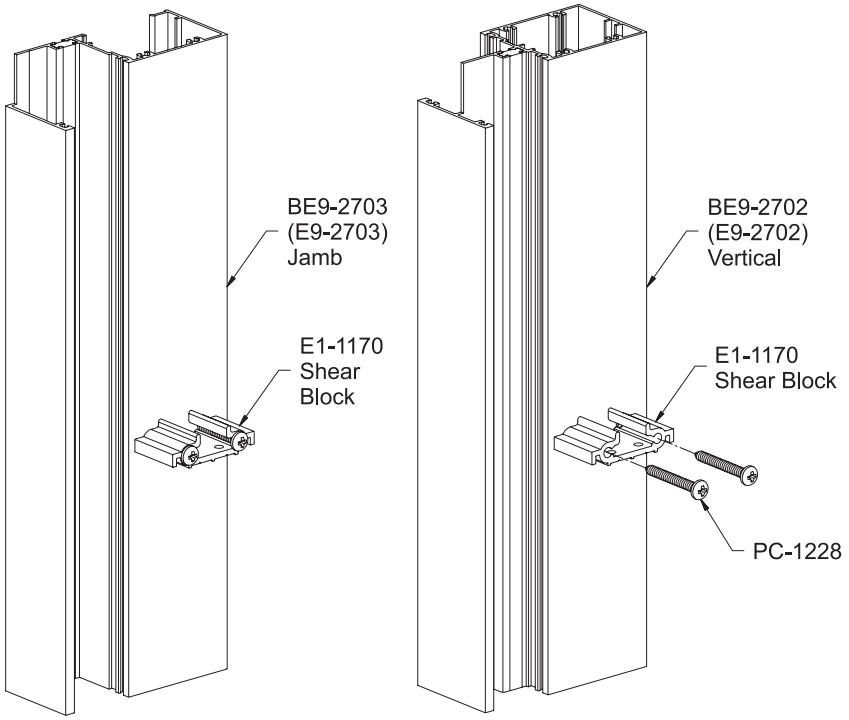
Note: Horizontals may also be attached by screw spline attachment at jambs.

See **Details 12 & 13**.

OUTSIDE GLAZED



INSIDE GLAZED



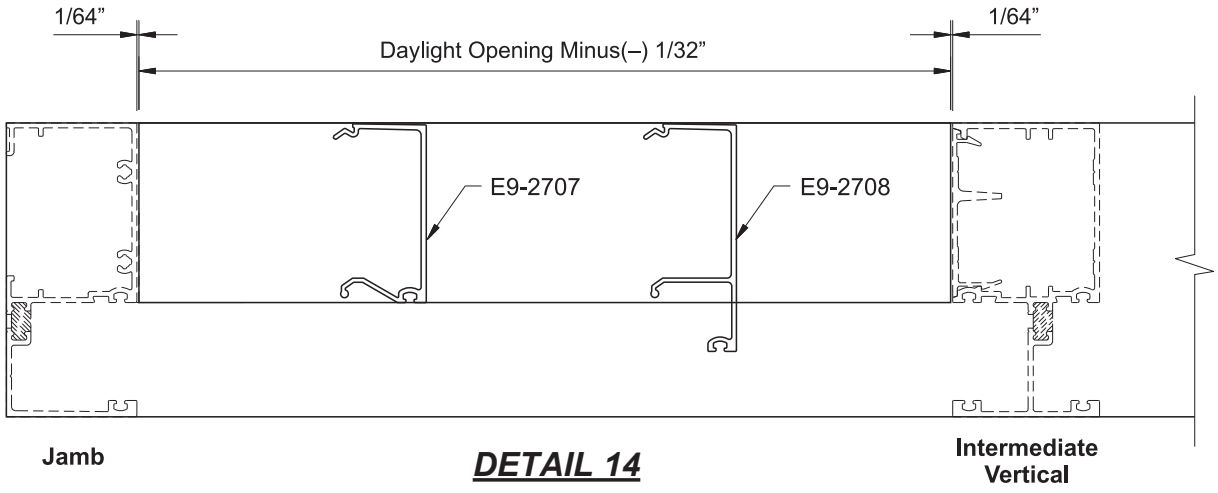
DETAIL 13

* **Note:** Intermediate horizontals cannot be used with splice.

FRAME FABRICATION

STEP 6
FABRICATE INTERIOR GLASS STOPS

-For interior glazing applications interior glass stops are required:
E9-2707 for 1” glazing and E9-2708 for 1/4” glazing.
-Cut all interior glass stops to the Daylight Opening minus(–) 1/32”.
See **Detail 14**.

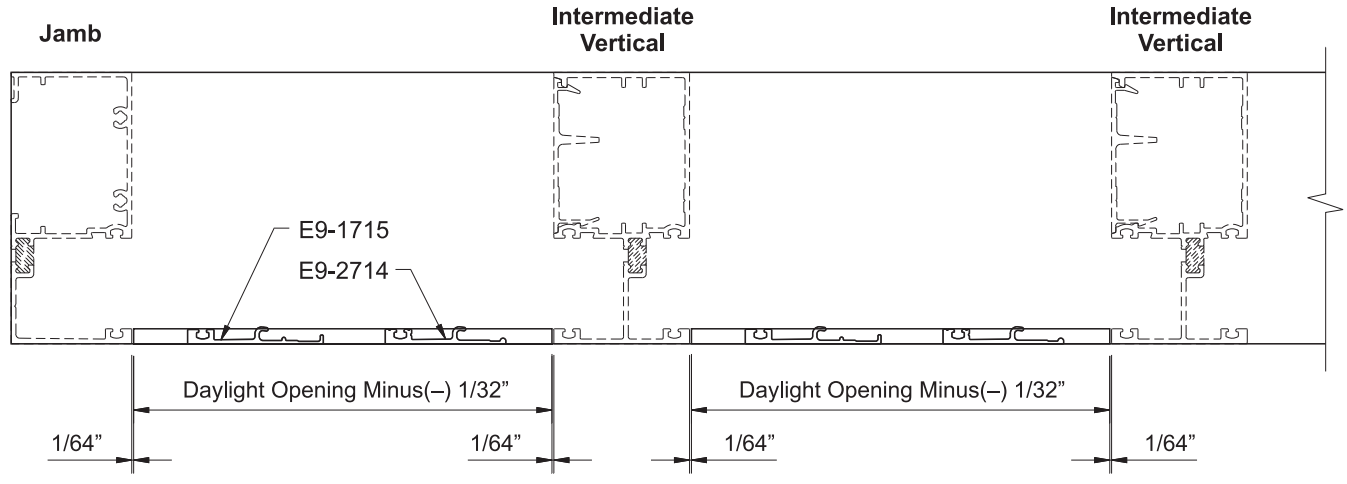


DETAIL 14

STEP 7
FABRICATE EXTERIOR GLASS STOPS

Exterior glass stops, E9-1715 for intermediate horizontals and E9-2714 for sills, are required when outside glazing and at intermediate horizontals when using structural silicone glazed (SSG) verticals.

For Outside Glazing Frames:
-Cut exterior glass stops to the Daylight Opening minus(–) 1/32”.
See **Detail 15**.



DETAIL 15

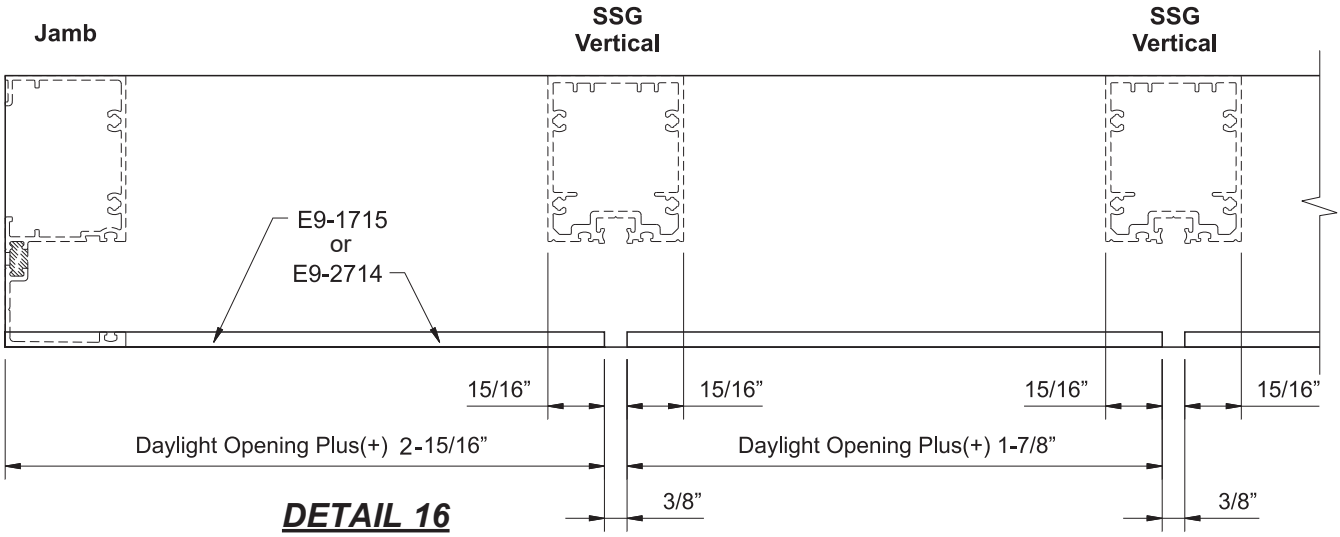
FRAME FABRICATION

STEP 7 (Continued)
FABRICATE EXTERIOR GLASS STOPS

For Structural Silicone Glazed (SSG) Frames (Continuous Head & Sill):

-Cut exterior glass stops between jambs and verticals to the Daylight Opening plus(+) 2-15/16”.
-Cut horizontal face members between verticals to the Daylight Opening plus(+) 1-7/8”.

See **Detail 16**.

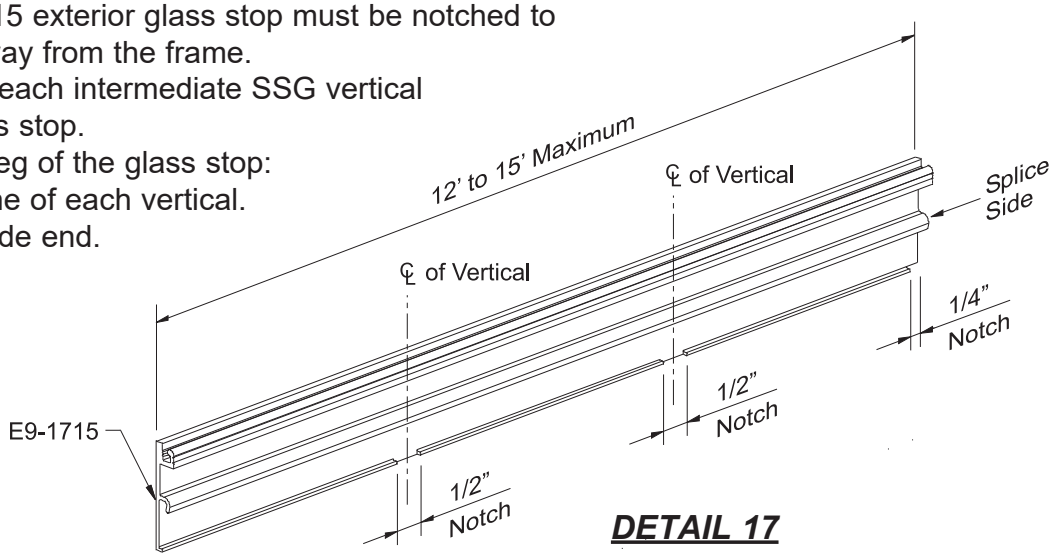


DETAIL 16

Exterior glass stops, E9-1715 for intermediate horizontals and E9-2714 for sills, may run continuous across SSG verticals. If so, a 3/8” expansion joint is required every 12 to 15 feet occurring at the centerline of a mullion.

Additionally, the E9-1715 exterior glass stop must be notched to allow water to weep away from the frame.
-Mark the centerline of each intermediate SSG vertical along the exterior glass stop.
-Notch out the bottom leg of the glass stop:
1/2” at the centerline of each vertical.
1/4” at the splice side end.

See **Detail 17**.



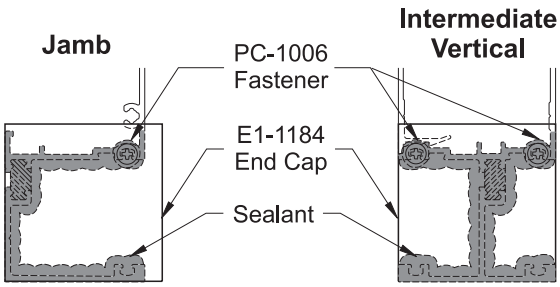
DETAIL 17

FRAME ASSEMBLY

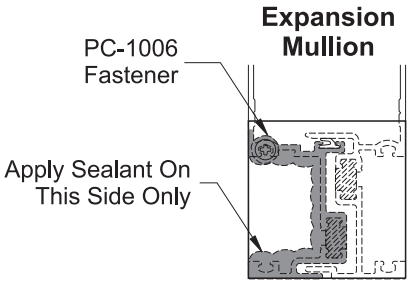
STEP 8
INSTALL MULLION END CAPS (For Vertical Through Frames Only)

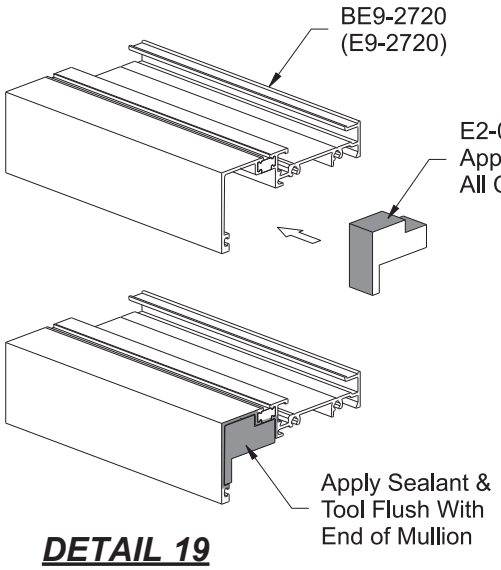
-Mullion end caps are only required at the top end of jamb and vertical mullions of vertical through frames.
-Clean the vertical mullion end and mullion end cap with a cleaner approved by sealant manufacturer.
-Apply a hardening, curing sealant along the front of the vertical members prior to installing mullion end caps, E1-1184, as shown in **Detail 18**.
-Attach mullion end cap with PC-1006 fasteners as shown.
-Seal all screw heads with silicone sealant.
-Tool the excess sealant along the inside of the glazing pocket between the mullion end cap and the mullion to ensure a watertight seal.

See **Detail 18.**

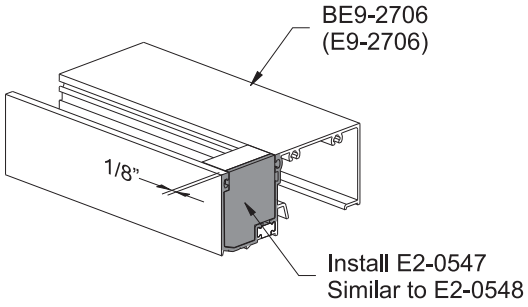


DETAIL 18





DETAIL 19
IG Shown
OG Similar



STEP 9
INSTALL END DAMS
(For Continuous Head & Sill Frames Only)

The ends of head and sill members of continuous head & sill frames must be plugged using end dams, E2-0548 at the head and E2-0547 at the sill.

Use the following technique to install end dams at the head and sill:

-Clean the ends of the head and sill members using a cleaner approved by sealant manufacturer.
-Apply sealant to all contact sides of the end dam.
-Insert the end dam into each end, leaving it 1/8" recessed from the edge of the mullion.
-Apply sealant to the end dams and tool the sealant flush with the ends of the mullion.

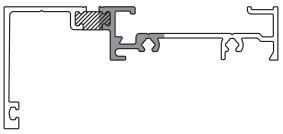
See **Detail 19.**

FRAME ASSEMBLY

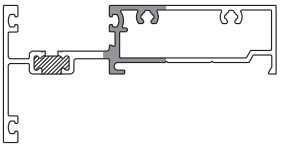
STEP 10
ASSEMBLE FRAMES

Vertical Through Frames:

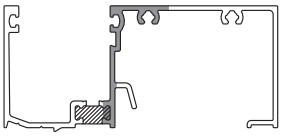
-Clean the ends of horizontal members and attachment areas of vertical members using a cleaner approved by sealant manufacturer.
-Apply (butter) sealant to both ends of head, horizontal, and sill members just prior to assembly. Make sure that the sealant does not get into the glass stop reglets of the head and horizontal.
-Attach head, horizontal, and sill members to jamb members with two (2) PC-1220 fasteners at each end.
-Attach head, horizontal, and sill members to intermediate vertical members with two (2) PC-1216 fasteners at each end.
Note: outside glazed horizontals, BE9-2712 & E9-2712, require three fasteners at each end.
-Using a clean cloth, wipe off the excess sealant while pushing it into the joints.
See **Detail 20.**



HEAD
BE9-2720 (E9-2720)

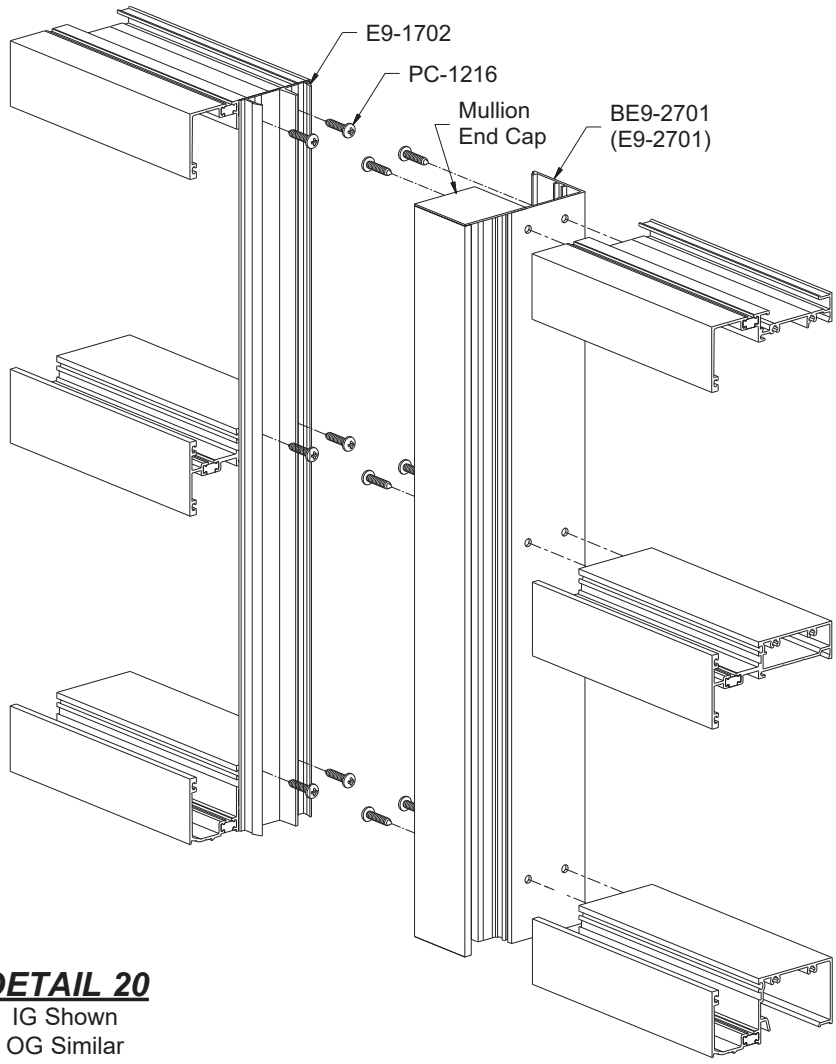


HORIZONTAL
BE9-2705 (E9-2705)



SILL
BE9-2706 (E9-2706)

Apply sealant to the shaded areas at each end.



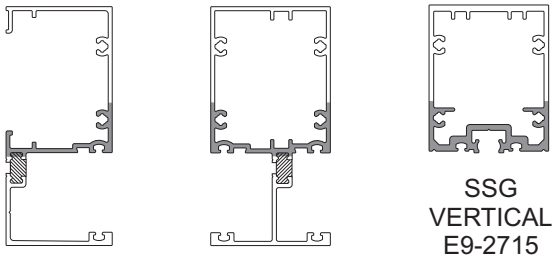
DETAIL 20
IG Shown
OG Similar

FRAME ASSEMBLY

STEP 10
ASSEMBLE FRAMES

Continuous Head & Sill Frames:

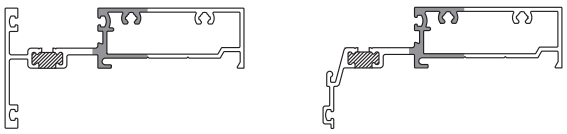
-Clean the ends of vertical members and attachment areas of head and sill members using a cleaner approved by sealant manufacturer.
-Apply (butter) sealant to both ends of jamb and vertical members just prior to assembly.
-Attach vertical members to the head and sill using (2) PC-1220 fasteners per jamb and (4) PC-1220 fasteners per intermediate vertical at each end.
Note: OG jamb members run full frame height are attached similar to vertical through frames.
-Apply (butter) sealant to both ends of intermediate horizontal members just prior to assembly. Make sure that the sealant does not get into the glass stop reglets of the horizontal.
-Attach horizontals to the shear blocks with (2) PC-1208(IG) or FC-1210(OG) fasteners at each end.
-Using a clean cloth, wipe off the excess sealant while pushing it into the joints.
See **Detail 21.**



JAMB*
BE9-2703
(E9-2703)

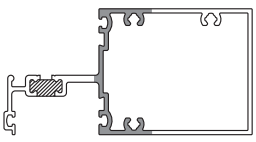
VERTICAL
BE9-2702
(E9-2702)

SSG
VERTICAL
E9-2715



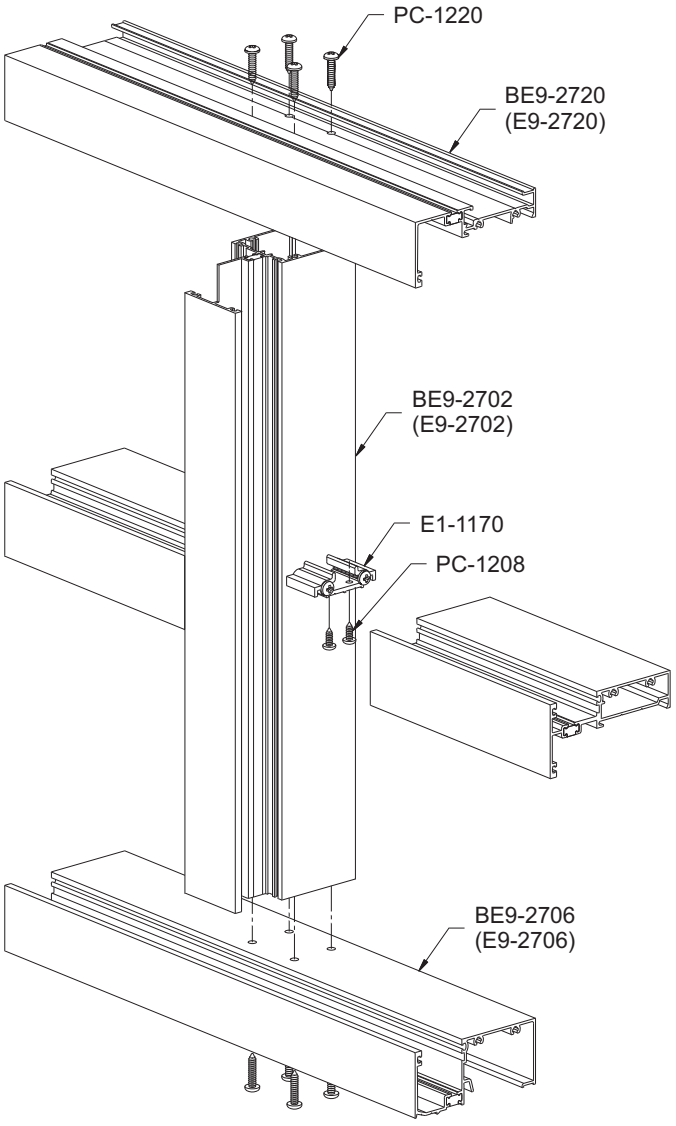
HORIZONTAL (IG)
BE9-2705 (E9-2705)

SSG HORIZONTAL (IG)
BE9-2717 (E9-2717)



HORIZONTAL (OG)
BE9-2712 (E9-2712)

Apply sealant to the shaded areas at each end.



DETAIL 21
IG Shown
OG Similar

Note: Jambs for OG frames run full frame and do not require sealant at the ends.

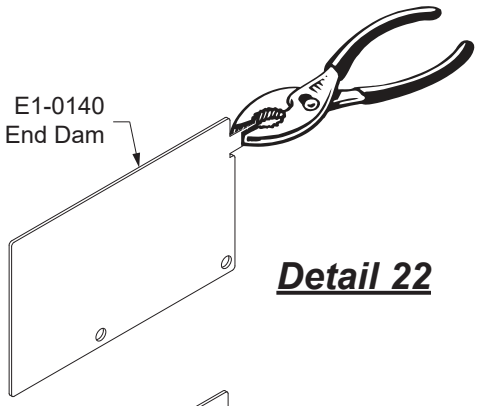
FRAME INSTALLATION

STEP 11
INSTALL SILL FLASHING END DAMS (For Vertical Through Frames Only)

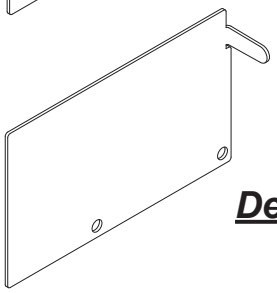
-Bend the end dam tab left or right 90 degrees in order to "hand the end dam for the left or right of the flashing.

See **Details 22 & 23**.

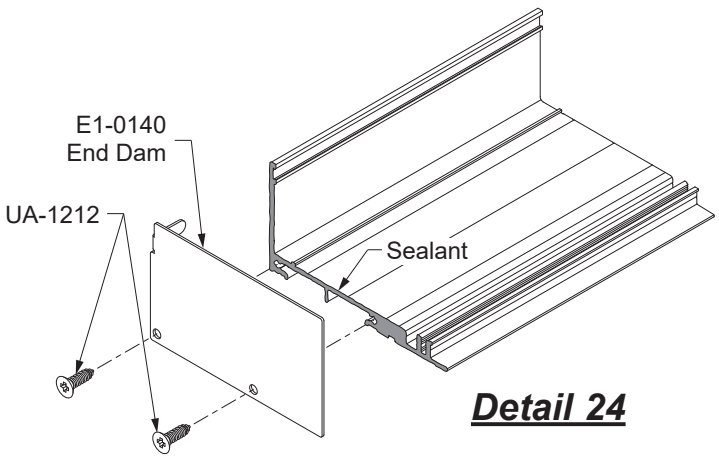
-Clean all joint surfaces using cleaner approved by sealant manufacturer.
-Apply sealant to the end of the sill flashing as shown in **Detail 24**.
-Slide the tab into the top portion of the sill flashing.
-Tap the tab into place with a small tool until the end dam is snug against the cut end of the flashing.
-Fasten end the end dam to the sill flashing with two UA-1212 screws, starting at the back followed by the front as shown in **Detail 24**.
-Tool sealant along the joint between the end dam and the sill flashing as shown in **Detail 25**.
-Seal over any exposed screw threads.



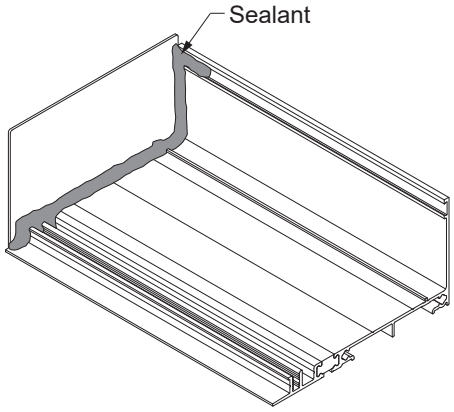
Detail 22



Detail 23



Detail 24



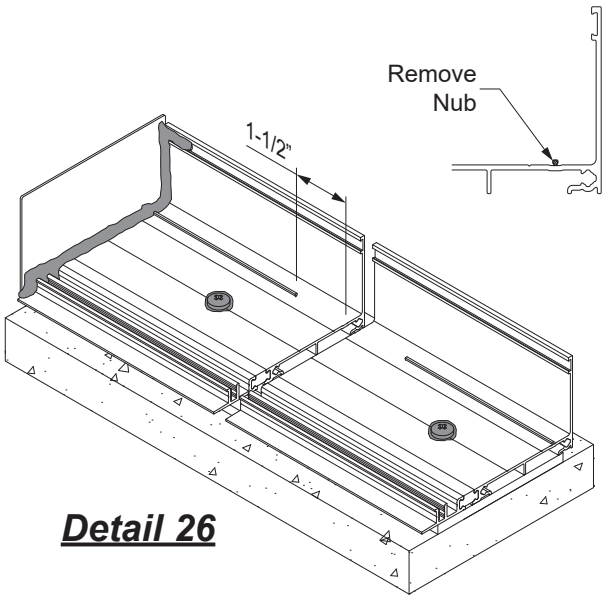
Detail 25

FRAME INSTALLATION

STEP 12
INSTALL SILL FLASHING

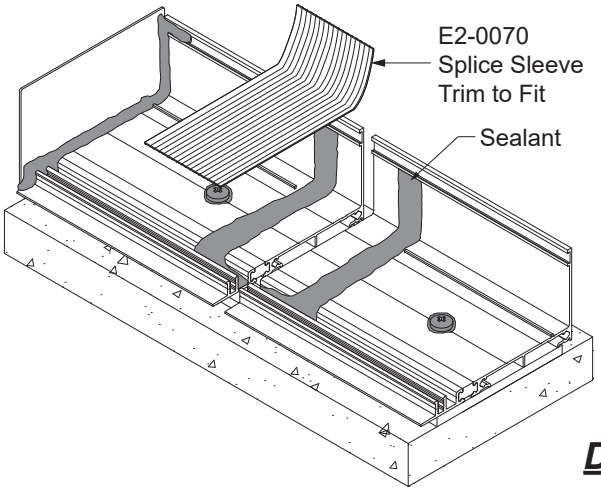
-Install the sill flashing with a minimum of 3/8” shim underneath. Sill flashing must be installed level.
-Anchor the sill flashing to the structure a maximum of 4” from each end and then 18” to 24” on center, or per P.E. calculations.
-Apply and tool sealant to cover the heads of all anchor fasteners.

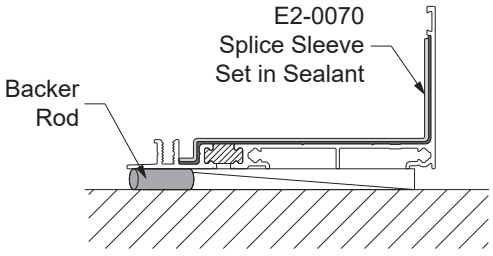
-Remove the nub with a chisel or pliers on both sides of the splice joint 1-1/2” as shown in **Detail 26**.
-After the sill flashing has been shimmed and installed to the building structure, insert a small backer rod under the sill flashing as shown in **Detail 27**.
-Position the Silicone Splice Sleeve into the front of the channel as shown. Mark and cut the sleeve at this position.
-Clean Sill Flashing and Silicone Splice Sleeve with isopropyl alchohol at the splice location.
-Seal the flashing at the splice location as shown in **Detail 27**, before positioning the flashing. Set the Silicone Splice Sleeve into the sealant.
-Tool sealant tight as shown in **Detail 28**, squeezing the sheet flat with a seam roller.



Detail 26

When using E2-0070, a compatible Silicone Sealant must be used at the splice.



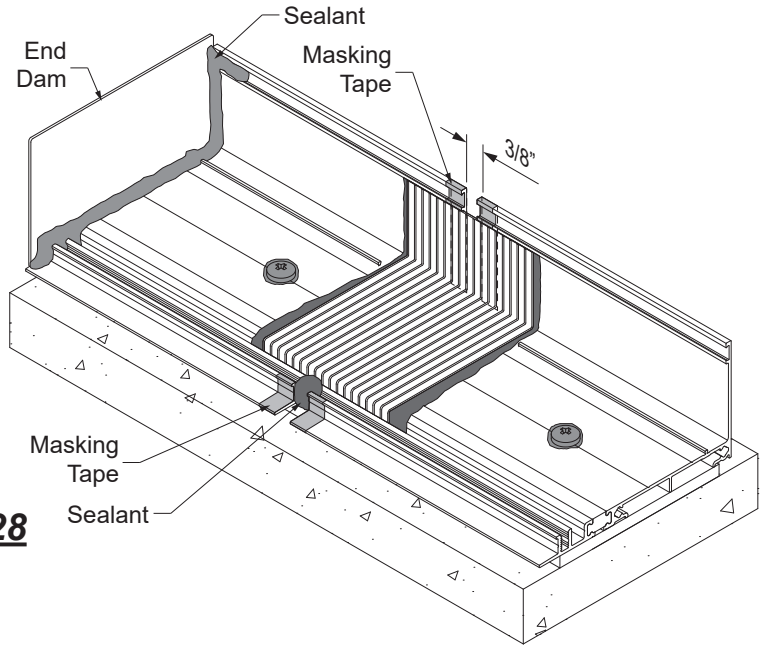


Detail 27

FRAME INSTALLATION

STEP 12 (Continued)
INSTALL SILL FLASHING

-Apply masking tape to the back of the sill flashing and at the front of the splice as shown in **Detail 28**.
-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.

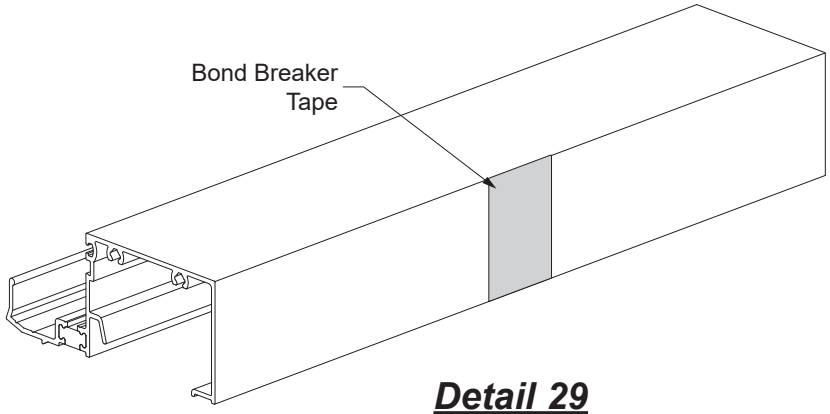


Detail 28

STEP 13
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 29**.



Detail 29

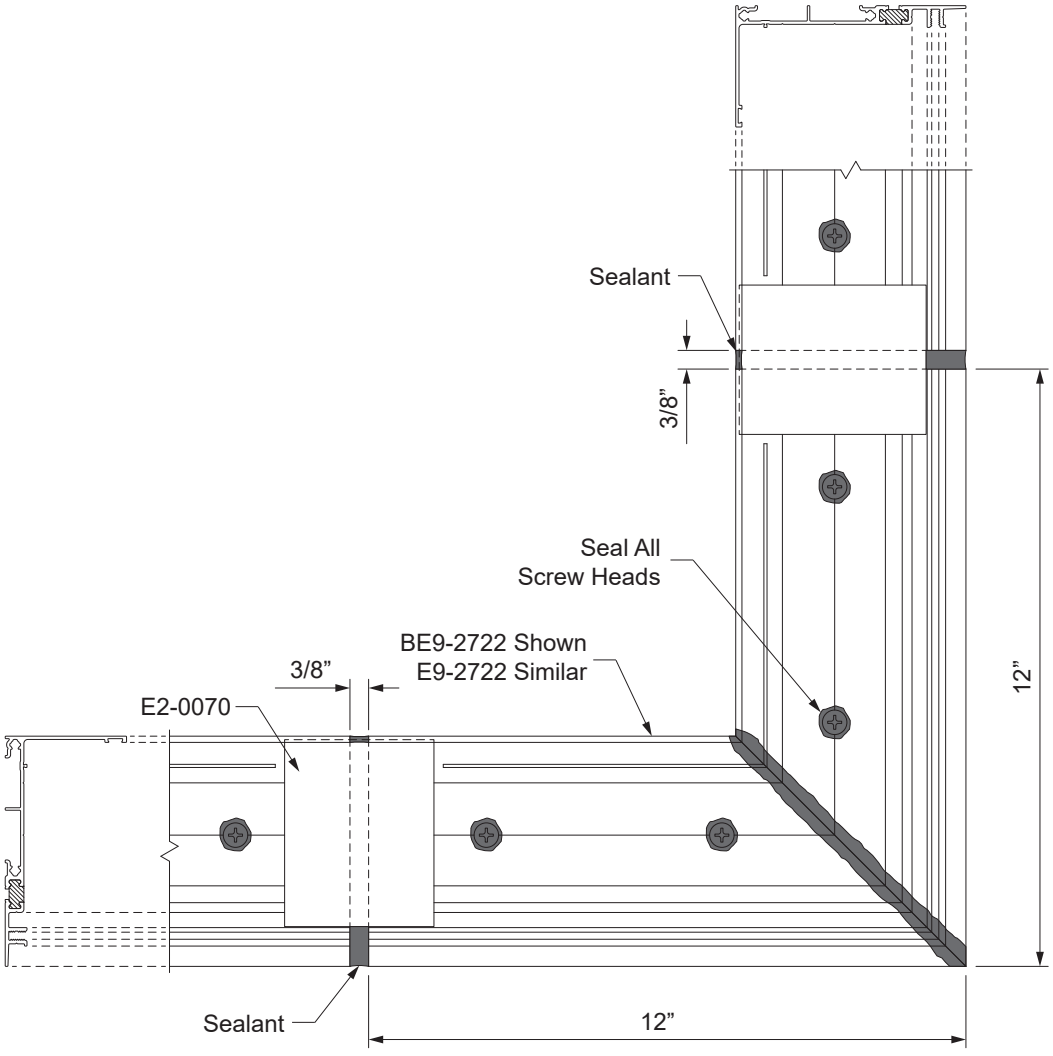
FRAME INSTALLATION

STEP 14
INSTALL SILL FLASHING AT CORNERS

-Cut two 12” long pieces of sill flashing E9-2722 / BE9-2722 or E9-2405 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 30**.

-Continue installing the rest of the sill flashing providing a 3/8” joint at splices as shown in **Step 11** on **Page 23**.



Detail 30

FRAME INSTALLATION

STEP 15
INSTALL VERTICAL THROUGH FRAMES

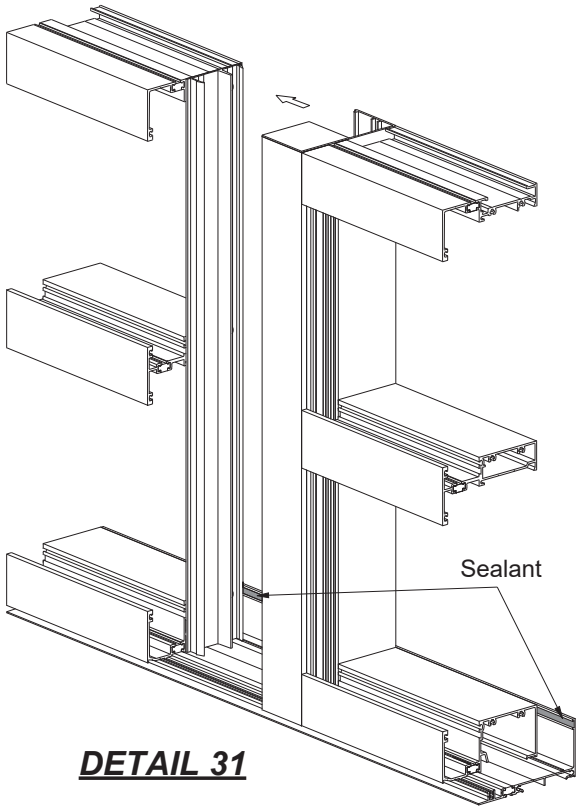
-Immediately before installing the frames, apply a continuous bead of sealant to the back leg of the sill flashing. Make sure all surfaces are clean.
-Snap frame assemblies together and set onto the sill flashing.
See **Detail 31**.

-Shim the frame as required to ensure that it is installed level, square, and true.
-Anchor the head members at 6” on each side of every vertical centerline and then no more than 24” on center.
-Anchor jamb members 6” from each end and then no more than 24” on center.

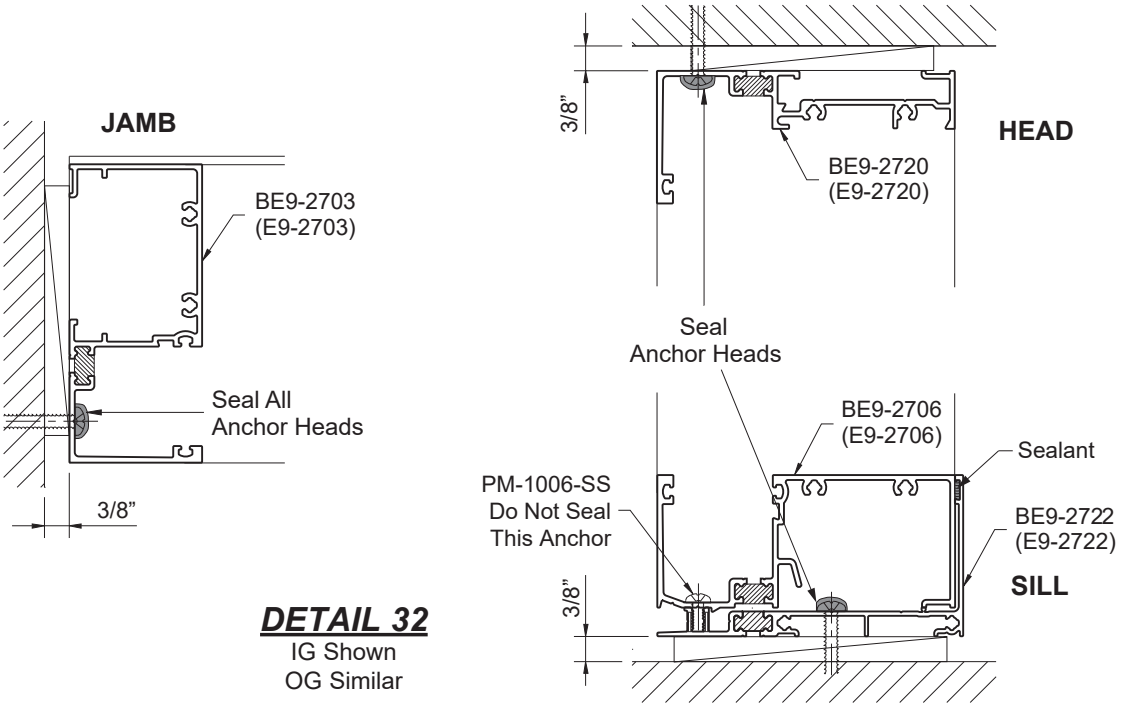
Note: Shims must be installed at all anchor locations.

-Sill members, BE9-2706/E9-2706 & BE9-2713/ E9-2713, must be attached to the sill flashing with a PM-1006-SS fastener at each hole previously drilled during sill fabrication.
-Seal anchor heads.

See **Detail 32.**



DETAIL 31



DETAIL 32
IG Shown
OG Similar

FRAME INSTALLATION

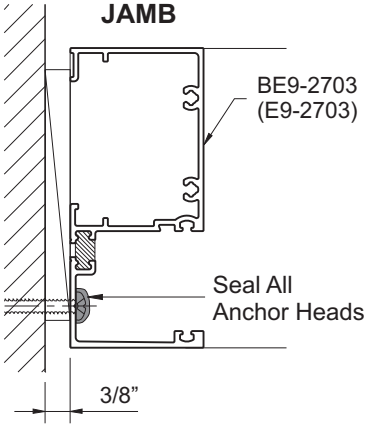
STEP 15 (Continued)
INSTALL CONTINUOUS HEAD & SILL FRAMES

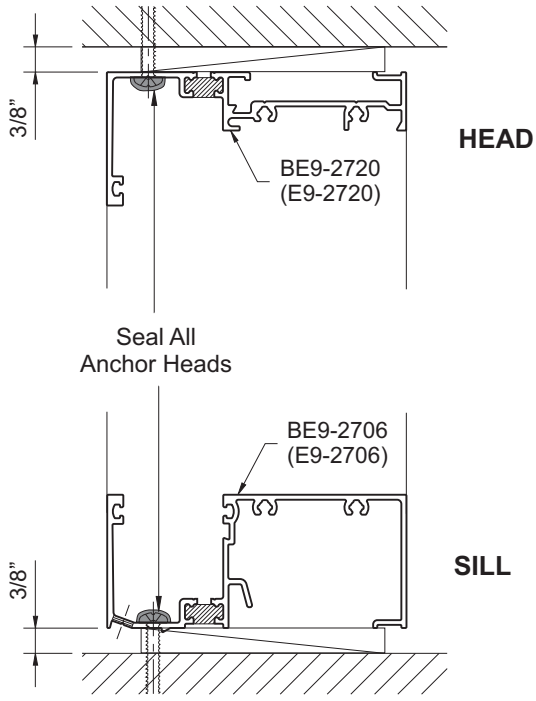
-Strike a line along the structure at the sill condition that will be the exterior face of the frame.
-Set the assembled frame into the opening and align it with the line representing the exterior face.
-Start installing the frame at the smallest opening height with a 3/8” minimum shim at the sill.
-Shim the frame as required to ensure that it is installed level, square, and true.
-Anchor the head and sill members at 6” on each side of every vertical centerline and then no more than 24” on center.
-Anchor jamb members 6” from each end and then no more than 24” on center.

Note: Shims must be installed at all anchor locations.

-Seal all anchor heads.

See **Detail 33.**





DETAIL 33
IG Shown
OG Similar

Install Head & Sill Joint Sleeves When Required:

When the head & sill members are spliced, the expansion joints must be bridged with splice sleeves:
E1-1181 at the front of all head and sill members.
E1-1182 at the rear of BE9-2703/E9-2703, BE9-2706/E9-2706, and BE9-2713/E9-2713.
E1-1183 at the rear of BE9-2720/E9-2720.

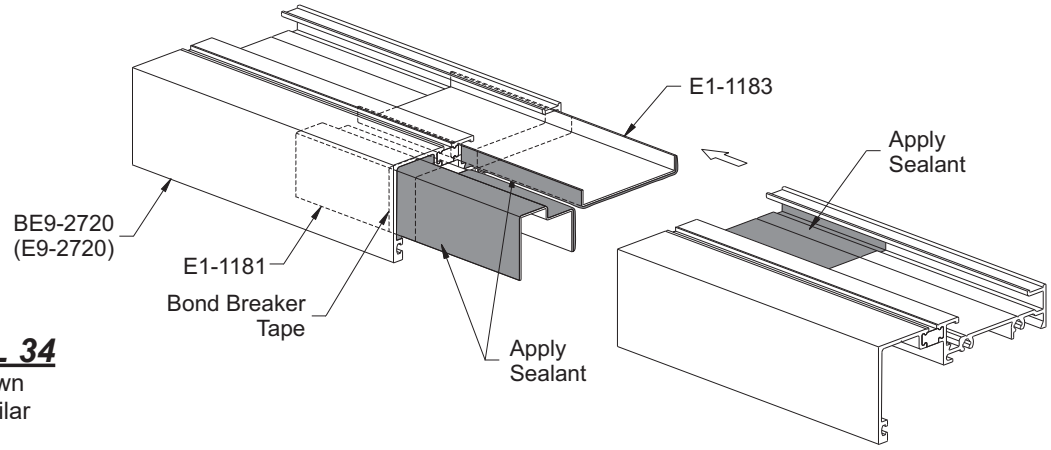
-Clean all sealant contact surfaces with cleaner and method approved by sealant manufacturer.
-Apply bond breaker tape to the splice sleeves along the midpoint of the side facing the mullions.
-Apply a bed of non-hardening, non-curing sealant to the walls of both halves of the mullions where the splice sleeves will be placed. Apply (butter) sealant to all contact surfaces of the splice sleeves.
-Slide the splice sleeves into position from the end of the first mullion, centering the bond breaker tape over the splice joint.

See **Detail 34** on the next page.

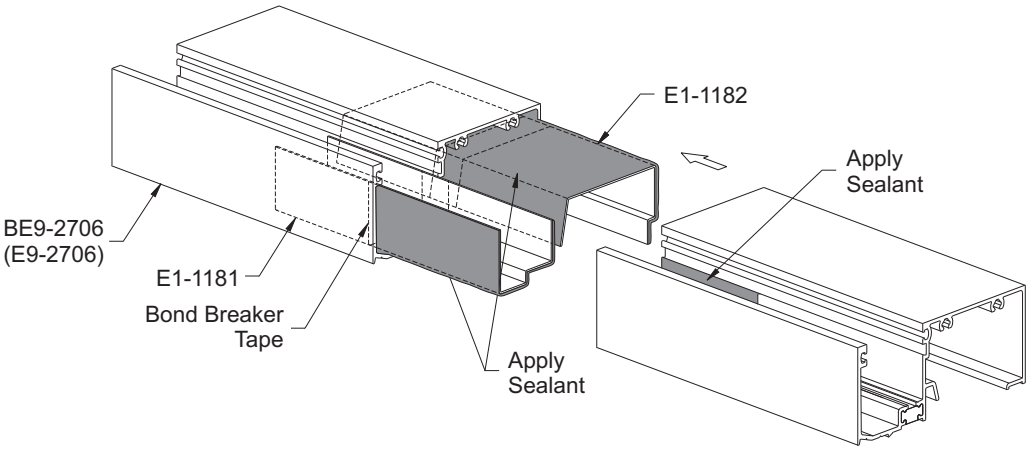
FRAME INSTALLATION

STEP 15 (Continued)
INSTALL CONTINUOUS HEAD & SILL FRAMES

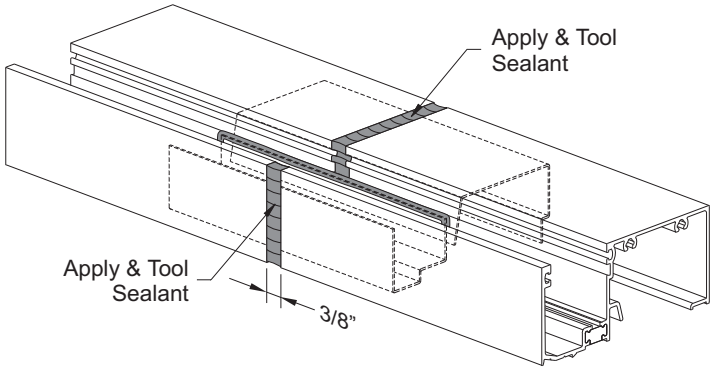
Install Head & Sill Joint Sleeves When Required (Continued):
Note: Intermediate horizontal cannot be spliced.



DETAIL 34
IG Shown
OG Similar



-Slide the next mullion into place leaving a 3/8” gap between the mullions.
-Firmly press the front splice sleeves, E1-1181, into the sealant bed and tool the excess sealant over the edges of the splice sleeve.
-Apply sealant to the joint at the front and back of the mullion.
-Tool the sealant to ensure a tight seal.
See **Detail 35**.



DETAIL 35

FRAME INSTALLATION

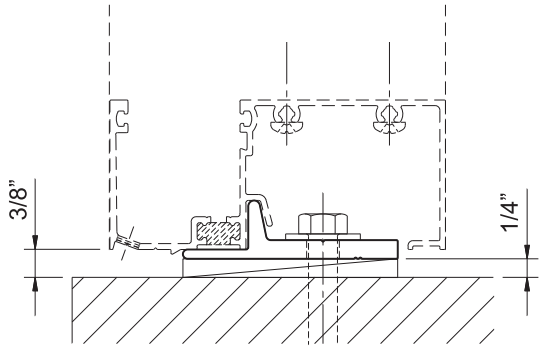
STEP 15 (Continued)
INSTALL CONTINUOUS HEAD & SILL FRAMES
USING OPTIONAL HEAD & SILL ANCHORS

Install Optional Sill Anchors, E1-1172:

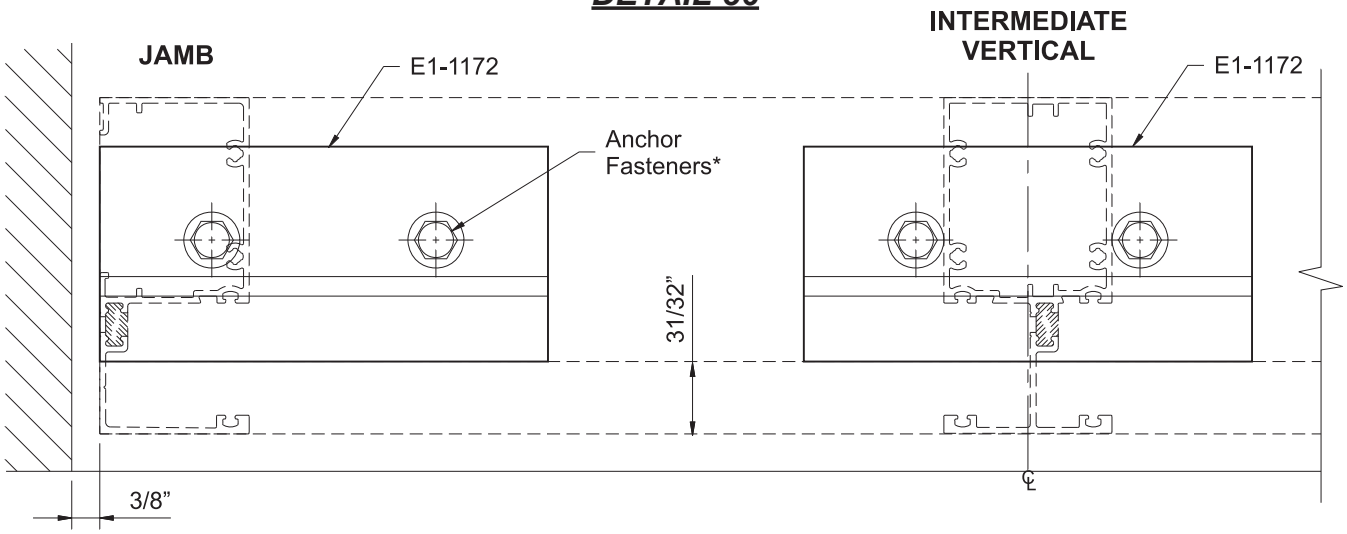
-Predrill sill anchors, E1-1172, for appropriate anchor fasteners*.
-Strike a line along the structure at the sill condition that will be the exterior face of the frame.
-Strike a second line 31/32” behind the first line; this line will represent the front of the sill anchor.
-Mark the centerline of each intermediate vertical along the line representing the sill anchor.
-Place the sill anchors along the reference line flush with the ends of the frame at jamb conditions and centered with mullion centerlines at intermediate verticals.
-Match drill the structure for each sill anchor.
-Install sill anchors with 1/4” minimum shim underneath. Make sure all sill anchors are installed level.

Note: *Anchor fastener size, location, and quantity may vary as required by engineering calculations.

See **Detail 36.**



DETAIL 36



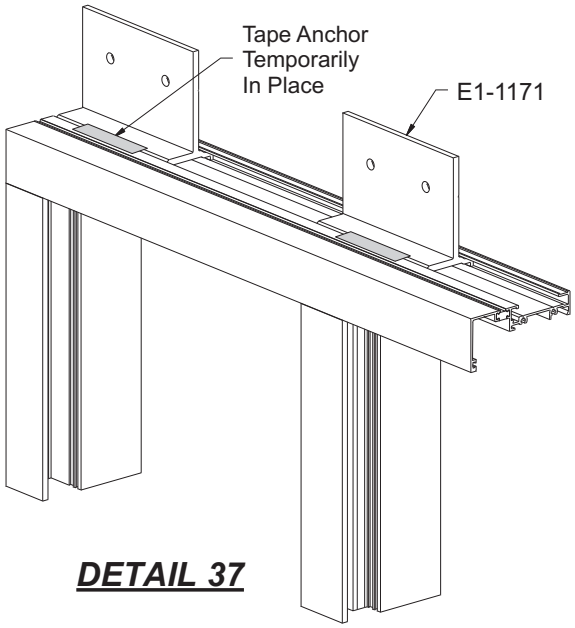
FRAME INSTALLATION

STEP 15 (Continued)
INSTALL CONTINUOUS HEAD & SILL FRAMES USING OPTIONAL HEAD & SILL ANCHORS

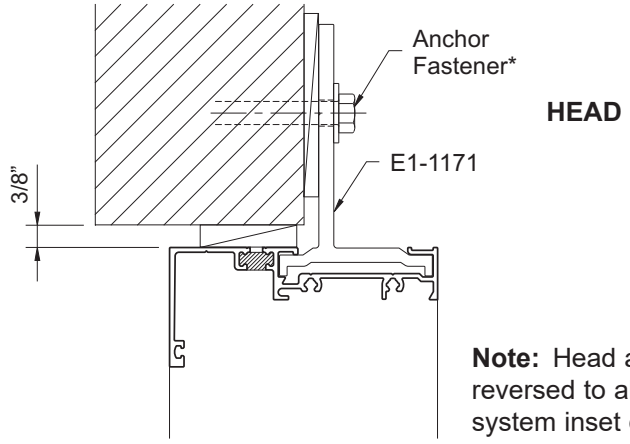
Install Optional Head Anchors, E1-1171:

-Predrill head anchors, E1-1171, for appropriate anchor fasteners*.
-Slide the head anchors from the ends of the head member and locate anchors flush with the ends of the frame at jambs and centered over the centerline of intermediate verticals.
-Temporarily tape the anchors in place to prevent slipping during installation.
See **Detail 37**.

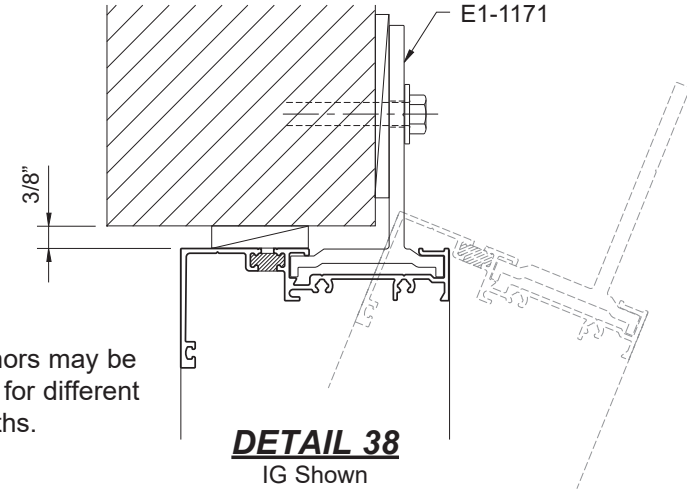
Note: *Refer to approved shop drawings or contact YKK AP for anchor size, quantity, and location.



DETAIL 37



HEAD



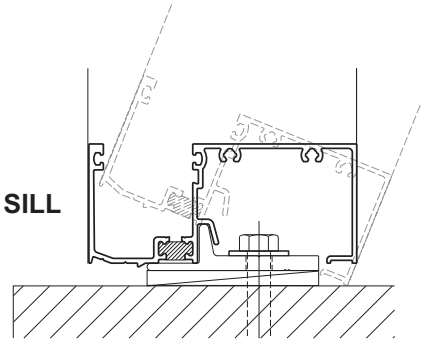
Note: Head anchors may be reversed to allow for different system inset depths.

DETAIL 38
IG Shown
OG Similar

Install Frame Into Opening:

-Carefully rotate the assembled frame into the opening, engage the sill member with the sill anchor, and continue rotating the frame into place.
-Shim the jambs and head anchors to ensure that the frame is installed plumb and true.
-Secure head anchors to the structure with anchor fasteners called out in approved shop drawings.

See **Detail 38**.



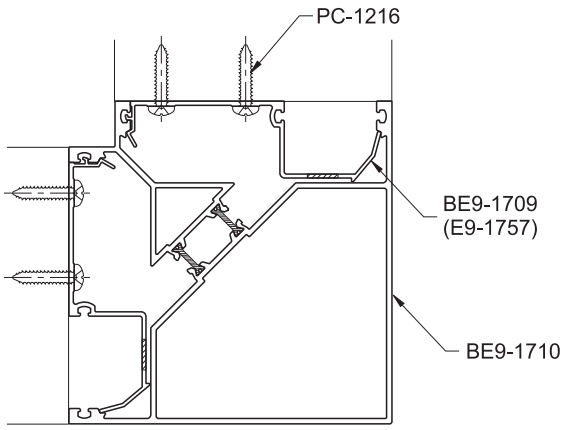
SILL

FRAME INSTALLATION

STEP 16
INSTALL CORNER MULLIONS FOR VERTICAL THROUGH FRAMES

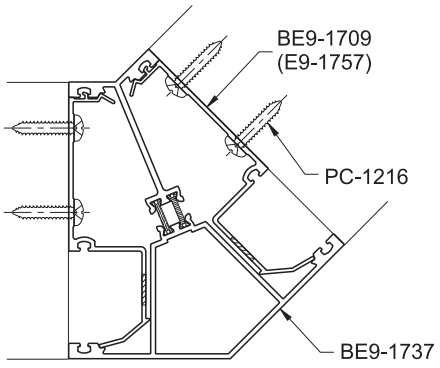
90° & 135° corner mullions and hinged mullions are available for vertical through frames only.

-Attach horizontal members to standard verticals as shown before in **Step 10**.
-Attach the other end of the horizontals to the corner mullions, hinged mullions or flat fillers, corners using the same technique.
-Snap the corner framing members together to form the corner assemblies.
-Hinged mullions must be fastened through the ball joint 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 39**.

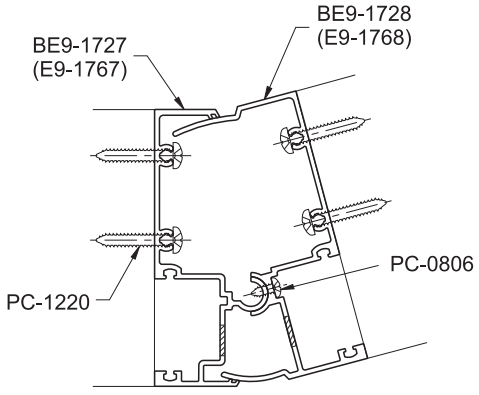


90° Outside Corner

DETAIL 39



135° Outside Corner



0°–15° Hinged Mullion

FRAME INSTALLATION

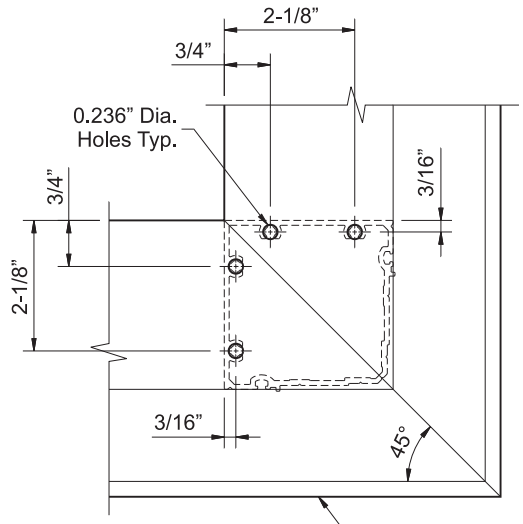
STEP 16 (Continued)
INSTALL CORNER MULLIONS
FOR CONTINUOUS HEAD & SILL FRAMES

90° outside corner mullions are available for IG and OG continuous head and sill frames.

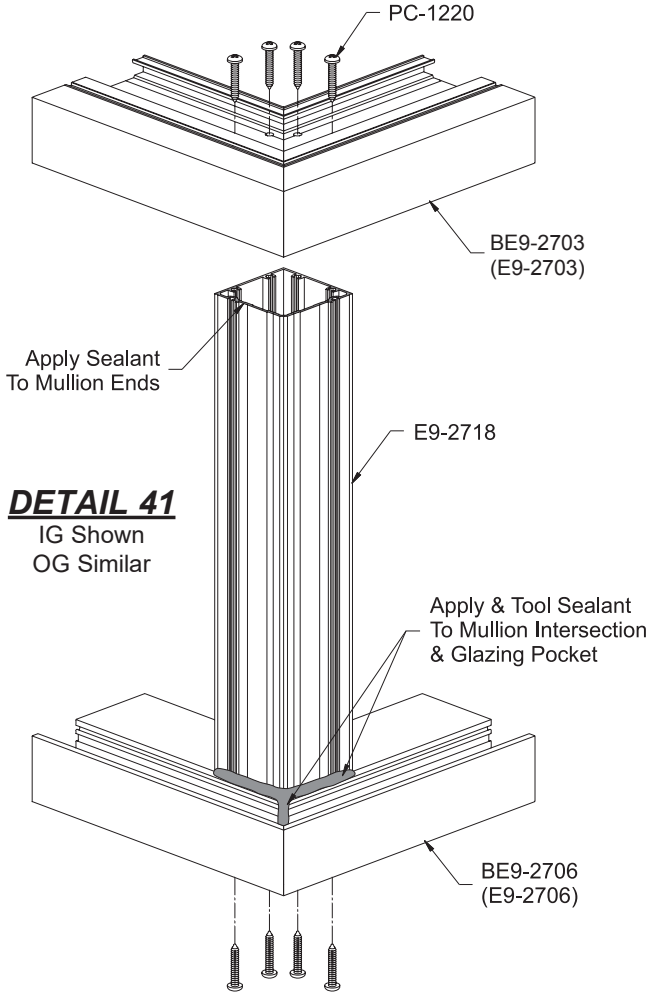
Fabricate Head & Sill Members for Corners:

Head and sill members are mitered (45°) at the corners and must be fabricated for attachment of the SSG corner mullion, E9-2718.

-Layout hole locations as shown in **Detail 40**.
OR
-Using a short piece of E9-2718 as template, line up the glazing pockets and mark hole locations through the screw splines.
-Drill a 0.236” diameter hole at each location marked.
See **Detail 40**.



DETAIL 40



DETAIL 41
IG Shown
OG Similar

Install Corner Assemblies:

-Apply sealant to the ends of the corner mullions and attach them to the head and sill members with (4) PC-1220 fasteners at each end.
-Apply and tool sealant to the joint where the corner mullion and the head & sill members intersect and along the glazing pocket where the head & sill members are mitered.
See **Detail 41**.

-Attach intermediate horizontal members (only BE9/E9-2712 or BE9/E9-2717 may be used with SSG corners) to the verticals and corner mullion as previously shown in **Step 10** on **Page-22**.
-Carefully move the corner assembly into place and anchor the frame to the structure as shown in **Step 15**.

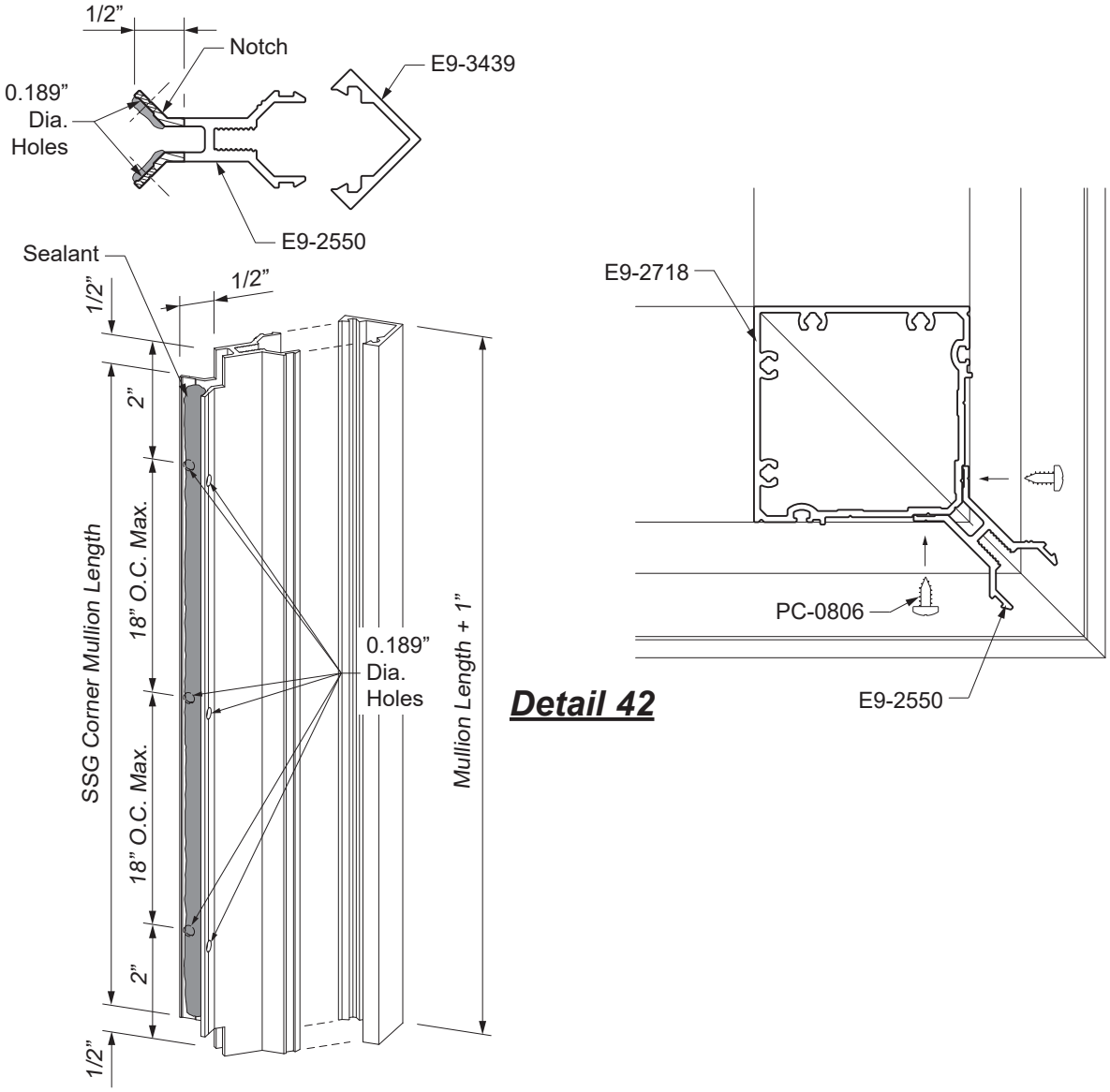
Note: For wider frames, YKK recommends that the head and sill members be spliced as shown in **Step 15**.

FRAME INSTALLATION

STEP 16 (Continued)
INSTALL CORNER SSG MULLIONS
FOR CONTINUOUS HEAD & SILL FRAMES

-Cut the E9-2550 Corner mullion Trim Adaptor Base and the E9-3439 Corner Cover to the length of the SSG corner mullion plus(+) 1".
-Notch 1/2" x 1/2" from each end of the legs of the E9-2550 corner mullion trim adaptor base as shown in **Detail 42**. Drill 0.189" diameter clear holes in the legs of the adaptor 2" from each end and at 18" on center. Apply sealant to the legs of the trim adaptor prior to fastening to the corner mullion.

-Install the E9-2550 adaptor using PC-0806 fasteners at 18" on center. Do not snap on the corner cover yet.



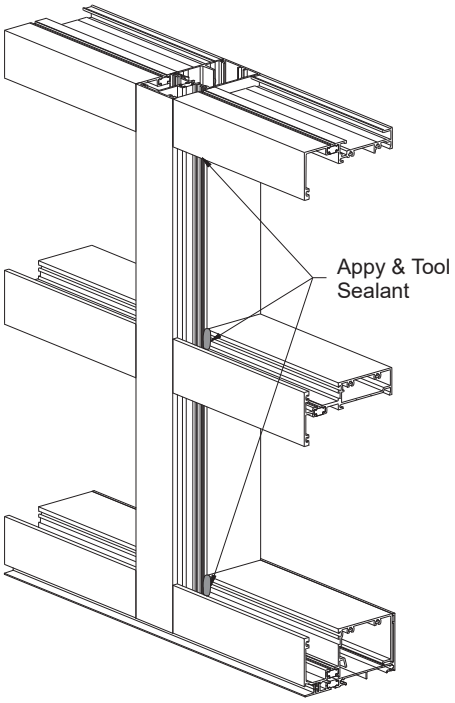
Detail 42

FRAME INSTALLATION

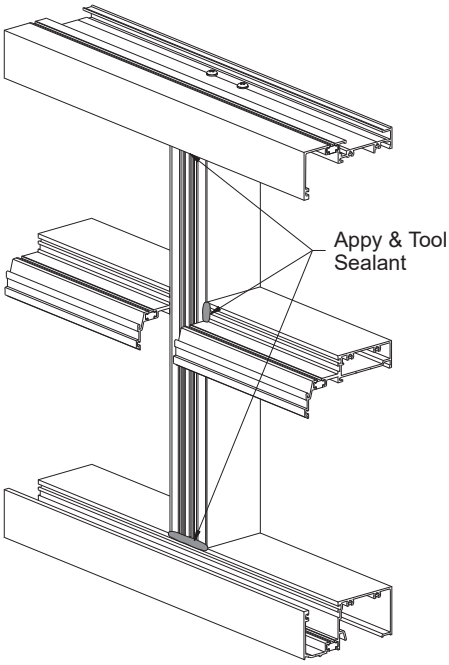
STEP 17
APPLY INTERNAL & PERIMETER SEALANT

-Apply a generous amount of sealant to all vertical/horizontal joints at the glazing pockets.
-Tool the sealant to ensure a watertight joint.
See **Detail 43**.

VERTICAL THROUGH

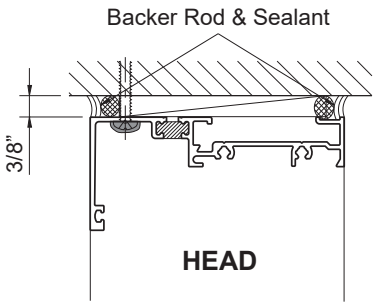


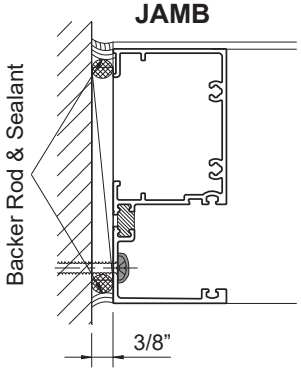
CONTINUOUS HEAD & SILL

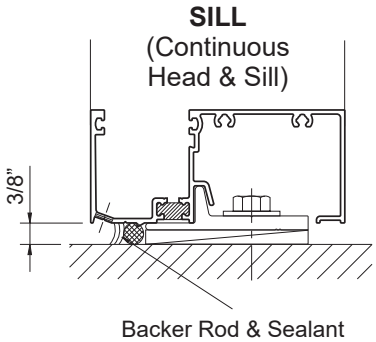


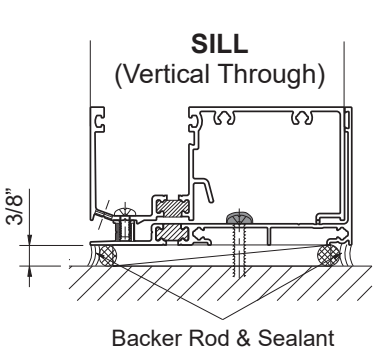
DETAIL 43
IG Shown
OG Similar

-Install backer rod around the perimeter of the frame between the frame and the structure.
-Apply perimeter sealant and tool the sealant to ensure a watertight seal.
See **Detail 44**.









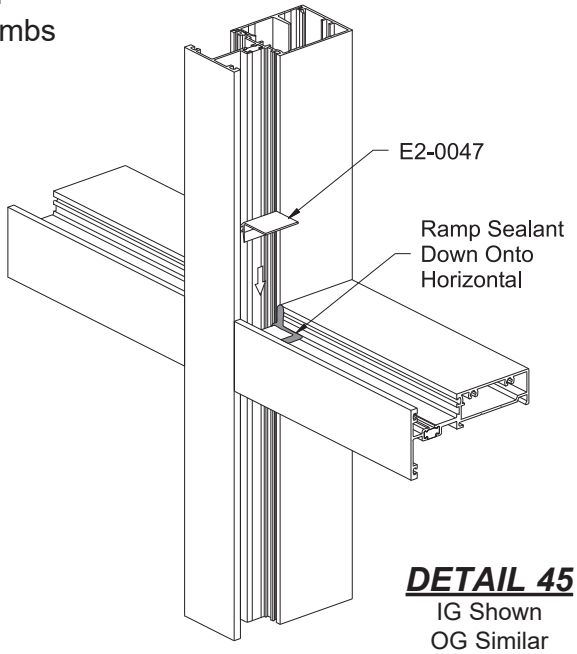
DETAIL 44

FRAME INSTALLATION

STEP 18
INSTALL WATER DEFLECTORS

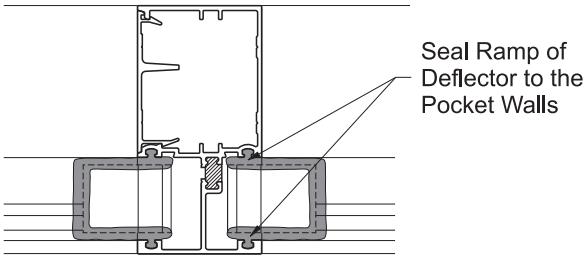
The installation of a water deflector, E2-0047, at the ends of every intermediate horizontal at standard verticals and all jambs is required to divert water away from the insulated units.

-Clean and dry off the glazing pocket of each horizontal at the ends.
-Peel off the protective paper and install the water deflector at the end of the horizontal.
-Position the vertical leg of the deflector against the end of the horizontal.
-Apply and tool sealant along the edges of the water deflector down onto the horizontal.
-Seal the ramp of the water deflector to the sides of the glazing pocket wall.
See **Detail 45 & 45a**.



DETAIL 45
IG Shown
OG Similar

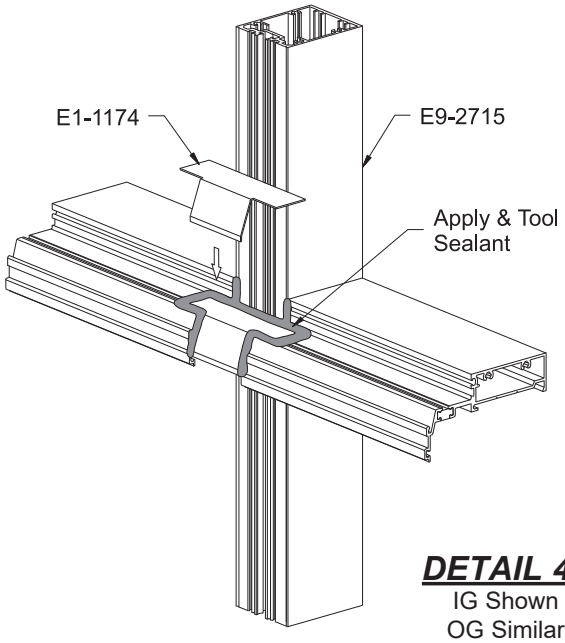
DETAIL 45a



INSTALL SSG WATER DEFLECTORS

The installation of water deflectors, E1-1174 for inside glazing or E1-1178 for outside glazing, is required to bridge the gap between intermediate horizontals at the SSG vertical. SSG corner mullions use E1-1175 & E1-1176 (IG) and E1-1179 & E1-1180 (OG).

-Clean and dry off the glazing pocket of each horizontal at the ends.
-Peel away the protective paper on the underside of the SSG water deflector.
-Install the water deflector centered over the gap, pressing it firmly down onto the glazing pocket.
-Apply and tool sealant at all bridge to horizontal and vertical joints to ensure a watertight seal.
See **Detail 49.**



DETAIL 46
IG Shown
OG Similar

FRAME INSTALLATION

STEP 19
INSTALL GLAZING ADAPTORS (When Required)

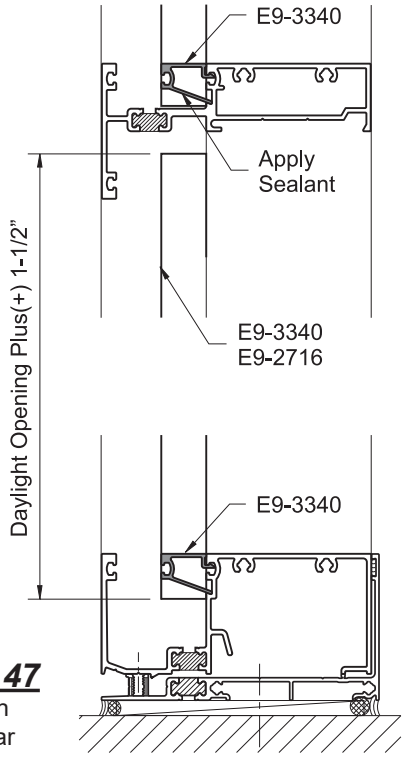
-Cut glazing adaptors E9-3340 & E9-2716 for verticals:
Cut Length = Daylight Opening plus(+) 1-1/2”
-Cut glazing adaptors E9-3340 for horizontals:
Cut Length = Daylight Opening minus(–) 1/32”
-Run a bead of sealant along the gasket reglets.

Attach the vertical glazing adaptors first:
-Center the vertical adaptors in the opening.
-For standard verticals, insert the ball end leg of the adaptor into the mullion recess and rotate the snap leg into the reglet.
-For SSG verticals, attach the SSG glazing adaptor, E9-2716, to the mullion with PC-1016 fasteners, 3” from each end and no more than 18” on center, and seal all screw heads.

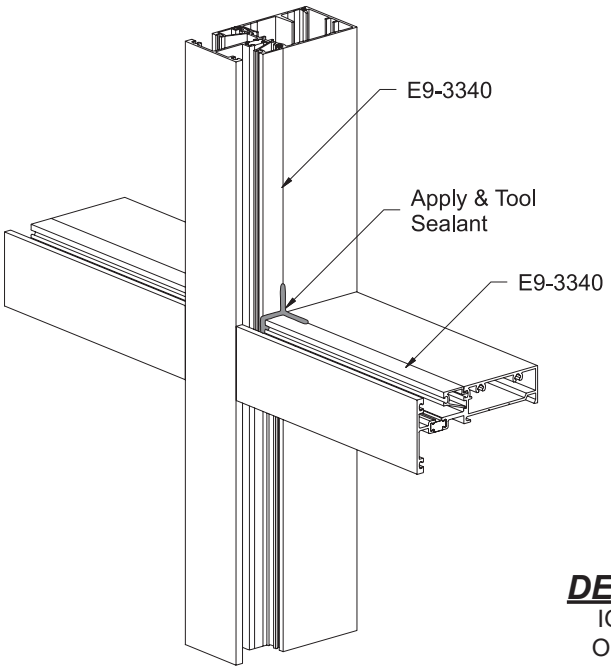
Attach the horizontal glazing adaptors last:
-Apply sealant to the ends of the horizontal glazing adaptors and install the horizontal adaptors.

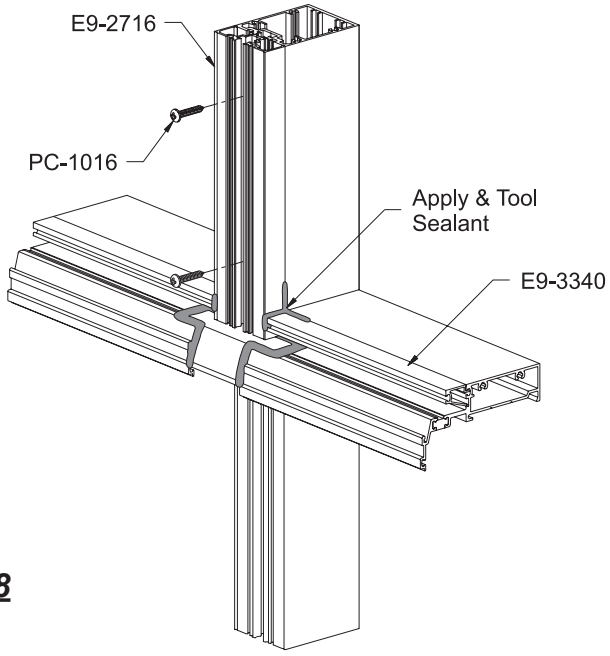
-Tool the excess sealant at the intersections of the adaptors to completely seal the joint.

See **Details 47 & 48**.



DETAIL 47
IG Shown
OG Similar





DETAIL 48
IG Shown
OG Similar

GLAZING

STEP 20
INSTALL GLAZING GASKETS

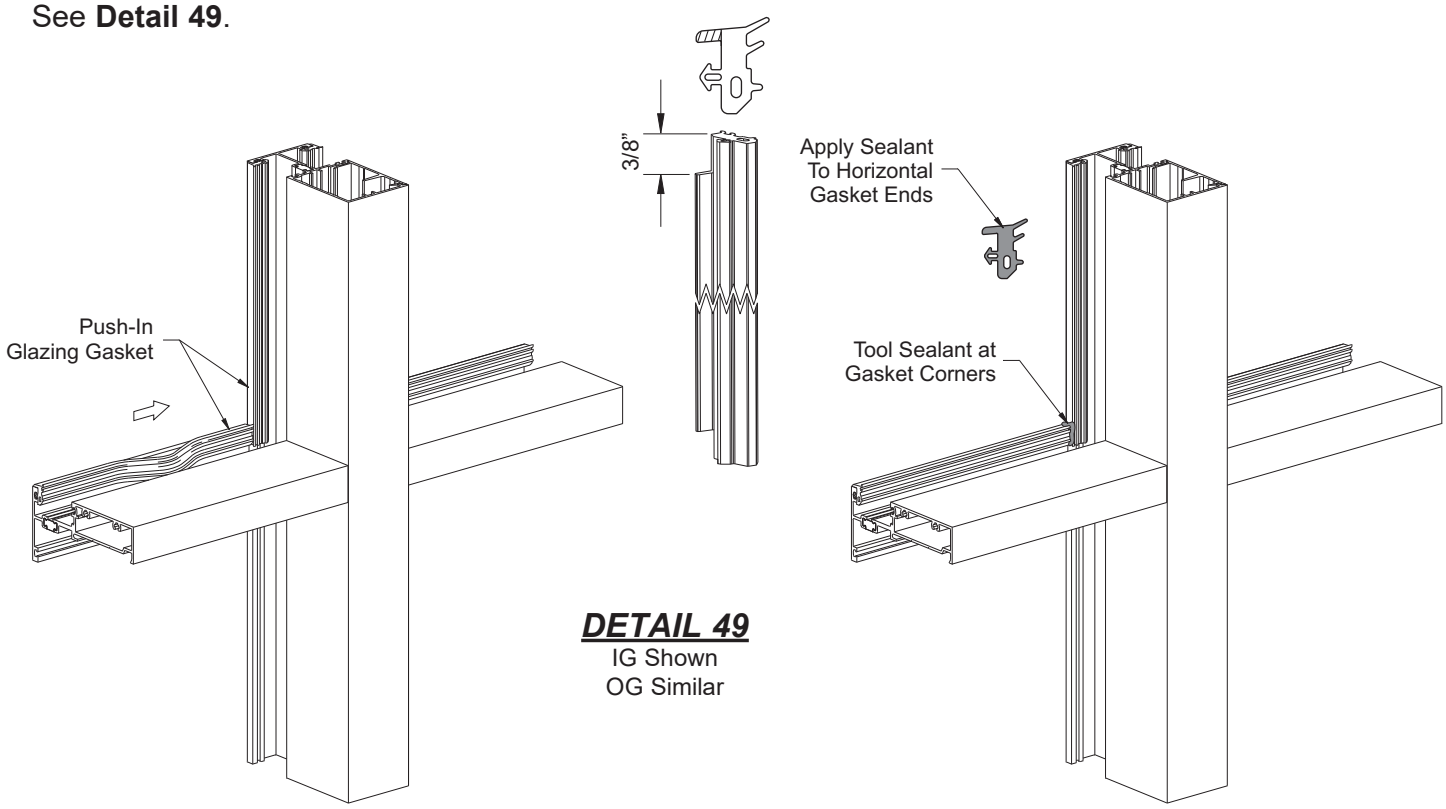
For inside glazing: the exterior glazing gaskets must be installed prior to the glazing process.
For outside glazing: the interior glazing gaskets must be installed prior to the glazing process.
(Note: For both IG and OG, push-in gasket E2-0801 or E2-0541(for SSG) will be installed.

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

Vertical glazing fixed gaskets must be installed first:

-Cut vertical fixed glazing gaskets to Daylight Opening plus(+) 3/4".
-Trim both ends of the exterior leg of fixed glazing gasket 3/8" as shown below.
-Insert the gasket into the reglets at each end first; 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.

See **Detail 49**.



DETAIL 49
IG Shown
OG Similar

Install horizontal glazing gaskets next:

-Cut horizontal fixed 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; 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 49**.

GLAZING

STEP 21
INSTALL GLASS FOR STANDARD GLAZING
(Vertical Through Frames)

-Determine the glass size:

	Width	Height
Standard Glazing	**D.L.O. + 7/8”**	**D.L.O. + 7/8”**

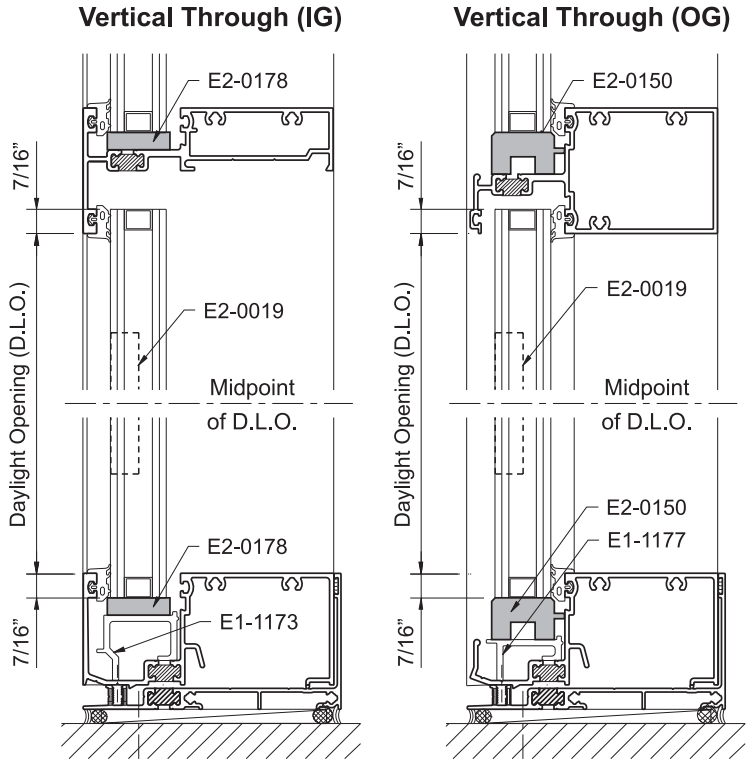
-Install setting blocks at 1/4 points or according to engineering calculations at the intermediate horizontal and sill:
For inside glazing: E2-0192 (1/4” gl.) or E2-0178 (1” gl.) with setting block chair E1-1173 at sill.
For outside glazing: E2-0190 (1/4” gl.) or E2-0150 (1” gl.) with setting block chair E1-1177 at sill.

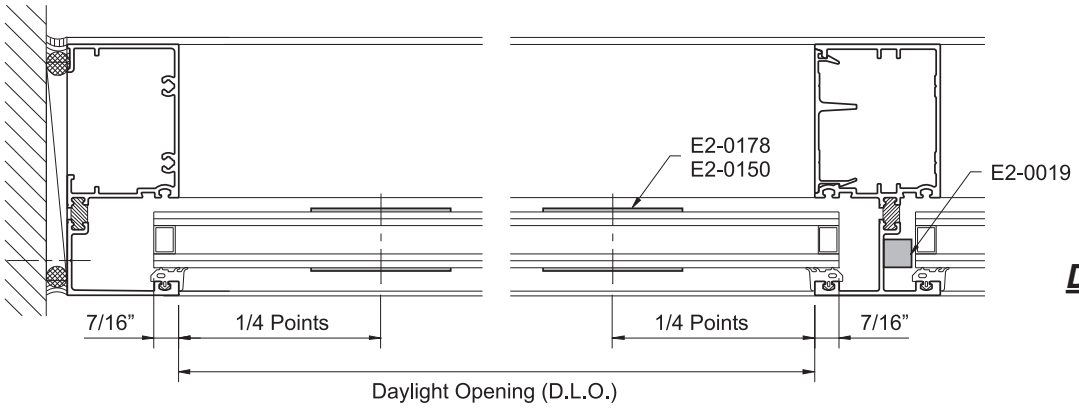
See **Detail 50**.

-Install side blocks, E2-0019, in the shallow glazing pocket of each vertical at the midpoint of daylight opening. Use E2-0537 (1/4” gl.) or E2-0513 (1” gl.) for expansion mullions.
Note: For side blocks without pressure sensitive adhesive, apply sealant to the contact side before installing.
-Carefully install glass into the frame making sure that setting and side blocks are properly aligned with the glass.

See **Details 50 & 51**.

DETAIL 50





DETAIL 51

GLAZING

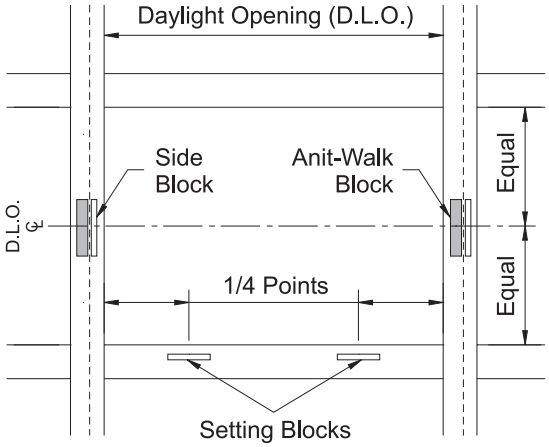
STEP 22
INSTALL ANTI-WALK BLOCKS

Anti-walk blocks must be installed in the vertical deep glazing pocket of each lite centered along the daylight opening:

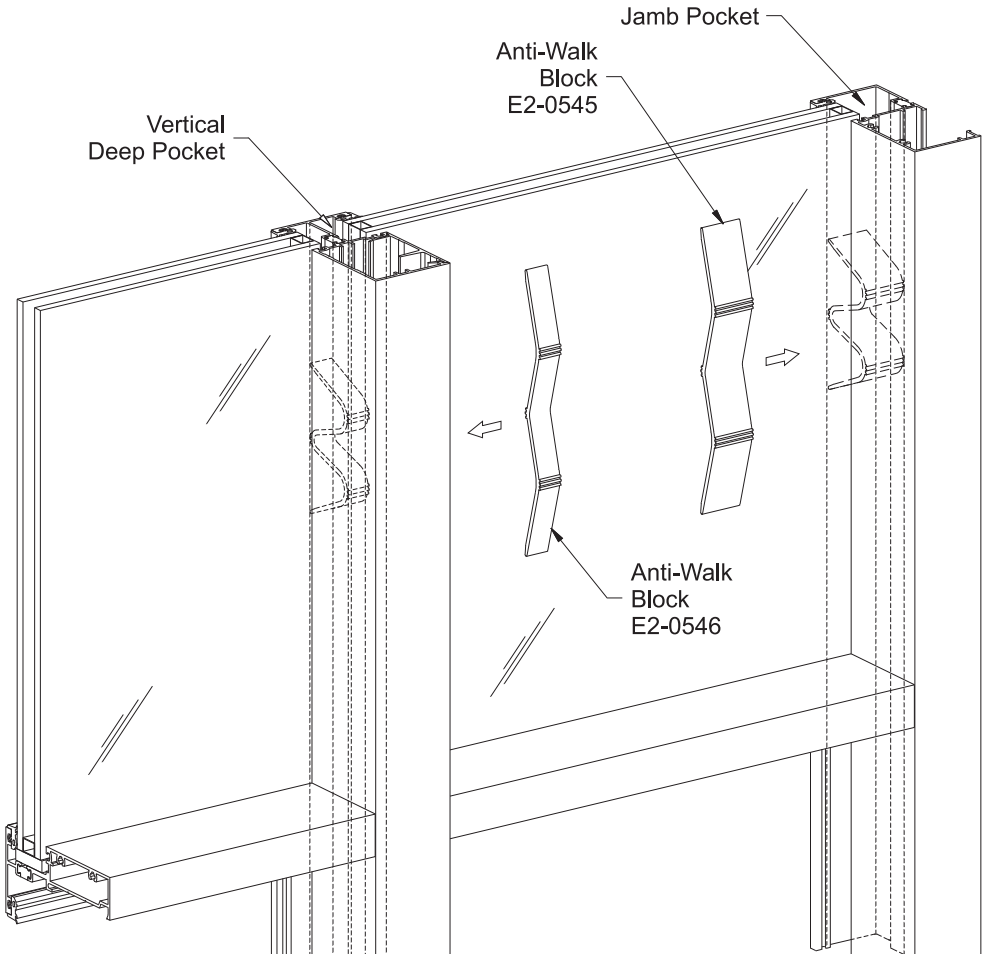
E2-0545 for all jambs.
E2-0546 for standard verticals.
E2-0153 for expansion mullions.

-Flatten the anti-walk block against the surface of the glass and push it into the opening between glass and the mullion until it is released into the glazing pocket.
See **Details 52 & 53**.

Note: Anti-walk block installation for inside glazing shown below; installation for outside glazing is similar but installed from the outside.



DETAIL 52



DETAIL 53
IG Shown
OG Similar

GLAZING

STEP 23
INSTALL GLASS STOPS

For inside glazed frames interior glass stops, E9-2707 for 1” glazing or E9-2708 for 1/4” glazing, are required at all head and intermediate horizontals.

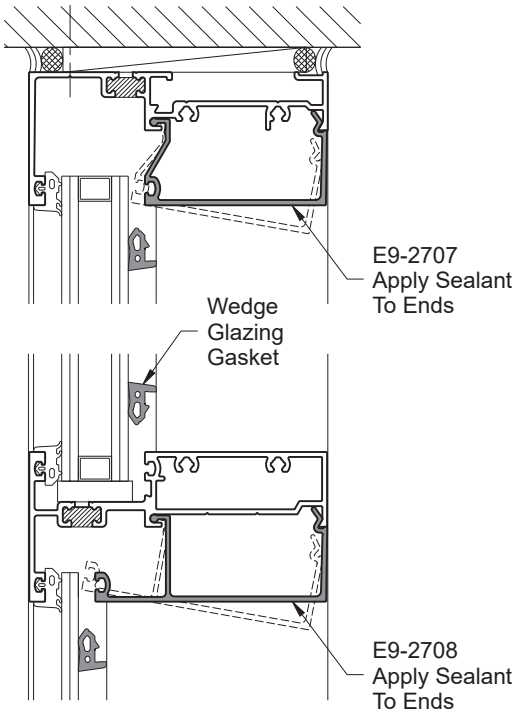
-Apply a quality non-hardening sealant to each end of the glass stops and snap them into position.
-Tool the sealant into the joint between the glass stop and the vertical to ensure a watertight seal and wipe away any excess sealant.

See **Detail 54**.

-Install the interior glazing gaskets using the same technique described in **Step 20** on **Page-39**.

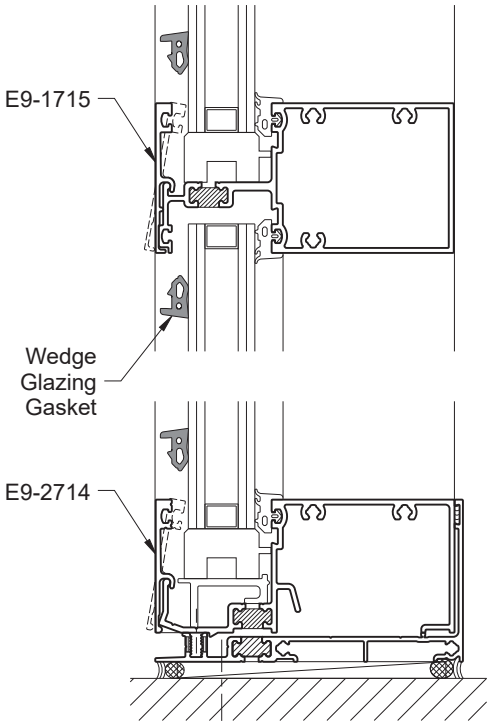
Note: Always install vertical glazing gaskets first.

INSIDE GLAZED



DETAIL 54

OUTSIDE GLAZED



DETAIL 55

For outside glazed frames exterior glass stops, E9-1715 for intermediate horizontals or E9-2714 for sills, are required at all intermediate horizontal and sill conditions.

-Engage the hook of the glass stops with the ball of the horizontal members and rotate them into position.

See **Detail 55**.

-Install the exterior glazing gaskets using the same technique described in **Step 20** on **Page-39**.

Note: Always install vertical glazing gaskets first.

GLAZING

STEP 24
INSTALL GLASS FOR INSIDE GLAZED STRUCTURAL SILICONE GLAZING (Continuous Head & Sill Frames)

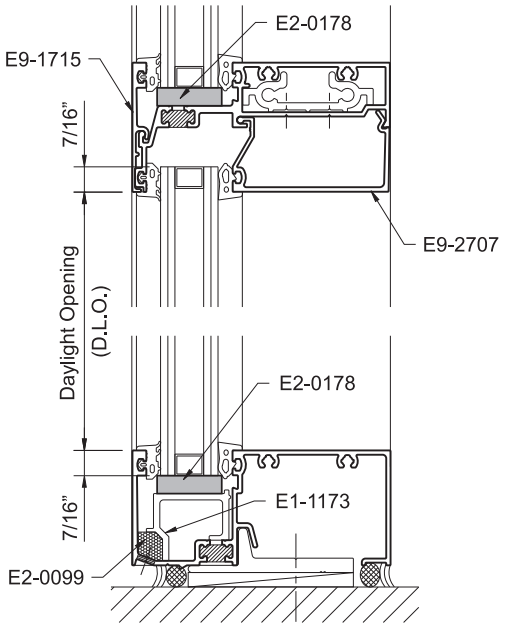
	Width	Height
Jamb to SSG	**D.L.O. + 1 5/16”**	**D.L.O. + 7/8”**
SSG to SSG	**D.L.O. + 1 3/4”**	**D.L.O. + 7/8”**

-Determine the glass size:

-Install setting blocks at 1/4 points or according to engineering calculations at the intermediate horizontal and sill: E2-0192 (1/4” gl.) or E2-0178 (1” gl.) with setting block chair E1-1173 at the sill.

Note: Weep baffles, E2-0099, are required at each setting block chair and over the weep holes.

-Install exterior glass stops, E9-1715 at the horizontal.
-Install glazing gaskets to the glass stop as instructed in **Step 20** except leave 1/2” gaps on the underside where the glass stops are spliced or notched to allow proper weepage.
-Carefully install the first lite of glass from the interior starting at one of the jambs.
-Slide the glass into the glazing pocket of the jamb until it clears the vertical; slide the glass back 7/8” over in front of the first vertical.
-Cut the structural silicone glazing spacers, E2-0543, to the same dimension as the glass plus(+) 3/16” per foot.
-Align the bottom of the spacer with the bottom of the glass. Push the spacer in until it locks into place and work your way up the vertical until the entire spacer is installed.
-Install interior glass stops and glazing gaskets to the jambs and stops as previously shown in **Step 23**.

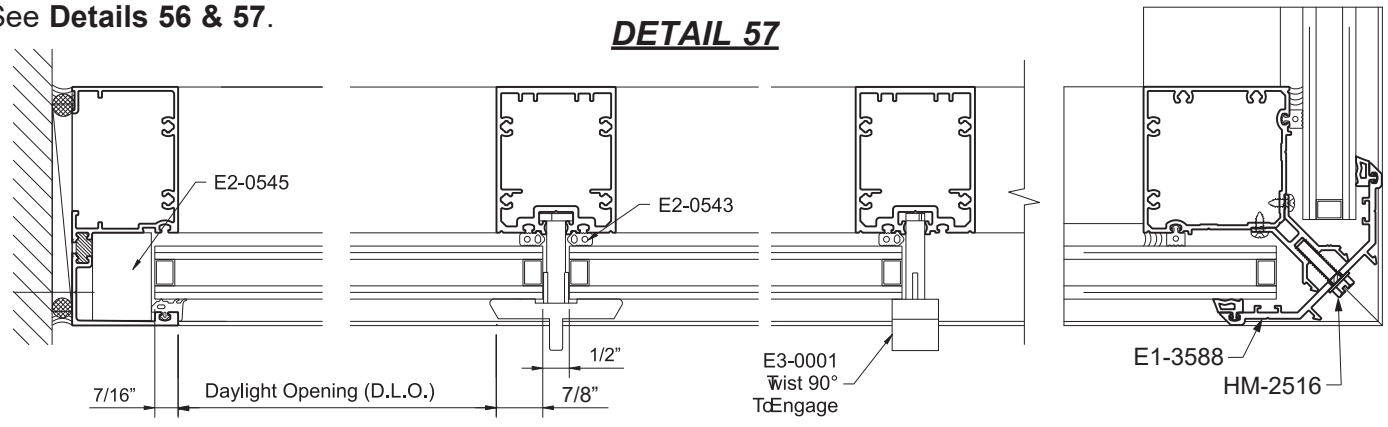


DETAIL 56

-Insert temporary glass retainers, E3-0001 (1” gl.) or E3-0006 (1/4” gl.), from the open side of the vertical and twist them 90° clockwise to engage. Locate temporary glass retainers 18” to 24” on center.
-At 90° outside corners, use E1-3588 with HM-2516 fasteners.
-Install the next the lite and center it to maintain a 1/2” joint between lites.
-Repeat the instructions above until all lites are installed.

See **Details 56 & 57**.

DETAIL 57



GLAZING

STEP 24
INSTALL GLASS FOR OUTSIDE GLAZED STRUCTURAL SILICONE GLAZING (Continuous Head & Sill Frames)

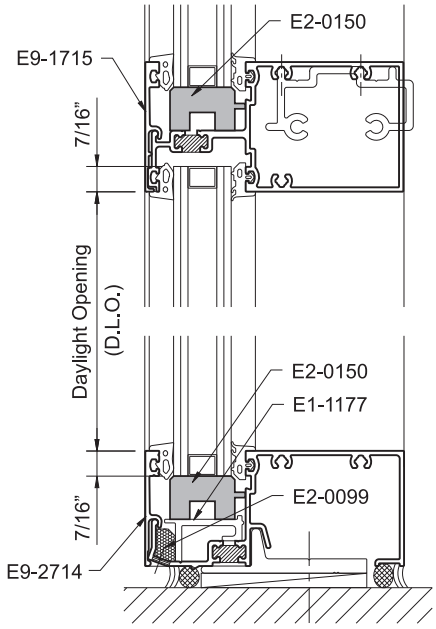
	Width	Height
Jamb to SSG	**D.L.O. + 1 5/16”**	**D.L.O. + 7/8”**
SSG to SSG	**D.L.O. + 1 3/4”**	**D.L.O. + 7/8”**

-Determine the glass size:

-Install setting blocks at 1/4 points or according to engineering calculations at the intermediate horizontal and sill: E2-0190 (1/4” gl.) or E2-0150 (1” gl.) with setting block chair E1-1177 at sill.

Note: Weep baffles, E2-0099, are required at each setting block chair and over the weep holes.

-Cut the structural silicone glazing spacers, E2-0544, to the same dimension as the glass plus(+) 3/16” per foot.
-Install the ssg spacers centered along the opening.
-Carefully install the first lite of glass from the exterior starting at one of the jambs.
-Slide the glass into the glazing pocket of the jamb until it clears the vertical; slide the glass back 7/8” over in front of the first vertical.
-Install exterior glass stops, E9-1715 at the intermediate horizontal and E9-2714 at the sill.
-Install glazing gaskets to the jambs and glass stops as shown in **Step 20** except leave 1/2” gaps on the underside where the glass stops are spliced or notched to allow proper weepage.
-Install the next the lite and center it to maintain a 1/2” joint between lites.

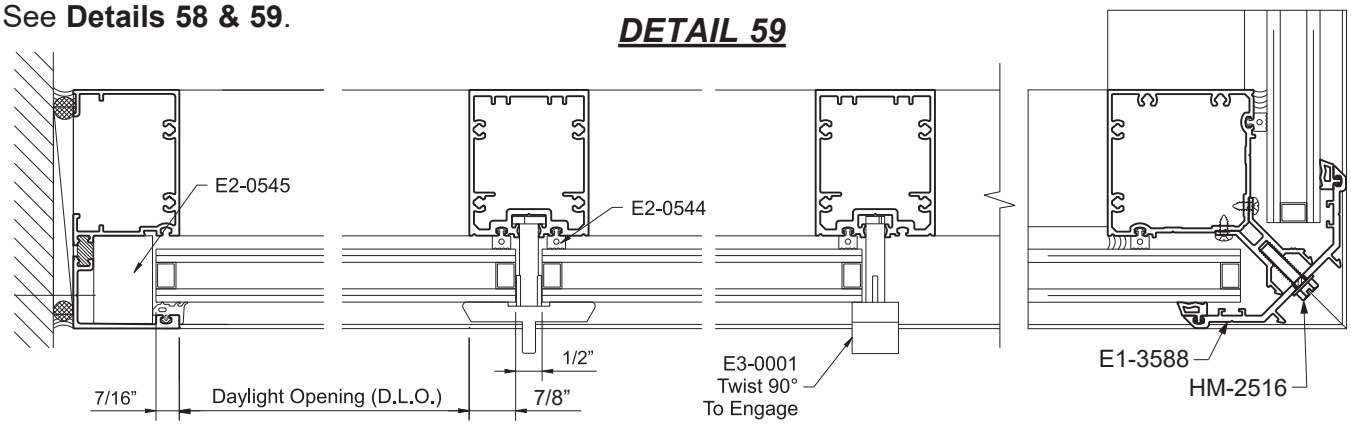


DETAIL 58

-Insert temporary glass retainers, E3-0001 (1” gl.) or E3-0006 (1/4” gl.), from the open side of the vertical and twist them 90° clockwise to engage. Locate temporary glass retainers 18” to 24” on center.
-At 90° outside corners, use E1-3588 with HM-2516 fasteners.
-Install the next the lite and center it to maintain a 1/2” joint between lites.
-Repeat the instructions above until all lites are installed.

See **Details 58 & 59**.

DETAIL 59

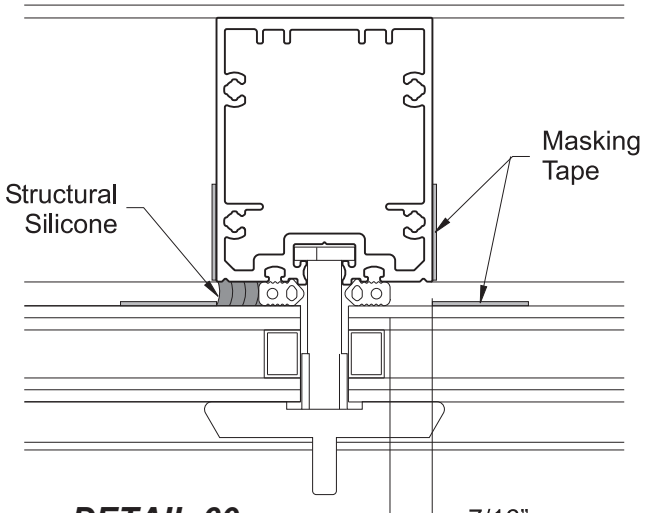


GLAZING

STEP 25
APPLY INTERIOR STRUCTURAL SILICONE

-Run a piece of masking tape vertically on the glass with one edge in line with the side of the mullion.
-Run another piece of masking tape vertically along the edge of the vertical nearest to the glass.
-Check to make sure that the structural silicone spacers are 7/16” from the edge of the vertical in order to obtain the proper structural joint size.

See **Detail 60.**



DETAIL 60
IG Shown
OG Similar

-Prior to applying the structural silicone, clean all contact surfaces using an approved cleaner.

-Apply an approved structural silicone from the bottom to the top of the joint.
Use positive pressure to completely fill the cavity between the glass and vertical mullion.

-Using a nylon spatula or other non-scratching implement, tool the silicone immediately after running the vertical joint. Exert positive pressure while tooling to ensure that the silicone completely fills the cavity.

-Be careful not to remove too much silicone.
The silicone should make complete contact with the glass and aluminum surfaces.
The finished joint should be flush with the edge of the vertical.

Caution: Do not permit the silicone to skin over before it is tooled. Immediately remove masking tape after tooling the silicone.

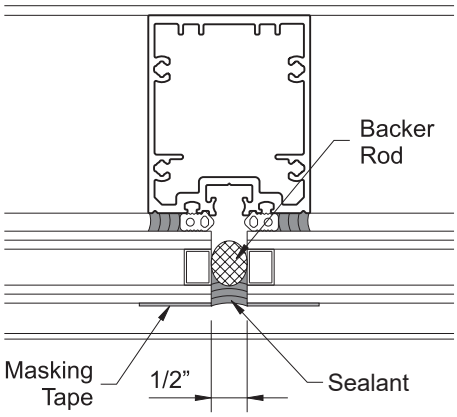
GLAZING

STEP 26
APPLY EXTERIOR WEATHERSEAL

Once the interior structural silicone has cured*, it is necessary to seal the 1/2” wide exterior joint between the lites of glass.

Note: * Please consult sealant manufacturer for recommended cure time.

-Remove the temporary glass retainers and insert an approved, open cell polyurethane backer rod between the lites of glass.
-Clean all contact surfaces with an approved cleaner and apply masking tape to both vertical edges of the glass.
-Starting at the bottom of the lite, pump sealant into the joint between the lites of glass. Apply moderate pressure so that the void is completely filled.
See **Detail 61.**



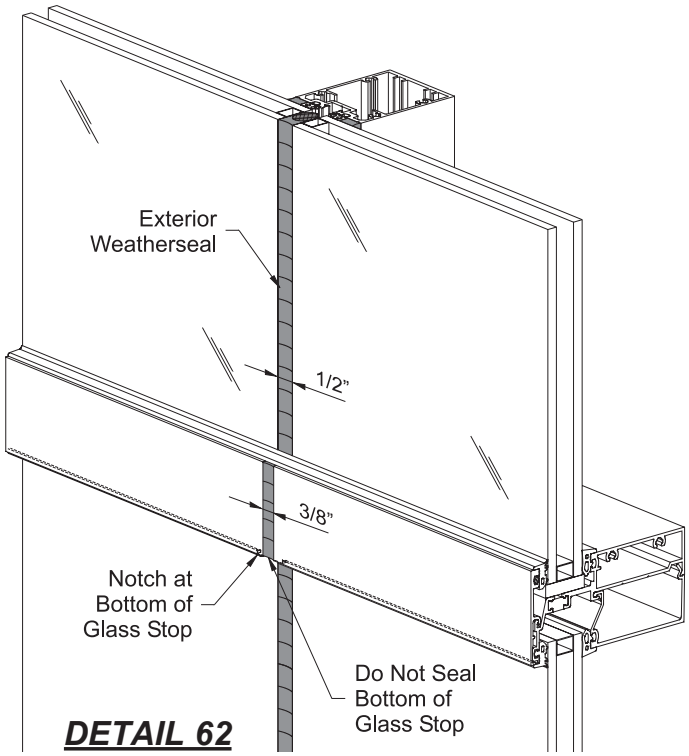
DETAIL 61
IG Shown
OG Similar

Caution: Be careful not to puncture the backer rod or push it out of the way.

-At face member splices, carry the sealant down over the face member without sealing off the bottom.
See **Detail 62.**

-Using a nylon spatula or other non-scratching implement, tool the silicone immediately after running the vertical joint. Exert positive pressure while tooling to ensure that the silicone completely fills the cavity.

-Be careful not to remove too much silicone. The silicone should make complete contact with the glass and aluminum surfaces. The finished joint should be flush with the edge of the vertical.



DETAIL 62

Caution: Do not permit the silicone to skin over before it is tooled. Immediately remove masking tape after tooling the silicone.

GLAZING

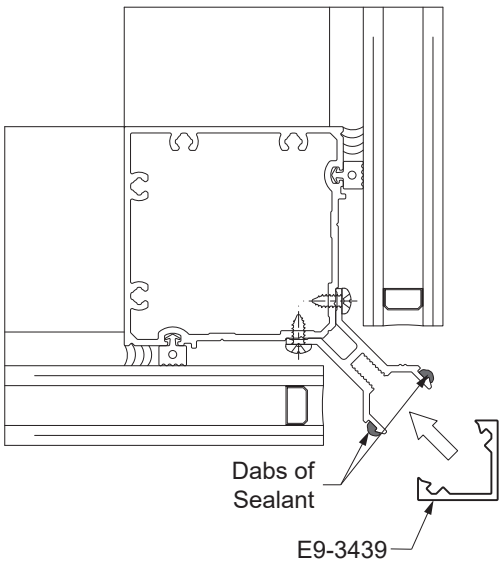
STEP 26
APPLY EXTERIOR WEATHERSEAL @ SSG CORNER

Once the interior structural silicone has cured*, it is necessary to seal the 1/2” wide exterior joint at the corner ssg mullion.

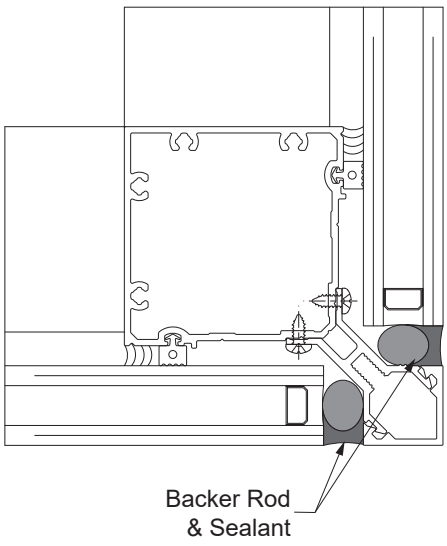
Note: * Please consult sealant manufacturer for recommended cure time.

-Remove the temporary glass retainers. Apply dabs of sealant ono the corner trim base as shown in **Detail 62**, and snap on the E9-3439 corner trim cover onto the corner trim base.
-Clean all contact surfaces with an approved cleaner and apply masking tape to both vertical edges of the glass.
-Insert an approved, open cell polyurethane backer rod between the glass and the corner trim.
-Starting at the bottom of the lite, pump sealant into the joint between the lites of glass. Apply moderate pressure so that the void is completely filled.

See **Detail 63.**



Detail 62



Detail 63

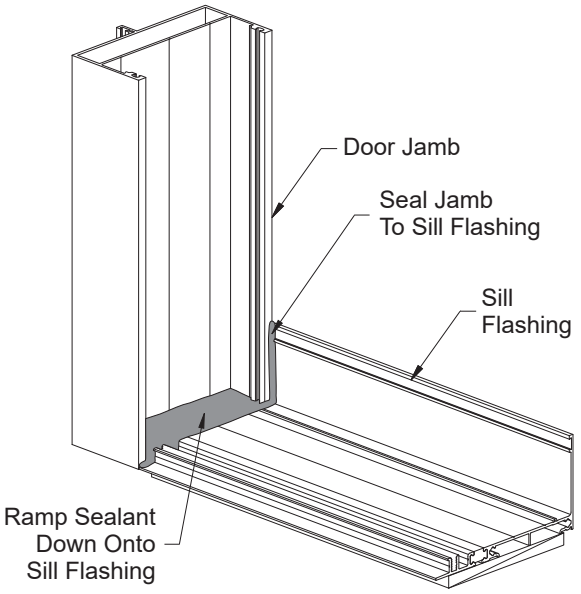
DOOR FRAME INSTALLATION

STEP 27
INSTALL DOOR FRAME

Doors are shipped assembled, and door frames will be fabricated and shipped knocked down. Please refer to the 20D, 35D, & 50D Entrances Installation Manual for door installation.

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 a liberal amount of sealant to completely fill the door jamb cavity and ramp the sealant down onto the sill flashing.
See **Detail 63**.



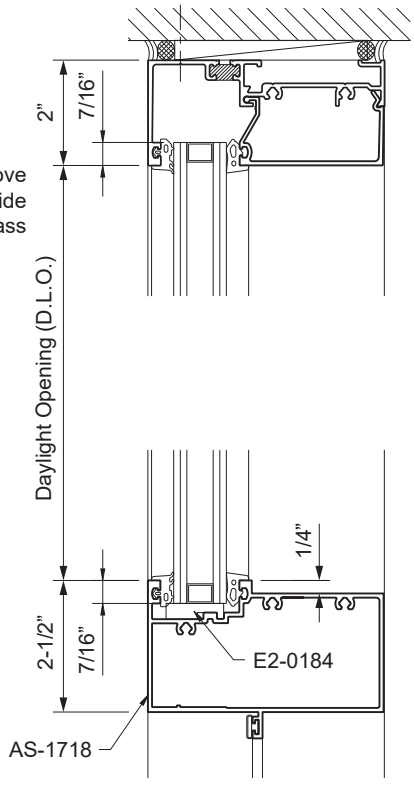
DETAIL 63

Glass sizes for transom areas are not the same as for standard YWW 45 FI/TU frames. See the table below and **Detail 64** for transom glass sizes.

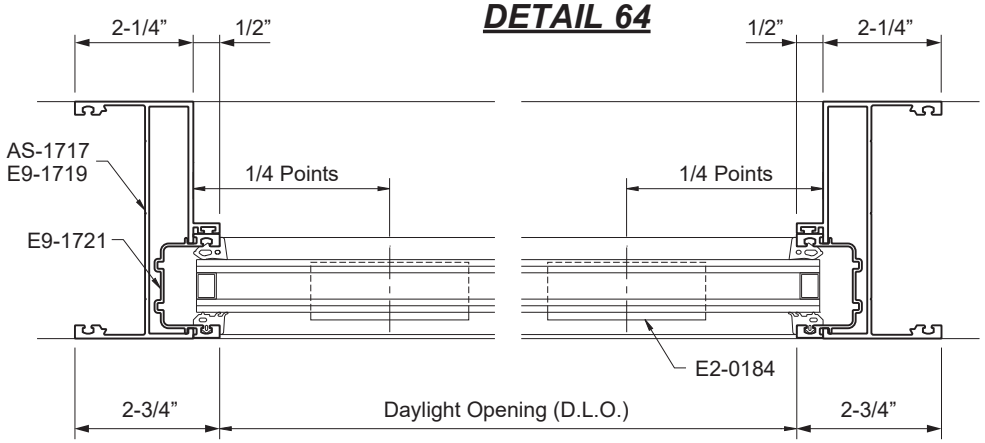
Transom Glass Sizes:

	Width	Height
Transom Glazing	**D.L.O. + 7/8”**	**D.L.O. + 7/8”**

Note: Head Member above transom must be Inside Glazed to install glass



DETAIL 64



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