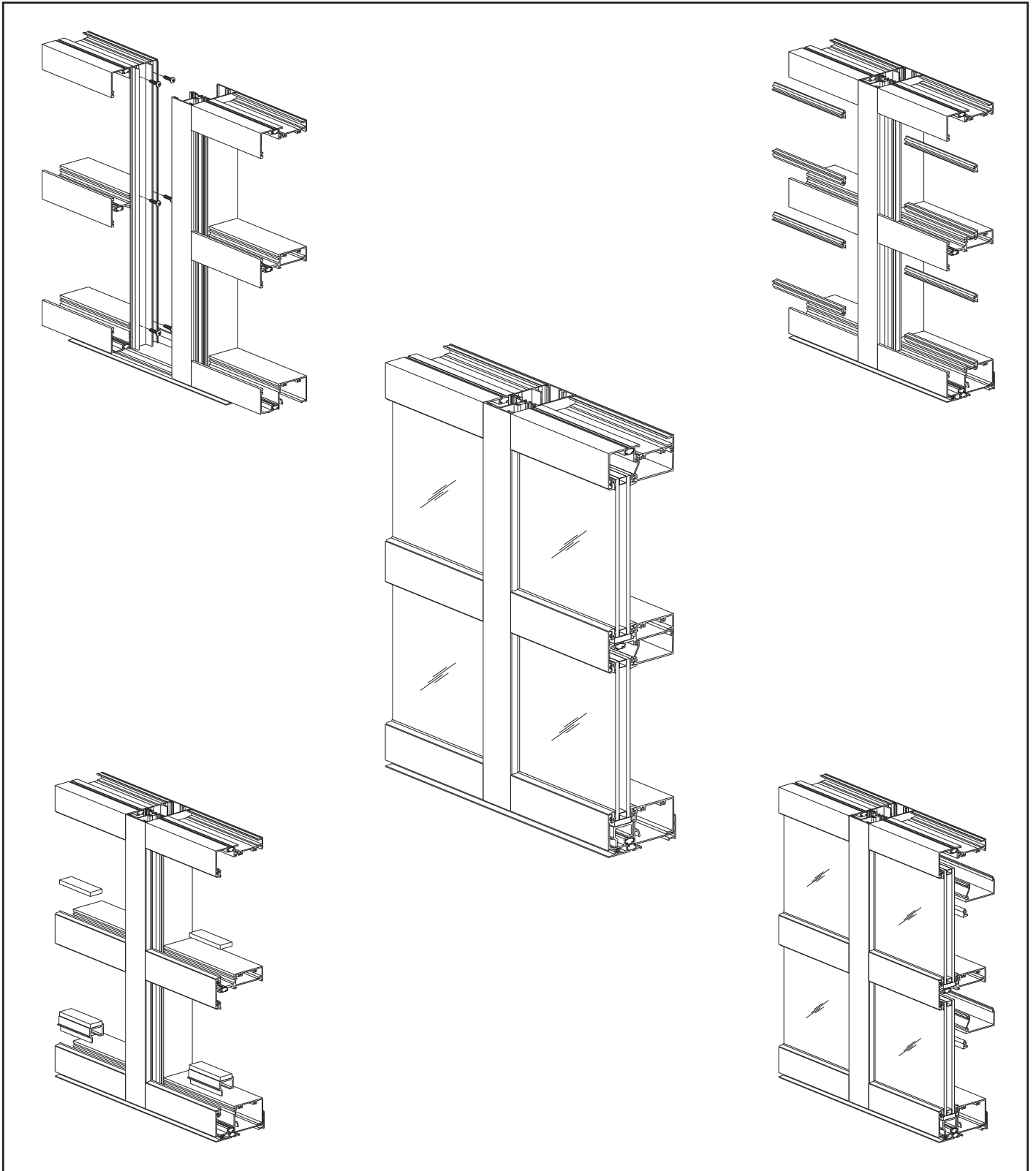


YWW 45 FI/TU Window Wall System



Installation Manual

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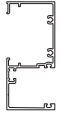
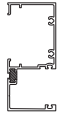

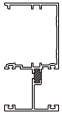




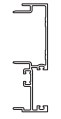

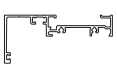
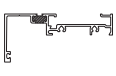
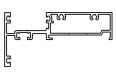
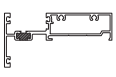




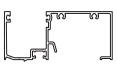
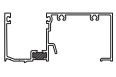




DOOR FRAME INSTALLATION

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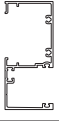
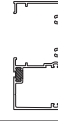
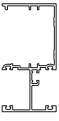







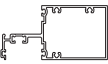
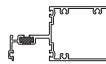


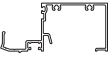
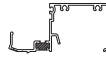






Installation Notes

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor and may stain aluminum finishes and paints.
3. All materials should be checked for 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.

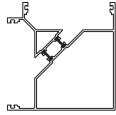
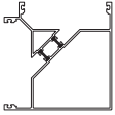
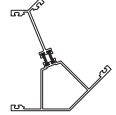
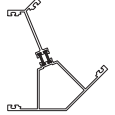










IG VERTICAL THROUGH FRAMING MEMBERS

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	E9-2405		Thermal Sill Flashing E9-2405 May Be Substituted For Economy	BE9-2711

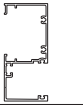
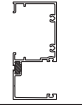
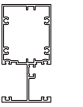
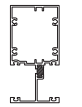


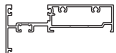
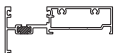
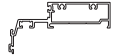
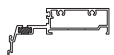




















OG VERTICAL THROUGH FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	Jamb / Head	E9-2703		Jamb / Head	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	E9-2405		Thermal Sill Flashing E9-2405 May Be Substituted For Economy	BE9-2711


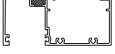
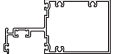
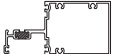


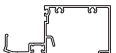















IG/OG CORNER FRAMING MEMBERS (Vertical Through Only)

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





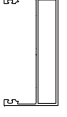
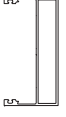
















IG CONTINUOUS HEAD & SILL FRAMING MEMBERS

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
	Glazing Adaptor For 90° SSG Corner Mullion E9-2348		Glazing Adaptor For 90° SSG Corner Mullion E9-2348

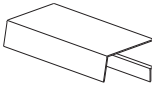
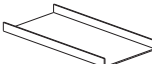
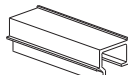
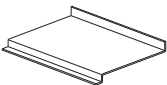

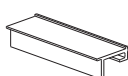
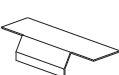

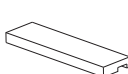

OG CONTINUOUS HEAD & SILL FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	Jamb / Head	E9-2703		Jamb / Head	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		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
	Glazing Adaptor For 90° SSG Corner Mullion	E9-2348		Glazing Adaptor For 90° SSG Corner Mullion	E9-2348



















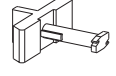

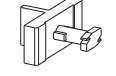




DOOR FRAMING MEMBERS

YWW 45 FI			YWW 45 TU		
	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" Elastomer Weathering E2-0051 included	AS-1717
	Single Acting Transom Bar 2-1/4" x 4-1/2" E2-0051 included	AS-1718		Single Acting Transom Bar 2-1/4" x 4-1/2" E2-0051 included	AS-1718
	Double Acting Door Jamb 2-1/4" x 4-1/2"	E9-1719		Double Acting Door Jamb 2-1/4" x 4-1/2"	E9-1719
	Double Acting Transom Bar 2-1/4" x 4-1/2" E2-0062 included	AS-1720		Double Acting Transom Bar 2-1/4" x 4-1/2" E2-0062 included	AS-1720
	Glazing Pocket Flush Filler	E9-1732		Glazing Pocket Flush Filler	E9-1732
	Intermediate Door Jamb 2" x 4-1/2" Tube Use with AS-0401	E9-9312		Intermediate Door Jamb 2" x 4-1/2" Tube Use with AS-0401	E9-9312
	Jamb Filler	E9-1757		Jamb Filler	BE9-1709
	Glazing Adaptor For 1/4" Glazing Use with E9-1757 & E9-1721	E9-1725		Glazing Adaptor For 1/4" Glazing Use with BE9-1709 & E9-1721	E9-1725
	Transom Glazing Pocket For 1" Glazing	E9-1721		Transom Glazing Pocket For 1" Glazing	E9-1721
	Door Stop Assembly E9-0409 & E9-1113 (mill) Elastomer Weathering E2-0051 Included	AS-0401		Door Stop Assembly E9-0409 & E9-1113 (mill) Elastomer Weathering E2-0051 Included	AS-0401
	Threshold 1/2" x 4"	E9-0407		Threshold 1/2" x 4"	E9-0407

ACCESSORIES

 <p>Shear Block For Outside Glazing Use (2) PC-1228 & (2) FC-1210 Not Included</p>	E1-1037	 <p>Head/Sill Joint Sleeve For Front Chamber Continuous Head & Sill Frames</p>	E1-1181
 <p>Shear Block For Inside Glazing Use (2) PC-1228 & (2) PC-1208 Not Included</p>	E1-1170	 <p>Sill Joint Sleeve For Back Chamber Continuous Head & Sill Frames</p>	E1-1182
 <p>Head Anchor For Continuous Head & Sill Frames Only</p>	E1-1171	 <p>Head Joint Sleeve For Back Chamber Continuous Head & Sill Frames</p>	E1-1183
 <p>Sill Anchor For Continuous Head & Sill Frames Only</p>	E1-1172	 <p>Mullion End Cap For Jambs & Verticals Vertical Through Frames</p>	E1-1184
 <p>Sill Flashing End Dam For Vertical Through Frames Only</p>	E1-0168	 <p>Setting Block Chair For Sill E9-2706 & BE9-2706 Inside Glazing</p>	E1-1173
 <p>Sill Flashing Splice Sleeve For Vertical Through Frames Only</p>	E1-1167	 <p>Setting Block For 1" Inside Glazing Use with E1-1173 at Sill</p>	E2-0178
 <p>Horizontal Water Deflector For SSG Inside Glazing</p>	E1-1174	 <p>Setting Block For 1/4" Inside Glazing Use with E1-1173 at Sill</p>	E2-0192
 <p>RH 90° Corner Water Deflector For SSG Inside Glazing</p>	E1-1175	 <p>Setting Block Chair For Sill E9-2713 & BE9-2713 Outside Glazing</p>	E1-1177
 <p>LH 90° Corner Water Deflector For SSG Inside Glazing</p>	E1-1176	 <p>Setting Block For 1" Outside Glazing Use with E1-1177 at Sill</p>	E2-0150
 <p>Horizontal Water Deflector For SSG Outside Glazing</p>	E1-1178	 <p>Setting Block For 1/4" Outside Glazing Use with E1-1177 at Sill</p>	E2-0190
 <p>RH 90° Corner Water Deflector For SSG Outside Glazing</p>	E1-1179	 <p>Setting Block For Transom Bar</p>	E2-0184
 <p>LH 90° Corner Water Deflector For SSG Outside Glazing</p>	E1-1180	 <p>Side Block For Vertical Shallow Pocket</p>	E2-0019

ACCESSORIES

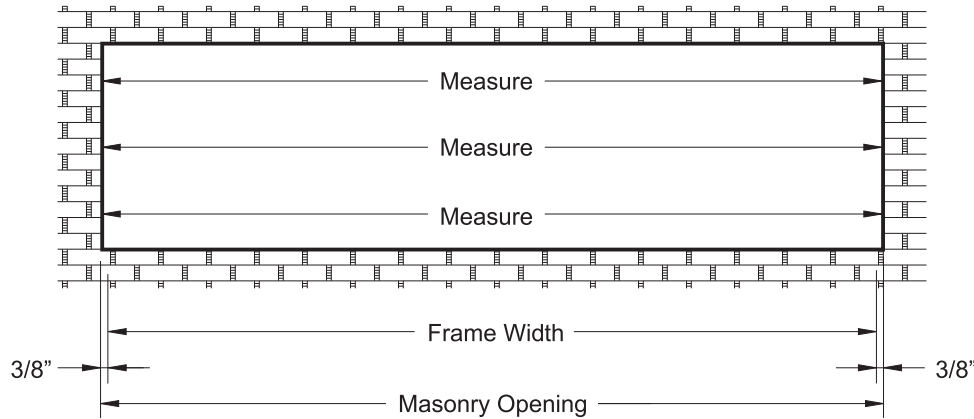
	Side Block For Expansion Mullion Shallow Pocket, 1" Glazing	E2-0513		Push-In Glazing Gasket For SSG Glazing	E2-0541
	Side Block For Expansion Mullion Shallow Pocket, 1/4" Glazing	E2-0537		Wedge Glazing Gasket For SSG Glazing	E2-0542
	Water Deflector For Intermediate Horizontals	E2-0047		SSG Glazing Spacer For Inside Glazing	E2-0543
	Anti-Walk Block For Jamb Deep Pocket 1.125" Wide	E2-0545		SSG Glazing Spacer For Outside Glazing	E2-0544
	Anti-Walk Block For Vertical Deep Pocket 0.625" Wide	E2-0546		Weathering Gasket For Expansion Mullion	E2-0065
	Anti-Walk Block For Expansion Mullion Deep Pocket, 0.531" Wide	E2-0153		#10 x 3/8" PHSMS Type AB Zinc Plated Steel, For Attachment of Mullion End Cap	PC-1006
	End Dam For Sill, Continuous Head & Sill Frames	E2-0547		#10 x 3/8" PHMS Stainless Steel For Attachment of Sill to Sill Flashing	PM-1006 -SS
	End Dam For Head, Continuous Head & Sill Frames	E2-0548		#12 x 1/2" PHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Shear Block E1-1170 (IG)	PC-1208
	Weep Baffle	E2-0099		#12 x 1/2" PHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Shear Block E1-1037 (OG)	FC-1210
	Temporary Glass Retainer For 1" Structural Silicone Glazing	E3-0001		#12 x 1" PHSMS Type AB Zinc Plated Steel For Screw Spine Attachment at Intermediate Vertical	PC-1216
	Temporary Glass Retainer For 1/4" Structural Silicone Glazing	E3-0006		#12 x 1-1/4" PHSMS Type AB, Zinc Plated Steel For Screw Spine Attachment at Jamb	PC-1220
	Push-In Glazing Gasket	E2-0801		#12 x 1-3/4" PHSMS Type AB, Zinc Plated Steel For Attachment of Shear Blocks to Vertical	PC-1228
	Wedge Glazing Gasket	E2-0808			

FRAME FABRICATION

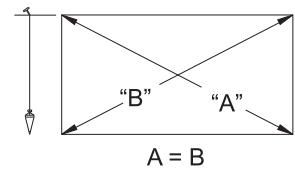
STEP 1

DETERMINE FRAME SIZE

Determine Frame Width:

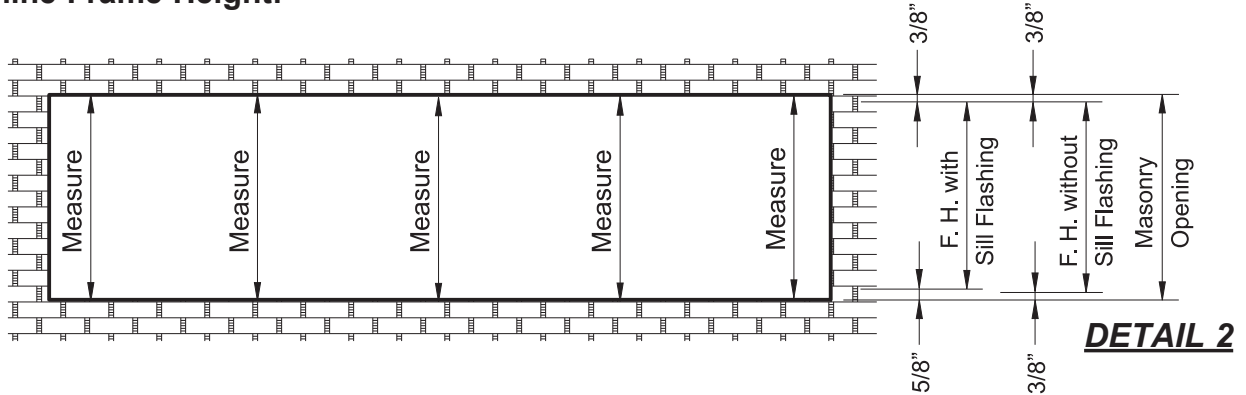


Note: Check opening for squareness of plumb at both ends, units must be installed in a true rectangle.



- 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:



- 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" from the masonry opening height:
 - 3/8" caulk joint at head.
 - 3/8" sill flashing.
 - 1/4" 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, BE9-2711 or E9-2405, for vertical through frames.
 Sill flashing is not required for continuous head and sill frames.

FRAME FABRICATION

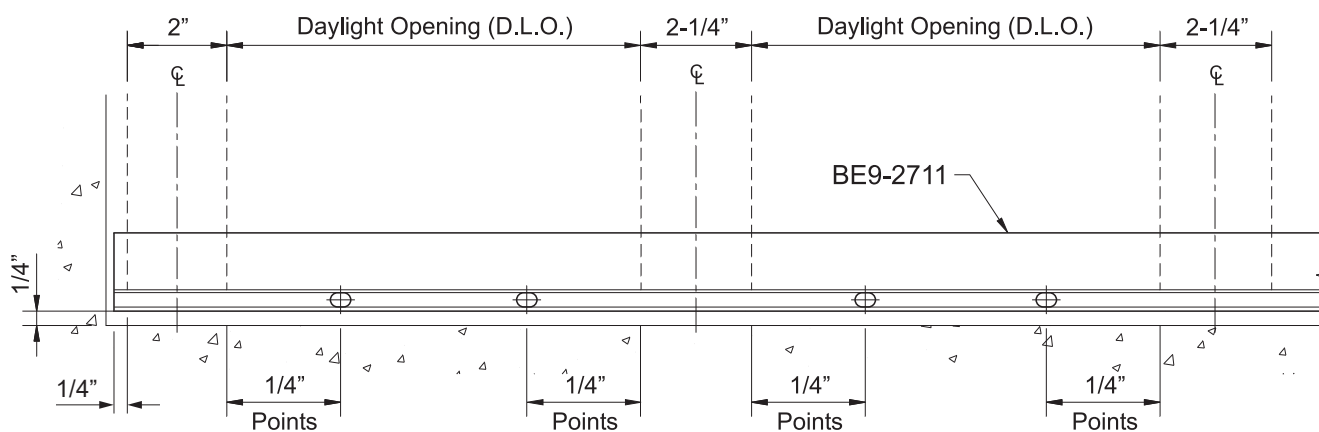
STEP 2

FABRICATE SILL FLASHING (VERTICAL THROUGH FRAMES ONLY)

- Cut the sill flashing, E9-2405 or BE9-2711(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 on runs longer than 24' 0".
- Mark the front face of the sill flashing at quarter points of daylight opening between verticals.
- Drill a 1/4" diameter weep hole in the face of the sill flashing at each location marked.
- Using the drill, elongate each weep hole by 1/8" to create an oval. ○

See **Detail 3**.

DETAIL 3
BE9-2711 Shown
E9-2405 Similar



STEP 3

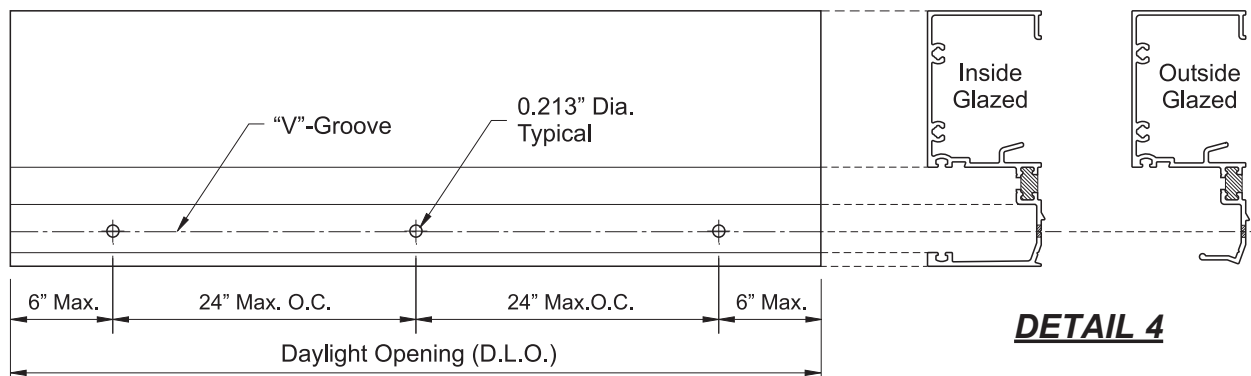
FABRICATE HEAD & SILL MEMBERS FOR VERTICAL THROUGH FRAMES

- 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**.

BE9-2706
(E9-2706)

BE9-2713
(E9-2713)



FRAME FABRICATION

STEP 3

FABRICATE HEAD & SILL MEMBERS FOR CONTINUOUS HEAD & SILL FRAMES

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

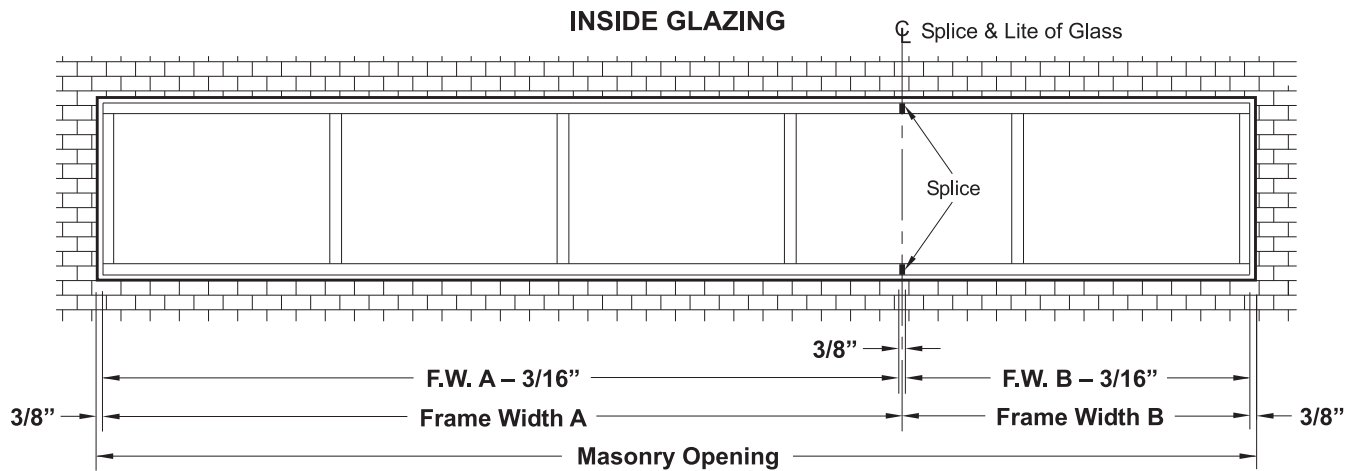
- For **Inside Glazing** cut head and sill members to the frame width determined in **Step 1**.
- For **Outside Glazing** cut head and sill members to the frame width determined in **Step 1** minus(-) 4".

For Frames Greater Than 24'-0" But Less Than 30'-0" (One Splice):

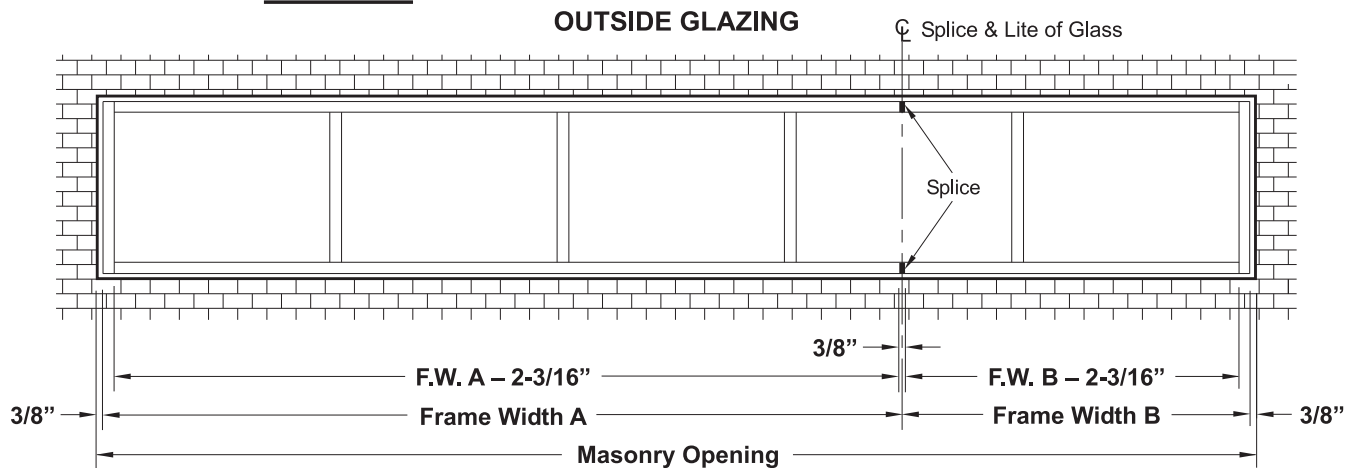
- Splices should occur every 12' to 15' at the center of a lite of glass. Head and sill members must always be spliced at the same location.
- Measure from the ends of the frame to the centerline of the splice.
 - For **Inside Glazing** cut head and sill members to this measurement minus(-) 3/16".
 - 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):

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".

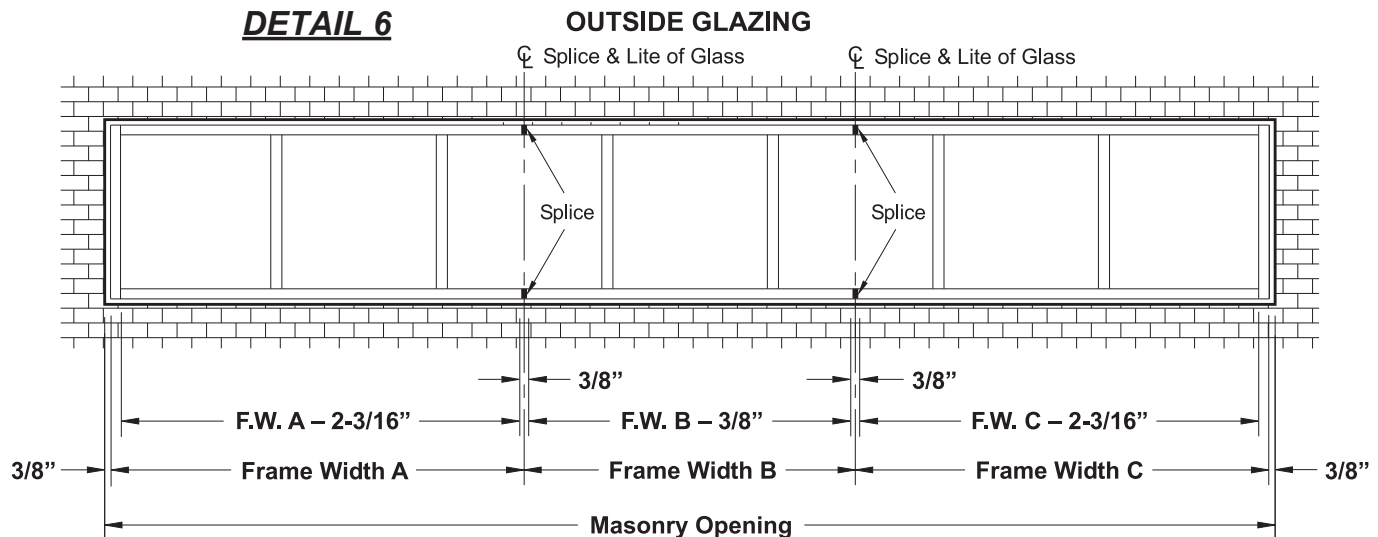
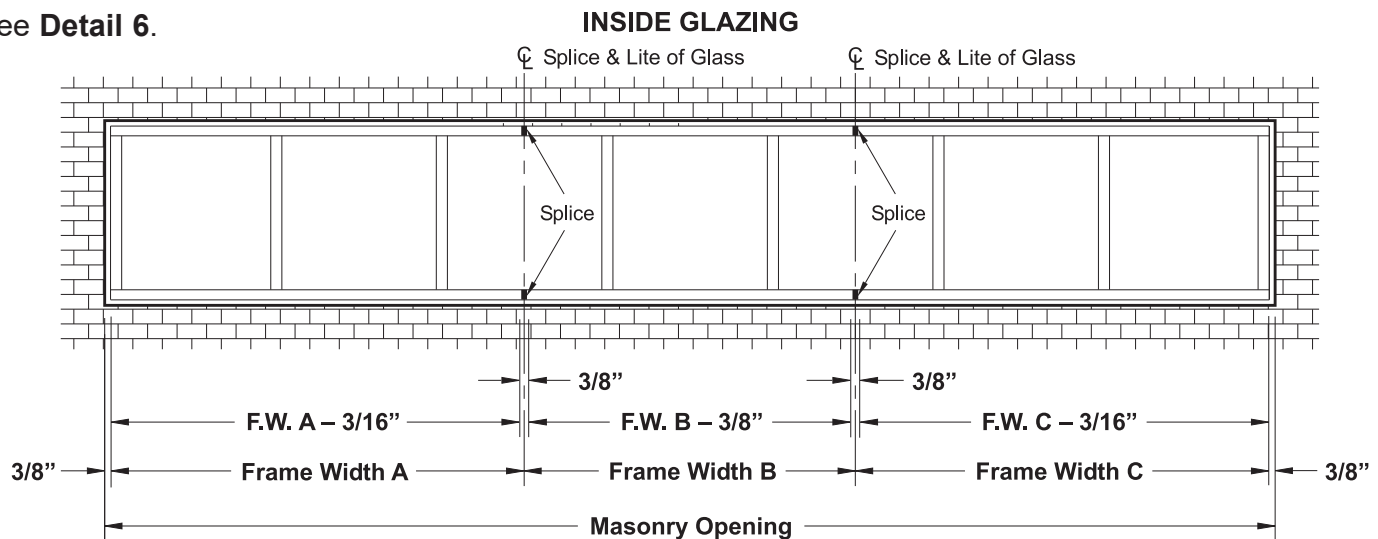
***Note:** OG continuous head and sill members do not run past the jambs.

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**.



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.

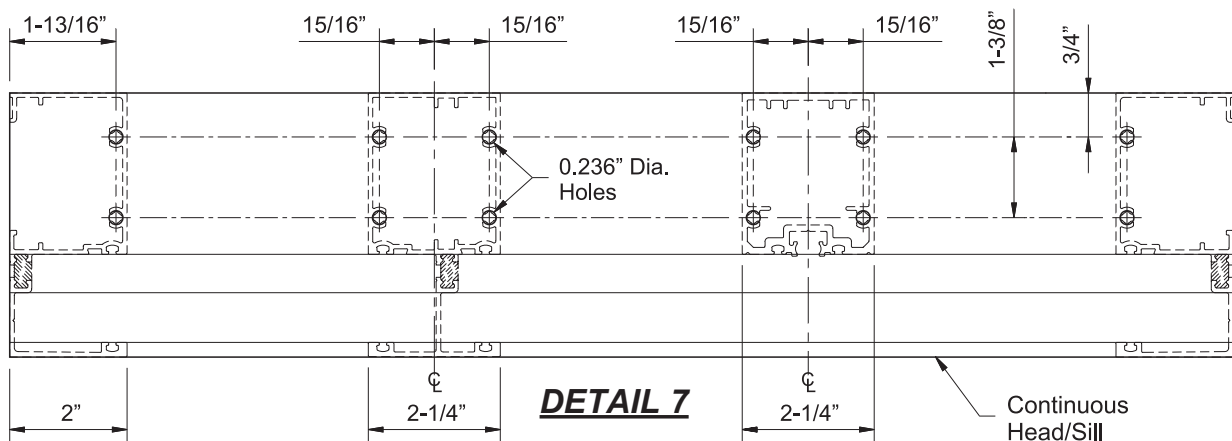
Continuous head and sill members must be fabricated for attachment of jamb and/or vertical members.
 -Using short pieces of vertical members as a template, line up the glazing pockets and mark hole locations through the screw splines.

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.

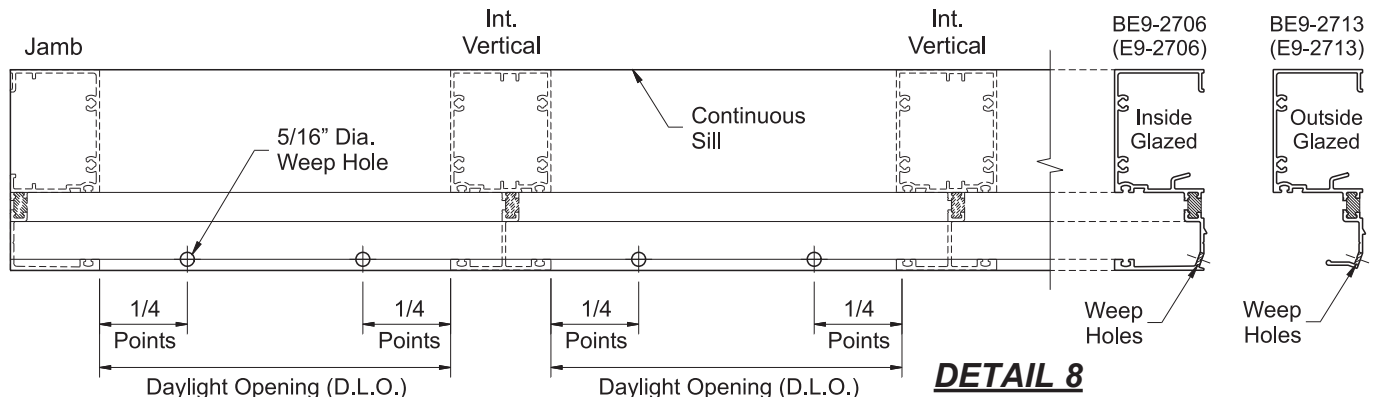
See **Detail 7**.



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**.



FRAME FABRICATION

STEP 4 FABRICATE INTERMEDIATE HORIZONTAL MEMBERS

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

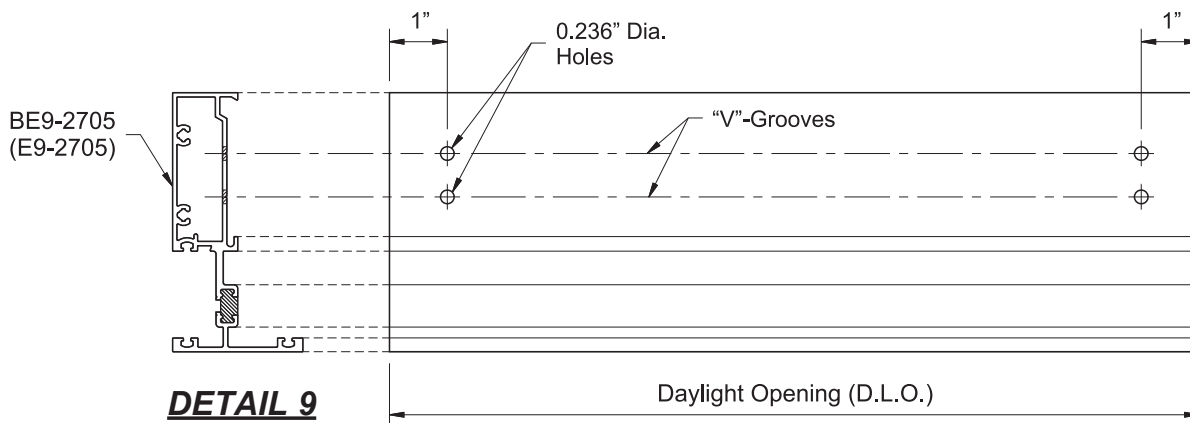
Horizontal members that are attached to one piece verticals by shear blocks require additional fabrication:

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**.

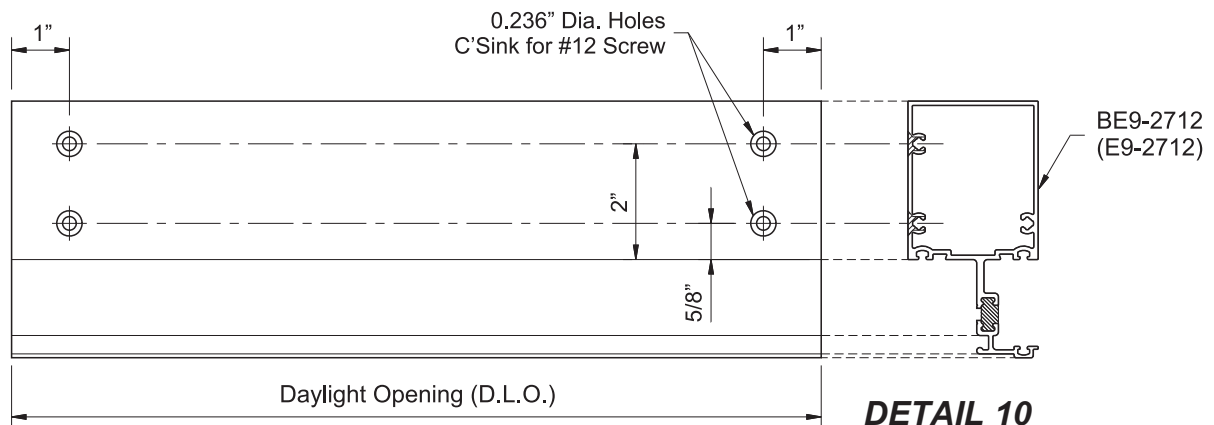


For Outside Glazed Horizontals:

-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.

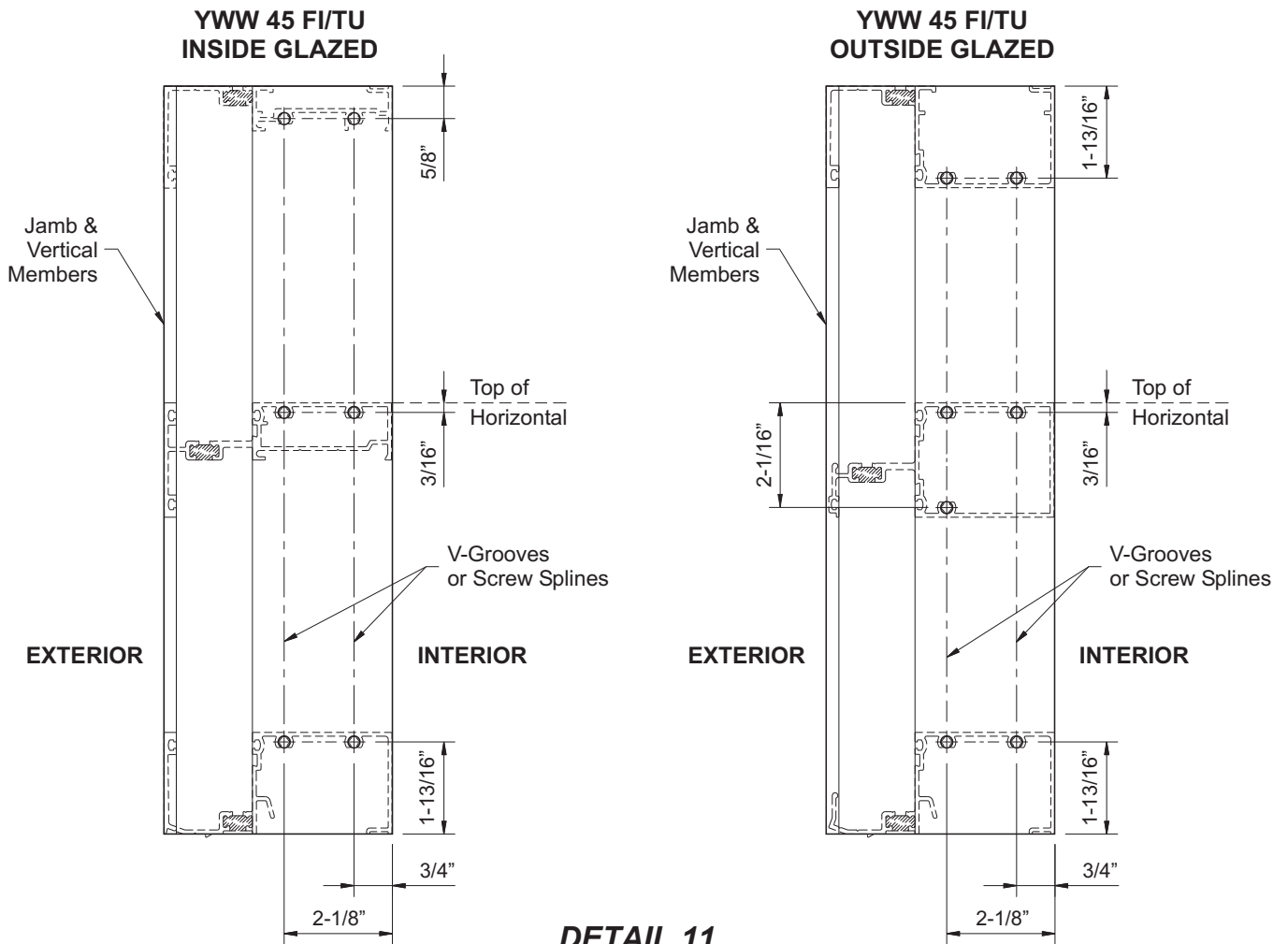
See **Detail 10**.



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

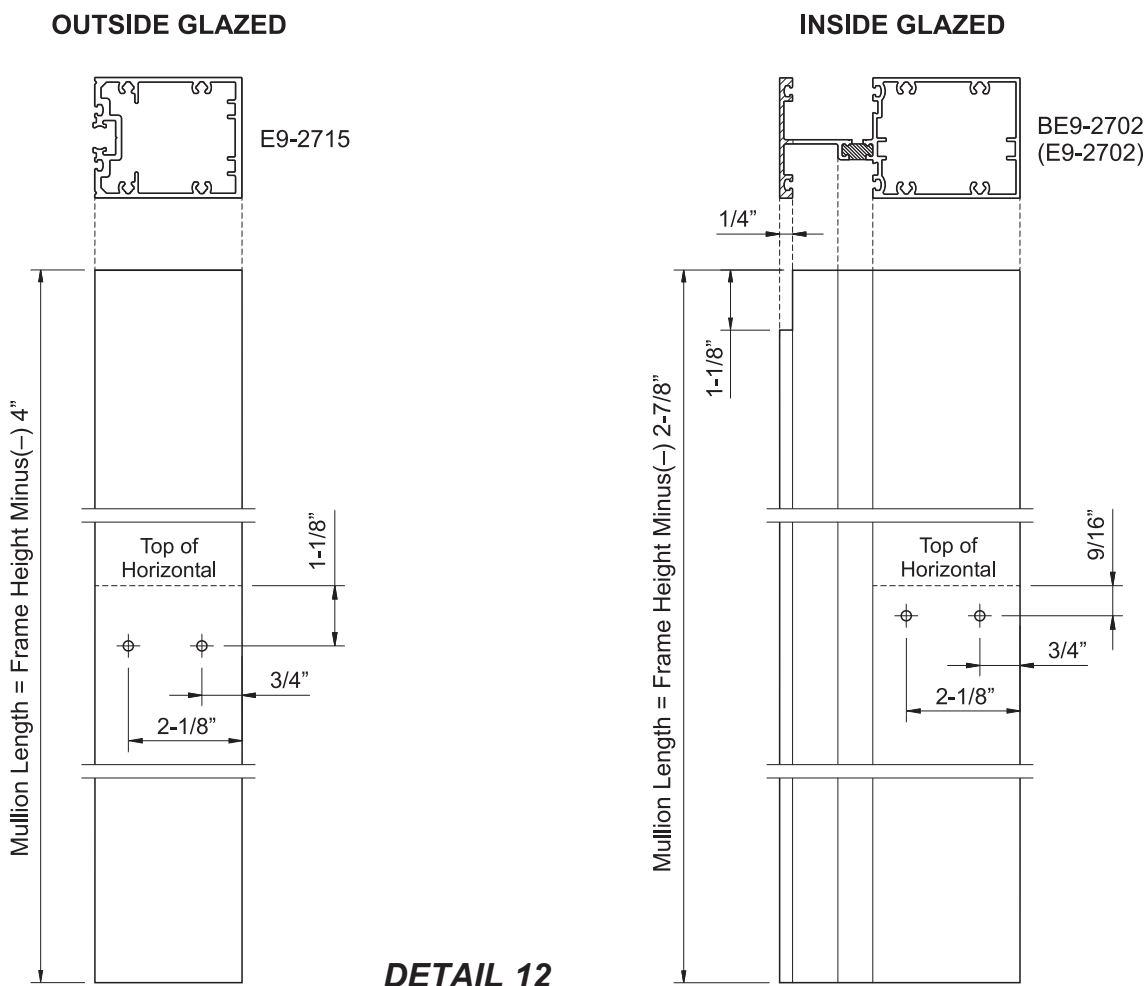
For Outside Glazing:

- 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**.



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:

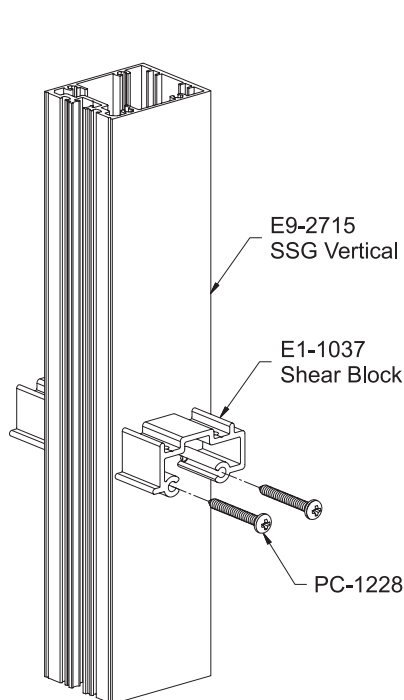
- Draw a line across the side of the vertical representing the top of the intermediate horizontal.
- Draw a second line 9/16" below the first one and mark a hole location along this line at 3/4" and 2-1/8" from the back of the mullion.

- 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.

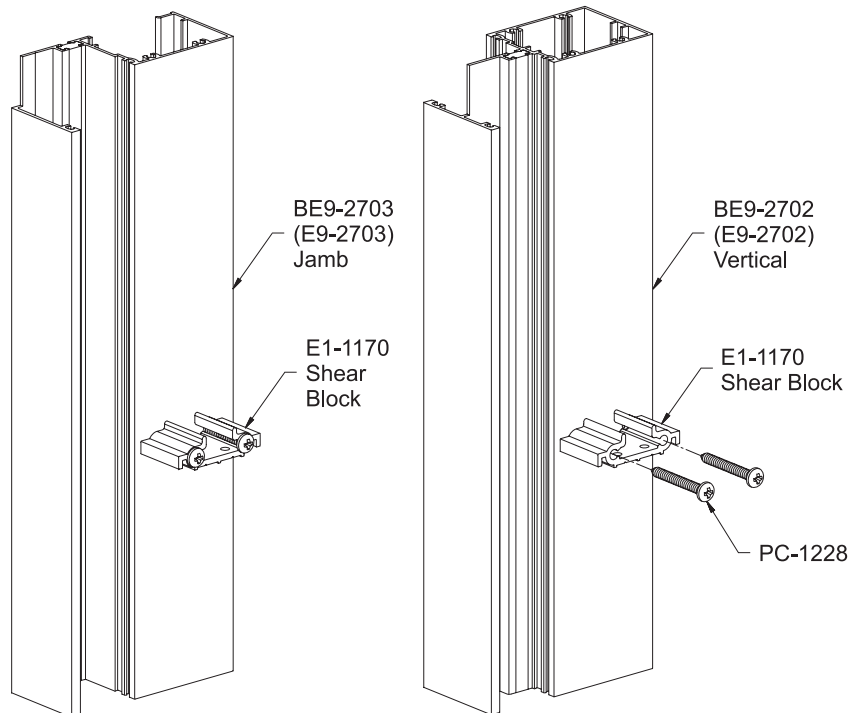
Note: Horizontals may also be attached by screw spline attachment at jambs.

See **Details 12 & 13.**

OUTSIDE GLAZED



INSIDE GLAZED

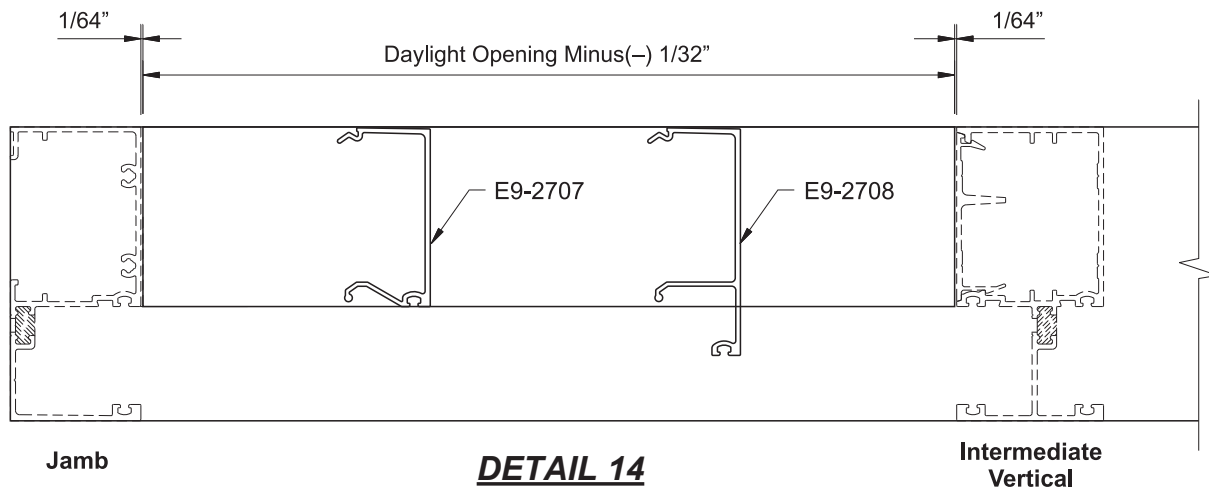


DETAIL 13

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**.

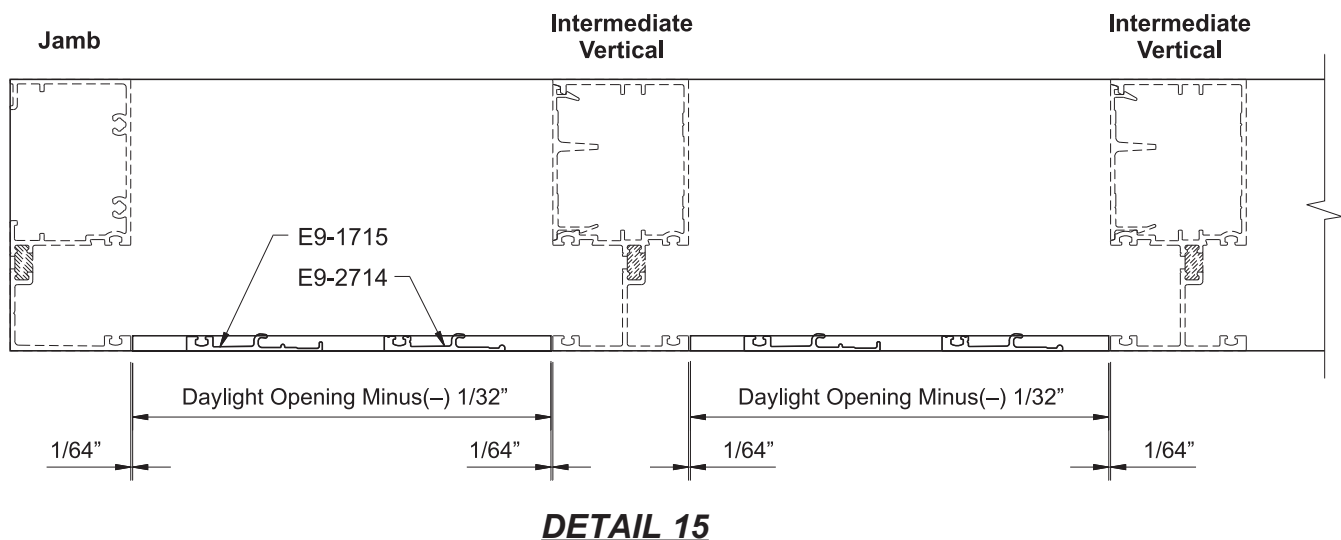


STEP 7 FABRICATE EXTERIOR GLASS STOPS

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**.



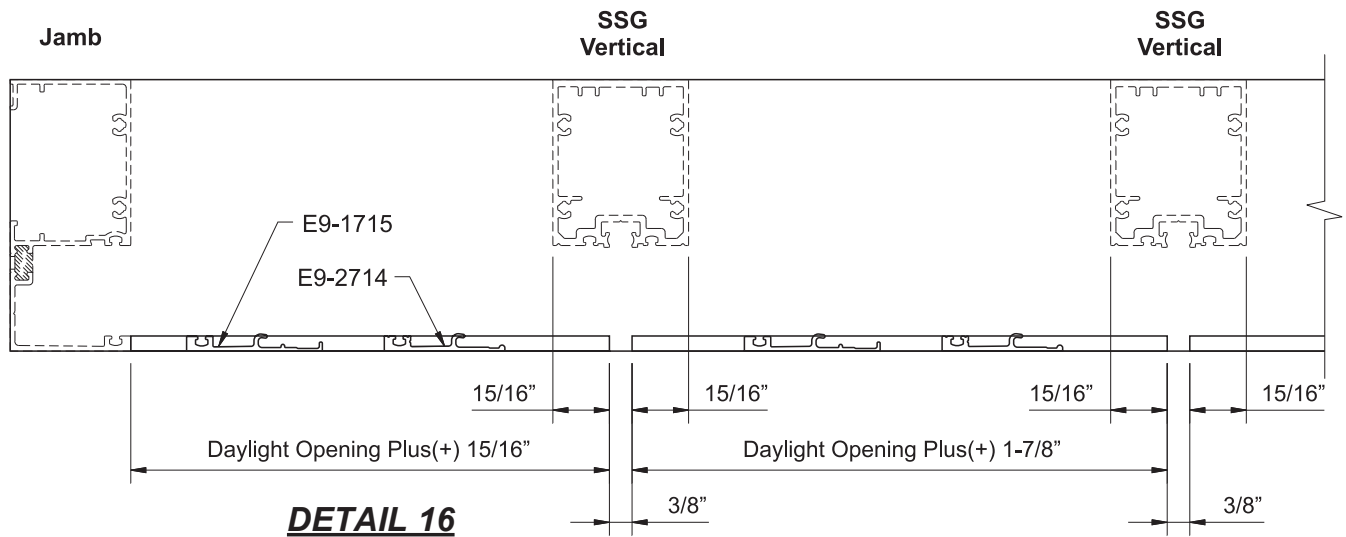
FRAME FABRICATION

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(+) 15/16".
- Cut horizontal face members between verticals to the Daylight Opening plus(+) 1-7/8".

See **Detail 16**.

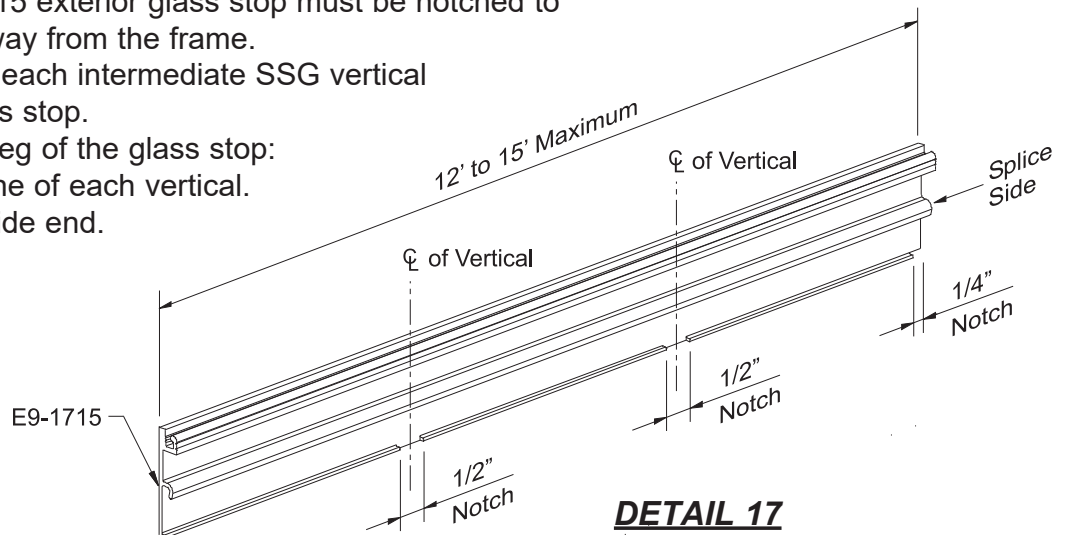


Exterior glass stops, E9-1715 for intermediate horizontals and E9-2714 for sills, may run continuous across SSG verticals. If so, a 3/8" expansion joint is required every 12 to 15 feet occurring at the centerline of a mullion.

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**.

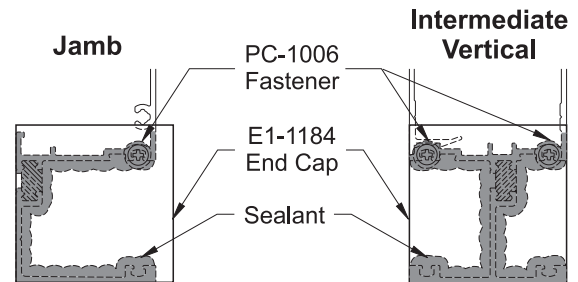


FRAME ASSEMBLY

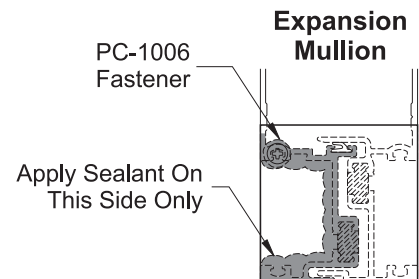
STEP 8

INSTALL MULLION END CAPS (For Vertical Through Frames Only)

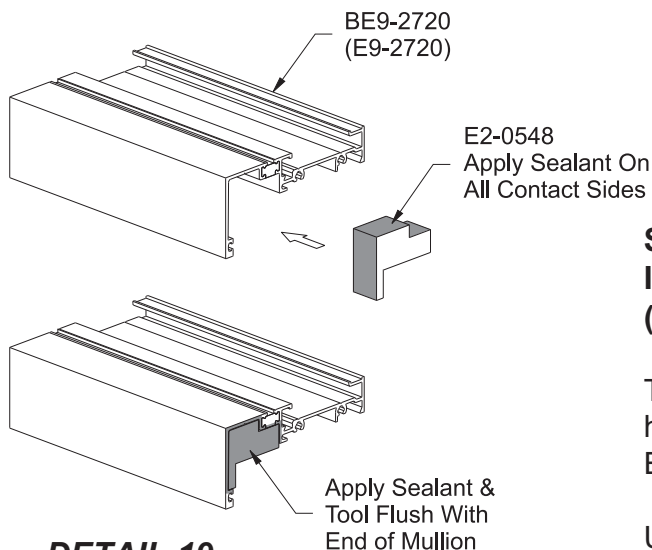
- Mullion end caps are only required at the top end of jamb and vertical mullions of vertical through frames.
- Clean the vertical mullion end and mullion end cap with a cleaner approved by sealant manufacturer.
- Apply a hardening, curing sealant along the front of the vertical members prior to installing 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.



DETAIL 18

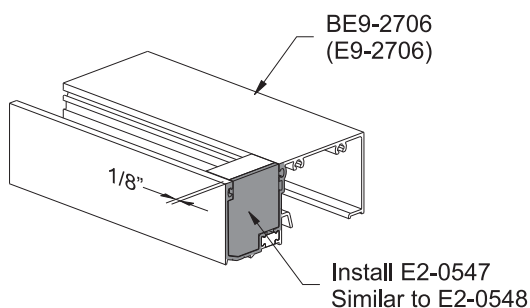


See **Detail 18**.



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:

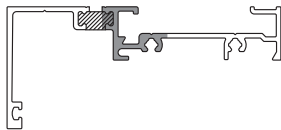
- Clean the ends of horizontal members and attachment areas of vertical members using a cleaner approved by sealant manufacturer.
- Apply (butter) sealant to both ends of head, horizontal, and sill members just prior to assembly. Make sure that the sealant does not get into the glass stop reglets of 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.

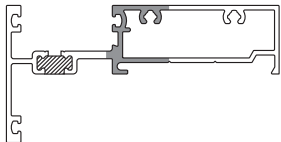
Note: outside glazed horizontals, BE9-2712 & E9-2712, require three fasteners at each end.

-Using a clean cloth, wipe off the excess sealant while pushing it into the joints.

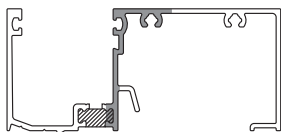
See **Detail 20**.



HEAD
BE9-2720 (E9-2720)

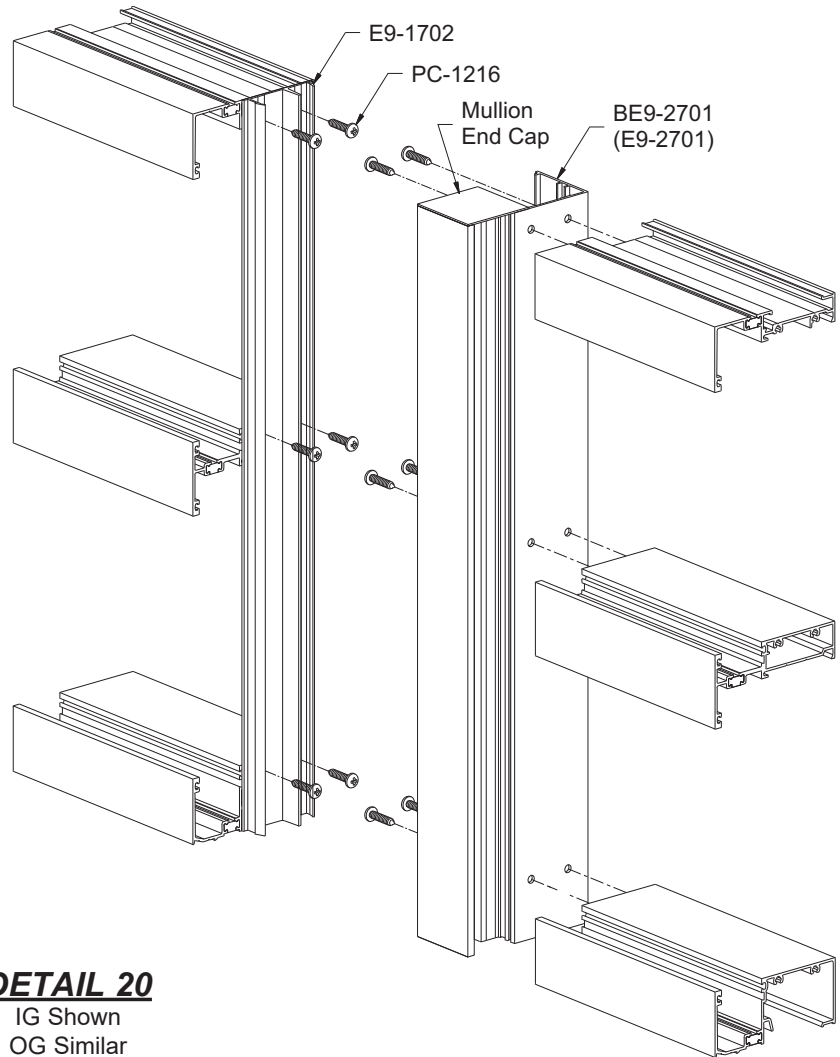


HORIZONTAL
BE9-2705 (E9-2705)



SILL
BE9-2706 (E9-2706)

Apply sealant to the shaded areas at each end.



DETAIL 20
IG Shown
OG Similar

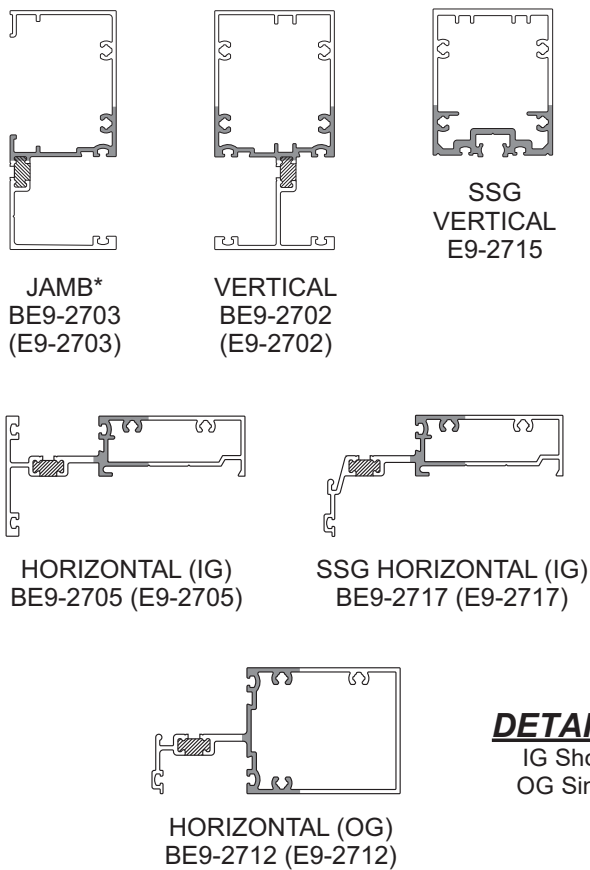
FRAME ASSEMBLY

STEP 10 ASSEMBLE FRAMES

Continuous Head & Sill Frames:

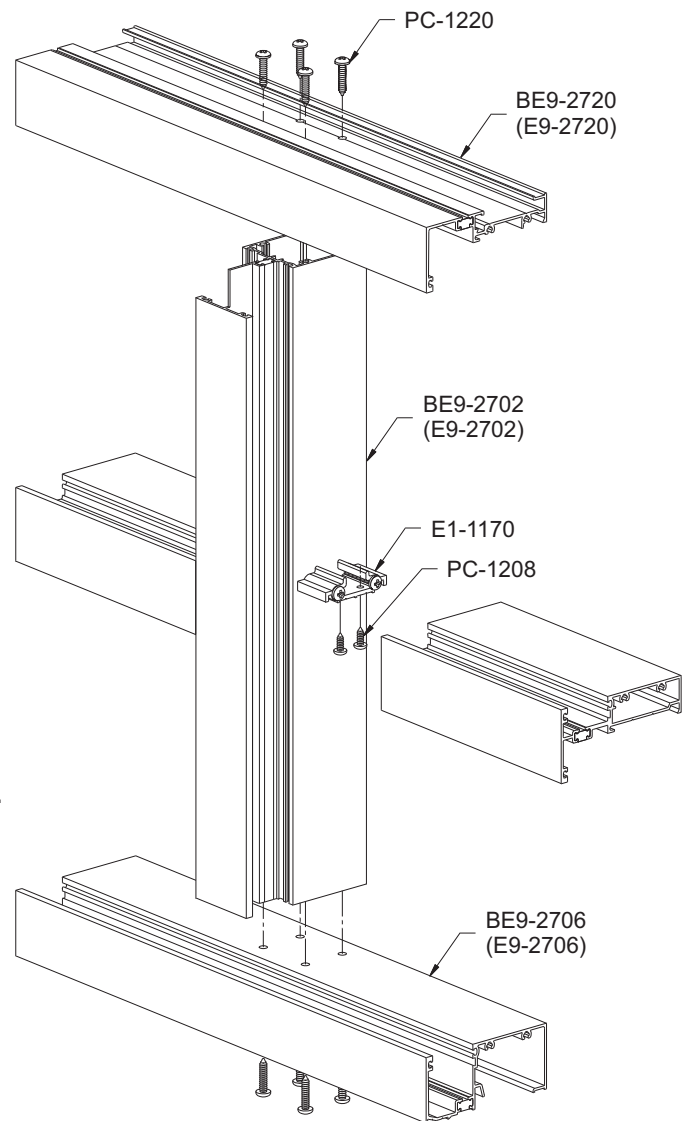
- Clean the ends of vertical members and attachment areas of head and sill members using a cleaner approved by sealant manufacturer.
 - Apply (butter) sealant to both ends of jamb and vertical members just prior to assembly.
 - Attach vertical members to the head and sill using (2) PC-1220 fasteners 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**.



Apply sealant to the shaded areas at each end.

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



DETAIL 21
IG Shown
OG Similar

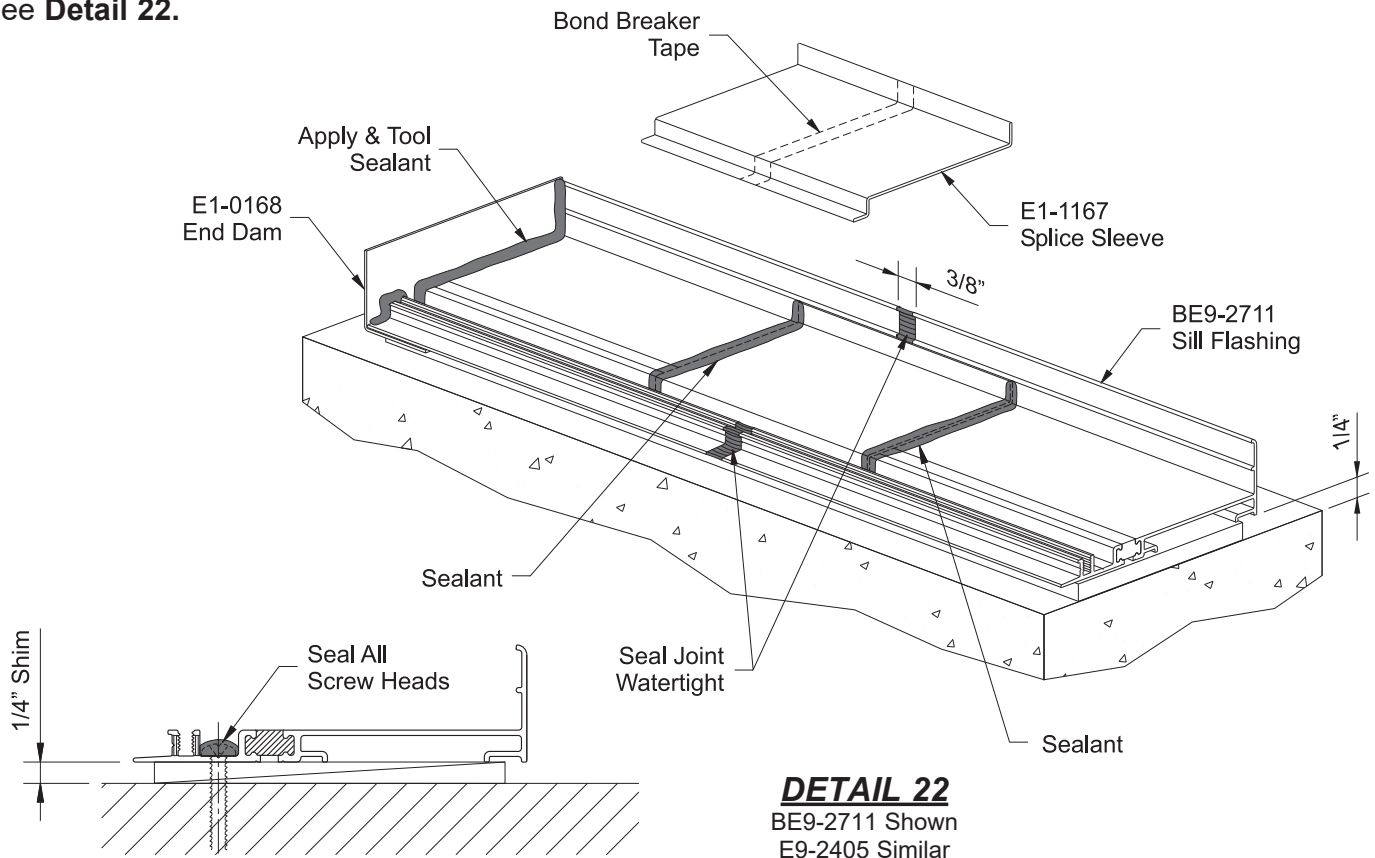
FRAME INSTALLATION

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

- Clean the ends of the sill flashing and end dams using a cleaner approved by sealant manufacturer.
- Install brake metal end dam, E1-0168, at each end of sill flashing BE9-2711 or E9-2405.
- Apply and tool sealant along the joint between the end dam and the sill flashing.
Tape down the back corners to hold the end dam in place until the sealant cures.
- Strike a line along the structure at the sill condition that will be the exterior face of the sill flashing.
- Starting at the smallest opening height, install the sill flashing with 1/4" minimum shim underneath.
Sill Flashing must be installed level.
- Anchor the sill flashing to the structure a maximum of 6" from each end and then 18" to 24" on center.
- Apply sealant to the heads of all fasteners.

- The sill flashing must be spliced every twelve to fifteen feet using splice sleeve, E1-1167:
- Apply bond breaker tape to center of the splice sleeve on the underside.
 - Clean the splice area of the sill flashing using a cleaner approved by sealant manufacturer.
 - Apply a generous amount of sealant to both sides of the sill flashing splice.
 - Center the splice sleeve over the 3/8" splice joint.
 - Tool the sealant up and over the edges of the splice sleeve to completely seal the joint.
 - Apply sealant to splice joint in front of the splice sleeve and tool the sealant to create a watertight joint.
 - Seal joint at the back leg of the sill flashing.

See **Detail 22**.



FRAME INSTALLATION

STEP 12 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.

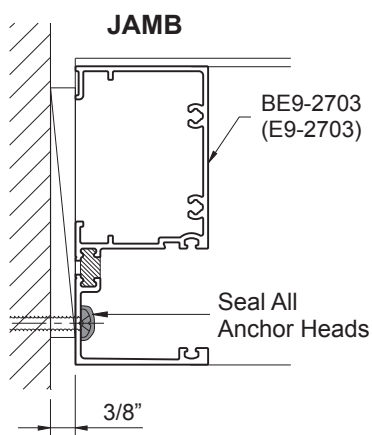
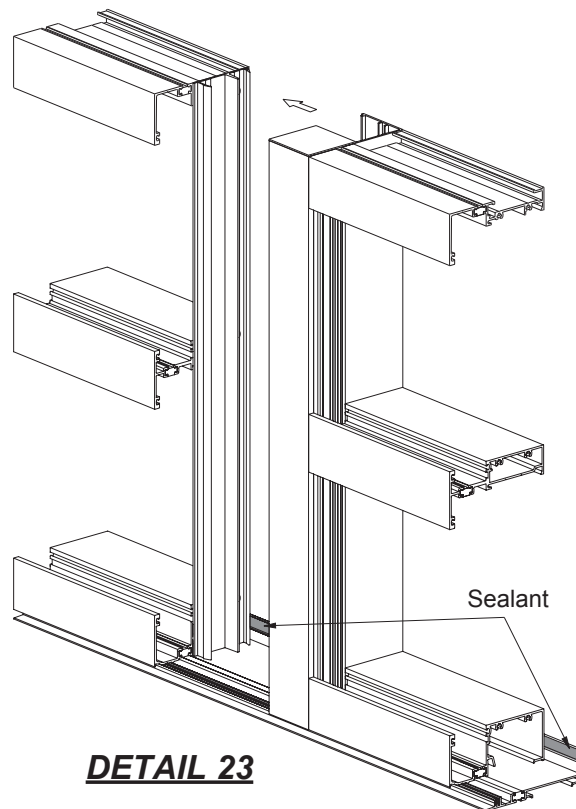
See **Detail 23**.

- 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.

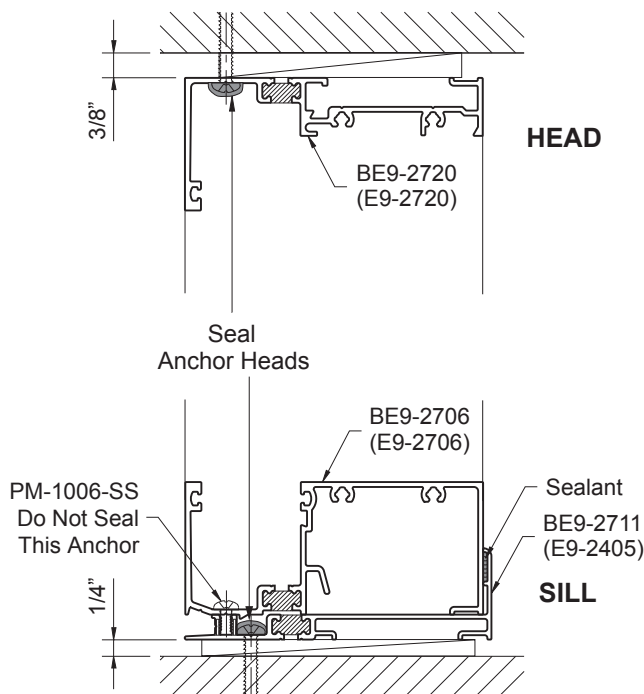
Note: Shims must be installed at all anchor locations.

- 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 24**.



DETAIL 24
IG Shown
OG Similar



FRAME INSTALLATION

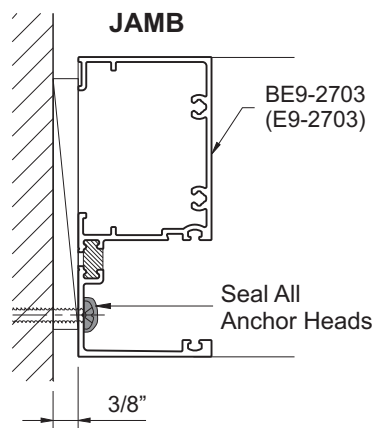
STEP 12 INSTALL CONTINUOUS HEAD & SILL FRAMES

- 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.

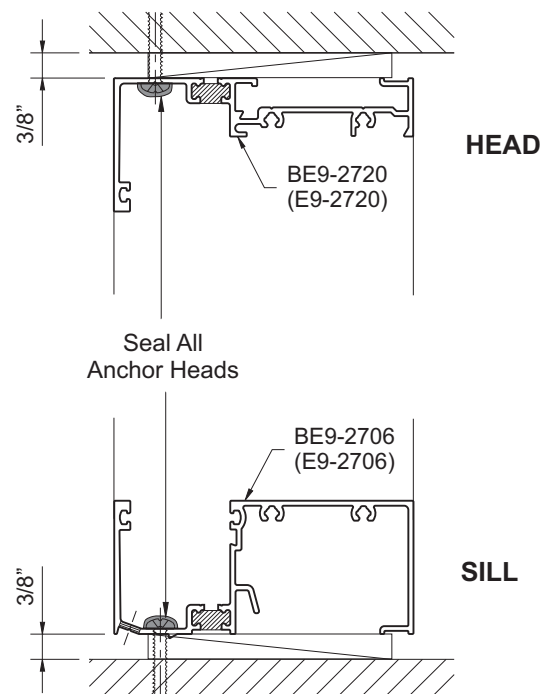
Note: Shims must be installed at all anchor locations.

-Seal all anchor heads.

See **Detail 25**.



DETAIL 25
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 26** on the next page.

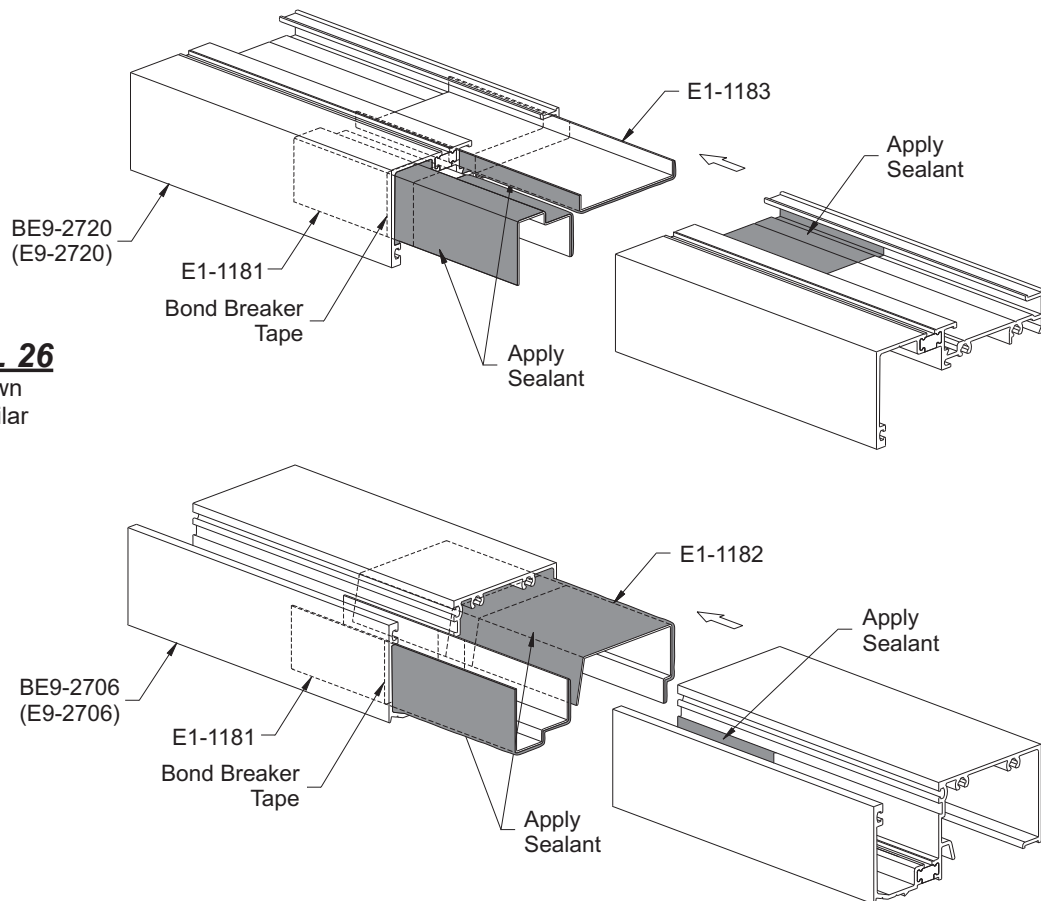
FRAME INSTALLATION

STEP 12 (Continued) INSTALL CONTINUOUS HEAD & SILL FRAMES

Install Head & Sill Joint Sleeves When Required (Continued):

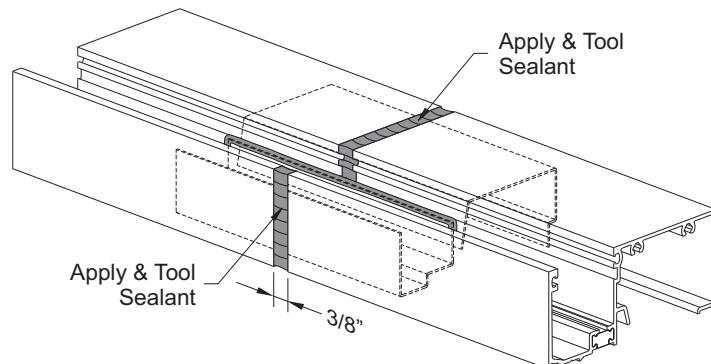
Note: Intermediate horizontal cannot be spliced.

DETAIL 26
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 27**.

DETAIL 27



FRAME INSTALLATION

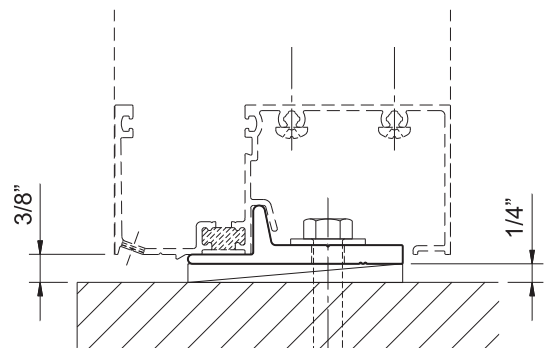
STEP 13
INSTALL CONTINUOUS HEAD & SILL FRAMES
USING OPTIONAL HEAD & SILL ANCHORS

Install Optional Sill Anchors, E1-1172:

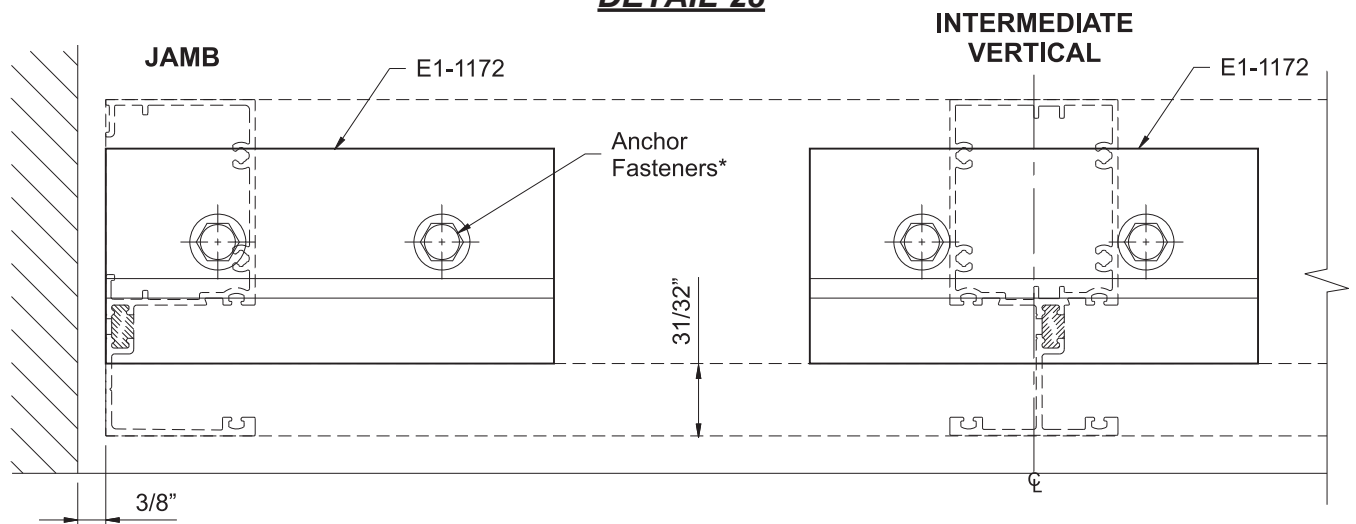
- Predrill sill anchors, E1-1172, for appropriate anchor fasteners*.
- Strike a line along the structure at the sill condition that will be the exterior face of the frame.
- Strike a second line 31/32" behind the first line; this line will represent the front of the sill anchor.
- Mark the centerline 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 28**.



DETAIL 28



FRAME INSTALLATION

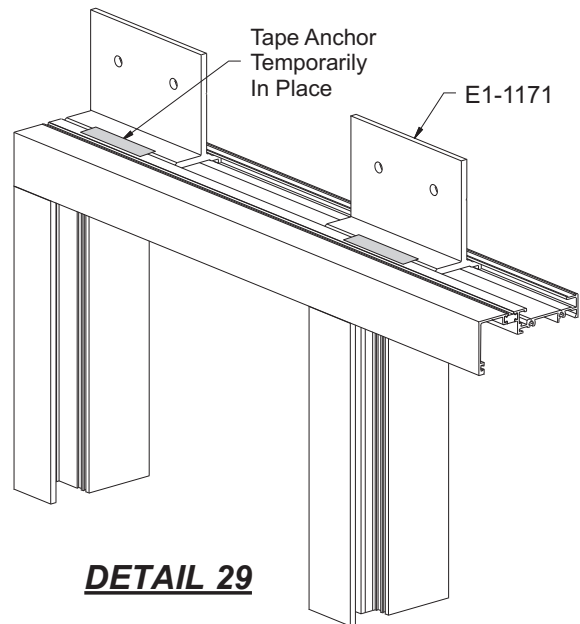
STEP 13 (Continued) INSTALL CONTINUOUS HEAD & SILL FRAMES USING OPTIONAL HEAD & SILL ANCHORS

Install Optional Head Anchors, E1-1171:

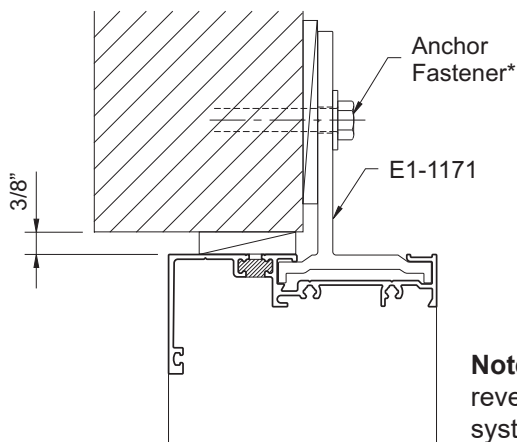
- Predrill head anchors, E1-1171, for appropriate anchor fasteners*.
- Slide the head anchors from the ends of the head member and locate anchors flush with the ends of the frame at jambs and centered over the centerline of intermediate verticals.
- Temporarily tape the anchors in place to prevent slipping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

See **Detail 29**.

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

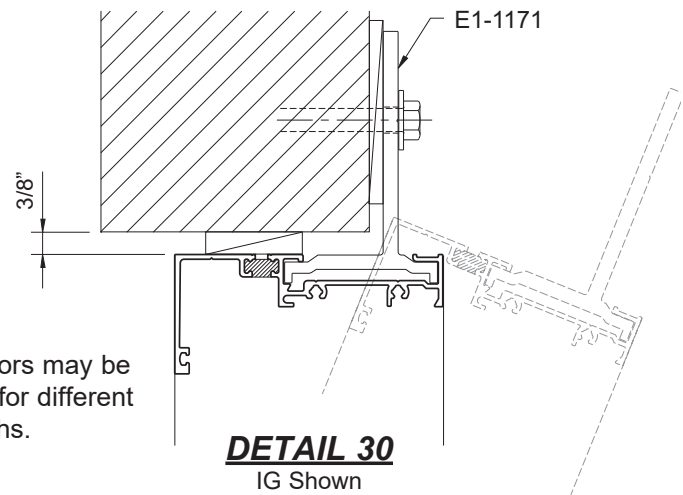


DETAIL 29



HEAD

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



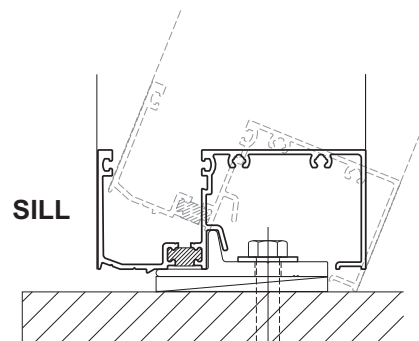
DETAIL 30

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 30**.



SILL

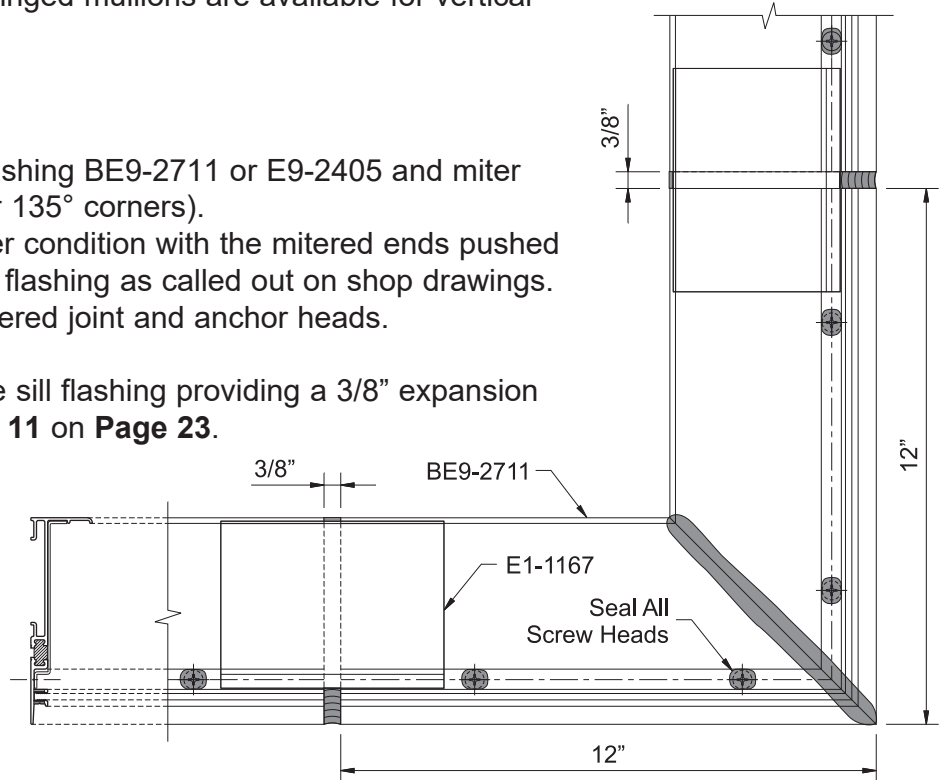
FRAME INSTALLATION

STEP 14
INSTALL CORNER MULLIONS FOR VERTICAL THROUGH FRAMES

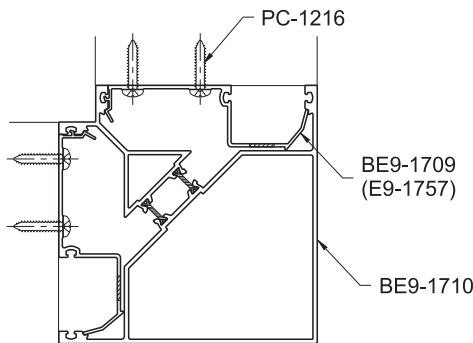
90° & 135° corner mullions and hinged mullions are available for vertical through frames only.

Install sill flashing at corners:

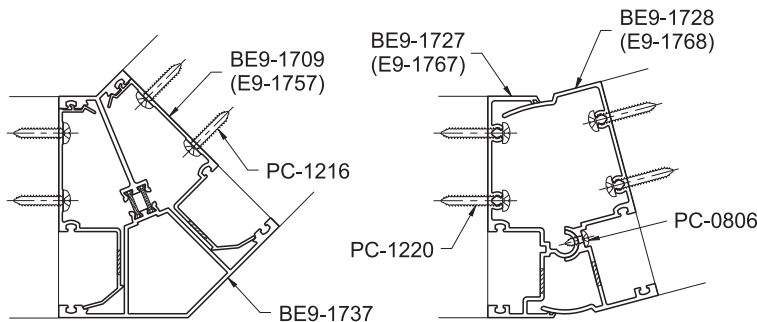
- Cut two 12" long pieces of sill flashing BE9-2711 or E9-2405 and miter (45° for 90° corners and 67.5° for 135° corners).
 - Align the two pieces at the corner condition with the mitered ends pushed together tight and anchor the sill flashing as called out on shop drawings.
 - Apply and tool sealant to the mitered joint and anchor heads.
- See **Detail 31**.
- Continue installing the rest of the sill flashing providing a 3/8" expansion joint at splices as shown in **Step 11** on **Page 23**.



DETAIL 31
 90° Outside Corner Shown
 Others Similar



90° Outside Corner



135° Outside Corner

0°-15° Hinged Mullion

Install Corner Assemblies:

- 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 32**.

FRAME INSTALLATION

STEP 14 (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:

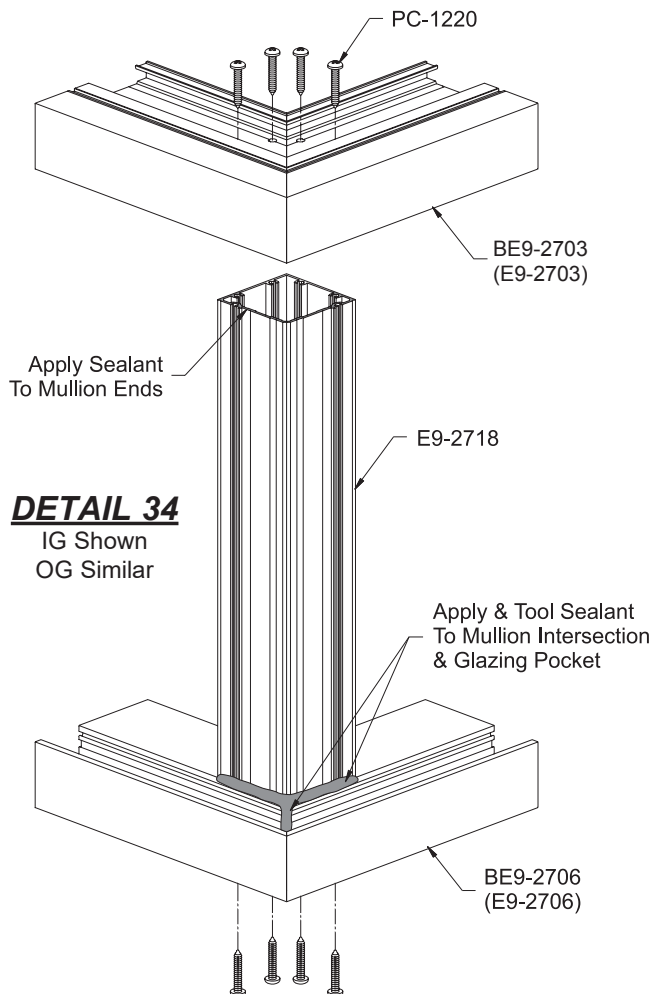
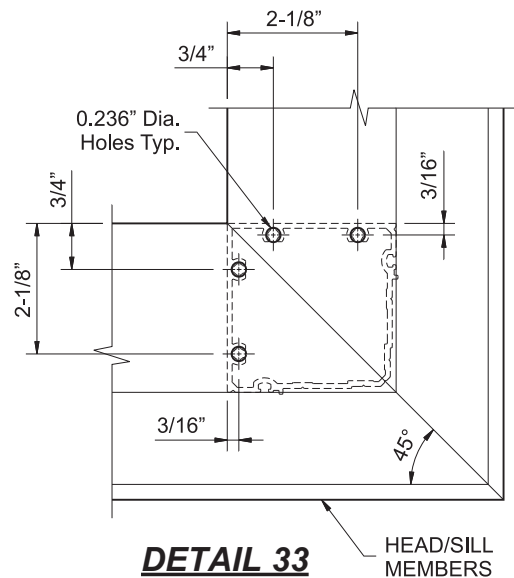
Head and sill members are mitered (45°) at the corners and must be fabricated for attachment of the SSG corner mullion, E9-2718.

-Layout hole locations as shown in **Detail 33**.

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 33**.



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 34**.

-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 12**.

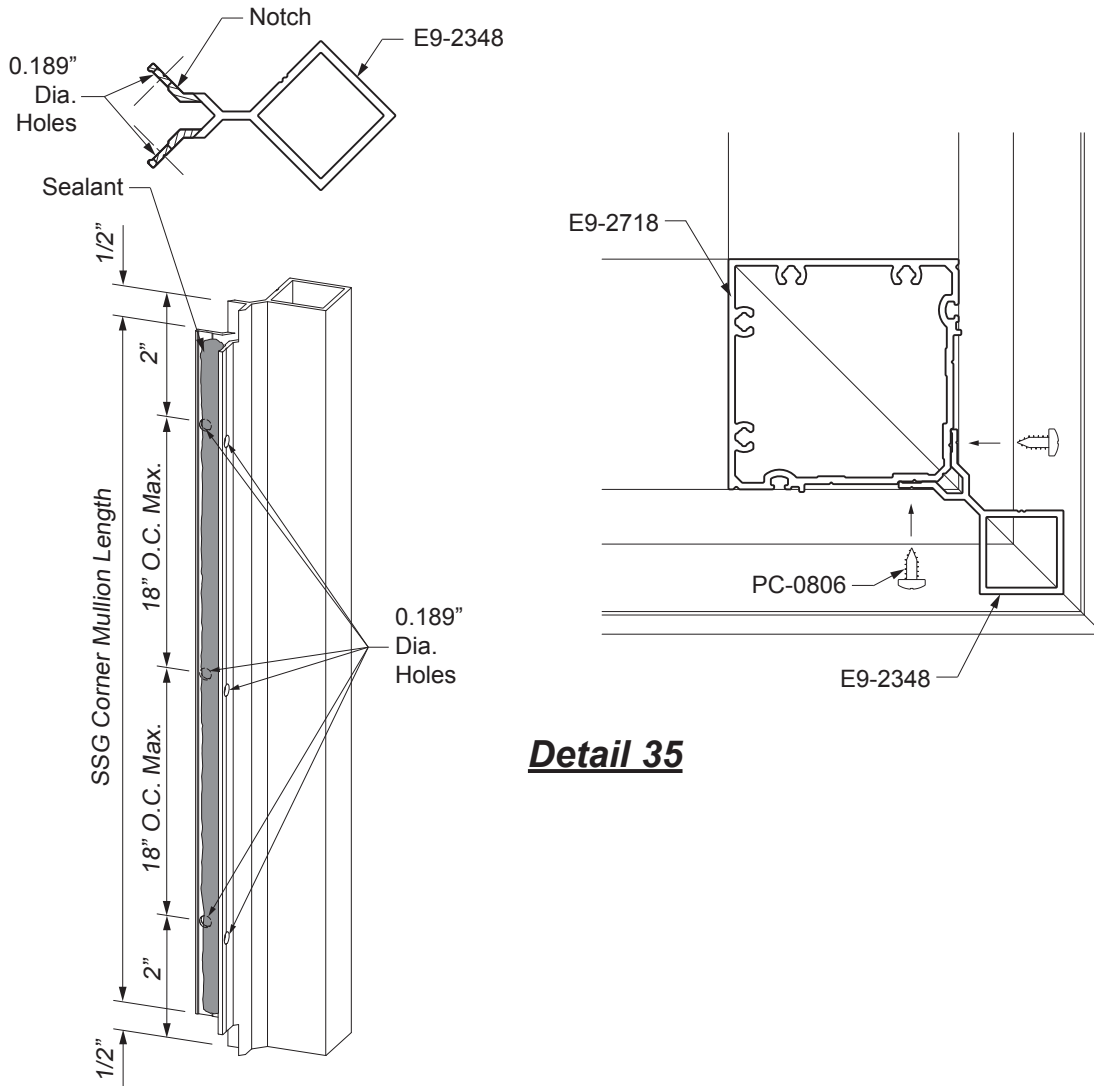
Note: For wider frames, YKK recommends that the head and sill members be spliced as shown in **Step 12**.

FRAME INSTALLATION

STEP 14 (Continued)
INSTALL CORNER MULLIONS
FOR CONTINUOUS HEAD & SILL FRAMES

-Cut the E9-2348 Corner mullion Trim Adaptor to the length of the SSG corner mullion plus(+) 1".
 -Notch 1/2" from each end of both legs of the E9-2348 corner mullion trim adaptor as shown in **Detail 35**. 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 E9-2348 adaptor using PC-0806 fasteners at 18" on center.



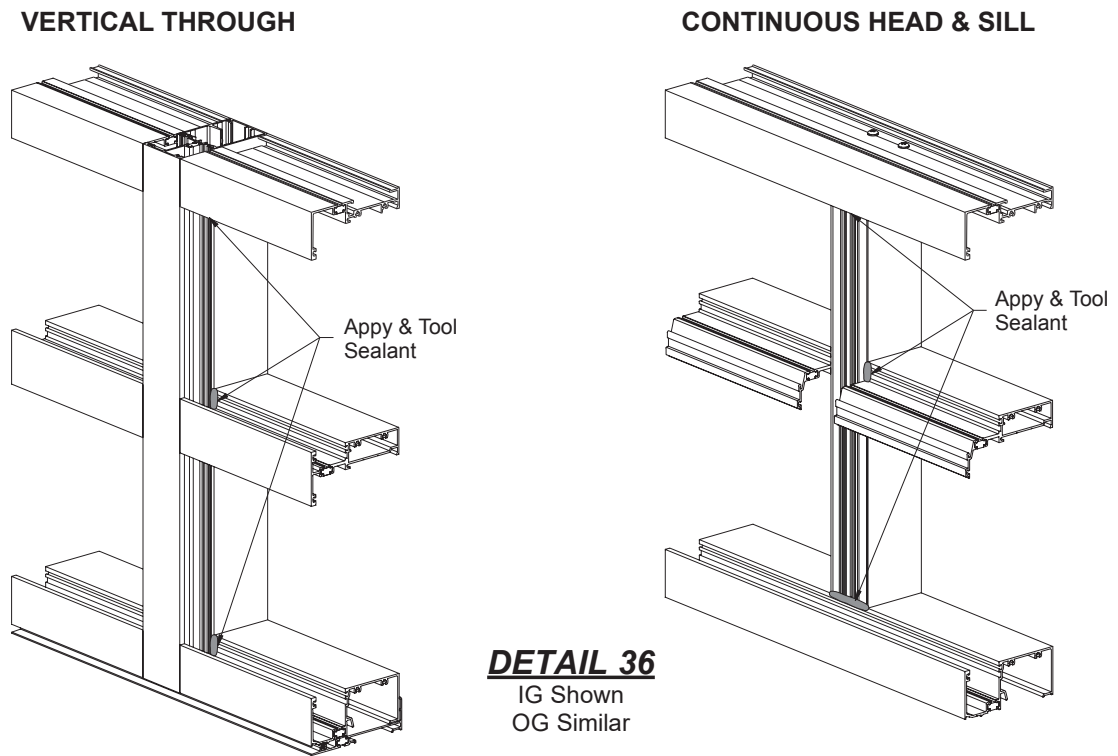
Detail 35

FRAME INSTALLATION

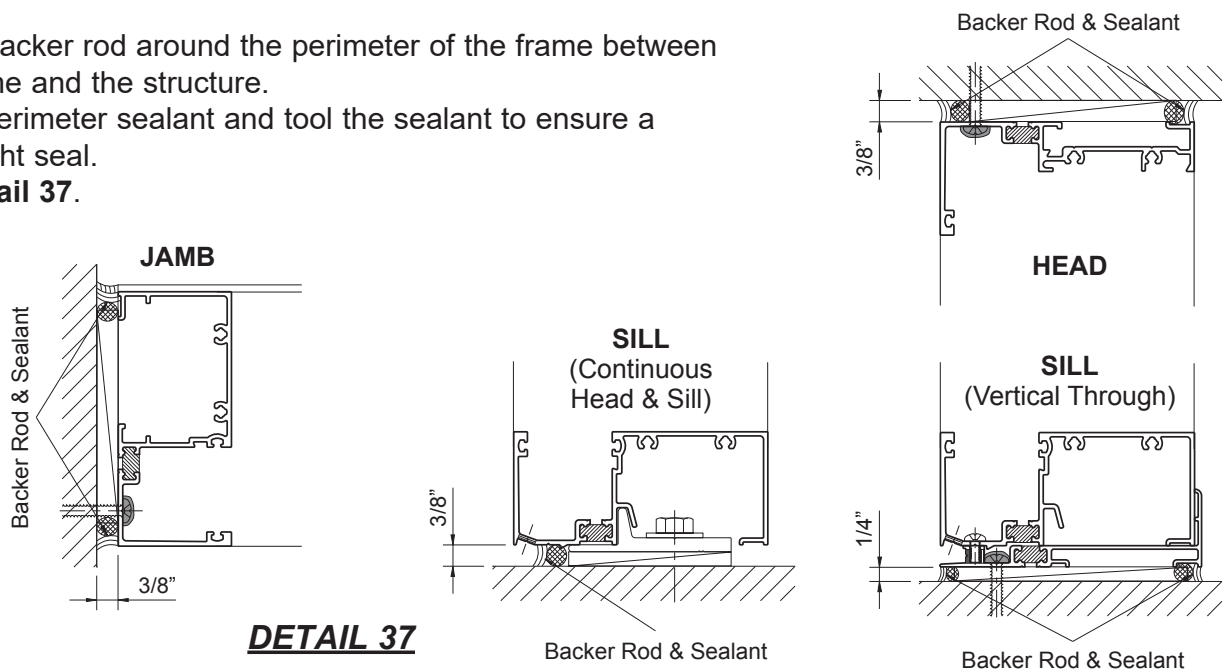
STEP 15

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 36**.



- 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 37**.



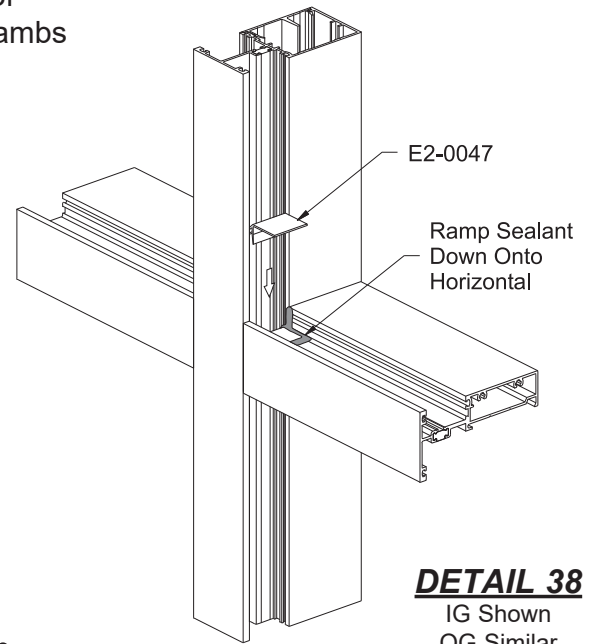
FRAME INSTALLATION

STEP 16 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.

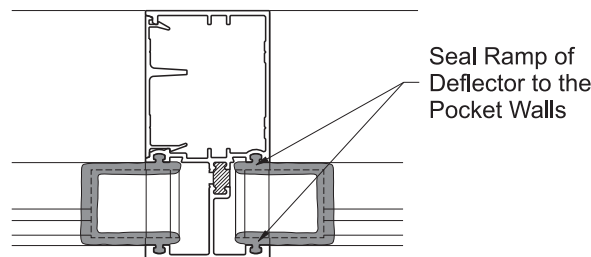
- Clean and dry off the glazing pocket of each horizontal at the ends.
- Peel off the protective paper and install the water deflector at the end of the horizontal.
- Position the vertical leg of the deflector against the end of the horizontal.
- Apply and tool sealant along the edges of the water deflector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

See **Detail 38 & 38a**.



DETAIL 38
IG Shown
OG Similar

DETAIL 38a

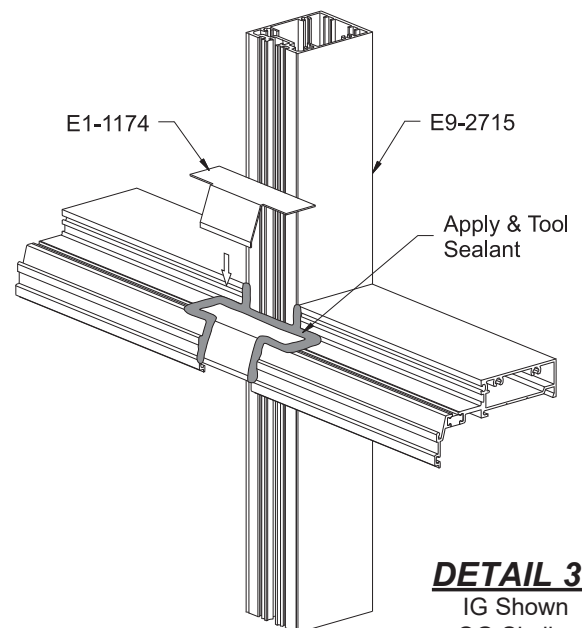


INSTALL SSG WATER DEFLECTORS

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 39**.



DETAIL 39
IG Shown
OG Similar

FRAME INSTALLATION

STEP 17

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:

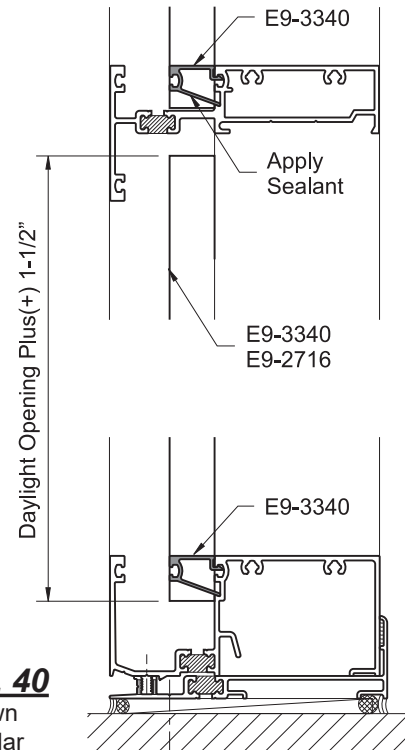
- Center the vertical adaptors in the opening.
- For standard verticals, insert the ball end leg of the adaptor into the mullion recess and rotate the snap leg into the reglet.
- For SSG verticals, attach the SSG glazing adaptor, E9-2716, to the mullion with PC-1016 fasteners, 3" from each end and no 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.

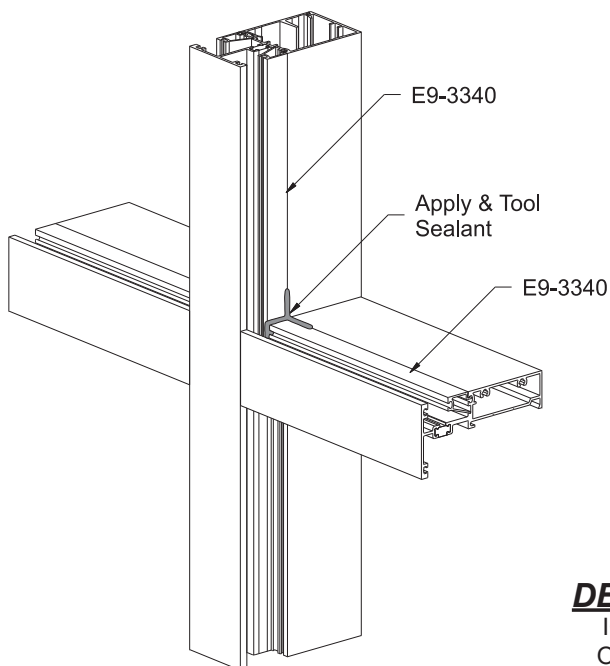
- Tool the excess sealant at the intersections of the adaptors to completely seal the joint.

See **Details 40 & 41**.



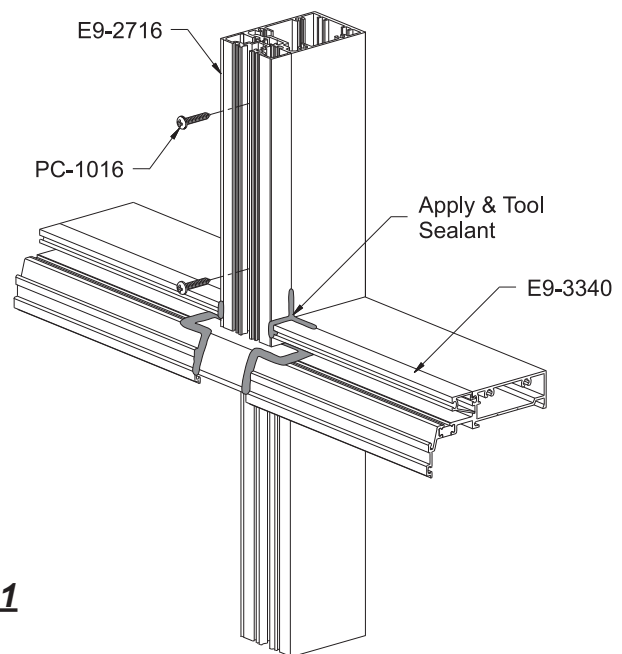
DETAIL 40

IG Shown
OG Similar



DETAIL 41

IG Shown
OG Similar



GLAZING

**STEP 18
INSTALL GLAZING GASKETS**

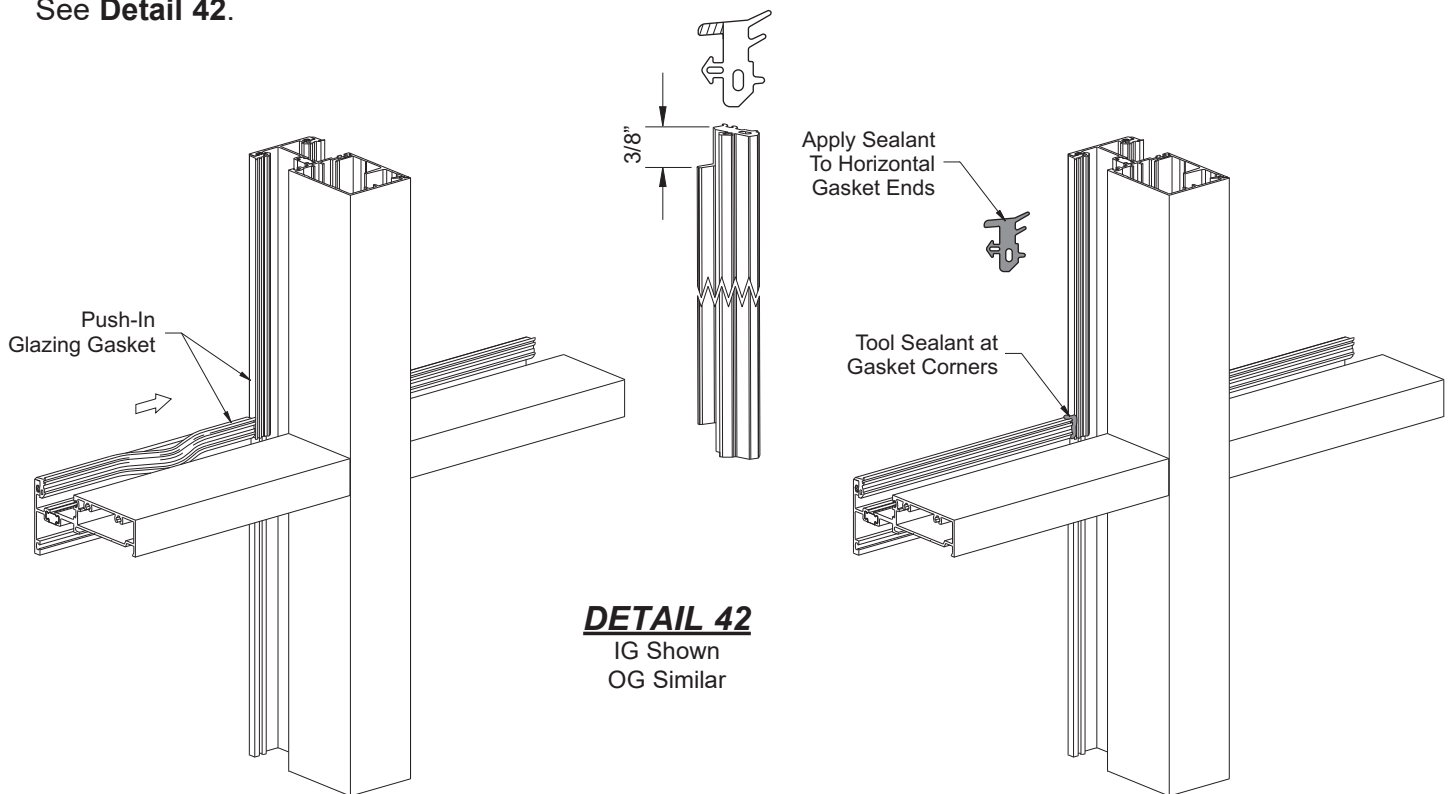
For inside glazing: the exterior glazing gaskets must be installed prior to the glazing process.
For outside glazing: the interior glazing gaskets must be installed prior to the glazing process.
 (Note: For both IG and OG, push-in gasket E2-0801 or E2-0541(for SSG) will be installed.)

-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 42**.



DETAIL 42
 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 42**.

GLAZING

STEP 19 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 43**.

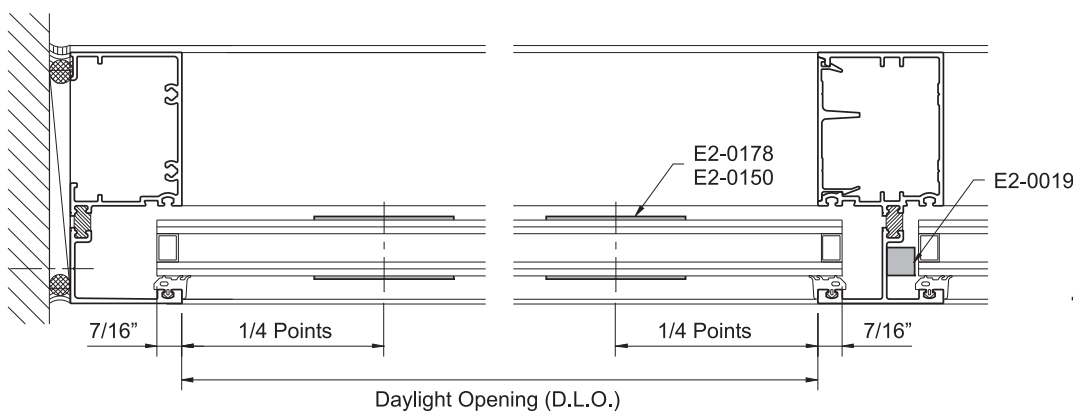
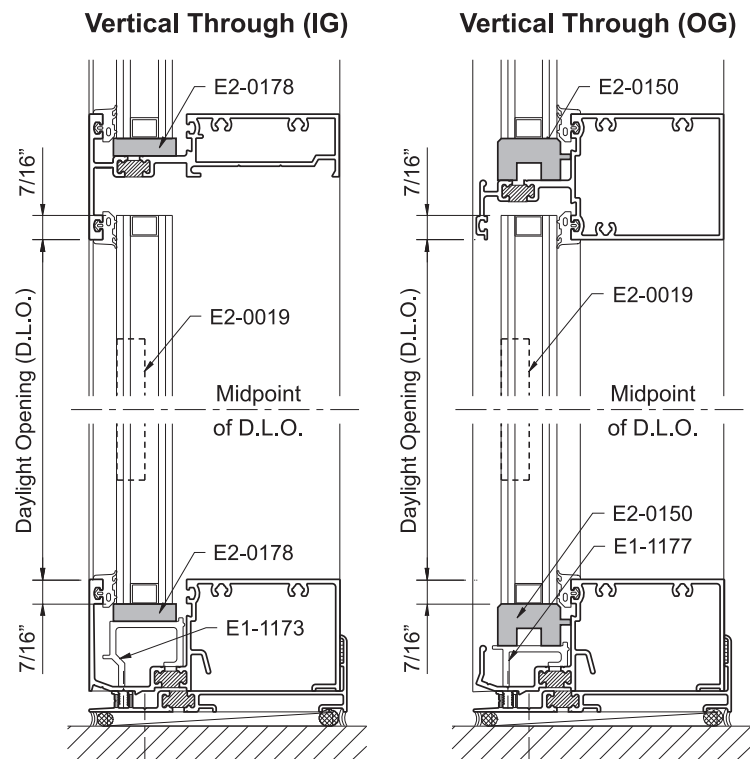
-Install side blocks, E2-0019, in the shallow glazing pocket of each vertical at the midpoint of daylight opening.
Use E2-0537 (1/4" gl.) or E2-0513 (1" gl.) for expansion mullions.

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 43 & 44**.

DETAIL 43



DETAIL 44

GLAZING

STEP 20 INSTALL ANTI-WALK BLOCKS

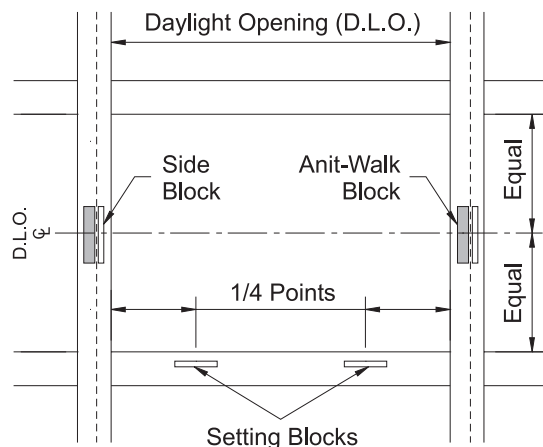
Anti-walk blocks must be installed in the vertical deep glazing pocket of each lite centered along the daylight opening:

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

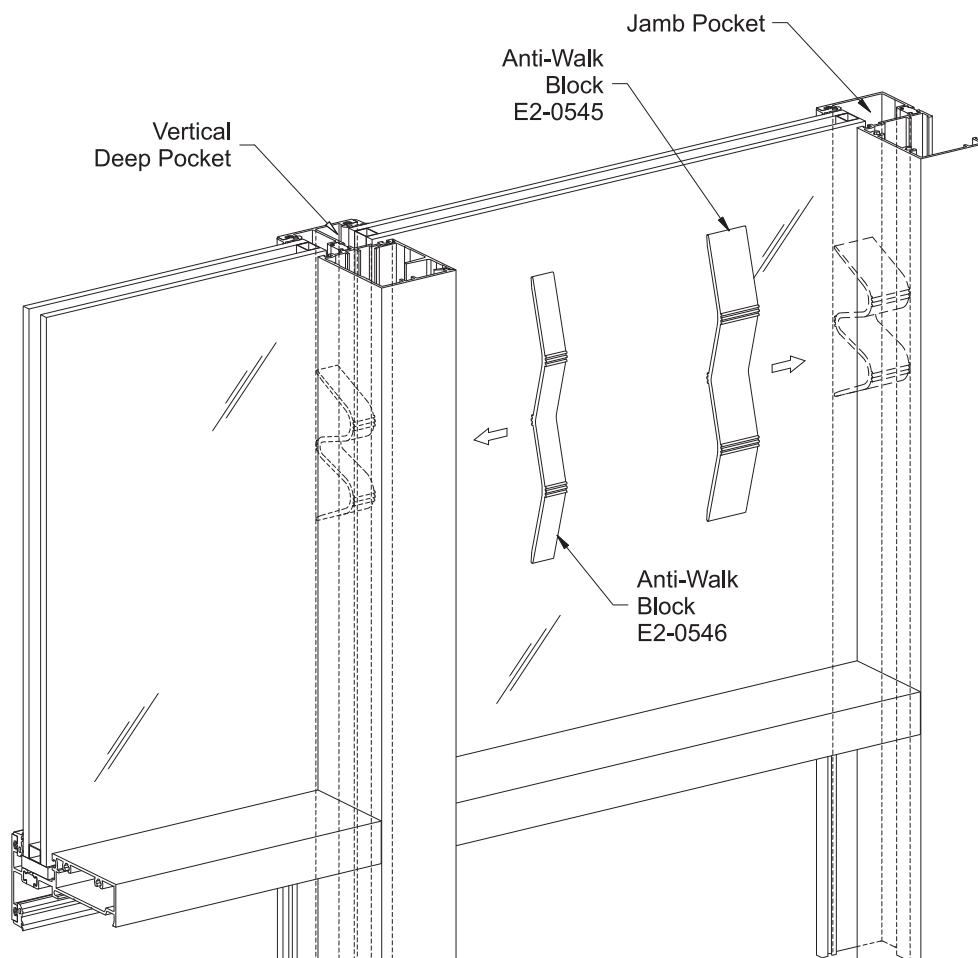
-Flatten the anti-walk block against the surface of the glass and push it into the opening between glass and the mullion until it is released into the glazing pocket.

See **Details 45 & 46**.

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



DETAIL 45



DETAIL 46

IG Shown
OG Similar

GLAZING

STEP 21 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.

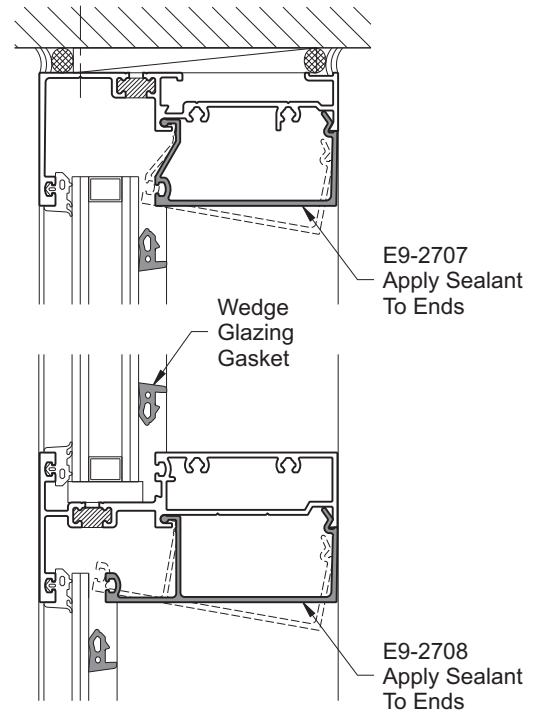
- Apply a quality non-hardening sealant to each end of the glass stops and snap them into position.
- Tool the sealant into the joint between the glass stop and the vertical to ensure a watertight seal and wipe away any excess sealant.

See **Detail 47**.

- Install the interior glazing gaskets using the same technique described in **Step 18** on **Page-35**.

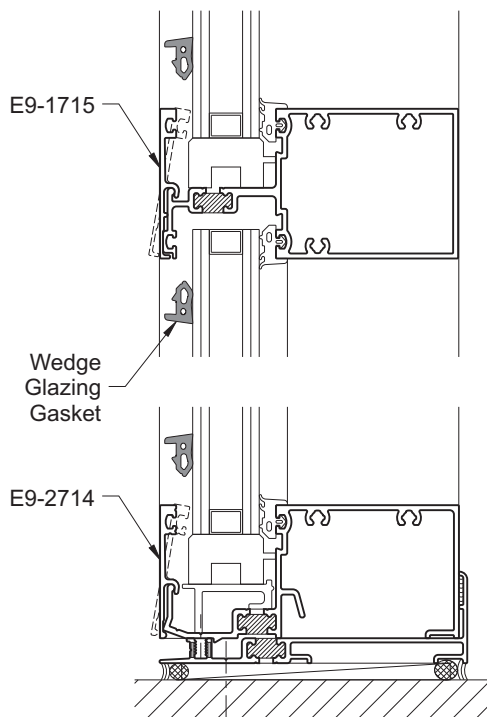
Note: Always install vertical glazing gaskets first.

INSIDE GLAZED



DETAIL 47

OUTSIDE GLAZED



DETAIL 48

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 48**.

- Install the exterior glazing gaskets using the same technique described in **Step 18** on **Page-35**.

Note: Always install vertical glazing gaskets first.

GLAZING

STEP 22
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"

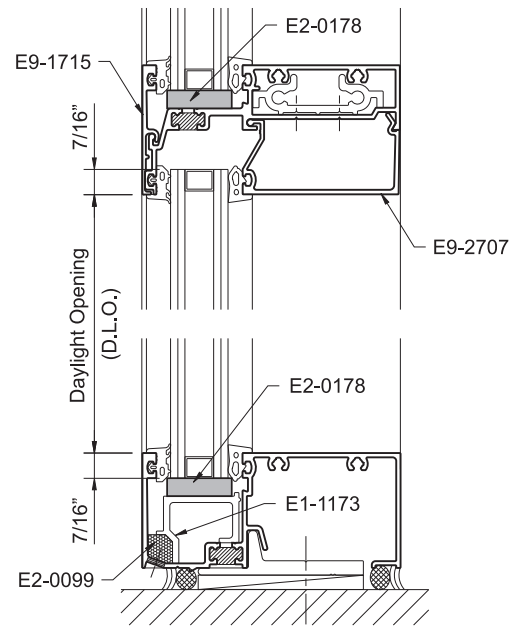
-Determine the glass size:

-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.

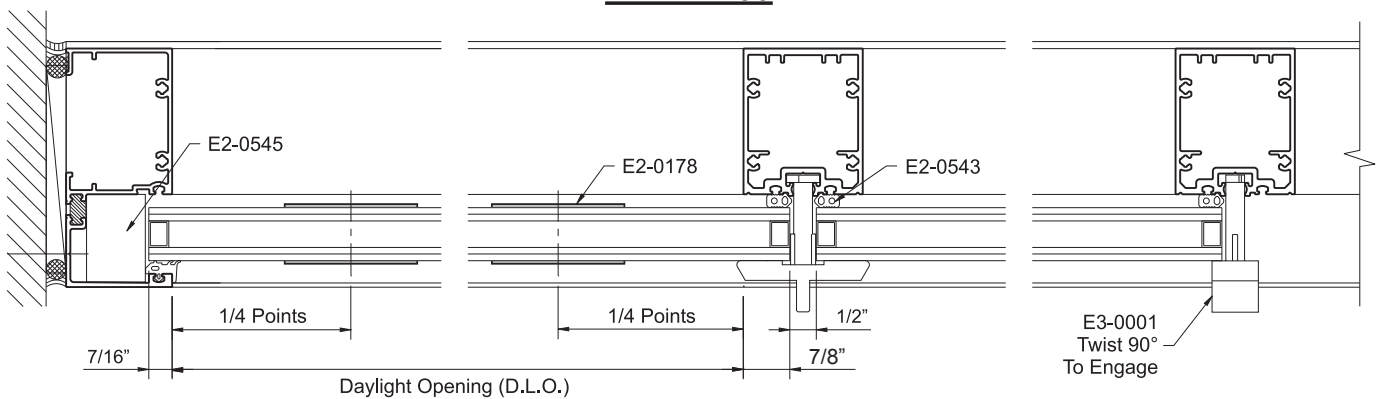
- Install exterior glass stops, E9-1715 at the horizontal.
- Install glazing gaskets to the glass stop as instructed in **Step 18** except leave 1/2" gaps on the underside where the glass stops are spliced or notched to allow proper weepage.
- Carefully install the first lite of glass from the interior 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 21**.
- 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.
- 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 49 & 50**.



DETAIL 49

DETAIL 50



GLAZING

STEP 22 INSTALL GLASS FOR OUTSIDE GLAZED STRUCTURAL SILICONE GLAZING (Continuous Head & Sill Frames)

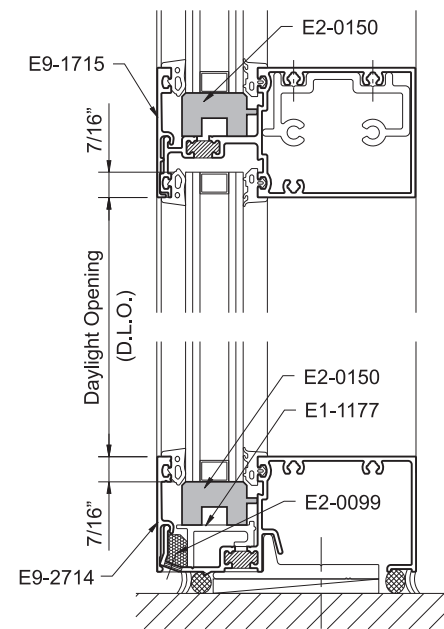
-Determine the glass size:

	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"

-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 18** 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.

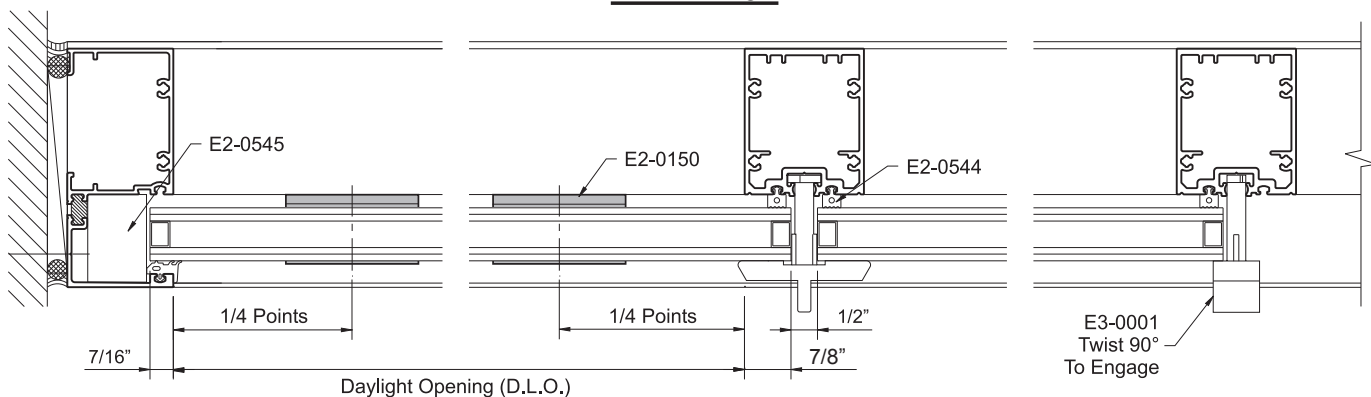


DETAIL 51

- 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.
- 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 51 & 52.**

DETAIL 52

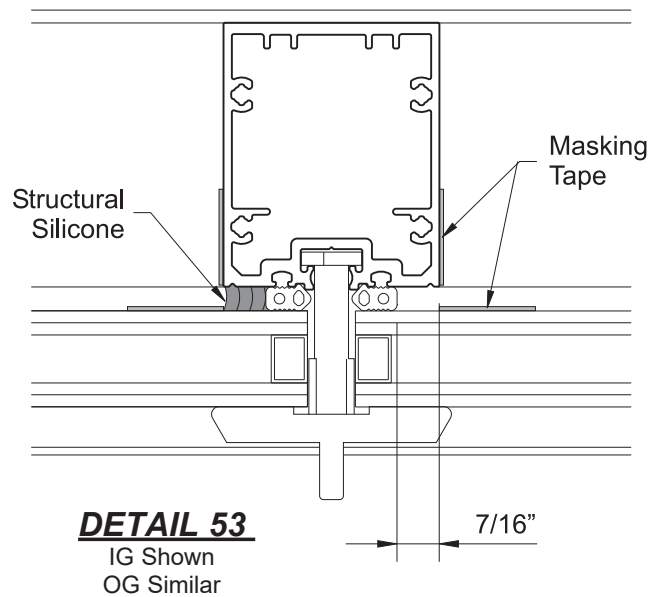


GLAZING

STEP 23
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 53**.



- 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.

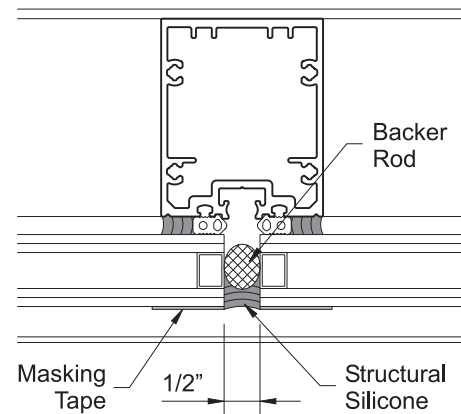
GLAZING

STEP 24 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 an approved structural silicone into the joint between the lites of glass. Apply moderate pressure so that the void is completely filled. See **Detail 54**.



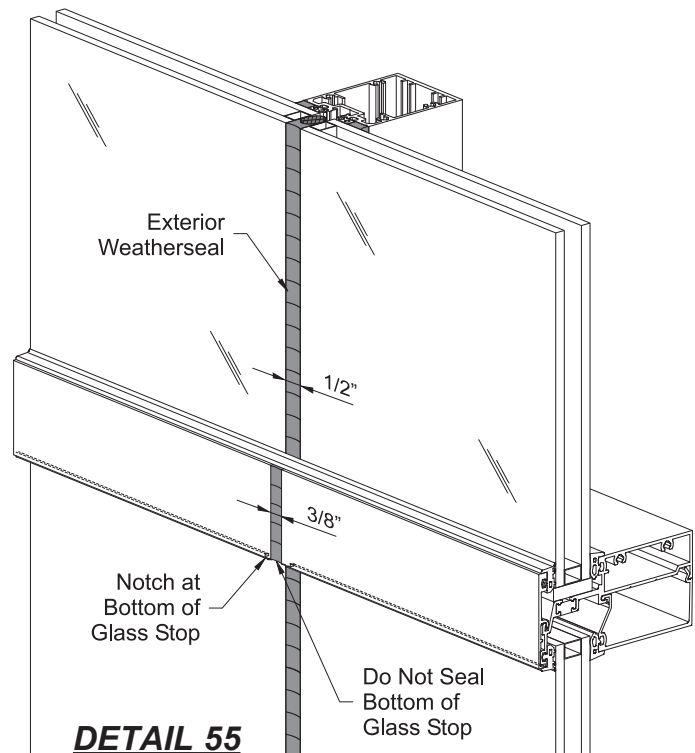
DETAIL 54
IG Shown
OG Similar

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 55**.

- 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 55

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

DOOR FRAME INSTALLATION

**STEP 25
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.

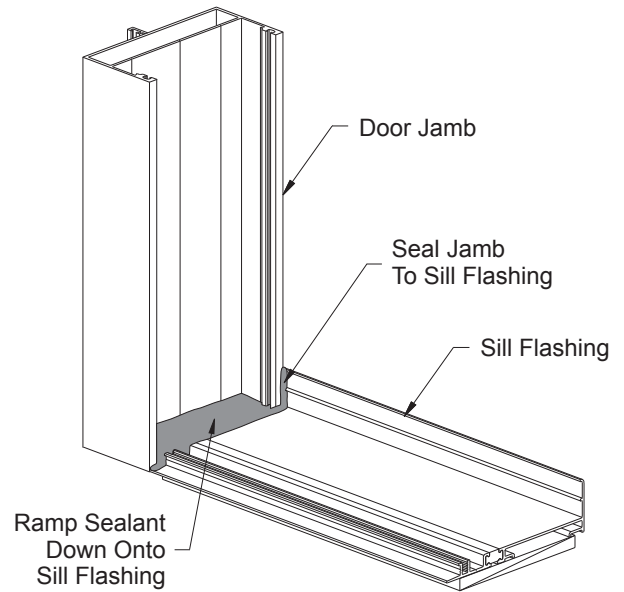
Prior to snapping the assembled frames into the door jamb, the end of the sill flashing needs to be sealed to the door jamb.

- 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 56**.

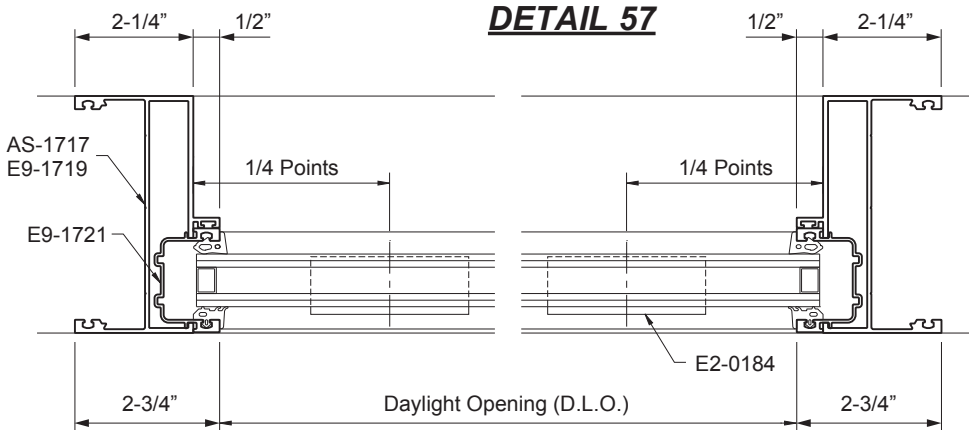
Glass sizes for transom areas are not the same as for standard YWW 45 FI/TU frames. See the table below and **Detail 57** for transom glass sizes.

Transom Glass Sizes:

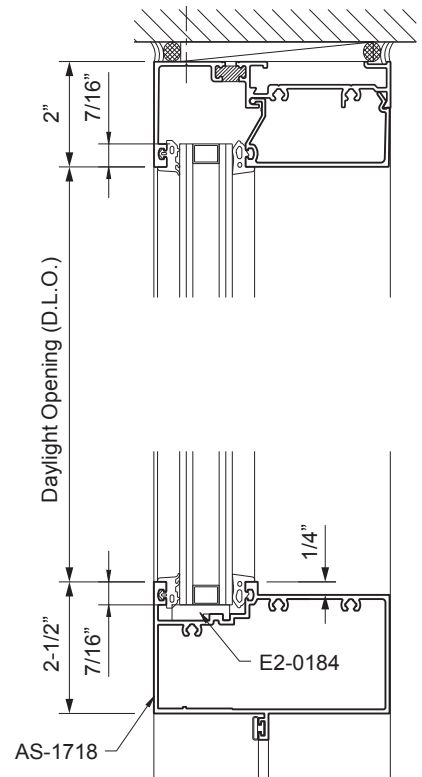
	Width	Height
Transom Glazing	D.L.O. + 7/8"	D.L.O. + 7/8"



DETAIL 56



DETAIL 57





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