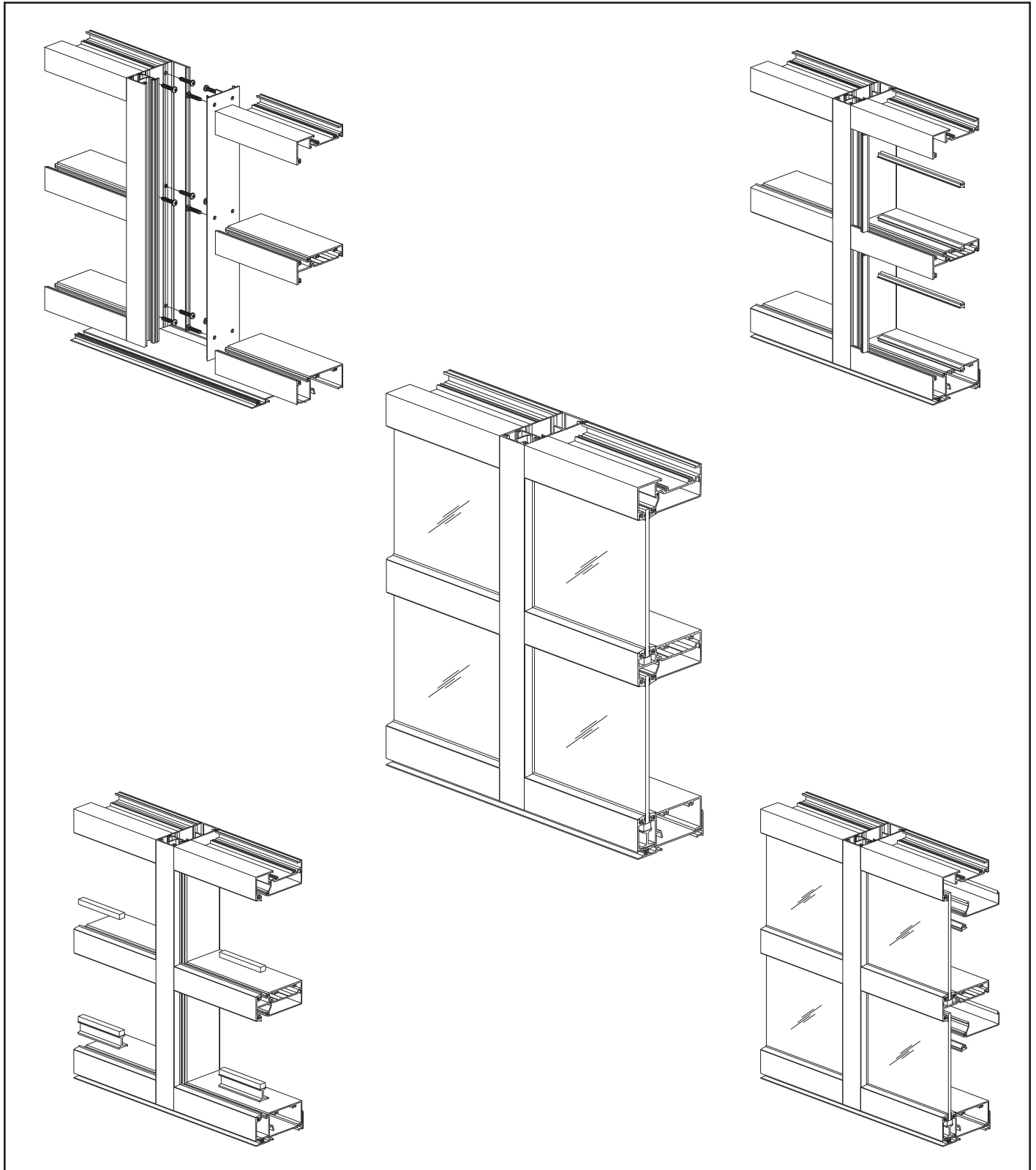


YWW 45 FS Window Wall System



Installation Manual

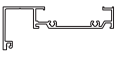
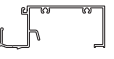
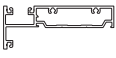


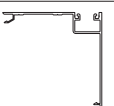
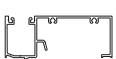
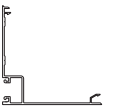

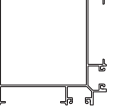

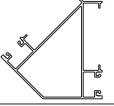
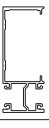
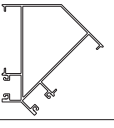

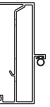

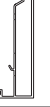




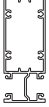
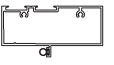
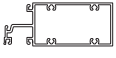



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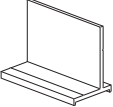
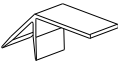

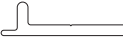


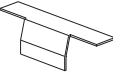

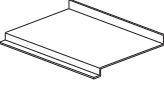

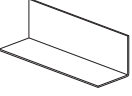



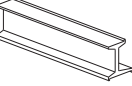

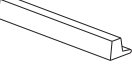

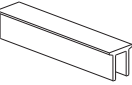









Installation Notes

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

FRAMING MEMBERS

	Head For Inside Glazing	E9-2401		Sill For Outside Glazing, Vertical Through Frames	E9-2415
	Horizontal For Inside Glazing	E9-2402		Exterior Glass Stop Use with E9-2413, E9-2414, & E9-2415	E9-2416
	Interior Glass Stop For Inside Glazing Use with E9-2401, E9-2402 & E9-2414	E9-2403		90° Outside Corner Post Use with E9-2418	E9-2417
	Sill For Inside Glazing	E9-2404		90° Outside Corner Post Use with E9-2417	E9-2418
	Sill Flashing For Vertical Through Frames	E9-2405		90° Inside Corner Post Use with E9-2408 Flat Filler	E9-2419
	Jamb (For All Frames) / Head (For Outside Glazing)	E9-2406		135° Outside Corner Post Use with E9-2408 Flat Filler	E9-2420
	Two Piece Vertical For Vertical Through Frames Use with E9-2408 Flat Filler	E9-2407		135° Inside Corner Post Use with E9-2408 Flat Filler	E9-2421
	Flat Filler Use with E9-2407 Vertical	E9-2408		Door Jamb (w/o Transom) Use with E9-2423 Gasket E2-0051 included	AS-2422
	Expansion Mullion (Female) Use with E9-2410	E9-2409		Door Jamb (w/ Transom) Use with E9-2423 & Standard Door Stop AS-0401	E9-2427
	Expansion Mullion (Male) Use with E9-2409	E9-2410		Door Jamb Filler Use with E9-2422 & E9-2427 Door Jambs	E9-2423
	SSG Vertical Mullion For Continuous Head & Sill	E9-2411		Transom Glazing Pocket For Door Jamb	E9-2424
	One Piece Vertical For Continuous Head & Sill	E9-2412		Single Acting Transom Bar Gasket E2-0051 included	AS-0477
	Horizontal For Outside Glazing (Vertical Through Frames)	E9-2413		Transom Bar Glazing Adaptor Use with AS-0477	E9-2425
	Horizontal For Use with SSG Verticals	E9-2414		Transom Bar Glass Stop Use with AS-0477	E9-2426

ACCESSORIES

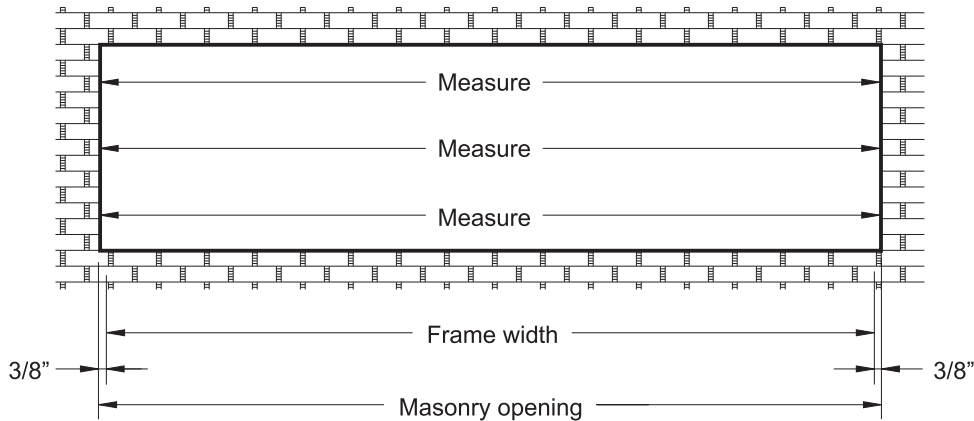
	Optional Head Anchor	E1-1161		Water Deflector F	E2-0537
	Mullion End Cap For Ends of Jambs & Verticals	E1-1165		Optional Sill Anchor	E1-1098
	Shear Block For Attachment of Intermediate Horizontal	E1-1168		Side Block 1/8"x1/2"x4" For E9-2409 Expansion Mullion (Female)	E2-0537
	Horizontal Bridge Use at SSG Vertical & Intermediate Horizontal	E1-1166		Weep Baffle Use at Sill Weep Holes (Continuous Head & Sill)	E2-0099
	Sill Flashing Splice Use with E9-2405 Sill Flashing	E1-1167		Temporary Glass Retainer (1/4" Glazing) For SSG Vertical	E3-0006
	End Dam For Sill Flashing E9-2405	E1-0168		Glazing Gasket	E2-0052
	Setting Block For Inside Glazing, Also Used as Side Block	E2-0054		Glazing Gasket Silicone Compatible Use with SSG	E2-0534
	Setting Block Chair Use with E2-0054 at Sill (Inside Glazing)	E1-1163		Structural Silicone Glazing Spacer	E2-0535
	Setting Block For Outside Glazing	E2-0536		Weathering Gasket For Expansion Mullion	E2-0065
	Setting Block Chair Use with E2-0536 at Sill (Outside Glazing)	E1-1164		#8 x 3/8" PHMS Type "AB", Zinc Plated Steel For Attachment of Mullion End Cap	PC-0806
	End Dam For Head, Continuous Head & Sill Frames	E2-0530		#10 x 3/8" PHMS Stainless Steel For Attachment of Sill to Sill Flashing	PM-1006-SS
	End Dam For Sill, Continuous Head & Sill Frames	E2-0531		#12 x 1/2" FHMS Type "AB", Zinc Plated Steel For Attachment of Int. Horizontal to Shear Block	FC-1208
	Anti Walk Block For Jamb, 1-3/16" wide	E2-0532		#12 x 1-1/4" PHMS Type "AB", Zinc Plated Steel For Screw Spline Attachment	PC-1220
	Anti Walk Block For Vertical, 3/8" wide	E2-0533		#12 x 1-3/4" PHMS Type "AB", Zinc Plated Steel For Attachment of Shear Block to Vertical	PC-1228

FRAME FABRICATION

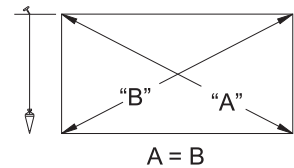
STEP 1

DETERMINE FRAME SIZE

Determine Frame Width:



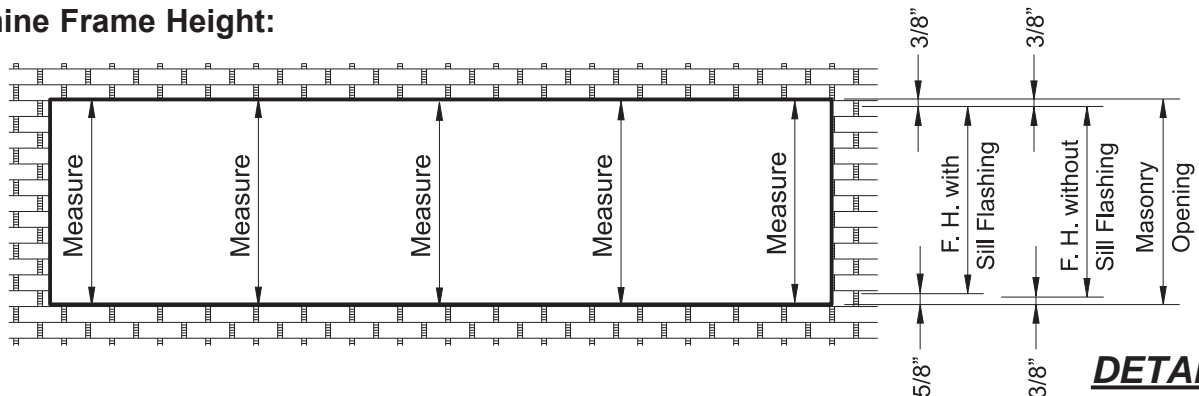
Note: Check opening for squareness of plumb at both ends, units must be installed in a true rectangle.



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" 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 FS must be installed with sill flashing, E9-2405, for vertical through applications.
 Sill flashing is not required when head and sill members run continuous (frames less than 24"-0" long).

FRAME FABRICATION

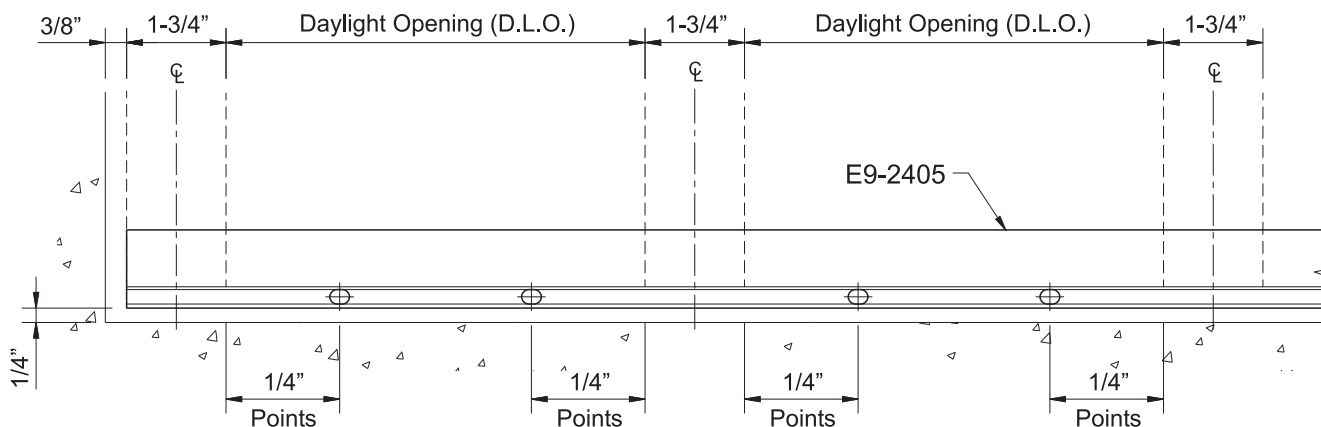
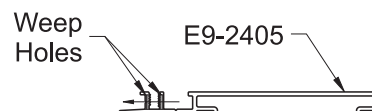
STEP 2

FABRICATE SILL FLASHING

- Cut the sill flashing, E9-2405, to the frame width determined in **Step 1**:
Masonry opening width minus(–) 3/4" (3/8" 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

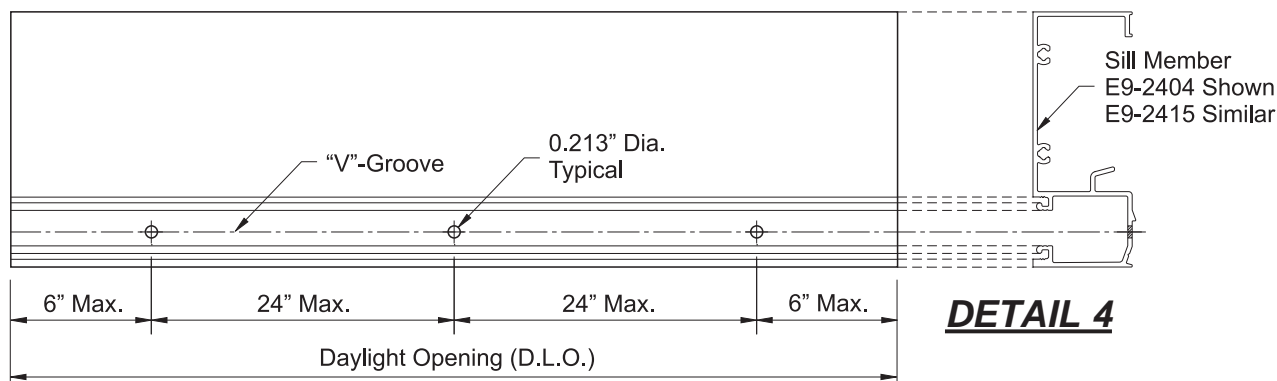


STEP 3

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 along the glazing pocket "V"-groove 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**.



FRAME FABRICATION

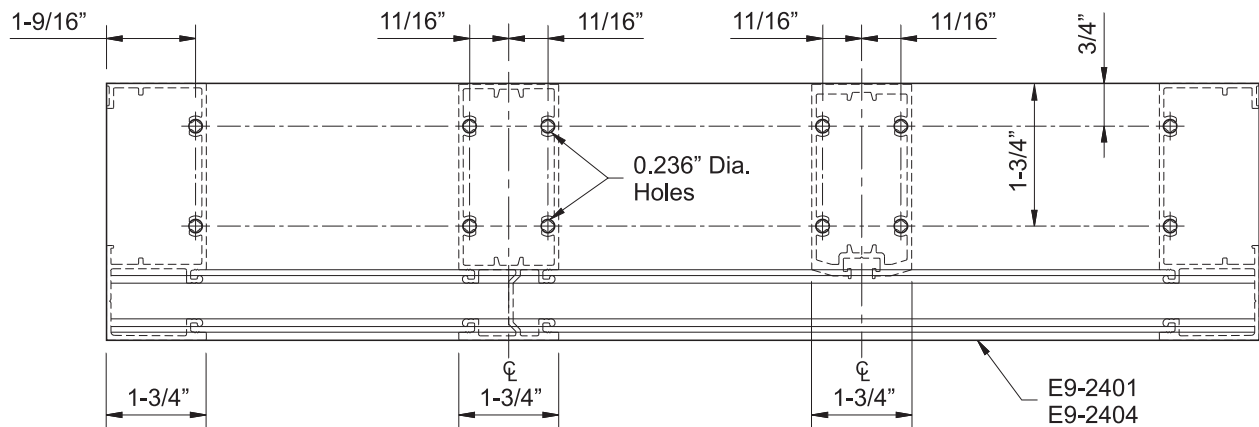
STEP 3

FABRICATE HEAD & SILL MEMBERS FOR CONTINUOUS HEAD AND SILL FRAMES

- Cut head and sill members to the frame width determined in **Step 1**.
- 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 for attachment of vertical members as shown below.
 - Drill 0.236" diameter (#B drill bit) clearance holes at each location marked.
- See **Detail 5**.

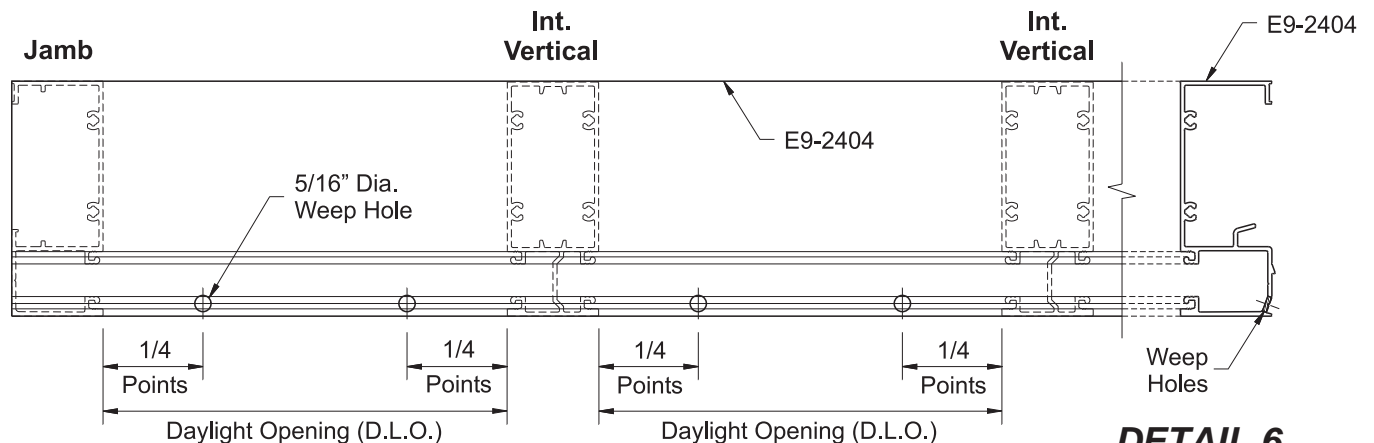


DETAIL 5

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

- Mark the sill members, E9-2404, at 1/4 points of daylight opening between vertical members along the "V"-Groove on the underside of the sill member as shown below.
- Drill 5/16" diameter weep holes at each location marked.

See **Detail 6**.



DETAIL 6

FRAME FABRICATION

STEP 4

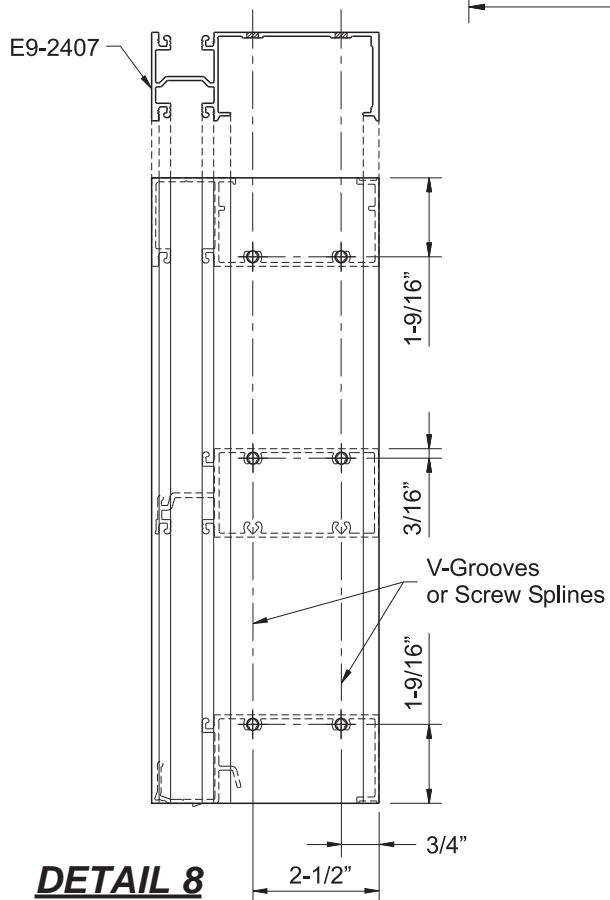
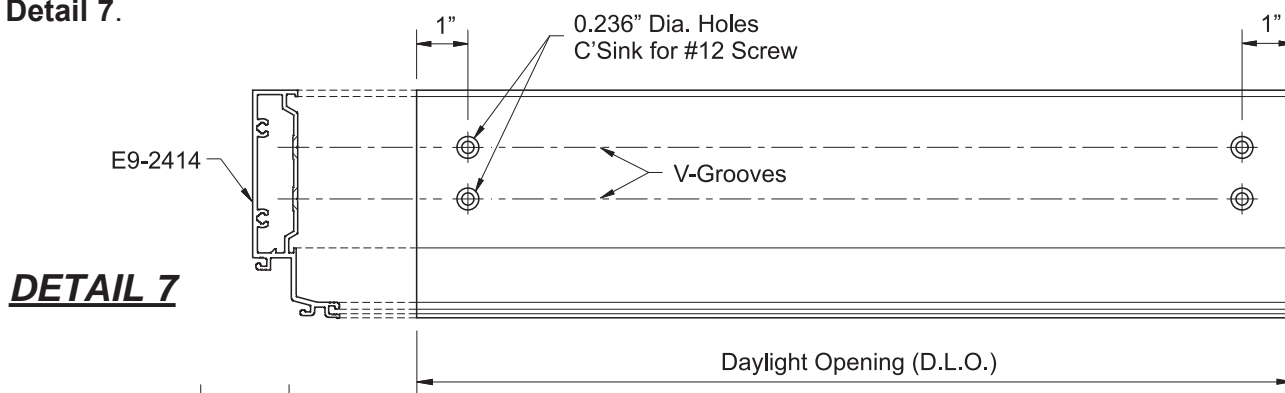
FABRICATE INTERMEDIATE HORIZONTAL MEMBERS

-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:

- 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, countersunk for a #12 fastener, at each location marked.

See **Detail 7**.



STEP 5

FABRICATE TWO PIECE VERTICALS 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 8**.
- Drill 0.236" diameter (#B drill bit) holes at each location marked.

See **Detail 8**.

FRAME FABRICATION

STEP 5 FABRICATE VERTICALS FOR CONTINUOUS HEAD & SILL FRAMES

-Cut the vertical and jamb members to the frame height determined in **Step1** minus(-) 2-5/8".

When using continuous head and sill frames, the verticals and jambs must be notched to fit up into the head member.

-Measure down 7/8" from the top of the mullion and draw a line across the face of the mullion.

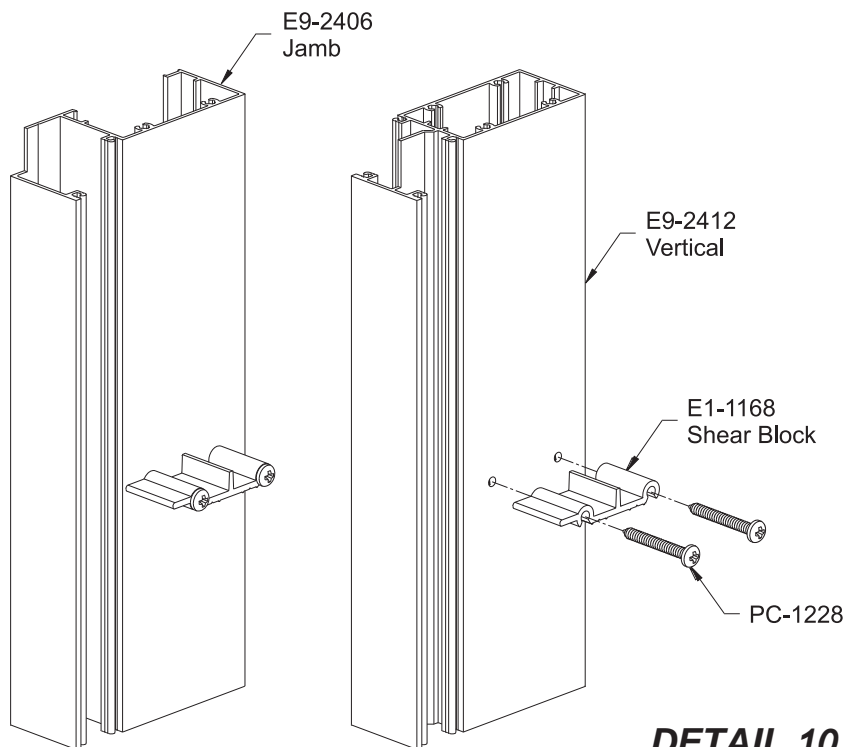
-Notch the mullions down to this line and 3/8" back.

See **Details 9 & 10**.

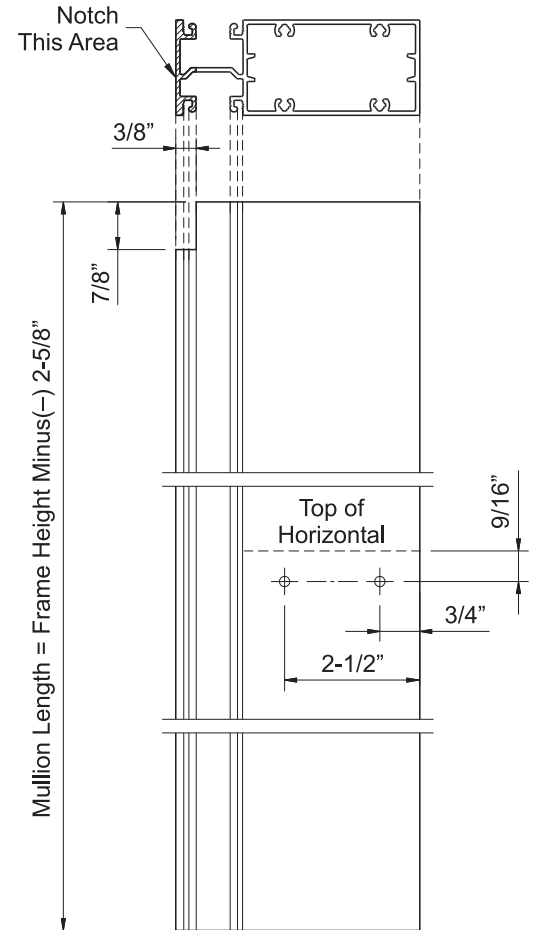
Fabricate verticals for intermediate horizontal attachment by shear block:

-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 2-1/2" from the back of the mullion.



DETAIL 10



DETAIL 9

-Drill 0.189" diameter (#12 drill bit) holes at each location marked.
-Attach shear blocks, E1-1168, using two PC-1228 fasteners.

See **Detail 10**.

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

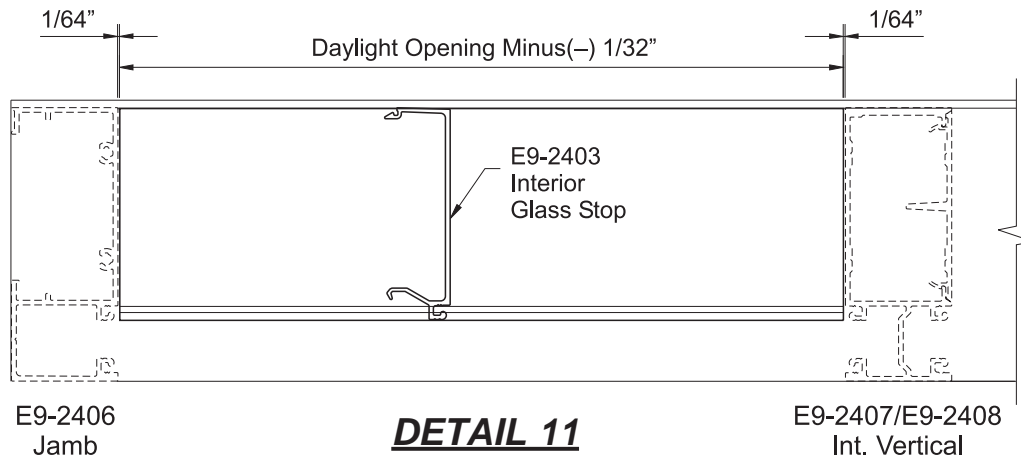
FRAME FABRICATION

STEP 6

FABRICATE INTERIOR GLASS STOPS

For interior glazing applications interior glass stops, E9-2403, are required.

-Cut all interior glass stops: Cut Length = Daylight Opening minus(-) 1/32".
See **Detail 11**.



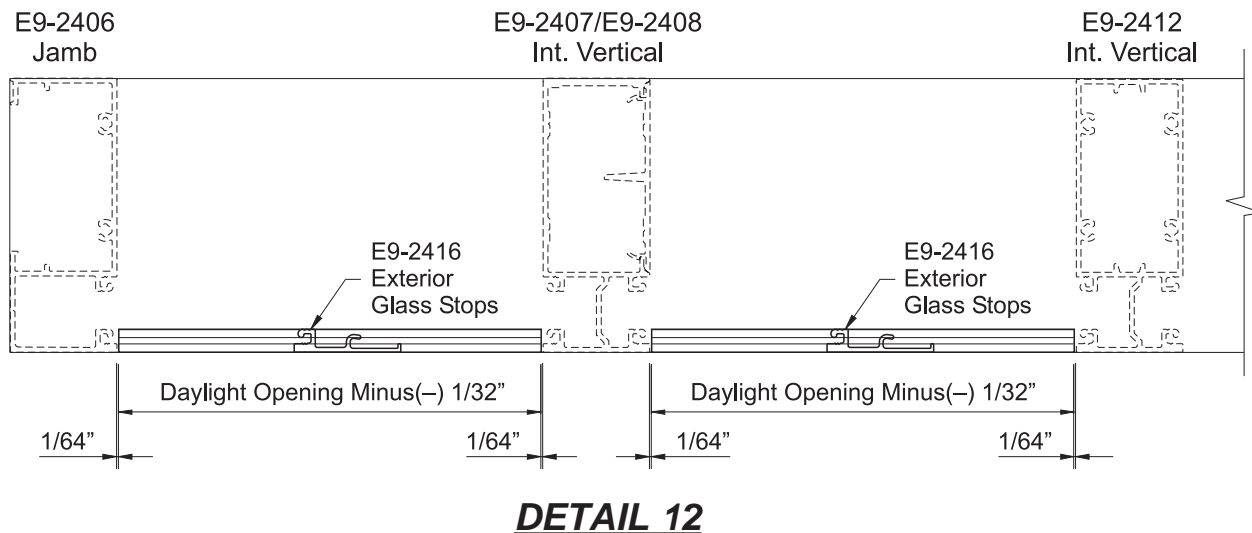
STEP 7

FABRICATE EXTERIOR HORIZONTAL FACE MEMBERS

Exterior horizontal face members, E9-2416, are required at intermediate horizontals and sills when outside glazing and at intermediate horizontals when using structural silicone glazed (SSG) verticals.

For Outside Glazing Frames (Vertical Thru):

-Cut horizontal face members: Cut Length = Daylight Opening minus(-) 1/32". See **Detail 12**.



FRAME FABRICATION

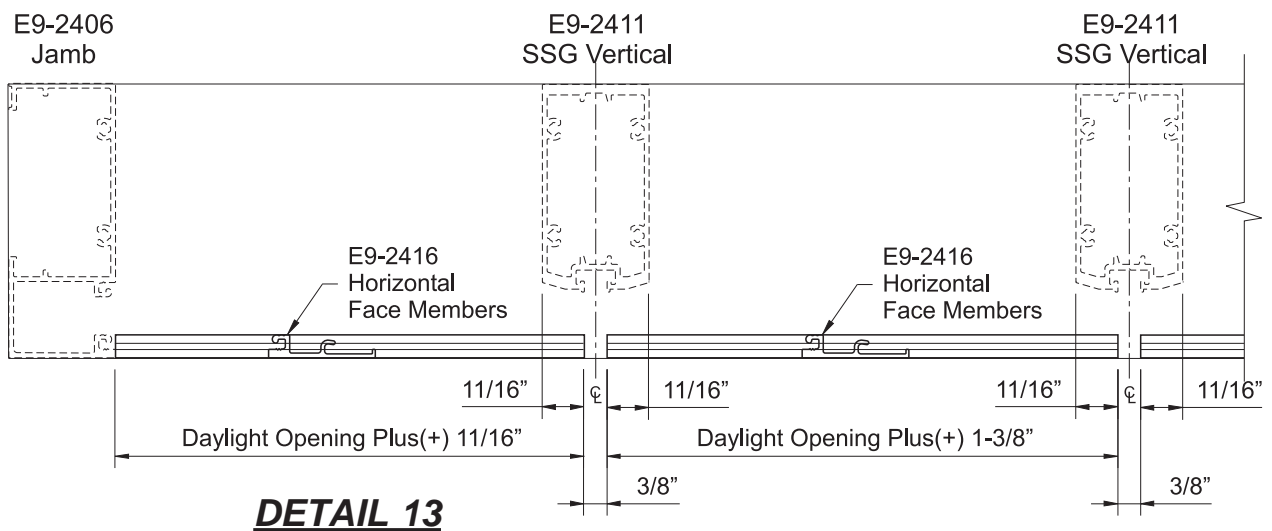
STEP 7 (Continued)

FABRICATE EXTERIOR HORIZONTAL FACE MEMBERS

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

- Cut horizontal face members between jambs and verticals:
Cut Length = Daylight Opening plus(+) $11/16"$.
- Cut horizontal face members between verticals:
Cut Length = Daylight Opening plus(+) $1-3/8"$.

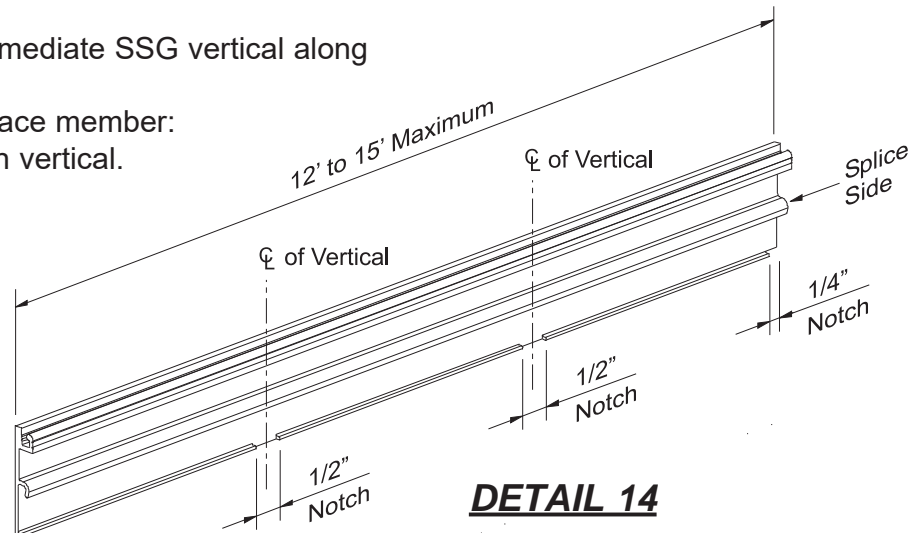
See **Detail 13**.



Exterior horizontal face members, E9-2416, for intermediate horizontals 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. The horizontal face member also needs to be notched to allow water to weep away from the frame.

- Mark the centerline of each intermediate SSG vertical along the horizontal face member.
- Notch out the bottom leg of the face member:
 - $1/2"$ at the centerline of each vertical.
 - $1/4"$ at the splice side end.

See **Detail 14**.



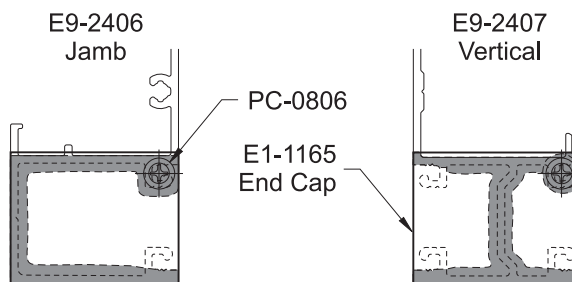
FRAME ASSEMBLY

STEP 8

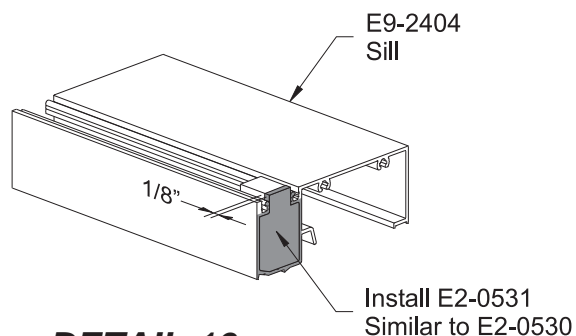
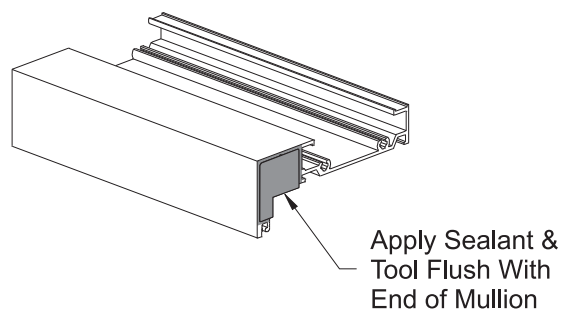
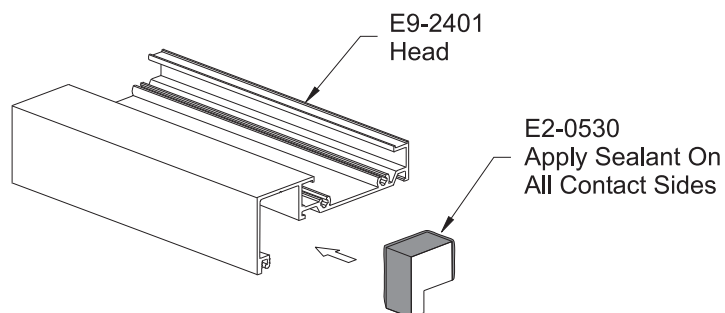
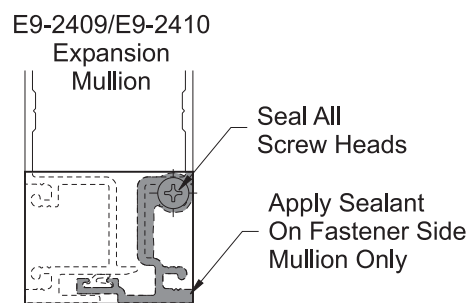
INSTALL MULLION END CAPS (For Vertical Through Frames Only)

- 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 sealant to the reglet center and along the front of the vertical members prior to installing mullion end caps, E1-1165, as shown in **Detail 15**.
- Attach mullion end caps using (1) PC-0806 fastener.
- Tool the excess sealant along the inside of the glazing pocket between the mullion end cap and the mullion.
- Seal all screw heads.

See **Detail 15**.



DETAIL 15



DETAIL 16

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, E2-0530 at the head and E2-0531 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 16**.

FRAME ASSEMBLY

STEP 10 ASSEMBLE FRAMES

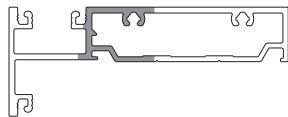
Vertical Through Frames:

- 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 vertical members, E9-2407 and E9-2408 with two (2) PC-1220 fasteners at each end.
- Using a clean cloth, wipe off the excess sealant while pushing it into the joints.

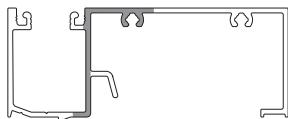
See **Detail 17**.



HEAD
E9-2401

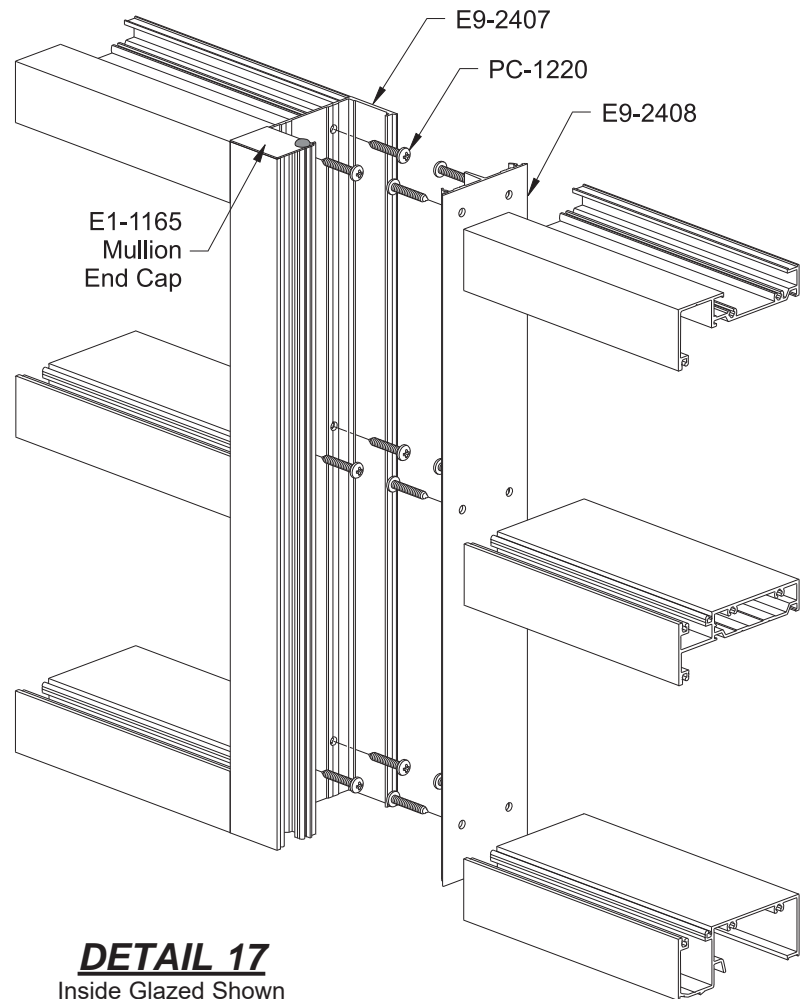


HORIZONTAL
E9-2402



SILL
E9-2404

Apply sealant to the shaded areas at each end.



DETAIL 17
Inside Glazed Shown
Outside Glazed Similar

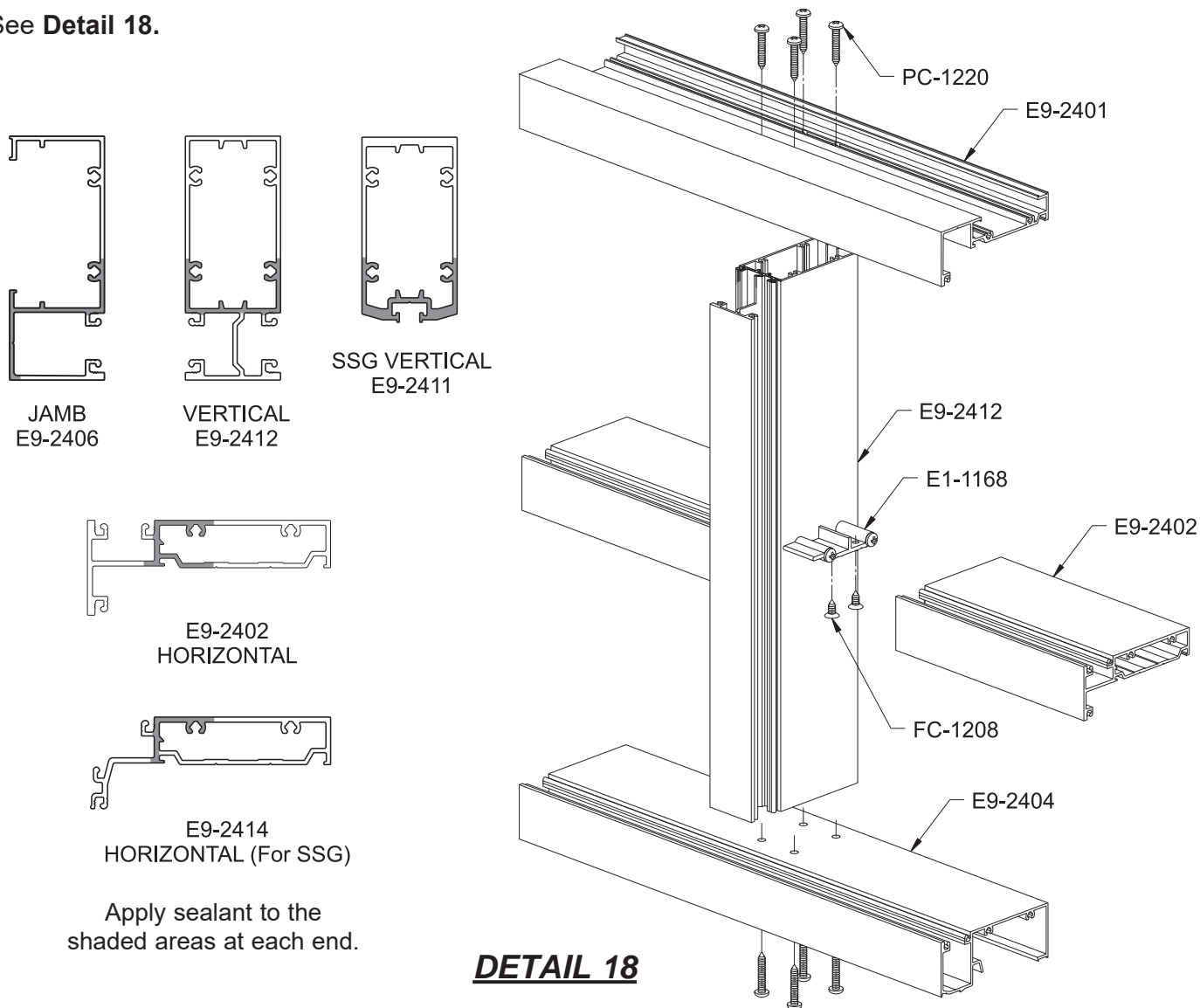
FRAME ASSEMBLY

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 jambs, E9-2406, standard verticals, E9-2412, and/or SSG verticals, E9-2411, to the head and sill members using (2) PC1220 fasteners per jamb and (4) PC-1220 fasteners per intermediate vertical.
- 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 intermediate horizontals to the shear blocks using (2) FC-1208 fasteners at each end.
- Using a clean cloth, wipe off the excess sealant while pushing it into the joints.

See **Detail 18**.



Apply sealant to the shaded areas at each end.

FRAME INSTALLATION

STEP 11

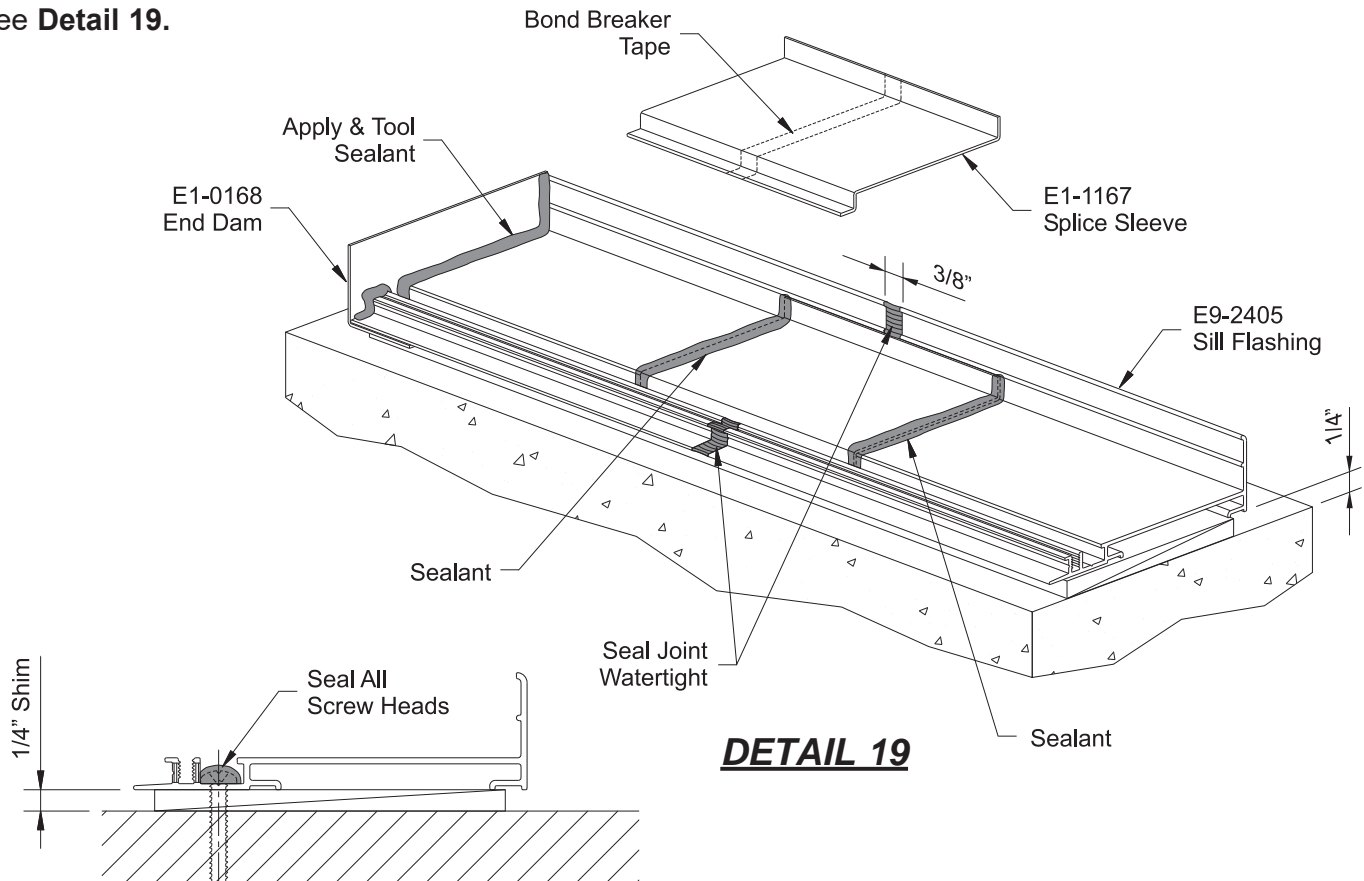
INSTALL SILL FLASHING (For Vertical Through Frames Only)

- 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 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 19**.



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.

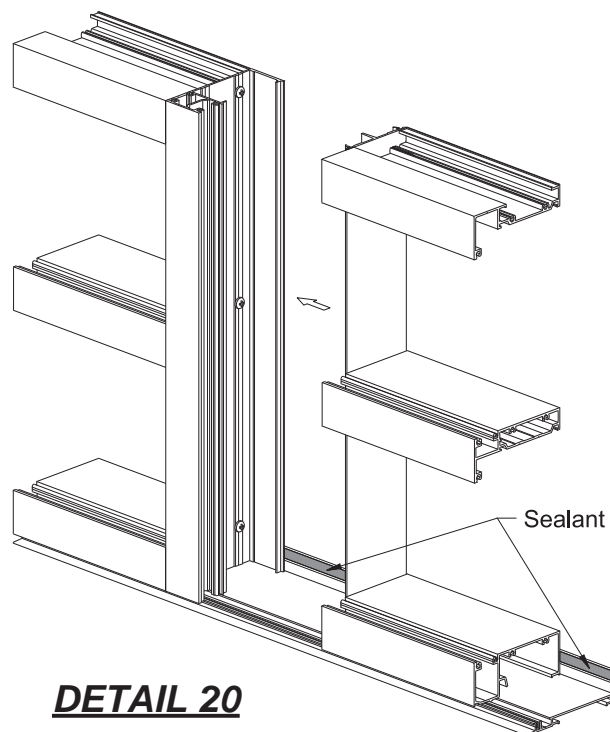
See **Detail 20**.

- Shim the head and jamb members to ensure that the frame is installed plumb, 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.

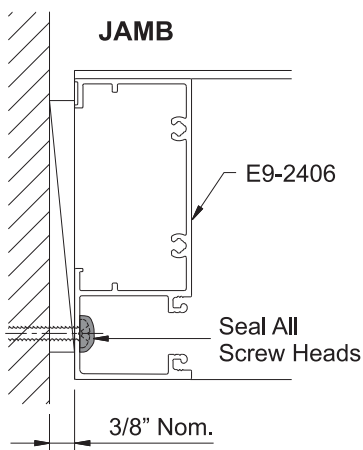
Note: Shims must be installed at all anchor locations.

- Sill members, E9-2404 & E9-2415, must be attached to the sill flashing with a PM-1006-SS fastener at each hole previously drilled during sill fabrication.
- Seal all anchor heads.

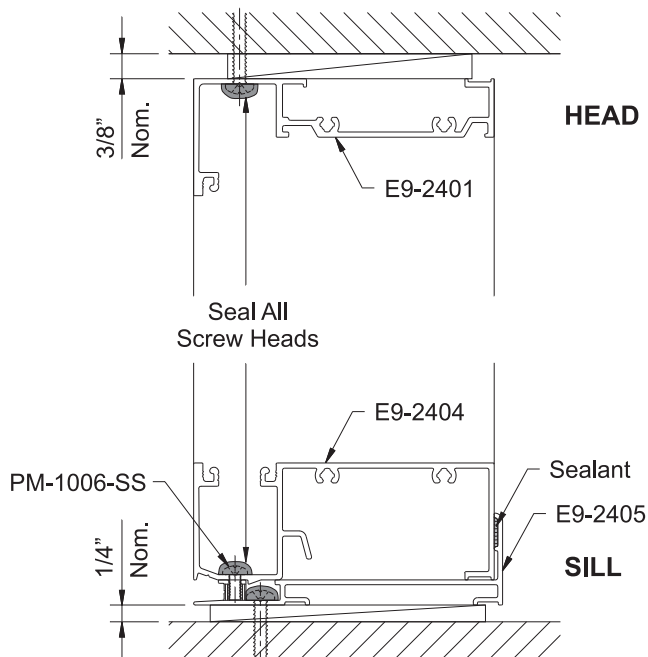
See **Detail 21**.



DETAIL 20



DETAIL 21
Inside Glazed Shown
Outside Glazed Similar



FRAME INSTALLATION

STEP 12

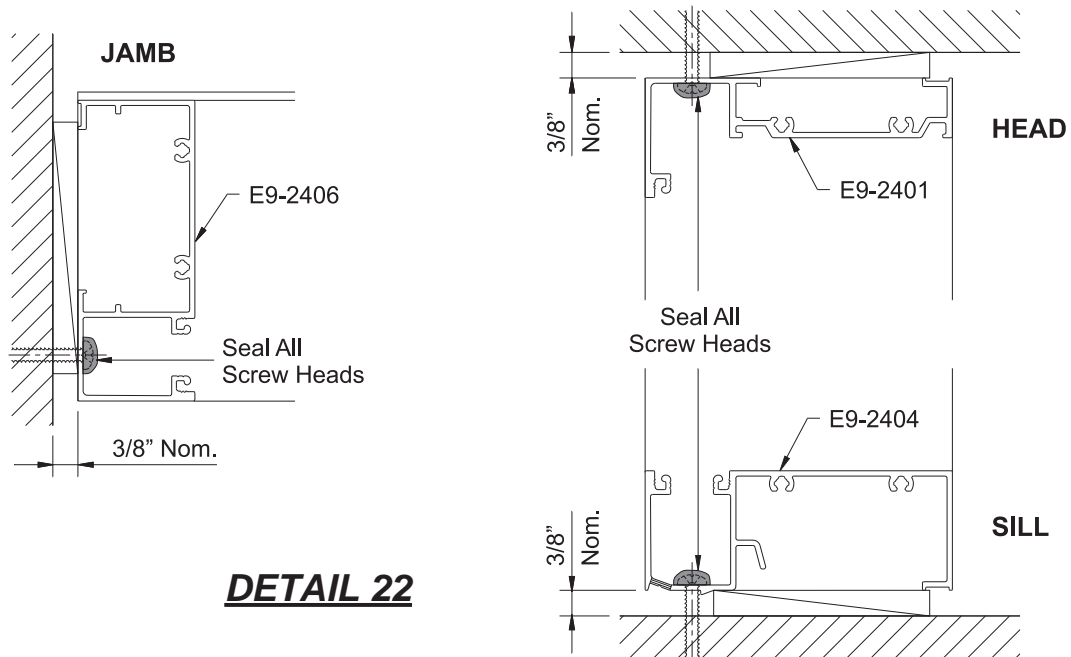
INSTALL CONTINUOUS HEAD & SILL FRAMES

- 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 22**.



DETAIL 22

FRAME INSTALLATION

STEP 13

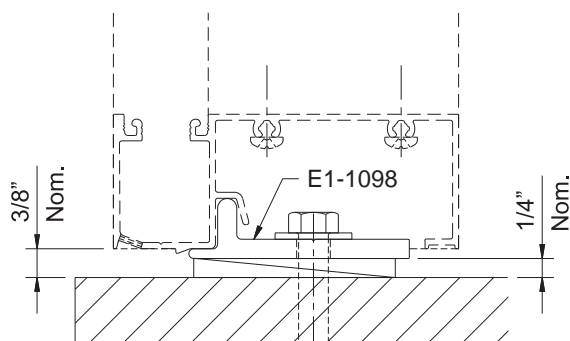
INSTALL CONTINUOUS HEAD & SILL FRAMES USING OPTIONAL HEAD & SILL ANCHORS

Install Optional Sill Anchors, E1-1098:

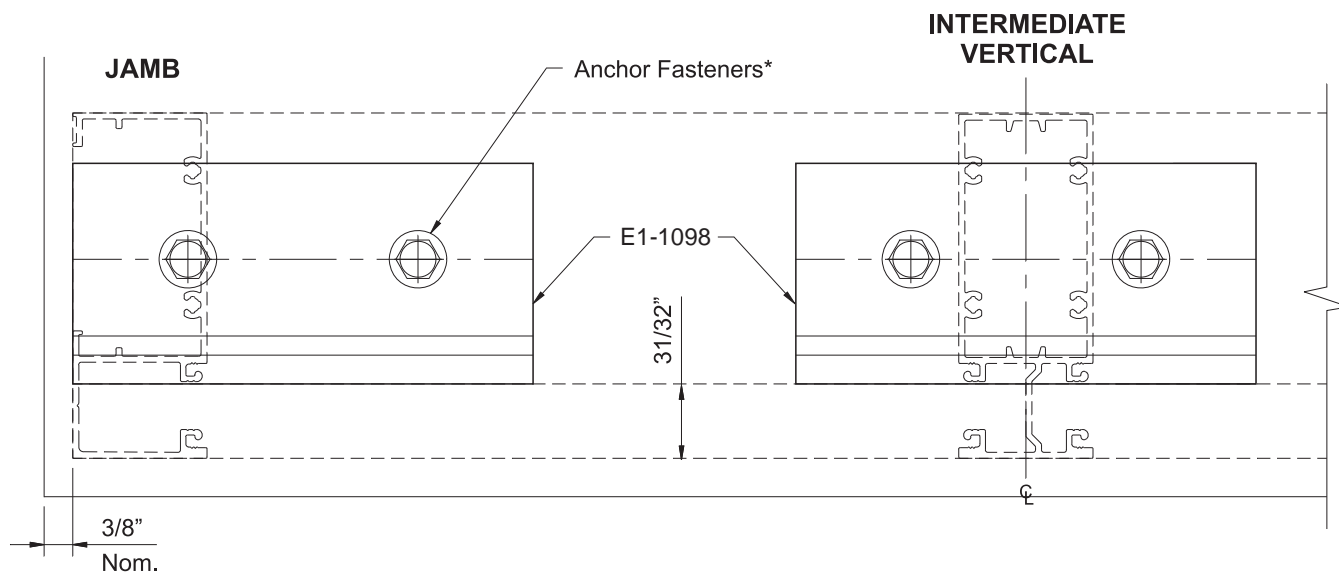
- Predrill sill anchors, E1-1098, for appropriate anchor fasteners*.
- Strike a line along the structure at the sill condition that will be the exterior face of the frame.
- Strike a second line $31/32"$ behind the first line; this line will represent the front of the sill anchor.
- Mark the centerline 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 23**.



DETAIL 23



FRAME INSTALLATION

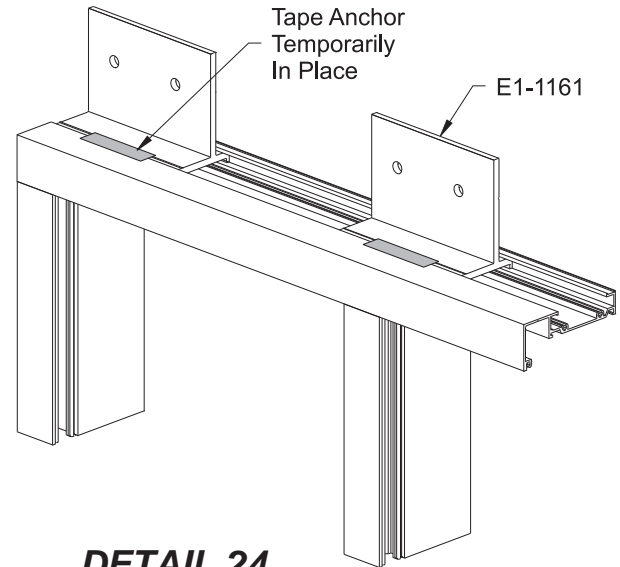
STEP 13 (Continued) INSTALL CONTINUOUS HEAD & SILL FRAMES USING OPTIONAL HEAD & SILL ANCHORS

Install Optional Head Anchors, E1-1161:

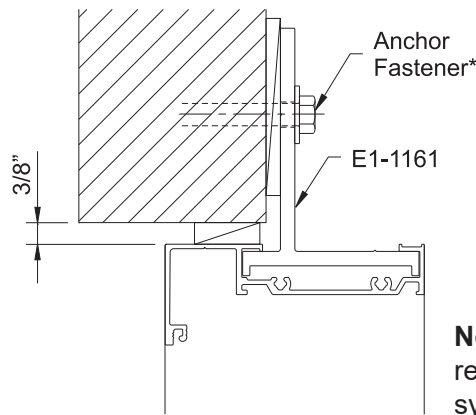
- Predrill head anchors, E1-1161, for appropriate anchor fasteners*.
- Slide the head anchors from the ends of the head member and locate anchors flush with the ends of the frame at jambs and centered over the centerline of intermediate verticals.
- Temporarily tape the anchors in place to prevent slipping during installation.

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

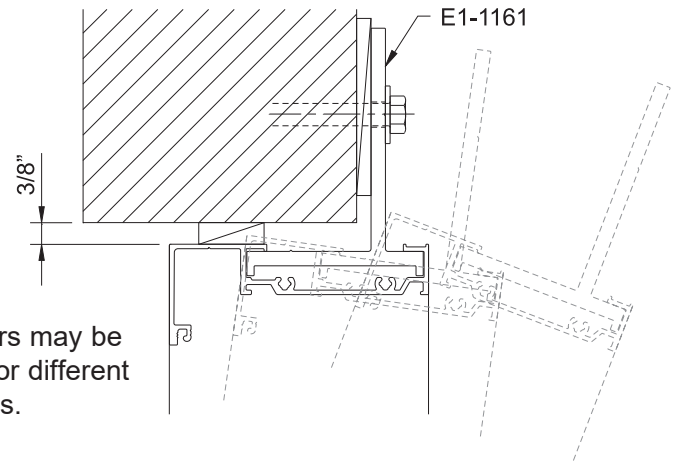
See **Detail 24**.



DETAIL 24



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

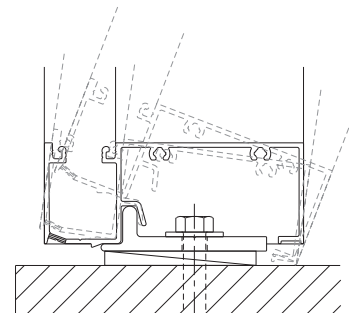


Install Frame Into Opening:

- 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 25**.

DETAIL 25



FRAME INSTALLATION

STEP 14

INSTALL CORNER MULLIONS FOR VERTICAL THROUGH FRAMES

90° and 135° outside and inside corner mullions are available for vertical through frames.

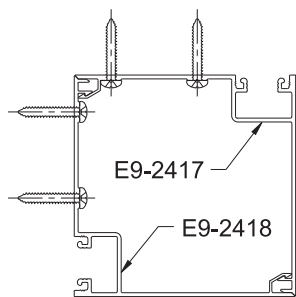
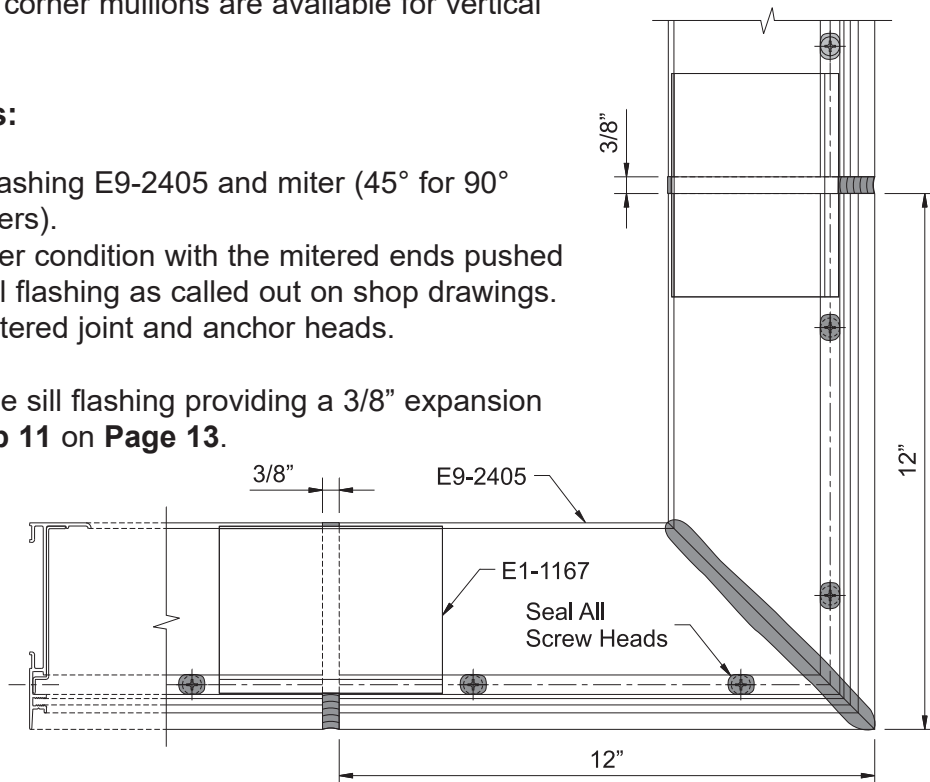
Install sill flashing at corners:

- Cut two 12" long pieces of sill flashing 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.

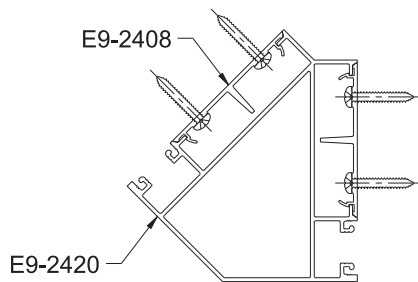
See **Detail 26**.

- Continue installing the rest of the sill flashing providing a 3/8" expansion joint at splices as shown in **Step 11** on **Page 13**.

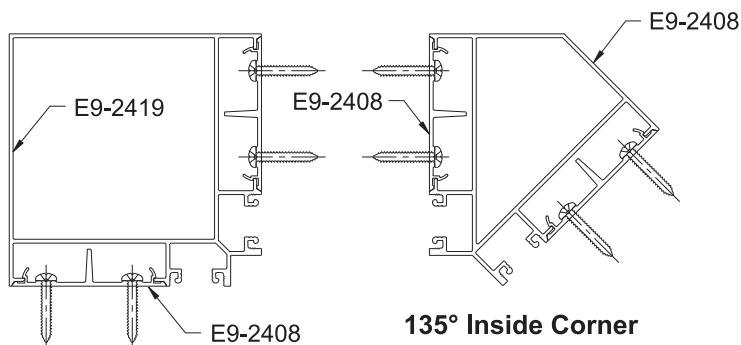
DETAIL 26
90° Outside Corner Shown,
Others Similar



90° Outside Corner



135° Outside Corner



135° Inside Corner

90° Inside Corner

DETAIL 27

Install Corner Mullions:

- Attach horizontal members to standard verticals as shown before in **Step 10**. Attach the other end of the horizontals to the corner mullions or flat fillers, E9-2408, for 90° inside and both 135° corners using the same technique.
- Snap the corner framing members together to form the corner assemblies.
- Carefully move the corner assembly into place and snap it into the rest of the frame one side at a time.

See **Detail 27**.

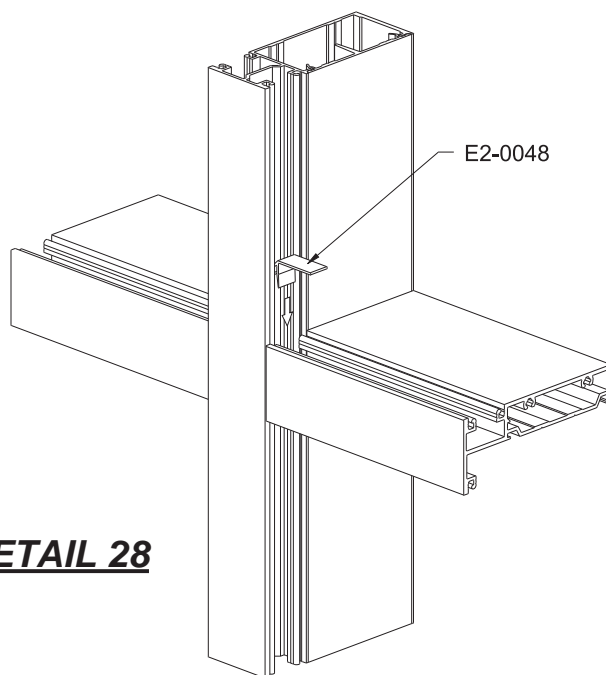
FRAME INSTALLATION

STEP 15 INSTALL WATER DEFLECTORS

The installation of a water deflector, E2-0048, is required at each end of the intermediate horizontals. Water deflectors aid to properly divert water away from the framing system.

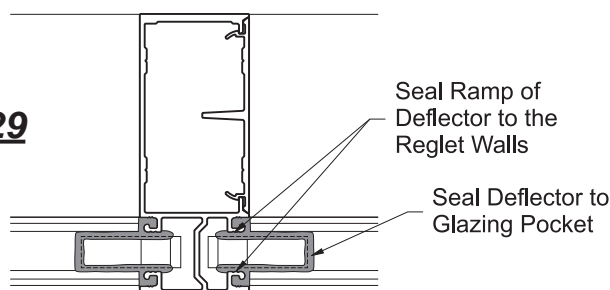
- Clean and dry off the glazing pocket of each horizontal at the ends.
- Peel off the protective paper and install the water deflector at the end of the horizontal.
- Position the vertical leg of the deflector against the end of the horizontal.
- Apply and tool sealant along the edges of the water deflector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

See **Detail 28 & 29**.



DETAIL 28

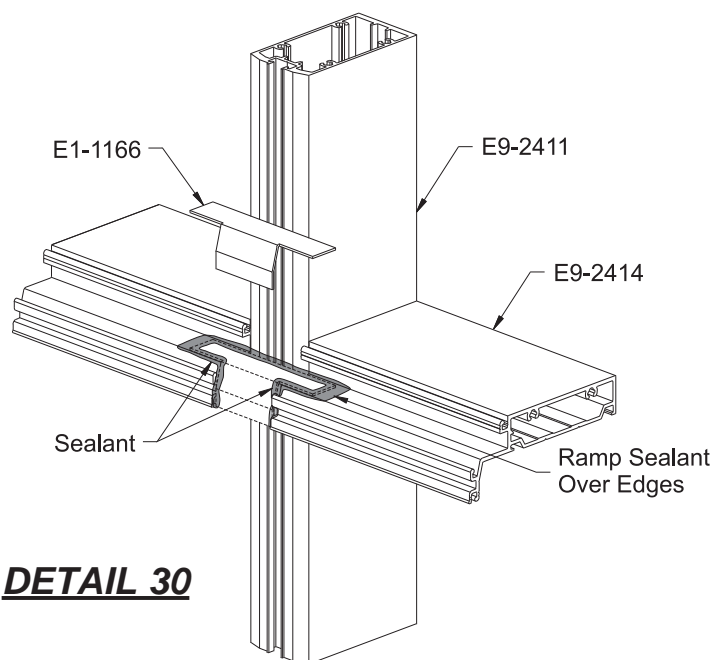
DETAIL 29



When using SSG verticals, the gap between the intermediate horizontals along the glazing pocket needs to be sealed using horizontal bridge, E1-1166:

- Apply sealant along the glazing pocket where the horizontal bridge will be placed.
 - Peel protective paper from the underside of the horizontal bridge and position it into place.
 - Apply sealant to the joints between the bridge and the horizontals and the face of the vertical.
 - Tool the sealant to ensure a watertight joint.
- Ramp the sealant on the glazing pocket up and over the bridge.

See **Detail 30**.



DETAIL 30

FRAME INSTALLATION

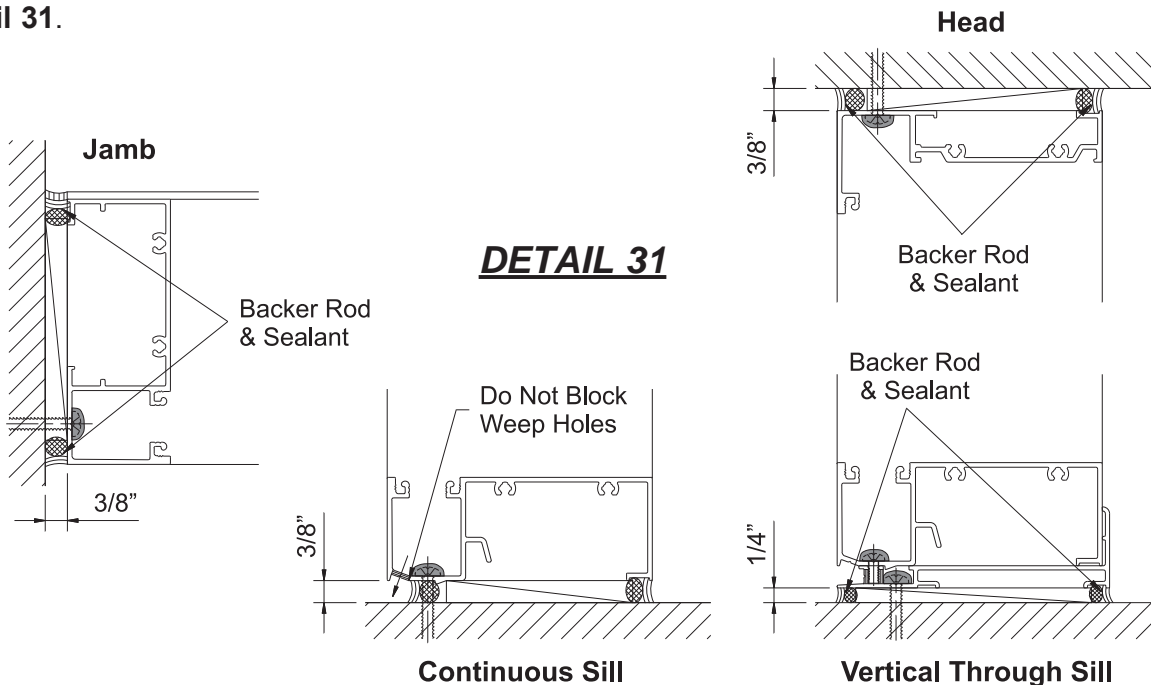
STEP 16

APPLY PERIMETER & INTERNAL SEALANT

-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 joint.

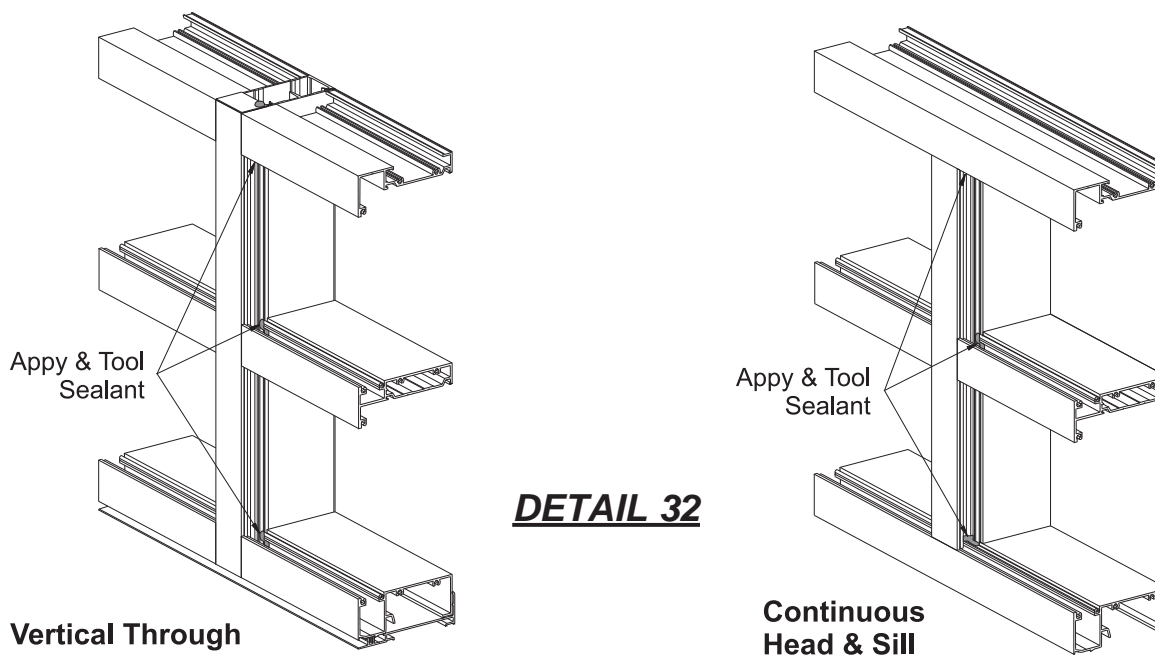
See **Detail 31**.



-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 32**.



GLAZING

STEP 17 INSTALL GLAZING GASKETS

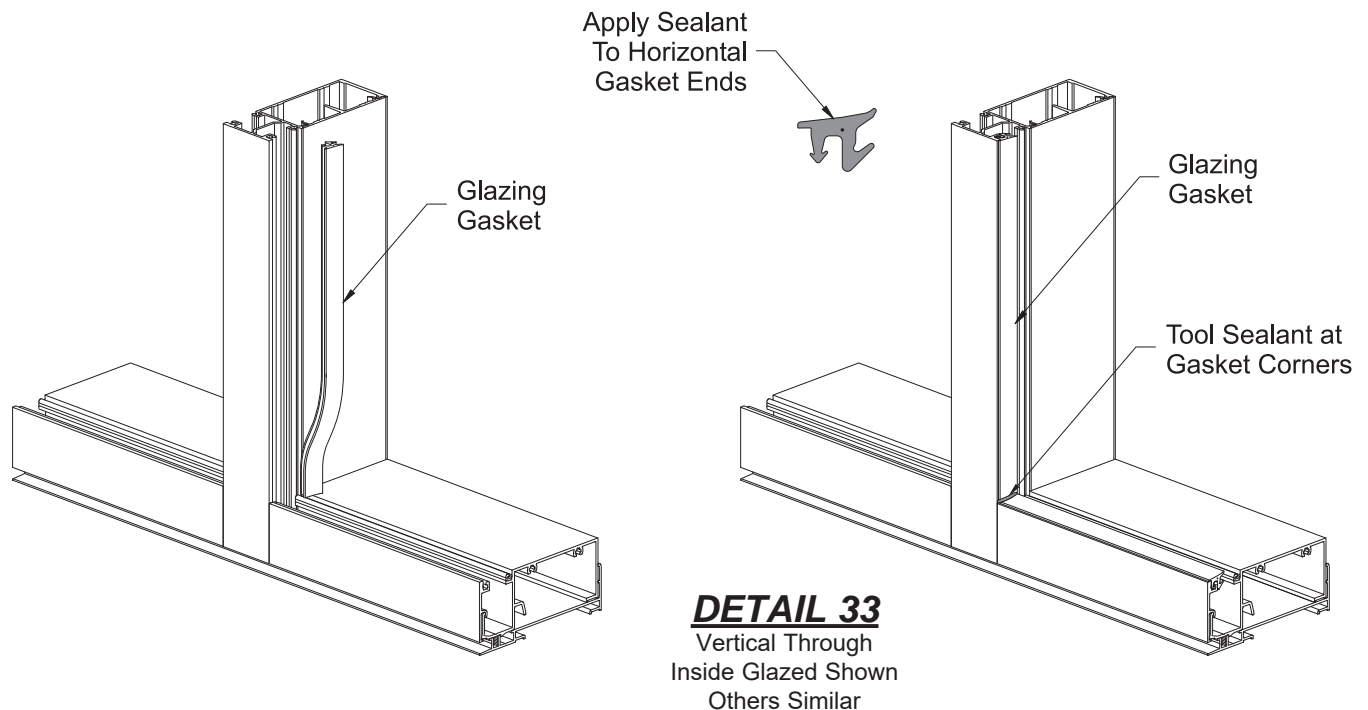
For inside glazing: the exterior glazing gaskets must be installed prior to the glazing process.
For outside glazing: the interior glazing gaskets must be installed prior to the glazing process.

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

Vertical glazing gaskets must be installed first:

- Cut vertical glazing gaskets to Daylight Opening plus(+) 3/16" for each foot of length.
- 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 33**.



Install horizontal glazing gaskets next:

- Cut horizontal glazing gaskets to Daylight Opening plus(+) 3/16" 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 33**.

GLAZING

STEP 18 INSTALL GLASS FOR STANDARD GLAZING

Determine the glass size:

	Width	Height
Standard Glazing	D.L.O. + 3/4"	D.L.O. + 3/4"

-Install setting blocks at 1/4 points or according to engineering calculations.

At intermediate horizontals: E2-0054 for inside glazing and E2-0536 for outside glazing.

At sill conditions: E2-0054 with setting block chair E1-1163 for inside glazing.

E2-0536 with setting block chair E1-1164 for outside glazing.

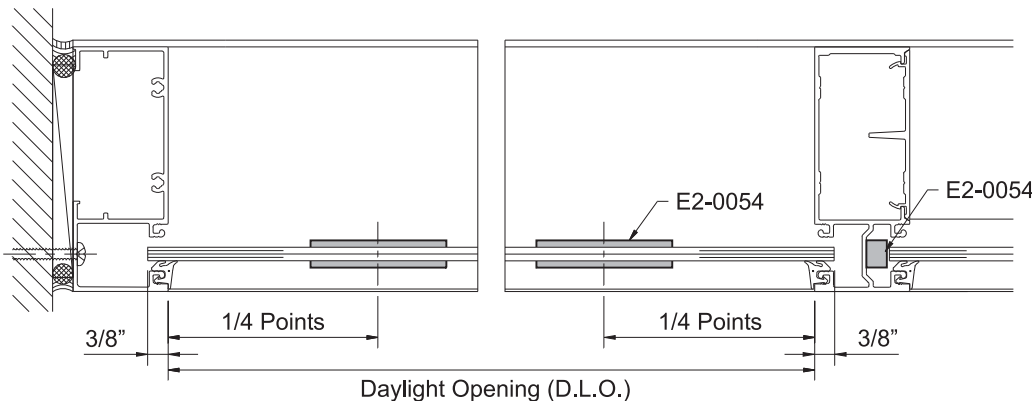
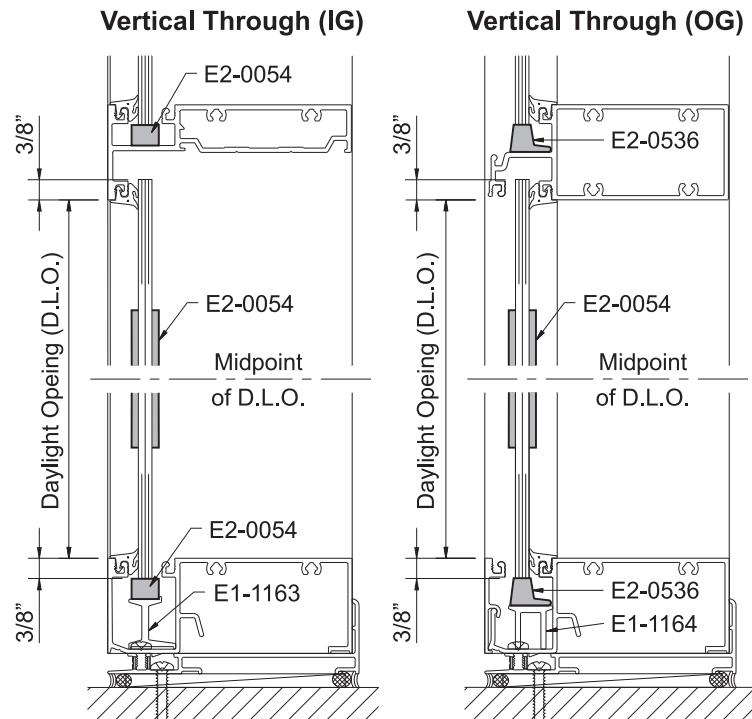
See **Detail 34**.

-Install side blocks, E2-0054, in the shallow glazing pocket of each vertical at the midpoint of daylight opening.
(Use E2-0537 for expansion mullion)

-Carefully install glass into the frame making sure that setting and side blocks are properly aligned with the glass.

See **Details 34 & 35**.

DETAIL 34



DETAIL 35

Inside Glazed Shown
Outside Glazed Similar

GLAZING

STEP 19 INSTALL ANTI-WALK BLOCKS

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

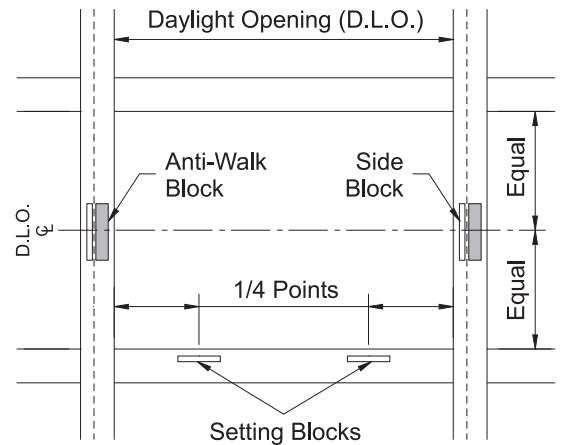
E2-0532 for the jambs.

E2-0533 for standard and expansion verticals.

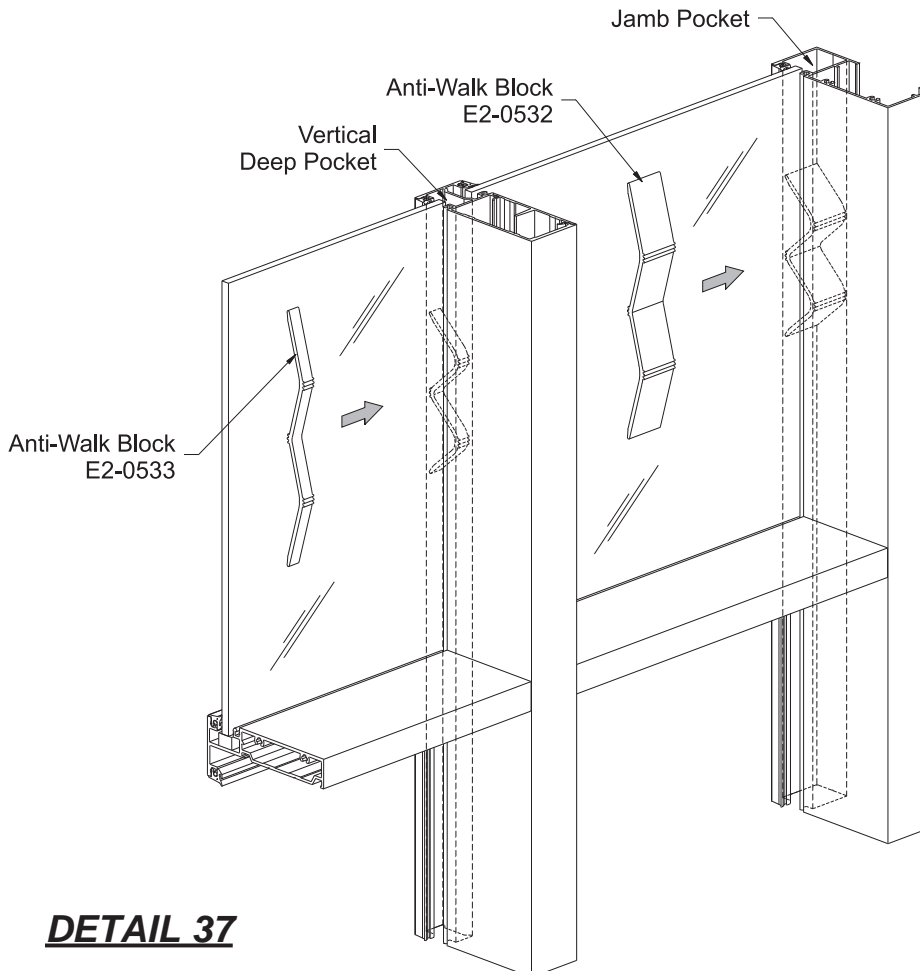
-Flatten the anti-walk block against the surface of the glass and push it into the opening between glass and the mullion until it is released into the glazing pocket.

See **Details 36 & 37**.

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



DETAIL 36



DETAIL 37

GLAZING

STEP 20 INSTALL GLASS STOPS FOR STANDARD GLAZING

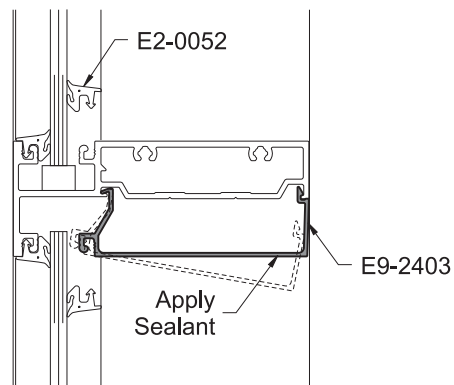
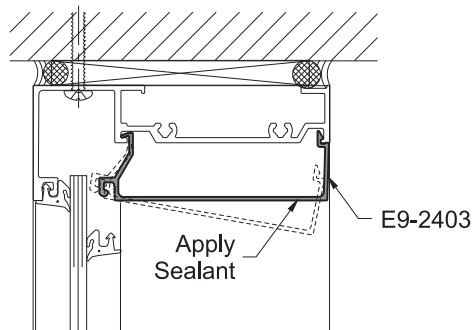
For inside glazed frames, interior glass stops, E9-2403, are required at all head and intermediate horizontals:

- Apply 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.

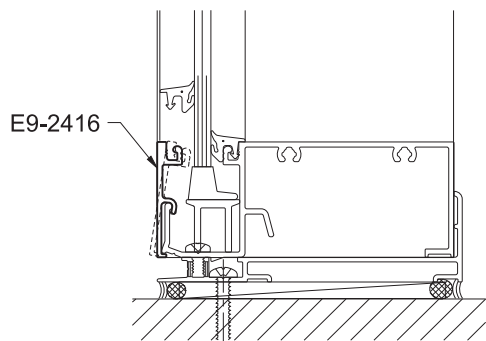
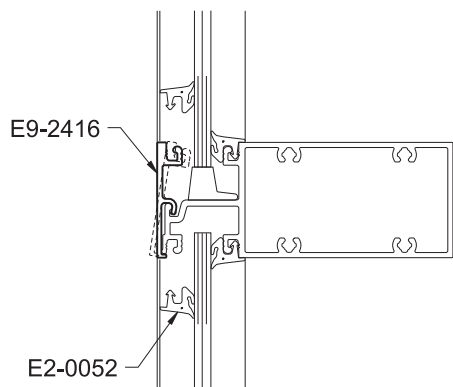
See **Detail 38**.

-Install the interior glazing gaskets using the same technique described in **Step 17** on **Page-21**.

Note: Always install vertical glazing gaskets first.



DETAIL 38



DETAIL 39

For outside glazed frames, exterior face members, E9-2416, are required at all intermediate horizontal and sill conditions:

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

See **Detail 39**.

-Install the exterior glazing gaskets using the same technique described in **Step 17** on **Page-21**.

Note: Always install vertical glazing gaskets first.

GLAZING

STEP 21 INSTALL GLASS FOR STRUCTURAL SILICONE GLAZING

Determine the glass size:

	Width	Height
Jamb to SSG	D.L.O. + 1"	D.L.O. + 3/4"
SSG to SSG	D.L.O. + 1-1/4"	D.L.O. + 3/4"

-Install setting blocks, E2-0054, at 1/4 points or according to engineering calculations. Setting block chair E1-1163 is required at the sill.

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

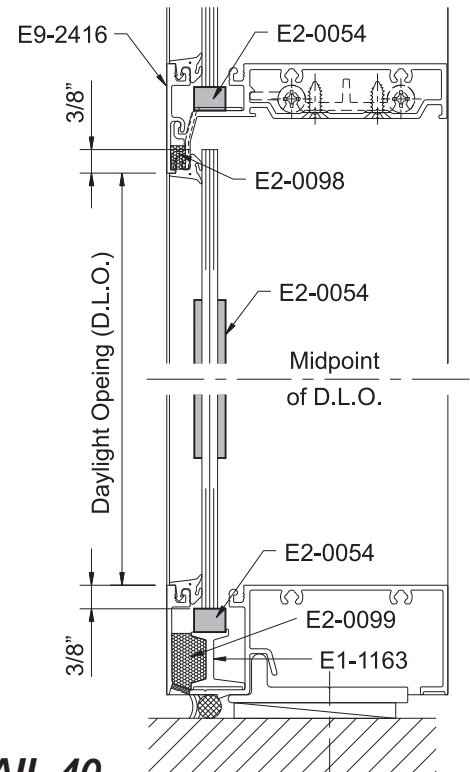
-Install exterior horizontal face members, E9-2416, at intermediate horizontals.

-Install glazing gaskets to the top part of the face member as instructed in **Step 17** on **Page-21**.

-Install glazing gaskets to the bottom part similarly but leave 1/2" gaps where the face members are notched. This will allow the frame to weep properly.

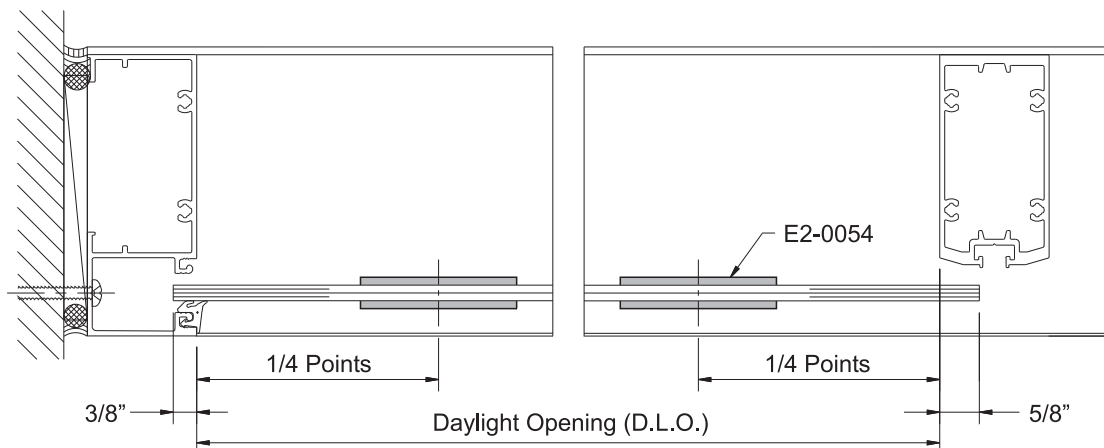
See **Detail 40**.

DETAIL 40



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 SSG vertical; slide the glass back 5/8" over in front of the first SSG vertical. See **Detail 41**.



DETAIL 41

GLAZING

STEP 21 (Continued) INSTALL GLASS FOR STRUCTURAL SILICONE GLAZING

Interior glass stops, E9-2403, are required at all head and intermediate horizontal conditions:

- Apply non-hardening sealant to each end of the glass stop and snap it 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 42**.

- Cut the structural silicone glazing spacers, E2-0535, to the same dimension as the glass plus(+) 3/16" per foot.

Using a putty knife, carefully install the silicone glazing spacer behind the first lite installed:

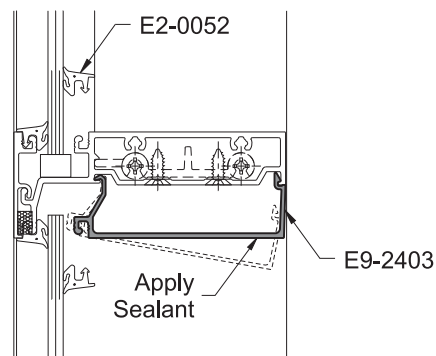
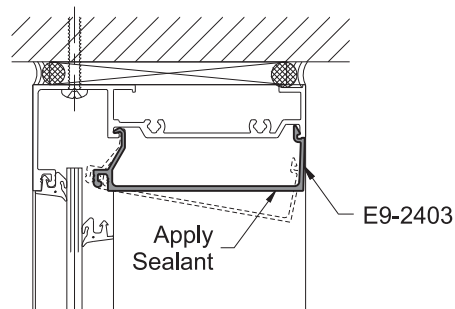
- Insert the bottom of the spacer so that it is aligned with the bottom of the lite of glass.
- Push the spacer in until it locks into place and work your way up the vertical until the entire spacer is installed.

- Install interior glazing gaskets at the jamb, horizontal members, and glass stops using the same technique described in **Step 17** on **Page-21**.

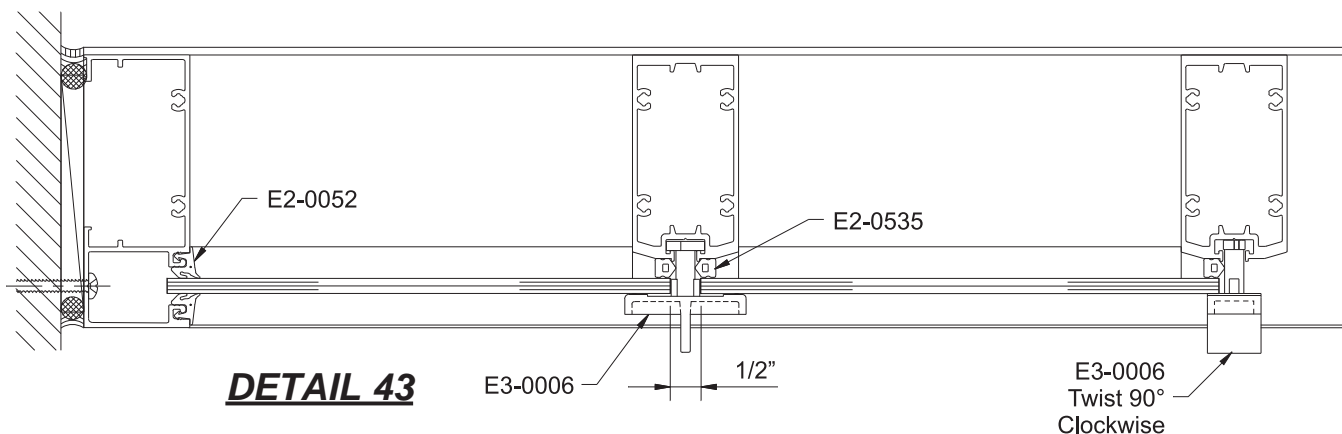
- From the open side reach around the vertical, insert the temporary glass retainers, E3-0006, and twist them 90° clockwise to engage. Locate temporary glass retainers 18" to 24" on center.

- Install the next lite of glass and center it to maintain a 1/2" joint between lites.
- Install the glazing spacers, interior glazing gaskets, and temporary glass retainers as instructed above.
- Repeat this step until all lites of glass have been installed.

See **Detail 43**.



DETAIL 42



DETAIL 43

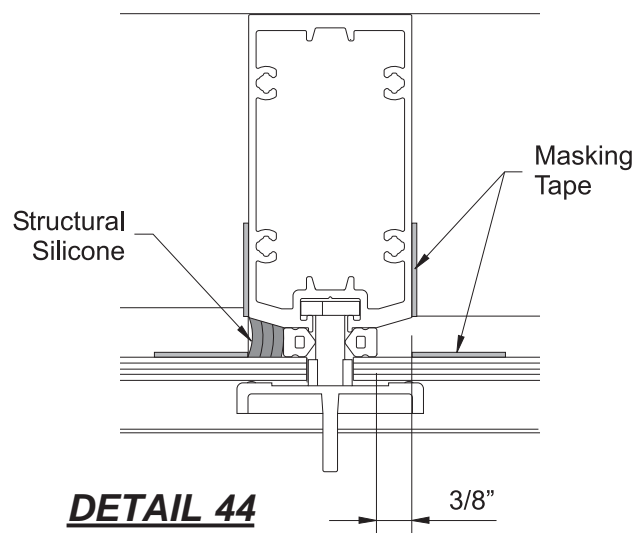
GLAZING

STEP 22

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 3/8" from the edge of the vertical in order to obtain the proper structural joint size.

See **Detail 44**.



- 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 23

APPLY EXTERIOR WEATHERSEAL

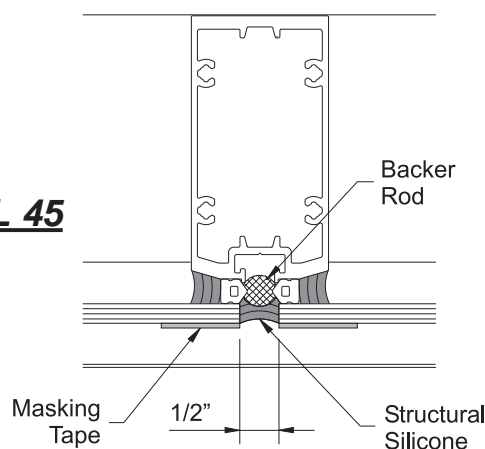
Once the interior structural silicone has cured*, it is necessary to seal the 1/2" wide exterior joint between the lites of glass.

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.

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

DETAIL 45



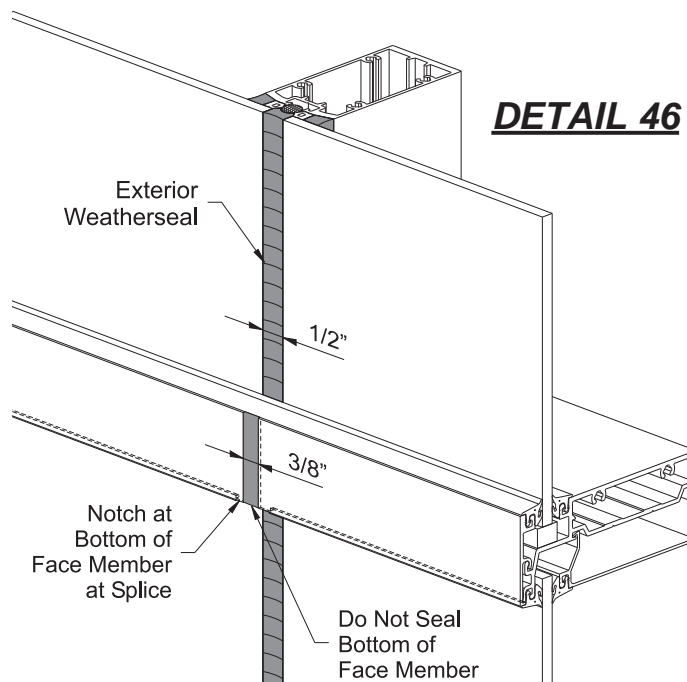
See **Detail 45**.

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

See **Detail 46**.

- 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 46



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 24 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.

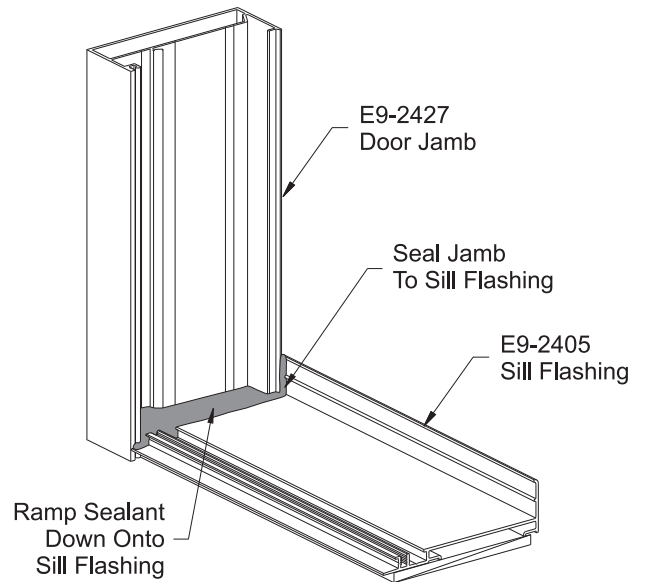
Prior to snapping the assembled frames into the door jamb, the end of the sill flashing needs to be sealed to the door jamb.

- 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 47**.

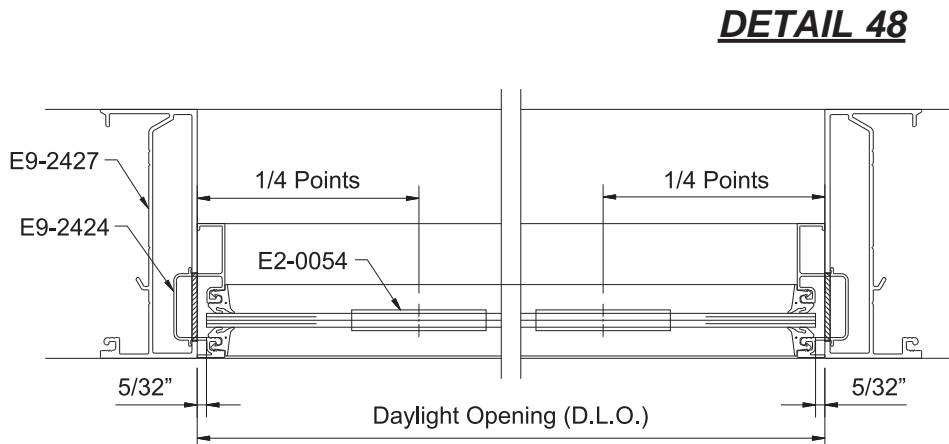
Glass sizes for transom areas are not the same as for standard YWW 45 FS frames. See the table below and **Detail 48** for transom glass sizes.

Transom Glass Sizes:

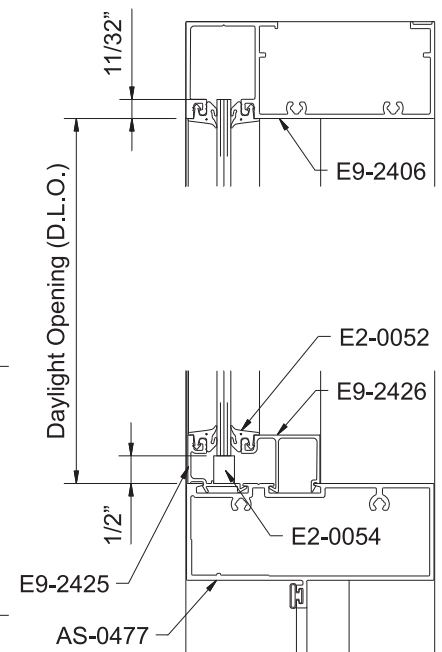
	Width	Height
Transom Glazing	D.L.O. – 5/16"	D.L.O. – 5/32"



DETAIL 47



DETAIL 48





270 Riverside Parkway
Suite 100
Austell, Georgia 30168
www.ykkap.com