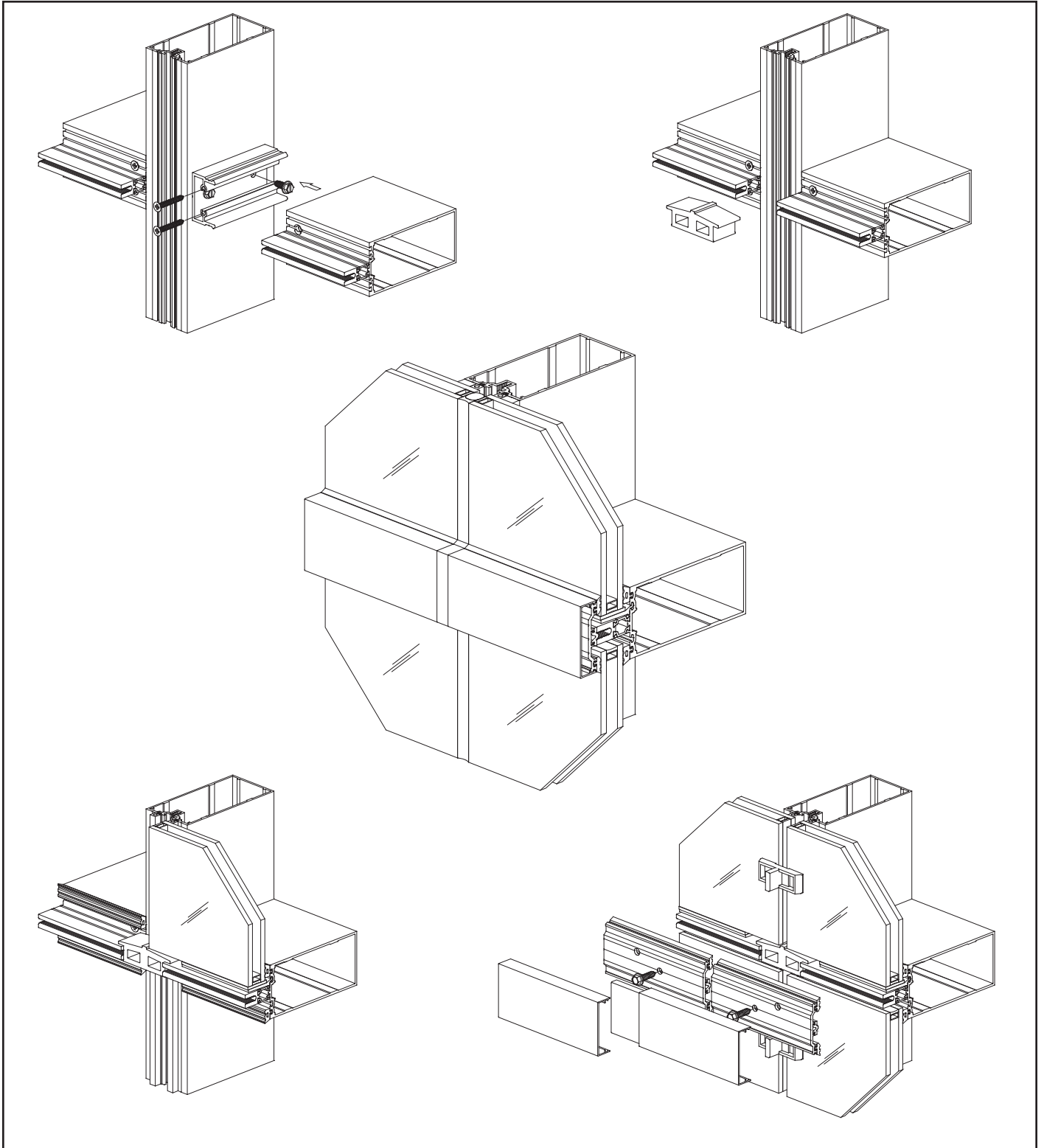


YCW 750 XT 2-Sided SSG Structural Silicone Glazed Curtain Wall System



Installation Manual

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Installation Notes

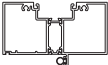

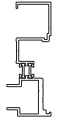



1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact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

FRAMING MEMBERS








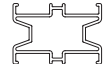
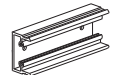
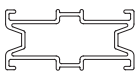

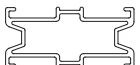

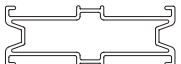
	Horizontal 2-1/2" x 3-3/4"	BE9-3948		Flush Filler Use With BE9-3948	E9-3595
	Jamb / Mullion / Horizontal 2-1/2" x 3-3/4"	BE9-3942		Flush Filler Use With BE9-3904	E9-3162
	Horizontal 2-1/2" x 5-1/4"	BE9-3910		Flush Filler Use With BE9-3914	E9-8489
	Head / Sill / Horizontal 2-1/2" x 5-1/4"	BE9-3904		Standard Pressure Plate E9-3906 with EPDM Isolator Drilled 9" O.C.	AS-3906
	Jamb / Mullion / Horizontal 2-1/2" x 5-1/4"	BE9-3901		Perimeter Pressure Plate E9-3907 with EPDM Isolator Drilled 9" O.C.	AS-3907
	Head / Sill / Horizontal 2-1/2" x 6-3/4"	BE9-3914		Corner Adaptor	E9-3413
	Jamb / Mullion / Horizontal 2-1/2" x 6-3/4"	BE9-3916		Face Cover 2-1/2" x 3/4"	E9-1206
	Heavy SSG Mullion ** 2-1/2" x 5-1/4" For 1/4" & 1" Glazing	E9-3401		90° Outside Corner Interior Cover Base Use with E9-1281	E9-1280
	SSG Mullion (Standard) ** 2-1/2" x 5-1/4" For 1/4" & 1" Glazing	E9-3402		90° Outside Corner Interior Cover For 5-1/4" Back Depth Only	E9-1281
	SSG Mullion ** 2-1/2" x 3-3/4" For 1/4" & 1" Glazing	E9-3423		90° Outside Corner Interior Cover Base Use with E9-7762	E9-3556
	SSG Mullion ** 2-1/2" x 6-3/4" For 1/4" & 1" Glazing	E9-3426		90° Outside Corner Interior Cover For 8-1/4" Back Depth Only	E9-7762
	Sill Flashing	BE9-3918		90° Outside Corner Trim For 1" Glazing	E9-2009

* Splay mullions and other face covers are available, contact YKK AP.


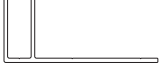



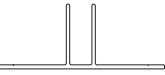
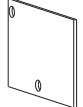




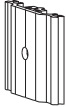




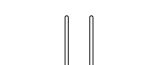







FRAMING MEMBERS (1" GLAZING)

	Single Acting Transom Bar Elastomer Weathering E2-0051 Included	AS-1532		Door Stop Elastomer Weathering E2-0051 Included Use with BE9-3650	AS-1533
	Door Jamb Use with BE9-1533	BE9-3650		Perimeter Anchor	E9-1223
	Glazing Adaptor For 1/4" Glazing	E9-1220		Perimeter Channel	E9-1231


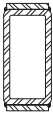








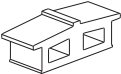













ACCESSORIES (1" GLAZING)

	"J" Anchor For 3-3/4" Depth Members Use (2) FC-1220 & Req. Fasteners	E1-3501		Mullion Joint Sleeve For BE9-3942	E1-1211
	"J" Anchor For 5-1/4" Depth Members Use (2) FC-1220 & Req. Fasteners	E1-3502		Mullion Joint Sleeve For BE9-3901	E1-1210
	Standard Shear Block For 3-3/4" Depth Members Use (2) HF-2510-W1 & (2) FC-1220	E1-3503		Mullion Joint Sleeve For BE9-3916	E1-1365
	Standard Shear Block For 5-1/4" Depth Members Use (2) HF-2510-W1 & (2) FC-1220	E1-3504		Mullion Joint Sleeve 18" Long, For E9-3423	E1-3421
	Standard Shear Block For 6-3/4" Depth Members Use (2) HF-2510-W1 & (2) FC-1220	E1-3506		Mullion Joint Sleeve 6" Long, For E9-3401 & E9-3402	E1-3620
	90° Outside Corner Shear Block For 5-1/4" Depth Members, Use (2) HF-2510-W1 & (2) FC-1212	E1-3504A		Mullion Joint Sleeve 18" Long, For E9-3401 & E9-3402	E1-3548
	Setting Block Chair	E1-3603		Mullion Joint Sleeve 18" Long, For E9-3426	E1-3427

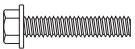

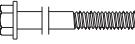

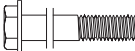

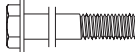



ACCESSORIES (1" GLAZING)

	Face Cover Splice Sleeve For E9-1206 Face Cover	E1-1202		Jamb "F" End Anchor* For BE9-3901	E1-1234
	Standard Mullion End Cap 2-1/2" x 2-3/8" x 0.050"	E1-3605		Jamb "F" End Anchor* For BE9-3916	E1-3602
	Stainless Steel Washer To be used as end cap	FW-2500-SS		Corner "T" End Anchor For 3-3/4" Depth Members	E1-1207A
	Sill Flashing End Dam 2.157" x 1-3/8" x 0.050"	E1-3611		Corner "T" End Anchor For 5-1/4" Depth Members	E1-1222A
	Corner Mullion End Cap	E1-3608		Corner "T" End Anchor For 8-1/4" Depth Members	E1-3571A
	Intermediate Vertical "T" End Anchor* For BE9-3942	E1-1223		Temporary Glass Retainer 2" Long	E1-3612
	Intermediate Vertical "T" End Anchor* For BE9-3901 & E9-3401	E1-1222		Setting Block For 1" Glazing	E2-0513
	Intermediate Vertical "T" End Anchor* For BE9-3916	E1-3601		Setting Block For 1/4" Glazing	E2-0192
	Intermediate Vertical "T" End Anchor* For E9-3402	E1-1208		Side Block With pressure sensitive adhesive	E2-0133
	Intermediate Vertical "T" End Anchor* For E9-3423	E1-1229		Standard Joint Plug For 1" Glazing	E2-3603
	Intermediate Vertical "T" End Anchor* For E9-3426	E1-3580		End Dam Plug Used with E9-1223 Perimeter Anchor	E2-0505
	Jamb "F" End Anchor* For BE9-3942	E1-1235		Structural Tape	E2-0679

ACCESSORIES (1" GLAZING)

	Nylon Slip Pad For Wind Load & Dead Load Anchor	E3-0103		Steel Reinforcing 2" x 4" x 1/4" Steel Tube & (2) 1/4" x 1-3/4" Steel Bars For BE9-3901 & BE9-3916	E1-0154
	Wind Load Anchor* Refer to Shop Drawings For Anchor Dimensions	E1-1204		Jamb Anchor Plate 3" x 6" x 5/16" Thk.	E1-3536
	Dead Load Anchor* Refer to Shop Drawings For Anchor Dimensions	E1-1205		Drill Fixture	H-7210
	Sill Flashing Gasket	E2-0241		#12 x 3/4" FHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Corner Shear Block	FC-1212
	Corner Condition Gasket	E2-0354		#12 x 1-1/4" FHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Shear Block	FC-1220
	SSG Joint Plug For 1" Glazing	E2-0245		#14 x 5/8" FHSMS Type AB Zinc Plated Steel For Attachment of Mullion End Caps	FC-1410
	Temporary Glass Retainer** For 1" Glazing	E3-0001		#8 x 5/8" PHSMS Type AB Zinc Plated Steel For Attachment of Glazing Adaptor E9-1220	PC-0810
	Interior Glazing Spacer Silicone	E2-0110		#10 x 5/8" PHSMS Type AB Zinc Plated Steel For Attachment of Sill Flashing BE9-3918	PC-1010
	Exterior Glazing Gasket Silicone	E2-0127		#8 x 1/2" PHSMS Type F Stainless Steel, For Attachment of Splice Sleeve Face Covers	PF-0808-SS
	Interior Glazing Gasket Silicone	E2-0128		1/4"-20 x 5/8" HWHS Type F Zinc Plated Steel For Attachment of Standard Shear Block to Vertical	HF-2510-W1
	Interior Glazing Spacer (5/16" Depth) 2" x 4" x 1/4" Steel Tube For BE9-3901 & BE9-3916	E2-0261		1/4"-20 x 1" HWHS Type F , Zinc Plated Steel, For Attachment of Standard Shear Block to Vertical with Steel Reinforcing	HF-2516-W1
	Steel Reinforcing 2" x 4" x 1/4" Steel Tube For BE9-3901 & BE9-3916	E1-0162		1/4"-20 x 1" HWHMS Type CA Zinc Plated Steel For Attachment of Pressure Plate to Mullion	HD-2516-W3

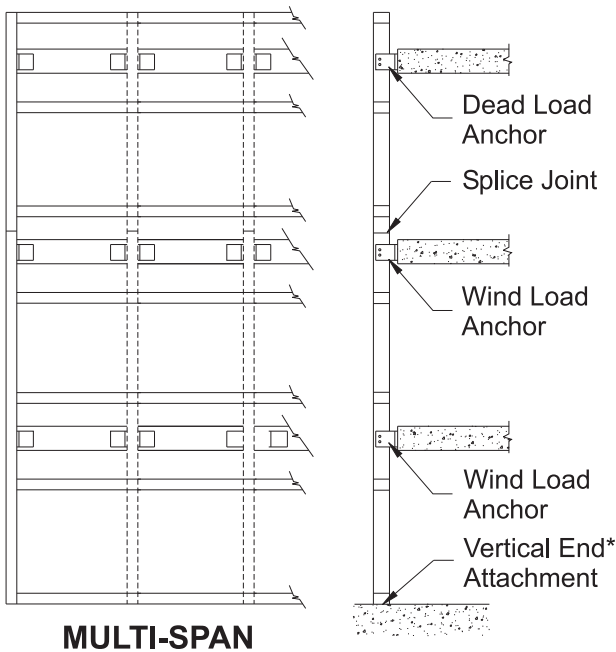
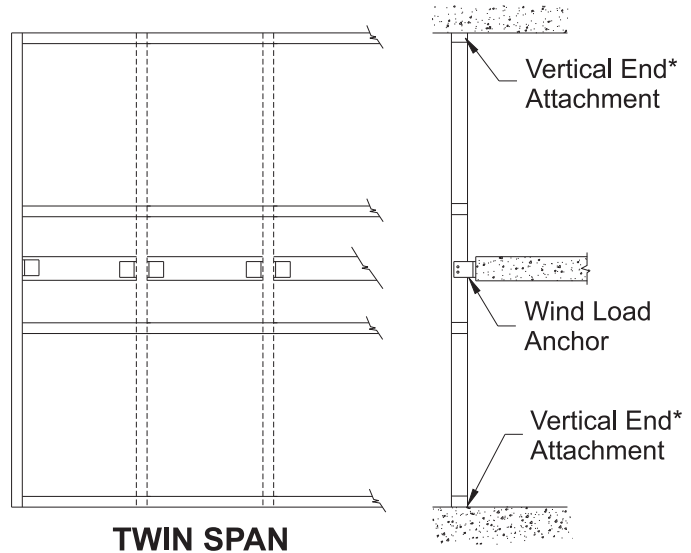
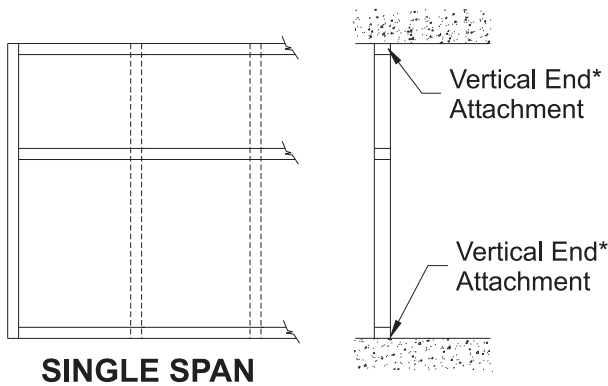
ACCESSORIES (1" GLAZING)

	1/4"–20 x 1-1/4" HWHMS Zinc Plated Steel, For Attachment of 90° Outside Corner Adaptor to Vertical	HM-2520-W3		1/4"-20 Nut HHMS Zinc Plated Steel For Attachment of "J" Anchor	HM-2500
	1/4"–20 x 3-1/2" HWHMS Zinc Plated Steel For Attachment of "J" Anchor at Intermediate Vertical	HM-2556-W3		1/4" Flat Washer Zinc Plated Steel For Attachment of "J" Anchor	WW-2500
	1/2"–13 x 2" HWHMS Zinc Plated Steel, For Attachment of Windload/ Deadload Anchor at Jamb	HM-5032		1/2" Flat Washer Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	WW-5000
	1/2"–13 x 4-1/2" HWHMS Zinc Plated Steel, For Attachment of Windload/ Deadload Anchor at Mullion	HM-5072		1/2" Lock Washer Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	WS-5000
	1/2"-13 Nut HHMS Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	HM-5000		1/4" Lock Washer Zinc Plated Steel For Attachment of "J" Anchor	WS-2500

FRAME FABRICATION

FRAME TYPES / ANCHORING METHODS

The following is a guideline for common types of frames. Refer to shop drawings for exact layout of frames.



Smaller units may be assembled on the ground and tipped in place. Larger units require being stick assembled in place.

Note: If YKK AP does not prepare the shop drawings for the project, a qualified engineer must approve all anchors and mullions for wind load and dead load.

All anchors must be attached to structurally sound material that will accommodate the anchor reactions.

* Vertical end attachment will be continuous perimeter anchor, "J" anchor, or mullion end anchor.

Fabrication of YCW 750 XT SSG varies depending on the type of vertical end attachment required for a given project:

Perimeter Anchors are for low load anchoring conditions (maximum 500lb. end load reaction): E9-1248, E9-1223, & E9-1231

"J" Anchors are for medium to high load conditions: E1-3501, E1-3502, & E1-3505.

Mullion End Anchors "F" & "T" are for high load conditions. See Accessories on **Page-3**.

FRAME FABRICATION

FRAME TYPES / ANCHORING METHODS

Using Perimeter Anchors:

-Jamb mullions must be notched as shown in **Detail 1** on **Page 8**.

Using Mullion End Anchors:

YCW 750 XT SSG has three possible end anchoring conditions: “J”, “T”, and “F”.

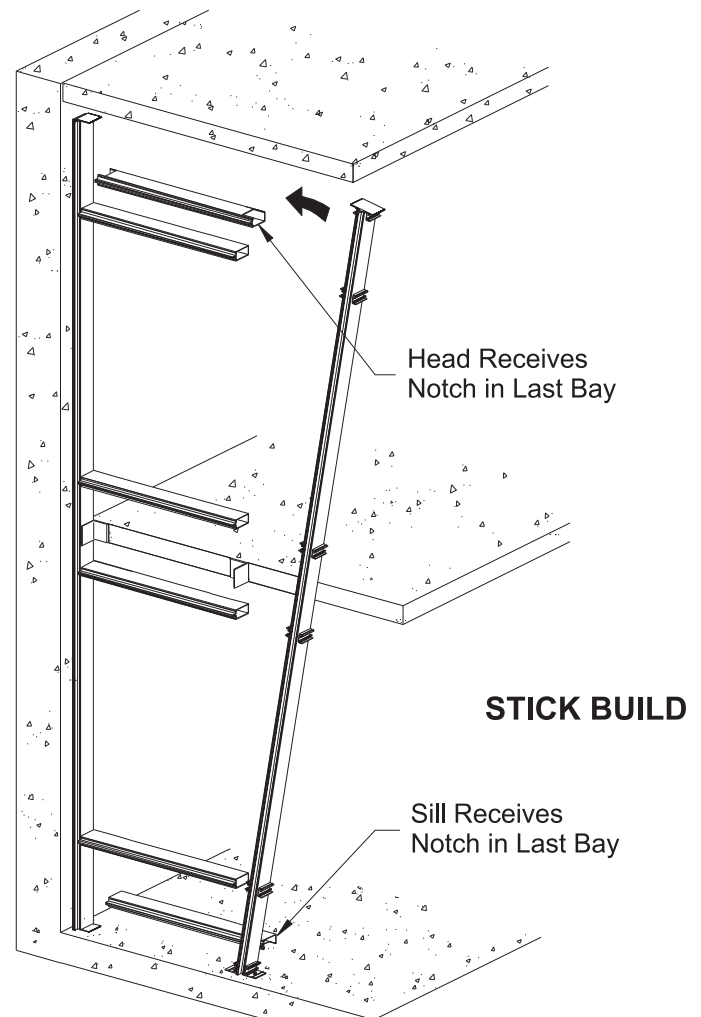
- “J” anchors are used with jambs and intermediate verticals at the sill only.
- “T” anchors are used with intermediate verticals at the head and sill.
- “F” anchors are used with jamb mullions at the head and sill.
- Anchor usage depends on end reaction, stress, and attachment.

Mullions should be pre-assembled with shear blocks/clips, end anchors, and steel or aluminum reinforcing if necessary.

Framing Members for Stick Build:

- Head and sill members must be notched as shown **Detail 9** on **Page-14** to clear the mullion end anchors.
- Closed horizontal members are used at all intermediate locations except at end bays.
- Open back intermediate horizontals are used at end bays to clear the shear clips.

Note: When using stick build construction, check overall frame width every fifth mullion as the wall is installed to prevent the buildup of cumulative tolerance errors.

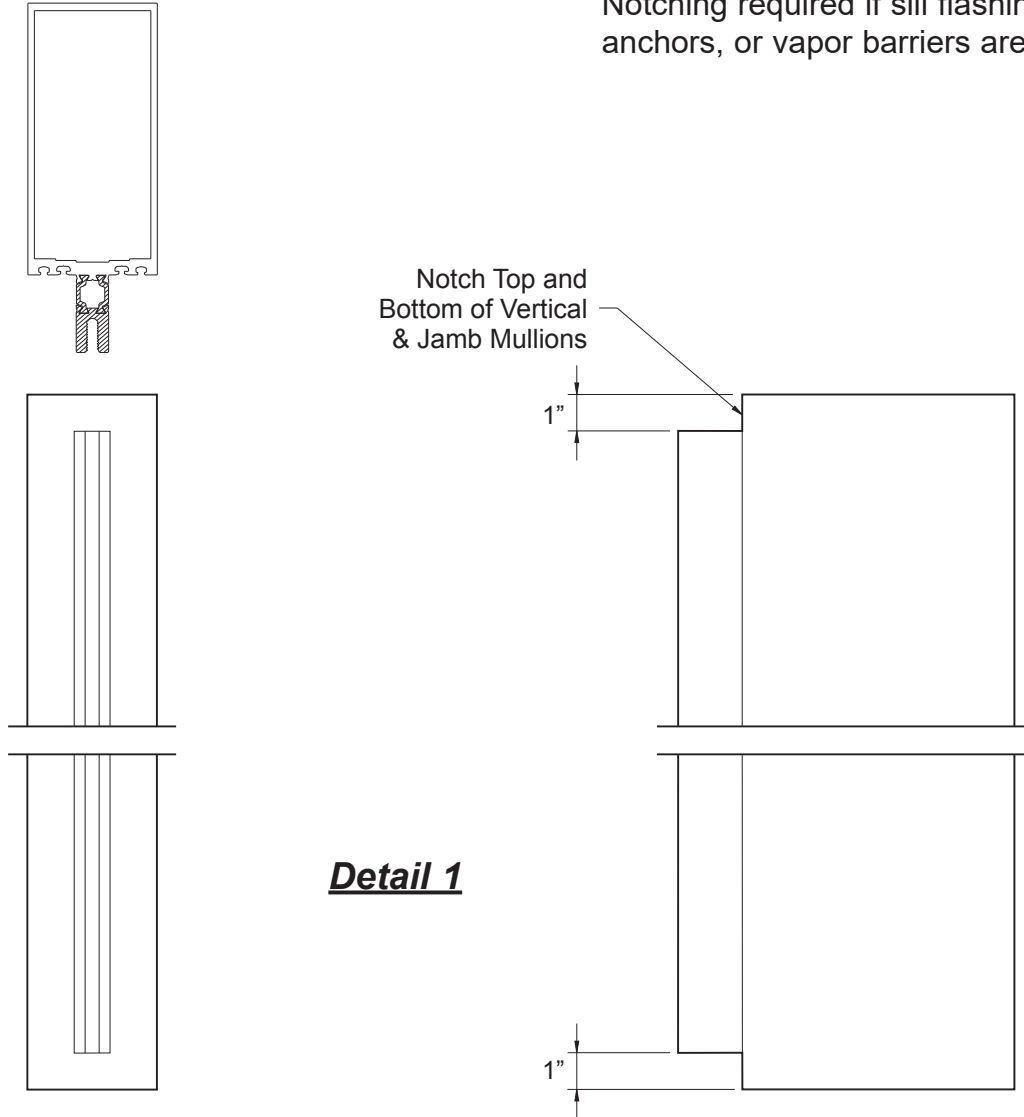


FRAME FABRICATION

FABRICATE VERTICAL MULLIONS

Note:

Notching required if sill flashing, perimeter anchors, or vapor barriers are used.



Step 1

-Cut all vertical and jamb mullions to dimensions as shown on shop drawings.
Allow for 1/2" caulk joint around the frame & 1/2" joint at vertical splices.

Step 2

-If you are using continuous perimeter anchors, E9-1223 or E9-1248, the top and bottom of jamb mullions must be notched as shown in **Detail 1**.

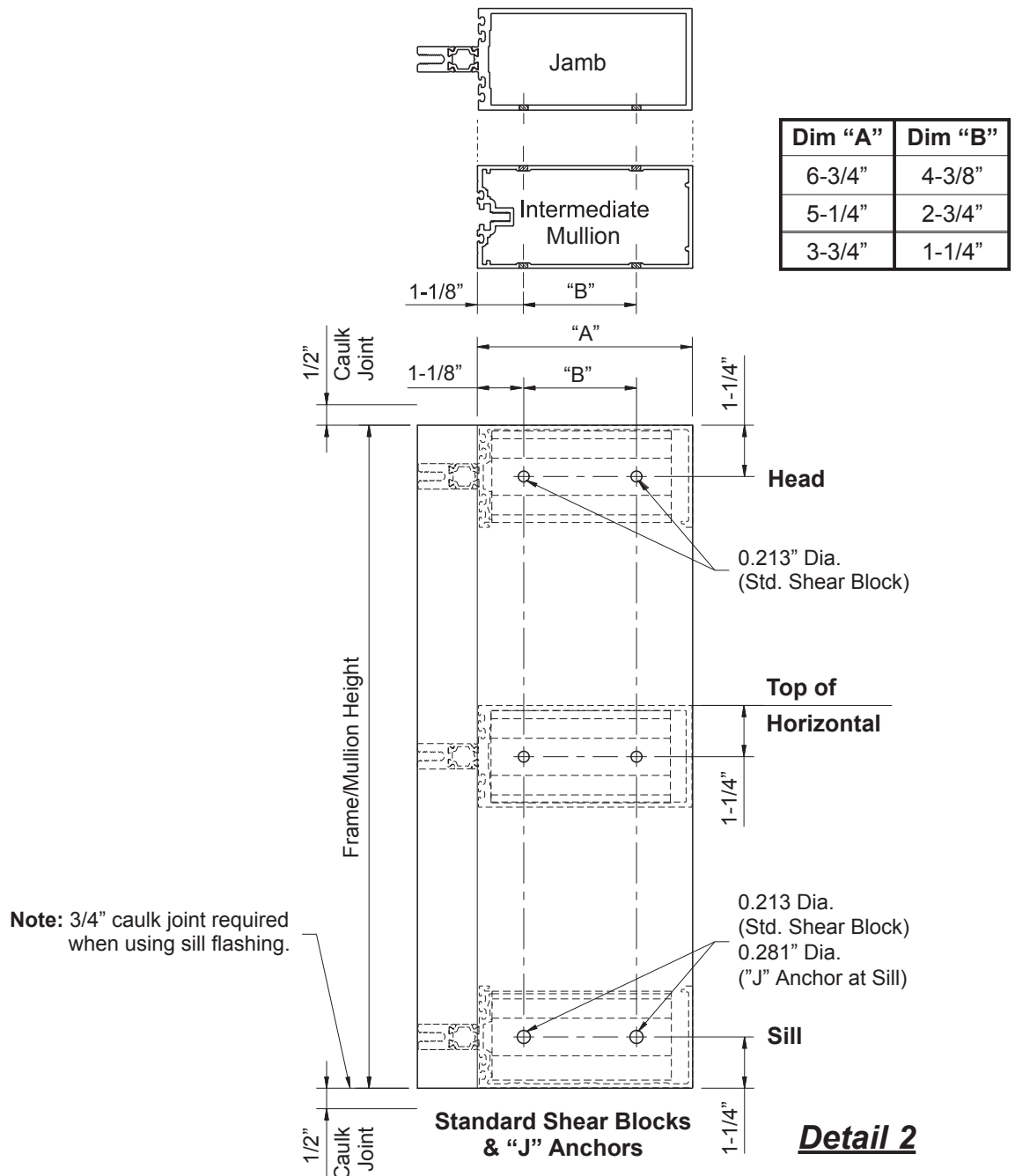
Note: Do not notch jamb mullions when using mullion end anchors: "J", "T", or "F".

FRAME FABRICATION

STEP 3

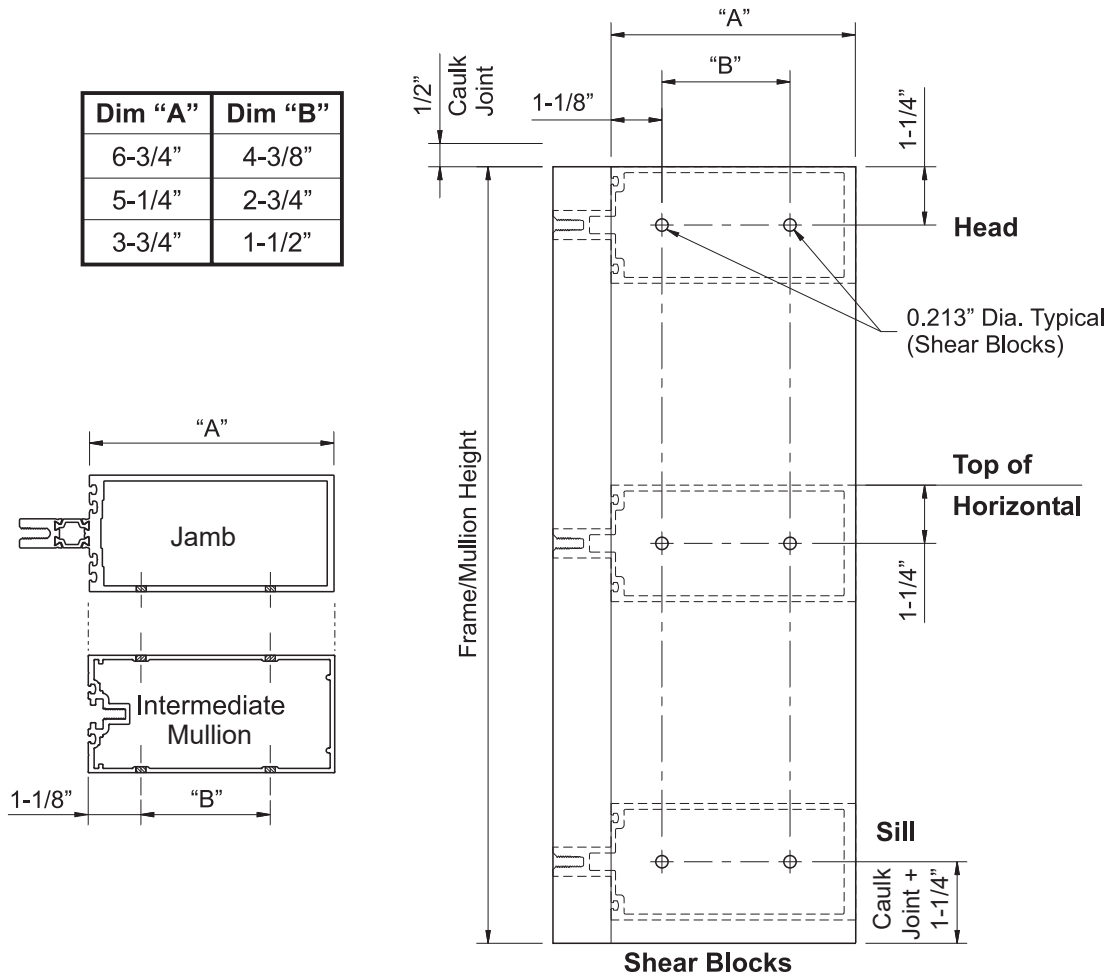
FABRICATE VERTICAL MULLIONS

- Mullion hole locations for shear blocks, shear clips, and “J” anchors are shown below.
- Drill 0.213” dia. (#3 drill bit) holes for shear block/clip attachment at the locations indicated.
- Drill 0.281” dia. (#9/32 drill bit) holes for “J” anchor attachment at the sill.
- See **Details 2 & 3**.



STEP 3 (Continued)

FABRICATE VERTICAL MULLIONS AT DOOR JAMB



FRAME FABRICATION

STEP 4

ATTACH SHEAR BLOCKS/CLIPS FOR HORIZONTALS

Shear blocks are used to attach one piece horizontal members to the jamb and vertical mullions:

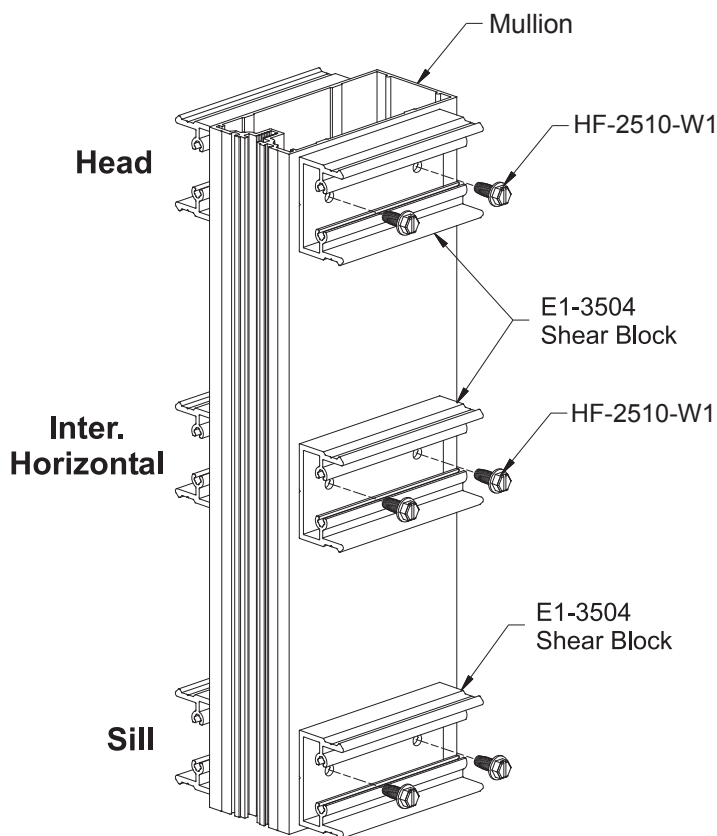
E1-3503 for 3-3/4" back members.

E1-3504 for 5-1/4" back members.

E1-3506 for 6-3/4" back members.

-Attach the shear blocks/clips to jambs and verticals with two HF-2510-W1 fasteners per block.
See **Detail 4**.

Note: See **Step 5** on the next page when using reinforcing.



Detail 4

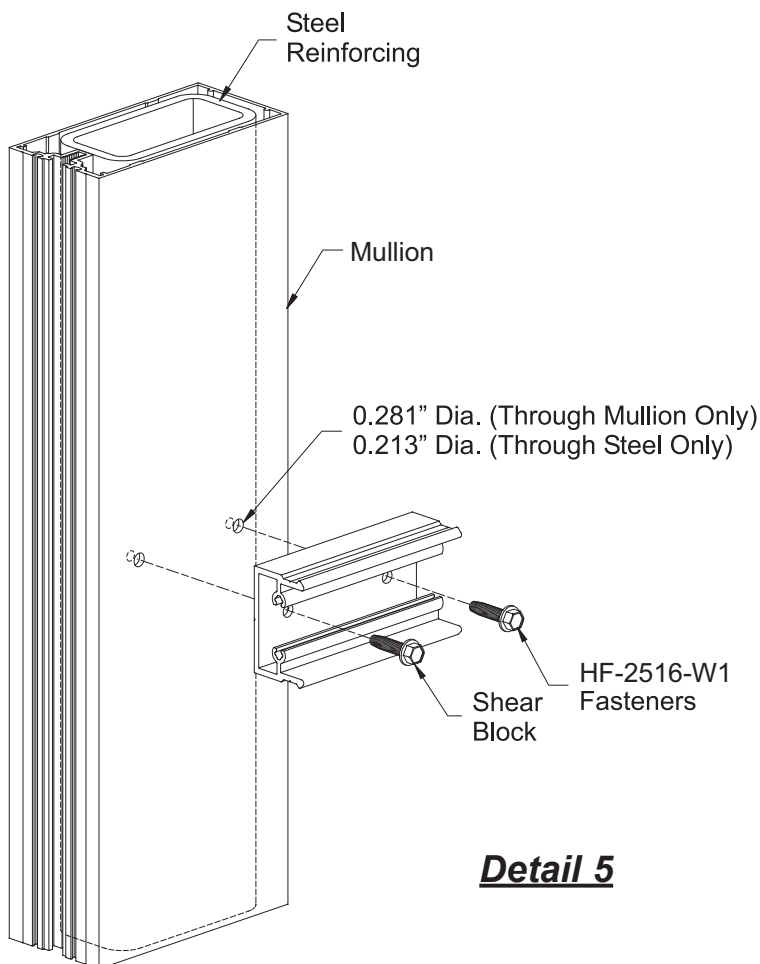
FRAME FABRICATION**STEP 5
USING ALTERNATE REINFORCING**

Engineering calculations may require the vertical mullions to be reinforced with either steel or aluminum.

- Steel reinforcing is always fastened through the shear blocks.
- Slide the steel reinforcing into the mullion and into position.
- Drill a 0.281" diameter (#9/32 bit) hole in the vertical mullion being careful not to drill a hole in steel reinforcing.
- Drill a 0.213" diameter (#3 bit) hole in the steel reinforcing through the previous holes.
- Attach the shear blocks to the mullion and steel with two HF-2516-W1 fasteners per block.

See **Detail 5**.

Note: Exact size of reinforcing to be determined by a qualified engineer.



Detail 5

FRAME FABRICATION

STEP 6

ATTACH “J” ANCHORS

In addition to anchoring the curtain wall frame to the structure, “J” anchors are used to attach sill members to jamb and vertical mullions:

E1-3501 for 3-3/4” back members.

E1-3502 for 5-1/4” back members.

E1-3505 for 6-3/4” back members.

Note: “J” anchors are used at the sill only.

Attach “J” anchors at jambs:

-Align the “J” anchor with the mullion and insert the HM-2516 bolts through the inside of the mullion and out the “J” anchor.

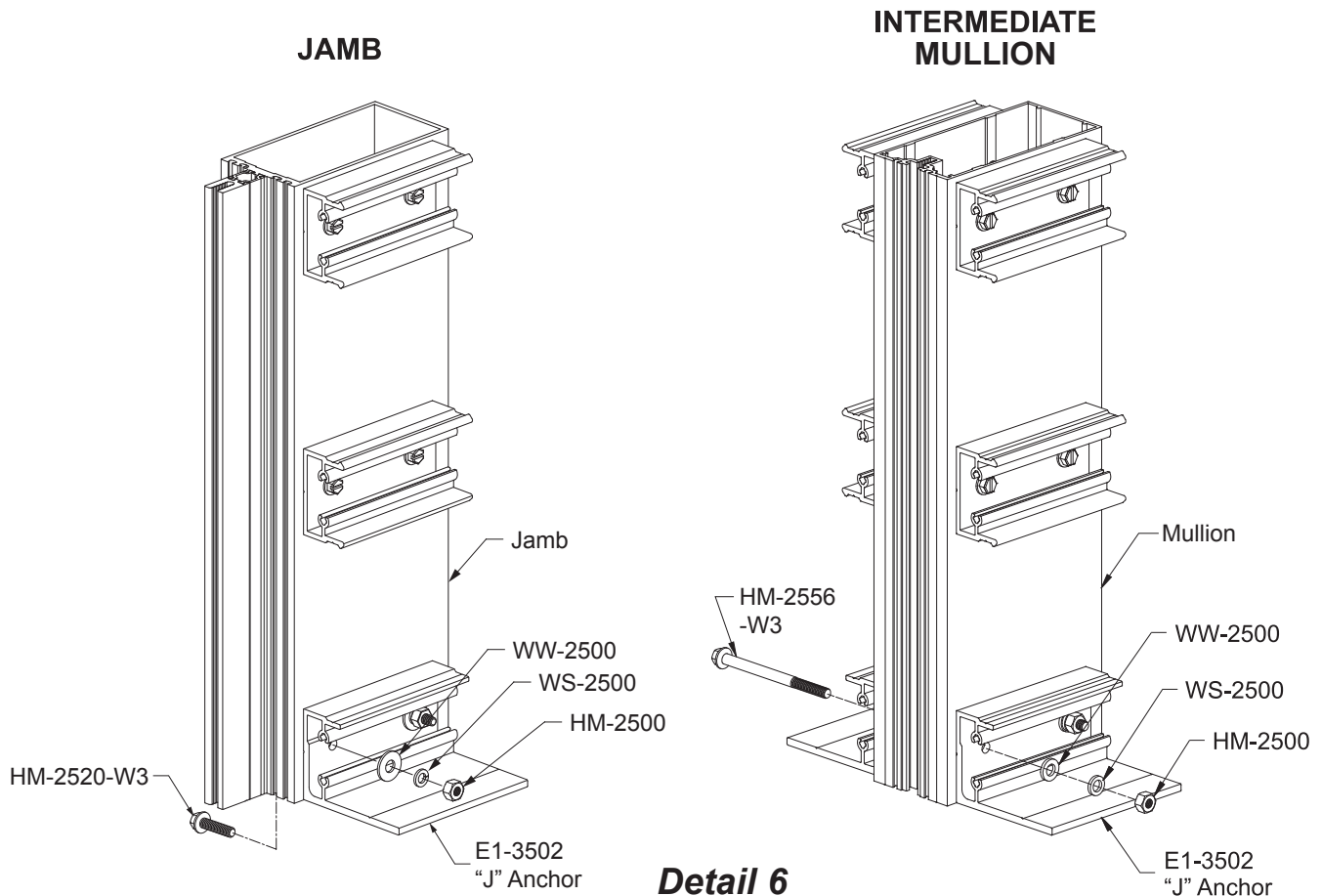
-Install 1/4” flat and lock washers between the anchor and HM-2500 hex nuts.

Attach “J” anchors at intermediate verticals:

-Align the “J” anchors and insert the HM-2556 bolts through both anchors and the mullion.

-Install 1/4” flat and lock washers between the anchor and HM-2500 hex nuts.

See **Detail 6**.



FRAME FABRICATION

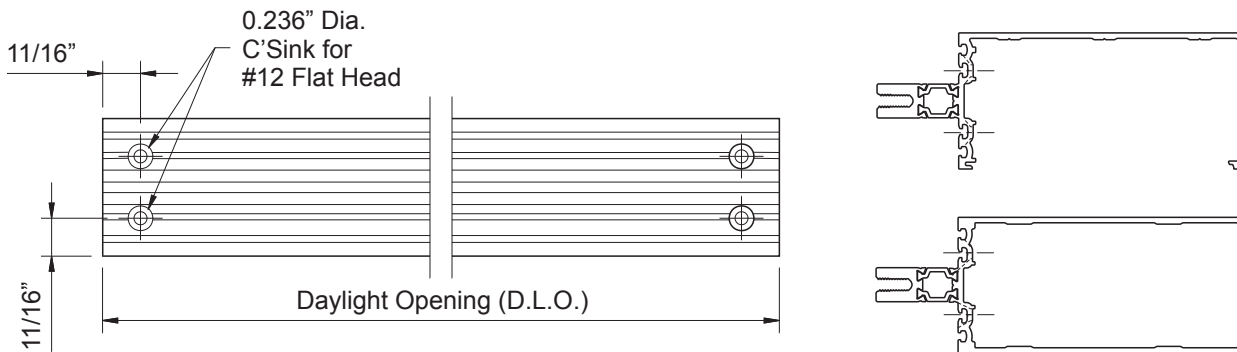
STEP 7

FABRICATE HORIZONTAL MEMBERS

- Cut all horizontal members to the daylight opening as shown in shop drawings.
- Horizontal members must be fabricated as shown below to attach to shear blocks or clips.

Horizontals with Concealed Fasteners:

- Layout hole locations on the face of the horizontal at both ends as shown below.
 - Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners.
- See **Detail 7**.



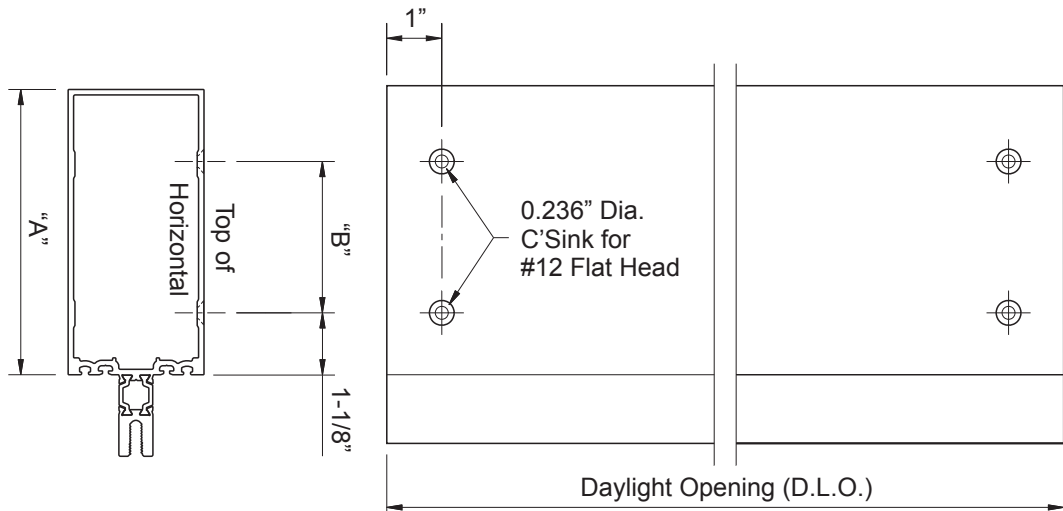
Detail 7

Horizontals with Exposed Fasteners:

- Layout hole locations on the top of the horizontal at both ends as shown below.
 - Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners.
- See **Detail 8**.

Dim "A"	Dim "B"
6-3/4"	4-3/8"
5-1/4"	2-3/4"
3-3/4"	1-1/4"

Detail 8



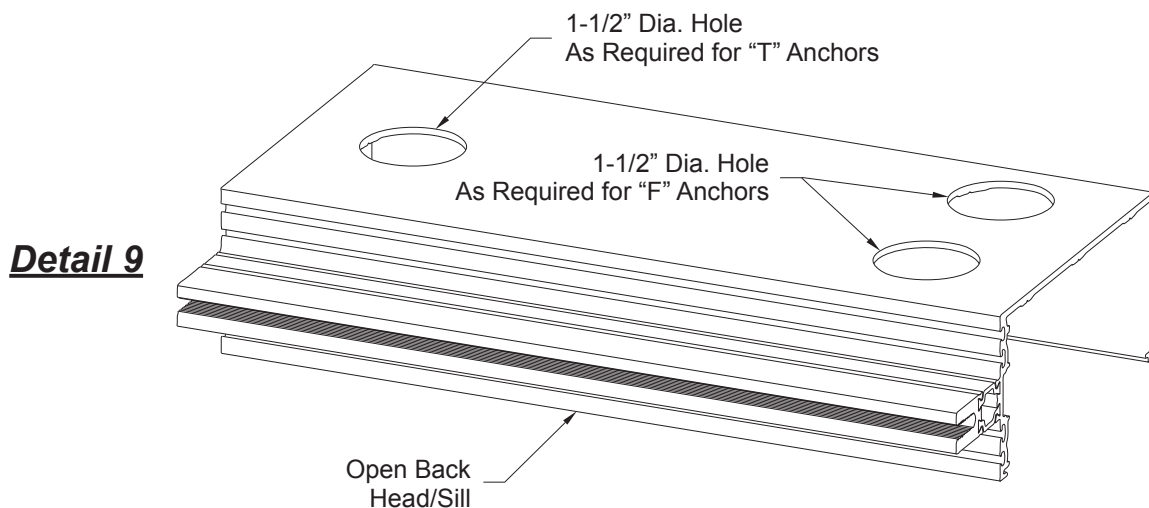
FRAME FABRICATION

STEP 7 (Continued)

FABRICATE HORIZONTAL MEMBERS

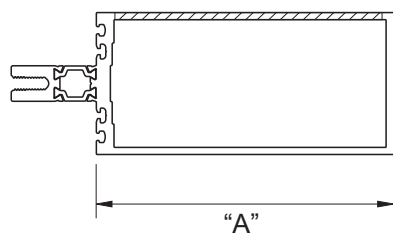
Open Back Head & Sill with “T” & “F” Anchors:

- Open back head & sill members require holes to access anchor bolts.
 - Drill 1-1/2” dia. holes at anchor locations as required by approved shop drawings or engineering calculations.
- See **Detail 9**.



Tubular Head & Sill with “J”, “F” & “T” Anchors:

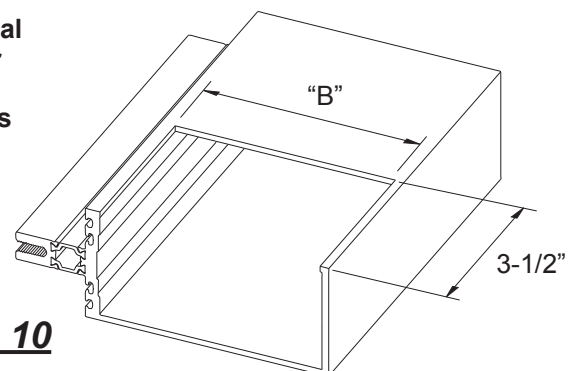
- Tubular head and sill members must be notched at each end to clear mullion end anchors and anchor bolts.
- See **Detail 10** below for notch dimensions.



Dim “A”	Dim “B”
6-3/4”	6-1/4”
5-1/4”	4-3/4”
3-3/4”	3-1/4”

**Notch Horizontal
Ends to Clear
End Anchors
& Anchor Bolts**

Detail 10

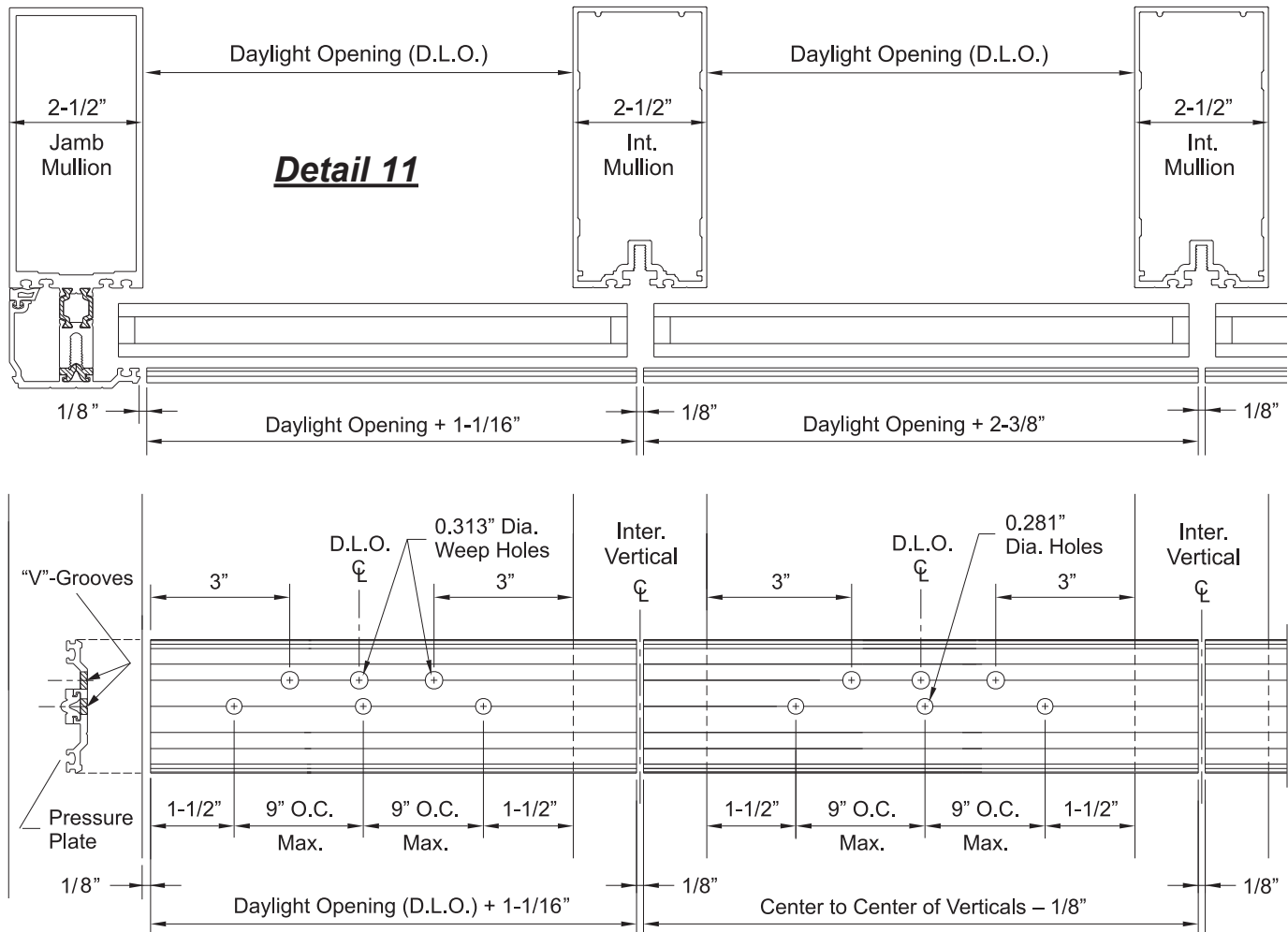


FRAME FABRICATION

STEP 8

FABRICATE PRESSURE PLATES

- Cut all jamb pressure plates to the same length as the jamb mullions.
- Drill additional holes if required to ensure that end holes are 1-1/2" from each end.
- If jamb members are spliced, cut pressure plates to accommodate for 1/2" expansion joint as shown in **Step 10** on **Pages 17 & 18**.
- Cut horizontal pressure plates as shown in **Detail 11**.
 - Cut pressure plates between jamb and intermediate mullions to D.L.O. plus(+) 1-1/16".
 - Cut pressure plates between intermediate verticals to D.L.O. plus(+) 2-3/8".
 - For pressure plates spanning more than one bay, cut them to the centerline to centerline dimension between mullions minus(-) 1/8".
- Pressure plate stock lengths have 0.281" dia. holes factory punched every 9".
Drill additional holes if required to ensure that end holes are 1-1/2" from each end.
- Drill 3 weep holes per daylight opening (D.L.O.). Weep holes must be 0.313" diameter and must be located 3" from each end of the D.L.O. and at the centerline of D.L.O. as shown in **Detail 11**.



FRAME FABRICATION

STEP 9

FABRICATE FACE COVERS

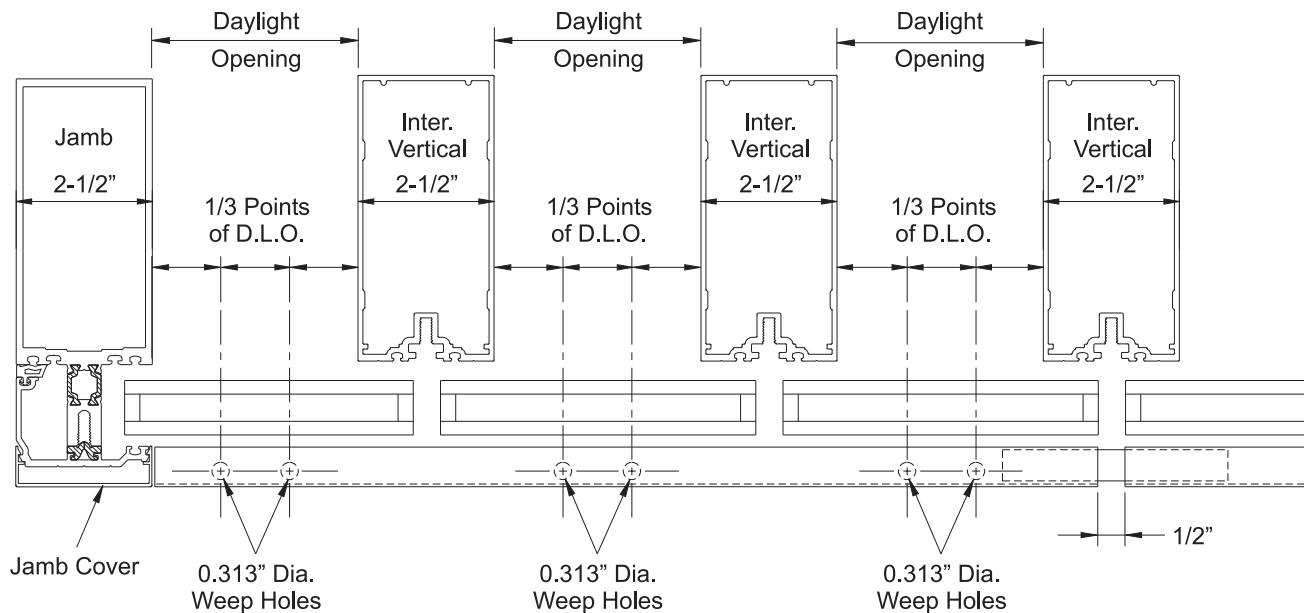
-Cut jamb face covers to the same length as the jamb mullions unless the mullions are spliced. If jamb mullions are spliced, cut jamb covers to accommodate for the 1/2" expansion joint as shown in **Step 10** on **Pages 17 & 18**.

-Cut horizontal covers 1/32" short of jamb mullion on jamb side of frame. Covers are to be spliced at every third light of glass at the centerline of vertical mullion. Optionally, covers may be spliced at every centerline of vertical mullions.

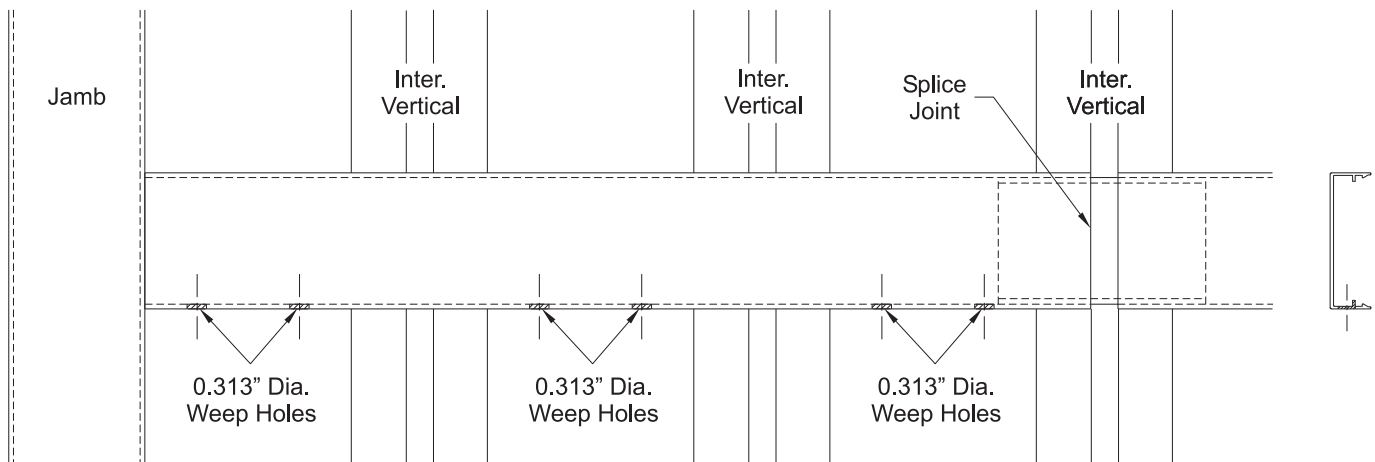
-Drill two 0.313" diameter weep holes as shown, at 1/3 points of each daylight opening.

Face cover weep holes must not align with pressure plate weep holes.

See **Detail 12**.



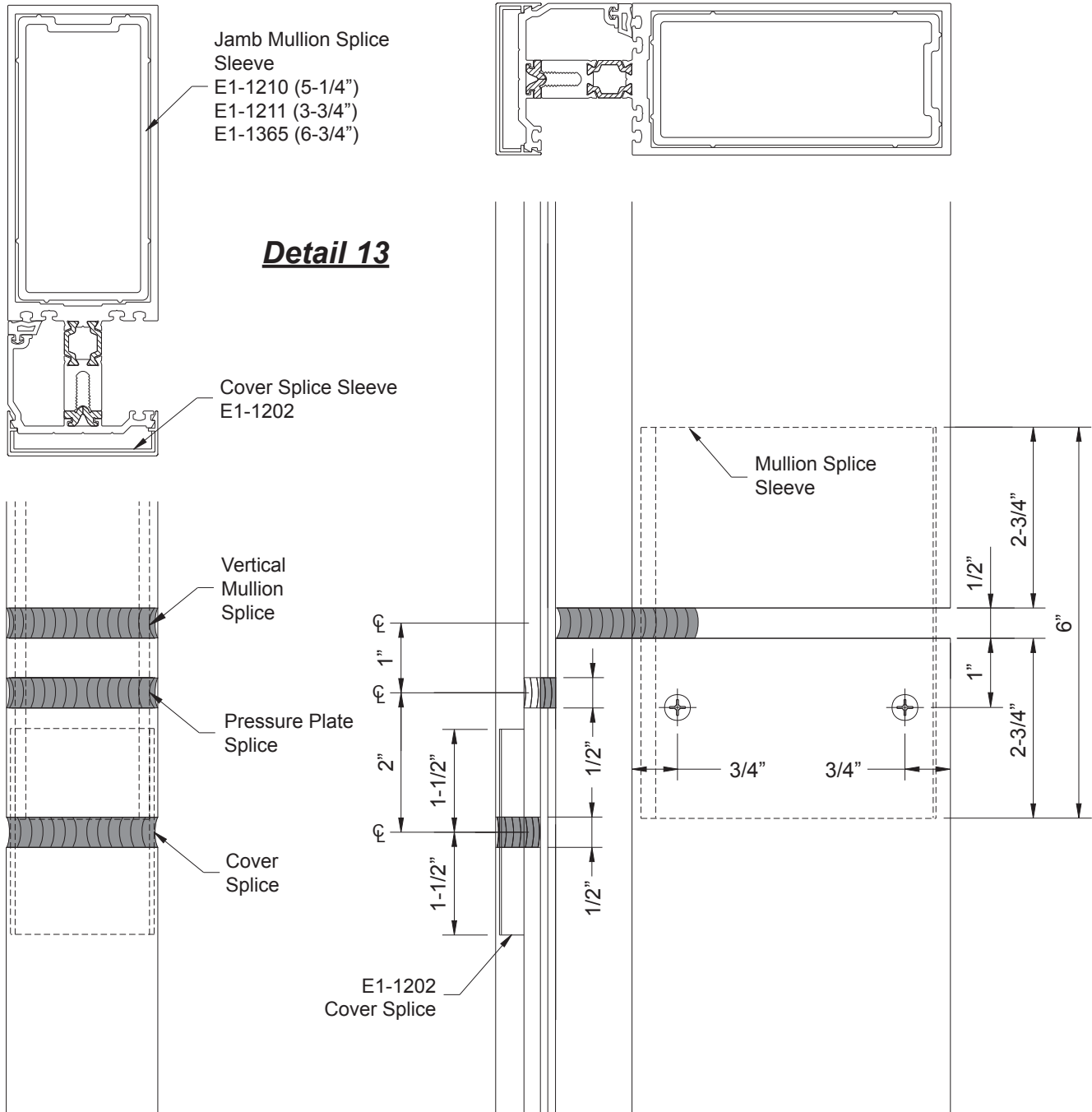
Detail 12



FRAME INSTALLATION

**STEP 10
JAMB SPLICE**

Stagger Mullion, Pressure Plate, and Cover Splice Joints as Shown Below.



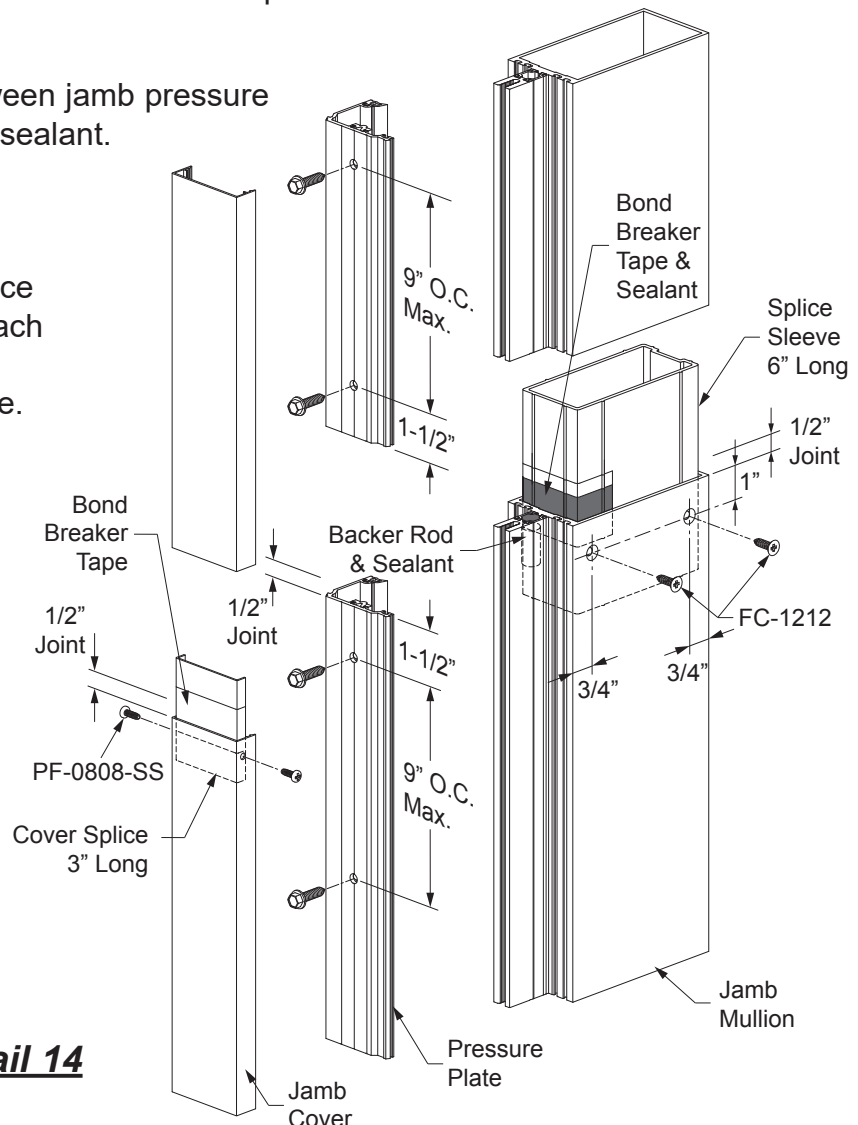
FRAME INSTALLATION

STEP 10 (Continued) JAMB SPLICE

- Clean all surfaces as recommended by sealant manufacturer.
- Apply bond breaker tape to the face of the splice sleeve at its midpoint (3" from top or bottom).
- Lower the splice sleeve into top of lower mullion 2-3/4" and attach with two FC-1212 fasteners on both sides of the mullion. Screws should be installed 3/4" from the front and back of mullion and 1" down from the top.
- When using 1" glazing jamb mullions, stuff a small piece of backer rod 1/2" down the cavity behind mullion tongue and pump in sealant to fill the cavity.
- Apply non-curing sealant to the face of splice sleeve on the upper half.
- Carefully slide the upper mullion down onto the splice sleeve and place a 1/2" temporary shim between the mullions to properly locate them.
- Secure the upper mullion to the mid anchors and remove the temporary shims.
- Apply and tool sealant to the face and sides of the splice sleeve to create a water tight joint.
- Leave a 1/2" expansion joint between jamb pressure plate splices and fill the joint with sealant.
- Locate pressure plate fasteners 1-1/2" from each end of pressure plate splice as shown.
- Apply bond breaker tape to the face of the cover splice sleeve and attach it to the lower face cover with a PF-0808-SS fastener on each side.
- Prior to snapping on the upper portion of the face cover, apply sealant to the face of the splice.
- Leave a 1/2" expansion joint between face cover splices.

See **Details 13 & 14.**

Note: Face covers, pressure plates, and mullions are staggered at splice locations. SSG vertical splices are similar.



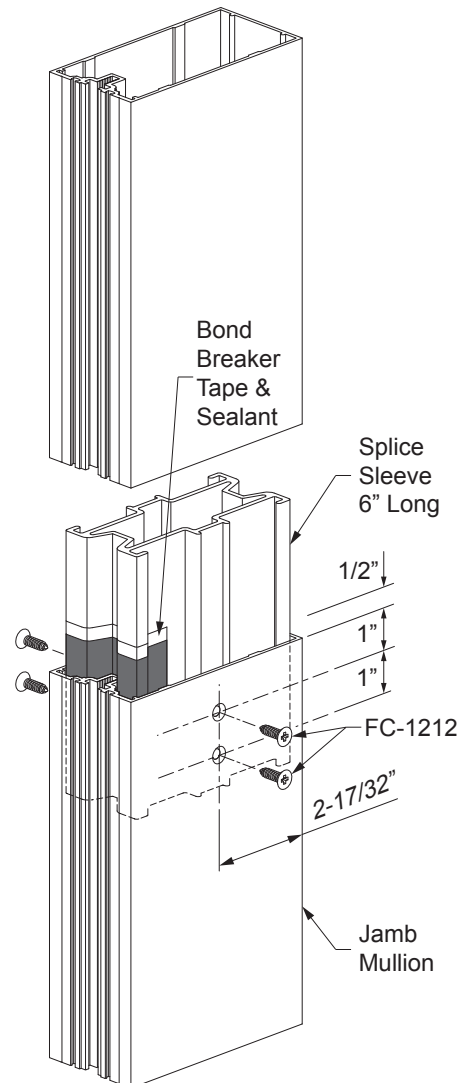
Detail 14

FRAME INSTALLATION

STEP 10 (Continued) SSG MULLION SPLICE

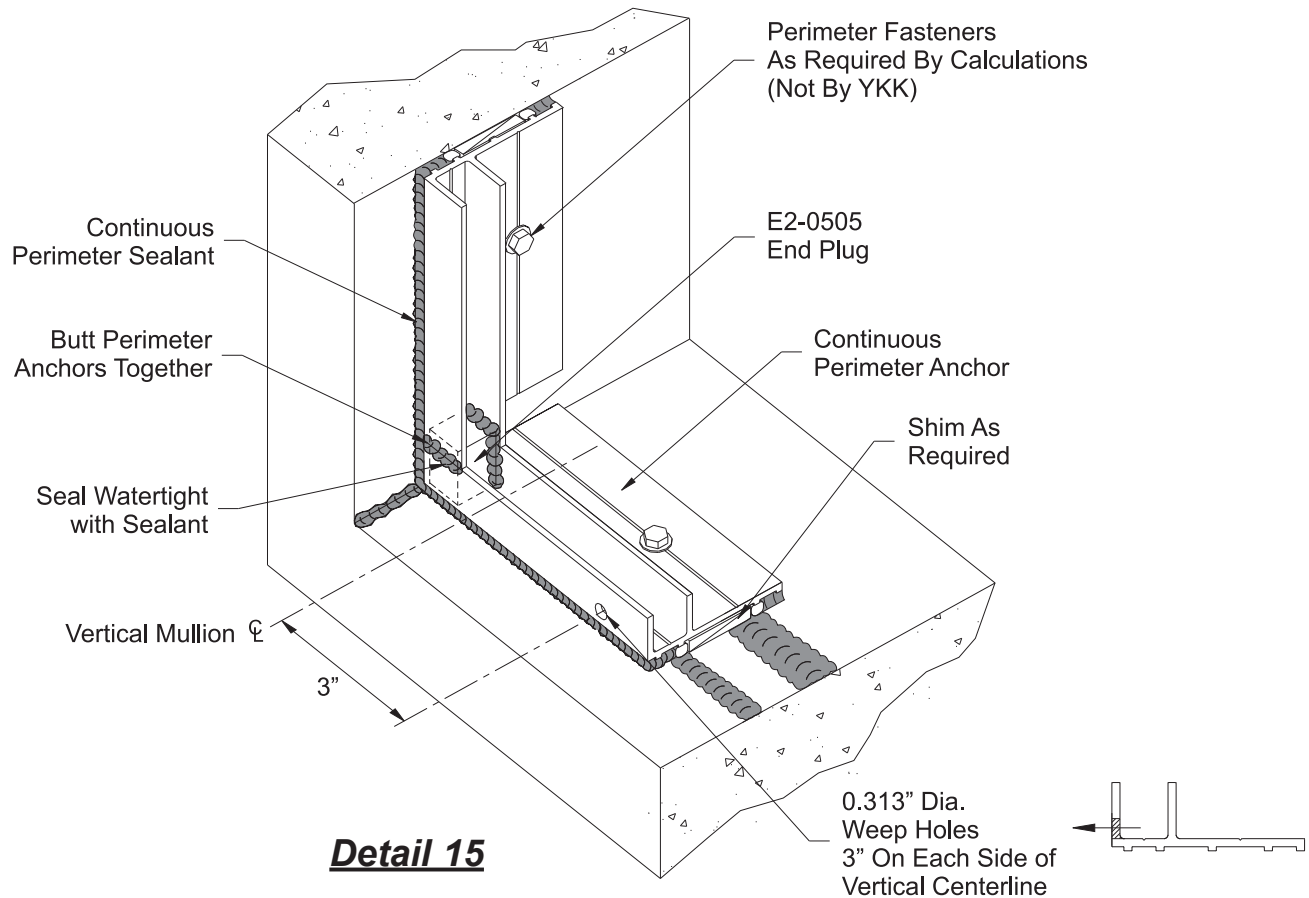
- Clean all surfaces as recommended by sealant manufacturer.
- Apply bond breaker tape to the face of the splice sleeve at its midpoint (3" from top or bottom).
- Lower the splice sleeve into top of lower mullion 2-3/4" and attach with two FC-1212 fasteners on both sides of the mullion as shown on **Detail 14a**.
- Apply non-curing sealant to the face of splice sleeve on the upper half.
- Carefully slide the upper mullion down onto the splice sleeve and place a 1/2" temporary shim between the mullions to properly locate them.
- Secure the upper mullion to the mid anchors and remove the temporary shims.
- Apply and tool sealant to the face and sides of the splice sleeve to create a water tight joint.

Detail 14a



FRAME INSTALLATION

STEP 11 INSTALL CONTINUOUS PERIMETER ANCHOR



- Cut perimeter anchors to size:
Head and sill anchors stop 1/8" short of the jambs.
Vertical jamb anchors butt in between head and sill anchors.
- Install perimeter anchors with appropriate perimeter fasteners. Refer to shop drawings or engineering calculations for type and spacing of fasteners. Shim as required to install anchors level.
- When splicing head and sill pieces together, leave 3/8" joint for expansion and install end plug, E2-0505, that has been buttered with sealant on the front, back, and bottom at the joint.
- Run continuous sealant along the perimeter between the anchors and the substrate.
- Seal corners of butted perimeter anchors watertight with sealant.
- Butter E2-0505 end plug with butyl on all sides that touch the anchors. Then push end plug into place and tool excess sealant that comes through the cracks.
- Field drill 0.313" diameter weep holes in perimeter anchor (exterior face only) at sill 3" from center line of vertical on each side.

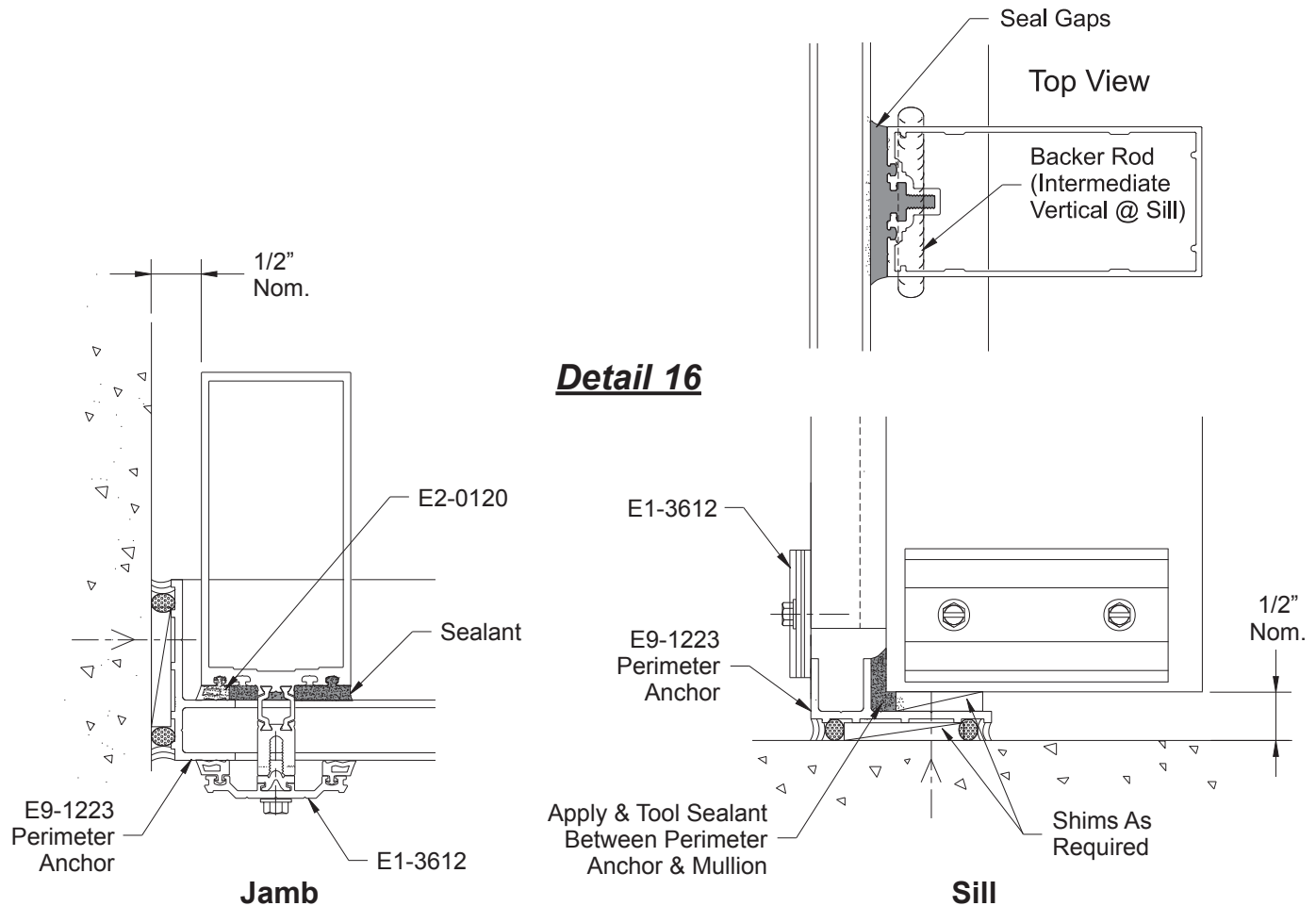
See **Detail 15**.

FRAME INSTALLATION

STEP 12

JAMB/VERTICAL INSTALLATION WITH PERIMETER ANCHORS

- The notched ends of jamb mullions for 1" glazing leaves the interior of the mullion exposed and must be plugged prior to installation.
 - Install a small piece of backer rod into the notched out space directly behind the tongue at the top and bottom of the jamb mullions.
 - Push the backer rod into the opening at the face of the mullion.
 - Apply and tool sealant to seal off the opening made by the notch.
 - Install interior gasket, E2-0120, to jamb mullion (jamb side only) the full length of the mullion.
 - Position jamb into opening as shown in **Detail 16**.
 - Seal the gap between the perimeter anchor and vertical glazing pocket with sealant.
 - Install temporary retainer clip, E1-3612, at the top and bottom of the mullion.
- Place a small length of backer rod below each SSG vertical and set the mullion onto the perimeter anchors as shown below.
- Seal all gaps between the SSG vertical and the perimeter anchor at the sill.
- See **Detail 16**.



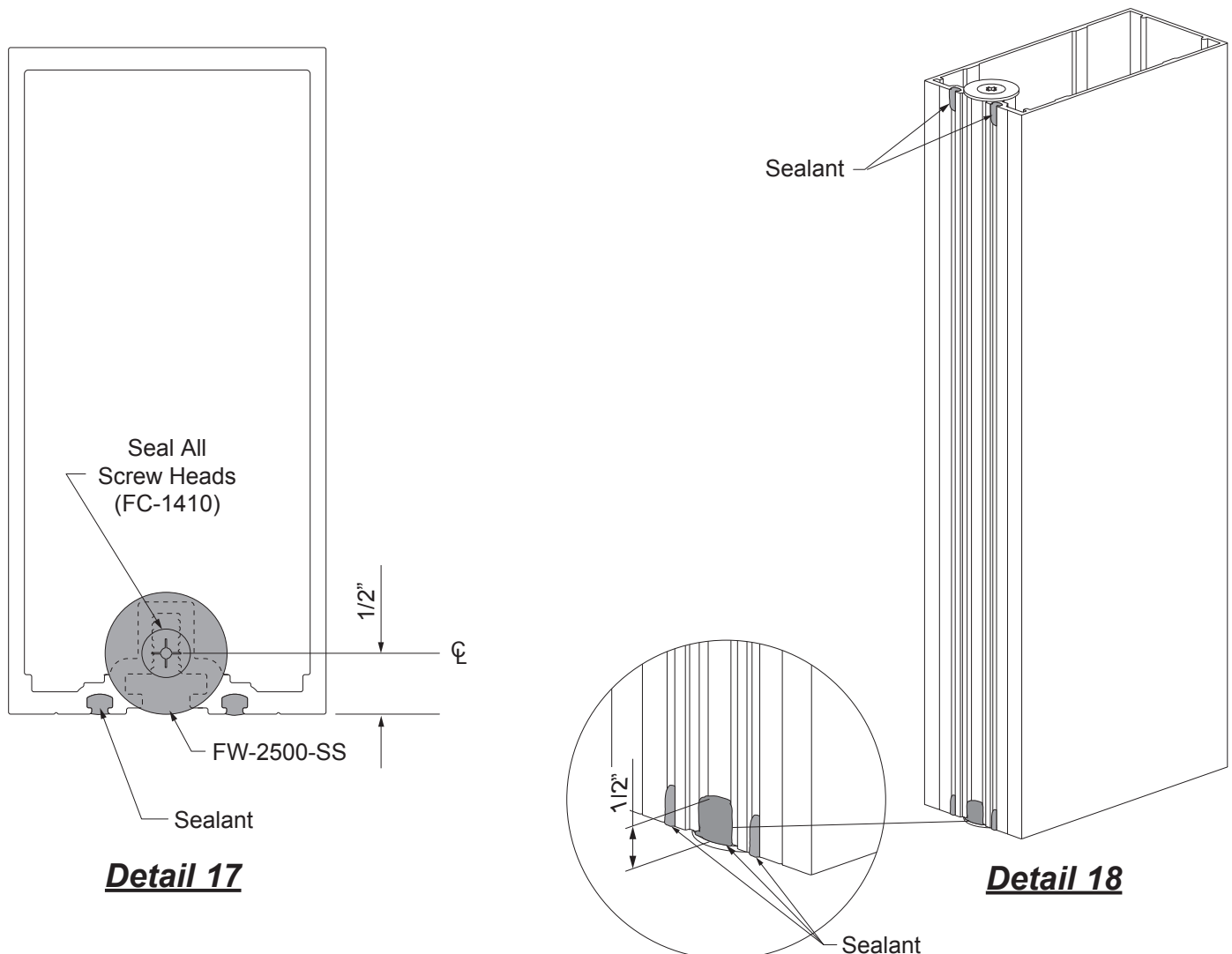
FRAME INSTALLATION

STEP 13

ATTACH SSG MULLION END CAPS

Mullion end caps are required at the head and sill of jambs and mullions.

- Clean the mullion ends and mullion end caps with a cleaner and method approved by the sealant manufacturer.
- Apply sealant to the spline cavity and along the front of the mullions on both ends prior to installing mullion end caps, FW-2500-SS. Also apply sealant to the reglets at both ends of the mullion.
- Attach the mullion end caps to each end of the mullion with FC-1410 fasteners as shown **Detail 17**.
- Tool the excess sealant flush between the mullion end cap and the mullion and at the reglets.
- Seal over all screw heads.
- At the bottom of the mullions, apply sealant to the center cavity to a height of 1/2". See **Detail 18**.



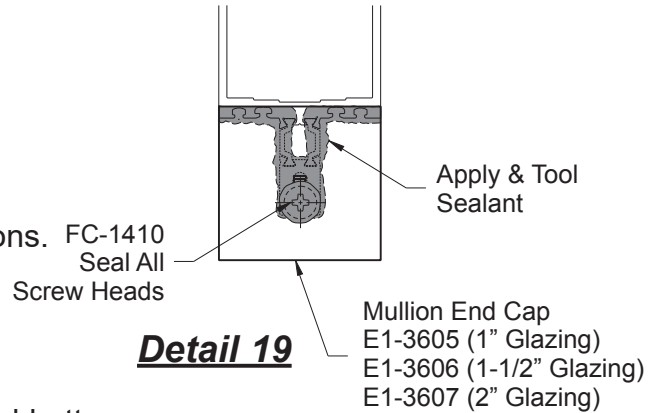
FRAME INSTALLATION

STEP 13A

JAMB/VERTICAL INSTALLATION WITH MULLION END ANCHORS

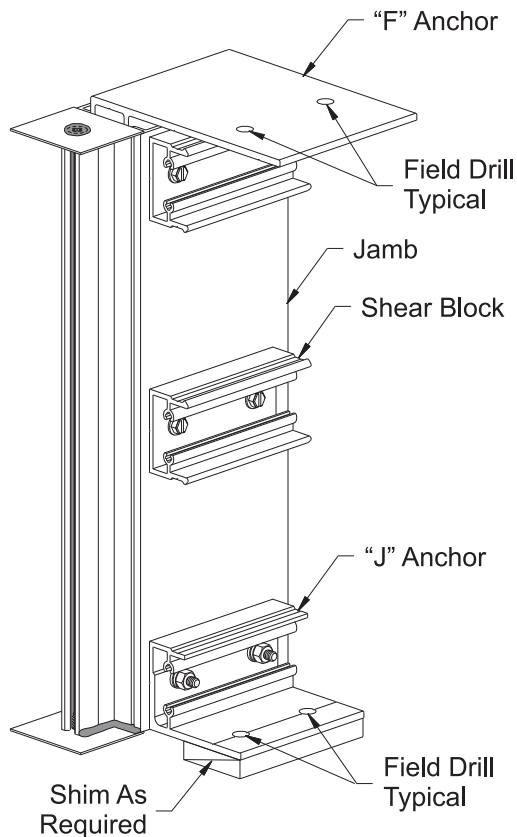
- Clean all contact surfaces as recommended by sealant manufacturer.
- Apply sealant into the screw raceway and along the front edge of the jamb mullion at each end.
- Prior to erecting jambs, install end caps, E1-3605 at the top and bottom of the jamb mullions.
- Apply and seal mullion end caps.
- Seal all screw heads with sealant.

See **Detail 19**.

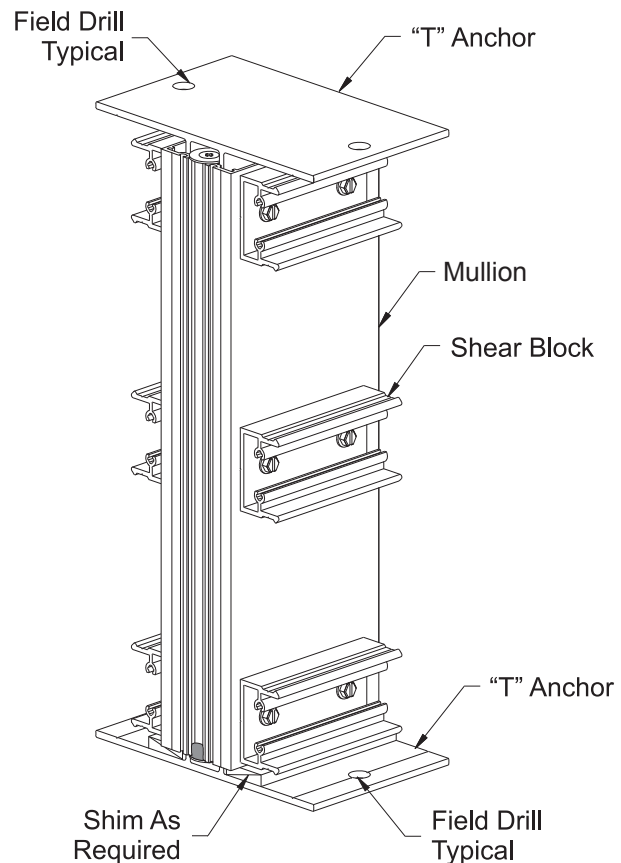


- Insert mullion "T" and "F" anchors into the top and bottom of the mullions before erecting them into the opening.
- Erect and locate the jamb and vertical mullions and temporarily attach them to the structure. All mullions must be installed plumb and true.
- Field drill holes in "T", "F", and "J" anchors for the appropriate anchor fasteners according to shop drawings or engineering calculations. Consult YKK AP if load requirements are in question.

Note: When using T and F anchors, shims should be located between the of the T or F anchor and the bottom of the vertical mullions as shown in **Detail 20**.



Detail 20



FRAME INSTALLATION

STEP 13B VERTICAL INSTALLATION AT DOOR JAMB END ANCHORS

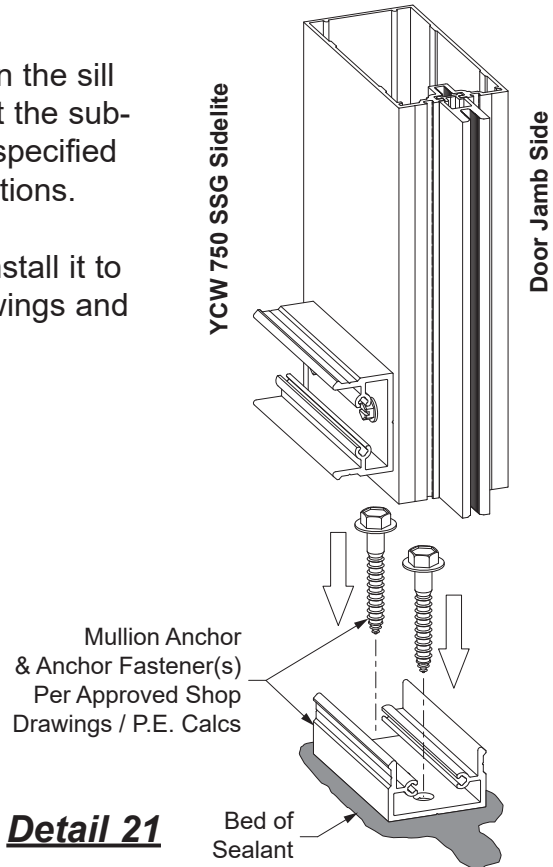
The mullions at the door jambs are set directly upon the sill substrate without any shims and are sealed against the substrate. The anchors to be used at this location are specified by the approved shop drawings and or P.E. calculations.

-Locate the mullion anchor for the door jamb and install it to the substrate according to the approved shop drawings and P.E. calculations.

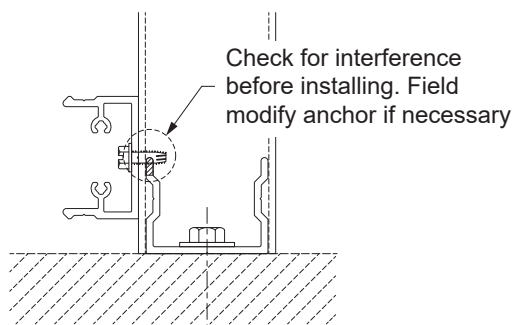
Note: if using an exposed fasteners shear block as a mullion anchor, check to ensure the sill shear block fasteners will not cause interference. Field modify the shear block anchor as required. See **Detail 22**.

-Clean all contact surfaces as recommended by sealant manufacturer.
-Set the mullion on the anchor, directly onto the sill substrate in a bed of sealant. Avoid using shims at this location. See **Detail 21**.

-Refer to the approved shop drawings for any additional fasteners required at anchor.
-Tool sealant at the bottom of the mullion at the sill substrate around the perimeter of the mullion. See **Detail 23**.

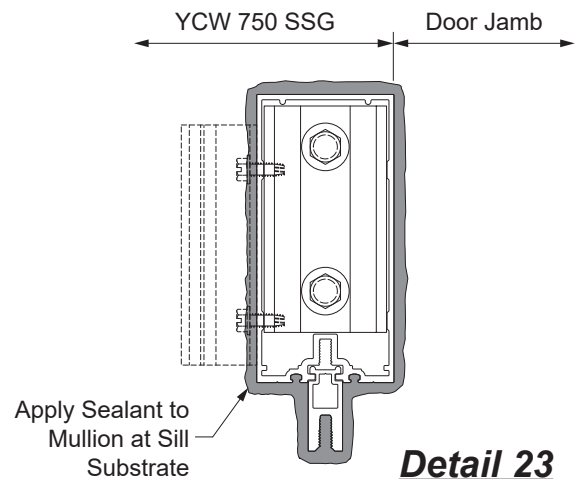


Detail 21



Detail 22

For Exposed Fasteners Shear Block Used as Anchor



Detail 23

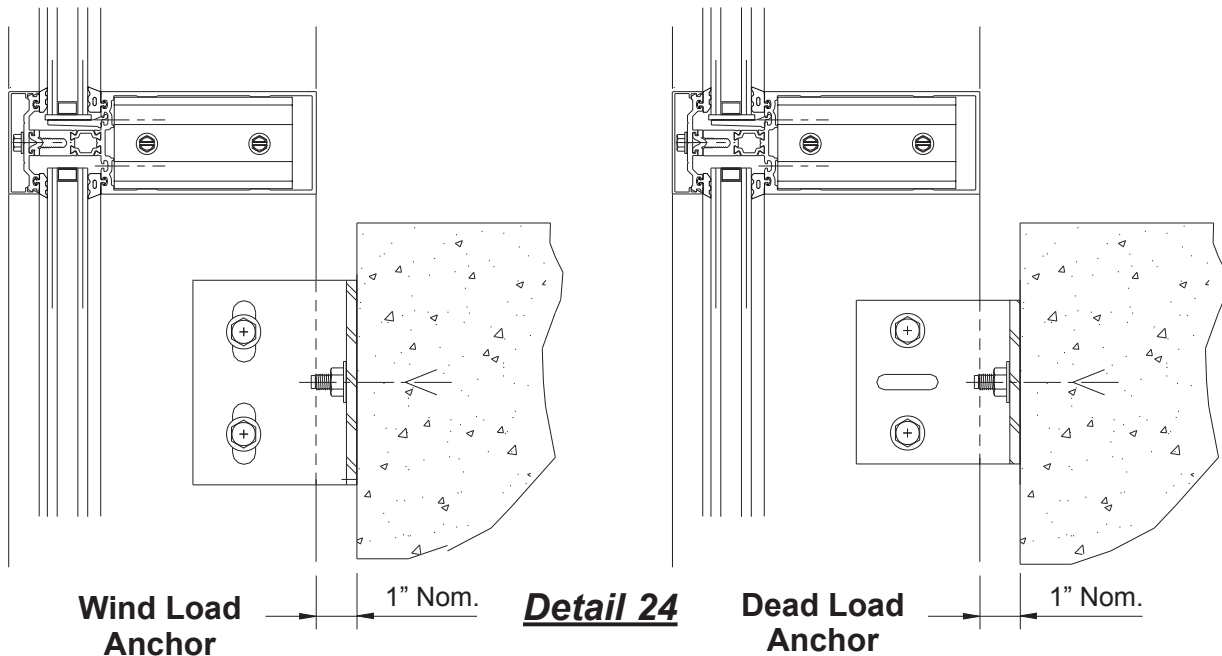
FRAME INSTALLATION

STEP 14

INSTALL WIND LOAD / DEAD LOAD ANCHORS

-Install steel wind load and dead load anchor clips. Anchor clips are normally template or line set before mullions are hung. Outstanding leg of clip must be set at 90° to offset line. The back of the vertical mullion should set 1" from the anchoring substrate.

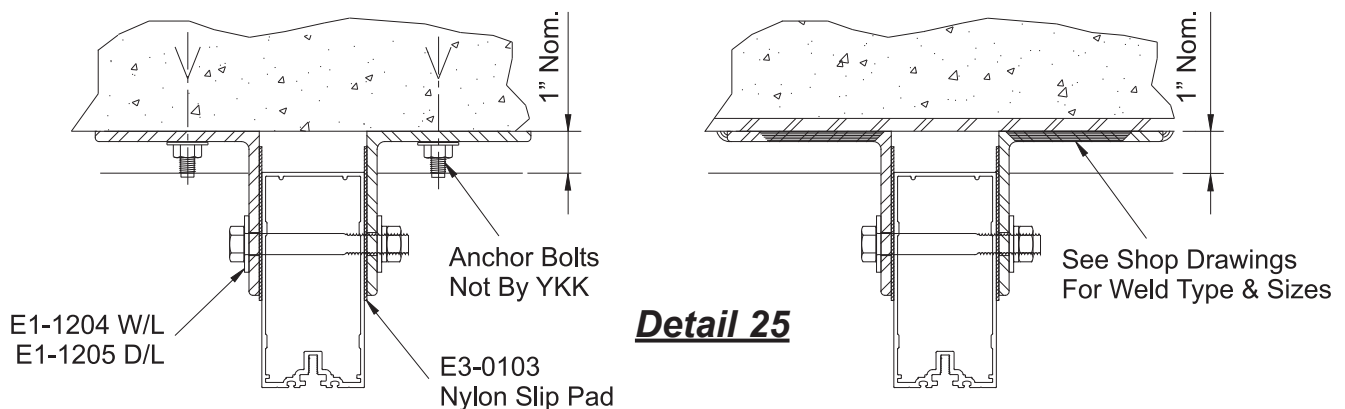
See **Detail 24**.



-Install, plumb, and align vertical mullions. Drill and install appropriate diameter anchor bolts. If shop drawings are not prepared by YKK AP, all anchors and bolts must be checked by a qualified engineer.

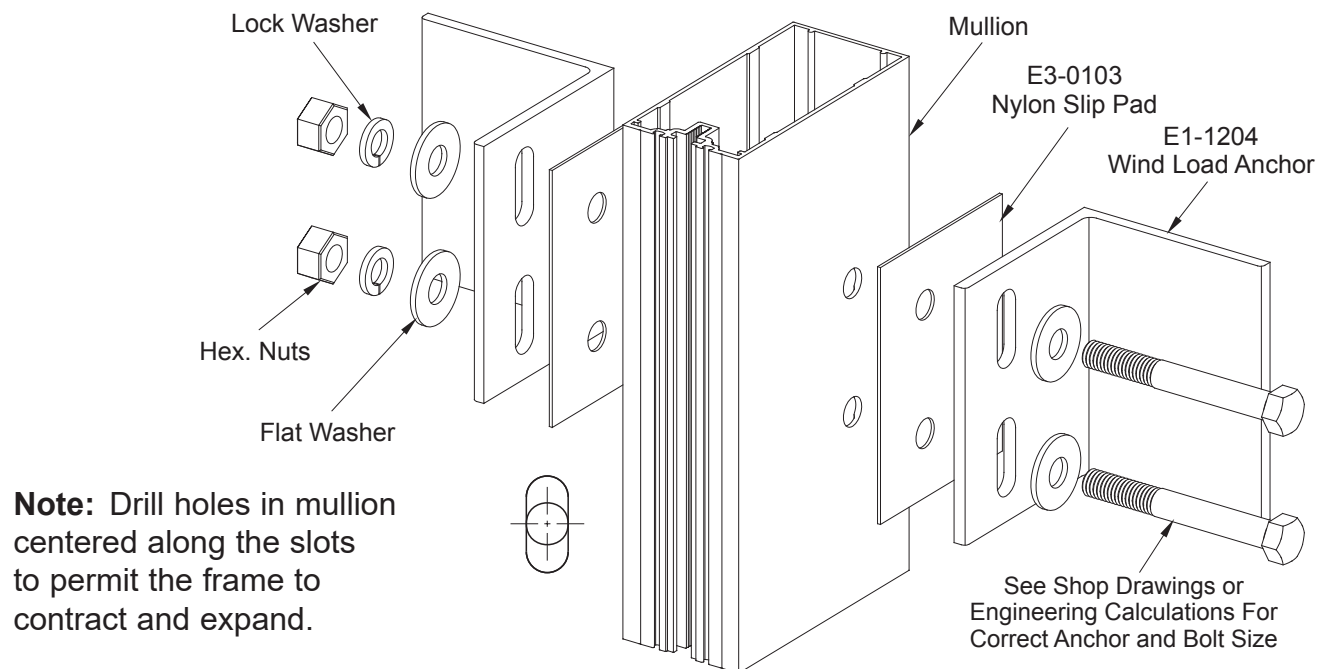
-Nylon slip pads, E3-0103, must be installed between mullion and anchor.

See **Detail 25**.



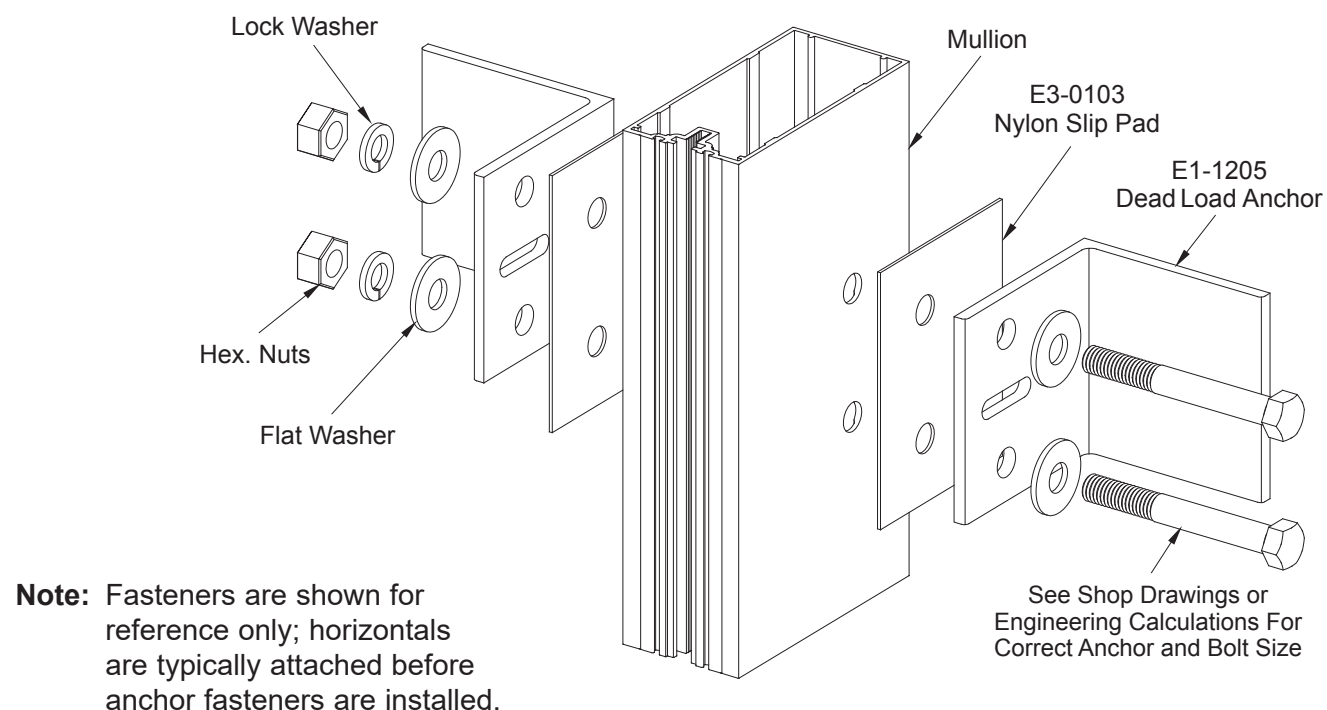
FRAME INSTALLATION

TYPICAL WIND LOAD ANCHOR



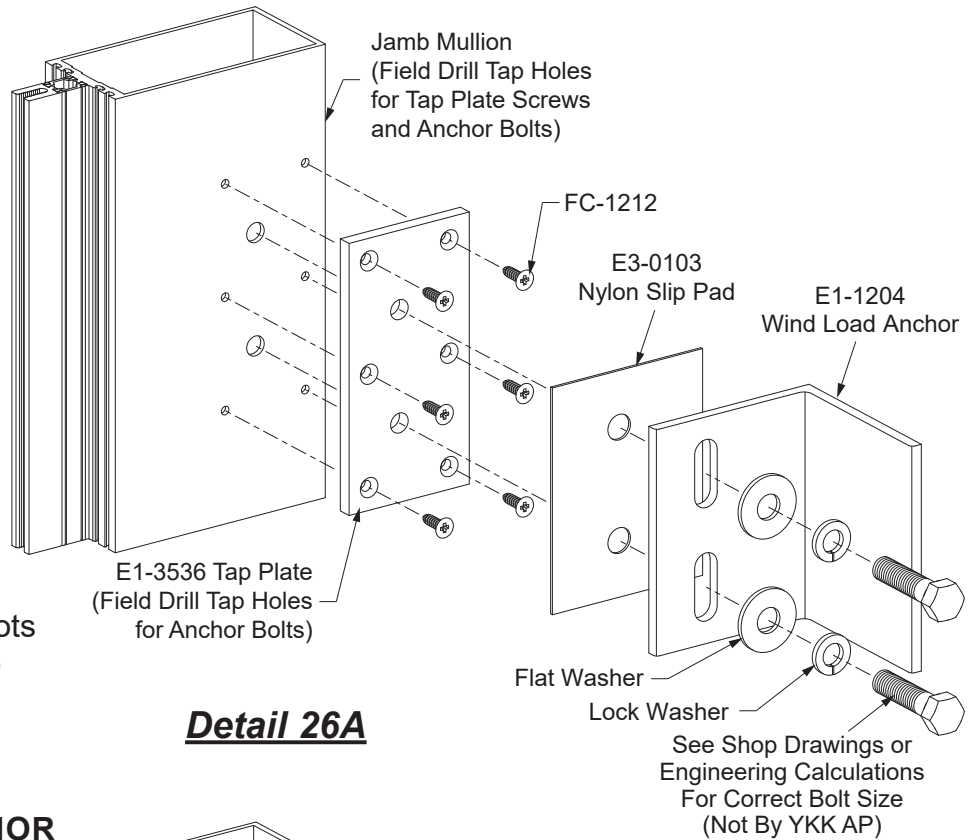
Detail 26

TYPICAL DEAD LOAD ANCHOR



FRAME INSTALLATION

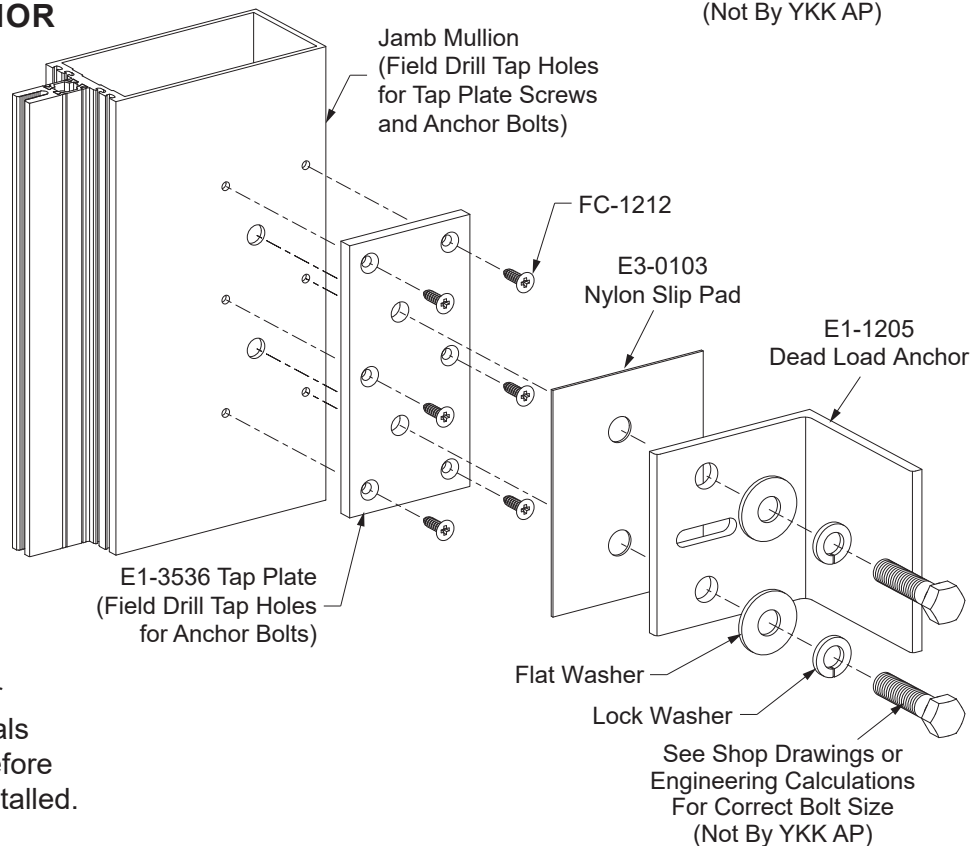
JAMB WIND LOAD ANCHOR



Note: Drill holes in mullion centered along the slots to permit the frame to contract and expand.

Detail 26A

JAMB DEAD LOAD ANCHOR



Note: Fasteners are shown for reference only; horizontals are typically attached before anchor fasteners are installed.

FRAME INSTALLATION

STEP 15

ATTACH HORIZONTAL MEMBERS

-Just prior to attaching the horizontal members to the vertical, apply sealant to the front of the shear block as shown below.

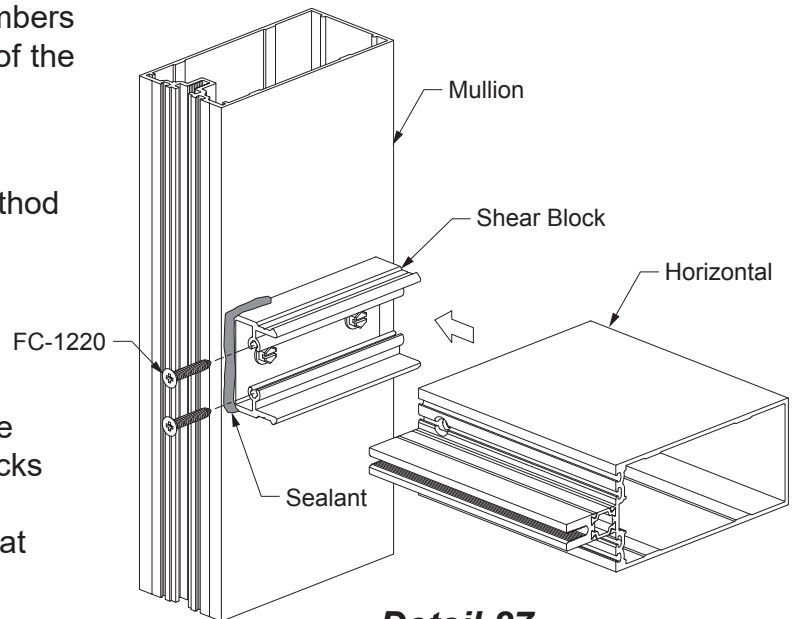
Note: Before applying any sealant, clean aluminum surfaces using cleaner and method approved by sealant manufacturer.

For Concealed Fasteners:

- Slide the horizontal members towards the vertical and attach them to the shear blocks at each end with two FC-1220 fasteners.
- Tool and wipe away any excess sealant at the vertical to horizontal joints.

See **Detail 27**.

CONCEALED FASTENERS



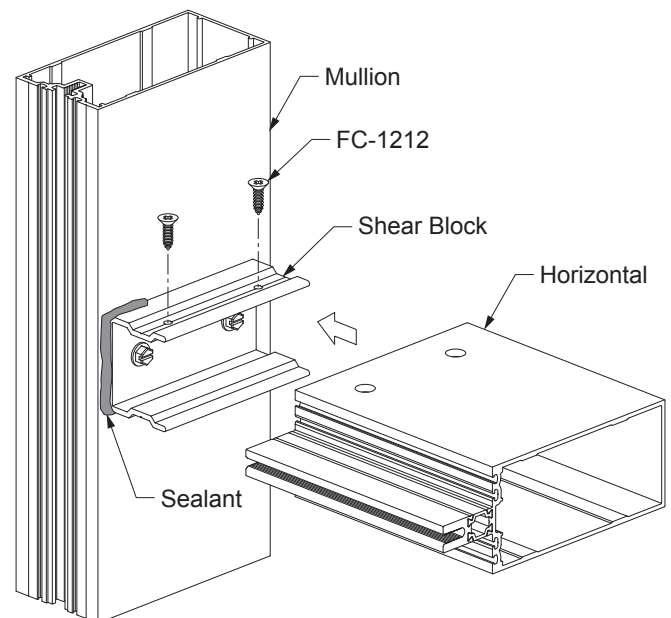
Detail 27

For Exposed Fasteners:

- Slide the horizontal members towards the vertical and transfer the hole locations on top of the horizontal to the shear block.
- Remove the horizontal and drill a 0.189" dia. (#12 bit) hole at each hole location.
- Slide the horizontal back against the vertical and attach it to the shear block with two FC-1212 fasteners at each end.
- Tool and wipe away any excess sealant at the vertical to horizontal joints.

See **Detail 28**.

EXPOSED FASTENERS



Detail 28

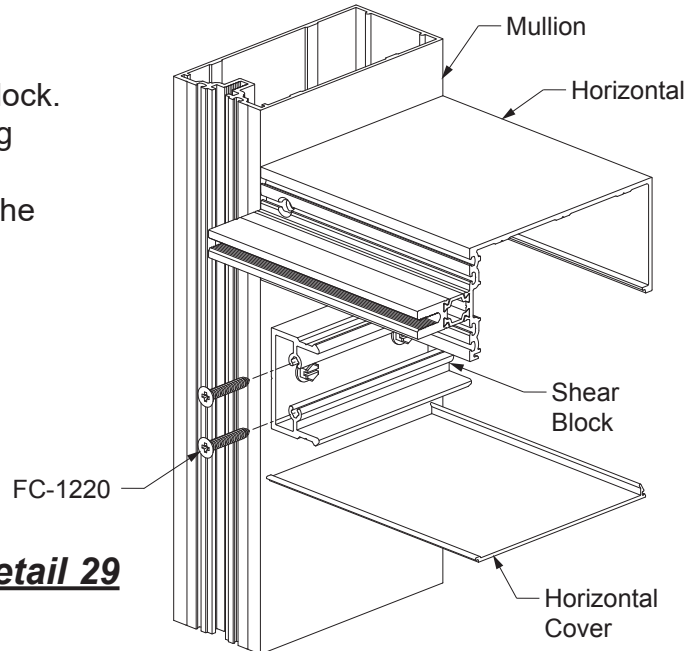
FRAME INSTALLATION

STEP 15 (Continued) ATTACH HORIZONTAL MEMBERS

For Two Piece Horizontals:

- Lower the horizontal down onto the shear block. Make sure the horizontal and vertical glazing pockets are flush.
 - Attach the horizontal to the shear clip from the front of the horizontal using two FC-1220 fasteners.
 - Snap on the horizontal cover.
- See **Detail 29**.

OPEN BACK HORIZONTAL



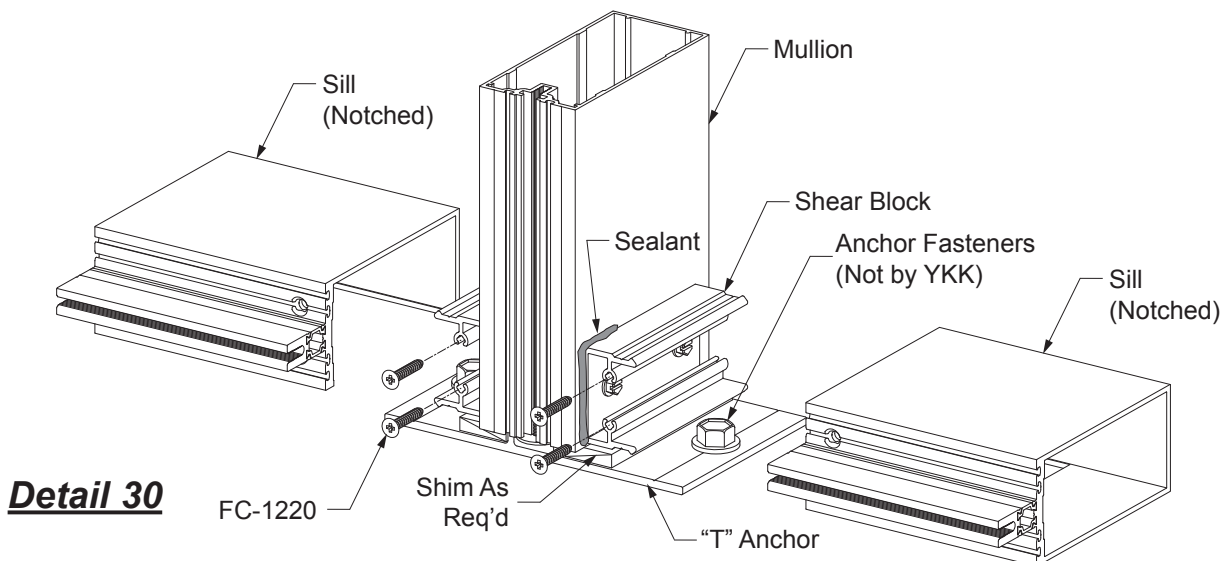
Detail 29

At Head and Sills:

- Mullion end anchors must be installed before head and sill members are attached.
 - Provide anchor fasteners as per job requirements. See approved shop drawings or engineering calculations for appropriate anchor fasteners.
 - Install the anchor fasteners as recommended by fastener manufacturer.
- Attach head and sill members according to the procedures previously outlined with the notched out portion facing the anchors.

See **Detail 30**.

Caution: There must always be a shim under the mullion to transfer glazing dead loads to the foundation.



Detail 30

FRAME INSTALLATION

STEP 16

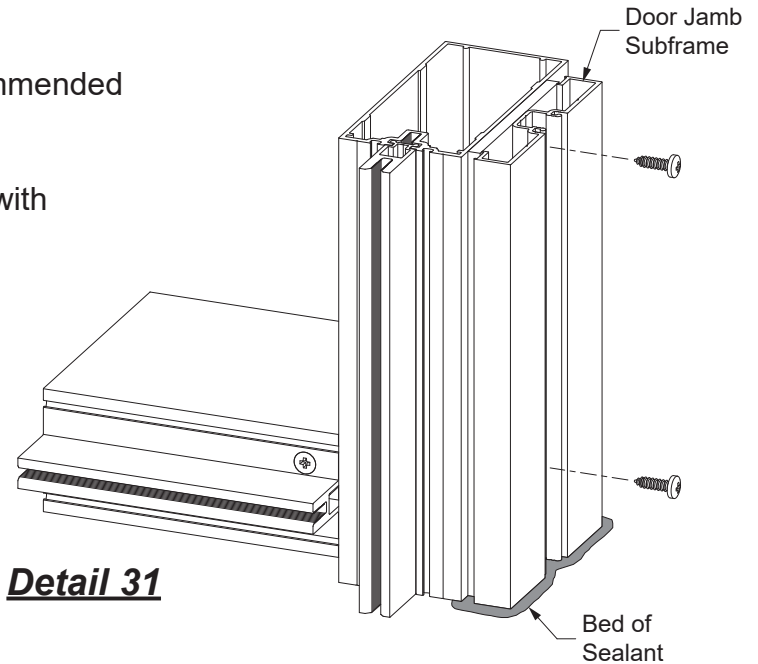
INSTALL DOOR SUBFRAMES

Refer to the **Entrances Installation Manual** for assembly of the door subframes. These subframes are typically installed into the curtain wall framing at the jambs, and set directly upon the sill substrate. The subframe members are determined by the approved shop drawings.

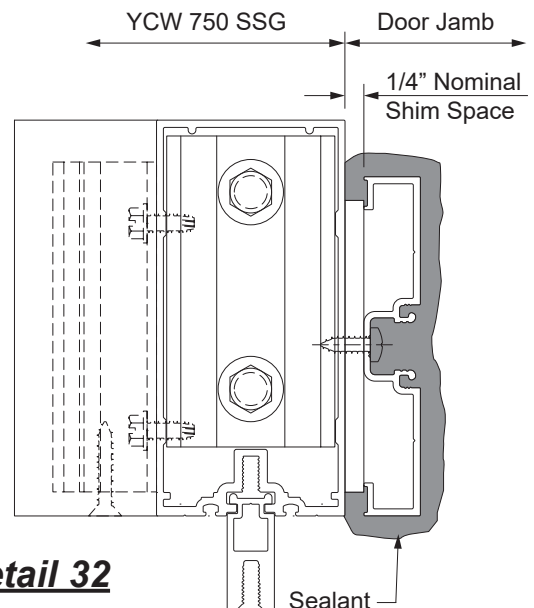
-Clean all sealant contact surfaces as recommended by the sealant manufacturer.

-Install the jamb subframe onto the mullion with fasteners according to the approved shop drawings and/or P.E. calculations, setting the subframe jambs in beds of sealant as shown in **Detail 31**.

-Apply and tool sealant to the bottom of the jamb subframe as shown in **Detail 32**.



Detail 31



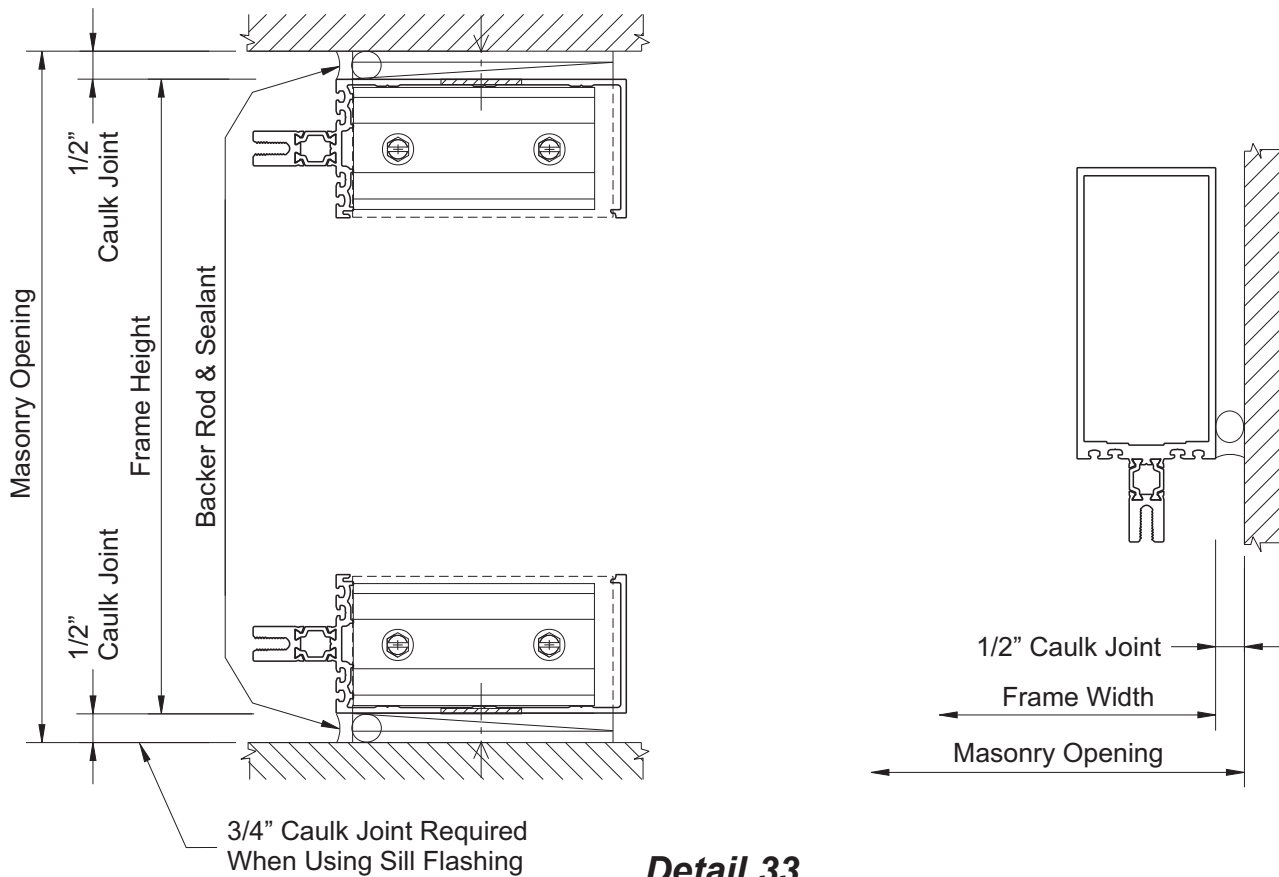
Detail 32

FRAME INSTALLATION

STEP 17

APPLY PERIMETER SEALANT

- Clean the area around the perimeter of the frame with cleaner and method approved by sealant manufacturer.
 - Insert a backer rod and apply sealant to the perimeter of the frame.
 - Tool the sealant making sure that sealant does not get into the gasket reglets.
- See **Detail 33**.



Detail 33

FRAME INSTALLATION

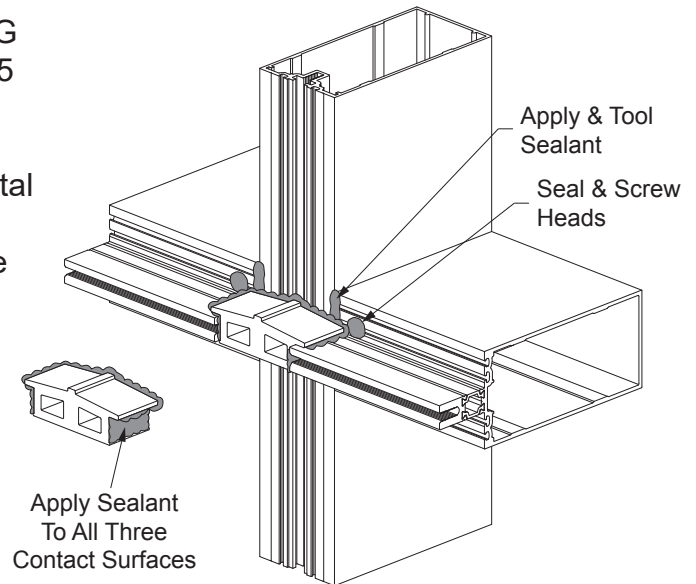
STEP 18 INSTALL JOINT PLUGS

At Intermediate SSG Verticals:

The space between the horizontals at each SSG vertical must be closed with joint plugs, E2-0245 for 1" glazing or E2-0279 for 1/4" glazing.

- Clean the area around the vertical and horizontal intersection with an approved cleaner.
- Apply and tool sealant to the intersection of the horizontal and vertical.
- Apply sealant to the three contact sides of the joint plug and into all cavities behind where the joint plug will go.
- Press joint plug firmly against face of mullion.
- Tool the sealant to ensure a watertight seal.
- Apply and tool sealant over fastener heads on horizontal. Make sure raceway adjacent to fastener head is effectively sealed.

See **Detail 34**.



Detail 34

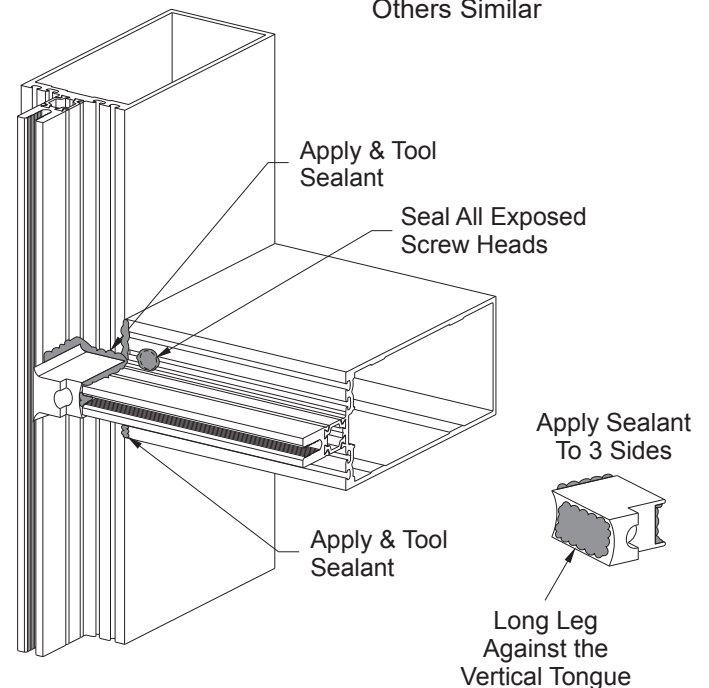
1" Glazing Shown,
Others Similar

At Jamb Mullions:

The tongue of the horizontal mullion must be sealed to the tongue of the jamb mullion with joint plugs, E2-3603 for 1" glazing.

- Clean the area around the tongue intersection with an approved cleaner.
- Apply and tool sealant to the intersection of the horizontal and jamb mullions.
- Apply sealant to the three contact sides of the joint plug and at the intersection of the vertical and horizontal glazing pocket.
- Install joint plug as shown with the long leg of plug against the vertical tongue.
- Press joint plug firmly against face of mullion.
- Tool the sealant to ensure a watertight seal.
- Apply and tool sealant over fastener heads on horizontal. Make sure raceway adjacent to fastener head is effectively sealed.

See **Detail 35**.



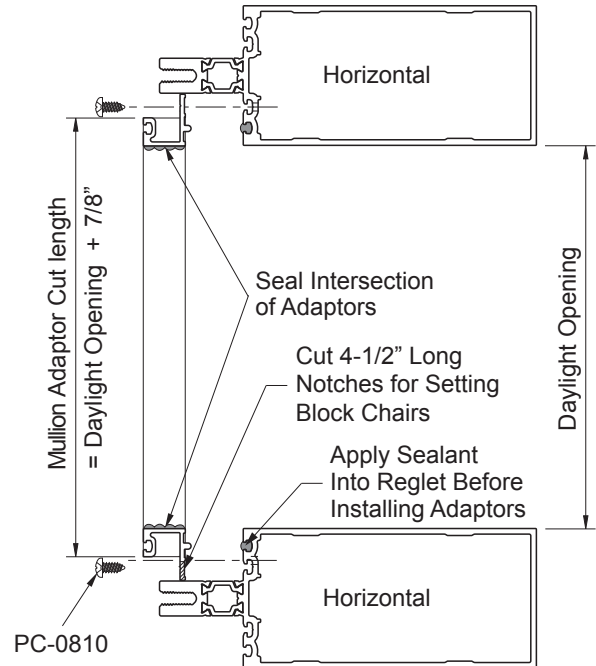
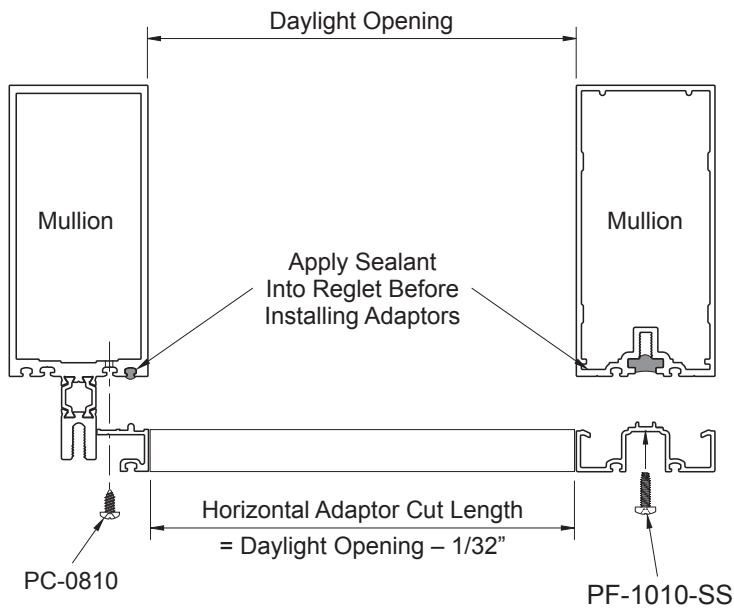
Detail 35

1" Glazing Shown,
Others Similar

GLAZING

STEP 19 INSTALL GLAZING ADAPTORS (When Required)

Note: 1/4" glazing adaptors shown
1/2" glazing adaptors similar.

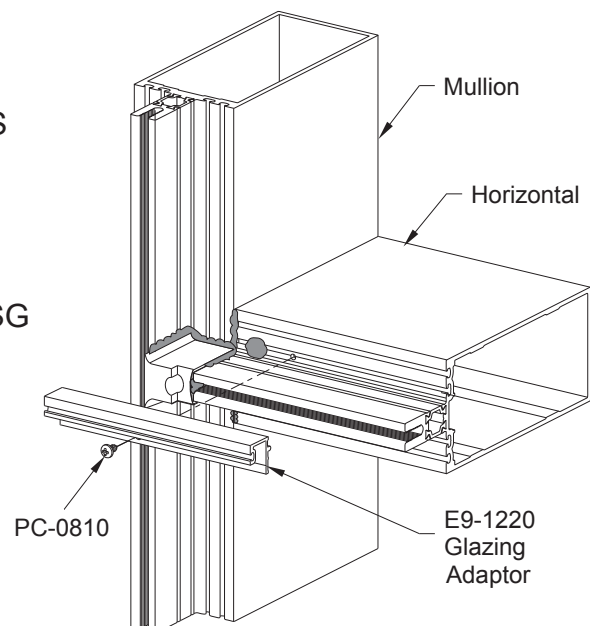


- Cut glazing adaptors to size:
Vertical Cut Length = Daylight Opening plus(+) 7/8".
Horizontal Cut Length = Daylight Opening minus(-) 1/32".

Detail 36

- Predrill each adaptor with 0.189" dia. (#12) holes 2" from each end and 24" O.C.
- Dry fit adaptors and match drill 0.141" diameter (#28) holes on mullion to receive PC-0806 and PF-1010-SS screws.
- Clean the area around the mullion glazing reglet and the glazing adaptor with a cleaner approved by the sealant manufacturer.
- Apply sealant to the glazing reglets of the mullion, SSG mullion recesses, and the ends of the horizontal adaptors.
- Install the adaptors with PC-0806 screws 2" from each end and at the center of the adaptor. Install the vertical adaptors first and make sure they are centered along the day light opening.
- Tool sealant at all adaptor intersections and seal all screw heads.

See **Detail 36**.



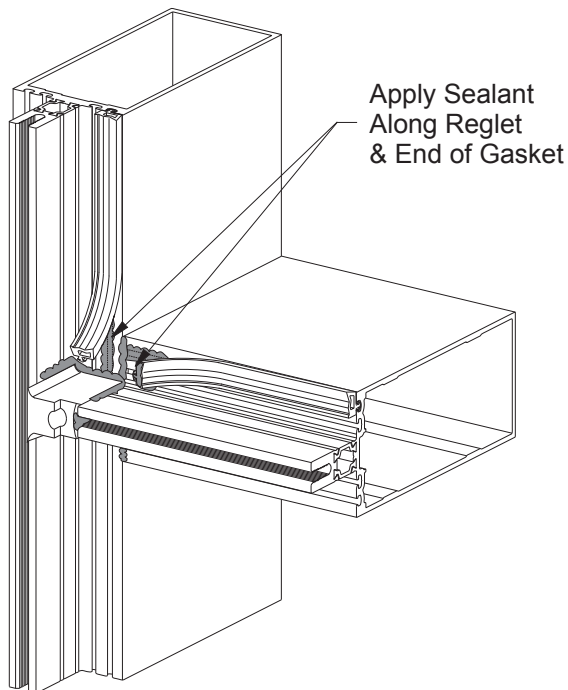
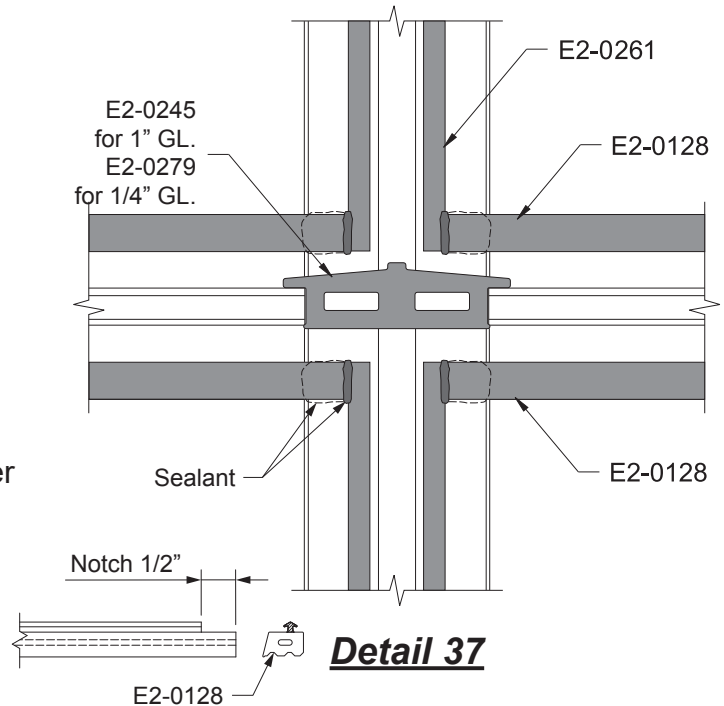
GLAZING

STEP 20

INSTALL INTERIOR GLAZING GASKETS & SPACERS AT SSG MULLIONS

- Cut vertical gaskets and spacers to Daylight Opening plus(+) 1-1/2".
- Cut horizontal gaskets to Daylight Opening plus(+) 1" plus(+) 1/4" per each foot of opening width.
- Notch horizontal gaskets 1/2" at each end.
- Apply sealant where the notched horizontal gasket overlaps the mullion and where it meets the vertical spacer.
- Install vertical gaskets and spacers first, centered along the daylight opening.
- Install horizontal glazing spacers by pushing each end into the reglet. Next press the center of gasket into the reglet and then push the rest of the gasket into the reglet working from the center towards each end.

See **Detail 37**.



Detail 38

Glazing gaskets require additional sealant at the jamb and horizontal intersection.

- Pull the last 3" of each gasket away from the reglet.
- With gasket end held out of the way, run a 2" to 3" bead of sealant into the reglet at each end.
- Apply sealant to each end of the horizontal gasket.
- Reinsert the gasket ends and press them firmly against the face of the mullion.
- Apply and tool sealant at the intersection of the vertical and horizontal gaskets.

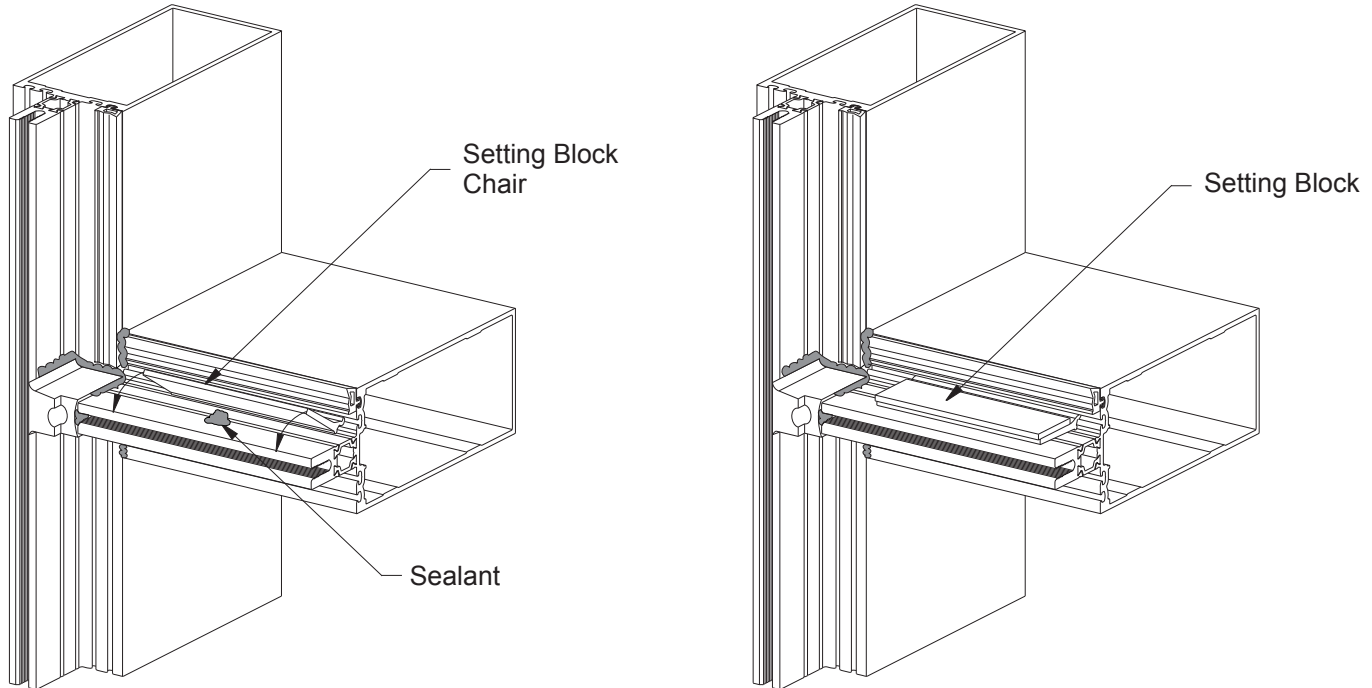
See **Detail 38**.

GLAZING**STEP 21****INSTALL SETTING BLOCK CHAIRS AND SETTING BLOCKS**

Note: For correct placement of setting block chairs and setting blocks, see **Detail 40** on **Page 37**. Consult YKK AP for setting block requirements on units that exceed 60" x 90" or 40 sq. ft.

- Install the E1-3603 setting block chair at 1/4 points as shown in **Detail 39**.
- Apply a small amount of silicone sealant to the tongue of the horizontal to keep the setting block chair correctly positioned prior to the glass being set.
- Place the E2-0513 setting block on the setting block chair.

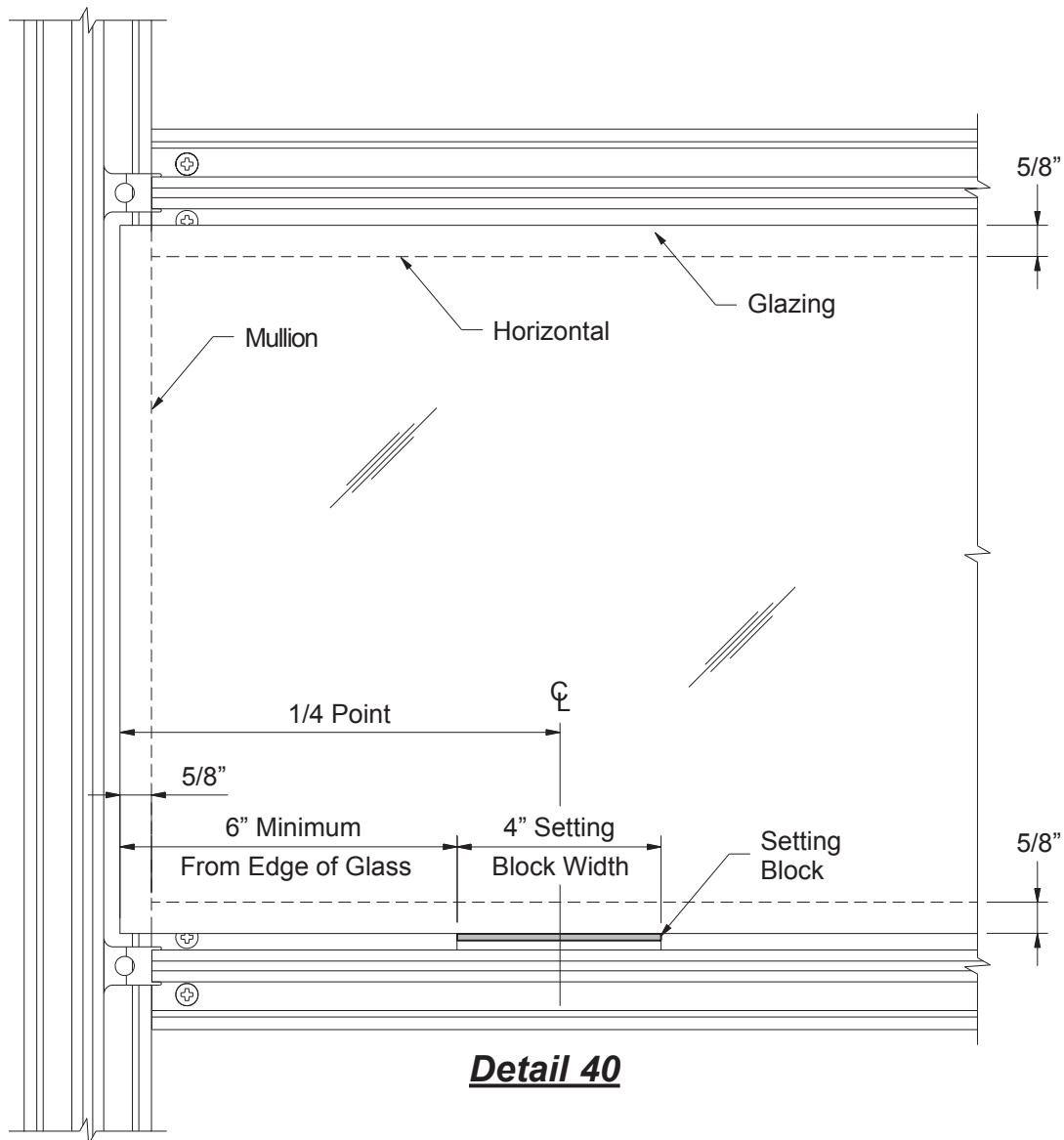
See **Detail 39**.



Detail 39

GLAZING

STEP 21 INSTALL SETTING BLOCKS (Continued)



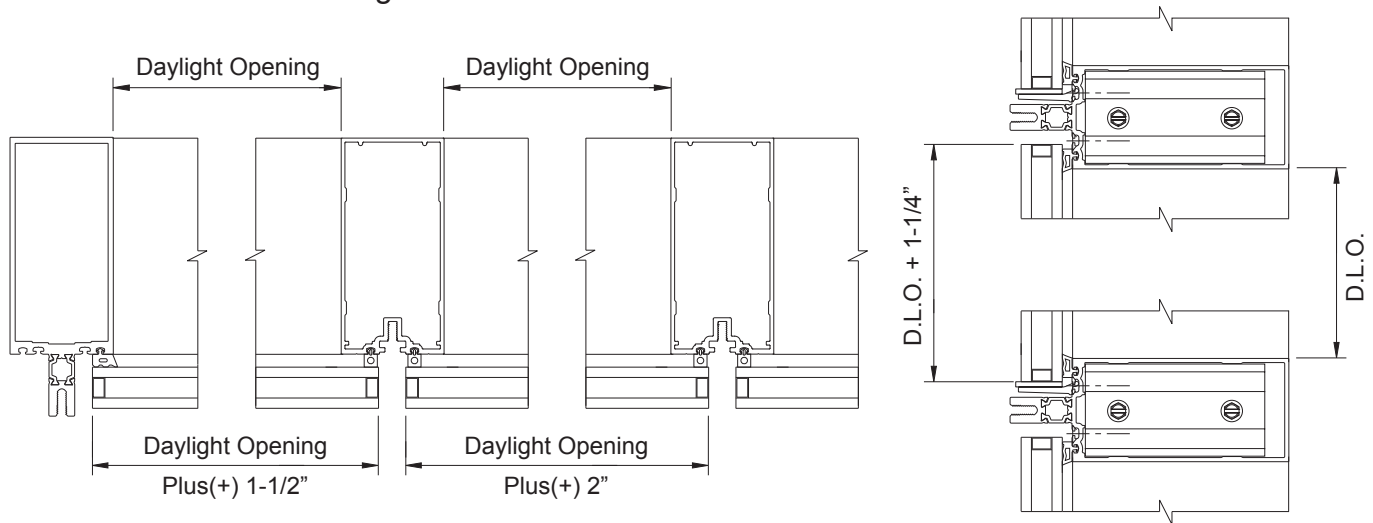
GLAZING

STEP 22

INSTALL EXTERIOR GLAZING GASKETS

- Cut exterior jamb glazing gaskets to the same length as the jamb pressure plates.
- Cut exterior horizontal glazing gaskets to daylight opening plus $\frac{3}{16}$ " per foot of opening width.
- Install jamb glazing gaskets centered along the jamb pressure plates.
- Install horizontal gaskets by pushing each end into the reglet of the pressure plate. Next press center of gasket into reglet; then push gasket into reglet working from center towards the ends.

Caution: Do not stretch the gaskets.



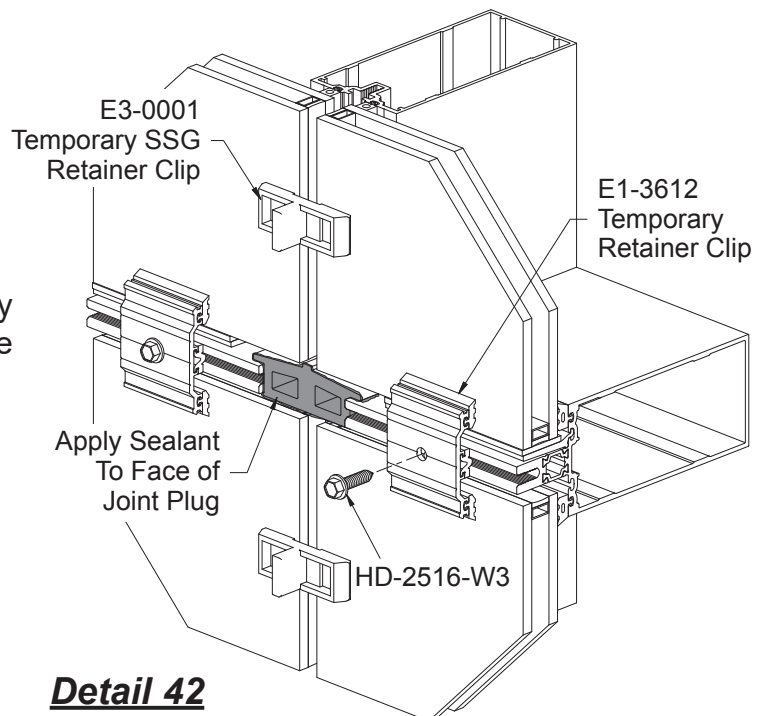
STEP 23

INSTALL GLASS

- Install glass.
See **Detail 41** for glass sizes.
 - As each lite is installed, attach a temporary retaining clip, E1-3612, in the middle of each horizontal and 4" from glass edge at each end with HD-2516-W3 fasteners.
 - Additionally, secure glass with SSG temporary glass retainers every 3'-0" maximum along the SSG verticals.
 - Apply sealant to the face of the joint plug just prior to installing pressure plates.
Do not allow sealant to skin over prior to installing pressure plates.
- See **Detail 42**.

Note: Sealant must form a complete seal between the exterior gasket, pressure plate, thermal isolator, and the joint plug.

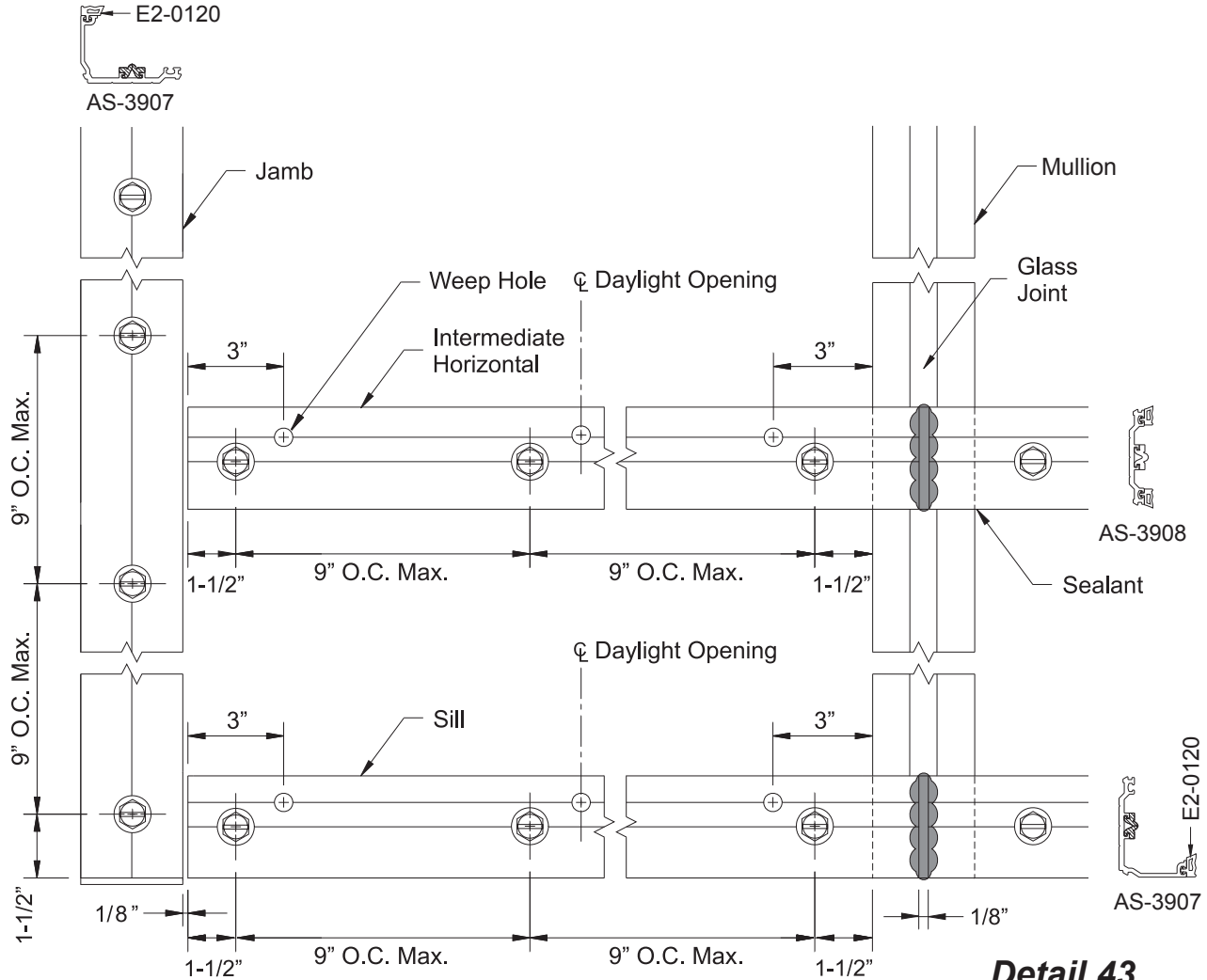
Detail 41



Detail 42

GLAZING

STEP 24 PRESSURE PLATE LAYOUT AND ASSEMBLY



Detail 43

- Pressure plate stock lengths are factory punched with 0.281" diameter holes at 9" o.c. maximum. After cutting, additional holes may be required to have fasteners located 1-1/2" from each end.
- Install jamb pressure plates using HD-2516-W3 bolts. Initially torque bolts to 30 inch-pounds with a speed wrench or torque limiting screw gun. Work from the bottom up.
- Center and install horizontal pressure plates in opening, leaving gaps at the ends as shown.
- Starting at the center of each pressure plate, tighten each retainer bolt to 50 inch-pounds.
- Apply and tool sealant to completely seal gaps at the pressure plate ends.
- Torque all vertical pressure plate bolts to 50 inch-pounds.

See **Detail 43**.

Note: Pressure plate AS-3908 must be used instead of AS-3907 on the perimeter when using perimeter anchors. Mullion end cap, E1-3605, must be installed at jambs when using mullion end anchors: "F" or "J".

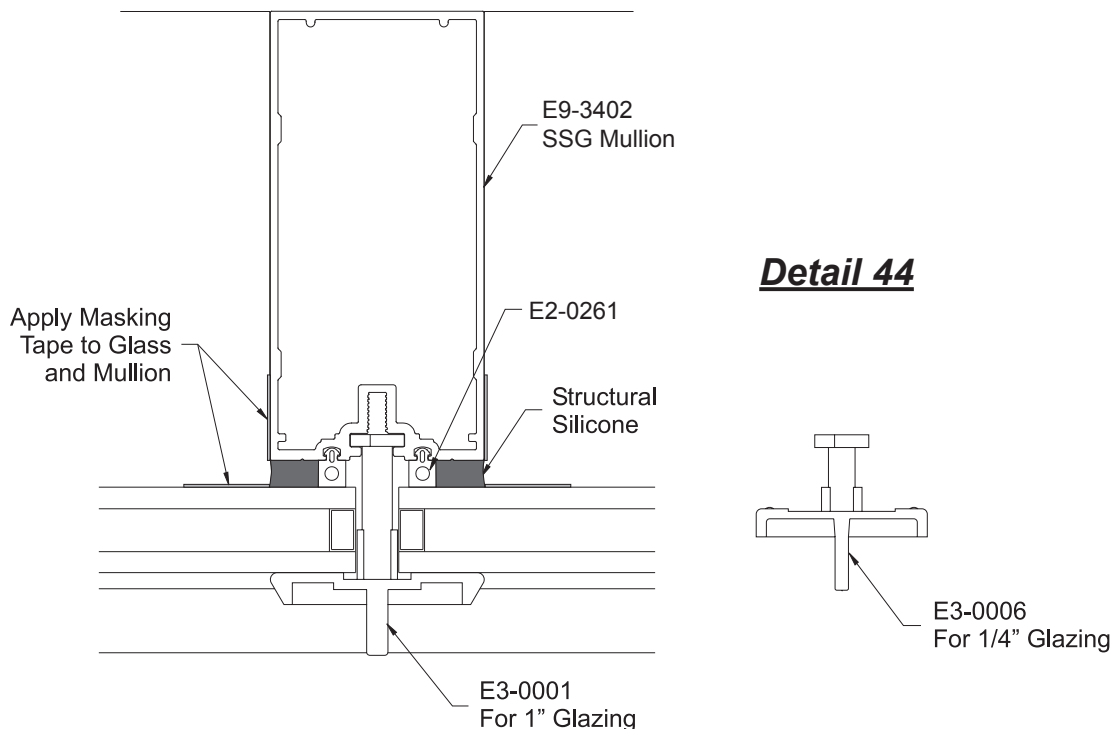
GLAZING

STEP 25

APPLY INTERIOR STRUCTURAL SILICONE SEALANT

- Carefully read and follow sealant manufacturers sealant recommendations.
- Make sure all silicone contact surfaces and joints have been cleaned with cleaner and method recommended by sealant manufacturer.
- Apply masking tape to the mullion and glass as shown in **Detail 44**.
- 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.
See **Detail 44**.

- Allow silicone to cure as per manufacturer's recommendations.
Temporary retainers should be left in place until silicone has cured.



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

GLAZING

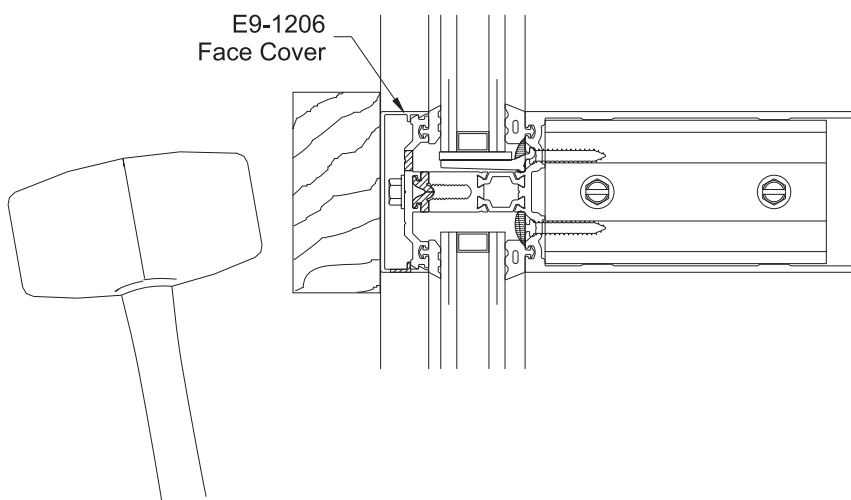
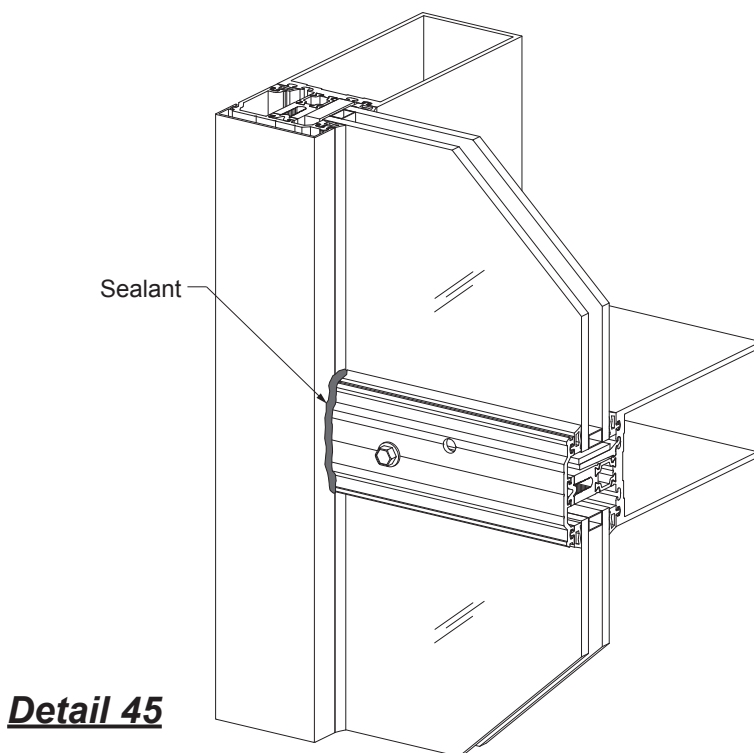
STEP 26

INSTALL EXTERIOR JAMB FACE COVERS

-Snap on exterior jamb face covers using a mallet and clean piece of lumber.
Start at one end. Work block and mallet down the vertical.

-Apply sealant to the joint between the horizontal pressure plate and the jamb face cover.
Make sure all sealant contact surfaces have been cleaned with method recommended by sealant manufacturer.

See **Detail 45**.



GLAZING**STEP 26A****INSTALL EXTERIOR HORIZONTAL FACE COVERS**

-Snap on exterior horizontal face covers using a mallet and clean piece of lumber.
Start at one end. Work block and mallet across the horizontal.

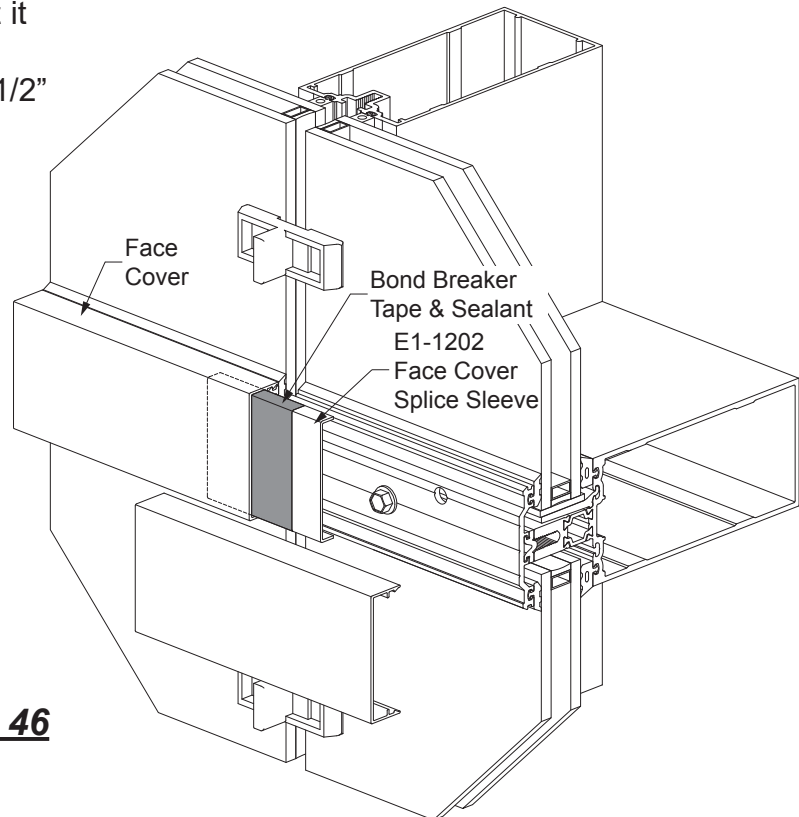
-If horizontal face covers are spliced, apply
bond breaker tape and sealant to the face
of the splice sleeve, E1-1202, and insert it
at the end of the first cover.

-Attach the second face cover leaving a 1/2"
joint between the two covers.

-Seal the joint between the face covers
with sealant.

See **Detail 46**.

Note: Face cover splice joint should
align with the vertical glass joint.



Detail 46

GLAZING

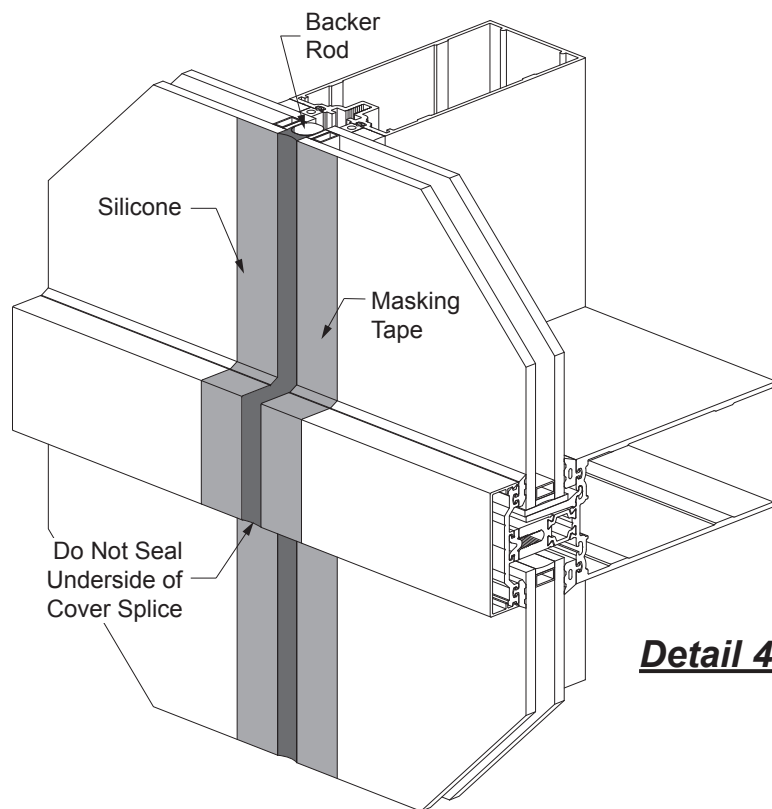
STEP 27

APPLY EXTERIOR WEATHERSEAL

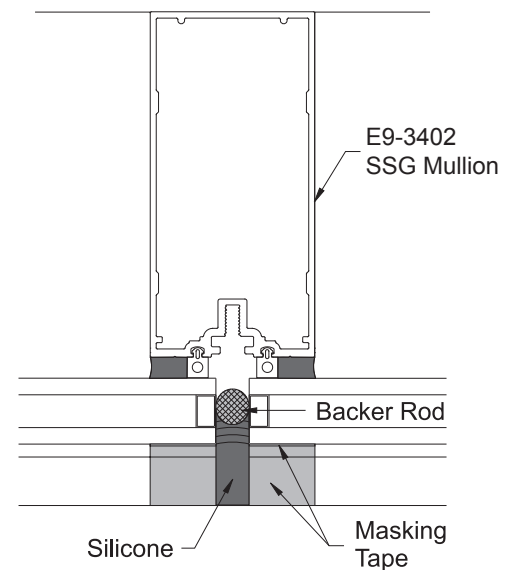
- Once interior structural silicone has cured, remove the temporary retainer clips and insert an approved open cell polyurethane backer rod into the glass joint.
- Clean all silicone contact surfaces and joints with cleaner and method recommended by sealant manufacturer.
- Apply masking tape to the edges of the glass and aluminum as shown in **Detail 47**.
- Apply silicone sealant into the cavity between the mullion and glass starting from the bottom and work towards the top. Use positive pressure so that the silicone sealant completely fills the cavity.

Note: The underside of face cover splices are left unsealed to allow for weepage.

- Using a spatula or other non-scratching implement, tool the silicone sealant immediately after running the joint. Exert positive pressure while tooling to ensure that the silicone sealant makes complete contact with all surfaces. Be careful not to remove too much silicone.



Detail 47



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



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