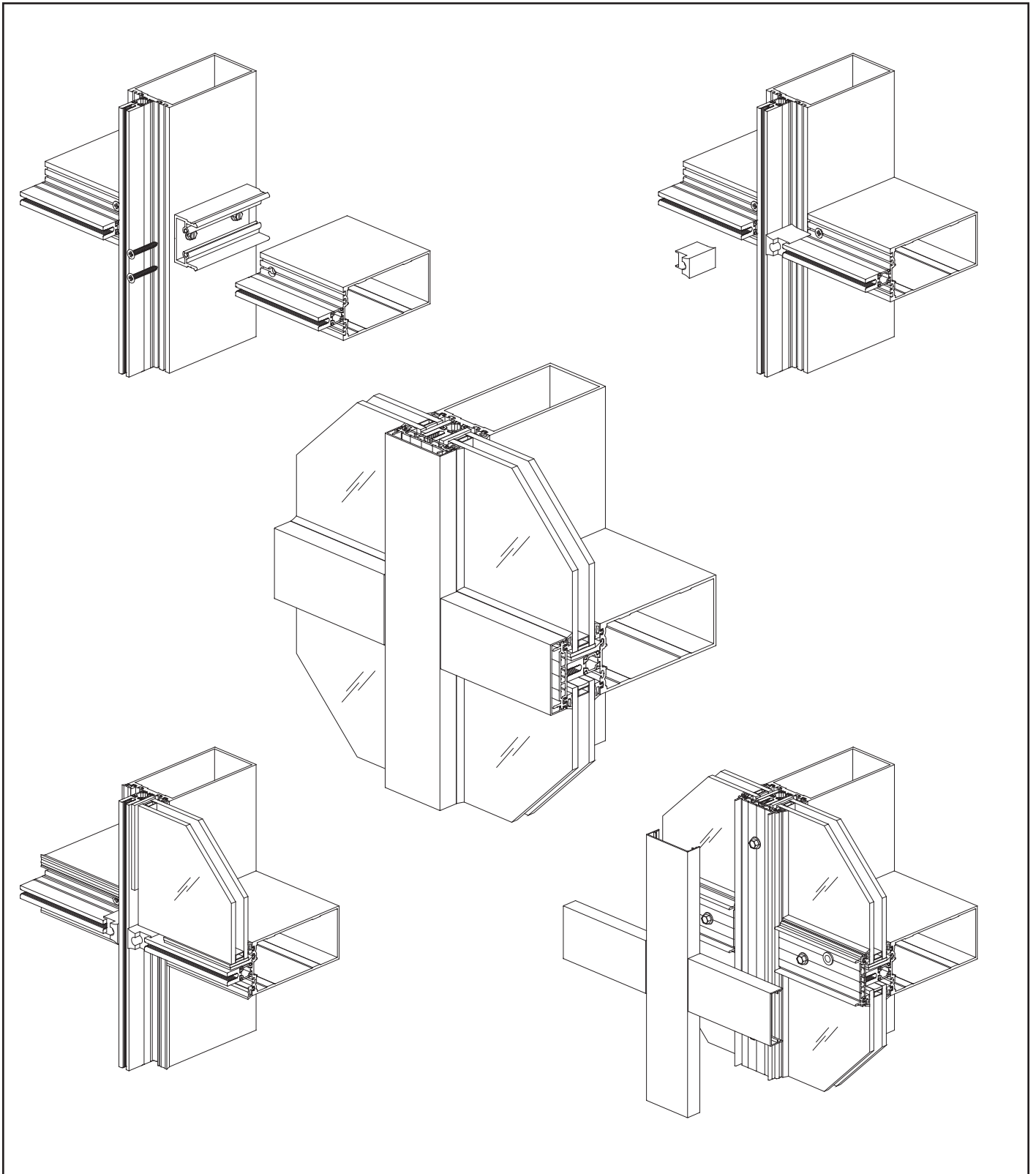


YCW 750 XTP High Performance Curtain Wall System



Installation Manual

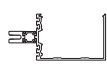

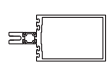


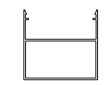

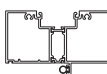
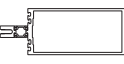
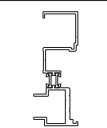



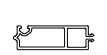






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Installation Notes


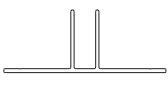





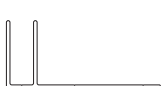
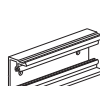


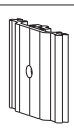










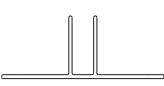

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used, be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact 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. Please contact the YKK AP DirecTech application engineering department for any project specific condition not covered by these instructions.
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 (1" GLAZING)






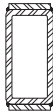




	Horizontal 2-1/2" x 3-3/4"	BE9-3948		Polyamide Pressure Plate For 1" Glazing	AS-3617
	Jamb / Mullion / Horizontal 2-1/2" x 3-3/4"	BE9-3942		Face Cover 2-1/2" x 3/4"	E9-1206
	Horizontal 2-1/2" x 5-1/4"	BE9-3910		Face Cover 2-1/2" x 2-3/8"	E9-1219
	Head / Sill / Horizontal 2-1/2" x 5-1/4"	BE9-3904		Single Acting Transom Bar Elastomer Weathering E2-0051 Included	AS-1532
	Jamb / Mullion / Horizontal 2-1/2" x 5-1/4"	BE9-3901		Door Jamb Use with BE9-1533	BE9-3650
	Head / Sill / Horizontal 2-1/2" x 6-3/4"	BE9-3914		Glazing Adaptor For 1/4" Glazing	E9-1220
	Jamb / Mullion / Horizontal 2-1/2" x 6-3/4"	BE9-3916		PVC Perimeter Filler For 1" Glazing	E3-3665
	Flush Filler Use With BE9-3948	E9-3595		Door Stop Elastomer Weathering E2-0051 Included Use with BE9-3650	AS-1533
	Flush Filler Use With BE9-3904	E9-3162		Perimeter Anchor	E9-1223
	Flush Filler Use With BE9-3914	E9-8489		Perimeter Channel	E9-1231

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


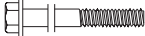

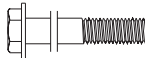

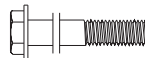













ACCESSORIES (1" GLAZING)

	"J" Anchor For 3-3/4" Depth Members Use (2) FC-1220 & Req. Fasteners	E1-3501		Intermediate Vertical "T" End Anchor* For BE9-3901	E1-1222
	"J" Anchor For 5-1/4" Depth Members Use (2) FC-1220 & Req. Fasteners	E1-3502		Intermediate Vertical "T" End Anchor* For BE9-3916	E1-3601
	Standard Shear Block For 3-3/4" Depth Members Use (2) HF-2510-W1 & (2) FC-1220	E1-3503		Jamb "F" End Anchor* For BE9-3942	E1-1235
	Standard Shear Block For 5-1/4" Depth Members Use (2) HF-2510-W1 & (2) FC-1220	E1-3504		Jamb "F" End Anchor* For BE9-3901	E1-1234
	Standard Shear Block For 6-3/4" Depth Members Use (2) HF-2510-W1 & (2) FC-1220	E1-3506		Jamb "F" End Anchor* For BE9-3916	E1-3602
	Setting Block Chair	E1-3603		Temporary Glass Retainer 2" Long	E1-3612
	Mullion Joint Sleeve For BE9-3942	E1-1211		Setting Block For 1" Glazing	E2-0513
	Mullion Joint Sleeve For BE9-3901	E1-1210		Setting Block For 1/4" Glazing	E2-0192
	Mullion Joint Sleeve For BE9-3916	E1-1365		Side Block With pressure sensitive adhesive	E2-0133
	Face Cover Splice Sleeve For E9-1206 Face Cover	E1-1202		Standard Joint Plug For 1" Glazing	E2-0102
	Standard Mullion End Cap 2-1/2" x 2-3/8" x 0.050"	E1-3605		Structural Tape	E2-0679
	Intermediate Vertical "T" End Anchor* For BE9-3942	E1-1223		Nylon Slip Pad For Wind Load & Dead Load Anchor	E3-0103

ACCESSORIES (1" GLAZING)

	Wind Load Anchor* Refer to Shop Drawings For Anchor Dimensions	E1-1204		Isolator Tape Use with Polyamide Pressure Plate	E2-0356
	Dead Load Anchor* Refer to Shop Drawings For Anchor Dimensions	E1-1205		Steel Reinforcing 2" x 4" x 1/4" Steel Tube For BE9-3901 & BE9-3916	E1-0162
	Interior/Exterior Glazing Gasket	E2-0120		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
	Sill Flashing Gasket	E2-0241		Jamb Anchor Plate 3" x 6" x 5/16" Thk.	E1-3536
	Weep Hole Tube	E3-3125		Drill Fixture	H-7210

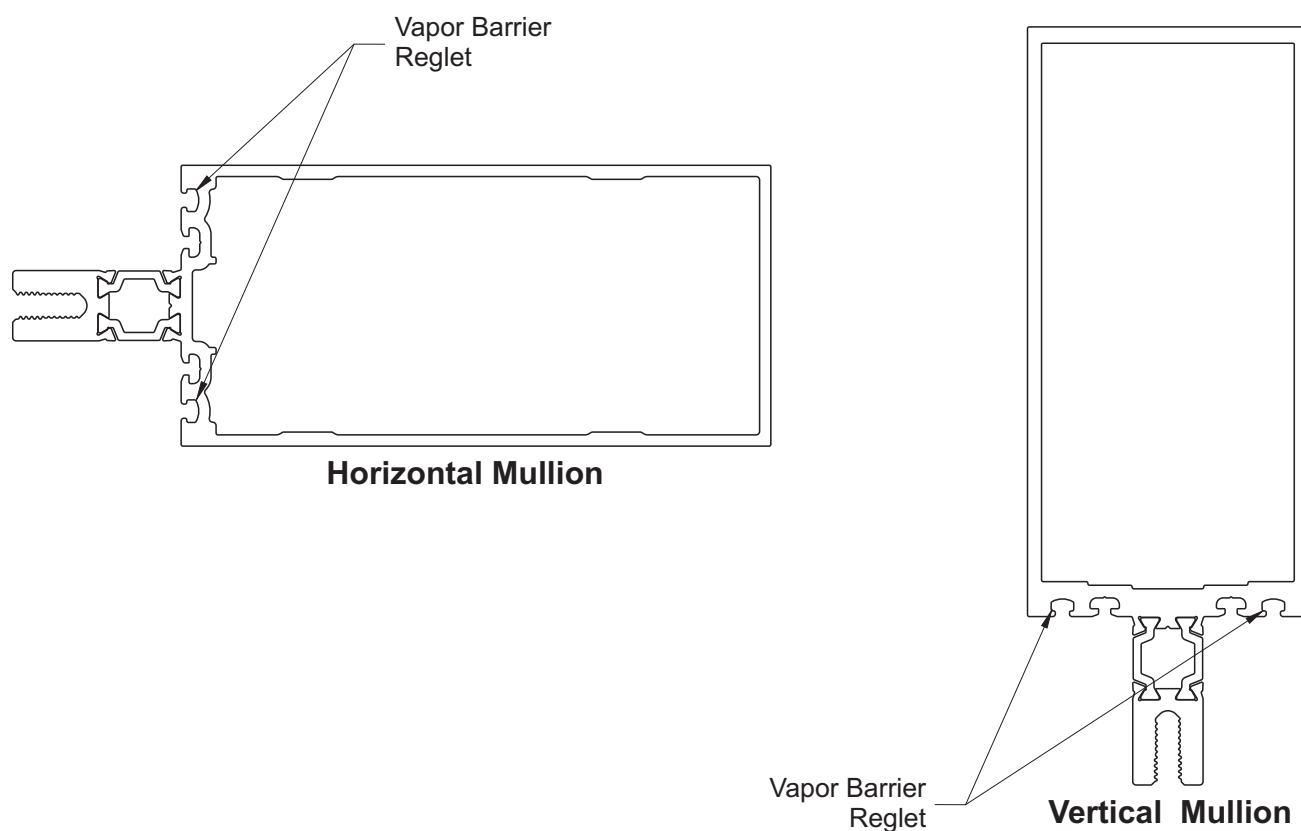
FASTENERS

	#8 x 1/2" FHSMS Type AB Stainless Steel For Attachment of Deep Face Cover at Exposed Area	FC-0808-SS		1/4"-20 x 3-1/2" HWHMS Zinc Plated Steel For Attachment of "J" Anchor at Intermediate Vertical	HM-2556-W3
	#12 x 3/4" FHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Corner Shear Block	FC-1212		1/2"-13 x 2" HWHMS Zinc Plated Steel, For Attachment of Windload/Deadload Anchor at Jamb	HM-5032
	#12 x 1-1/4" FHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Shear Block	FC-1220		1/2"-13 x 4-1/2" HWHMS Zinc Plated Steel, For Attachment of Windload/Deadload Anchor at Mullion	HM-5072
	#14 x 5/8" FHSMS Type AB Zinc Plated Steel For Attachment of Mullion End Caps	FC-1410		1/2"-13 Nut HHMS Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	HM-5000
	#8 x 5/8" PHSMS Type AB Zinc Plated Steel For Attachment of Glazing Adaptor E9-1220	PC-0810		1/4"-20 Nut HHMS Zinc Plated Steel For Attachment of "J" Anchor	HM-2500
	#8 x 1/2" PHSMS Type F Stainless Steel For Attachment of Splice Sleeve Face Covers	PF-0808-SS		1/4" Flat Washer Zinc Plated Steel For Attachment of "J" Anchor	WW-2500
	1/4"-20 x 5/8" HWHS Type F Zinc Plated Steel For Attachment of Standard Shear Block to Vertical	HF-2510-W1		1/2" Flat Washer Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	WW-5000
	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		1/2" Lock Washer Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	WS-5000
	1/4"-20 x 1" HWHMS Type CA Zinc Plated Steel For Attachment of Pressure Plate to Mullion	HD-2516-W3		1/4" Lock Washer Zinc Plated Steel For Attachment of "J" Anchor	WS-2500
	1/4"-20 x 1-1/4" HWHMS Zinc Plated Steel, For Attachment of 90° Outside Corner Adaptor to Vertical	HM-2520-W3			

VAPOR BARRIER

ATTACHING VAPOR BARRIER TO YCW 750 XT

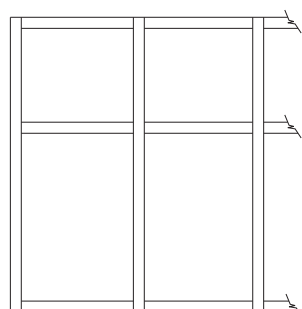
Vapor barriers can be installed to both mullions and horizontals by means of vapor barrier reglets, see image below. Please follow the vapor barrier manufacturer's installation instructions for correct installation of the vapor barrier.



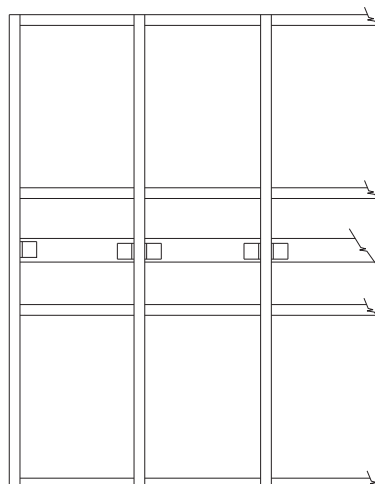
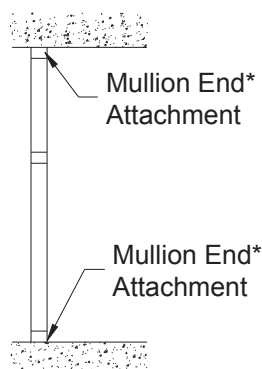
FRAME FABRICATION

FRAME TYPES / ANCHORING METHODS

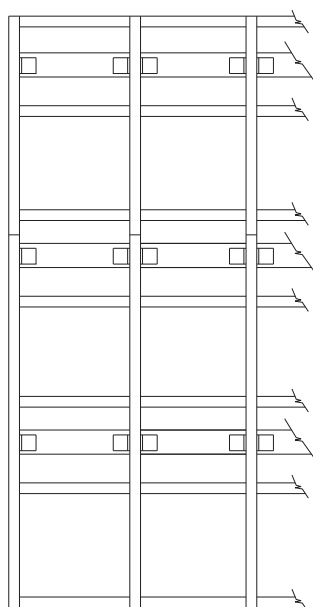
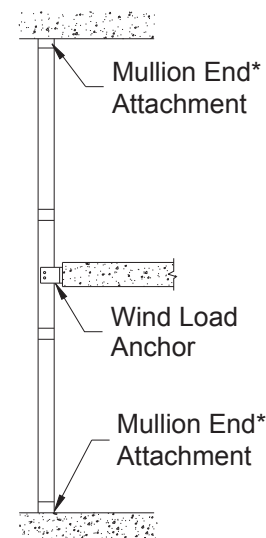
The following is a guideline for common types of frames. Refer to shop drawings for exact layout of frames.



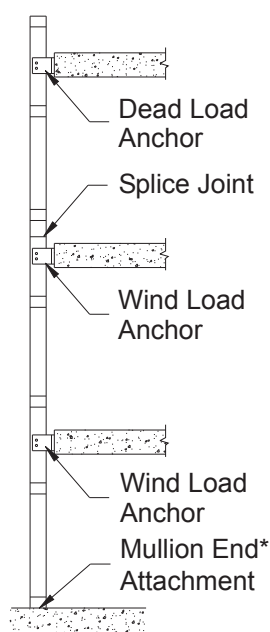
SINGLE SPAN



TWIN SPAN



MULTI-SPAN



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, their arrangement, and mullion selection.

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

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

Fabrication of YCW 750 XT varies depending on the type of mullion 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 for 1" infill applications only.

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

"T" & "F" Anchors are for high load conditions: E1-1207, E1-1208, E1-1209, E1-1231, E1-1232, E1-1233, E1-1238, & E1-1240 (for 1" infill applications only).

FRAME FABRICATION

FRAME TYPES / ANCHORING METHODS

Using Perimeter Anchors:

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

Using Mullion End Anchors:

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

- "J" anchors are used with jambs and intermediate mullions at the sill only.
- "T" anchors are used with intermediate mullions 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.

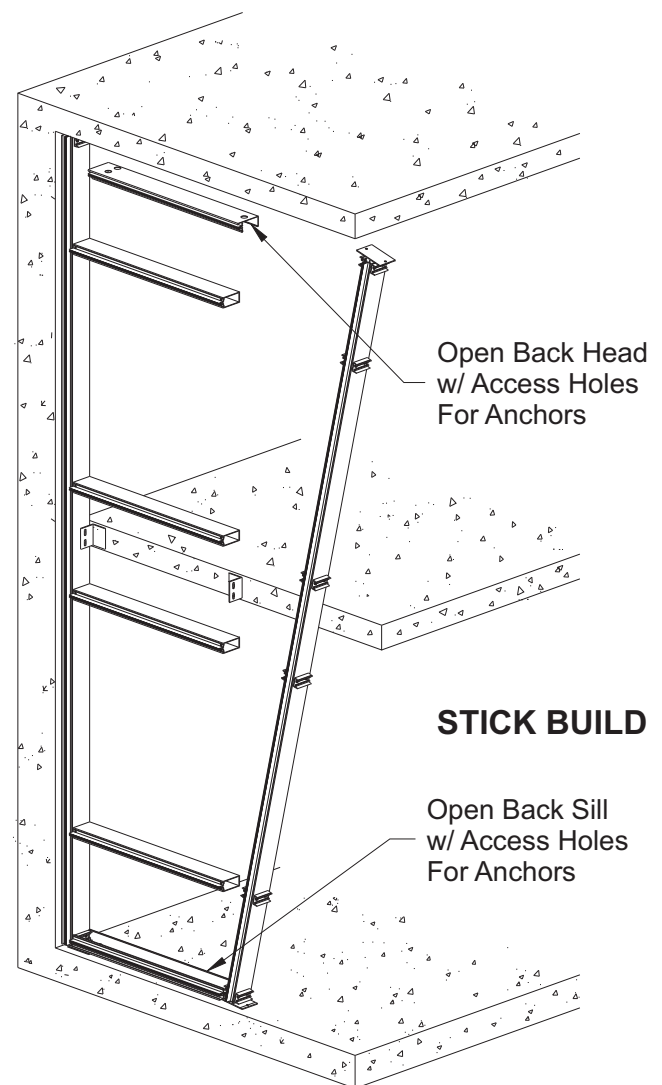
Mullions should be pre-assembled with shear blocks/clips, end anchors, and steel or aluminum reinforcing if necessary.

End anchors should be pre-drilled for anchor fasteners according to approved shop drawings or engineering calculations.

Framing Members for Stick Build:

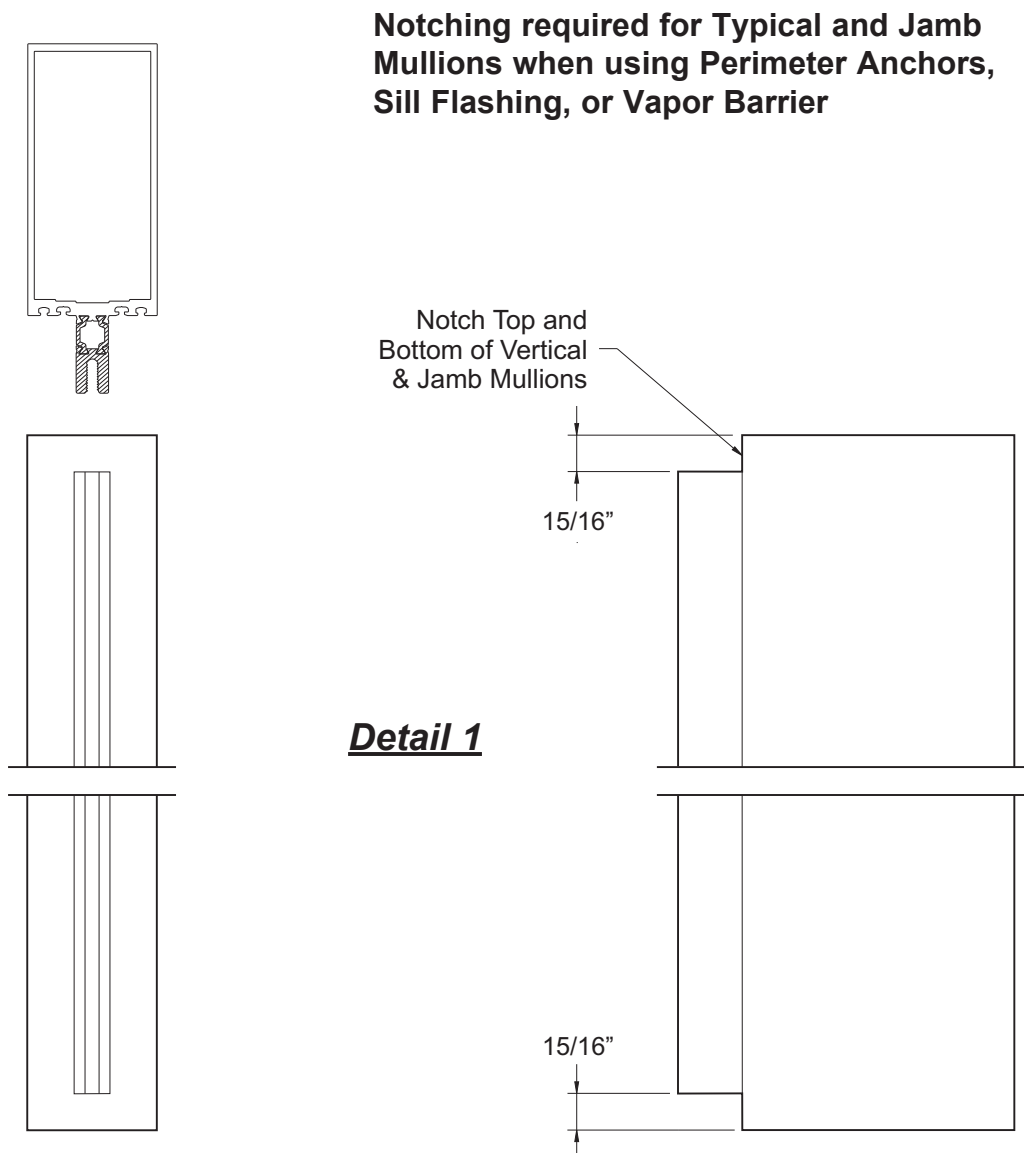
- Open back head and sill members provide easy access to end anchor fasteners.
- Closed horizontal members are used at all intermediate locations except at end bays.
- Open back intermediate horizontals are used at end bays to clear the shear blocks.

Note: When using stick build construction, check overall frame width every fifth mullion as the wall is installed. A buildup of cumulative tolerance errors may occur, resulting in excessive DLO spacing.



FRAME FABRICATION

FABRICATE MULLIONS



Step 1

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

Step 2

-When using continuous perimeter anchor E9-1223, the top and bottom of the typical and jamb mullion members must be notched as shown in **Detail 1**.

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

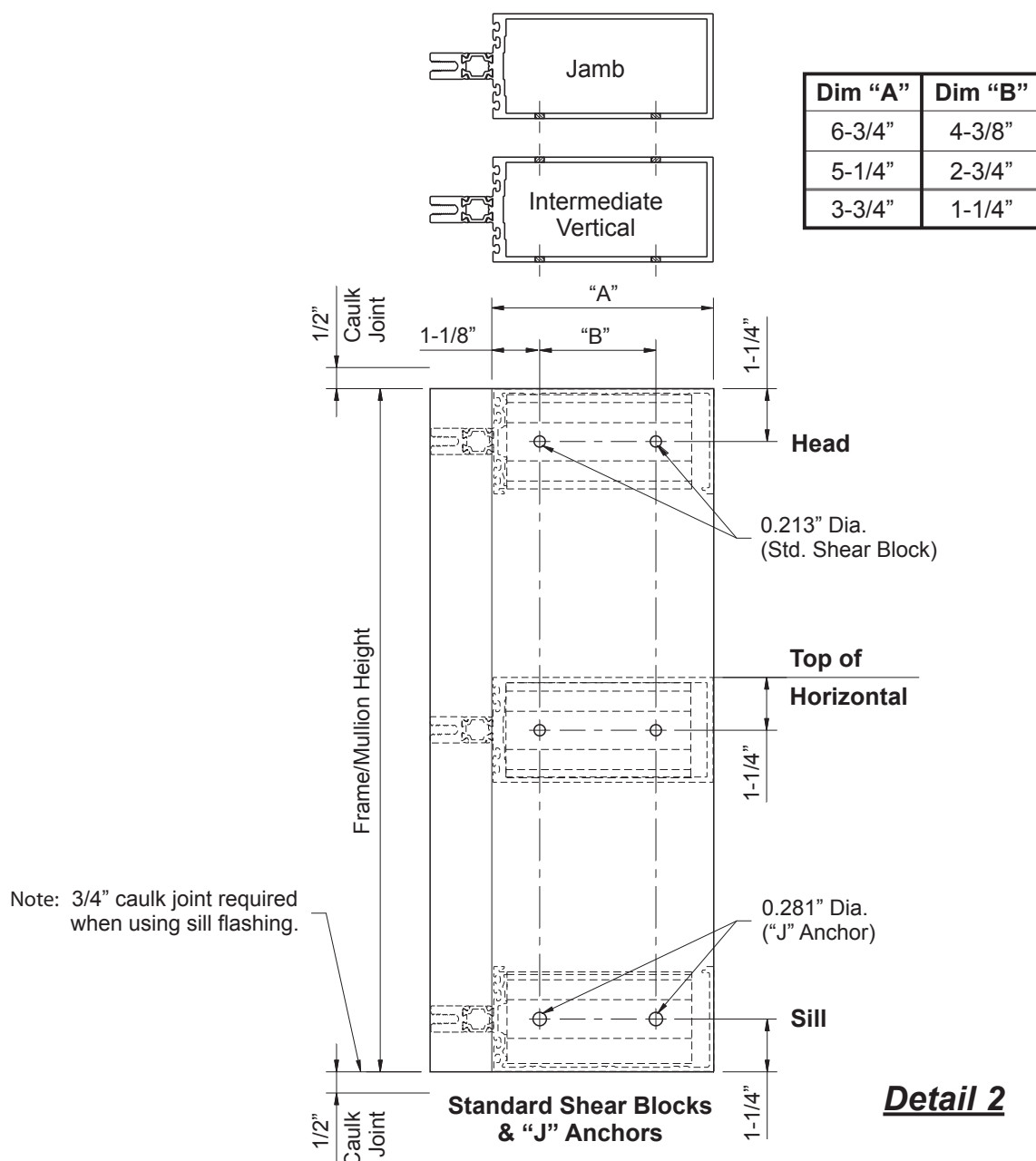
FRAME FABRICATION

STEP 3

FABRICATE MULLIONS

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

See **Detail 2**.



FRAME FABRICATION

STEP 4 (Optional) USING STEEL REINFORCING

When engineering calculations require the mullions to be reinforced with steel, secure the reinforcing to the mullion using the appropriate fasteners.

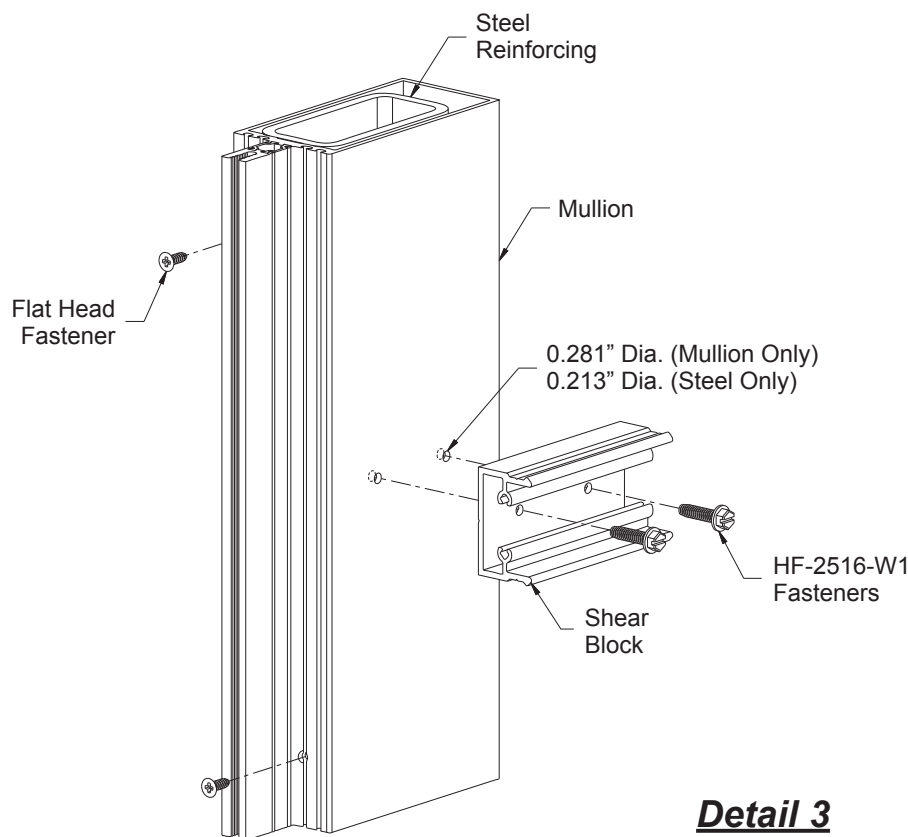
- Start 3" from both ends of the mullion and install a fastener on both sides of the mullion tongue.
- Stagger the fasteners on either side of the tongue going up the mullion.
- Seal all screw heads with sealant.

Note: Exact size of reinforcing, size and location of fasteners to be determined by a qualified engineer.

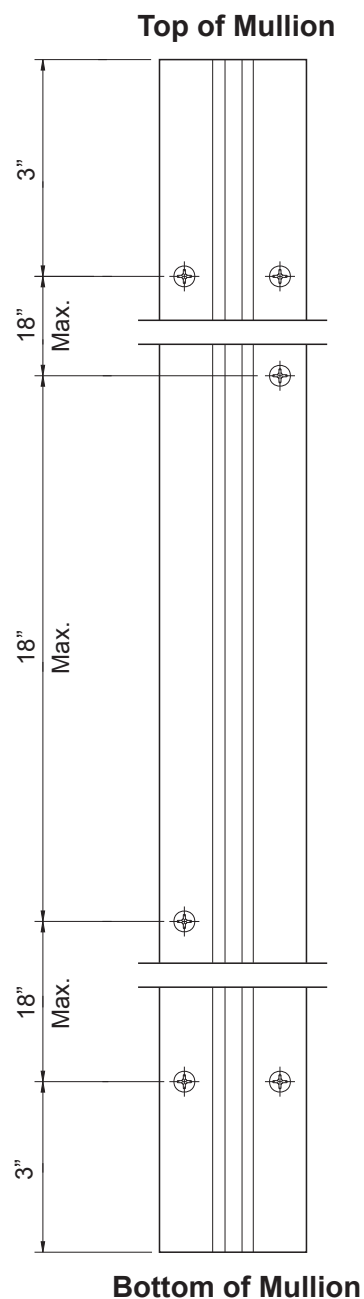
Steel reinforcing is also attached on the sides of the mullion with the attachment of shear blocks.

- Drill 0.281" dia. (9/32 bit) clear holes in the mullion only.
- Match drill 0.213 dia. (#3 bit) tap holes in the reinforcing only.
- Attach the shear blocks with HF-2516-W1 fasteners.

See **Detail 3**.



Detail 3



FRAME FABRICATION

STEP 5

ATTACH SHEAR BLOCKS/CLIPS FOR HORIZONTALS

Standard shear blocks are used to attach horizontal members to the jambs and mullions.

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

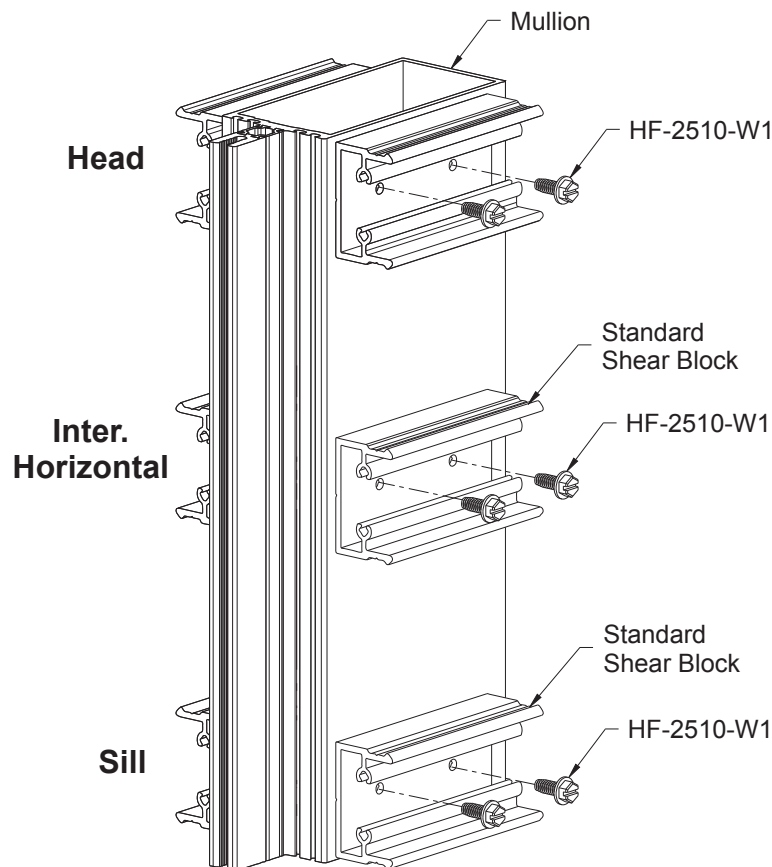
E1-3504 for 5-1/4" back members.

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

-Attach shear blocks to jambs and mullions with (2) HF-2510-W1 fasteners per block.

See **Detail 4**.

Note: Do not attach standard shear blocks at the head and sill for end bays at this time.
See **Step 15** on **Page 27** for head and sill end bay attachment.



Detail 4

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 Jamb:

-Align the “J” anchor with the mullion and insert the HM-2516-W3 bolts through the inside of the mullion and out the “J” anchor.

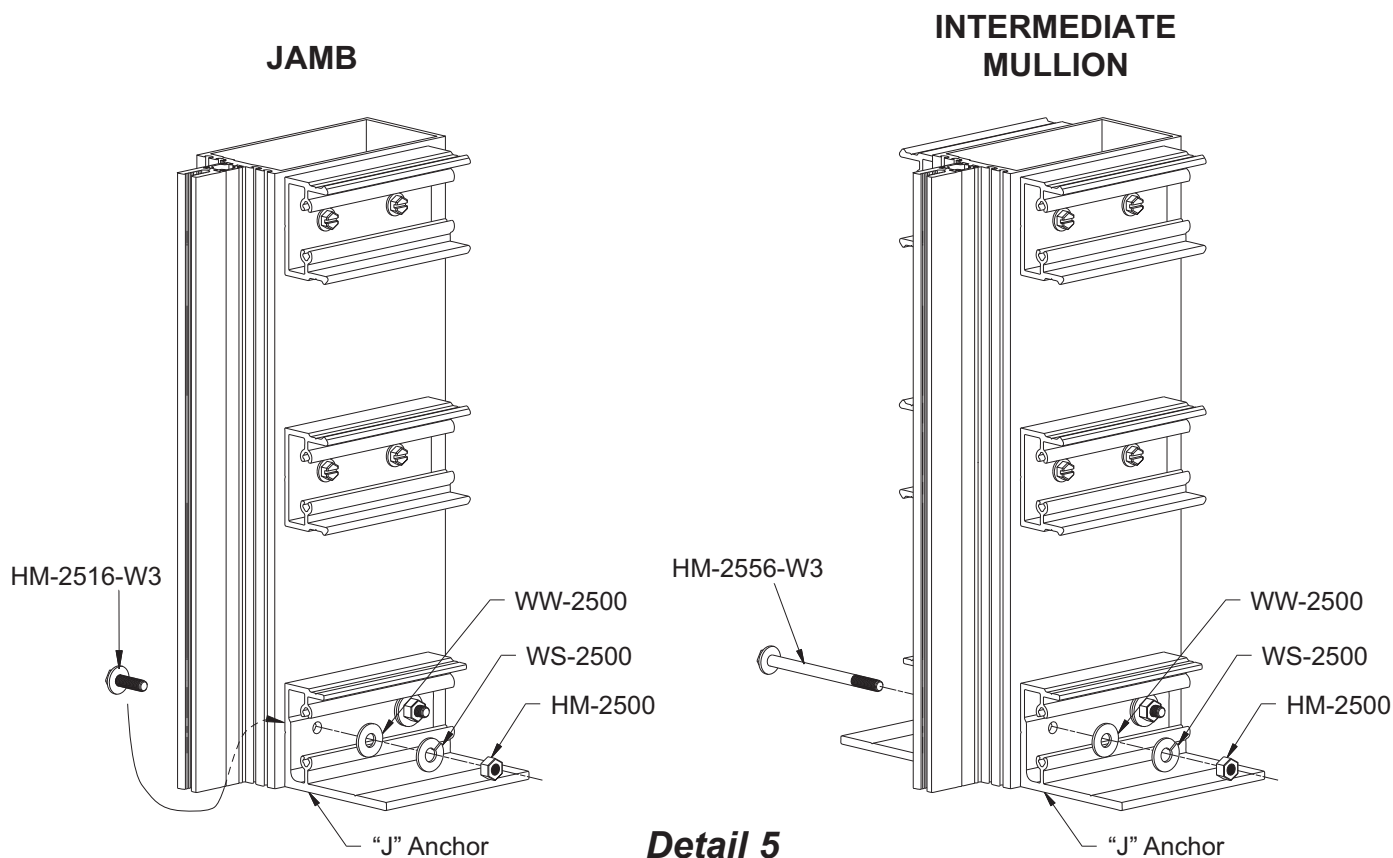
-Install 1/4” flat and lock washers between the anchor and HM-2500 hex nuts.

Attach “J” Anchors at Intermediate Mullions:

-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 5**.



FRAME FABRICATION

STEP 7

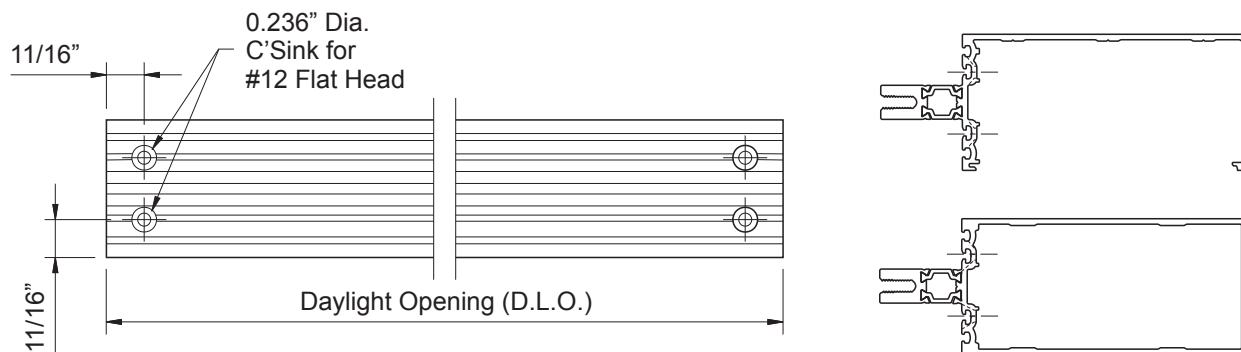
FABRICATE HORIZONTAL MEMBERS

- Cut all horizontal members to the daylight opening as shown in shop drawings.
- Cut all horizontal flush fillers to the daylight opening minus(-) 1/32".
- Horizontal members must be fabricated for shear block/clip attachment as follows:

Horizontals with Concealed Fasteners:

- Layout hole locations on the face of the horizontal at both ends as shown below.
- Using drill fixture H-7210, drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners.

See **Detail 6**.

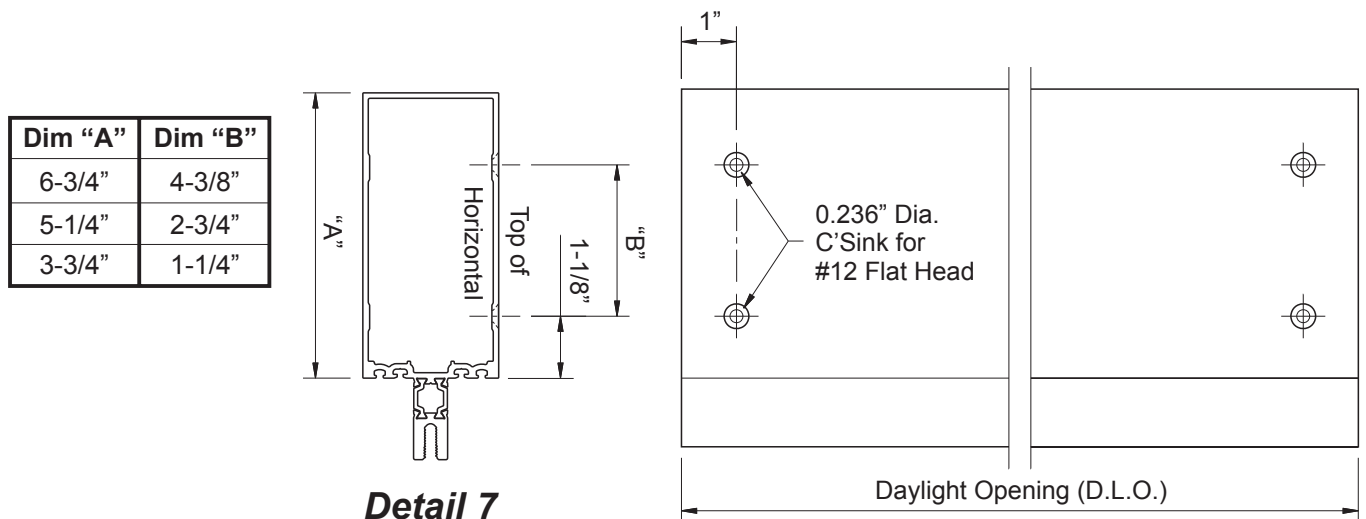


Detail 6

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 7**.



Detail 7

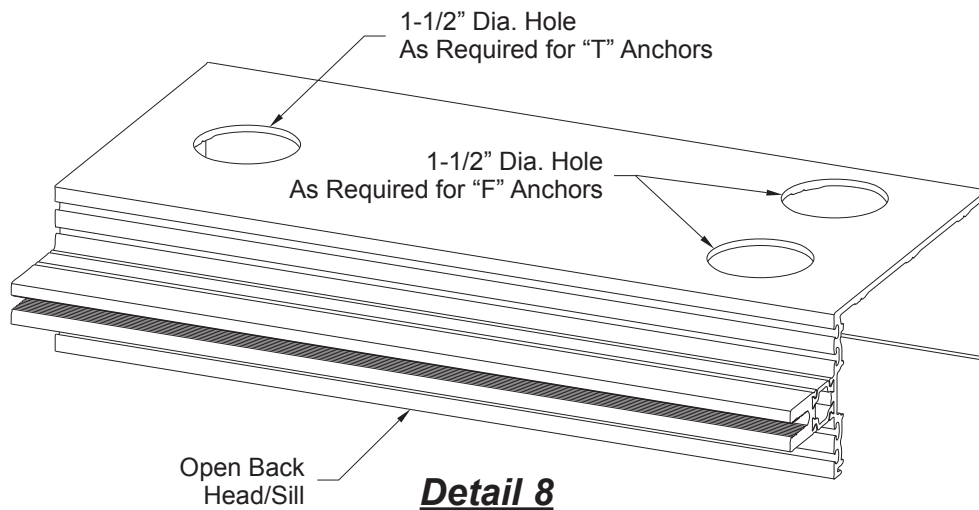
FRAME FABRICATION

STEP 7 (Continued)

FABRICATE HORIZONTAL MEMBERS

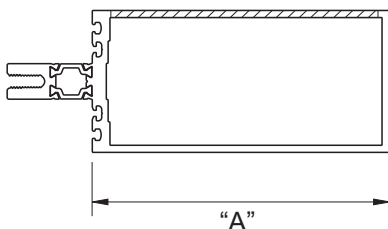
Open Back Head & Sill with "T" & "F" Anchors:

- 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 8**.



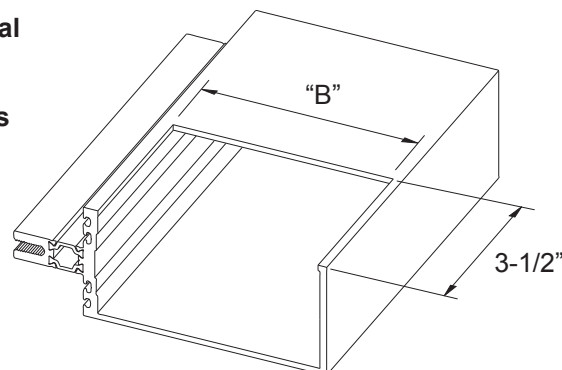
Tubular Head & Sill with "J", "F" & "T" Anchors:

- Tubular head and sill members must be notched at each end to clear mullion end anchors and anchor bolts.
- See **Detail 9** 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 9

FRAME FABRICATION

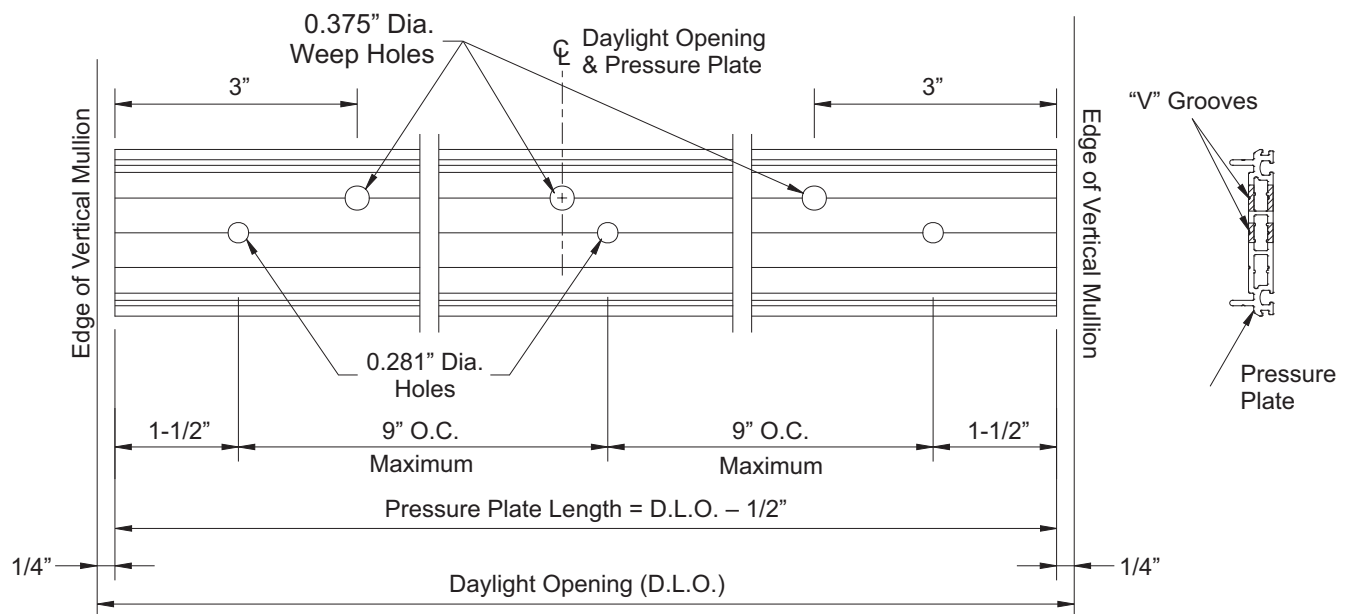
STEP 8

FABRICATE PRESSURE PLATES

Horizontal Polyamide Pressure Plates:

- Cut horizontal pressure plates to the daylight opening between verticals minus(-) 1/2".
- Pressure plate stock lengths have 0.281" dia. attachment holes factory made every 9" on center.
- After cutting, drill additional holes if required to ensure that end holes are 1-1/2" from each end.
- Drill two 0.375" (3/8") diameter weep holes 3" from each end and one at the centerline of the pressure plate.

See **Detail 10a**.

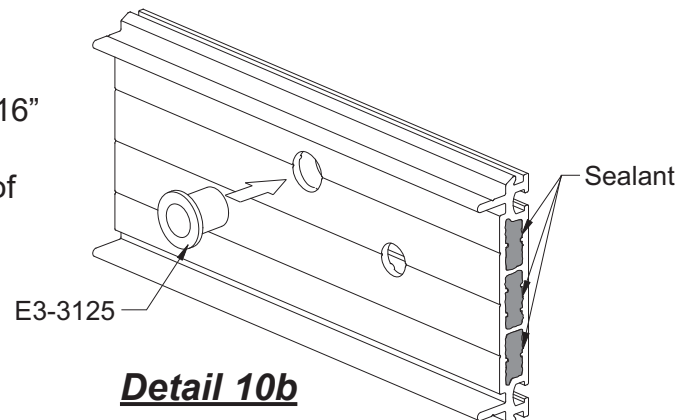


Detail 10a

Horizontal Pressure Plates:

- Horizontal Pressure Plate must have E3-3125 5/16" weep tubes installed at each weep hole location.
- Insert the weep hole tube from the exterior side of the pressure plate until it is flush.
- Apply and tool sealant into both ends of pressure plate hollows.

See **Detail 10b**.



Detail 10b

FRAME FABRICATION

STEP 8 (Continued) FABRICATE PRESSURE PLATES

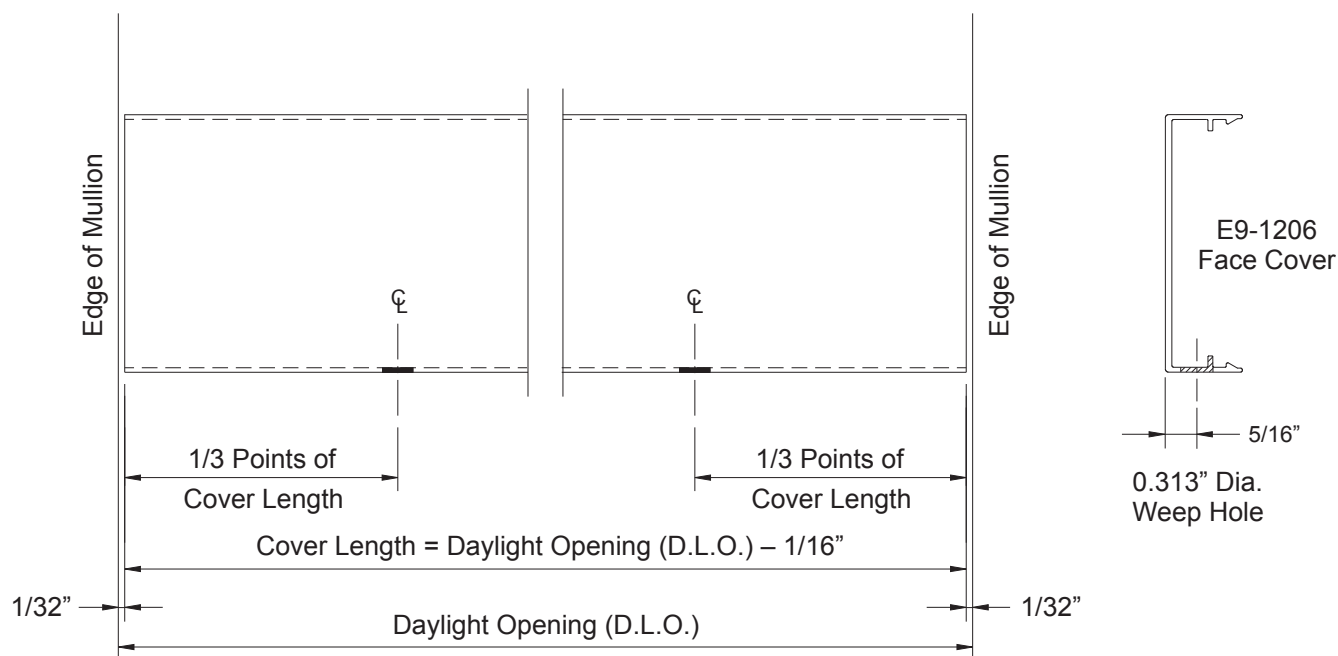
Vertical Pressure Plates:

- Cut mullion and jamb pressure plates to the same length as the mullions.
- If mullions are spliced, cut pressure plates to accommodate for 1/2" expansion joint as shown in **Details 12 & 13** on **Pages 17 & 18**.
- Drill additional attachment holes if required to ensure that end holes are 1-1/2" from each end.

STEP 9 FABRICATE FACE COVERS

Horizontal Face Covers:

- Cut horizontal face covers to the daylight opening between mullions minus(-) 1/16".
 - Drill two 0.313" diameter weep holes at 1/3 points of cover as shown below.
- See **Detail 11**.



Detail 11

Mullion Face Covers:

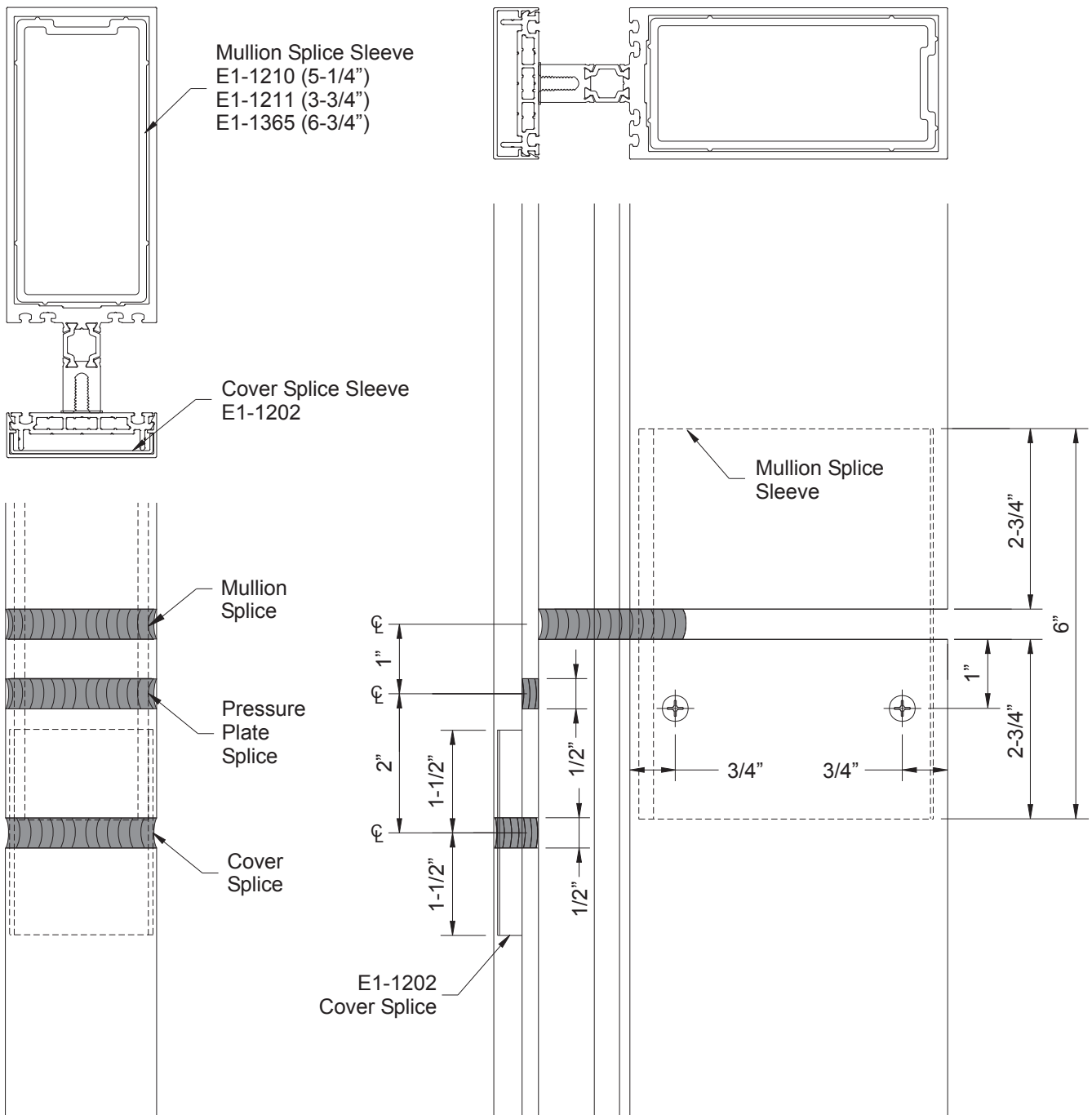
- Cut mullion face covers to the same length as the mullions unless the verticals are spliced.
- If mullions are spliced, cut mullion face covers to accommodate for the 1/2" expansion joint as shown in **Step 11**.

FRAME INSTALLATION

STEP 10

TYPICAL VERTICAL SPLICE

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



Detail 12

FRAME INSTALLATION

STEP 10 (Continued) TYPICAL VERTICAL 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 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 sealant to the face of splice sleeve on the upper half and carefully slide the upper mullion down onto the splice sleeve. Place a 1/2" temporary shim between the mullions to 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.

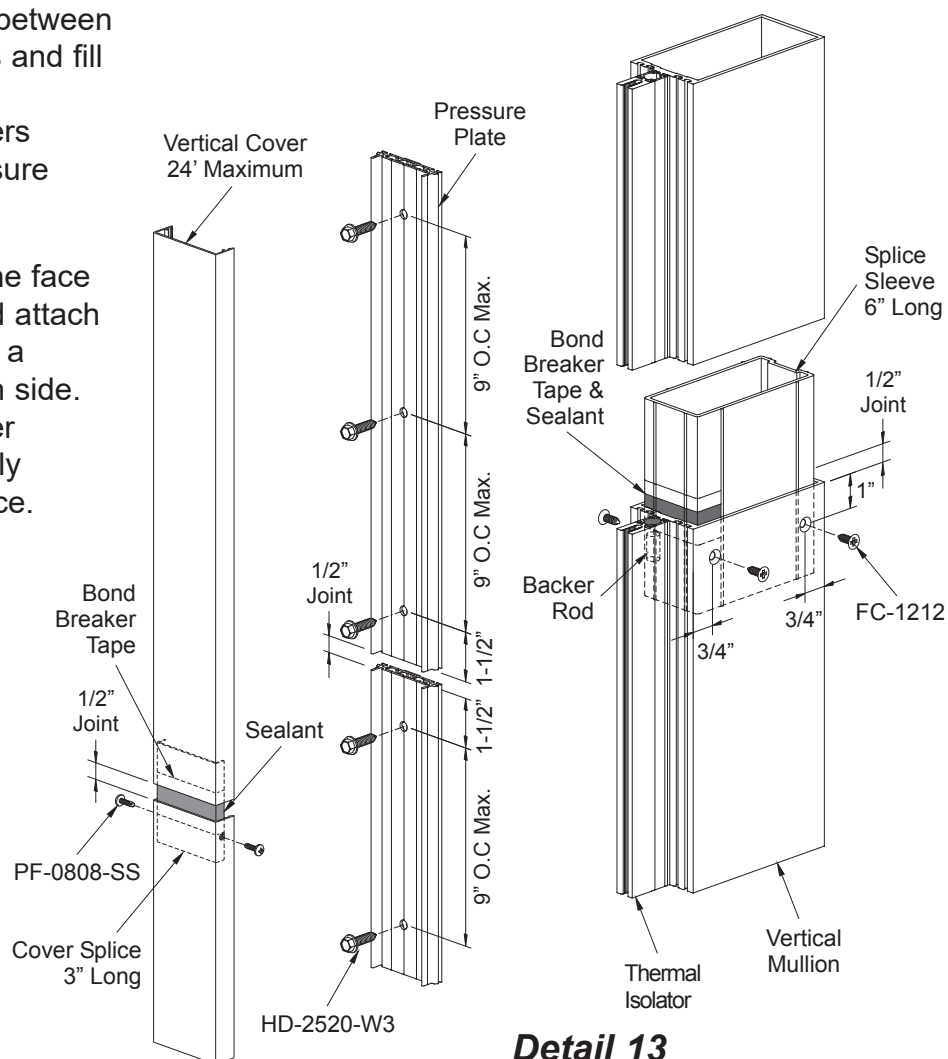
- Leave a 1/2" expansion joint between vertical pressure plate splices and fill the joint with sealant.

- 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 12 & 13.**

Note: Face covers, pressure plates, and mullions are staggered at splice locations.

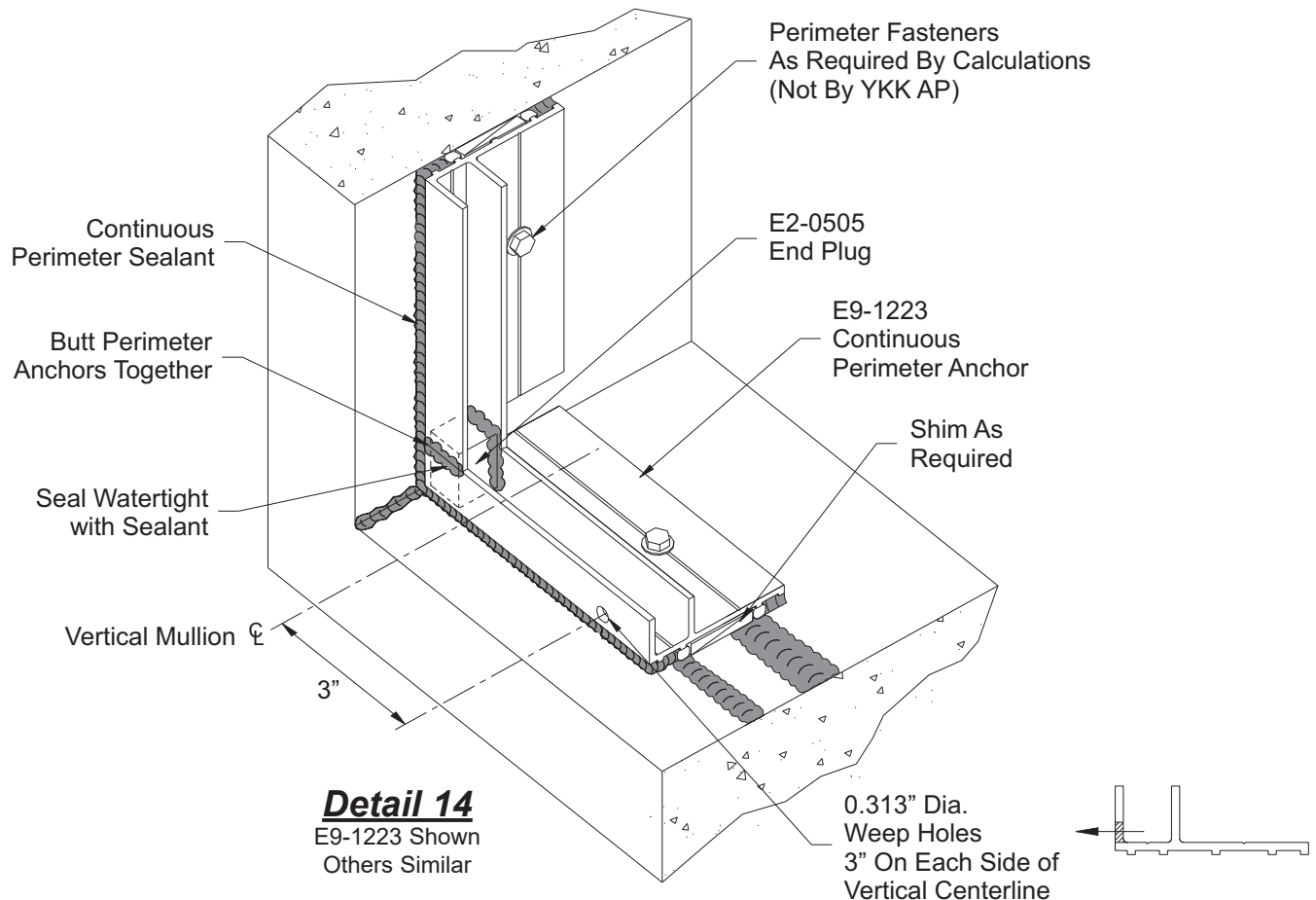


Detail 13

FRAME INSTALLATION

STEP 11 (When Required)

INSTALL CONTINUOUS PERIMETER ANCHOR (1" INFILL ONLY)



-Cut perimeter anchors to size:

Head and sill anchors stop 1/8" short of the structure.

Vertical jamb anchors butt in between head and sill anchors.

-Prepare structure for anchor attachment.

-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 sealant 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 14**.

FRAME INSTALLATION

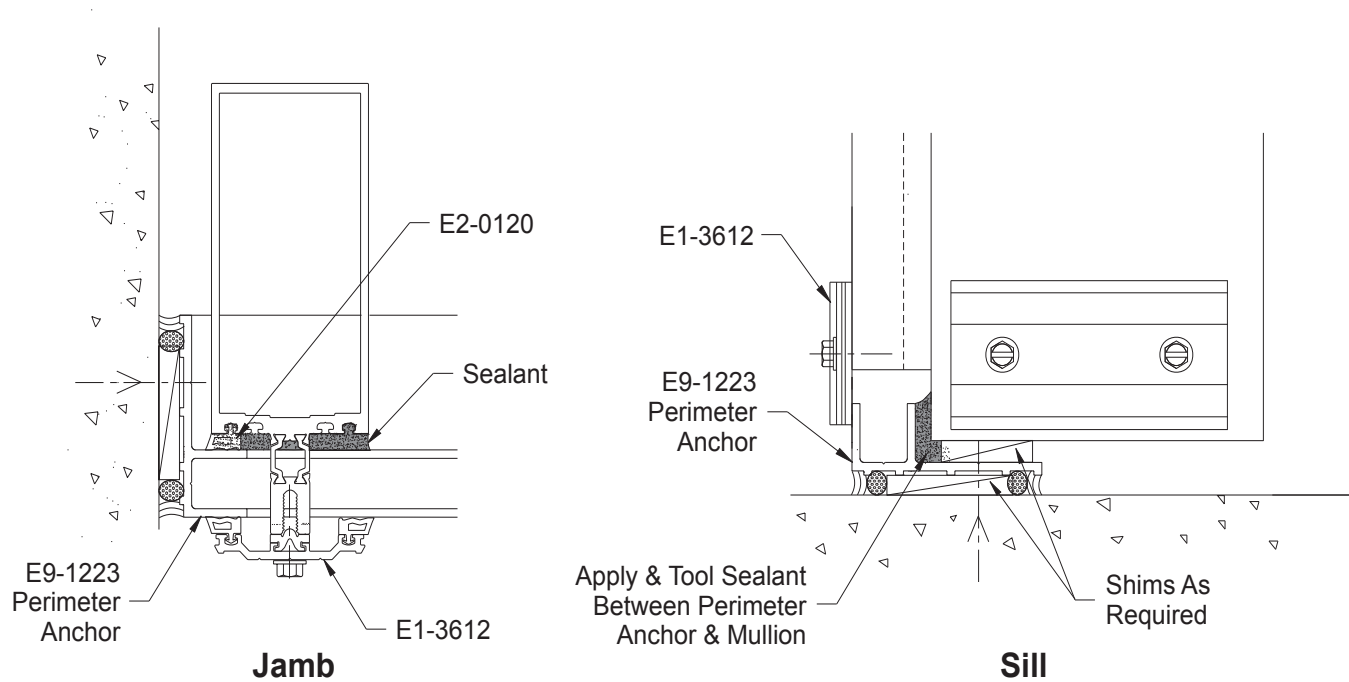
STEP 12 (When Required)

JAMB/VERTICAL INSTALLATION

WITH PERIMETER ANCHORS (1" INFILL ONLY)

- Install interior gasket, E2-0120, to jamb mullion (jamb side only) the full length of the mullion.
- Position jamb into opening as shown below.
- Seal the gap between the perimeter anchor and mullion glazing pocket(s) with sealant (one side for jambs – both sides for intermediate mullions).
- Install temporary retainer clip, E1-1294, at the top and bottom of the mullion.
- Repeat this step for all jamb and mullion members.

See **Detail 15**.



Detail 15

E9-1223 Shown
Others Similar

Sill Shown
Head Similar

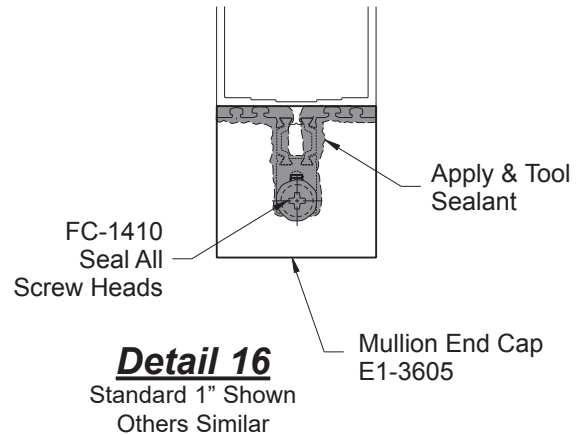
FRAME INSTALLATION

STEP 13

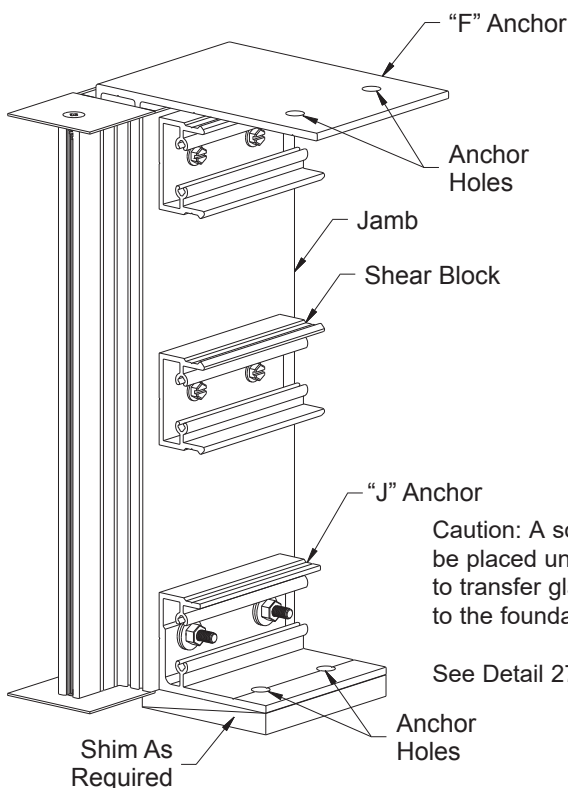
JAMB/VERTICAL INSTALLATION WITH MULLION END ANCHORS

- Clean all contact surfaces as recommended by sealant manufacturer.
- Apply sealant into the screw raceway and along the front edge of the mullion at each end.
- Prior to erecting mullions, install mullion end caps at the top and bottom of all intermediate mullions and jambs with FC-1410 fasteners.
- Seal all screw heads with sealant.

See **Detail 16**.

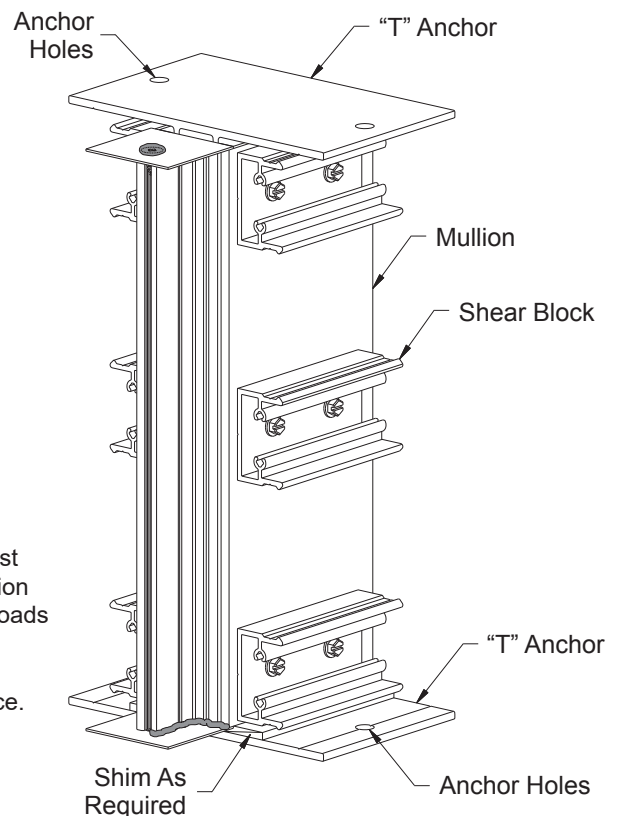


- Insert mullion “T” and “F” anchors into the top and bottom of the mullions before erecting them into the opening.
 - Erect and locate the jamb and mullions and temporarily attach them to the structure. All mullions must be installed plumb and true.
 - Drill through the pre-drilled holes in “T”, “F” and “J” anchors into the structure for the appropriate anchor fasteners according to approved shop drawings or engineering calculations.
- See **Detail 17**.



JAMB

Detail 17



MULLION

FRAME INSTALLATION

STEP 14A

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 19**.

-Clean all contact surfaces as recommended by sealant manufacturer.

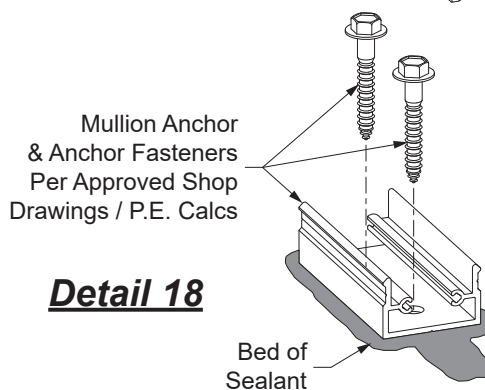
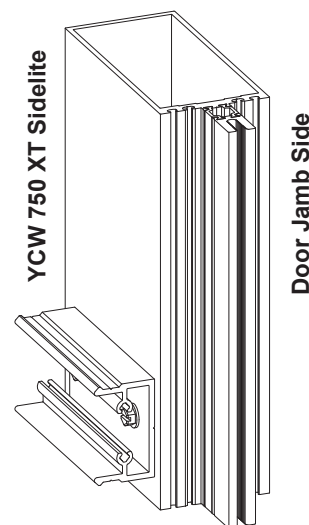
-Set the mullion on the anchor, directly onto the sill substrate in a bed of sealant. Avoid using shims at this location.

See **Detail 18**.

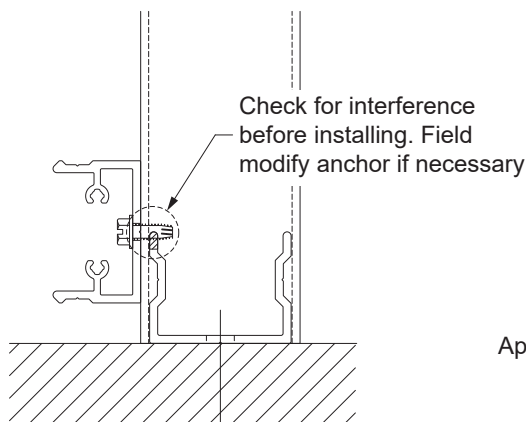
-Refer to the approved shop drawings for any additional fasteners required.

-Tool sealant at the bottom of the mullion at the sill substrate around the perimeter of the mullion.

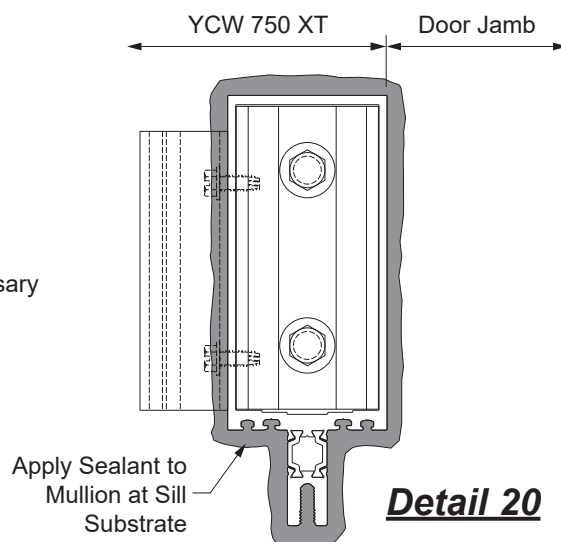
See **Detail 20**.



Detail 18



Detail 19



Detail 20

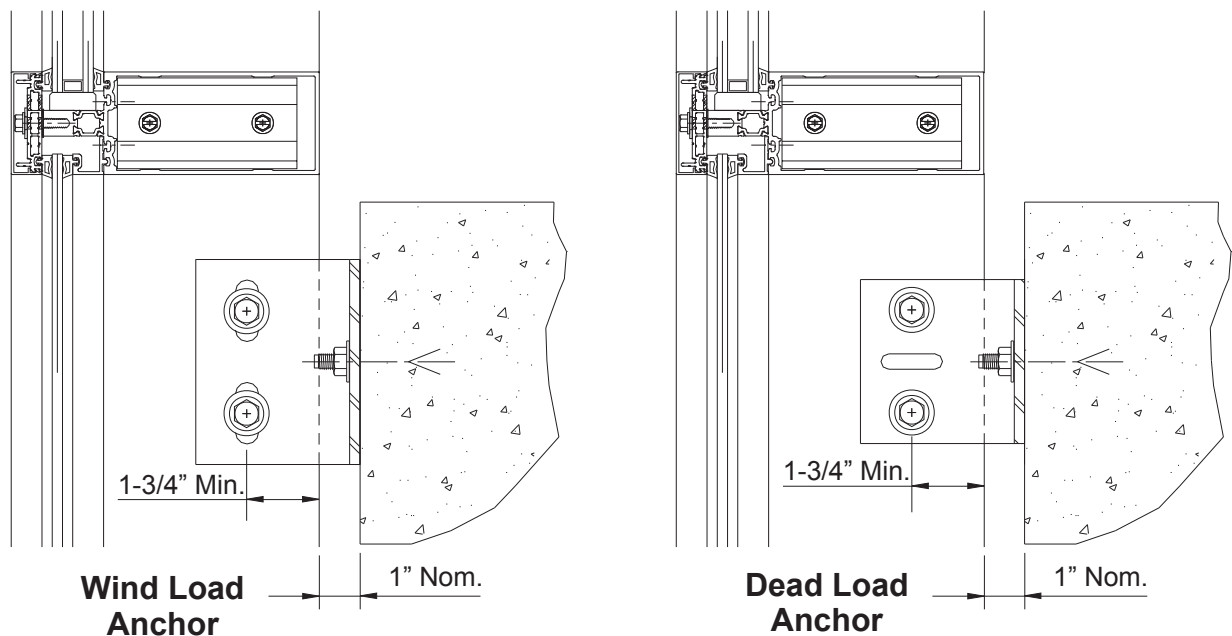
FRAME INSTALLATION

STEP 14

INSTALL WIND LOAD/DEAD LOAD ANCHORS

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

See **Detail 21**.

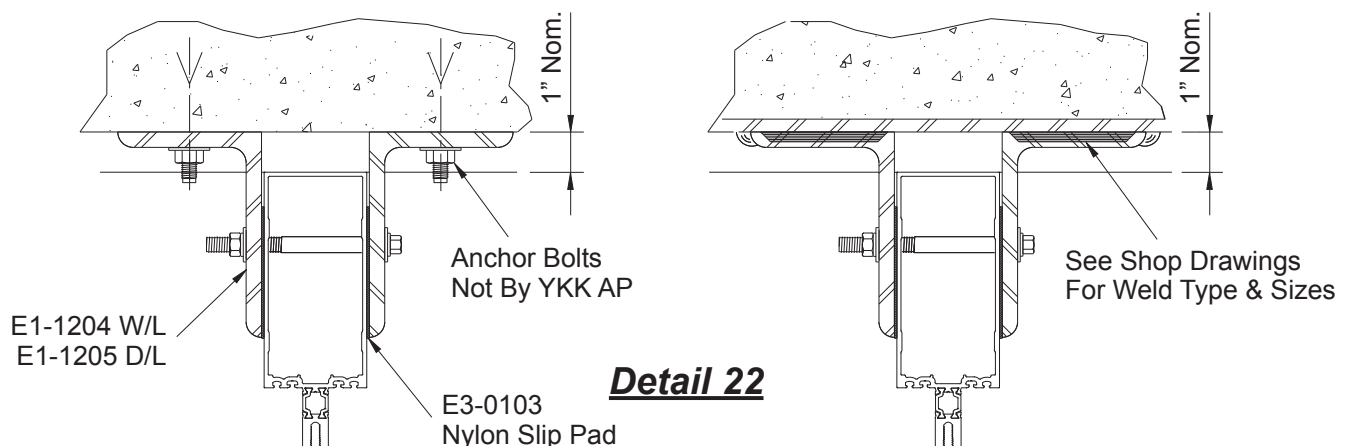


Detail 21

-Install, plumb, and align mullions. Drill and install appropriate diameter anchor bolts per approved shop drawings or engineering calculations.

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

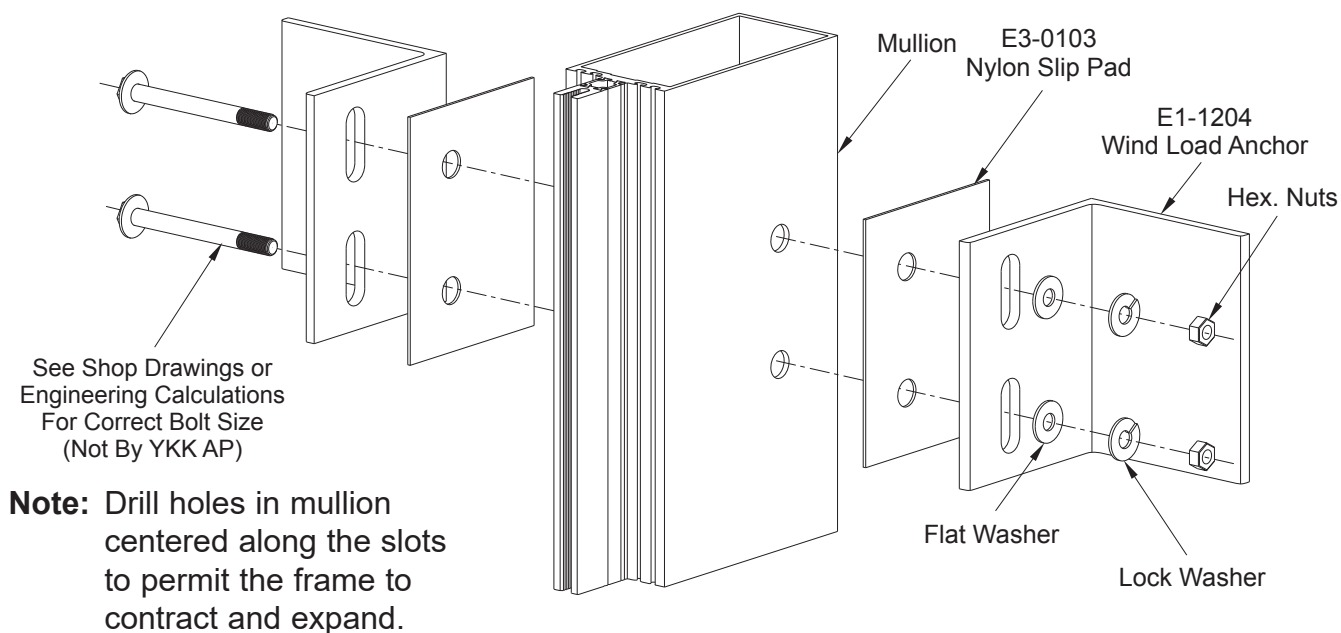
See **Detail 22**.



Detail 22

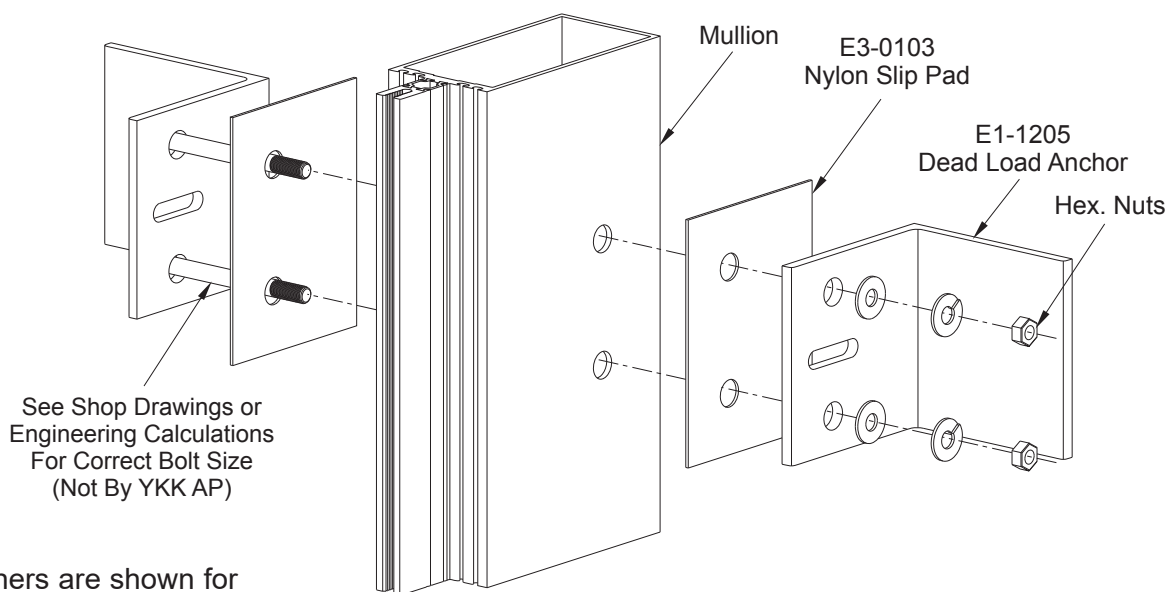
FRAME INSTALLATION

TYPICAL WIND LOAD ANCHOR



Detail 23

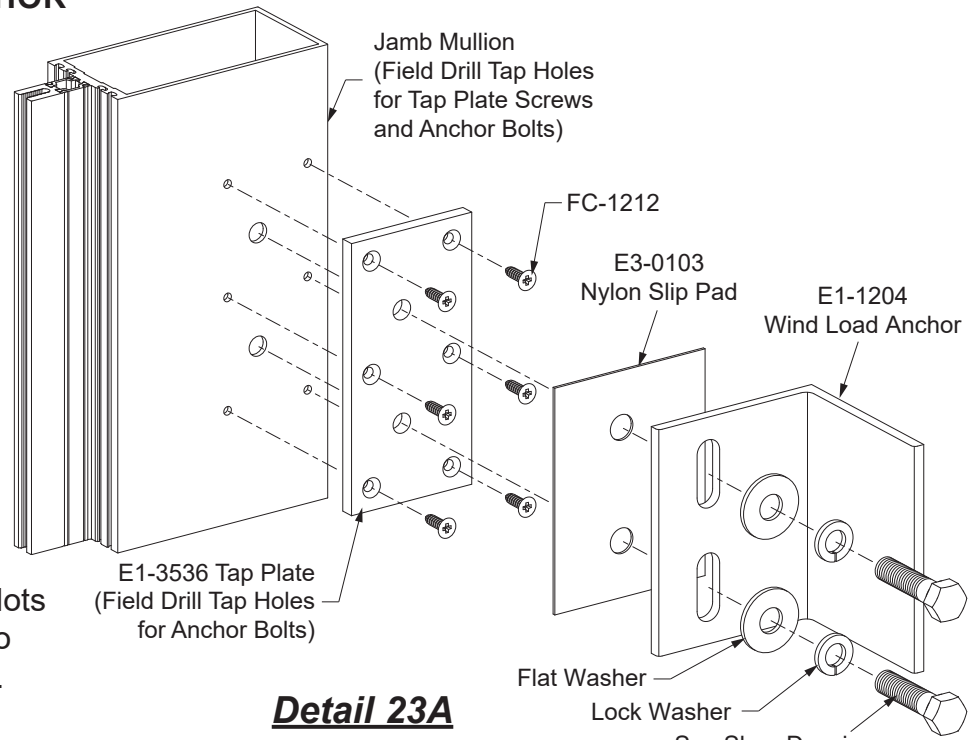
TYPICAL DEAD LOAD ANCHOR



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

FRAME INSTALLATION

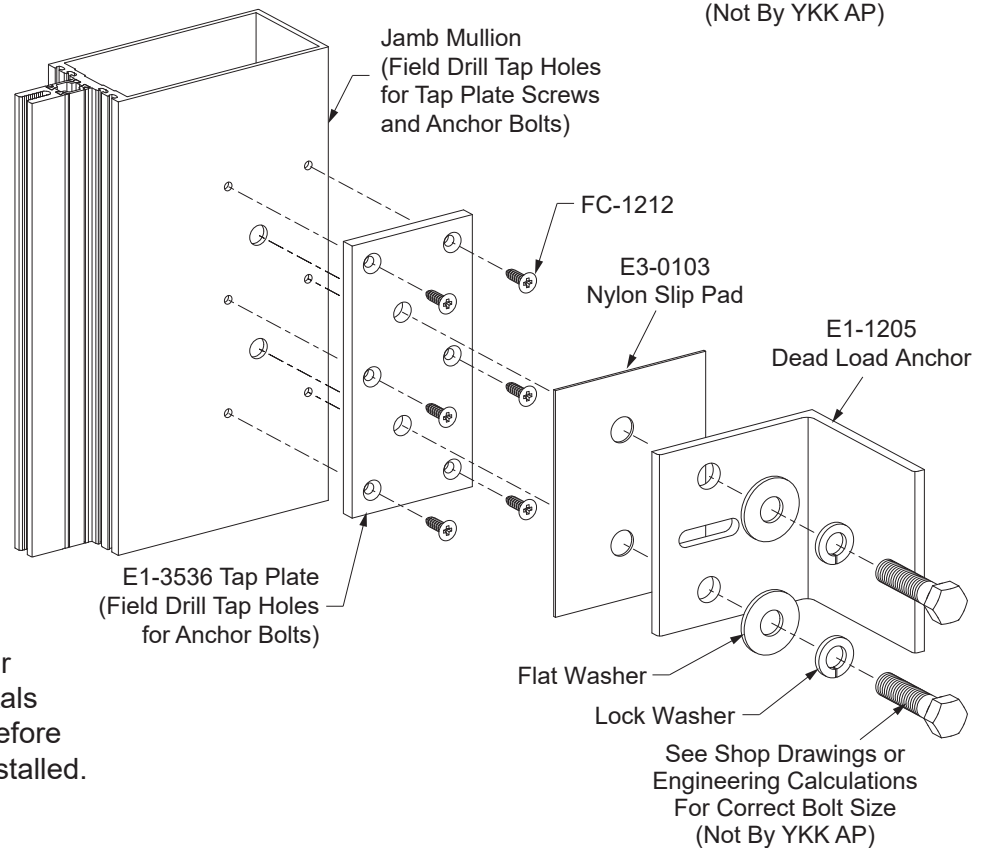
JAMB WIND LOAD ANCHOR



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

Detail 23A

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

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

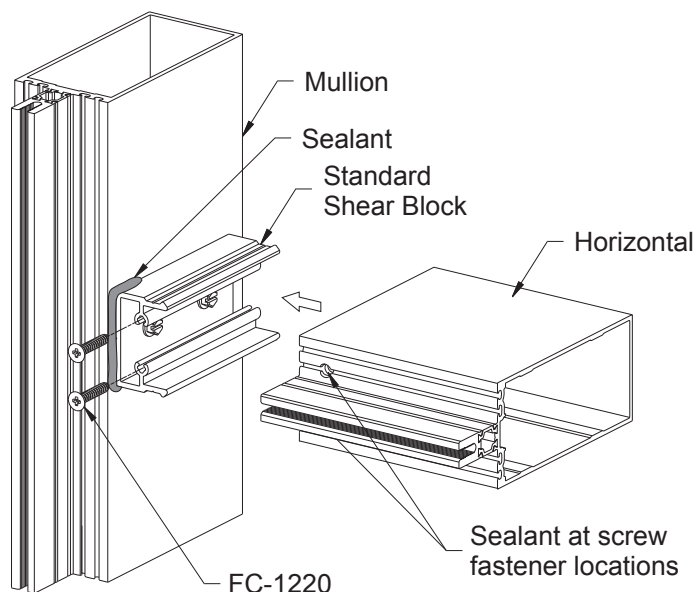
-Just prior to attaching the horizontal members to the mullions, apply sealant to the front of the shear block as shown.

Horizontals with Concealed Fasteners:

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

See **Detail 24**.

CONCEALED FASTENERS



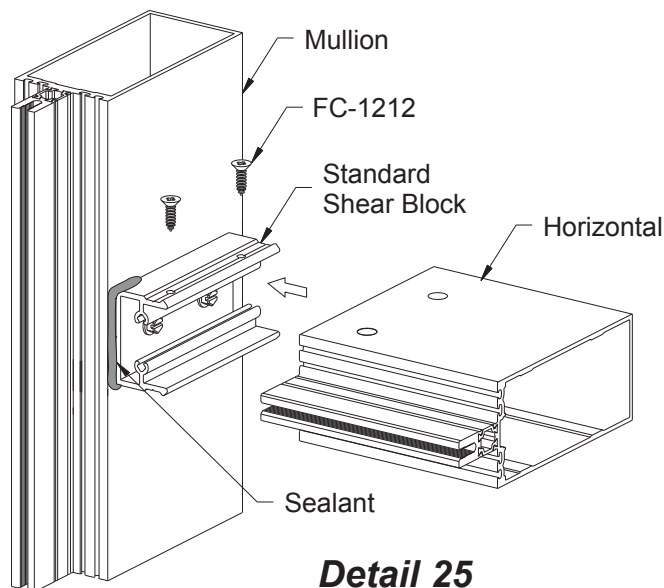
Detail 24

Horizontals with Exposed Fasteners:

- Slide the horizontal members towards the mullion 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 mullion and attach it to the shear block with two FC-1212 fasteners at each end.
- Tool and wipe away any excess sealant at the mullion to horizontal joints.

See **Detail 25**.

EXPOSED FASTENERS



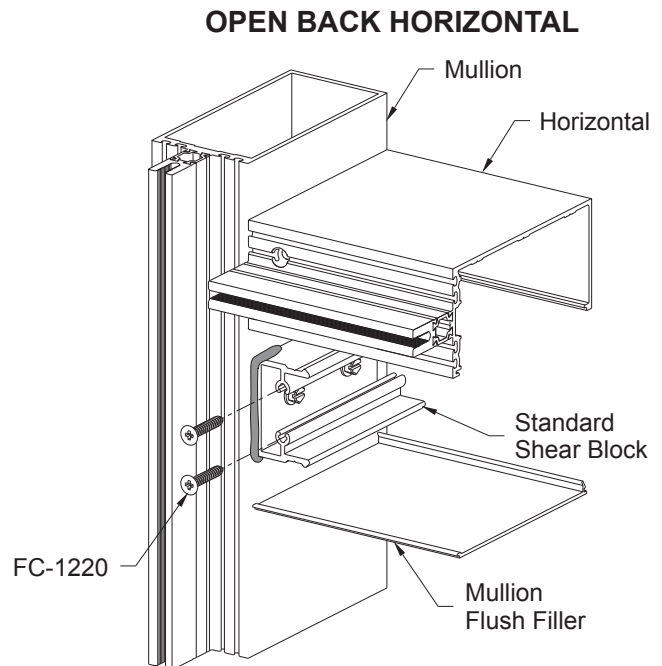
Detail 25

FRAME INSTALLATION

STEP 15 (Continued) ATTACH HORIZONTAL MEMBERS

Open Back Intermediate Horizontals:

- Just prior to attaching the horizontal members to the mullion, apply sealant to the front of the shear block as shown below.
 - Lower the horizontal down onto the shear block. Make sure the horizontal and mullion glazing pockets are flush.
 - Attach the horizontal to the shear block at the face of the horizontal with two FC-1220 fasteners at each end.
 - Tool and wipe away any excess sealant at the mullion to horizontal joints, and exposed front fasteners.
 - Snap on the mullion flush filler.
- See **Detail 26**.



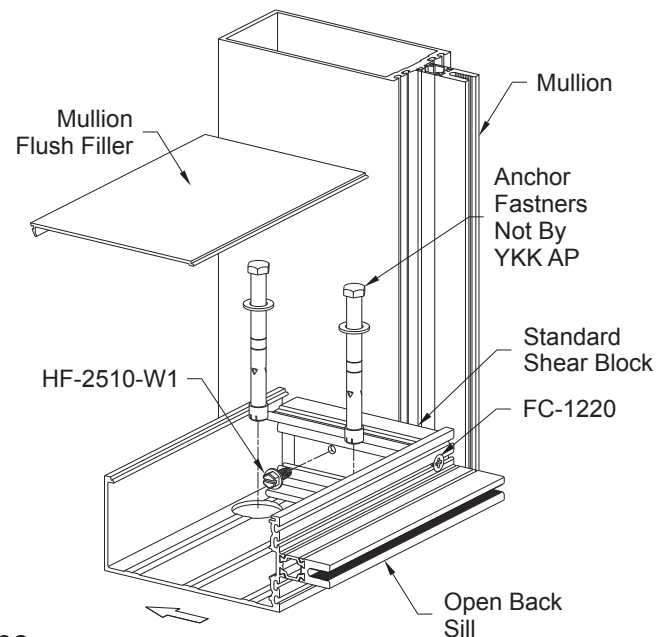
Detail 26

Open Back Head & Sill Members at End Bays:

- To clear the vertical mullions at end bays shear blocks must be pre-attached to the head and sill members through the face of the mullion with FC-1220 fasteners.
 - Position the head/sill members into place and attach the shear blocks to the mullions with two HF-2510-W1 fasteners per block.
 - Provide anchor fasteners per approved shop drawings or engineering calculations.
 - Install the anchor fasteners as recommended by fastener manufacturer.
 - Snap on the mullion flush filler.
- See **Detail 27**.

Caution: A solid shim must be placed under the mullion to transfer glazing dead loads to the foundation.

OPEN BACK HEAD/SILL AT END BAY



Detail 27

Sill Shown, Head Similar

FRAME INSTALLATION

STEP 15 (Continued)

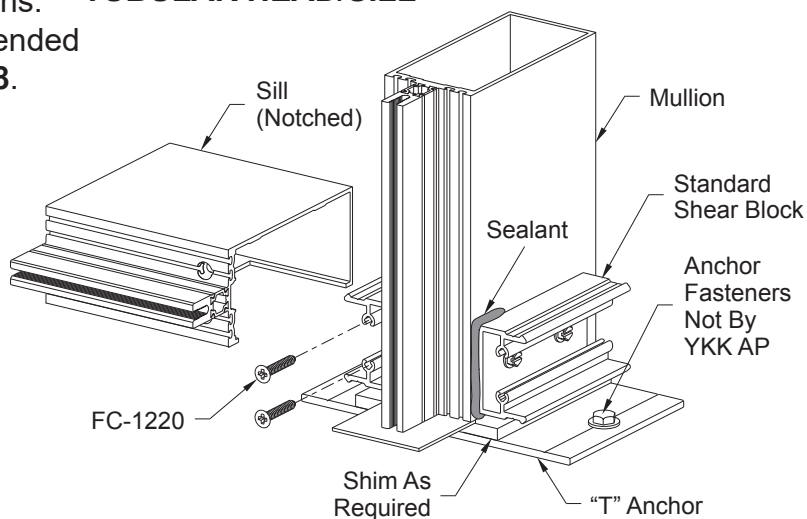
ATTACH HORIZONTAL MEMBERS

Tubular Head & Sill Members:

- Mullion end anchors must be installed before head and sill members are attached.
- Provide anchor fasteners as per approved shop drawings or engineering calculations.
- Install the anchor fasteners as recommended by fastener manufacturer. See **Detail 28**.
- Clean, seal, and attach head and sill members as previously shown on **Page 28**.

Caution: A solid shim must be placed under the mullion to transfer glazing dead loads to the foundation.

TUBULAR HEAD/SILL



Detail 28

Sill Shown, Head Similar

FRAME INSTALLATION

STEP 16 INSTALL DOOR SUBFRAMES

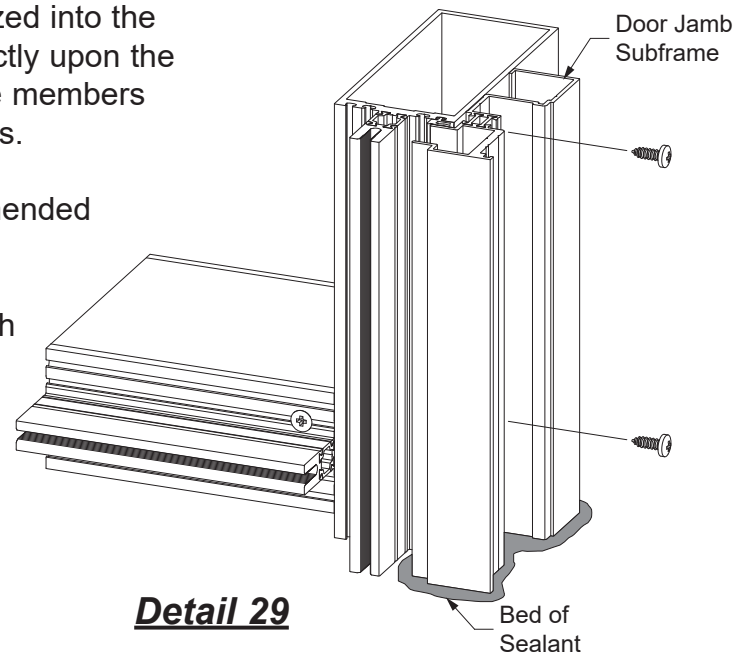
Doors are shipped assembled, and door sub-frames will be fabricated and shipped knocked down. Refer to the **Entrances Installation Manual** for assembly of the door subframes. These subframes are typically glazed into the curtain wall framing at the jambs, and set directly upon the sill substrate without any shims. The subframe members are determined by the approved shop drawings.

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

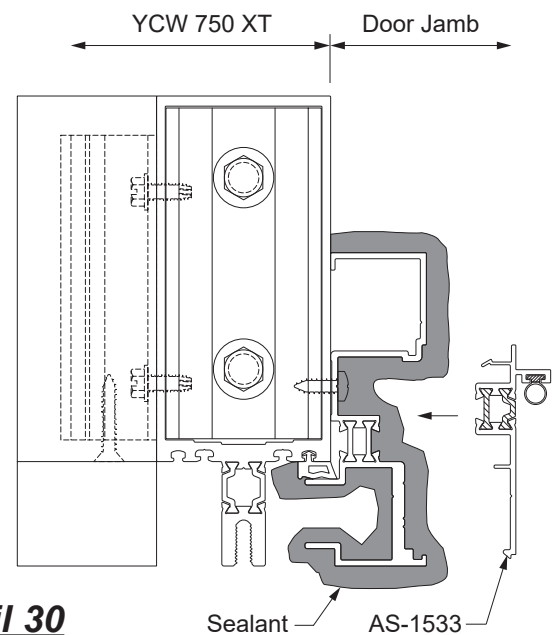
-Install the jamb subframe onto the mullion with fasteners according to the approved shop drawings and/or P.E. calculations, setting the subframe jambs in beds of sealant as shown in **Detail 29**.

-Apply and tool sealant to the bottom of the jamb subframe as shown in **Detail 30**.

-Install door stop, AS-1533, into the door jambs.



Detail 29



Detail 30

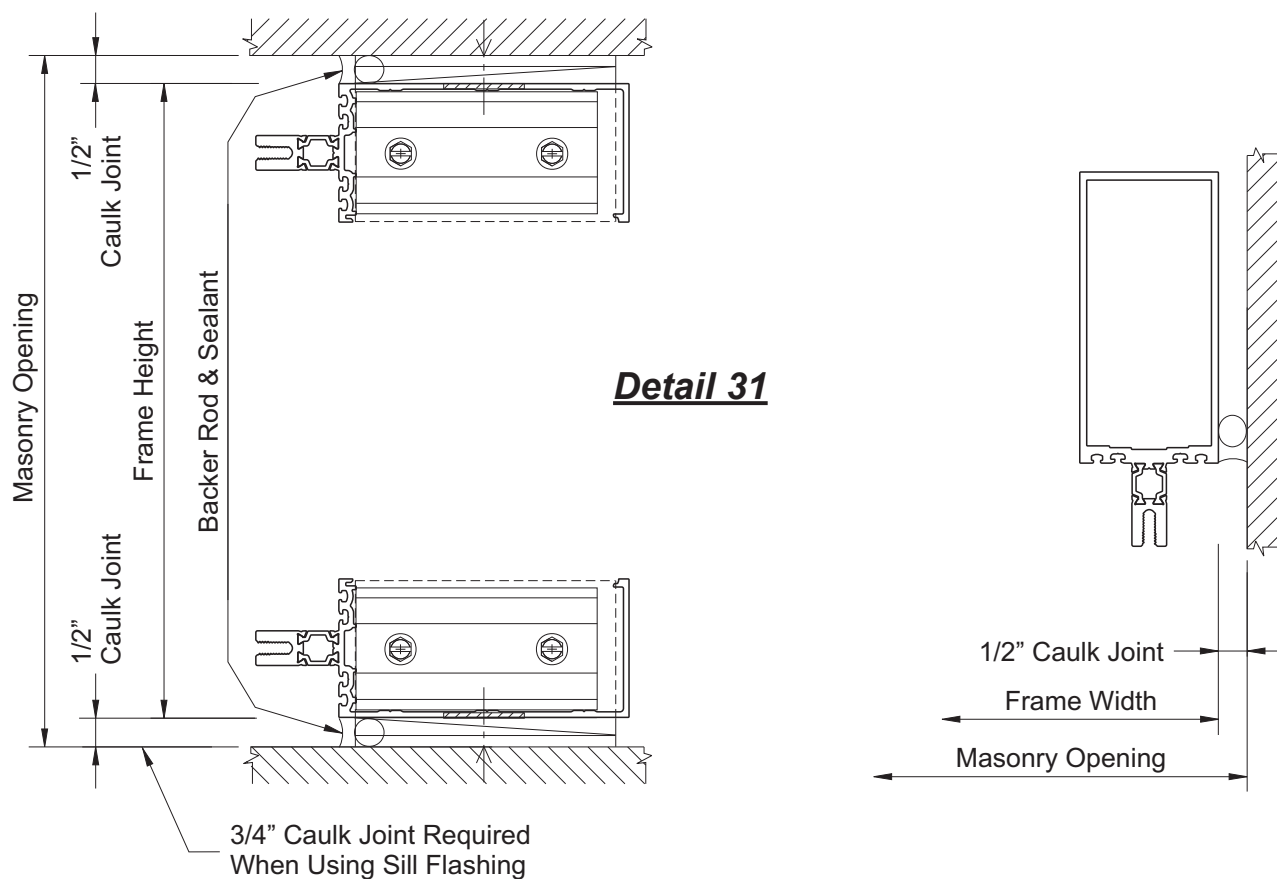
FRAME INSTALLATION

STEP 17

APPLY PERIMETER SEALANT

- Clean the area around the perimeter of the frame with cleaner and method approved by sealant manufacturer.
- Push in backer rod between the perimeter of the frame and the substrate about 1/4".
- Apply sealant to the perimeter of the frame.
- Tool the sealant to ensure a water tight joint.

See **Detail 31**.



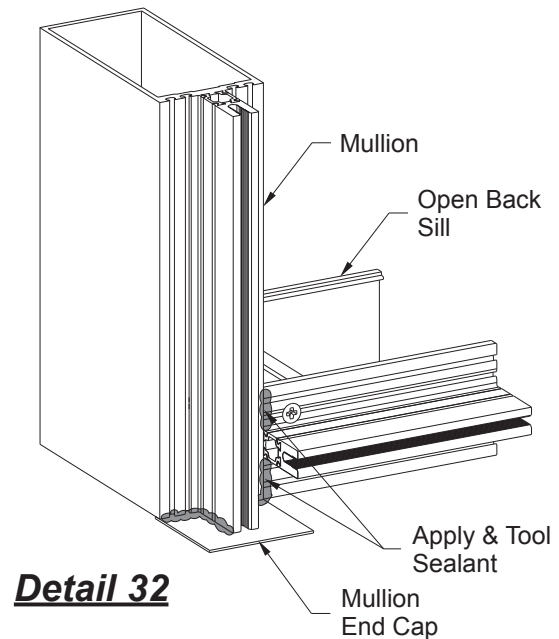
FRAME INSTALLATION

STEP 18 INSTALL JOINT PLUGS

The tongue of each head, horizontal and sill must be sealed to the tongue of the mullion and jamb mullions at each end with joint plugs, E2-0102.

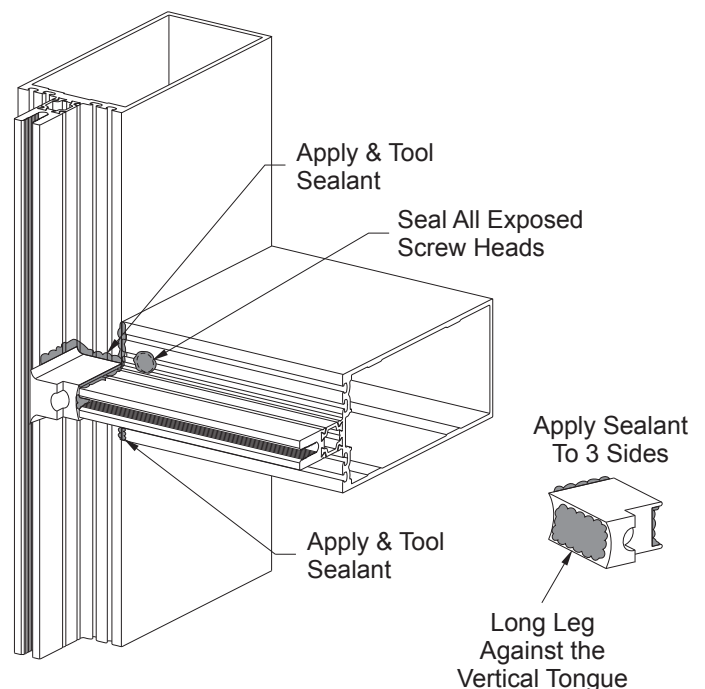
For Open Back Sill Members:

- Just prior to installing joint plugs, clean the area around the intersection of the mullion and the sill member with an approved cleaner.
 - Apply and tool sealant to the joint where the sill member meets the mullion and along the joint between the mullion end cap and the perimeter leg of the sill member.
- See **Detail 32**.



Detail 32

- Clean the area around the mullion tongue ends with an approved cleaner.
 - Apply and tool sealant to the joint where the horizontal meets the mullion.
 - Apply sealant to the three contact sides of the joint plug. Fill all glazing reglet cavities in the mullion's front face.
 - Install joint plug as shown with the long leg of the joint plug against the mullion tongue.
 - Press the joint plug firmly against the face of the mullion.
 - Tool the sealant to ensure a watertight seal.
 - Seal all exposed screw heads on the face of the mullion.
- See **Detail 33**.

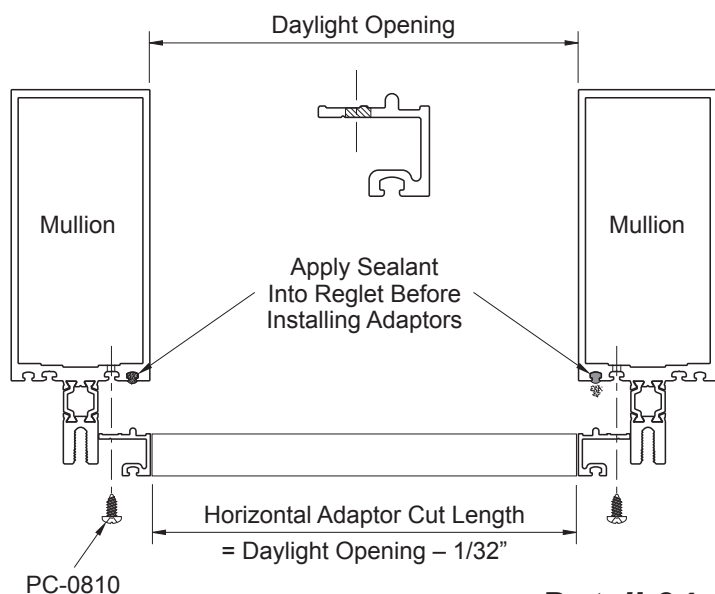


Detail 33

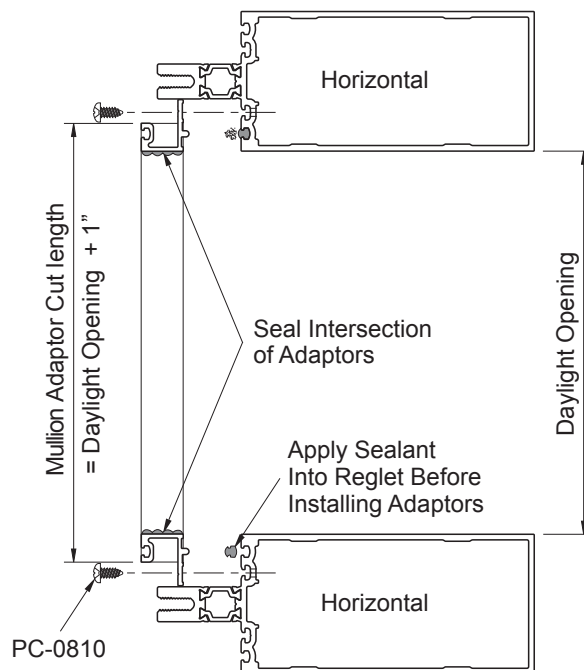
Int. Horizontal Shown
Head & Sill Similar

GLAZING

STEP 19 (Optional) INSTALL GLAZING ADAPTORS



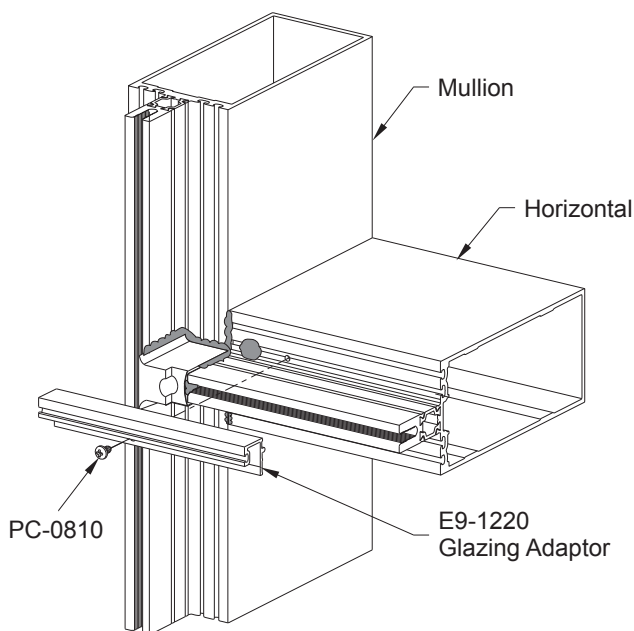
Detail 34



- Cut E9-1220 glazing adaptors to:
Mullion Cut Length = D.L.O. plus(+) 1".
Horizontal Cut Length = D.L.O. minus(-) 1/32".

- Predrill each adaptor along the "V"-groove with 0.189" dia. holes 2" from each end and 24" O.C.
- Dry fit adaptors and match drill 0.141" dia. holes on the mullion to receive PC-0810 fasteners.
- Clean the area around the mullion glazing reglet and the glazing adaptor with a cleaner approved by the sealant manufacturer.
- Apply sealant into the glazing reglet of the mullion and the ends of the horizontal adaptors.
- Install the adaptors with PC-0810 screws at each hole location. Install the mullion adaptors first; make sure they are centered along the day light opening.
- Tool sealant at all adaptor intersections and seal all screw heads.

See **Detail 34 & 35**.



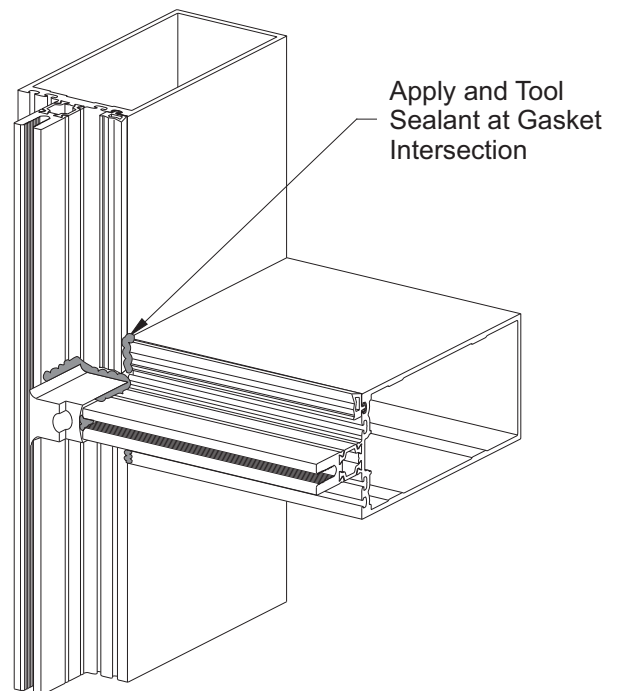
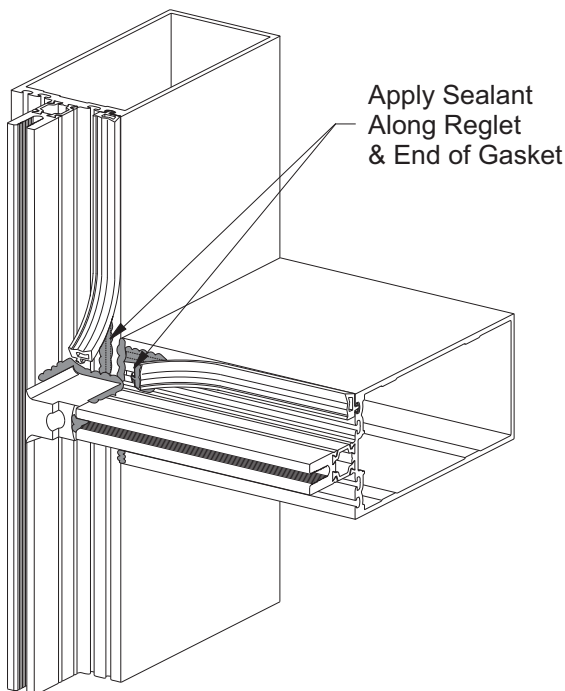
Detail 35

GLAZING

STEP 20

INSTALL INTERIOR GLAZING GASKETS

- Cut E2-0120 interior glazing gaskets to size:
Vertical Gasket = Daylight Opening + 1-1/2".
Horizontal Gasket = Daylight Opening + 1/4" per each foot of opening width.
- Install vertical gaskets first, centered along the daylight opening.
- Install horizontal glazing gaskets next.
 - Insert the glazing gasket into the reglet at each end first.
 - Snap the rest of the glazing gasket into the reglet starting at the center and work towards each end.



Detail 36

- Pull the last 3" of each gasket away from the reglet.
 - With gasket end held out of the way, run a 2-3" bead of sealant into the reglet at the ends.
 - Apply sealant at the ends of the horizontal gaskets.
 - Reinsert the ends of the gaskets pressing them firmly against the face of the mullions.
 - Apply and tool sealant at the intersection of the vertical and horizontal gaskets.
- See **Detail 36**.

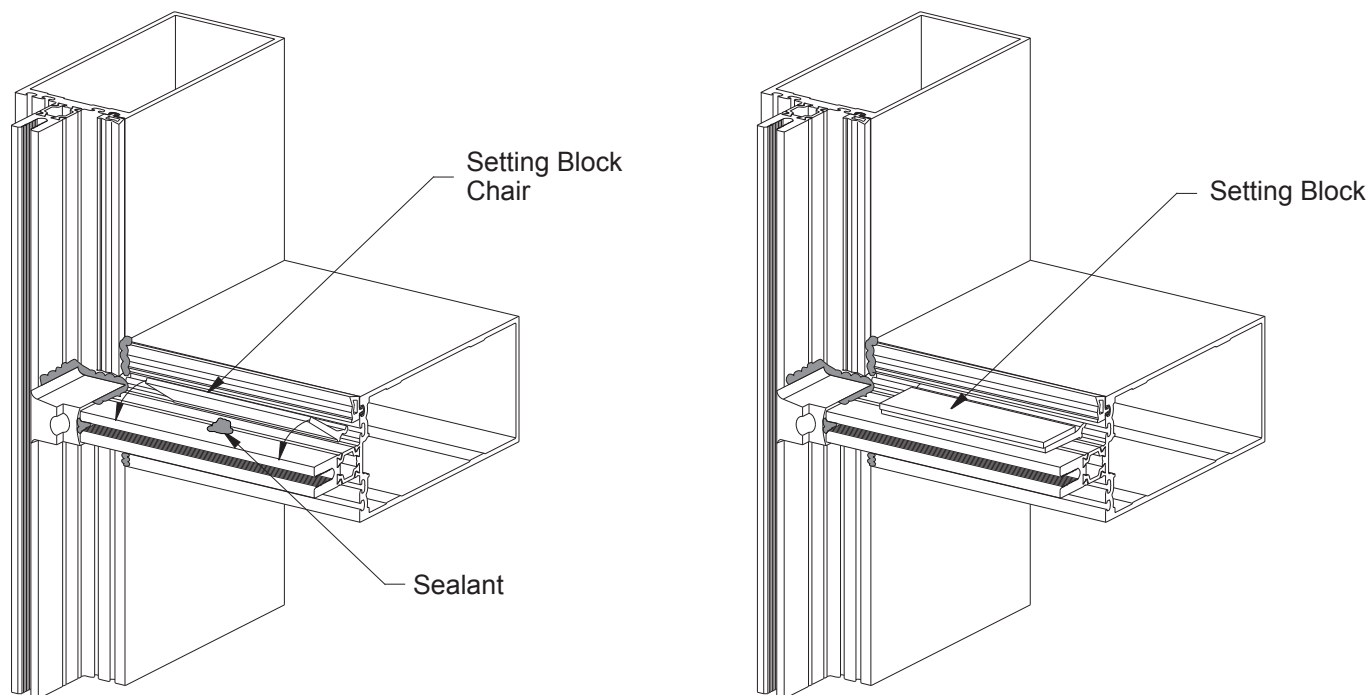
GLAZING

STEP 21

INSTALL SETTING BLOCK CHAIRS AND SETTING BLOCKS

Note: For correct placement of setting block chairs and setting blocks, see **Detail 38** on **Page 35**. Consult YKK AP for setting block requirements on units that exceed 60" x 90" or 40 sq. ft.

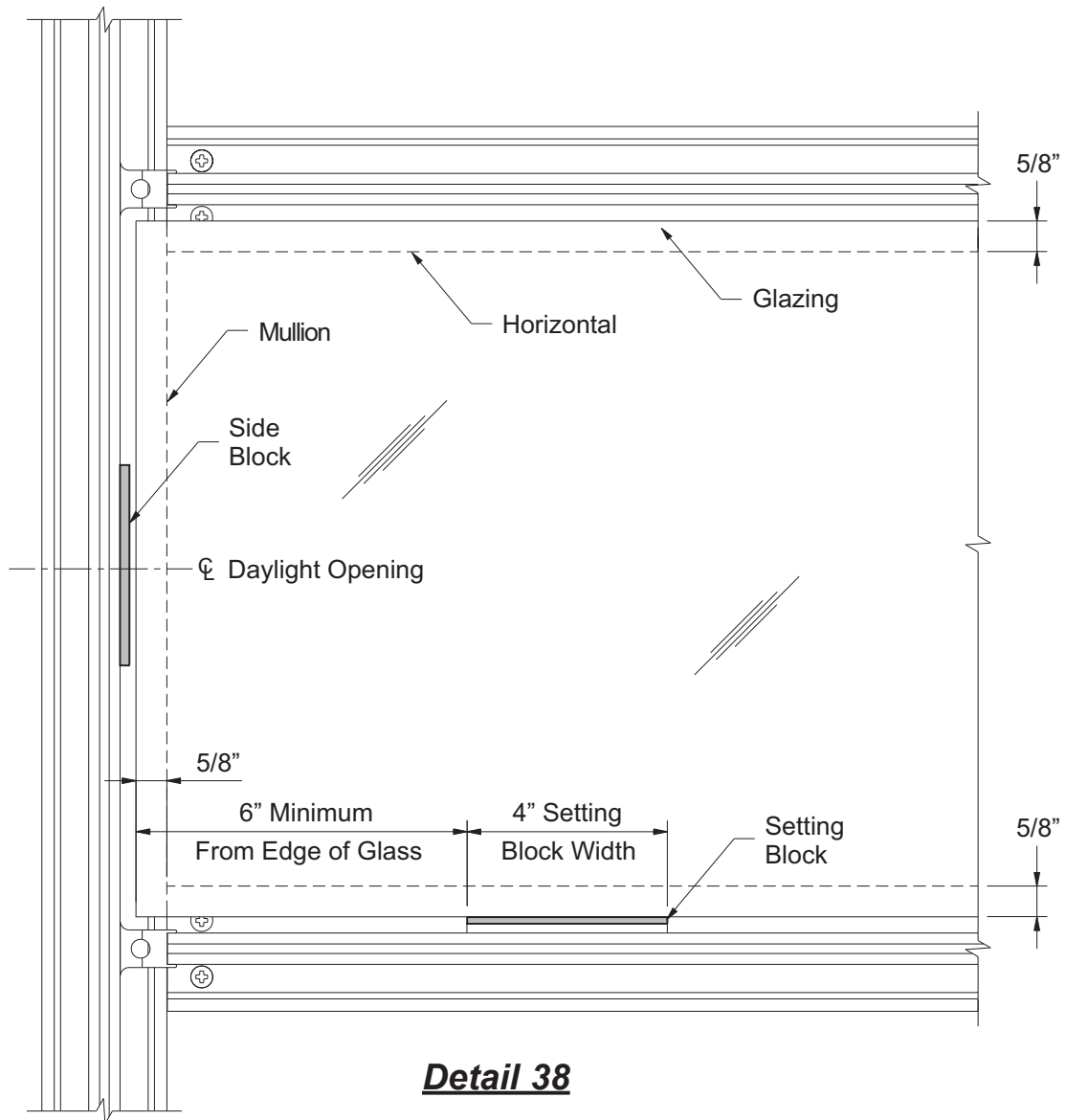
- Install the setting block chair, E1-3603, at 1/4 points as shown in **Detail 37**.
- Apply a small amount of silicone sealant to the tongue of the horizontal to adhere the setting block chair to the horizontal.
- Adhere setting block, E2-0513 to the topside of the setting block chair.



Detail 37

GLAZING

STEP 22 INSTALL SIDE BLOCKS



-Install side blocks, E2-0133, centered along the daylight opening on both sides of glazing material.

See **Detail 38**.

GLAZING**STEP 23****INSTALL EXTERIOR GLAZING GASKETS**

- Cut E2-0120 exterior vertical glazing gaskets to the same length as the vertical pressure plates.
- Cut E2-0120 exterior horizontal glazing gaskets to daylight opening plus 3/16" per foot of opening width.
- Install vertical glazing gaskets onto the vertical 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.

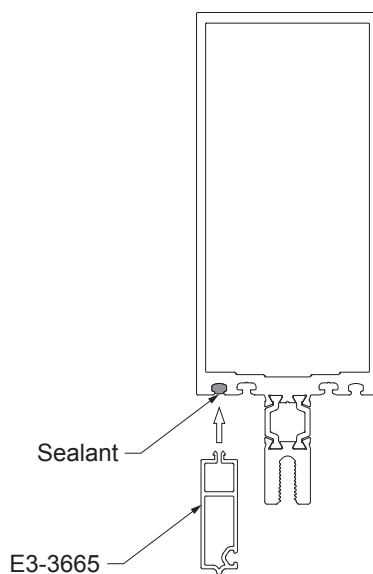
STEP 24**INSTALL PVC PERIMETER FILLER**

- For polyamide pressure plate application, the PVC perimeter filler (E3-3665) must be installed in all perimeter conditions before the pressure plates are installed.
- Cut the PVC filler to mullion length minus 1/16".
- Apply a thin strip of silicone sealant into the reglet on the jamb mullion.

Note: Too much silicone will prevent engagement of the perimeter filler.

- Center and snap the perimeter filler and tap into place.

See **Detail 39**.

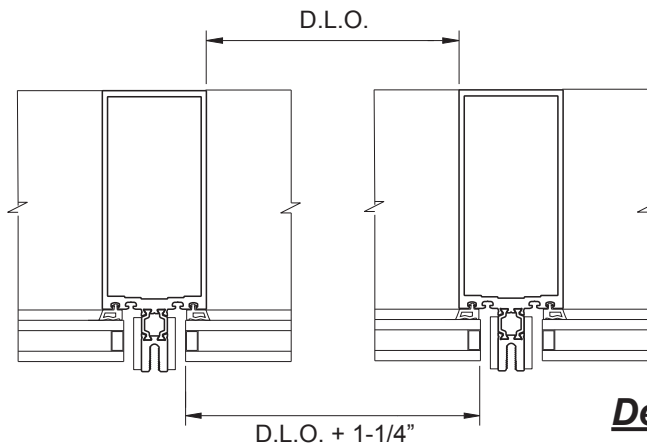


Detail 39

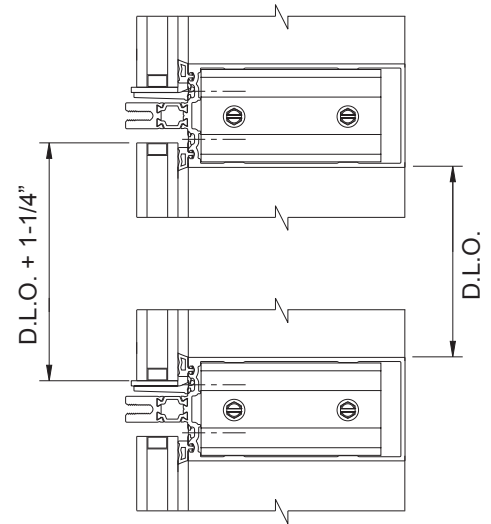
GLAZING

STEP 25 INSTALL GLASS

Glass and Spandrel Size = Daylight Opening + 1-1/4"
Horizontally and Vertically.

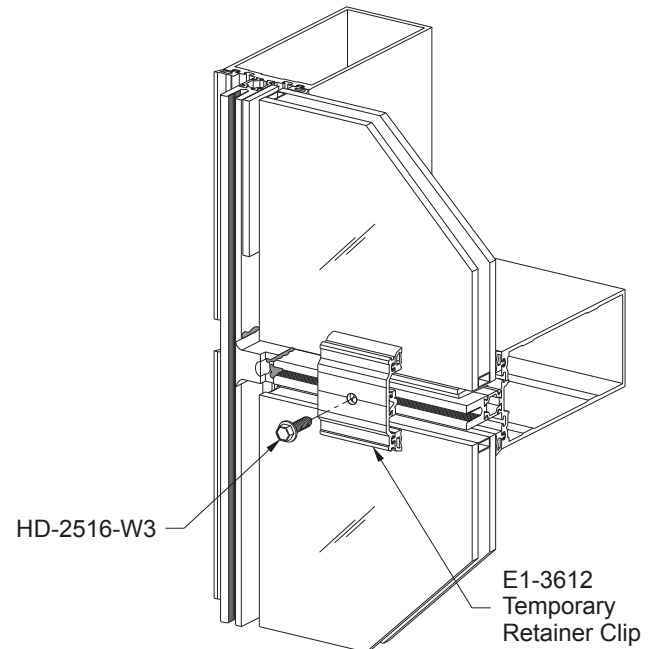


Detail 40



- 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 using HD-2516-W3 fasteners.
- Reuse the temporary retaining clips.

See **Detail 40 & 41**.



Detail 41

GLAZING

STEP 26 ADD THERMAL ISOLATOR

-Prior to assembly and erection, install the E2-0356 isolator tape cut to the full length of the vertical and horizontal pressure plates, centered on the pressure plate holes. Do not stretch the isolator tape.

See **Detail 42**.

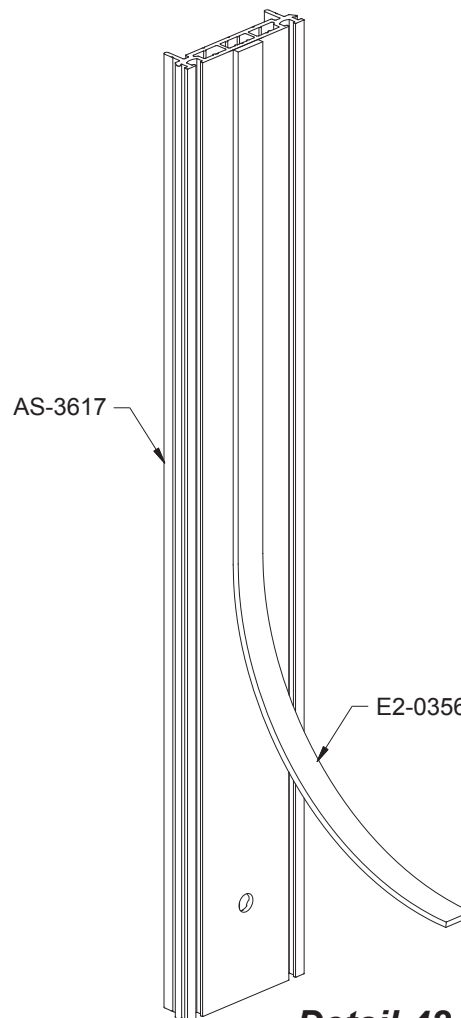
STEP 27 INSTALL VERTICAL PRESSURE PLATES AND VERTICAL FACE COVERS

-Apply sealant to the face of the joint plugs just prior to installing vertical pressure plates. Do not allow sealant to skin over prior to installing pressure plates.

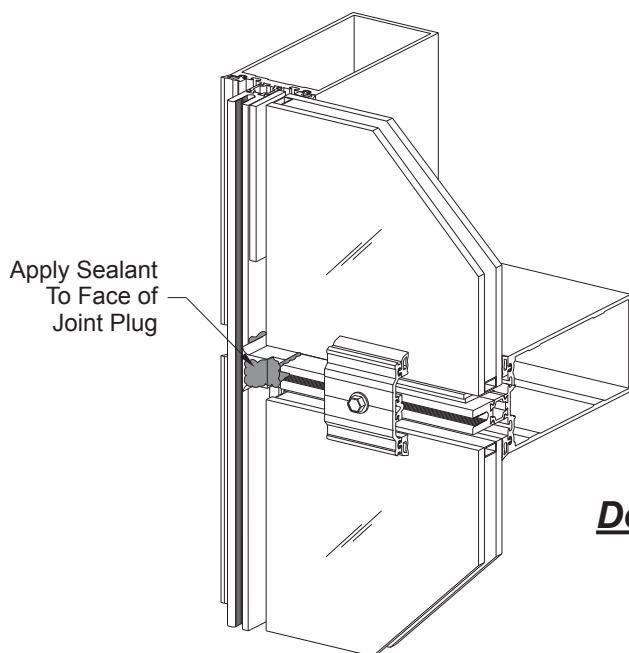
Note: Sealant must form a complete seal between the exterior gasket, pressure plate, thermal isolator, and the joint plug.

See **Detail 43**.

THERMAL ISOLATOR INSTALLATION



Detail 42
Glazing Gaskets
Not Shown
for Clarity



Detail 43

GLAZING

STEP 27 (Continued)

INSTALL VERTICAL PRESSURE PLATES AND VERTICAL FACE COVERS

-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 screws 1-1/2" from each end.

See **Detail 47** on **Page 41**.

-Working from the bottom up, install vertical pressure plates using HD-2516-W3 screws and WW-2500 flat washers. Initially torque screws to 30 inch-pounds with a speed wrench or torque limiting screw gun.

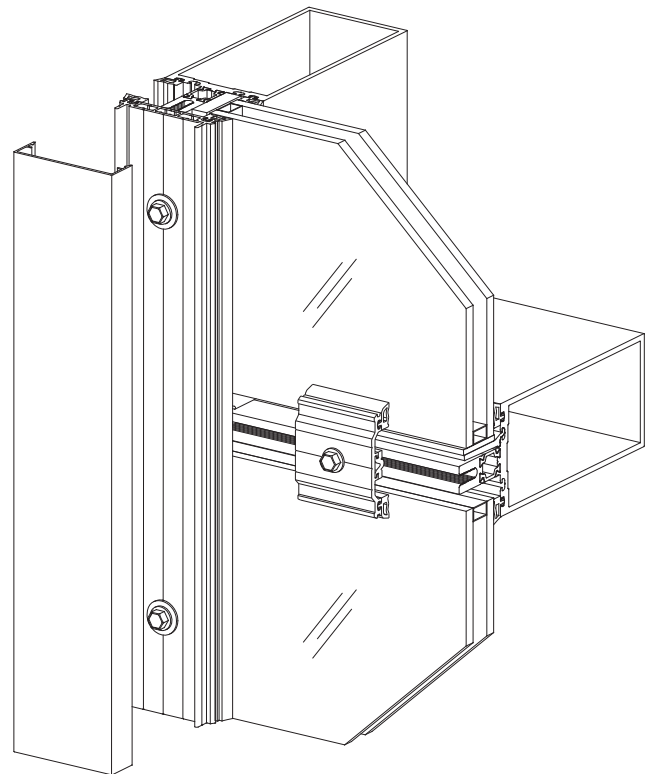
-Then, torque all vertical pressure plate screws to 40 to 45 inch-pounds.

-Snap on exterior vertical face covers using a mallet and a clean scrap piece of lumber. Start at one end and work down the mullion. Avoid hitting the center of the cover.

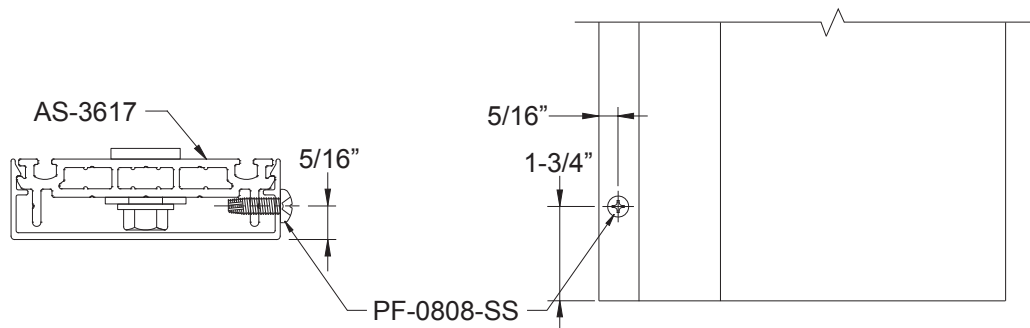
See **Detail 44**.

-Fasten the cover to the pressure plate with one PF-0808-SS screw at the bottom of each vertical cover.

See **Detail 45**.



Detail 44



Detail 45

GLAZING

STEP 27A

INSTALL OPTIONAL DEEP FACE COVERS

Installation of a deep vertical cover is similar to that of the standard face cover. Fasteners (PF-0808-SS typical) are required to pin the cover in place. These fasteners are usually located at the horizontals to be concealed by the horizontal face covers. Refer to the approved shop drawings for the number and or spacing of screws required.

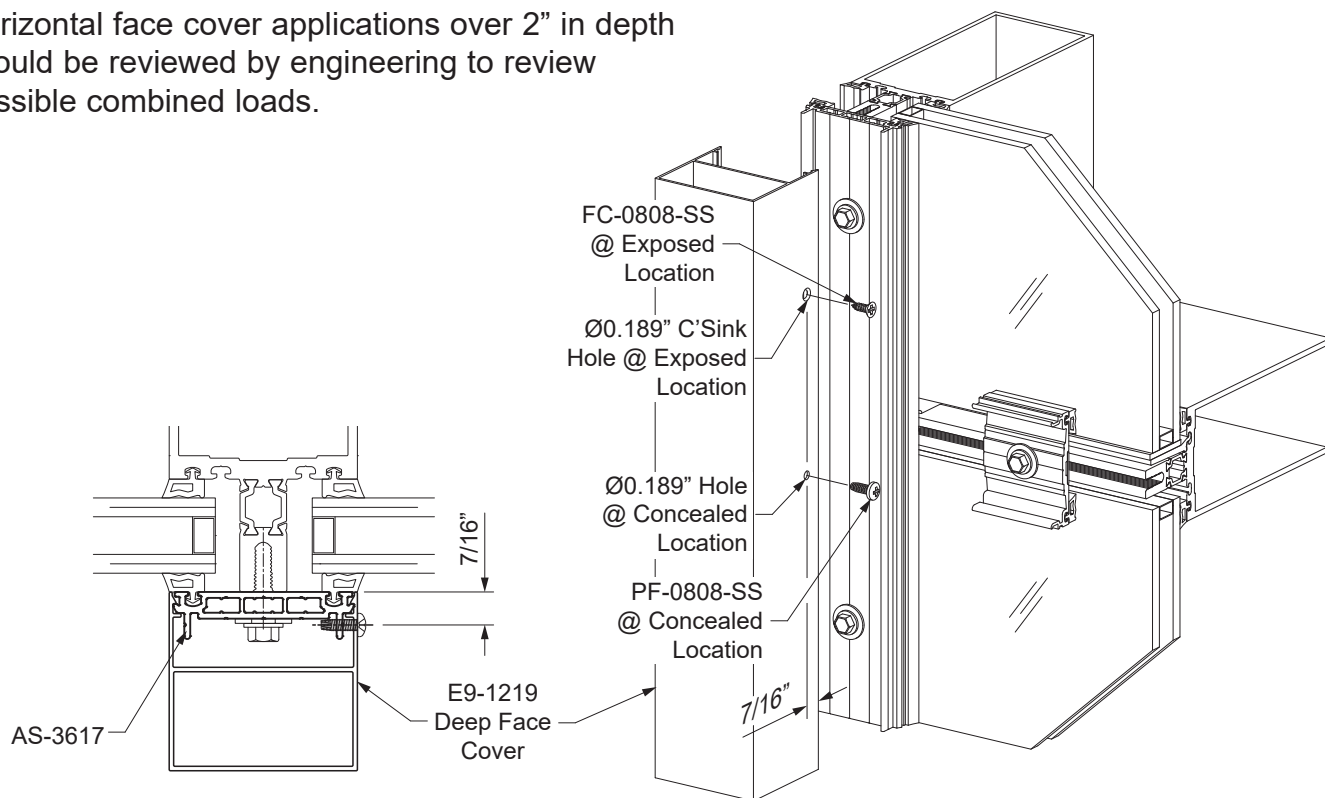
-For concealed fastener locations, drill a 0.189" diameter hole into the side of the face cover, 7/16" from the snap interface of the cover. Snap on the deep cover at its intended location. Using the clear hole as a pilot hole, drill a 0.141" diameter tap hole into the leg on the deep pressure plate. Secure the face cover in place with a PF-0808-SS.

-If the face cover requires it to be fastened at an exposed location, drill a 0.189" diameter countersunk hole into the side of the cover. Snap on the deep cover at its intended location. Using the clear hole as a pilot hole, drill a 0.141" diameter tap hole into the leg on the deep pressure plate. Secure the face cover in place with an FC-0808-SS screw.

-Continue to install the horizontal pressure plate and face cover as specified on **Pages 41 & 42**.

See **Detail 46**.

Horizontal face cover applications over 2" in depth should be reviewed by engineering to review possible combined loads.



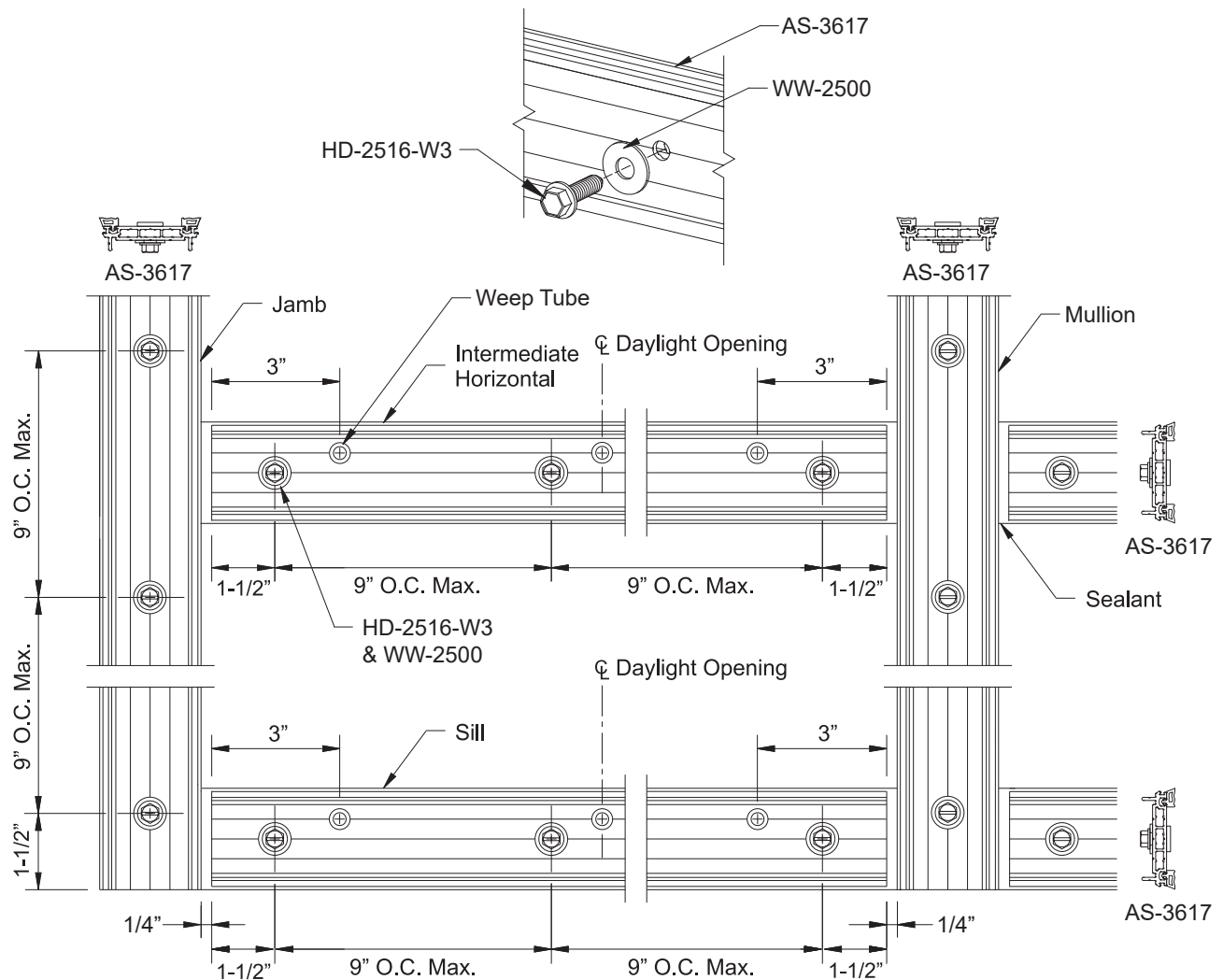
Detail 46

GLAZING

STEP 28 INSTALL HORIZONTAL PRESSURE PLATES

- Center and install horizontal pressure plates in opening, leaving a 1/4" gap at the ends.
- Starting at the center of each pressure plate, tighten each retainer screw to 40 to 45 inch-pounds.

See **Detail 47** for pressure plate layout.



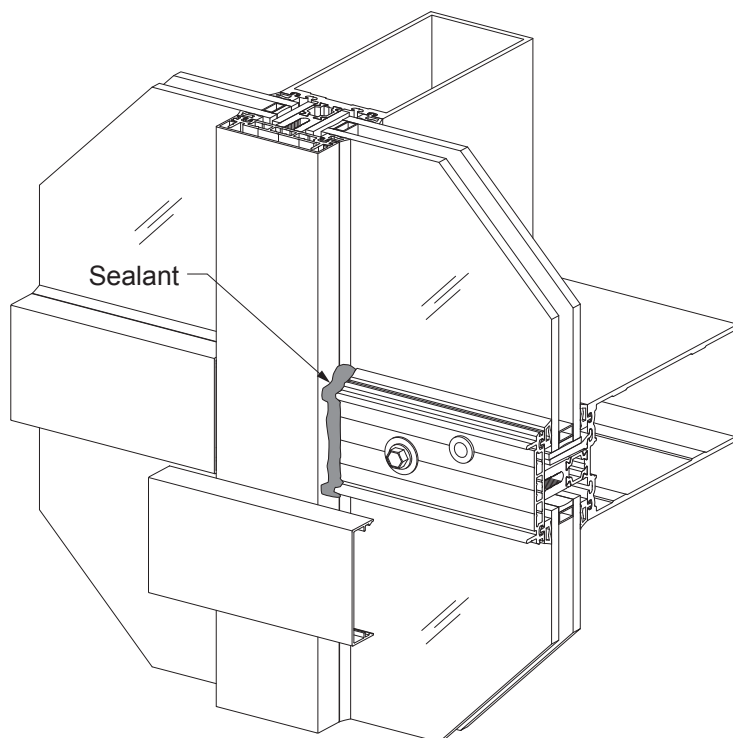
Detail 47

Vertical Face Covers
Not Shown For Clarity

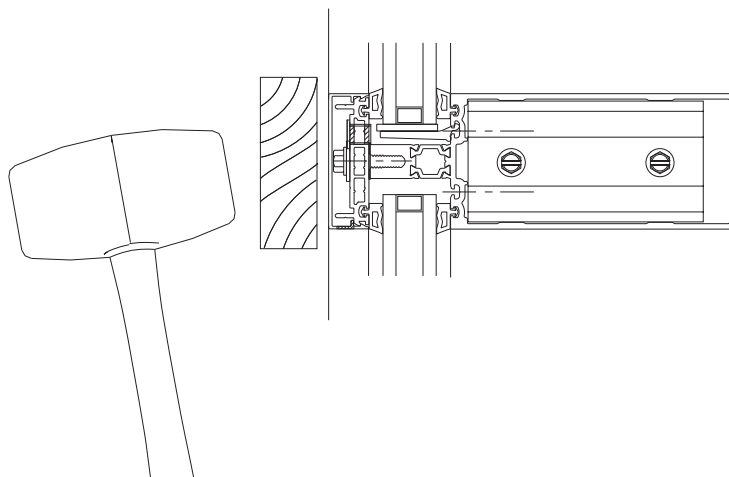
GLAZING**STEP 29****INSTALL HORIZONTAL FACE COVERS**

- Apply and tool sealant in the joint between the horizontal pressure plate and the vertical face cover, filling the joint.
- Snap on horizontal exterior covers using a mallet and a clean scrap piece of lumber. Start at one end and work across the horizontal.

See **Detail 48**.



Detail 48



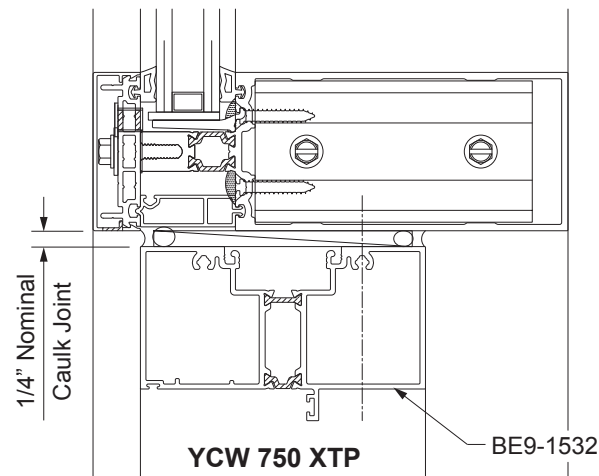
DOOR SUBFRAME INSTALLATION

STEP 30

FASTEN DOOR SUBFRAME AT TRANSOM

Horizontals at the door transom are largely the same as regular horizontals. To securely anchor the frame, the door header must be fastened into the mullion itself.

See **Detail 49**.



Detail 49



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