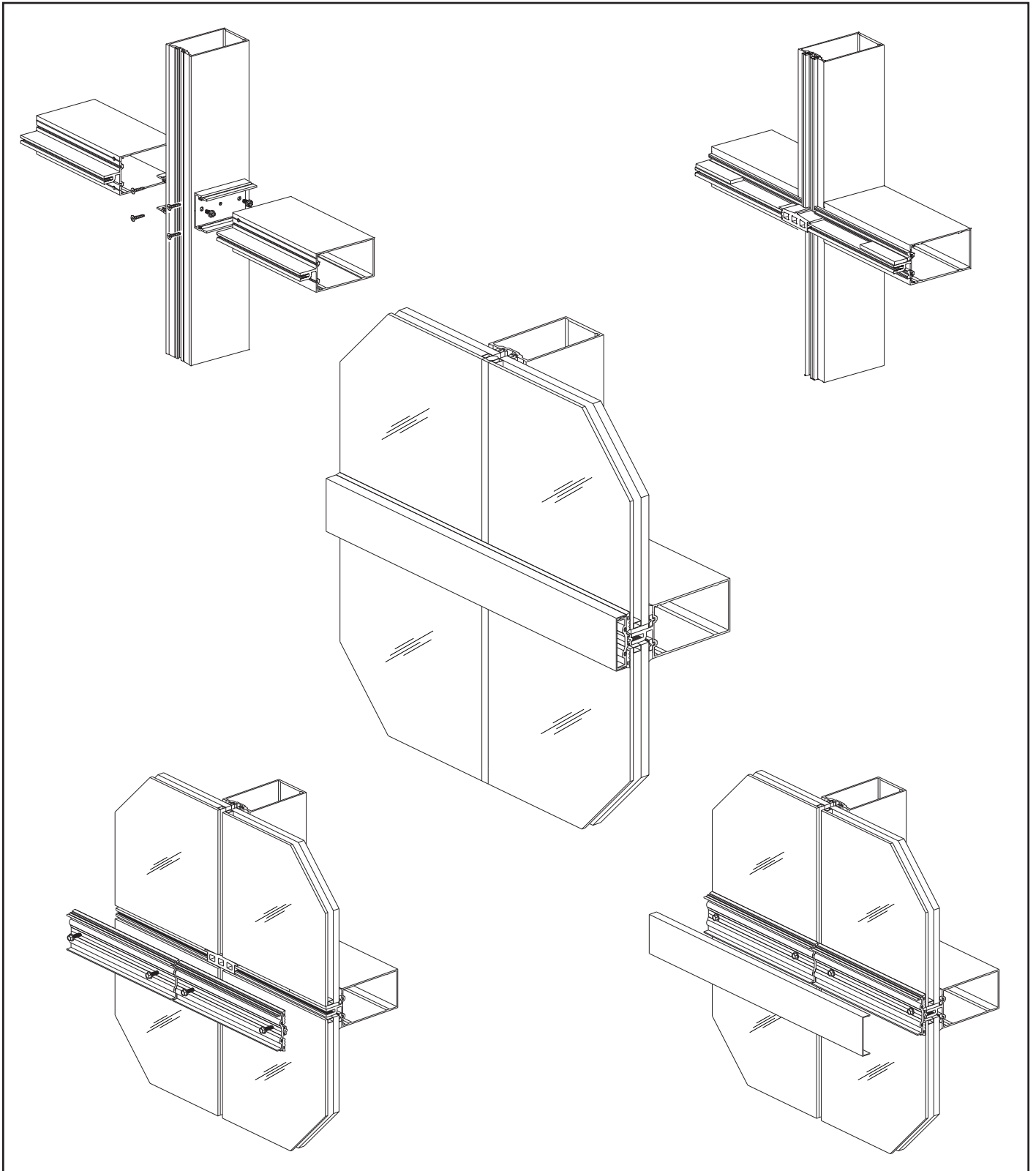


YHC 300 SSG Structural Silicone Glazed Curtain Wall System



Installation Manual




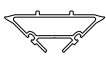
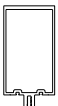
















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
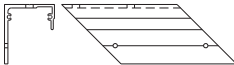

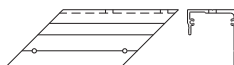
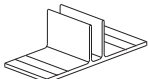
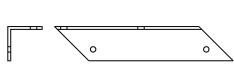
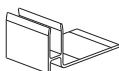
















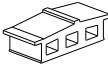
Installation Notes

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.










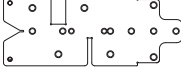
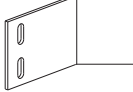

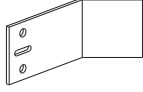











FRAMING MEMBERS

	Head / Horizontal / Sill For Single Glazing	E9-3105		Perimeter Pressure Plate For Insulating Glazing Punched 9" o.c.	AS-3178
	Horizontal For Single Glazing	E9-3106		SSG 90° Outside Corner Glazing Adaptor	E9-3149
	Jamb / Mullions For Single Glazing	E9-3103		Glazing Adaptor For Single Glazing	E9-3141
	Head / Horizontal / Sill For Insulating Glazing	E9-3104		SSG Glazing Adaptor For Single Glazing	E9-3148
	Horizontal For Insulating Glazing	E9-3102		Post Adaptor For Single Glazing	E9-3150
	Jamb / Mullions For Insulating Glazing	E9-3101		Post Adaptor For Insulating Glazing	E9-3151
	SSG Mullions For Single & Insulating Glazing	E9-3119		90° Outside Corner Trim For Insulating Glazing	E9-3152
	Flush Filler Use with E9-3104 & E9-3105	E9-3162		Face Cover	E9-3161
	Pressure Plate For Monolithic Glazing Punched 9" o.c.	AS-3173		90° Outside Corner Interior Cover Use with E9-1280	E9-3165
	Perimeter Pressure Plate For Monolithic Glazing Punched 9" o.c.	AS-3179		90° Outside Corner Interior Cover Base	E9-1280
	Pressure Plate For Insulating Glazing Punched 9" o.c.	AS-3172			

ACCESSORIES

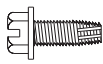
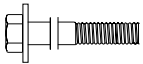


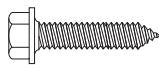




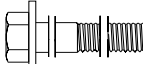



	Shear Block	E1-3001		“J” Anchor (Right Hand) For 90° Corner Mullion	E1-3014
	“J” Anchor	E1-3002		“J” Anchor (Left Hand) For 90° Corner Mullion	E1-3015
	Intermediate Mullion Mullion End Anchor Requires E1-3006 Anchor Sleeve	E1-3003		Shear Clip (Right Hand) For 90° Corner Mullion	E1-3016
	Jamb Mullion End Anchor Requires E1-3006 Anchor Sleeve	E1-3004		Shear Clip (Left Hand) For 90° Corner Mullion	E1-3017
	Mullion Splice Sleeve	E1-3005		Mullion End Anchor For 90° Corner Mullion	E1-3018
	Mullion Anchor Sleeve Use with E1-3003 & E1-3004	E1-3006		Setting Block For Insulating Glazing	E2-0611
	Mullion Reinforcement Sleeve	E1-3007		Joint Plug For Insulating Glazing	E2-0355
	Face Cover Splice Sleeve	E1-3009		Isolator Tape 1/4" x 3/8" Use with Perimeter Pressure Plate	E2-0386
	Mullion End Cap For Insulating Glazing	E1-3010		Setting Block For Monolithic Glazing	E2-0623
	Mullion End Cap For Single Glazing	E1-3011		Joint Plug For Single Glazing	E2-0358
	Temporary Pressure Plate	E1-3025		SSG Joint Plug For Single Glazing	E2-0370
	Shear Block For 90° Corner Mullion	E1-3013		SSG Joint Plug For Insulating Glazing	E2-0371

ACCESSORIES

	90° Outside Corner Joint Plug For Single Glazing	E2-0372		Bulb Gasket	E2-0354
	90° Outside Corner Joint Plug For Insulating Glazing	E2-0373		Steel Reinforcing 2" x 4" x 1/8" tube For Single Span 90° Corner	E1-0187
	Wind Load / Dead Load Anchor Slip Pad	E3-0103		Steel Reinforcing 2-1/2" x 4-3/8" x 3/16" Channel For Intermediate Vertical	E1-0189
	Wind Load Anchor* Refer to Shop Drawings for Anchor Dimensions	E1-1204		Steel E1-0187 Reinforcing 2" x 4" x 1/8" Tube with Channel Assembly For Twin Span 90° Corner	E1-0192
	Dead Load Anchor* Refer to Shop Drawings for Anchor Dimensions	E1-1205		Drill Fixture	H-7213
	90° Corner Wind Load Anchor* Refer to Shop Drawings for Anchor Dimensions	E1-0191		#8-32 x 1/2" FHTCS Type F Zinc Plated Steel For Attachment of Face Cover Splice Sleeve	FF-0808
	90° Corner Dead Load Anchor* Refer to Shop Drawings for Anchor Dimensions	E1-0190		#10 x 1" FHSMS Type AB Zinc Plated Steel For Attachment of Single Glazing Adaptor	FC-1016
	Jamb Anchor Plate 3" x 6" x 5/16" Thk.	E1-3536		#12 x 3/4" FHSMS Type AB Zinc Plated Steel For Attachment of Mullion Splice Sleeve	FC-1212
	Interior/Exterior Glazing Gasket	E2-0379		#12 x 1-1/4" FHSMS Type AB Zinc Plated Steel For Attachment of Horizontal to Shear Block	FC-1220
	Interior/Exterior Glazing Gasket For 1/4" Non-Impact Glazing	E2-0380		#14 x 5/8" FHSMS Type AB Zinc Plated Steel For Attachment of Mullion End Cap	FC-1410
	Interior Glazing Spacer Slide for Large Missile Glazing that Requires an Interior Structural Silicone Seal	E2-0353		#8 x 3/8" PHSMS Type AB Zinc Plated Steel For Attachment of E9-3152 Corner Trim	PC-0806
	SSG Glazing Spacer For Small Missile Glazing that Requires an Interior Structural Silicone Seal - Below 90PSF	E2-0176		#10 x 5/8" PHSMS Type AB Zinc Plated Steel For Attachment of E1-3006 Anchor Sleeve	PC-1010

***Note:** Exact size of anchors should be determined from loads calculated on each individual curtain wall.

ACCESSORIES

	1/4\"-20 x 5/8\" HWHTCS Type F , Zinc Plated Steel For Attachment of Shear Block to Vertical	HF-2510-W1		3/8\"-16 x 4\" HHMS Grade 5 Zinc Plated Steel For Attachment of "J" Anchor at Intermediate Vertical	HM-3864
	1/4\"-20 x 1\" HWHTCS Type F , Zinc Plated Steel For Attachment of Shear Block to Vertical with Steel Reinforcing	HF-2516-W1		1/2\"-13 Nut HHMS Zinc Plated Steel, For Attachment of Mid-Anchors (Wind Load / Dead Load)	HM-5000
	1/4\"-20 x 1\" HWHMS Zinc Plated Steel For Attachment of Pressure Plate to Mullion	HD-2520-W3		1/2\" Flat Washer Zinc Plated Steel, For Attachment of Mid-Anchors (Wind Load / Dead Load)	WW-5000
	3/8\"-16 Nut HHMS Zinc Plated Steel For Attachment of "J" Anchor	HM-3800		1/2\" Lock Washer Zinc Plated Steel, For Attachment of Mid-Anchors (Wind Load / Dead Load)	WS-5000
	3/8\" Flat Washer Zinc Plated Steel For Attachment of "J" Anchor	WW-3800		1/2\"-13 x 4-1/2\" HHMS Grade 5, Zinc Plated Steel For Attachment of Mid-Anchors (Wind Load / Dead Load)	HM-5072
	3/8\" Lock Washer Zinc Plated Steel For Attachment of "J" Anchor	WS-3800		1/2\"-13 x 2\" HHMS Grade 5 Zinc Plated Steel, For Attachment of Jamb Mid-Anchors (Wind Load / Dead Load)	HM-5032
	3/8\"-16 x 1\" HHMS Grade 5 Zinc Plated Steel For Attachment of "J" Anchor at Jamb	HM-3816			

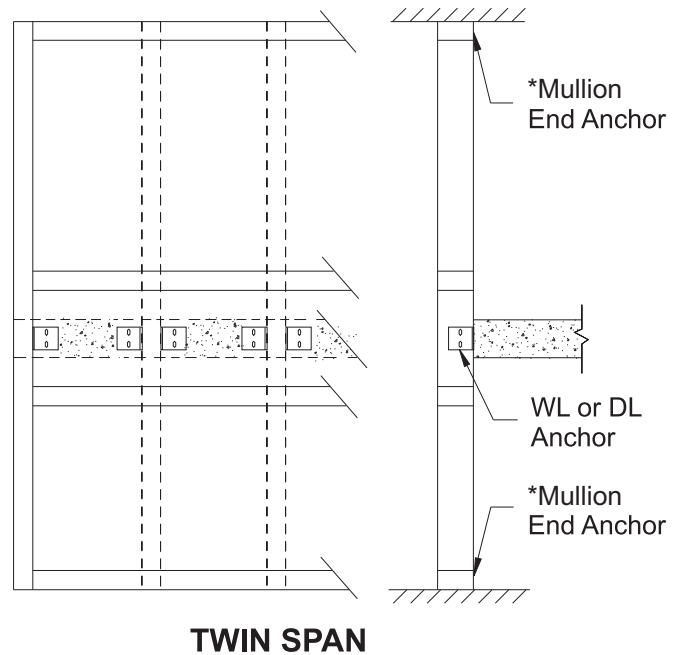
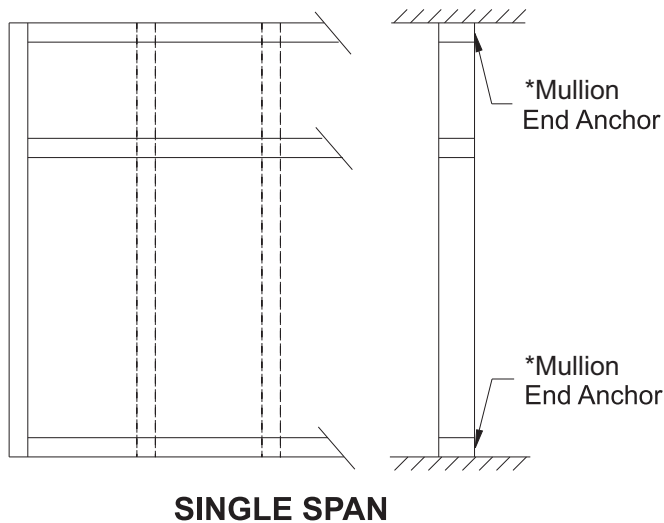
****Note:** Refer to Florida Product Approvals or Engineer of Record for anchor fastener sizes and locations.

FRAME FABRICATION

FRAME TYPES ANCHORING METHODS:

Note: The following is a guideline for types of frames. Refer to the shop drawings or consult factory for exact layout of frames. These installation instructions are to be used in conjunction with approved shop drawings. Consult shop drawings for anchorage of mullions to structure.

Larger units require being stick assembled in place with open horizontals used in the last bay.



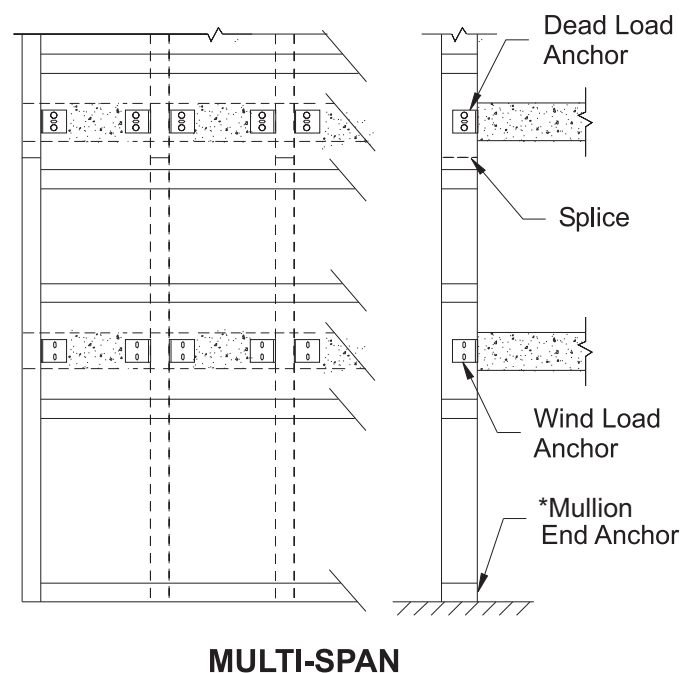
Smaller units may be assembled on the ground and tipped up into position.

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.

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

Fabrication of YHC 300 SSG varies depending on which anchors are required for a given project.

*Mullion end attachment will be "J", "F", "T" mullion end anchor. Refer to shop drawings or consult Tech Center.



FRAME FABRICATION

Using Mullion End Anchors:

YHC 300 SSG has three possible end anchoring conditions: "J", "T", and "F".

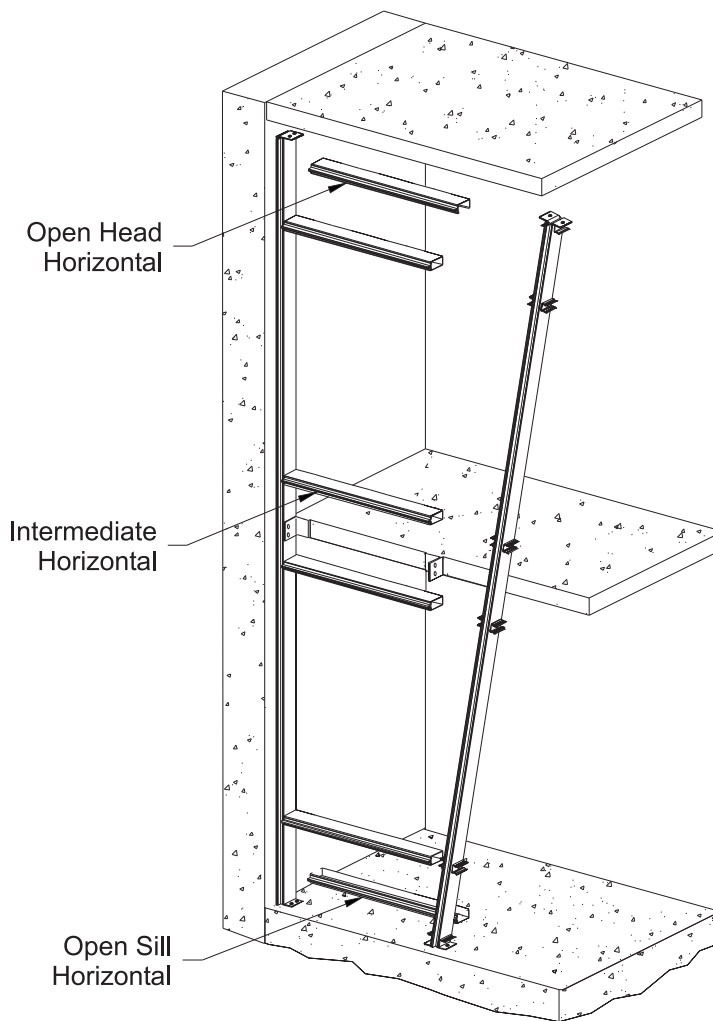
- "J" anchors are used with jambs and intermediate mullions at the sill only.
- "T" anchors are used with intermediate mullions at the head and sill.
- "F" anchors are used with jamb mullions at the head and sill.
- "Door Jamb" anchors are used with mullions at a door jamb and are specified by the approved shop drawings or P.E. calcs.
- Anchor usage depends on end reaction, stress, and attachment.

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

Framing members:

- Open back members are used for all head and sill members.
- Closed horizontal members are used at all intermediate locations with the exception of end bays.
- Open back members are used for intermediate horizontals at end bays, to slide over the shear blocks.

Note: When using stick built construction, check for plumb, level, and overall frame width every fifth mullion. This helps to avoid the build up of cumulative tolerance errors. Also check that all anchors are secure and firmly attached to the building.



FRAME FABRICATION

FABRICATE VERTICAL MULLIONS

Step 1

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

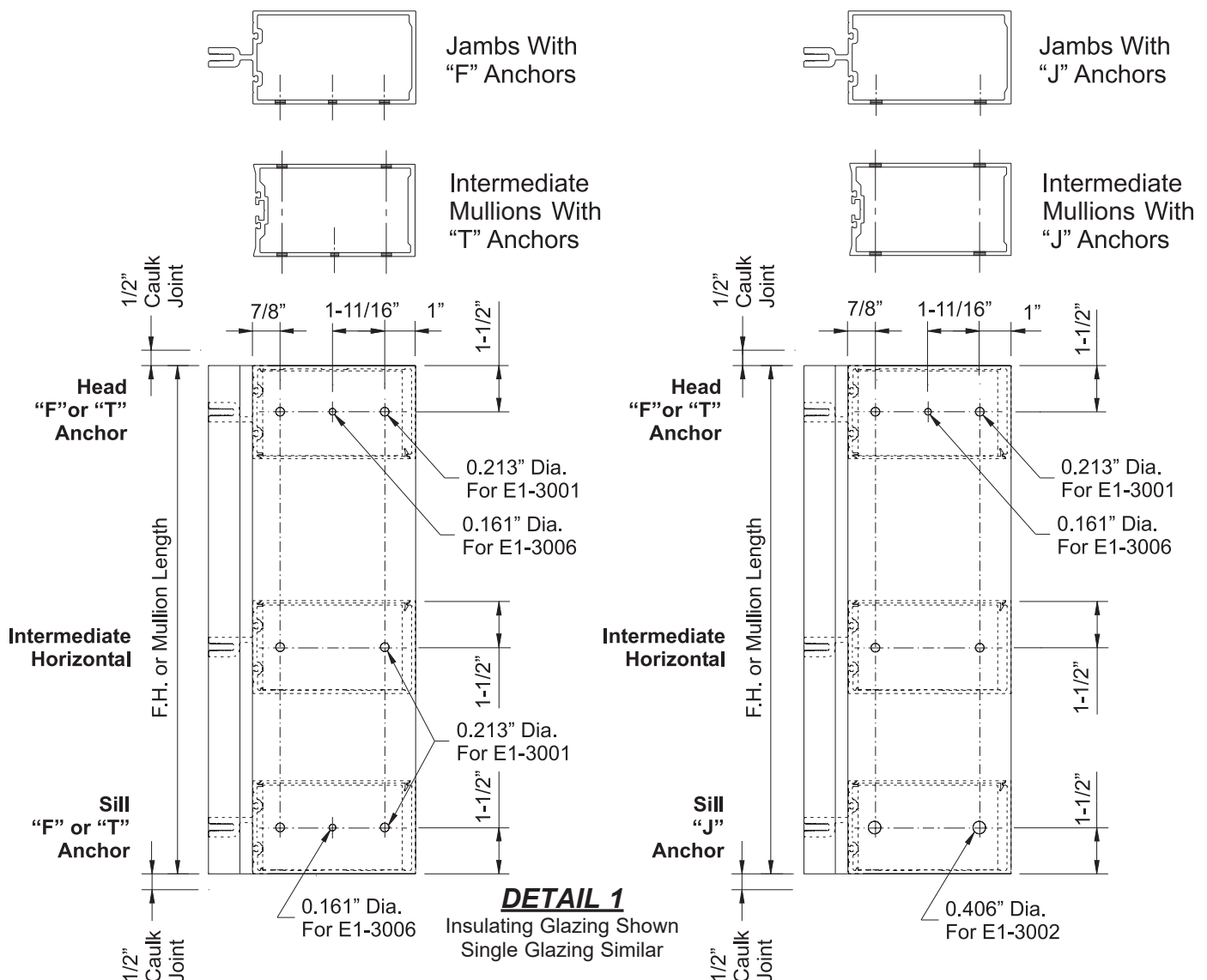
Note: Mullion at door jambs are sealed against the substrate at the sill without a shim space at that location.

Step 2

Mullion hole locations for attachment of shear blocks, or "J" anchor are shown below:

-Locate and drill holes in intermediate and jamb mullions at the locations shown in **Detail 1**.

Note: Mullion hole locations and diameters vary depending on shear block or "J" Anchor usage.
"J" Anchors are used at the sill only.



FRAME FABRICATION

FABRICATE DOOR JAMB MULLIONS

Step 1

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

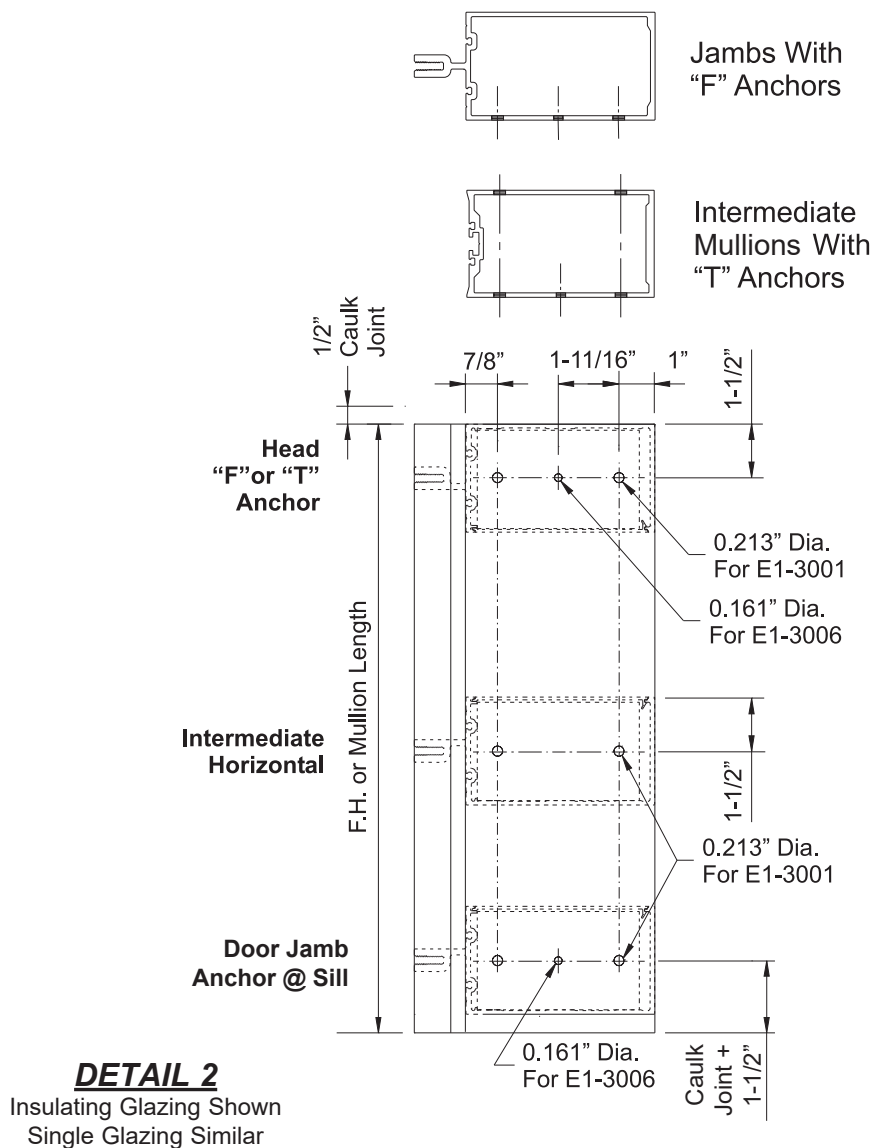
Step 2

Mullion hole locations for attachment of shear blocks are shown below:

- Locate and drill holes in mullions at the locations shown in **Detail 2**.

Note: Mullion hole locations and diameters vary depending on shear block usage.

"J" Anchors are not used at door jambs.



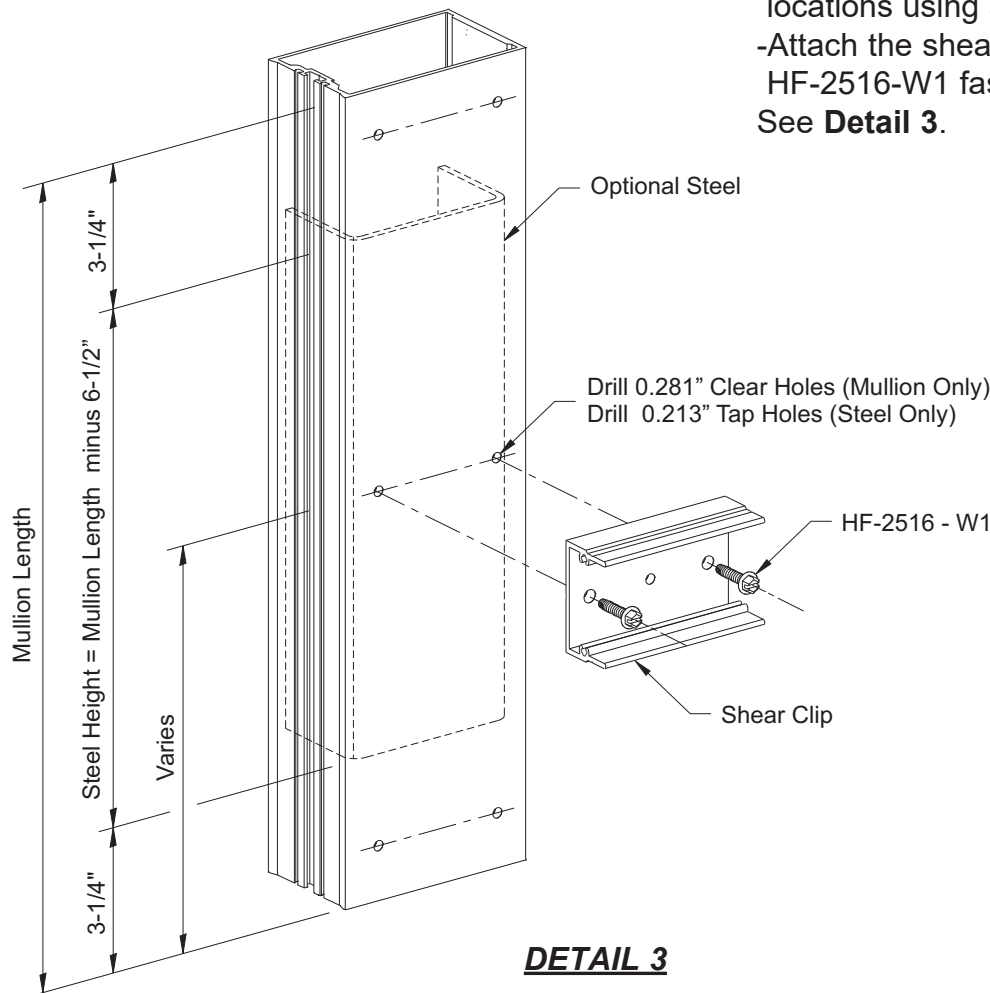
FRAME FABRICATION

STEP 3 USING ALTERNATE REINFORCEMENT

- Reference your shop drawings for the location of horizontals. Steel channels are always fastened through the shear clip.
- Drill a 0.281" diameter hole in the mullion being careful to not drill a hole in steel channel.
- Reinforcing must allow clearance for anchor sleeve; locate reinforcing a minimum of 3-1/4" from the end of the mullion.

See **Detail 3**.

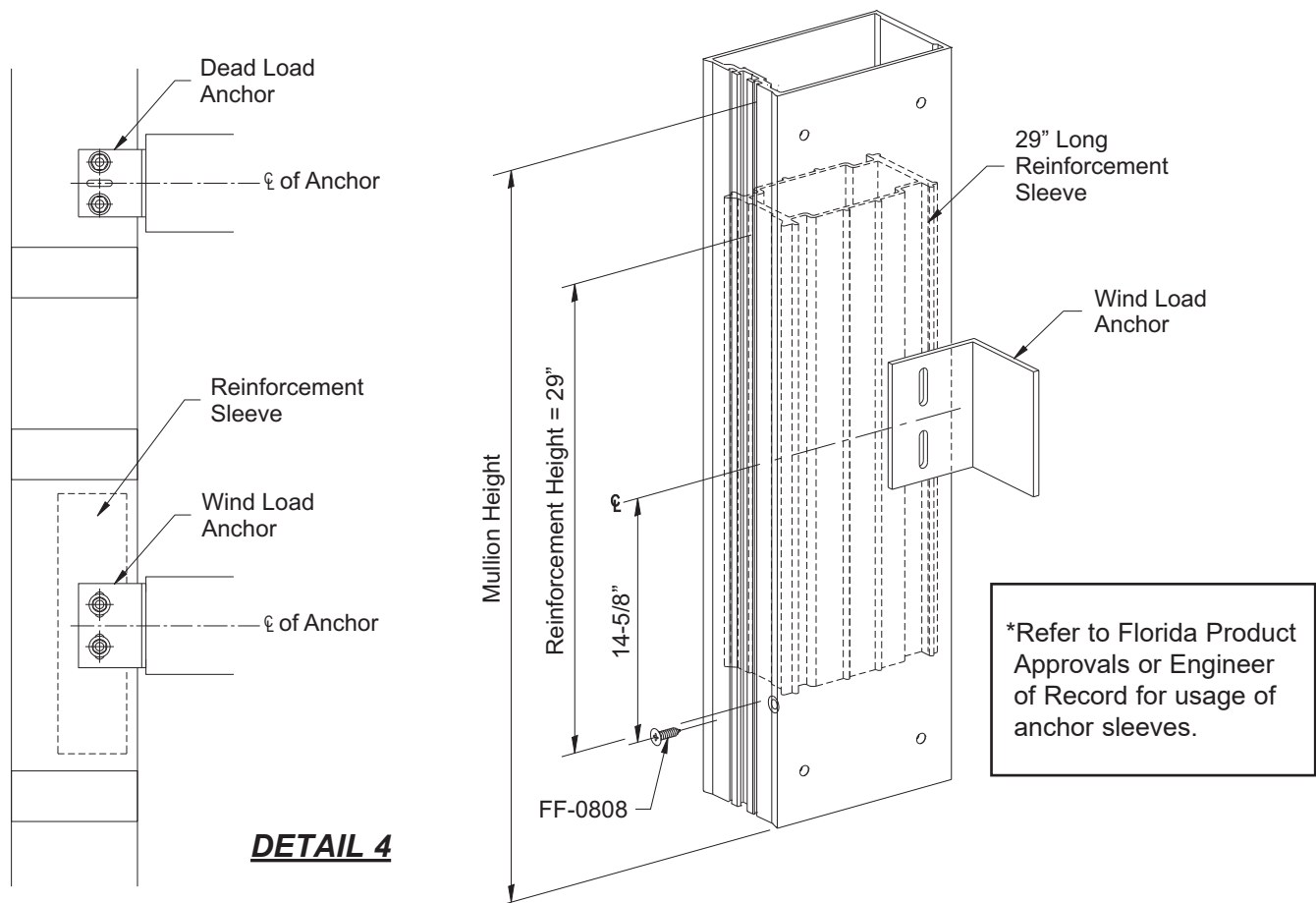
- Drill a 0.213" diameter hole in steel channel through the same hole locations using a #3 diameter drill bit.
 - Attach the shear clip using two HF-2516-W1 fasteners per clip.
- See **Detail 3**.



FRAME FABRICATION

STEP 3 (Continued) USING ALTERNATE REINFORCEMENT, REINFORCEMENT SLEEVE

If the engineering calculations require the mullions to be reinforced with additional aluminum, a reinforcement sleeve may be used. Checking stress levels at point load areas will require different anchors or possibly steel reinforcing. A qualified engineer should do these calculations.



- When locating reinforcement sleeve at wind load or dead load anchors see **Detail 4**.
 - Reference your shop drawings for the exact location of the centerline of the wind load/dead load anchors.
 - From the centerline, measure down 14-5/8" along the "V"-groove of the mullion, and locate hole for FF-0808 fastener as a stop for reinforcement sleeve.
 - Drill a 0.141" diameter hole into the V-Groove of mullion.
 - Countersink for #8 flat head screw and install FF-0808 fastener.
- See **Detail 4**.

FRAME FABRICATION

Mullions with “F” or “T” Anchors at Head & Sill

STEP 4

SHEAR BLOCKS FOR HORIZONTALS

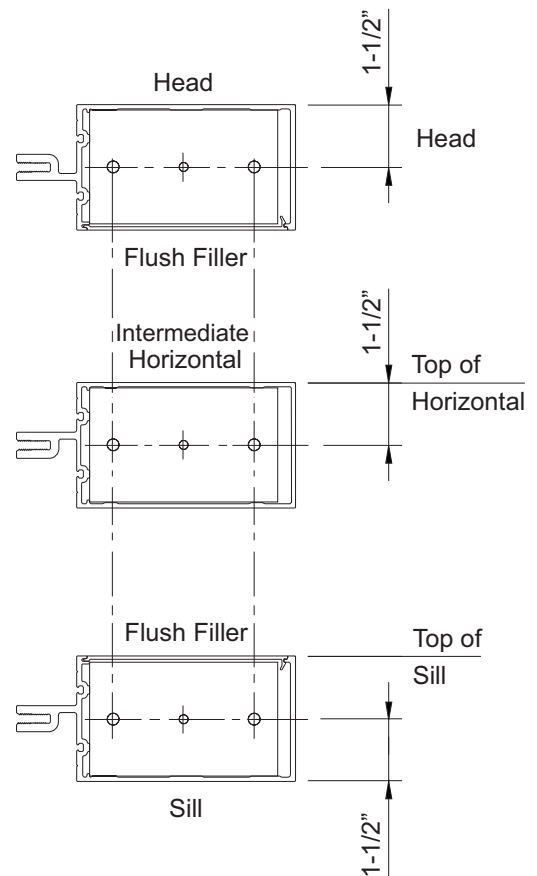
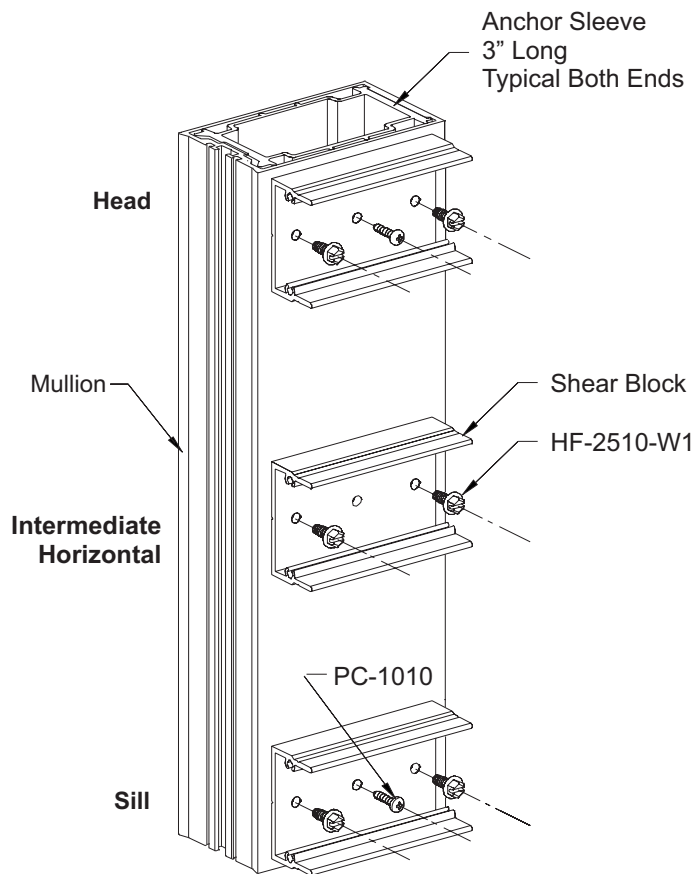
Shear blocks are used to attach horizontal members to the jamb and intermediate mullions.

-Fasten shear blocks to the mullion with two HF-2510-W1 fasteners per clip.

The anchor sleeve centers the “F” and “T” mullion end anchors and must be installed when using “T” anchors, and “F” anchors. Anchor sleeves are not required when using a “J” anchor.

-Attach the anchor sleeve to the mullion and shear blocks with one PC-1010 fastener.
Anchor sleeves are attached only on one side of the mullion.

See **Detail 5**.



DETAIL 5

Insulating Glazing Shown
Single Glazing Similar

FRAME FABRICATION

Mullions with "T" Anchor at Head & "J" Anchor at Sill

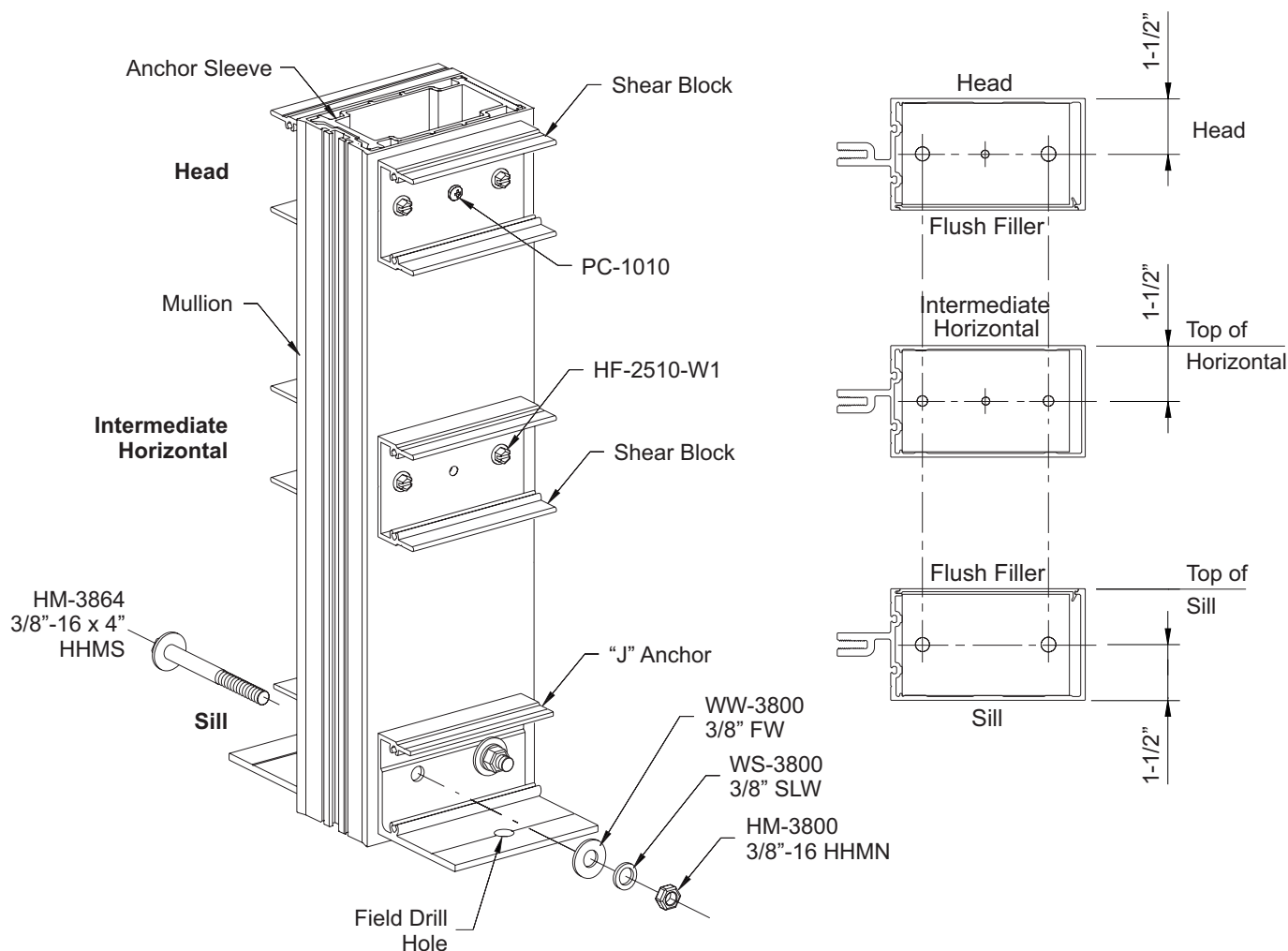
STEP 5

"J" ANCHORS AT INTERMEDIATE MULLIONS

The "J" anchor is installed without the anchor sleeve and is designed to be attached to intermediate mullions using two through bolts as shown below.

- Align the "J" anchors and insert the HM-3864 bolts through both anchors and the mullion.
- Install 3/8" flat washers and 3/8" lock washers between the anchor and HM-3800 hex nuts.

See **Detail 6**.



DETAIL 6

Insulating Glazing Shown
Single Glazing Similar

FRAME FABRICATION

Mullions with "T" Anchor at Head & "J" Anchor at Sill

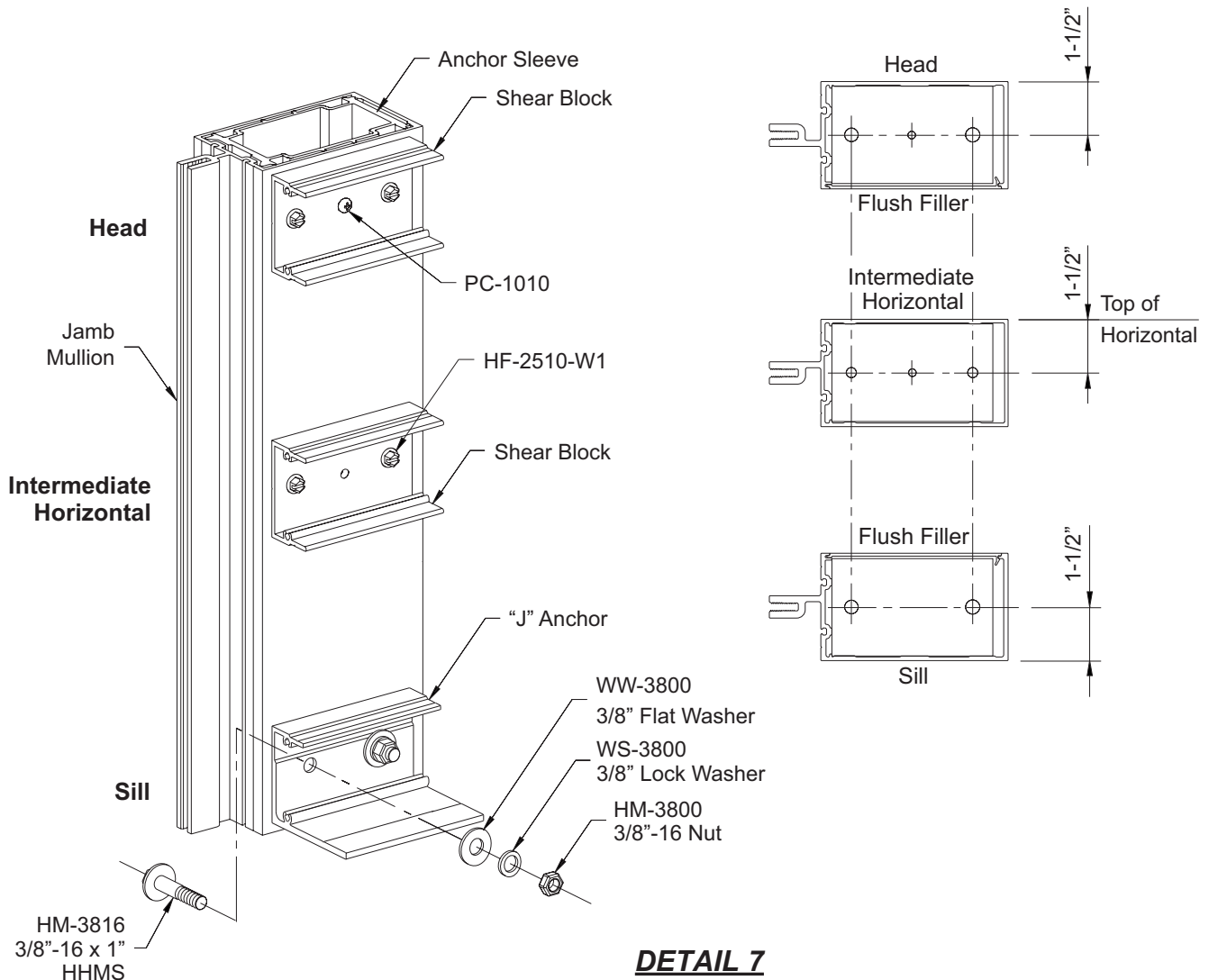
STEP 5 (Continued)

"J" ANCHORS AT JAMB CONDITIONS

A "J" anchor is installed without anchor sleeve, and is designed to be attached to jamb mullions using two 3/8" x 1" bolts as shown below.

- Align the "J" anchor with the mullion and insert the HM-3816 bolts through the inside of the mullion and out the "J" anchor.
- Install 3/8" flat washers and 3/8" lock washers between the anchor and HM-3800 hex nuts.

See **Detail 7**.



DETAIL 7

Insulating Glazing Shown
Single Glazing Similar

FRAME FABRICATION

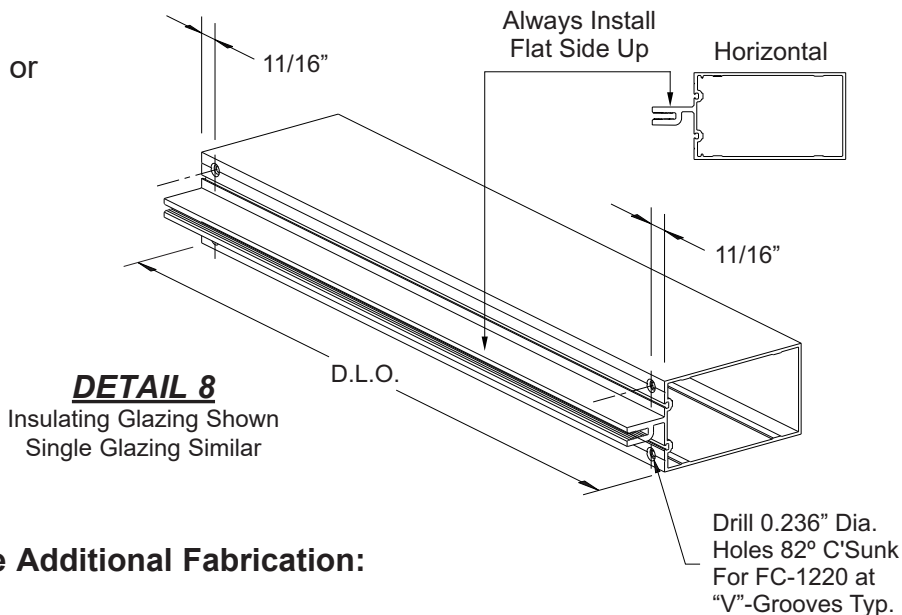
STEP 6

FABRICATE HORIZONTAL MEMBERS

- Cut all head, horizontal, sill members, and flush fillers to the daylight opening.
- Drill two 0.236" (#B) dia. holes along the "V"-Grooves above and below the mullion tongue on both ends of the mullion to attach members to the shear clips.

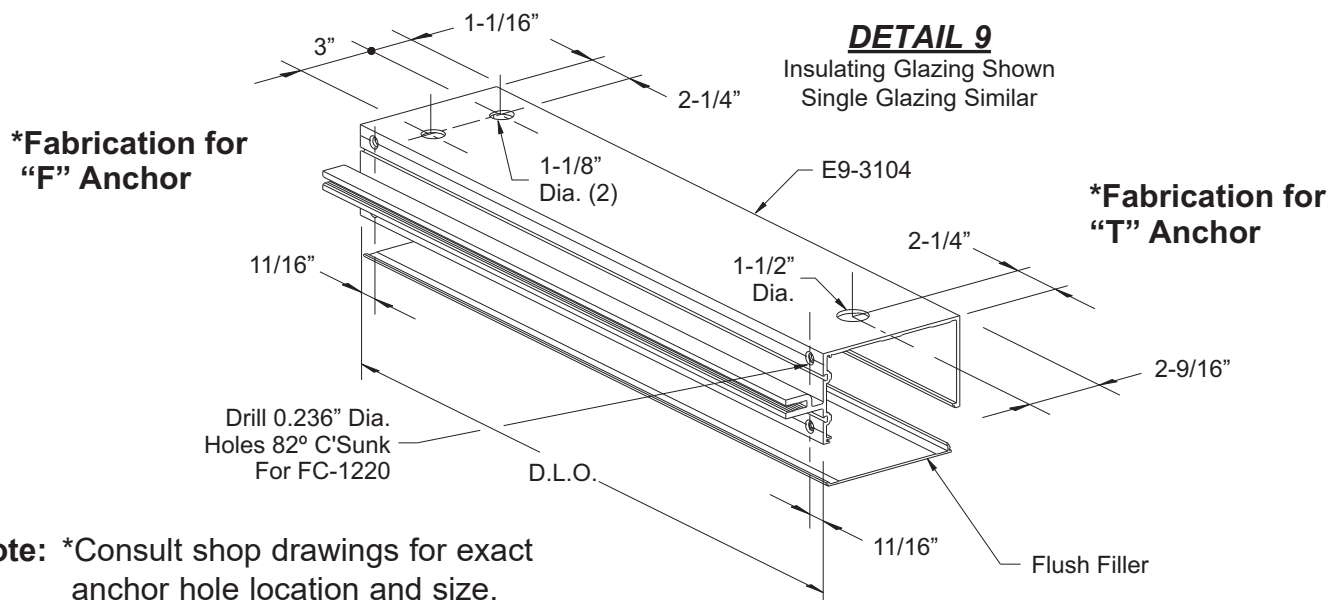
Note: Closed back horizontals are not to be used at head or sill conditions.

See **Details 8 & 9**.



Head and Sill Members Require Additional Fabrication:

- Drill appropriate size clearance holes at each end of the mullion as shown in **Detail 9**, or according to shop drawings or engineering calculations to clear anchor bolts and nuts.



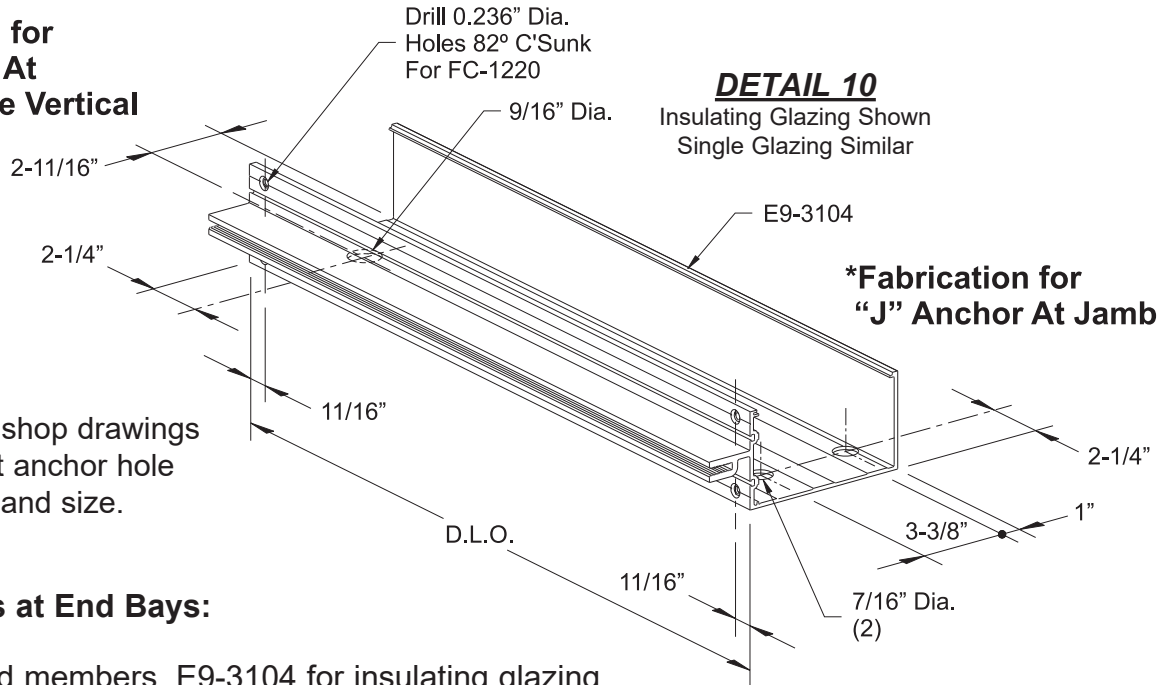
Note: *Consult shop drawings for exact anchor hole location and size.

FRAME FABRICATION

STEP 6 (Continued) FABRICATE HORIZONTAL MEMBERS

-When using “J” anchors, drill appropriate size clearance holes at each end of the sill member as shown in **Detail 10**, or according to shop drawings or engineering calculations to clear anchor bolts.

*Fabrication for “J” Anchor At Intermediate Vertical



Note: *Consult shop drawings for exact anchor hole location and size.

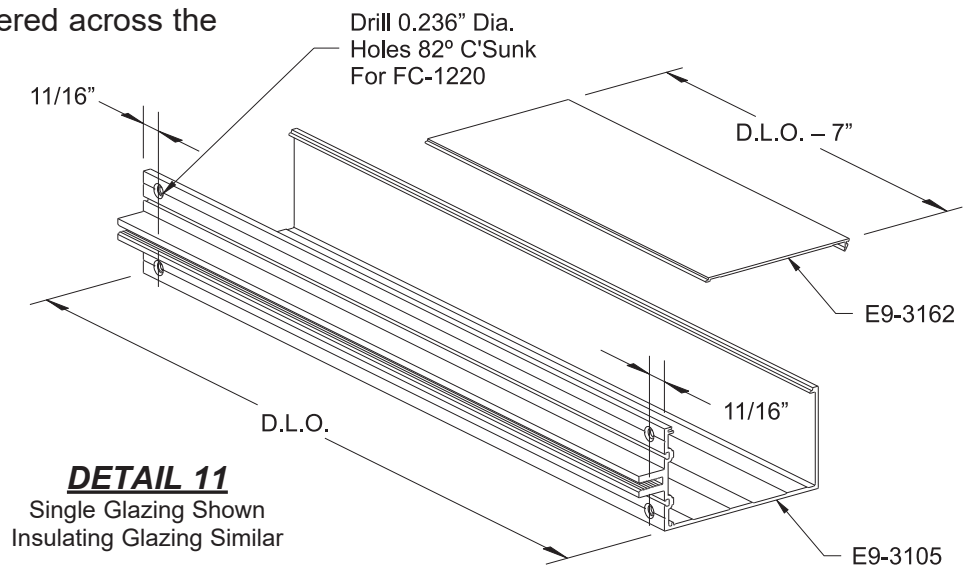
Head Members at End Bays:

Open back head members, E9-3104 for insulating glazing and E9-3105 for single glazing, are installed with the open side facing the structure at end bays. To clear the anchor bolts:

-Cut the flush filler to Daylight Opening minus(–) 7”.

-Snap in the flush filler centered across the width of the mullion.

See **Detail 11**.



STEP 7

- Pressure plate stock lengths have 0.281" dia. holes factory punched every 9".
- Cut all jamb pressure plates to the same length as the jamb mullions.
- Drill additional holes if required to ensure that end holes are at 1-1/2" of each end.
- If jamb members are spliced, cut pressure plates to accommodate for 1/2" expansion joint as shown in **Detail 16** on **Page-20**.

-For pressure plates spanning more than one bay, cut them to the centerline to centerline dimension between mullions minus(-) 1/8".

-Drill two 0.313" diameter weep holes 3" from each end and one at the centerline of the pressure plate for each lite of glass.



FRAME FABRICATION

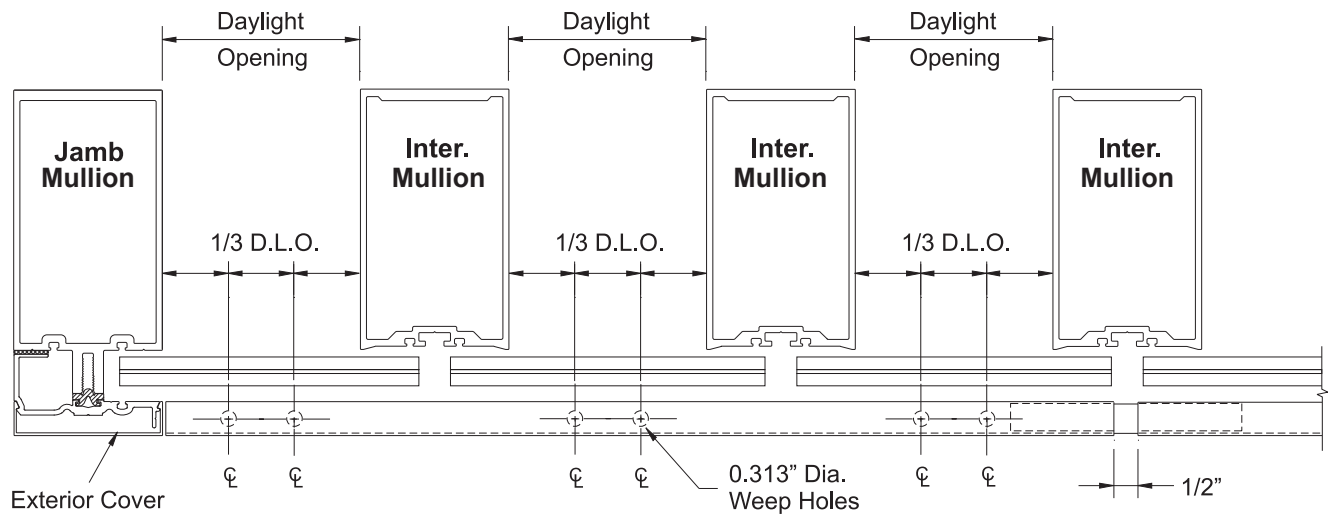
STEP 8

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 **Detail 16** on **Page-20**.

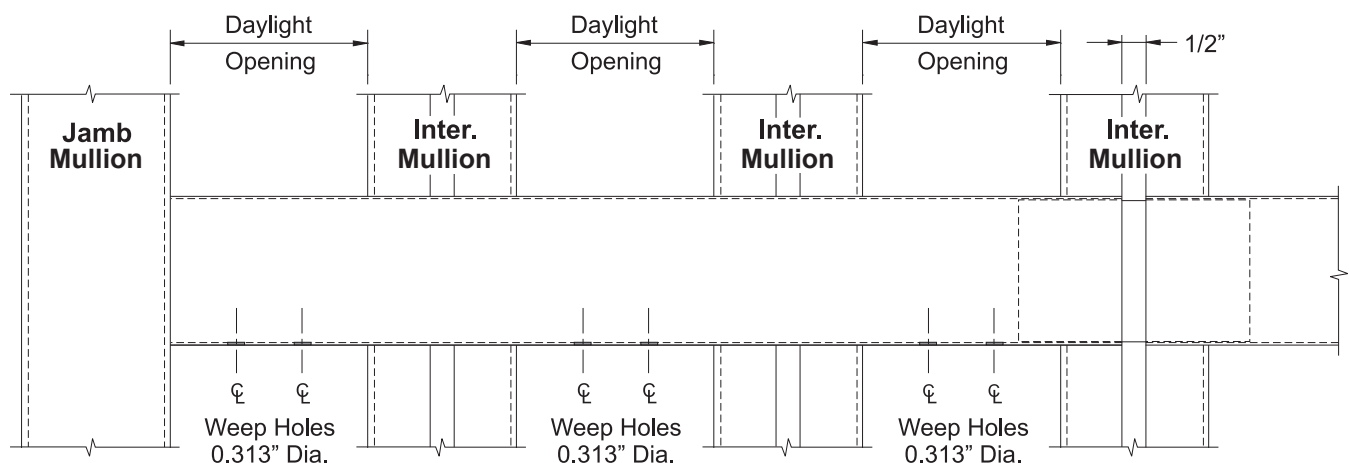
-Cut horizontal covers 1/32" short of jamb mullion on jamb side of frame. Covers are to be spliced at every third light of glass at the centerline of mullion. Optionally, covers may be spliced at every centerline of vertical mullions.

-Drill two 0.313" diameter weep holes as shown, at 1/3 points of each daylight opening. See **Detail 13**.



DETAIL 13

Single Glazing Shown
Insulating Glazing Similar



FRAME FABRICATION

STEP 9

FABRICATE MULLIONS FOR SPLICES

Splice locator screw:

- Measure down 2-5/8" on the "V"-groove on the face of the mullion and mark the hole location.
- Drill a 0.141" diameter (#28 drill bit) diameter hole and countersink for a #8 flat head fastener for the splice locator screw.

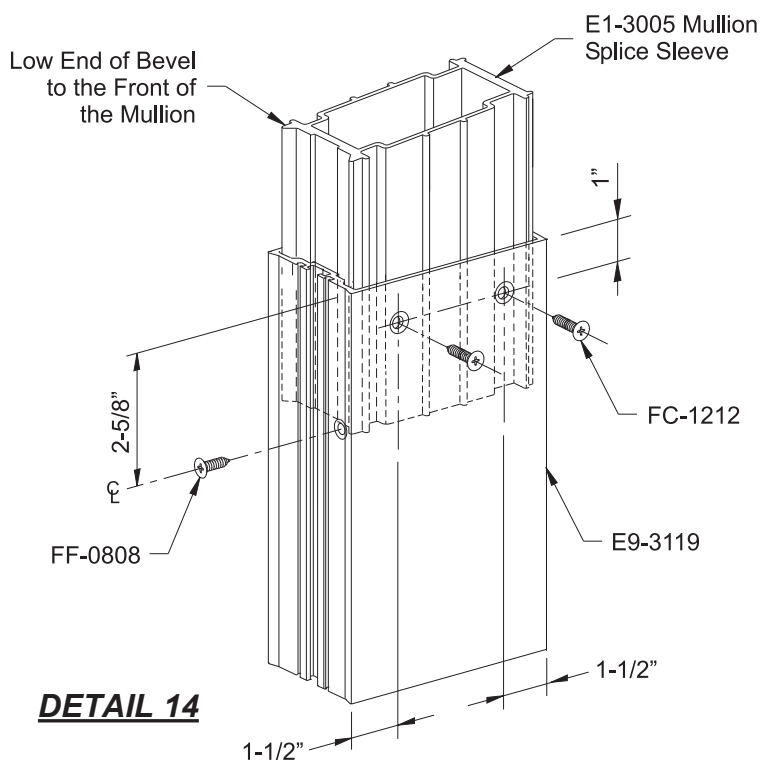
Splice sleeve attachment fasteners:

- Measure down from the top of the mullion 1" on both sides and draw a line parallel with the top of the mullion.
- Measure in from both, the front and the back of the mullion, 1-1/2" and mark the hole locations on the previously drawn lines.
- Drill a 0.236" diameter (#8 drill bit) diameter hole at each hole location and countersink for a #12 flat head fastener.

Install splice sleeve beveled end up:

- Install one (1) FF-0808 fastener into the face of the mullion to properly locate the splice.
- Carefully slide the splice sleeve down into the end of the mullion with the beveled end up (the beveled end will ease the stacking of the next mullion).
- Match drill 0.189" diameter (#12 drill bit) holes in the splice sleeve through the holes previously drilled in the mullion for the splice sleeve attachment fasteners.
- Attach the splice sleeve with two FC-1212 fasteners on each side of the mullion.

See **Detail 14**.



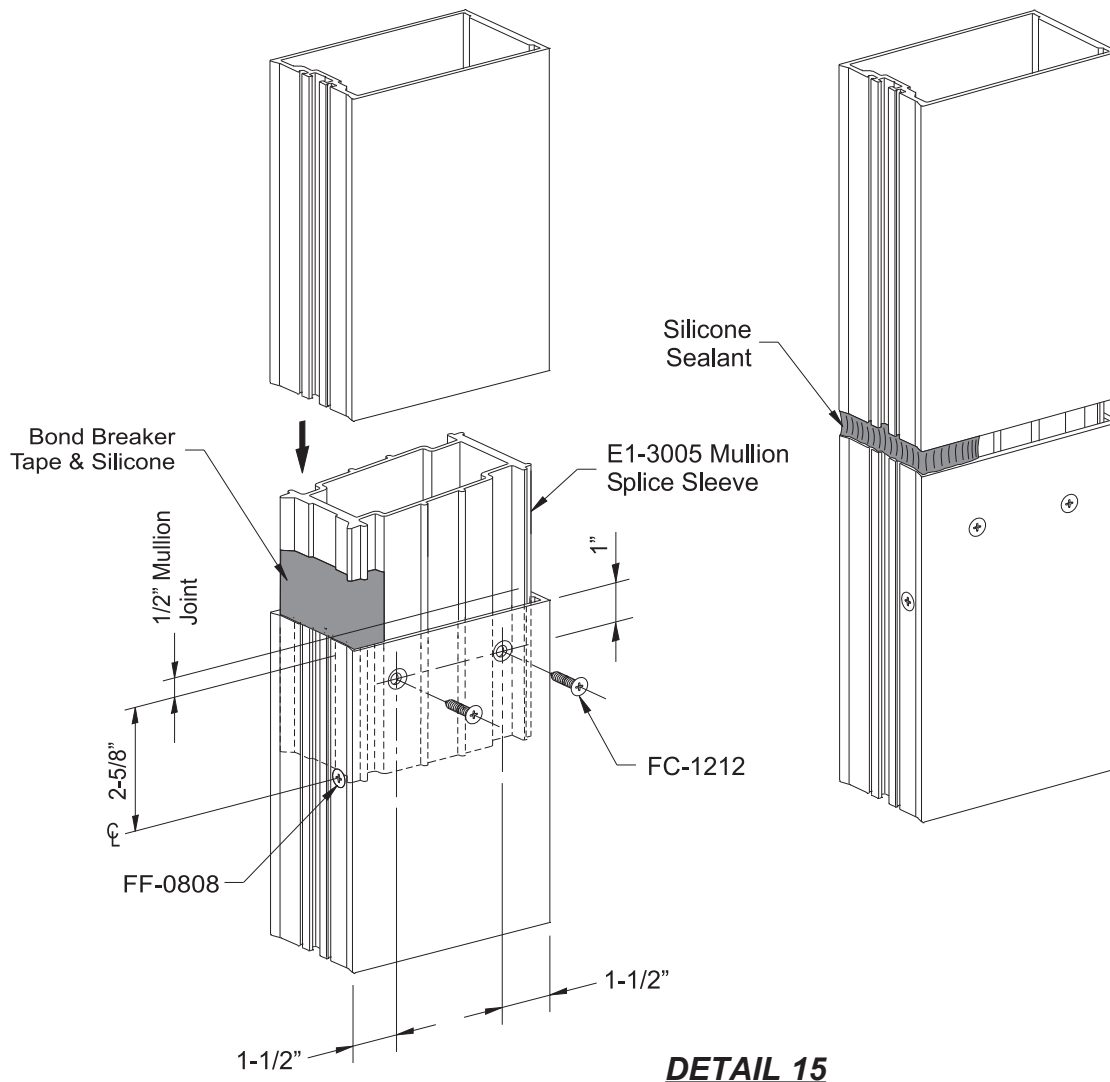
FRAME INSTALLATION

STEP 10

TYPICAL SPLICE AT INTERMEDIATE MULLION

- Clean all contact surfaces as recommended by the sealant manufacturer.
- Apply bond breaker tape to the face of the mullion splice sleeve.
- Carefully slide the next 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 shim.
- Apply and tool sealant to the face and sides of the splice sleeve to create a water tight joint.

See **Detail 15**.



DETAIL 15

FRAME INSTALLATION

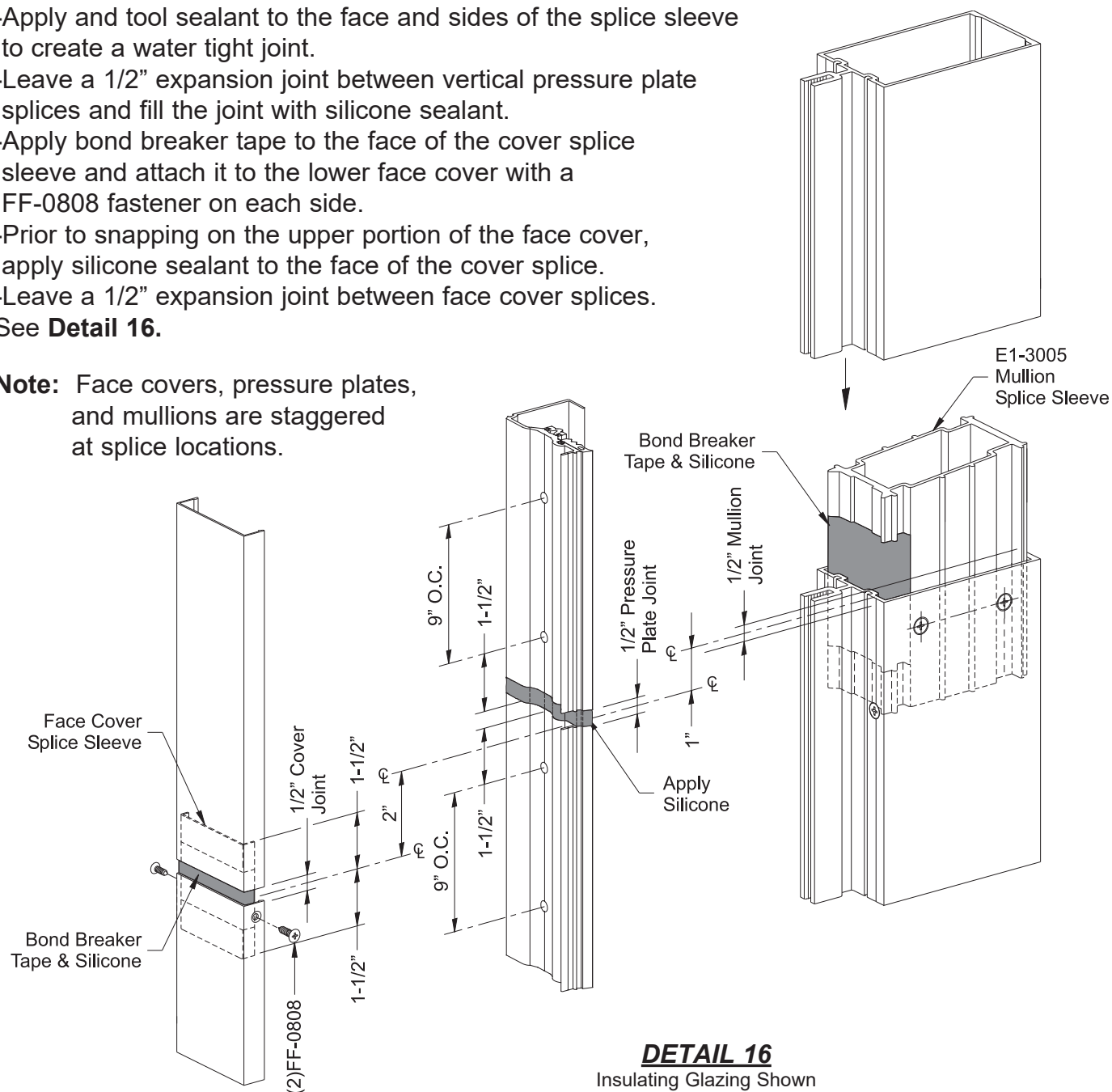
STEP 11

TYPICAL SPLICE AT JAMB MULLION

- Clean all contact surfaces as recommended by the sealant manufacturer.
- Apply bond breaker tape to the face of the mullion splice sleeve.
- Carefully slide the next 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 shim.
- 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 silicone sealant.
- Apply bond breaker tape to the face of the cover splice sleeve and attach it to the lower face cover with a FF-0808 fastener on each side.
- Prior to snapping on the upper portion of the face cover, apply silicone sealant to the face of the cover splice.
- Leave a 1/2" expansion joint between face cover splices.

See **Detail 16**.

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



DETAIL 16

Insulating Glazing Shown
Single Glazing Similar

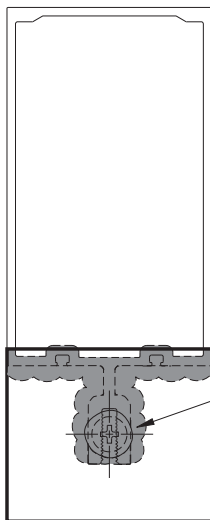
FRAME INSTALLATION

STEP 12

INSTALL MULLION END CAPS AT JAMBS

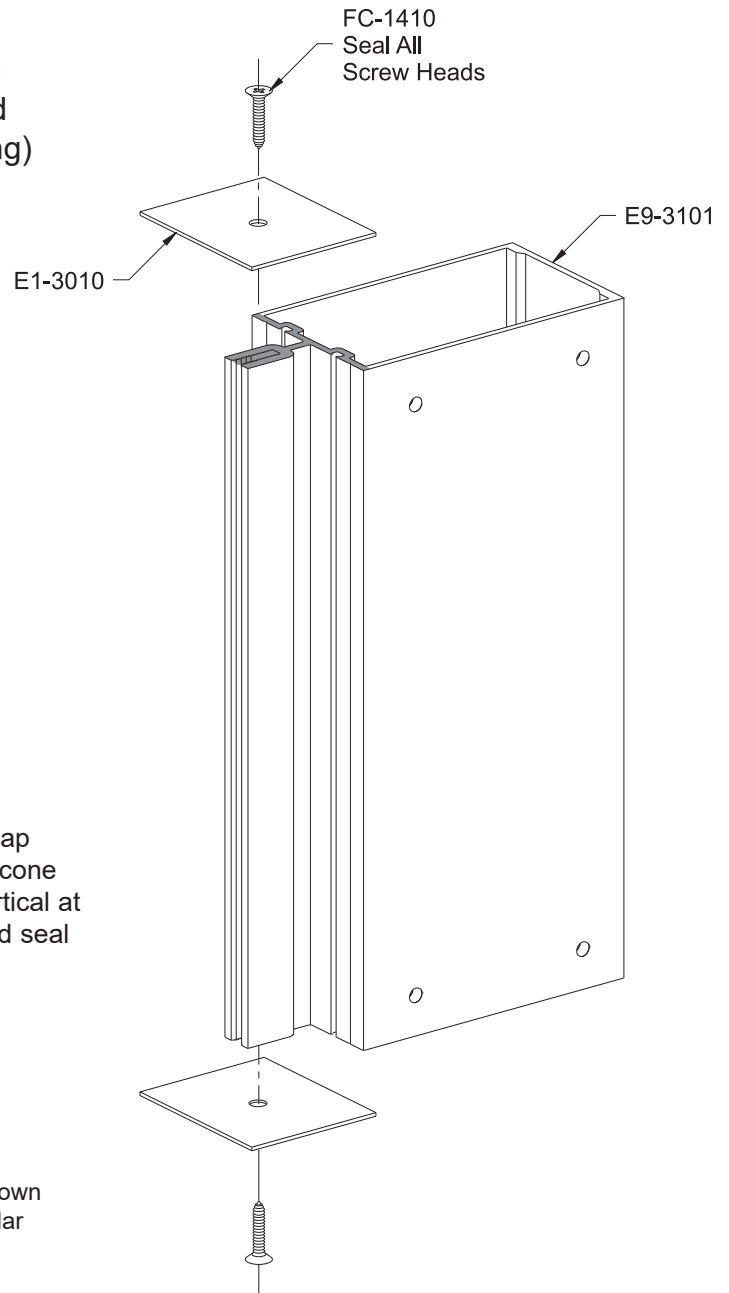
- Clean all contact surfaces as recommended by the sealant manufacturer.
- Apply silicone sealant to screw raceway and edge of mullion prior to installing mullion end caps, E1-3010 for E9-3101 (insulating glazing) or E1-3011 for E9-3103 (single glazing).
- Prior to erecting vertical mullions, install mullion end caps using one FC-1410 fastener at each end of the mullion.
- Apply and tool sealant to all screw heads.

See **Detail 17**.



Note:
Seal mullion end cap water tight with silicone sealant around vertical at top and bottom and seal all screw heads.

DETAIL 17
Insulating Glazing Shown
Single Glazing Similar



CAUTION: Make sure that mullion end cap location does not interfere with the installation of mullion end anchors.

FRAME INSTALLATION

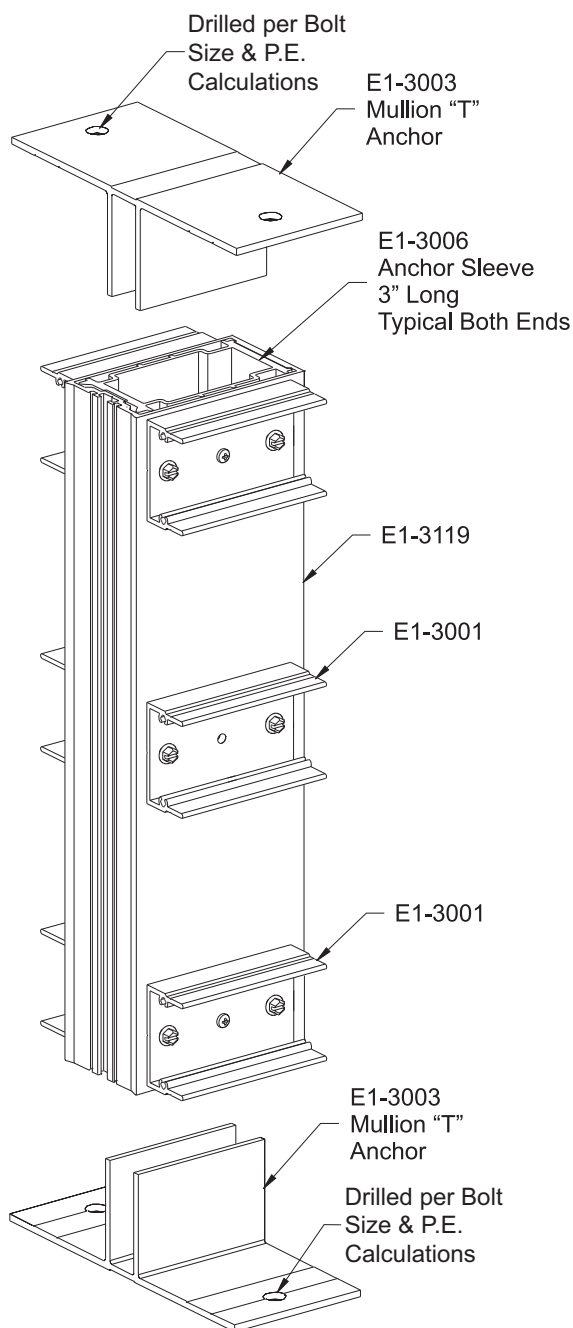
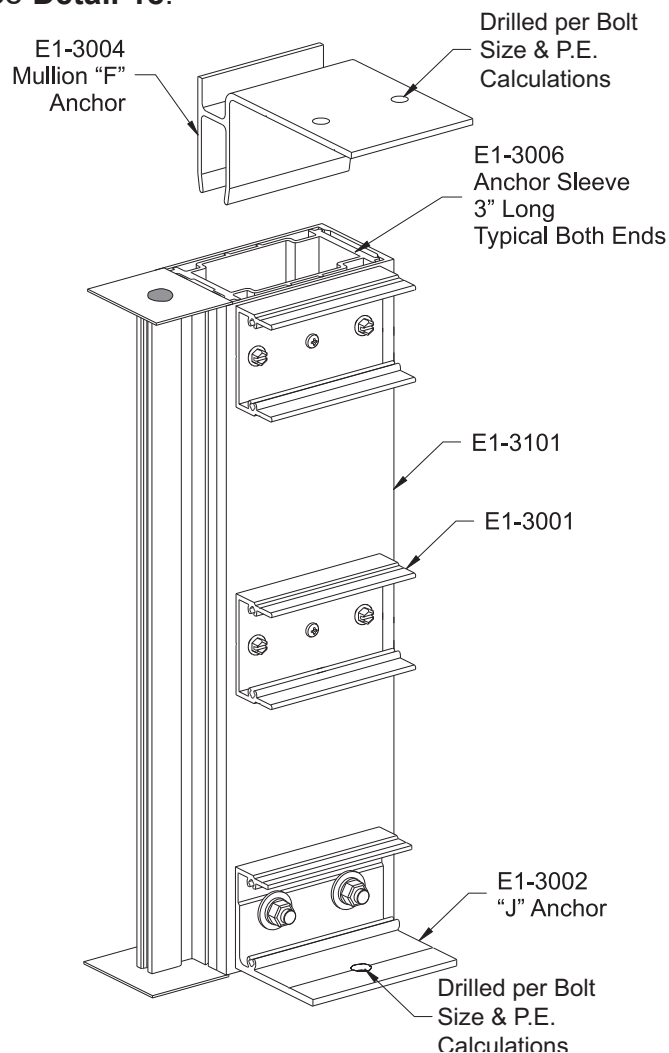
STEP 13 INSTALL JAMB AND INTERMEDIATE MULLIONS

- Insert mullion "T" anchors, E1-3003, and "F" anchors, E1-3004, into the top and bottom of the mullions before erecting them into the opening.
- Erect and locate the jamb and intermediate mullions and temporarily attach them to the structure.

Note: All mullions must be installed plumb and true.

- Field drill holes in "T", "F", and "J" anchors for appropriate anchor fasteners according to engineering calculations. Consult YKK AP if load requirements are in question.

See **Detail 18**.



DETAIL 18
Insulating Glazing Shown
Single Glazing Similar

FRAME INSTALLATION

Door Jamb Mullions

STEP 13A 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.

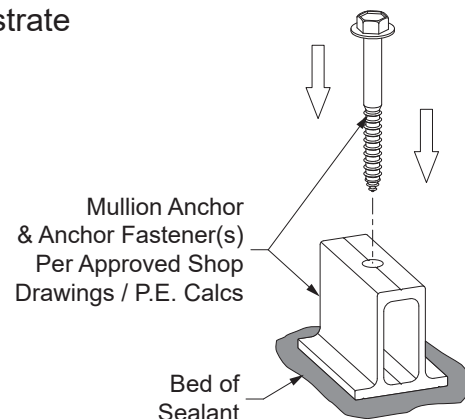
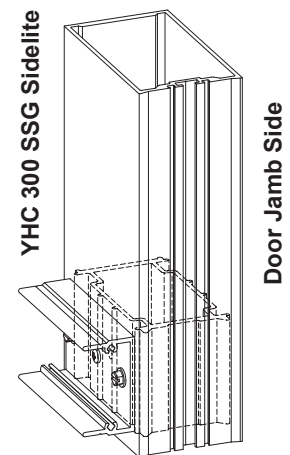
- Locate the mullion anchor for the door jamb and install it to the substrate according to the approved shop drawings and P.E. calculations.
 - Clean all contact surfaces as recommended by sealant manufacturer.
 - Set the mullion on the anchor, directly onto the sill substrate in a bed of sealant. Avoid using shims at this location.
- See **Detail 19**.

Note: For single-span elevations, the anchor sleeve must be installed temporarily 6" up from the bottom of the mullion and dropped into place after the mullion is rotated over the side of the door anchor.

See **Detail 19A**.

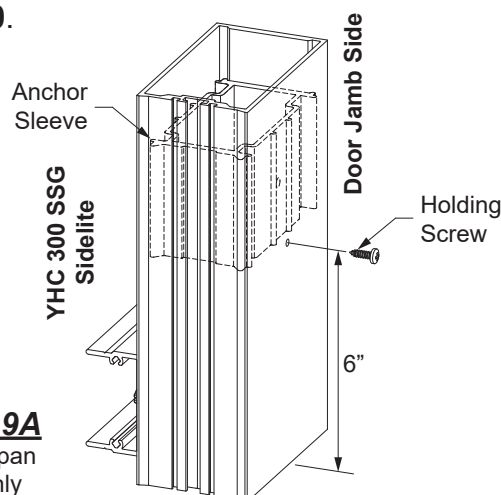
- Refer to the approved shop drawings for any additional fasteners required at anchor.
- Tool sealant at the bottom of the mullion at the sill substrate around the perimeter of the mullion.

See **Detail 20**.

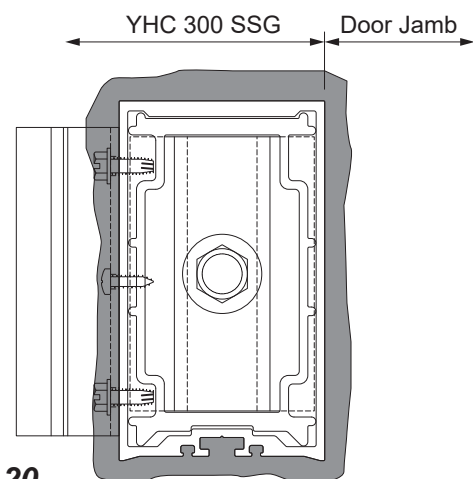


DETAIL 19

DETAIL 19A
For Single Span
Mullions Only



DETAIL 20



FRAME INSTALLATION

STEP 14

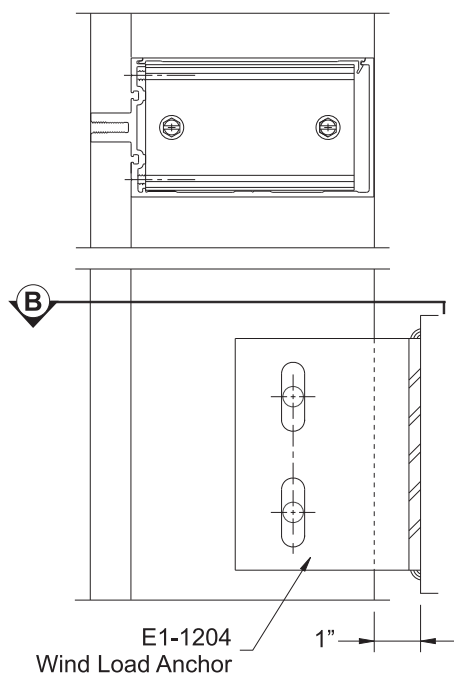
INSTALL WIND LOAD/DEAD LOAD ANCHORS

-Install steel mullion mid anchors:

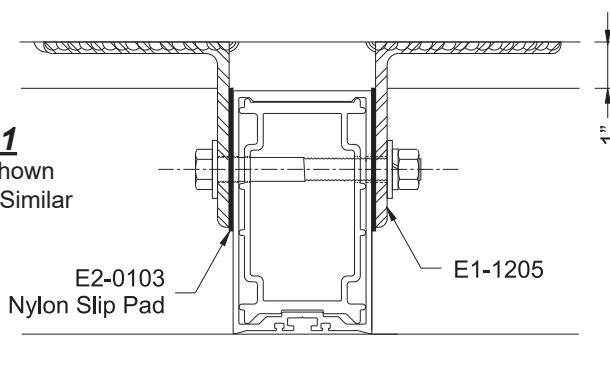
Wind Load Anchor, E1-1204. See **Detail 18**.

Dead Load Anchor, E1-1205. See **Detail 19**.

Note: Required anchors and bolt size will vary based on project requirements. Consult a qualified engineer or YKK AP.



DETAIL 21
Single Glazing Shown
Insulating Glazing Similar



SECTION B

-Mid anchors are normally template or line set before mullions are hung.

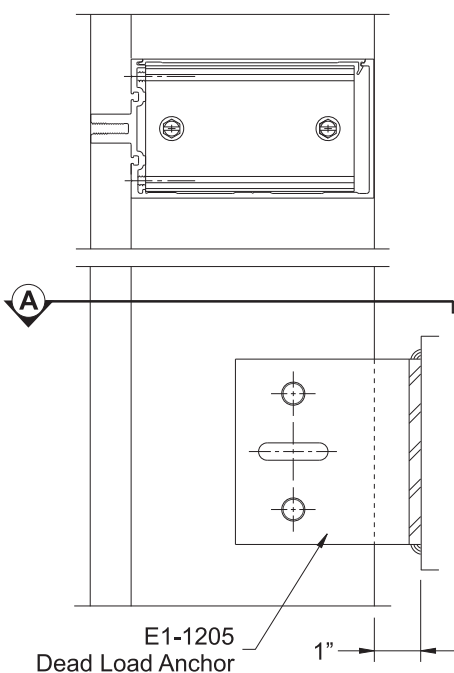
-Slotted or drilled leg of clip must be set at 90° to offset leg.

See shop drawings for details of mid anchor attachment.

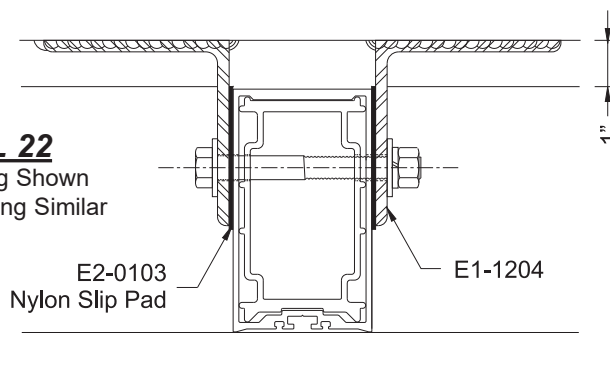
-Install plumb and align mullions, drill appropriate size holes for anchor bolts as shown in shop drawings.

-Anchor bolts are fastened **after** horizontals are attached.

-Nylon slip pads, E2-0103, **must** be installed between mullion and mid anchors.



DETAIL 22
Single Glazing Shown
Insulating Glazing Similar



SECTION A

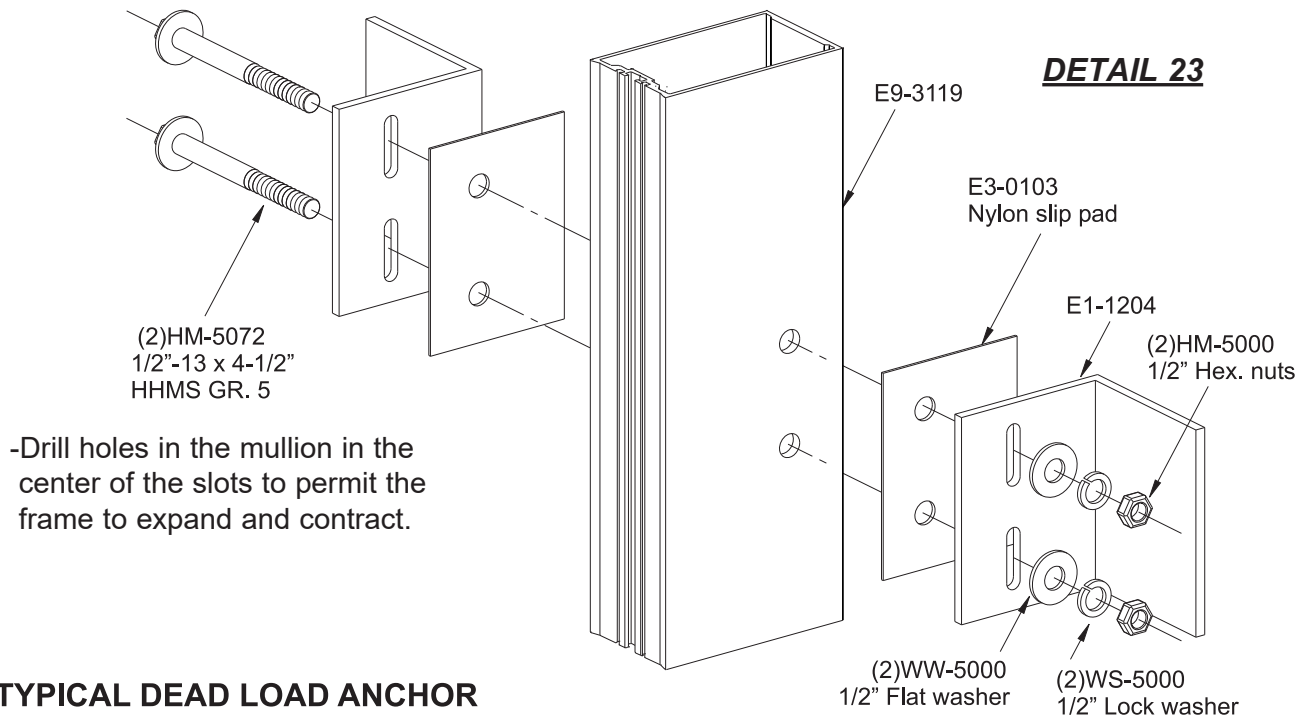
FRAME INSTALLATION

STEP 14 (CONTINUED)

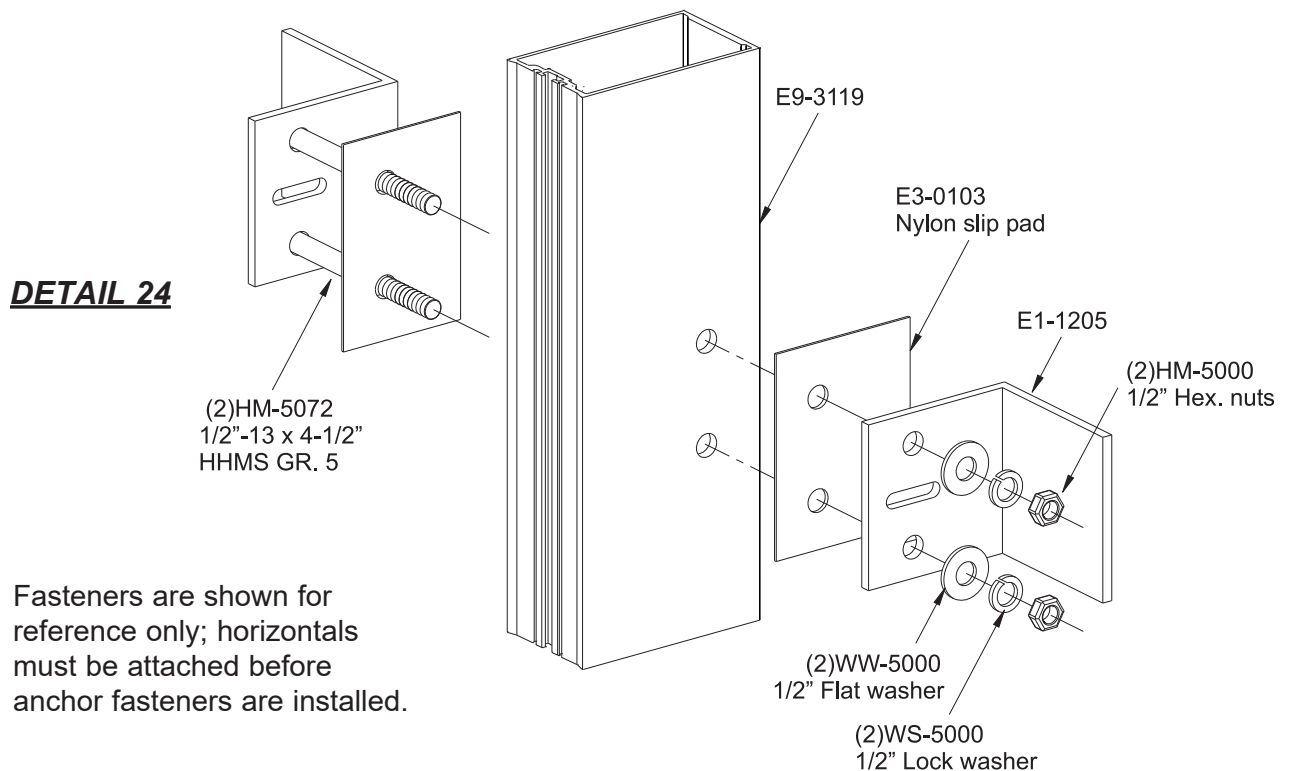
INSTALL WIND LOAD/DEAD LOAD ANCHORS

-Refer to shop drawings or engineering calculations for anchor requirements.

TYPICAL WIND LOAD ANCHOR



TYPICAL DEAD LOAD ANCHOR



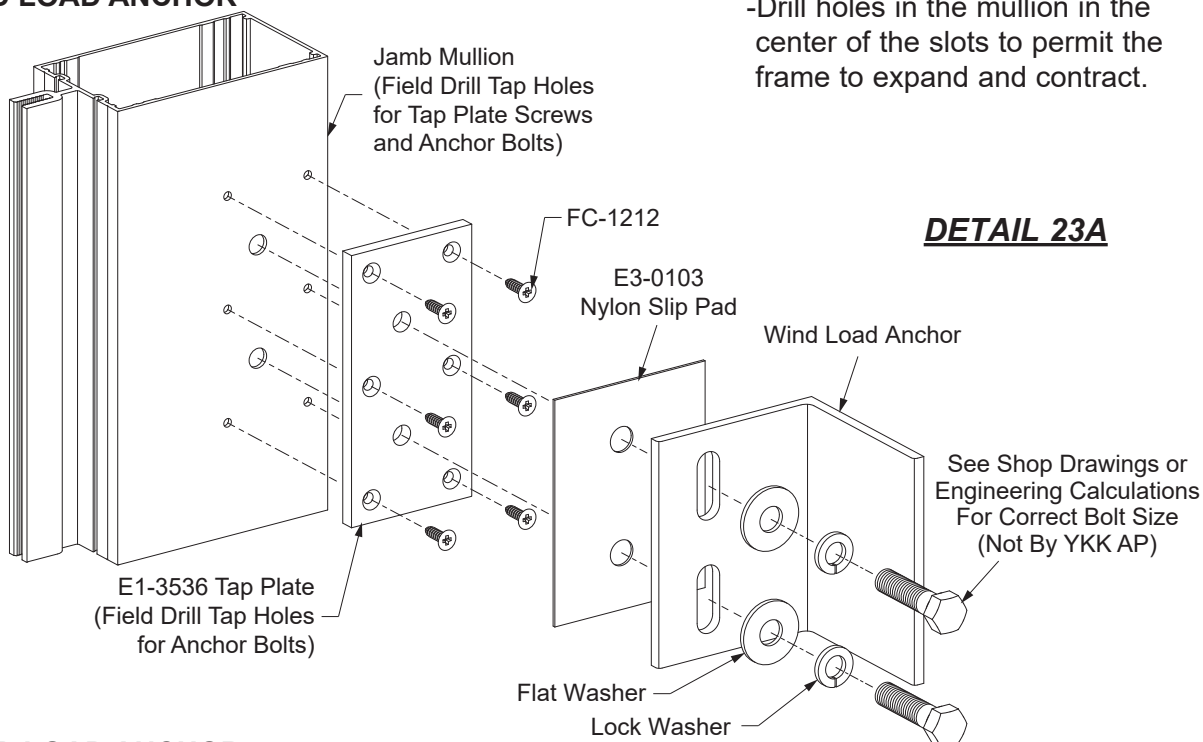
FRAME INSTALLATION

STEP 14 (CONTINUED)

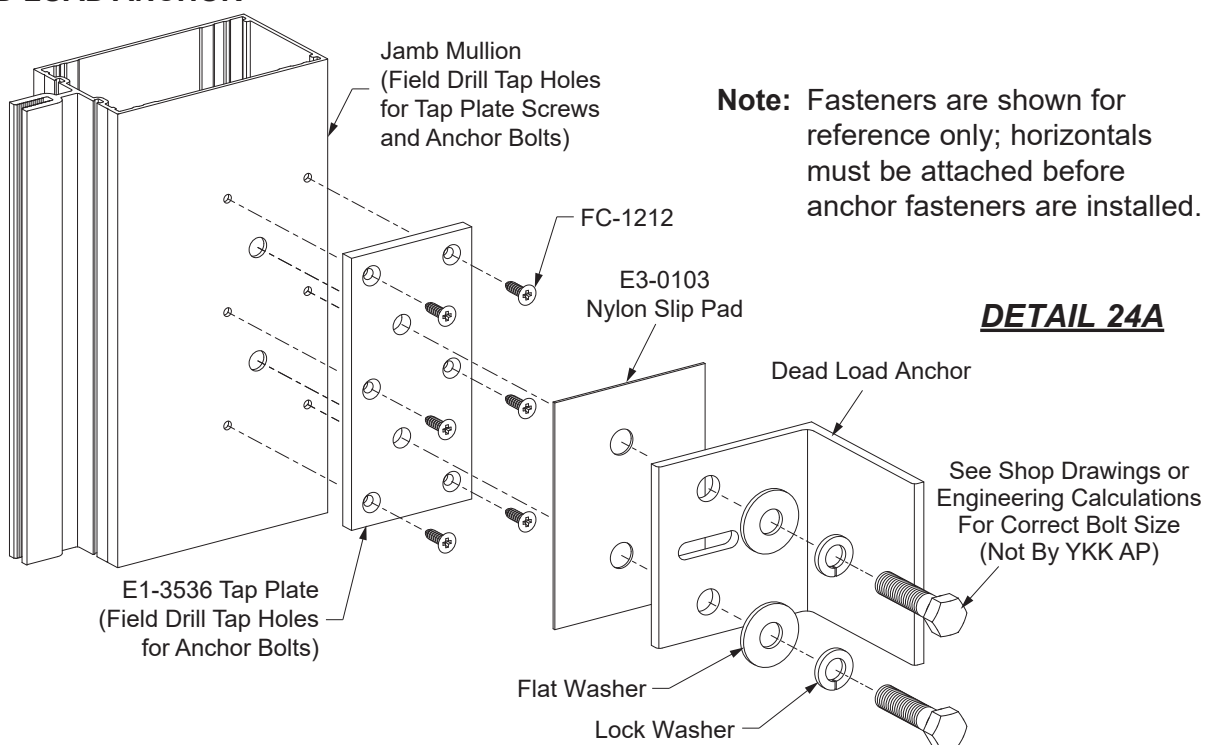
INSTALL WIND LOAD/DEAD LOAD ANCHORS

-Refer to shop drawings or engineering calculations for anchor requirements.

JAMB WIND LOAD ANCHOR



JAMB DEAD LOAD ANCHOR



FRAME INSTALLATION

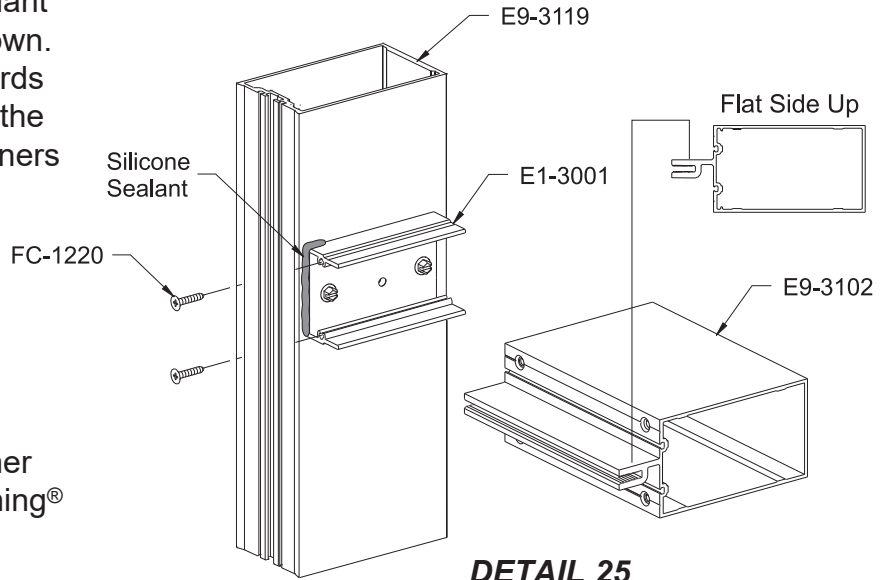
STEP 15

ATTACH HORIZONTAL MEMBERS

- Just prior to attaching the horizontal members to the mullion, apply sealant to the front of the shear clip as shown.
 - Slide the horizontal members towards the shear clips and attach them to the shear clips with two FC-1220 fasteners at each end.
 - Tool the sealant at the joints and wipe away any excess sealant.
 - Seal all screw heads with silicone.
- See **Detail 25**.

Note: Before applying any silicone, clean aluminum surfaces with cleaner and method approved by Dow Corning® for 795 silicone.

Note: When using E9-3102, always install flat side of horizontal tongue up.

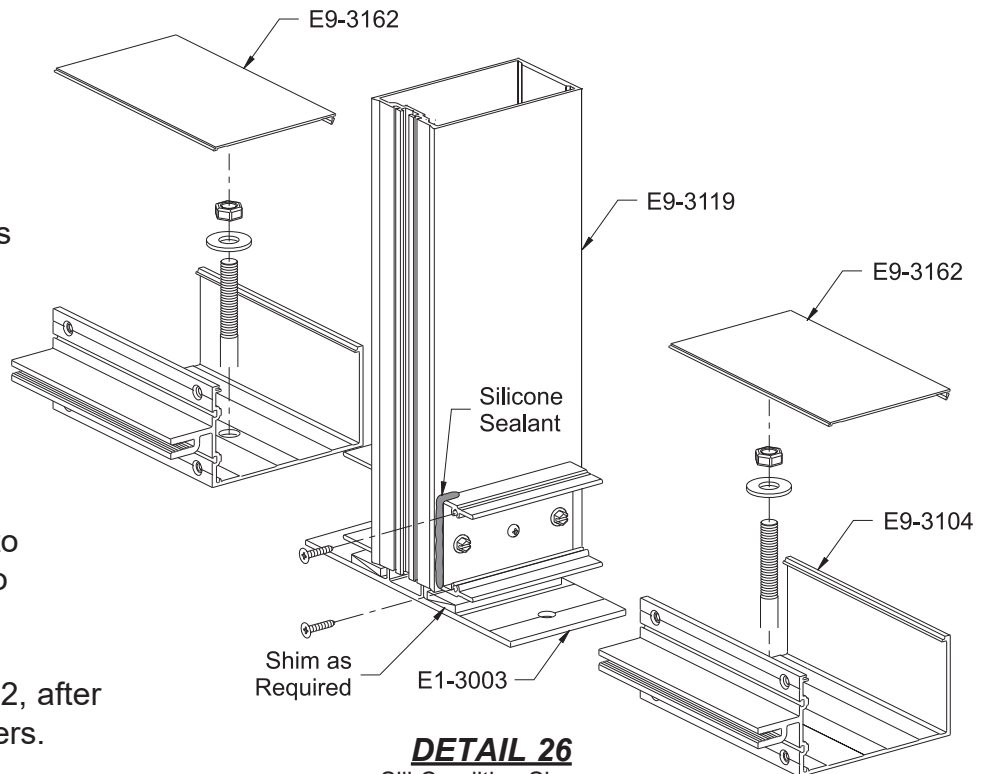


DETAIL 25
Insulating Glazing Shown
Single Glazing Similar

- Drill appropriate size holes into the structure for the anchor fasteners.
- Provide anchor fasteners as per job requirements. See approved shop drawings or engineering calculations for anchor fastener type and size.
- Install anchor fasteners. See **Detail 26**.

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

- Install the flush filler, E9-3162, after tightening the anchor fasteners.

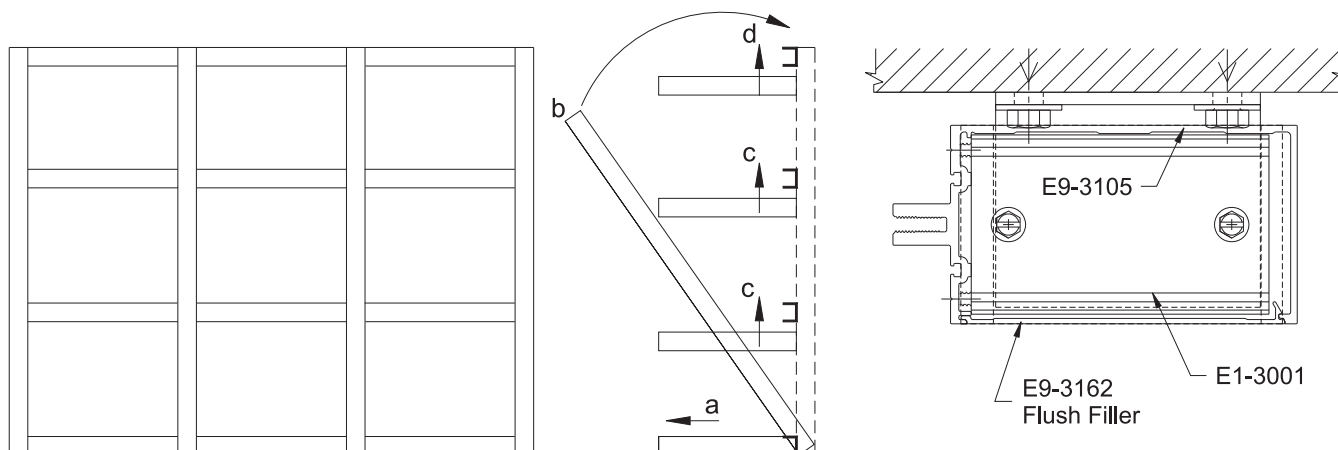


DETAIL 26
Sill Condition Shown
Head Condition Similar

FRAME INSTALLATION

STEP 16

ATTACH HORIZONTAL MEMBERS AT END BAYS



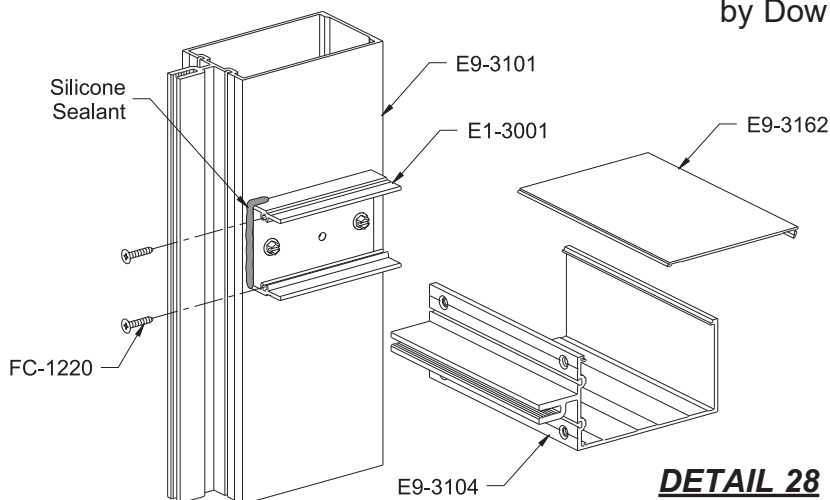
DETAIL 27

Single Glazing Shown
Insulating Glazing Similar

- a: Bring horizontal into position and secure loosely.
- b: To install vertical jamb, engage bottom shear clip/"J" anchor with sill member. Pivot vertical jamb into position and anchor loosely.
- c: Use open horizontals at intermediate locations, bring them from under the clips and lift into position; fasten to shear clips.
- d: Secure top and bottom end anchors permanently; then install the head member with the open side facing up to clear the shear clips. Fasten the head member to the shear clips.

See **Detail 27**.

Note: Before applying any silicone clean aluminum surfaces with cleaner and method approved by Dow Corning® for 795 silicone.



DETAIL 28

Insulating Glazing Shown
Single Glazing Similar

- Slide horizontal under shear clips from interior side making sure pockets are flush.
 - Attach horizontals to shear clips with FC-1220.
 - Snap cover E9-3162 over open side horizontal E9-3105 or E9-3104 to finish intermediate horizontal attachment.
 - Seal all screw heads.
- See **Detail 28**.

FRAME INSTALLATION

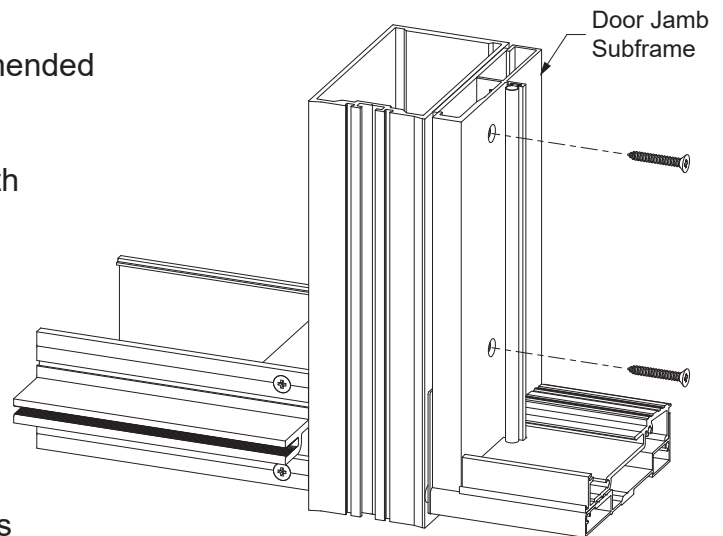
STEP 17 INSTALL DOOR SUBFRAMES

Refer to the **35H/50H Door Installation Manual** for assembly of the door subframes. These subframes are installed into the curtain wall framing members. The subframe members are determined by the approved shop drawings.

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

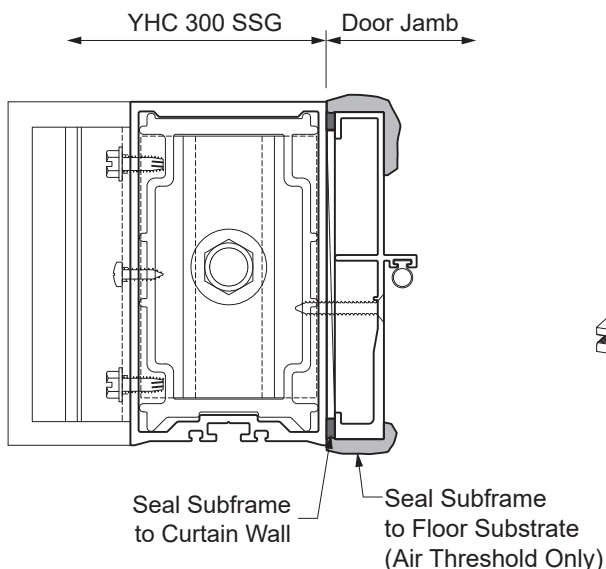
-Install the jamb subframe onto the mullion with fasteners according to the approved shop drawings. For air-resistant thresholds, set the jamb subframes in a bed of sealant at the floor substrate.

-Apply and tool sealant between the door jamb subframe and the curtain wall framing. For air-resistant thresholds, apply and tool sealant to the bottom of the jamb subframe as shown in **Details 29(A) & 30**.

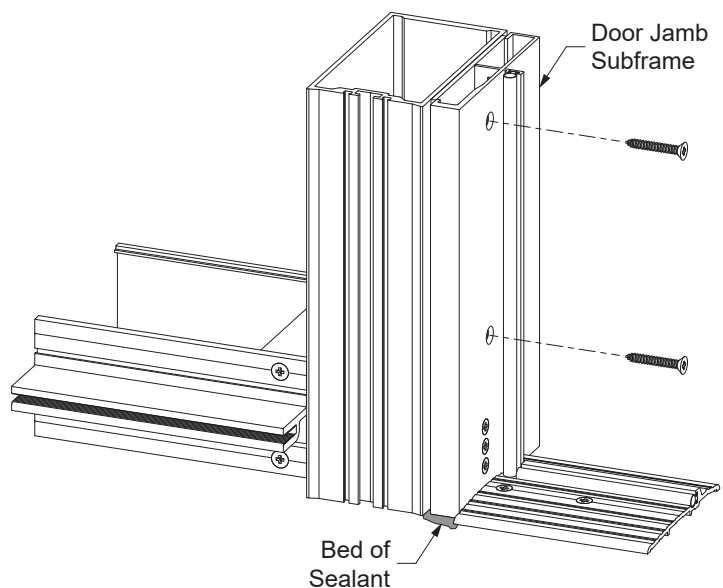


Detail 29

Water-resistant
Threshold Shown



Detail 30



Detail 29A

Air-resistant
Threshold Shown

FRAME INSTALLATION

STEP 18 (Optional) INSTALL 90° OUTSIDE CORNER

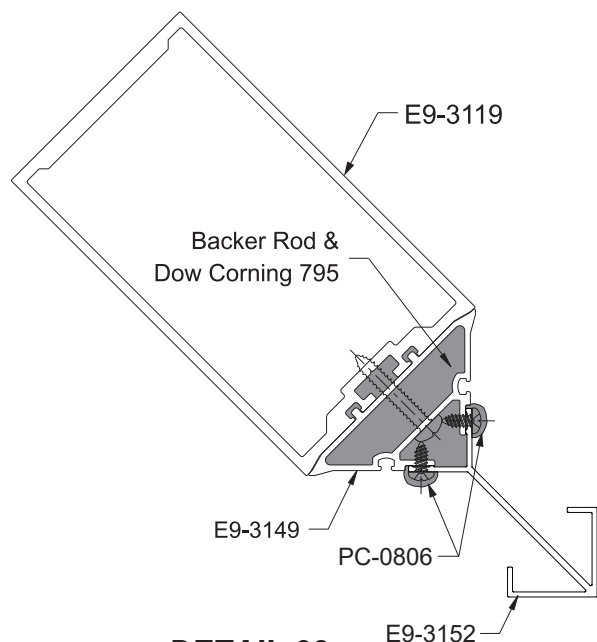
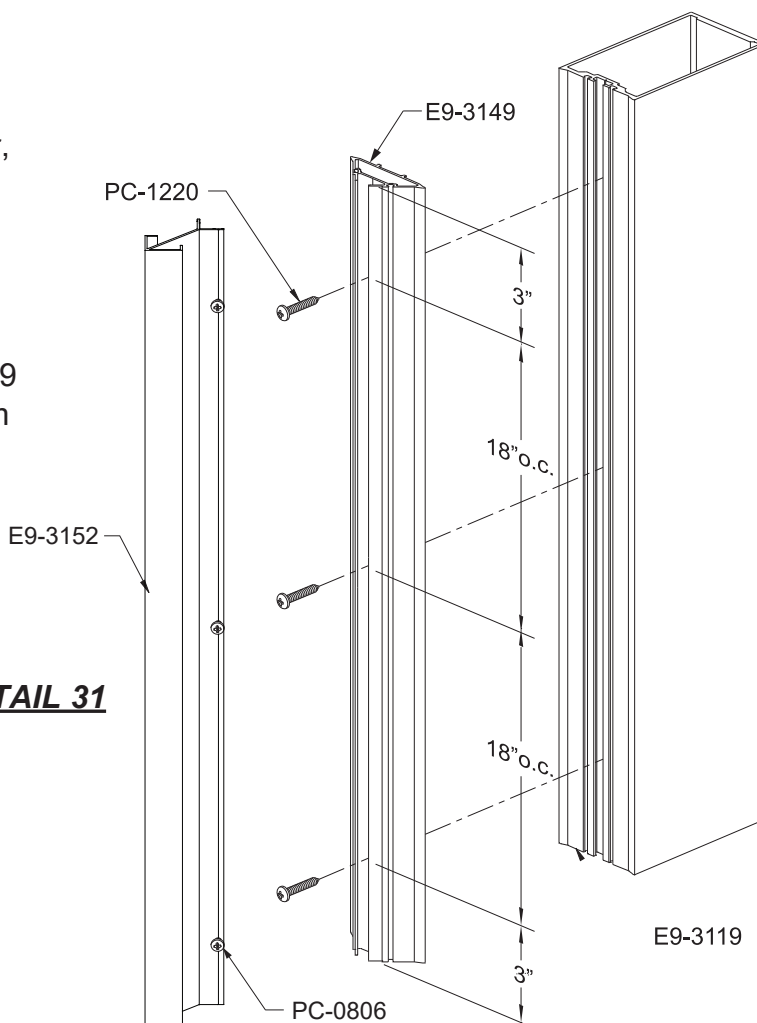
-Attach 90° outside corner glazing adaptor, E9-3149, to SSG mullion, E9-3119, with PC-1220 fasteners at 3" from each end and at 18" maximum on center.

-For insulating glazing outside corner trim, E9-3152, must be attached to the E9-3149 adaptor with PC-0806 fasteners at 2" from each end and at 18" maximum on center, on both sides of the corner trim.

-Seal all screw heads with silicone.

See **Detail 31**.

DETAIL 31



DETAIL 32

-At both ends of the vertical, compress backer rod into the open cavities between the mullion and corner adaptors and seal with Dow Corning® 795 silicone as shown in **Detail 32**.

-Attach shear clips for horizontal members.

-Position the assembled mullion into place.

-Attach horizontal members as previously shown in **Step 15 on Page-27**.

-Anchor head and sill ends with appropriate end anchors: J, F, or T.

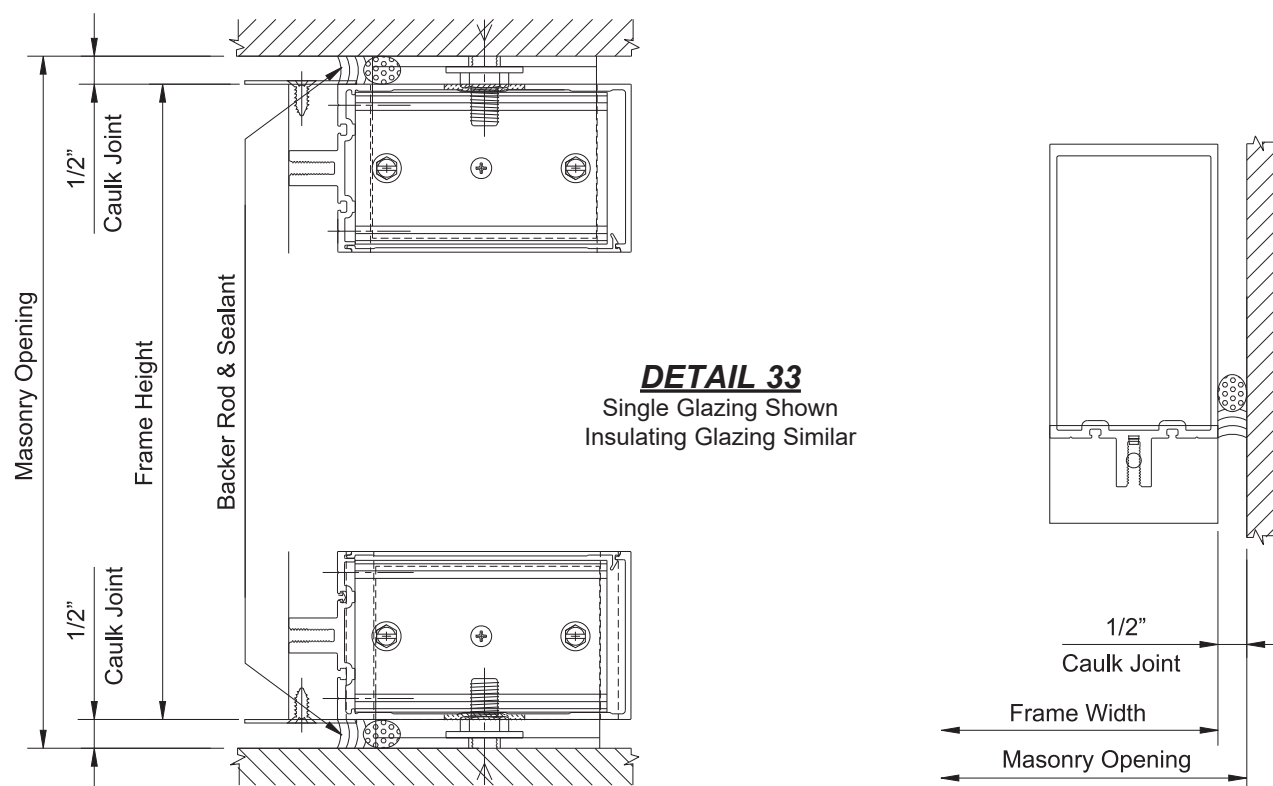
-Refer to shop drawings for wind load/dead load anchor locations.

FRAME INSTALLATION

STEP 19 APPLY PERIMETER SEALANT

- Position backer rod around the perimeter of the frame.
- Clean area around the perimeter of the frame with isopropyl alcohol and wipe clean with lint free cotton cloths using the “two cloth method”.
- Apply Dow Corning 795 silicone sealant to the perimeter of the frame.

See **Detail 33**.

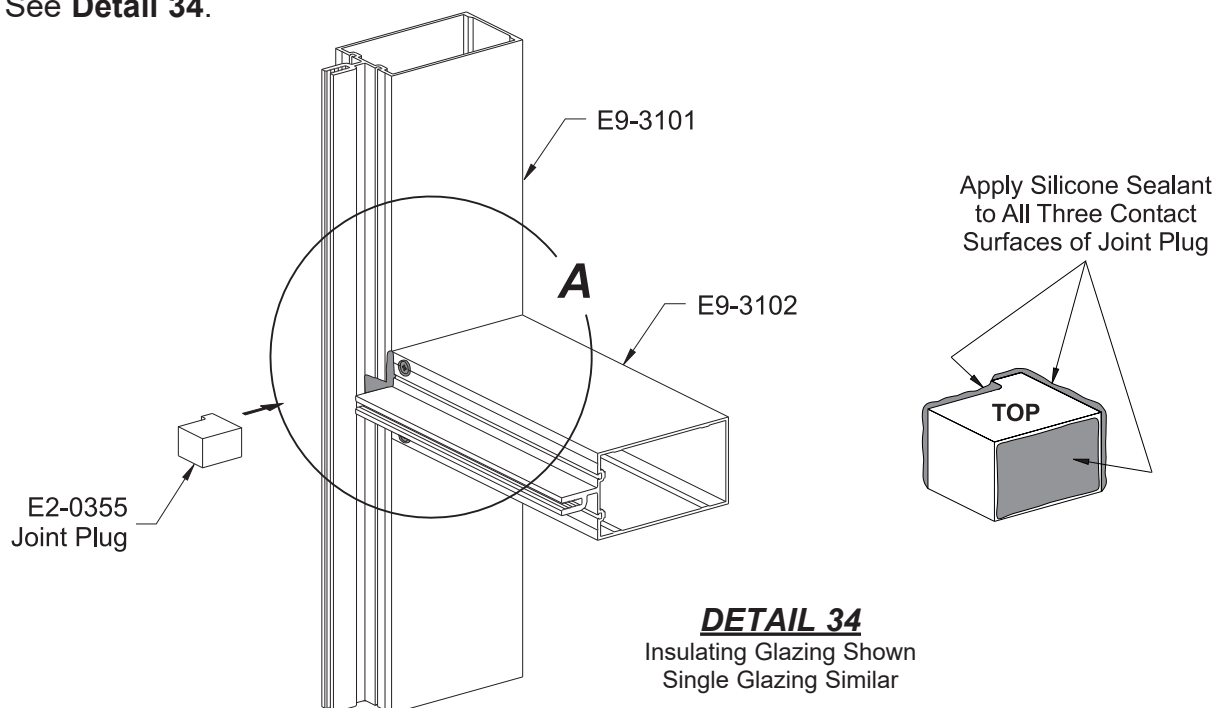


FRAME INSTALLATION

STEP 20 INSTALL JOINT PLUGS AT JAMBS

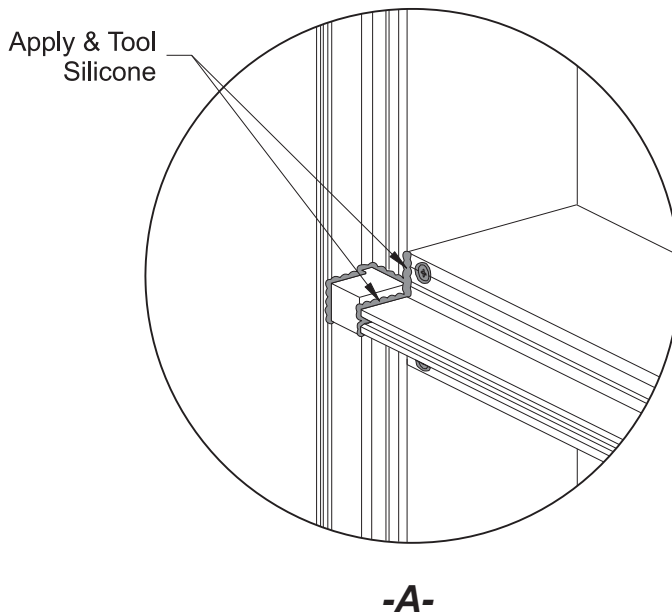
The tongue of each horizontal, head, and sill must be sealed to the tongue of the jamb mullion. The space between the two tongues is plugged with joint plugs, E2-0355 for insulating glazing or E2-0358 for single glazing.

See **Detail 34**.



- Clean the vertical to horizontal joints with isopropyl alcohol and wipe clean with lint free cotton cloths using the "two cloth method".
- Apply and tool Dow Corning® 795 silicone sealant to the vertical to horizontal joints.
- Apply silicone sealant to all three contact sides of the joint plugs.
- Apply silicone sealant into all cavities behind where the joint plug will go.
- Insert the joint plug into the opening and press it firmly against the face of the mullion.

See **Detail 34-A**.

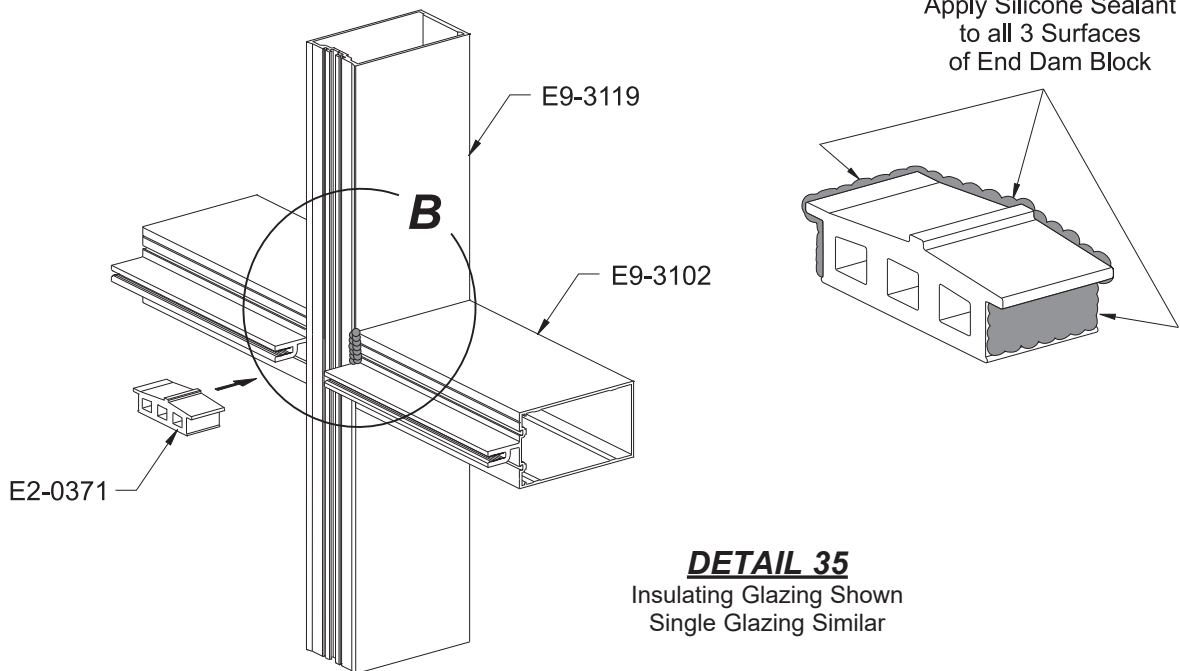


FRAME INSTALLATION

STEP 21 INSTALL JOINT PLUGS AT SSG VERTICALS

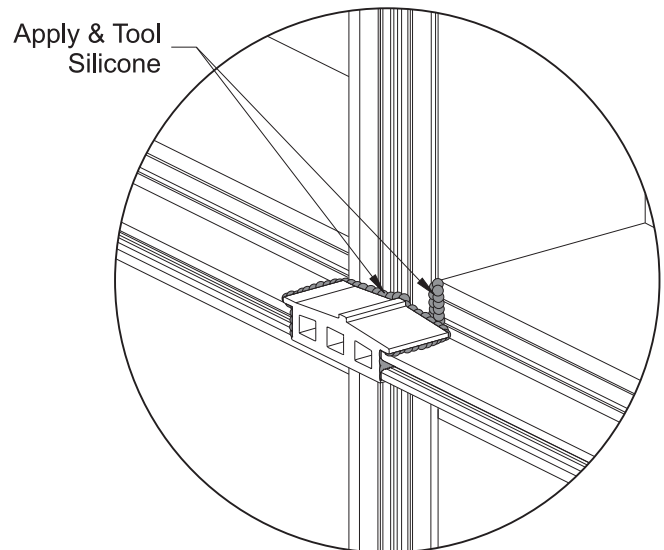
-The space created by the two horizontal, head, sill tongues and SSG mullion at intermediate mullions and horizontal intersections must be closed by using joint plugs E2-0371 for insulating glazing and E2-0370 for single glazing.

See **Detail 35**.



- Clean the vertical to horizontal joints with isopropyl alcohol and wipe clean with lint free cotton cloths using the "two cloth method".
- Apply and tool Dow Corning® 795 silicone sealant to the vertical to horizontal joints.
- Apply silicone sealant to all three contact sides of the joint plugs.
- Apply silicone sealant into all cavities behind where the joint plug will go.
- Insert the joint plug into the opening and press it firmly against the face of the mullion.

See **Detail 35-B**.

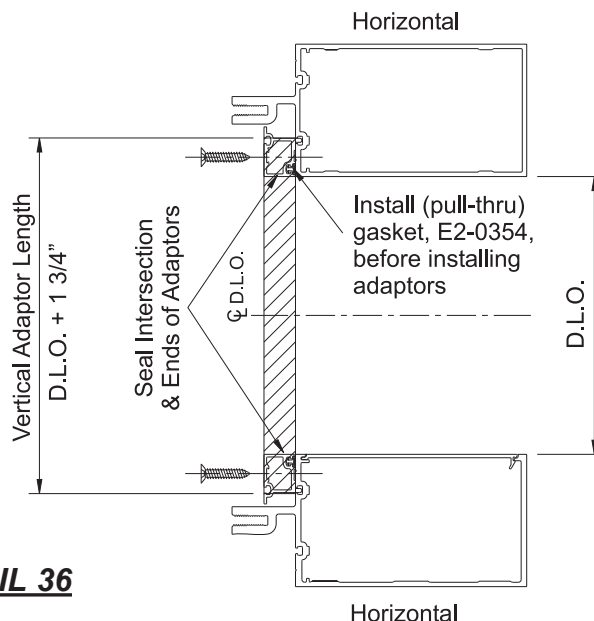
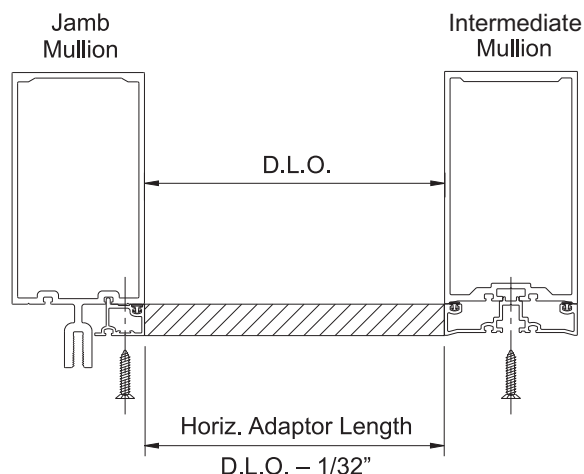


-B-

FRAME INSTALLATION

STEP 22

INSTALL 1/4" GLAZING ADAPTORS (When Required)



DETAIL 36

-Cut glazing adaptors for verticals:
Cut length = D.L.O. plus(+) 1-3/4".

-Cut glazing adaptors for horizontals:
Cut length = D.L.O. minus(-) 1/32".

-Slide E2-0354 bulb gasket into the back of the glazing adaptors.

-Predrill (countersink) each adaptor along the V-Groove to receive a FC-1016, at 2" from each end and at 18" maximum on center.

-Center vertical adaptors in openings as shown in **Detail 36**.

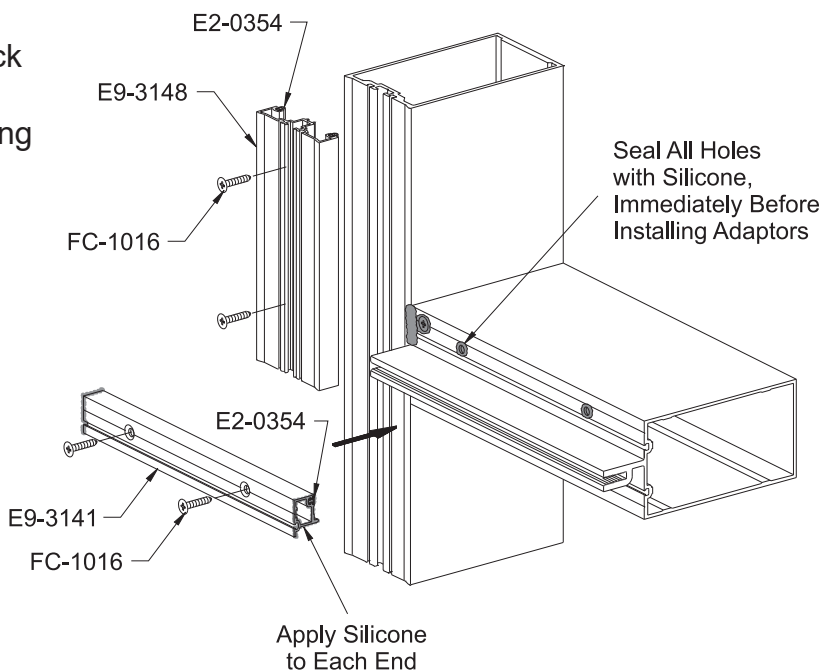
-Dry fit the adaptors and match drill attachment holes on the mullion.

-Pull away & apply silicone sealant over the previously drilled holes.

-Return the adaptor into position and secure with FC-1016 fasteners .

-Before installing horizontal adaptors, butter each end with silicone sealant.

See **Detail 37**.



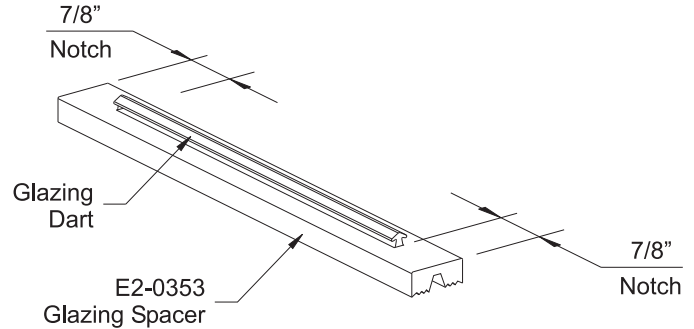
DETAIL 37

GLAZING

STEP 23

INSTALL INTERIOR GLAZING SPACERS

- Cut interior vertical glazing spacers, E2-0353 and E2-0176, to daylight opening plus(+) 2".
 - Cut horizontal glazing spacers, E2-0353, to daylight opening plus(+) 1-1/4" and add 3/16" for each foot of opening width between jambs and intermediate mullions.
 - Cut the horizontal glazing spacers, E2-0353, to daylight opening plus(+) 1-1/2" and add 3/16" for each foot of opening width between intermediate mullions.
 - Trim off 7/8" of the glazing dart at each end of the horizontal glazing spacer.
- See **Detail 38**.



DETAIL 38

Install vertical glazing spacers first:

- Install vertical glazing spacer centered along the daylight opening.
- Insert the spacer into the reglet starting at the center and work towards each end.

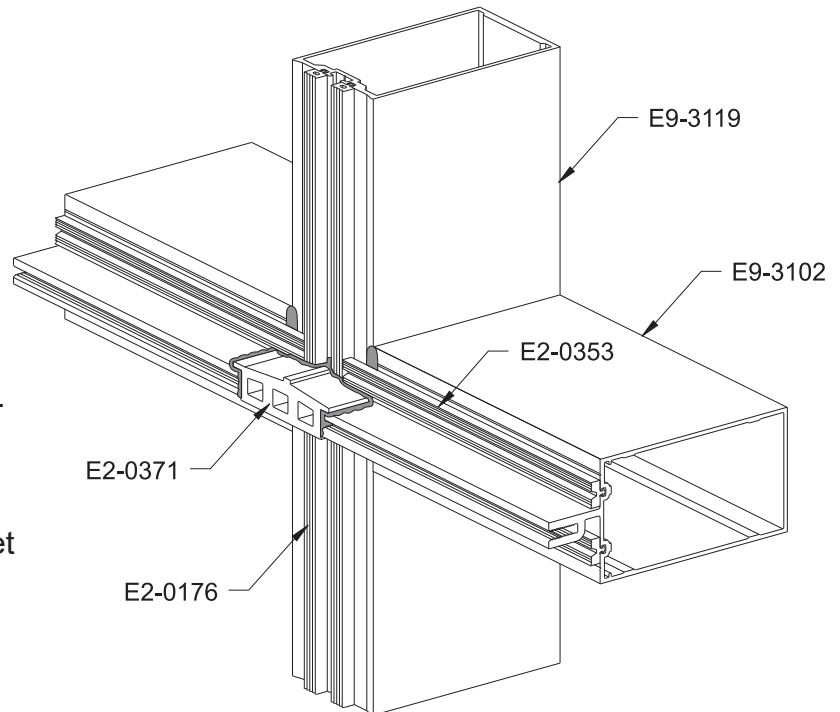
Note: Do not stretch the glazing spacer while snapping it into the reglet.

Install horizontal glazing spacers next:

- Insert the glazing spacer into the reglet at each end first.
- Snap the rest of the glazing spacer into the reglet starting at the center and work towards each end.

Note: Horizontal spacer ends should always overlap the verticals at each end.

See **Detail 39**.



DETAIL 39

GLAZING

STEP 24 INSTALL GLASS

Determine the glass size:

	Width	Height
Jamb to SSG	D.L.O. + 2-3/16"	D.L.O. + 1-7/8"
SSG to SSG	D.L.O. + 2-1/2"	D.L.O. + 1-7/8"

-Clean all glazing surfaces and joints of foreign matter and contaminants such as grease, oil, dust, frost, and surface dirt. Do not use water or soap to clean surfaces or to tool the sealant.

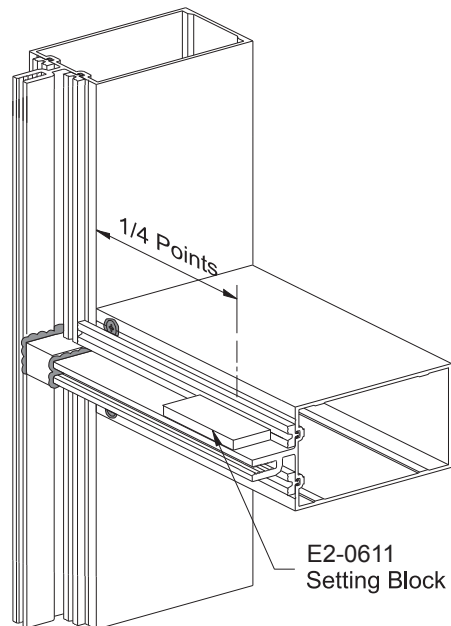
-Install setting blocks, E2-0611 for insulating glazing or E2-0623 for single glazing, at 1/4 points of horizontal. See **Detail 40**.

-Clean all silicone contact surfaces and joints with isopropyl alcohol and wipe clean with white lint-free cotton cloths using the "two cloth method".

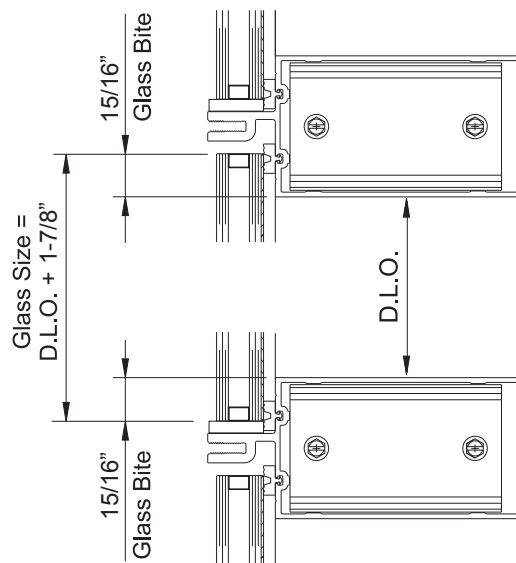
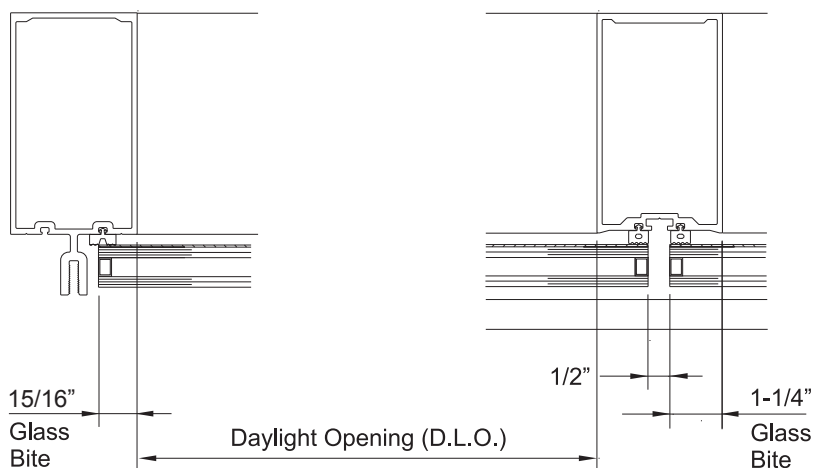
Priming may be required for certain finishes.

-Carefully install glass into the frame. Make sure all setting blocks are properly aligned with the glass.

See **Detail 41**.



DETAIL 40
Insulating Glazing Shown
Single Glazing Similar



DETAIL 41
Insulating Glazing Shown
Single Glazing Similar

GLAZING

STEP 24 (Continued) INSTALL GLASS

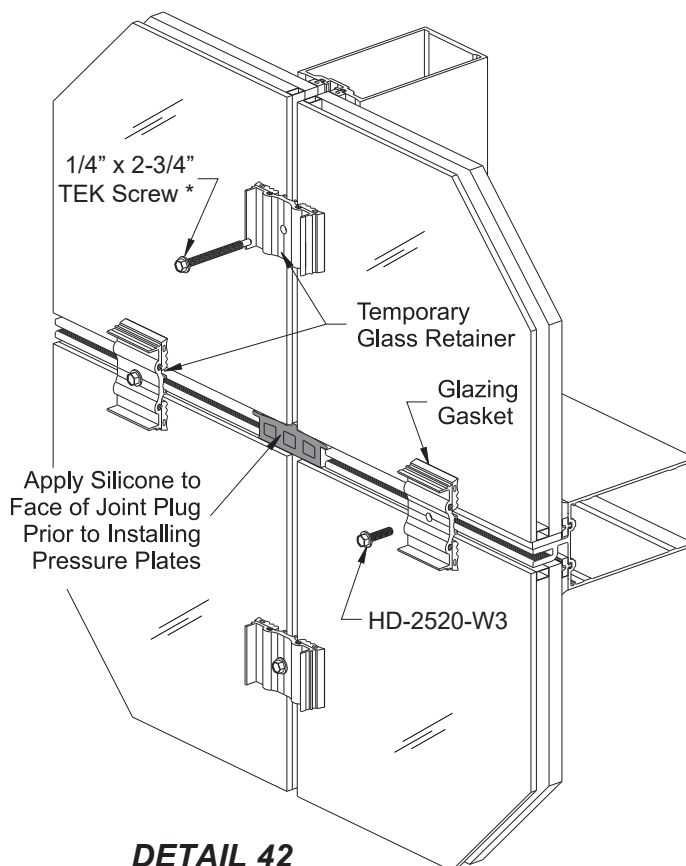
- Cut 2" long pieces of glazing gasket and attach to temporary pressure plates, E1-3025.
- Install temporary glass retainers to secure the glass every 18" to 24":
 - With HD-2520-W3 fasteners at jambs and horizontals.
 - With 1/4" x 2-3/4" TEK* screws at intermediate verticals.

See **Detail 42**.

Note: *1/4" self tapping screw or similar pending on steel reinforcement type and/or thickness.

- Cut exterior vertical gaskets to the same length as the vertical pressure plates.
- Cut exterior horizontal gaskets to daylight opening plus(+) 3/16" extra per foot of width.
- Install the exterior gaskets into the reglets of the pressure plates.
- Apply silicone sealant to face of joint plugs just prior to installing pressure plates.

Note: See Glazing Table below for proper gasket usage.



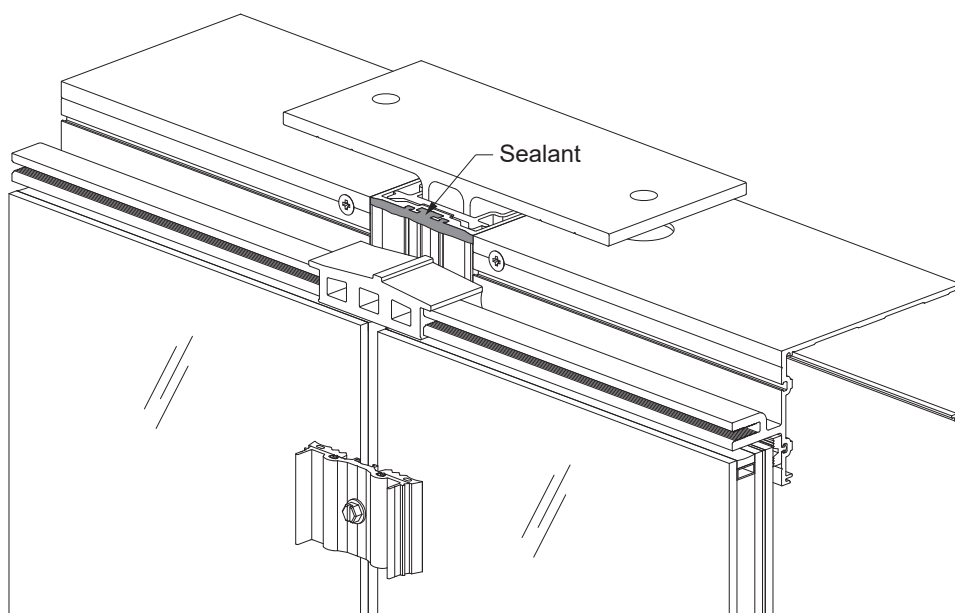
DETAIL 42
Insulating Glazing Shown
Single Glazing Similar

YHC 300 SSG GLAZING TABLE

	Glass Size	Exterior Gasket	Interior Spacers	Glazing Adaptor	Pressure Plate	Perimeter P. Plate
Single	1/4"	E2-0380	E2-0353(H) / E2-0176(V)	—	AS-3173	AS-3179
	9/16"	E2-0379	E2-0353*(H) / E2-0176(V)	—	AS-3173	AS-3179
Insulating	9/16"	E2-0379	E2-0353(H) / E2-0176(V)	E9-3141	AS-3172	AS-3178
	1-5/16"	E2-0379	E2-0353*(H) / E2-0176(V)	—	AS-3172	AS-3178

GLAZING**STEP 25
INSTALL PRESSURE PLATES**

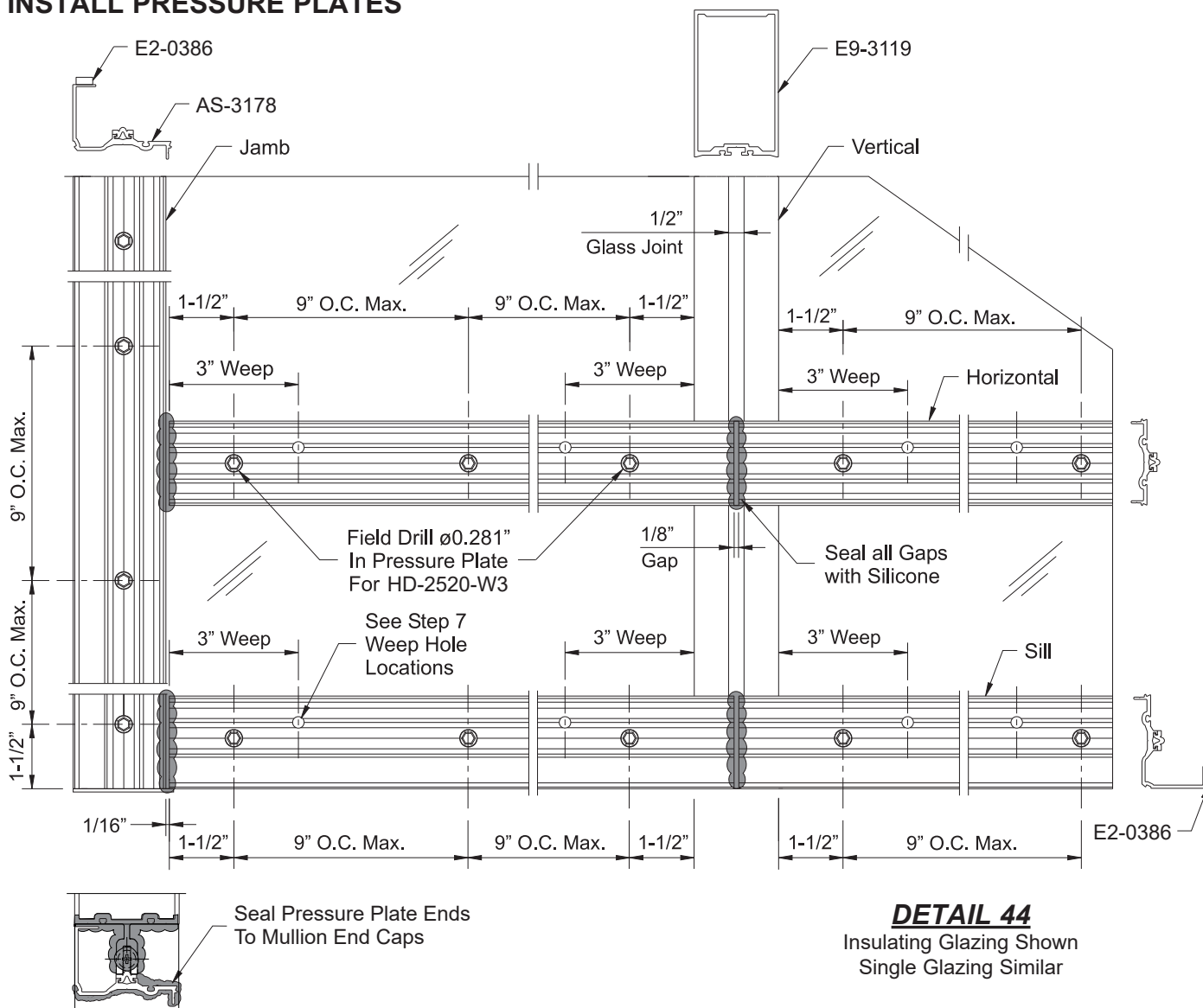
-Before installing the pressure plates, apply sealant to the top of each SSG mullion at the head as shown in **Detail 43**, filling in the reglets at the face of the SSG Mullion.



DETAIL 43
Insulating Glazing Shown
Single Glazing Similar

GLAZING

STEP 25 (Cont.) INSTALL PRESSURE PLATES



- Apply isolator tape, E2-0386, to the inside leg of all perimeter pressure plates.
- Remove temporary pressure plates as you install the permanent pressure plates.
- Install jamb pressure plates first using HD-2520-W3 fasteners.
- Install horizontal pressure plates next leaving a 1/8" gap at the jambs and a 1/8" gap at the intermediate SSG mullions.
- Initially torque fasteners to 30 inch-pounds with a speed wrench or torque limiting screw gun, work from the bottom up.
- Apply and tool Dow Corning® 795 silicone sealant to completely seal the gaps at horizontal pressure plate butt ends. Torque all fasteners to 50 inch-pounds.
- Caulk and seal the ends of vertical pressure plates to the mullion end caps with 795 sealant. See **Detail 44**.

GLAZING

STEP 26

INSTALL EXTERIOR FACE COVERS

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

-If horizontal face covers are spliced, apply bond breaker tape and sealant to the face cover splice sleeve, E1-3009, and insert it at the end of the first cover.

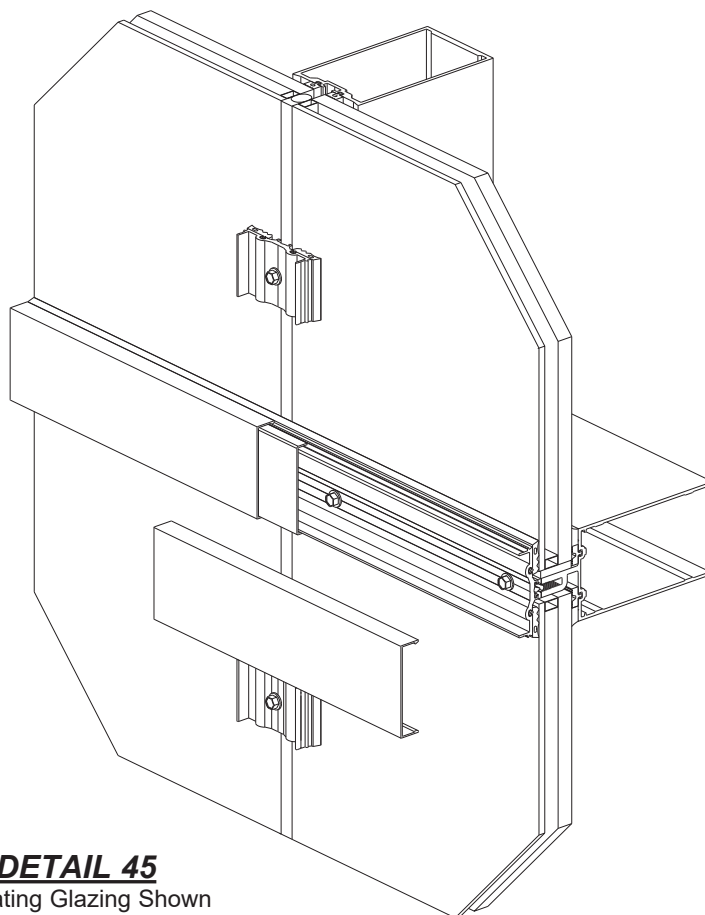
-Attach the second face cover leaving a 1/2" joint between the two covers.

-Seal the joint between the face covers with Dow Corning® 795 silicone sealant.

-Seal end of horizontal pressure plate to jamb or mullion face cover.

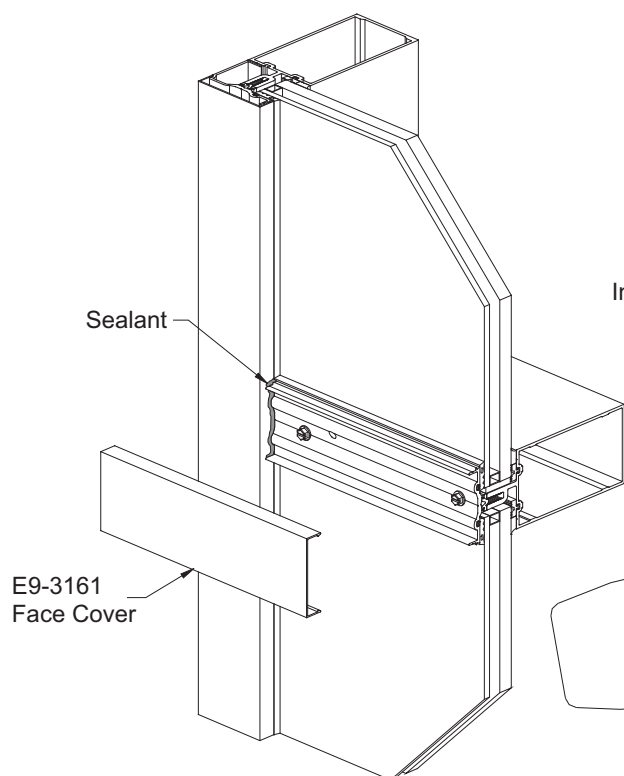
See **Detail 45**.

Note: Cover splice joint should align with the vertical glass joint.

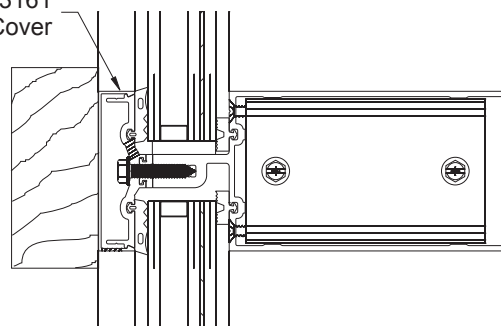


DETAIL 45

Insulating Glazing Shown
Single Glazing Similar



E9-3161
Face Cover



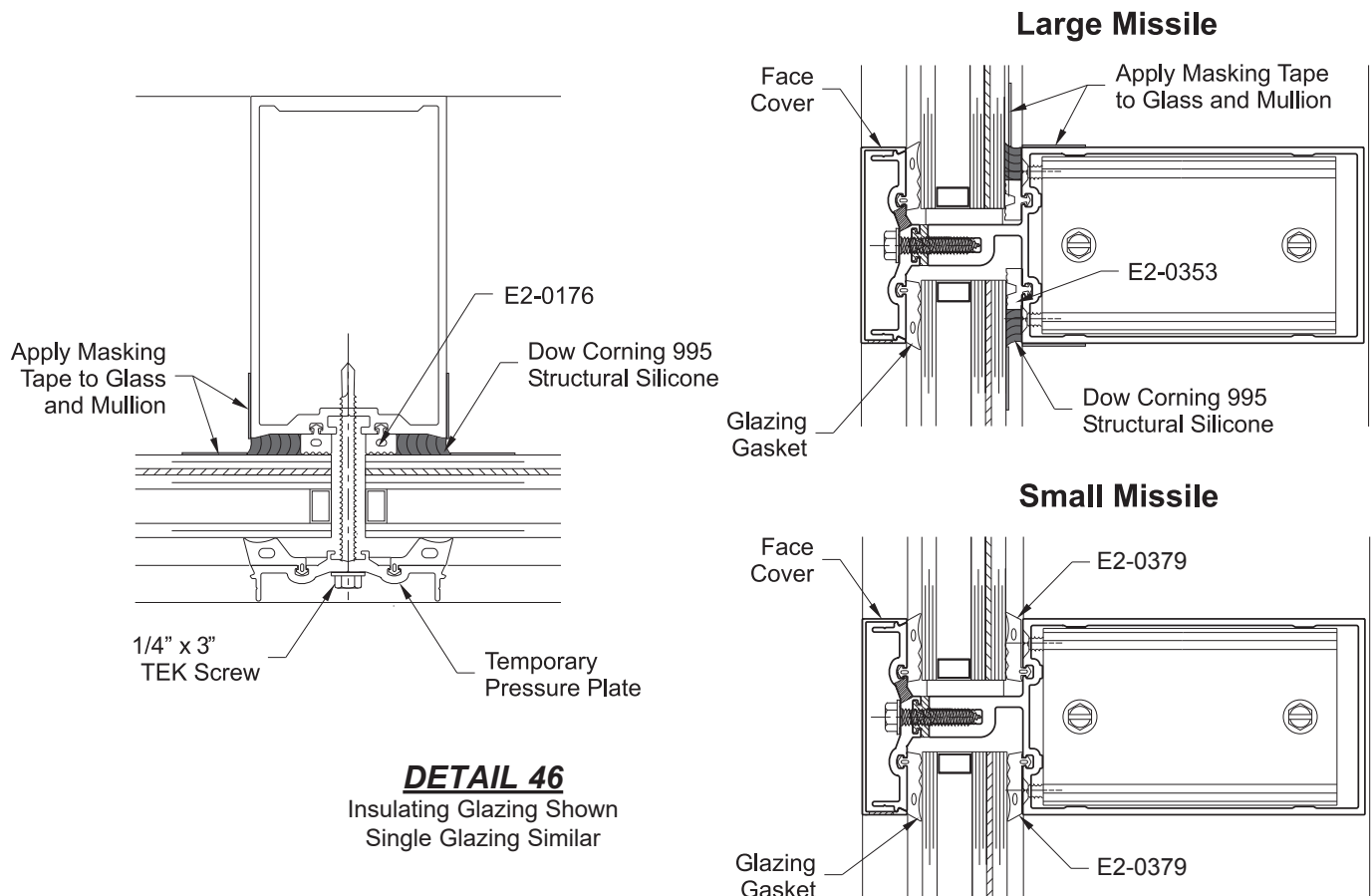
GLAZING

STEP 27 APPLY INTERIOR STRUCTURAL SILICONE SEALANT

- Make sure all silicone contact surfaces and joints have been cleaned with isopropyl alcohol and wipe clean with lint free cotton cloths using the “two cloth method”.
- Apply masking tape to the mullion and glass as shown in **Detail 46**.
- Apply Dow Corning 995 structural 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.
- 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.
- Remove masking tape within ten minutes of tooling; do not allow silicone to skin over.

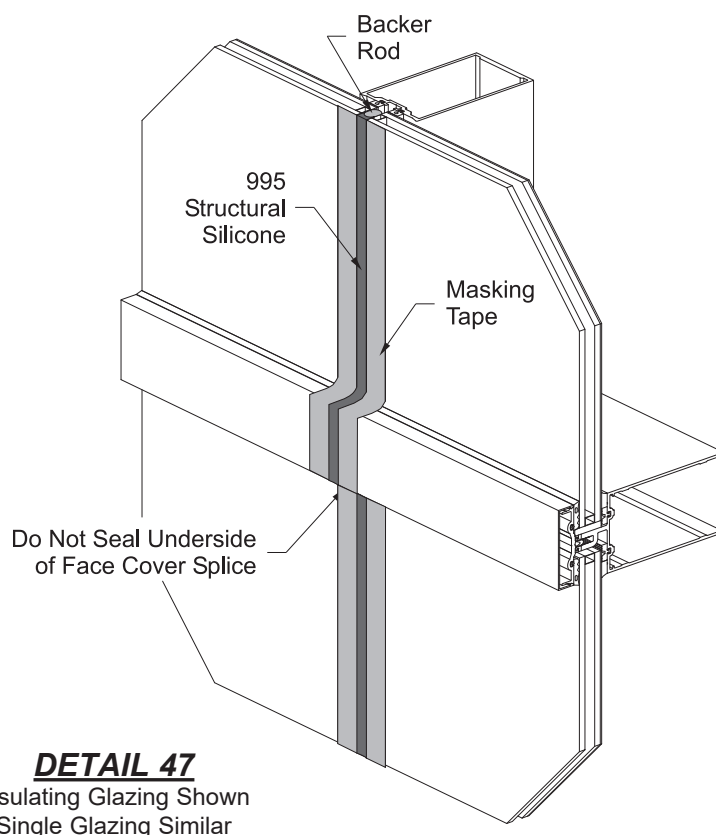
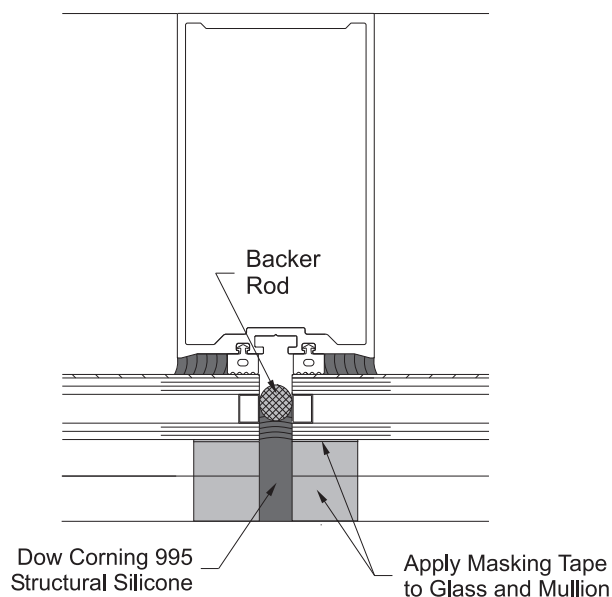
Caution: Do not permit the silicone sealant to skin over before it is tooled. Immediately remove masking tape after tooling silicone sealant.

- For Small Missile glazing install interior glazing gasket, E2-0376, at all jambs and horizontals. See **Detail 46**.



GLAZING

STEP 28 APPLY EXTERIOR STRUCTURAL SILICONE SEALANT



DETAIL 47
Insulating Glazing Shown
Single Glazing Similar

- Once interior structural silicone has cured*; it is necessary to seal the 1/2" exterior vertical joint between the lites of glass. *Consult sealant manufacturer for recommended cure time.
- Remove the temporary pressure plates and seal all mullion through hole locations with silicone sealant.
- Insert an approved open cell polyurethane backer rod into the glass joint.
- Clean all silicone contact surfaces and joints using isopropyl alcohol (50%) with white lint free cloth using the "two cloth method."
- Apply masking tape to the edges of the glass and aluminum as shown in **Detail 47**.
- Apply Dow Corning 995 structural 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.
- Remove masking tape within ten minutes of tooling; do not allow silicone to skin over.

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



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