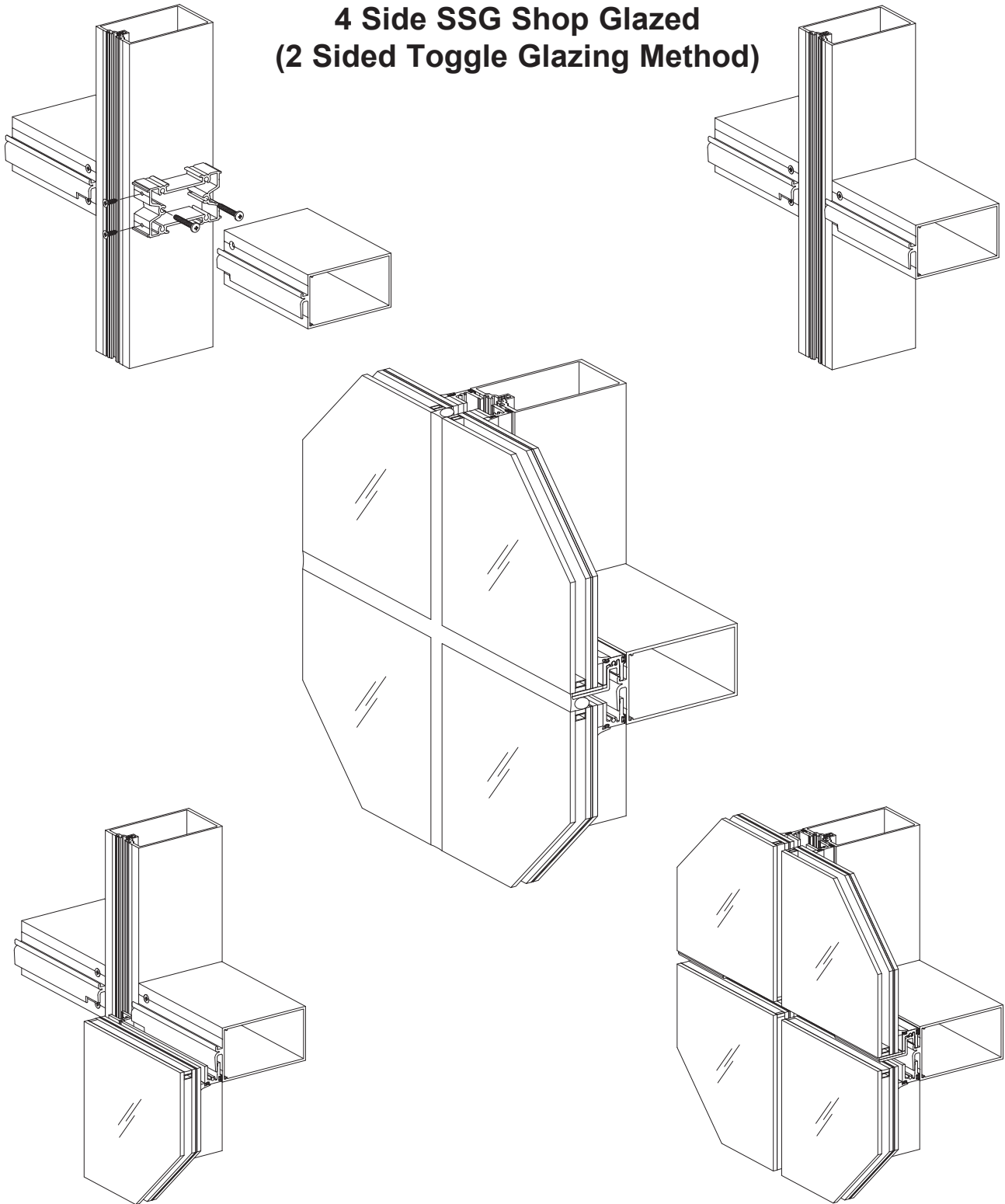


## YHC 300 SSG Cassette Structural Silicone Glazed Curtain Wall System

### 4 Side SSG Shop Glazed (2 Sided Toggle Glazing Method)



## 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 materials including but not limited to, 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 and approved prior to its use.
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](http://www.ykkap.com), for the latest installation manual update prior to commencing work.

## **Important Notice for SSG Curtain Wall Systems:**

In order to properly perform and to maintain structural integrity, in addition to all other installation requirements, structurally glazed curtain wall systems rely specifically upon effective and appropriate structural sealant selection and installation.

It is the responsibility of the glazing contractor to take all steps to ensure the installed structural sealant is capable of meeting all applicable project requirements in accordance with industry standards. Such steps on each project may include, but are not limited to, design reviews, formal adhesion testing, project specification compliance, validating applications, field testing, auditing, sealant design strength analysis, and the quality control review of the installation and surrounding conditions.

Subject to project specific design pressures, requirements, and/or specifications, the structural sealant that is used between the glass and framing system must be capable of withstanding tensile and shear stresses imposed by the curtain wall without failing adhesively or cohesively.

The structural sealant's capability to withstand these stresses are dependent on several factors including, but not limited to, type of structural sealant, method of application (i.e. cleaning, primer), construction of glazing material (i.e. insulating glass unit (IGU), other infill, and finish of framing (i.e. anodizing, paint).

- Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
- Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.










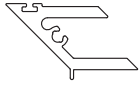



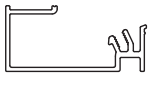
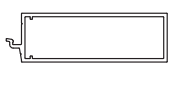
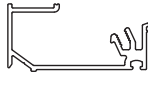





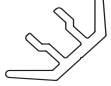
The IGU and/or other infill must be constructed for installation into structurally sealant glazed curtain walls. Notify the manufacturer or fabricator of the IGU and/or infill and advise of the product's application into 2 or 4-sided structurally sealant glazed curtain walls along with the project's design requirements so that appropriate fabrication steps are taken.

## **Secondary Notice for SSG Curtain Wall Systems:**


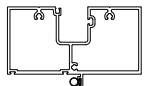
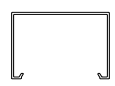


Standard product details and system offering supports single and twin span applications only. For multi-span applications or elevation configurations that require the application of vertical expansion components, please contact YKK AP engineering for review.



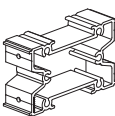
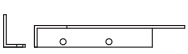
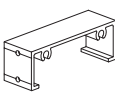
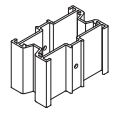
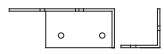
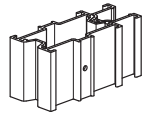
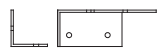
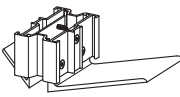
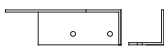
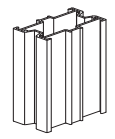
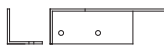
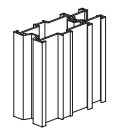
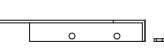
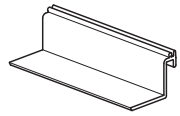
## FRAMING MEMBERS

	<b>Heavy Duty Vertical / Horizontal</b> 3" x 6-3/4"	<b>E9-3251</b>		<b>Horizontal Adaptor</b>	<b>E9-3246</b>
	<b>Horizontal Mullion</b> 3" x 6-3/4"	<b>E9-3253</b>		<b>Sill Adaptor</b>	<b>E9-3254</b>
	<b>Vertical / Horizontal</b> 3" x 5-1/4"	<b>E9-3230</b>		<b>Cassette Perimeter (Taped)</b>	<b>E9-3233</b>
	<b>Light Duty Vertical / Horizontal</b> 3" x 5-1/4"	<b>E9-3248</b>		<b>Cassette Perimeter (Gasketed)</b>	<b>E9-3232</b>
	<b>Open Back Head / Sill</b> 3" x 6-3/4"	<b>E9-3252</b>		<b>Corner Cassette Perimeter (Taped)</b>	<b>E9-3249</b>
	<b>Open Back Head / Sill Heavy Duty</b> 3" x 5-1/4"	<b>E9-3231</b>		<b>Corner Cassette Perimeter (Gasketed)</b>	<b>E9-3240</b>
	<b>Tubular / Horizontal</b> 3" x 5-1/4"	<b>E9-3242</b>		<b>Perimeter Trim</b> For 1-5/16" GL.	<b>E9-3234</b>
	<b>Sill for Expansion Horizontal (Top)</b> 1-3/4 x 5-1/4"	<b>E9-3243</b>		<b>Sill Trim</b> For 1-5/16" GL.	<b>E9-3255</b>
	<b>Expansion Horizontal (Bottom)</b> 1-3/4 x 5-1/4"	<b>E9-3244</b>		<b>90° Outside Corner Adaptor</b>	<b>E9-3238</b>
	<b>Horizontal Flush Filler</b> Use with E9-3231	<b>E9-3162</b>		<b>90° Outside Corner Glazing Adaptor</b>	<b>E9-3239</b>
	<b>Horizontal Flush Filler</b> Use with E9-3252	<b>E9-8489</b>		<b>90° Outside Corner Toggle Bar</b>	<b>E9-3241</b>

## FRAMING MEMBERS

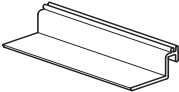
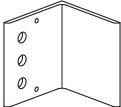

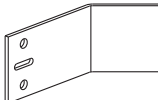

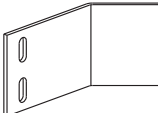

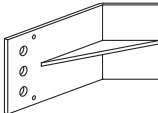
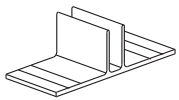
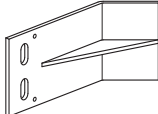
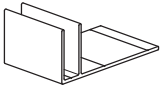

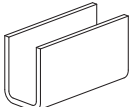


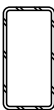




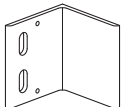

	<b>90° Corner Interior Cover Base</b>	<b>E9-1280</b>		<b>Single Acting Transom Bar</b> Elastomer Weathering E2-0051 Included	<b>AS-0501</b>
	<b>90° Corner Interior Cover 3" x 2-3/16"</b>	<b>E9-3165</b>		<b>Door Jamb Adaptor</b>	<b>AS-3180</b>
	<b>1" x 1" x 1/8" Angle</b>	<b>E9-9302</b>			

## ACCESSORIES





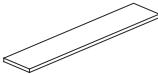




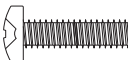
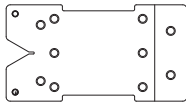
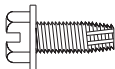



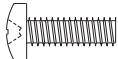




	<b>Standard Shear Block</b> For 3-3/4" Depth Members Use (2) HF-2528-W1 & (2) FC-1212	<b>E1-3049</b>		<b>Shear Clip Angle For 90° Corner Mullion (R.H.)</b> For E9-3243 & E9-3244	<b>E1-3061</b>
	<b>Shear Block</b> For Expansion Horizontal Members Use (2) PF-2528 & (2) FC-1212	<b>E1-3064</b>		<b>Anchor Sleeve</b> For E9-3230 & E9-3248	<b>E1-3054</b>
	<b>Shear Clip Angle For 90° Corner Mullion (R.H./L.H.)</b> For E9-3231	<b>E1-3056</b>		<b>Anchor Sleeve</b> For E9-3251	<b>E1-3066</b>
	<b>Shear Clip Angle For 90° Corner Mullion (L.H./R.H.)</b> For E9-3231	<b>E1-3057</b>		<b>Mullion Anchor</b> For 90° Corner Use with E9-3230 & E9-3248	<b>E1-3055</b>
	<b>Shear Clip Angle For 90° Corner Mullion (L.H.)</b> For E9-3230 & E9-3248	<b>E1-3058</b>		<b>Mullion Splice Sleeve</b> Use with E9-3230 & E9-3248	<b>E1-3048</b>
	<b>Shear Clip Angle For 90° Corner Mullion (R.H.)</b> For E9-3230 & E9-3248	<b>E1-3059</b>		<b>Mullion Splice Sleeve</b> Use with E9-3251	<b>E1-3065</b>
	<b>Shear Clip Angle For 90° Corner Mullion (L.H.)</b> For E9-3243 & E9-3244	<b>E1-3060</b>		<b>Setting Block Chair</b> For 2-Sided Toggle Assembly at Stack Joint	<b>E1-3051</b>



## ACCESSORIES

	<b>Setting Block Chair</b> For 2-Sided Toggle Assembly	<b>E1-3052</b>		<b>Dead Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-1281</b>
	<b>Perimeter Trim Clip</b>	<b>E1-3543</b>		<b>Corner Dead Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-0190</b>
	<b>Temporary Retaining Clip</b>	<b>E1-3053</b>		<b>Corner Wind Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-0191</b>
	<b>End Cap</b> For Perimeter Trim	<b>E1-3063</b>		<b>Heavy Duty Corner Dead Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-1282</b>
	<b>Intermediate Vertical "T" Anchor</b> Use with E1-3054 & E1-3066	<b>E1-3003</b>		<b>Heavy Duty Corner Wind Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-1283</b>
	<b>Jamb "F" Anchor</b> Use with E1-3054 & E1-3066	<b>E1-3067</b>		<b>Steel Reinforcing</b> 13/16" x 3-11/16" x 9/64" Steel Channel	<b>E1-0157</b>
	<b>Door Jamb Anchor</b> Use with E1-3054	<b>E1-3062</b>		<b>Steel Reinforcing</b> 2" x 4" x 1/4" Steel Tube	<b>E1-0162</b>
	<b>Jamb Anchor Plate</b>	<b>E1-3536</b>		<b>Steel Reinforcing</b> 2" x 4" x 1/8" Steel Tube	<b>E1-0187</b>
	<b>Wind Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-1204</b>		<b>Nylon Slip Pad</b>	<b>E3-0103</b>
	<b>Dead Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-1205</b>		<b>Silicone Splice Sleeve</b>	<b>E2-0070</b>
	<b>Wind Load Anchor*</b> Refer to Shop Drawings For Anchor Dimensions	<b>E1-1280</b>		<b>Glazing Spacer Tape</b>	<b>E2-0110</b>

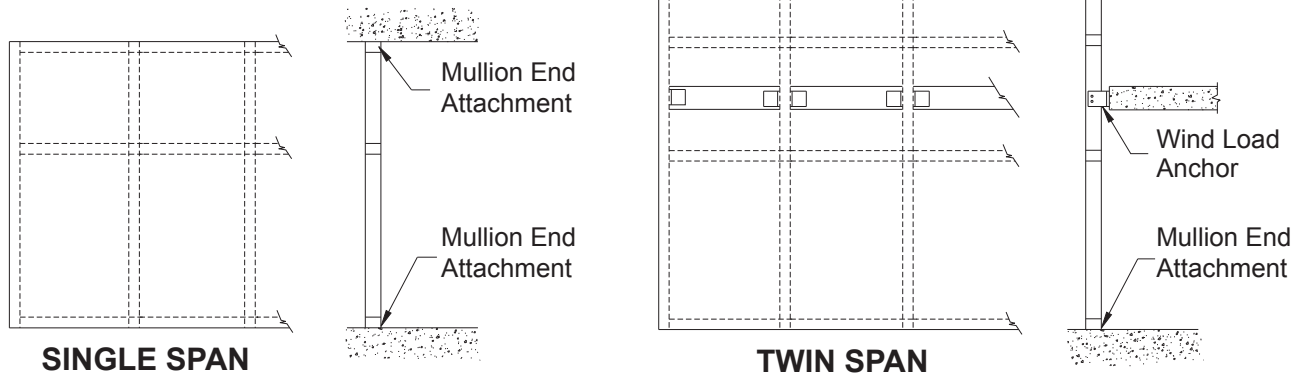
## ACCESSORIES

	<b>SSG Cassette Gasket</b>	<b>E2-0262</b>		<b>#14 x 5/8" FHSMS Type AB</b> , Zinc Plated Steel, For Attach. of FW-2500-SS End Cap to Vertical Mullion	<b>FC-1410</b>
	<b>SSG Glazing Spacer</b> Use with E1-3053	<b>E2-0261</b>		<b>1/4" Fender Washer</b> Stainless Steel Used as Vertical Mullion End Cap	<b>FW-2500-SS</b>
	<b>Setting Block (Silicone)</b> For Sill and Horizontal Members	<b>E2-7017</b>		<b>#10 x 1" PHSMS Type AB</b> Zinc Plated Steel, For Assembly of Cassettes	<b>PC-1016</b>
	<b>Interior Gasket</b>	<b>E2-7001</b>		<b>1/4-20 x 1-3/4" LG Type F</b> Zinc Plated Steel For Attachment of Vertical to Shear Block	<b>PF-2528</b>
	<b>Toggle Bar Assembly</b>	<b>H-3541</b>		<b>1/4"-20 x 1" PHMS</b> Stainless Steel, for Attachment of Temporary Retaining Clip	<b>PM-2516-SS</b>
	<b>Drill Fixture</b>	<b>H-7217</b>		<b>1/4"-20 x 5/8" HWHS Type F</b> , Zinc Plated Steel For Attachment of Corner Shear Block to Mullion	<b>HF-2510-W1</b>
	<b>#10 x 5/8" PHSMS Type AB</b> Zinc Plated Steel For Attachment of End Cap to Perimeter Trim	<b>PC-1010</b>		<b>1/4"-20 x 1" HWHS Type F</b> , Zinc Plated Steel For Attach. of Corner Shear Block to Mull. w/ Steel	<b>HF-2516-W1</b>
	<b>#12 x 5/8" FHSMS Type AB</b> , Zinc Plated Steel, For Attach. of Horiz.to Shear Block (Exposed Fastener)	<b>FC-1210</b>		<b>1/4"-20 x 3/4" PHMS</b> Stainless Steel, For Attachment of Perimeter Trim Clip to Mullion	<b>PM-2512-SS</b>
	<b>#12 x 3/4" FHSMS Type AB</b> , Zinc Plated Steel, For Attach. of Horiz.to Shear Block	<b>FC-1212</b>		<b>#10 x 3/8" PHMS</b> Stainless Steel, For Attachment of Perimeter Trim Clip to Perimeter Trim	<b>PM-1006-SS</b>
	<b>#12 x 1-1/4" FHSMS Type AB</b> , Zinc Plated Steel, For Attach. of Horiz.to Corner Mullion	<b>FC-1220</b>		<b>1/4"-20 x 1 1/2" PHMS</b> Stainless Steel For Attachment of the Toggle Bar to Mullion	<b>PM-2524-SS</b>

## FRAME FABRICATION

### FRAME TYPES / ANCHORING METHODS

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



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

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

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

## FRAME FABRICATION

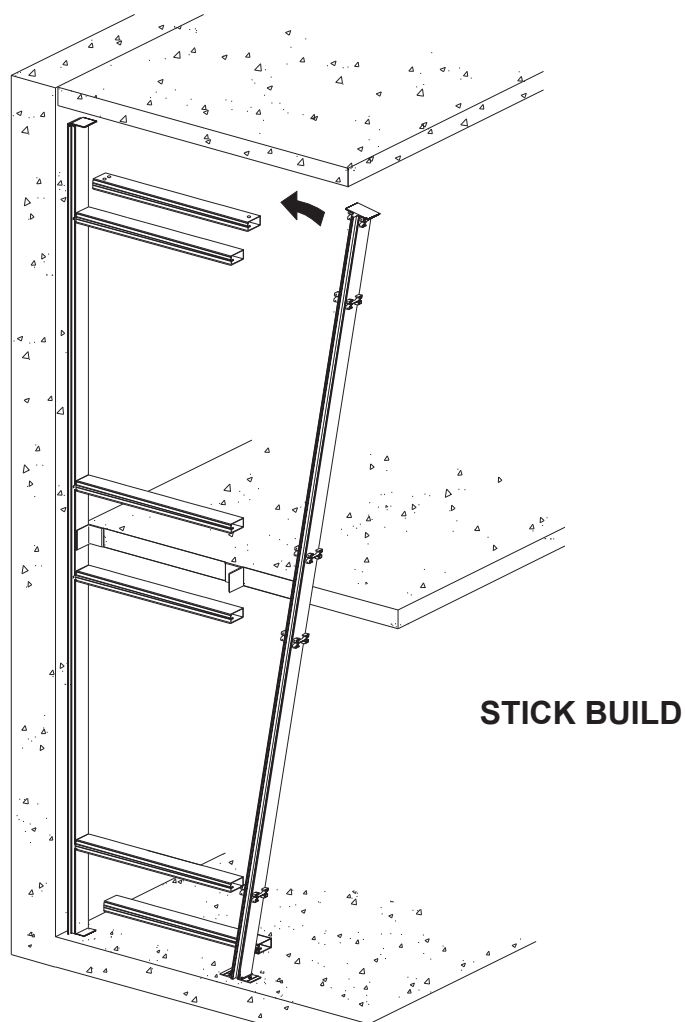
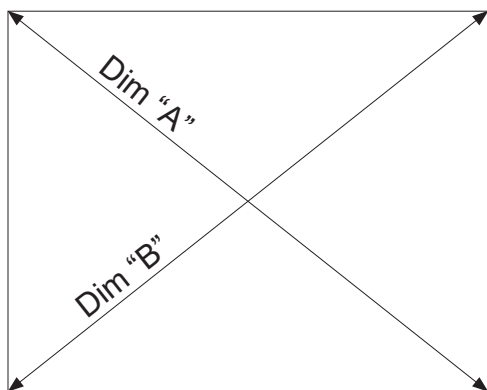
### FRAME TYPES / ANCHORING METHODS

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

#### Framing Members for Stick Build:

- Tubular 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, and at head and sill to access "T" and "F" anchor bolts.

**Note:** When using stick build construction, check overall frame width every fifth mullion as the wall is installed to prevent the buildup of cumulative tolerance errors. Mullions must be installed plumb, horizontals must be installed level. Check diagonals to confirm squareness of daylight openings. Adjust mullion height to square daylight openings. Daylight openings must be within 1/16" to ensure frame squareness.

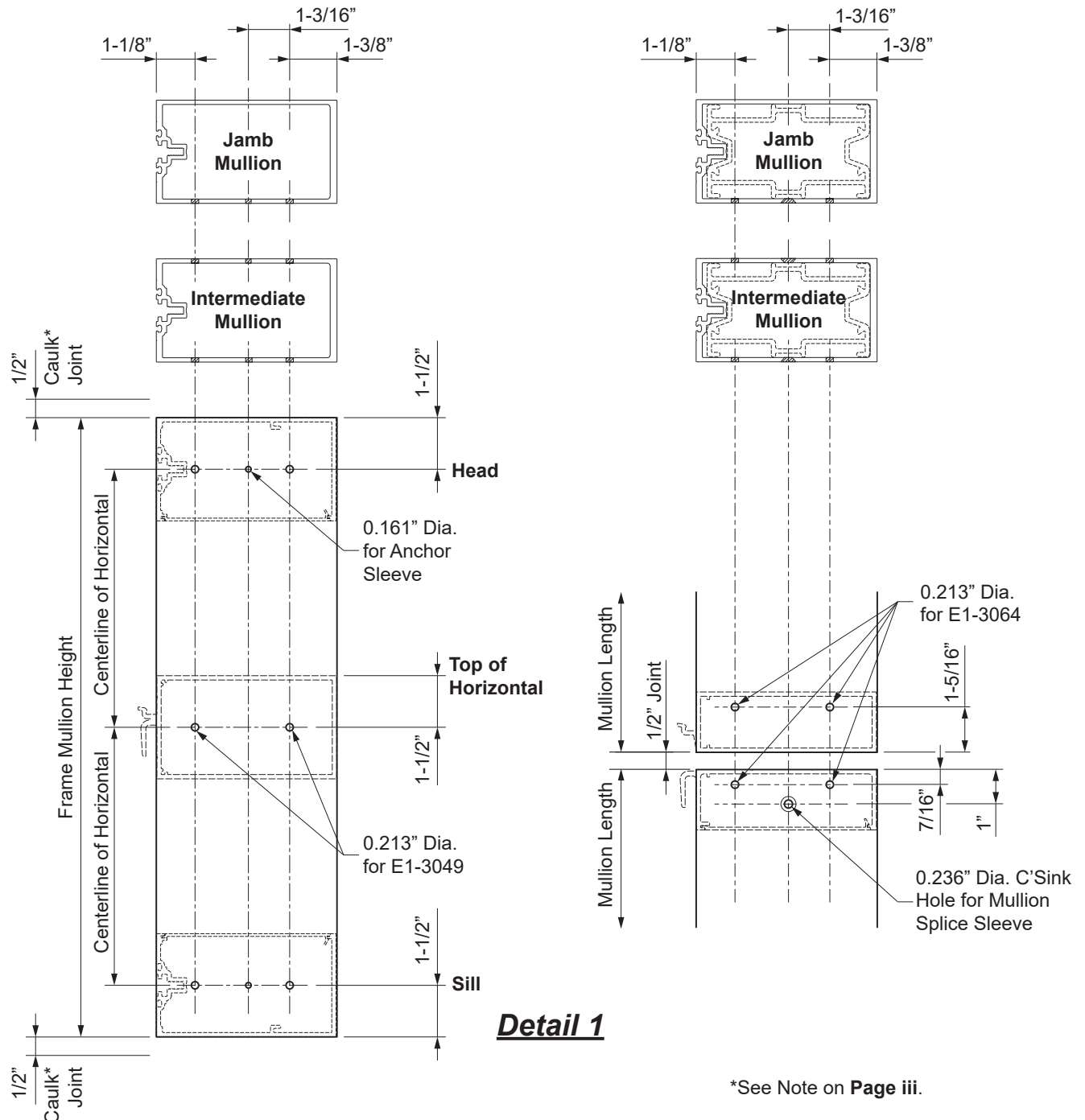


## FRAME FABRICATION

### STEP 1 FABRICATE MULLIONS

- Mullion hole locations for shear blocks are shown below.
- Drill 0.213" dia. (#3 drill bit) holes for shear block attachment at the locations indicated.
- For mullions at the expansion horizontals, drill a 0.236" diameter countersunk hole, one on each side for the mullion at the location indicated.

See **Detail 1**.



## FRAME FABRICATION

### STEP 1 (Continued)

#### 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.
- Notch the mullion raceway at the sill, 3/8" x 3/8" to clear the door jamb anchor.

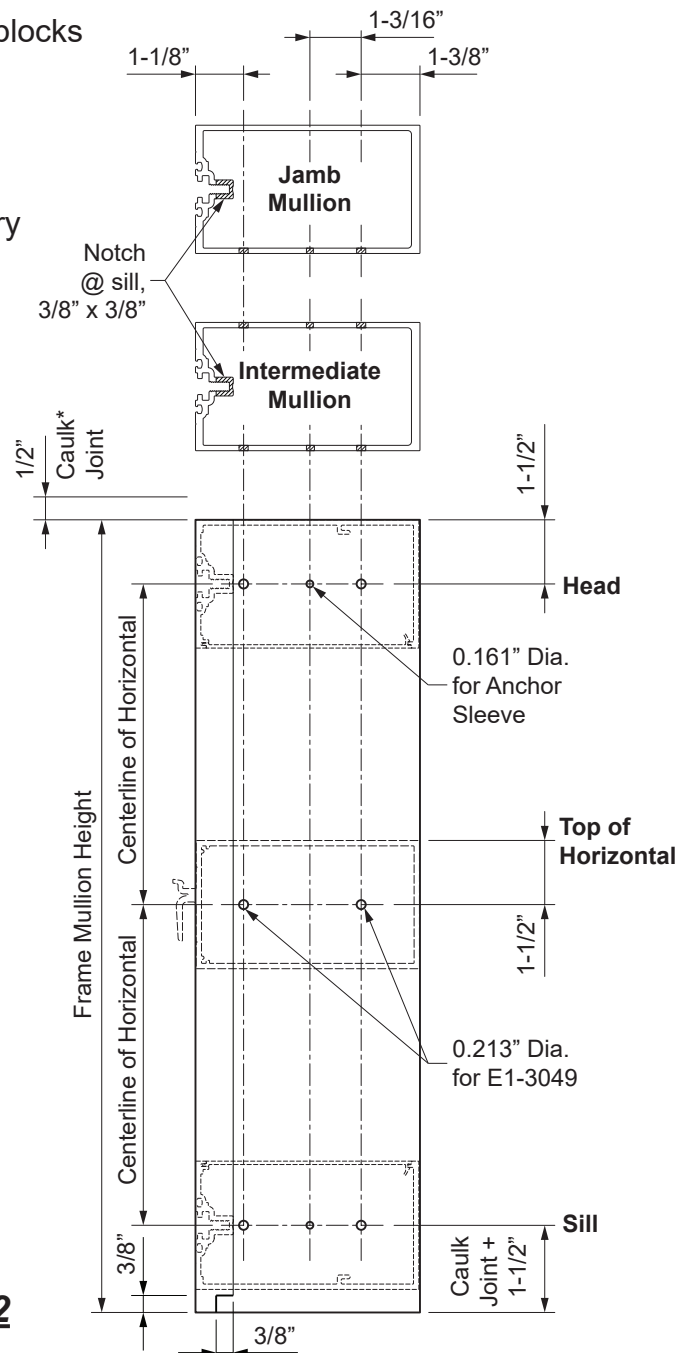
##### Step 2

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.

**Detail 2**



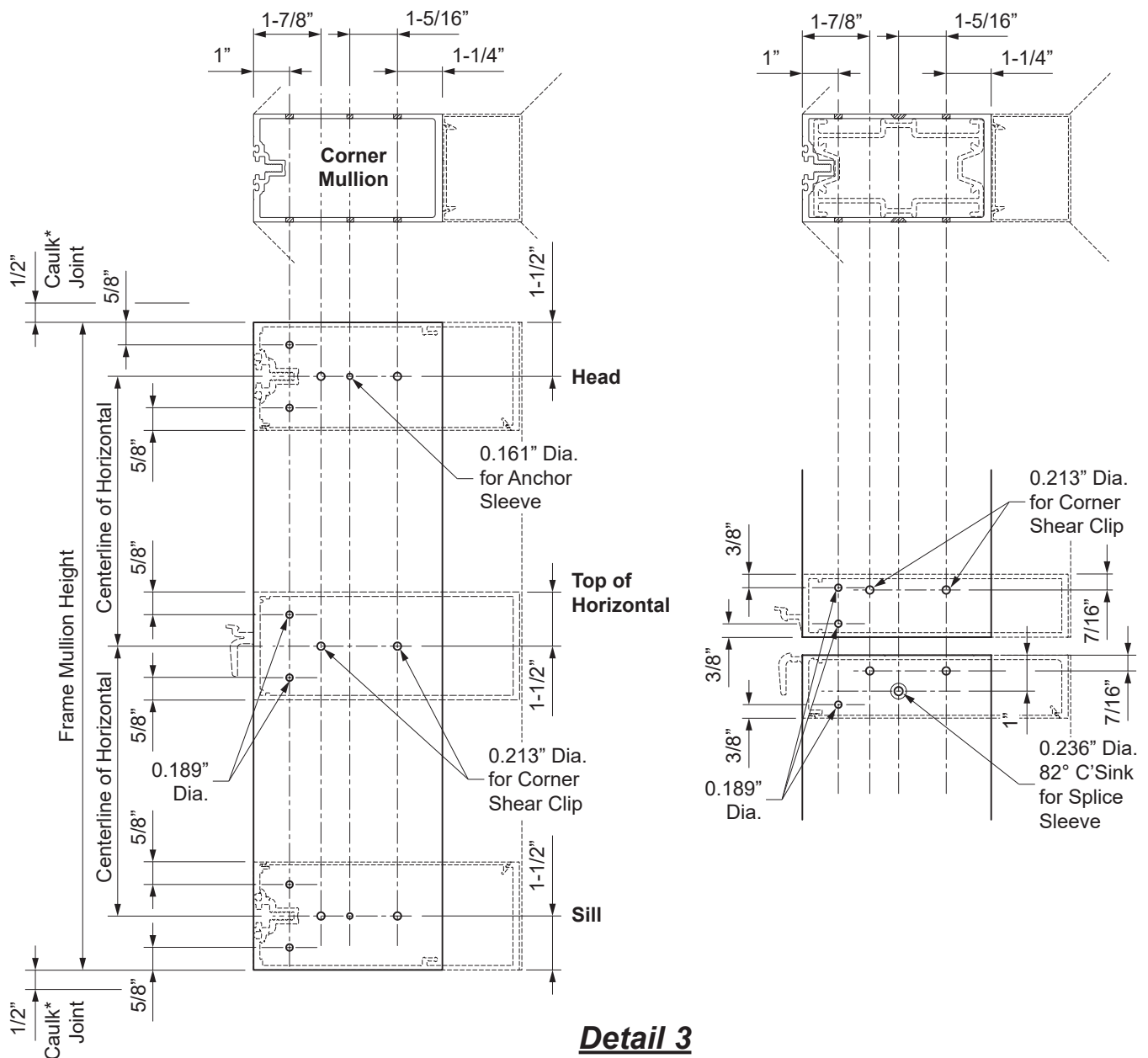
## FRAME FABRICATION

### STEP 1 (Continued)

### FABRICATE 90° OUTSIDE CORNER MULLIONS

- Mullion hole locations for shear blocks are shown below.
- Drill 0.213" dia. (#3 drill bit) holes for shear block attachment at the locations indicated.
- Drill 0.189" dia holes for concealed fastener attachment at the locations indicated.

See **Detail 3**.



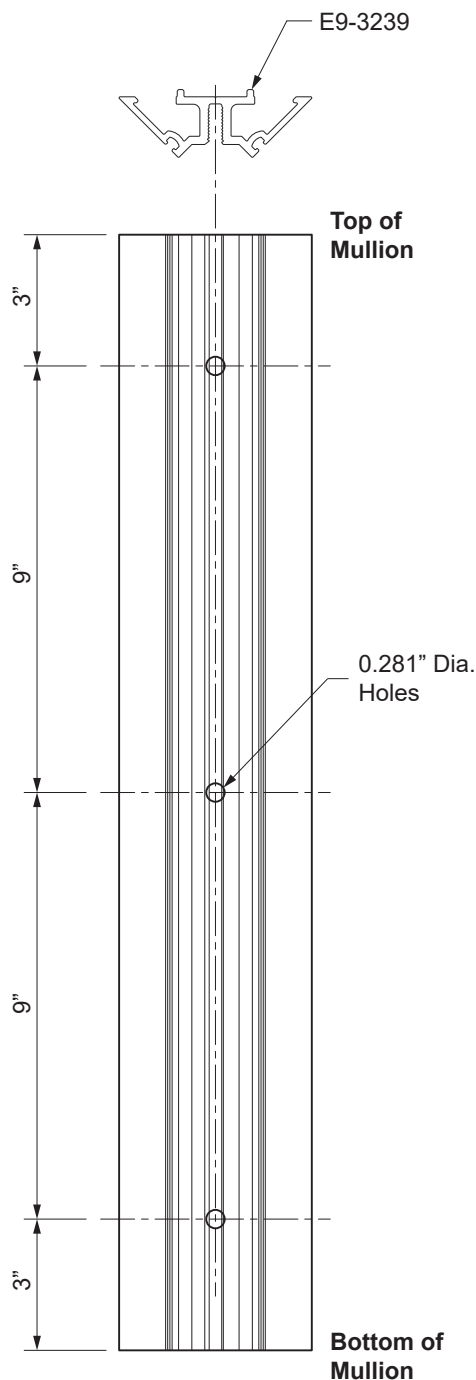
**FRAME FABRICATION**

**STEP 1 (Continued)**

**FABRICATE 90° OUTSIDE CORNER GLAZING ADAPTOR**

- Cut E9-3239 outside corner mullion adaptor to vertical mullion length.
- Drill 0.281" dia. (9/32 bit) clear holes every 9" on center.

See **Detail 4**.



**Detail 4**



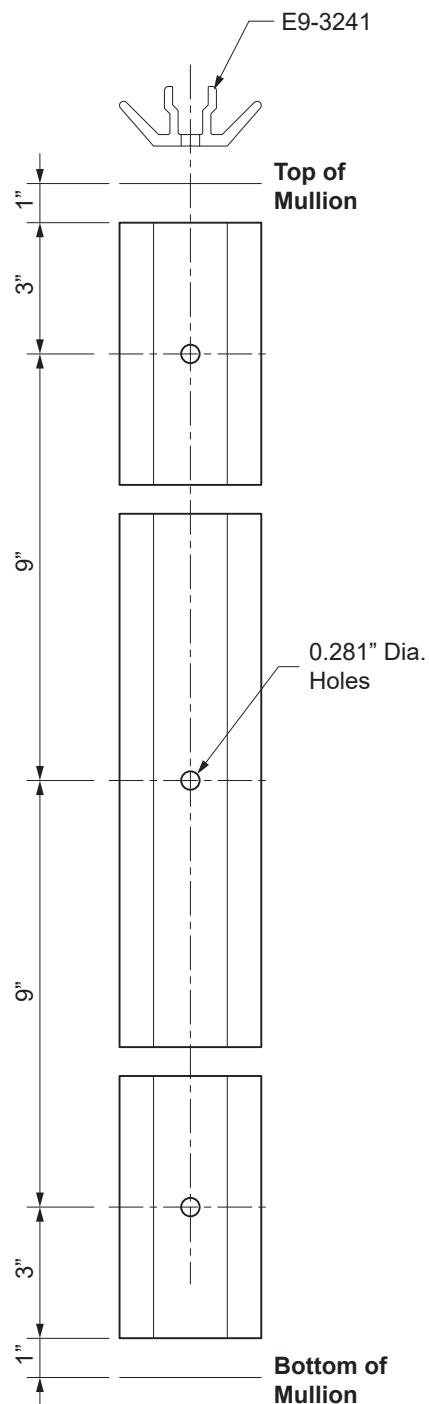
## FRAME FABRICATION

### STEP 1 (Continued)

#### FABRICATE 90° OUTSIDE CORNER SSG CORNER TOGGLE BAR

- Cut E9-3241 outside corner glazing toggle bar to mullion length minus(-) 2".
- Drill 0.281" dia. (9/32 bit) clear holes every 9" on center.

See **Detail 5**.



**Detail 5**

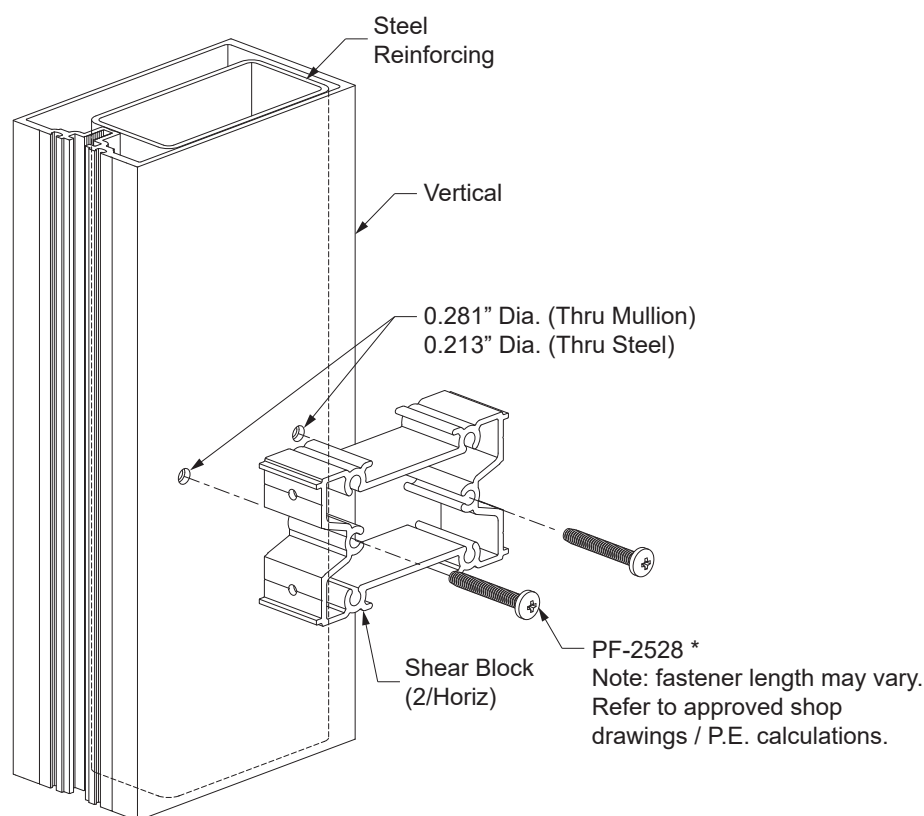
## FRAME FABRICATION

### STEP 2 USING ALTERNATE REINFORCING

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

- Reinforcing shall be attached to the mullion in accordance with engineering requirements.
  - Slide the reinforcing into the mullion and into position.
  - When attaching reinforcing at shear block locations, drill a 0.281" diameter (#9/32 bit) hole in the mullion, being careful not to drill a hole in reinforcing.
  - Drill a 0.213" diameter (#3 bit) hole in the reinforcing through the previous holes.
  - Tap the 0.213" hole to accommodate a 1/4-20 fastener.
  - Attach the shear blocks to the mullion and steel with two PF-2528\* fasteners per block.
- See **Detail 6**.

**Note:** Reinforcing to be determined by a qualified engineer.  
Steel reinforcing must be coated to insulate the steel from the aluminum.



**Detail 6**

## FRAME FABRICATION

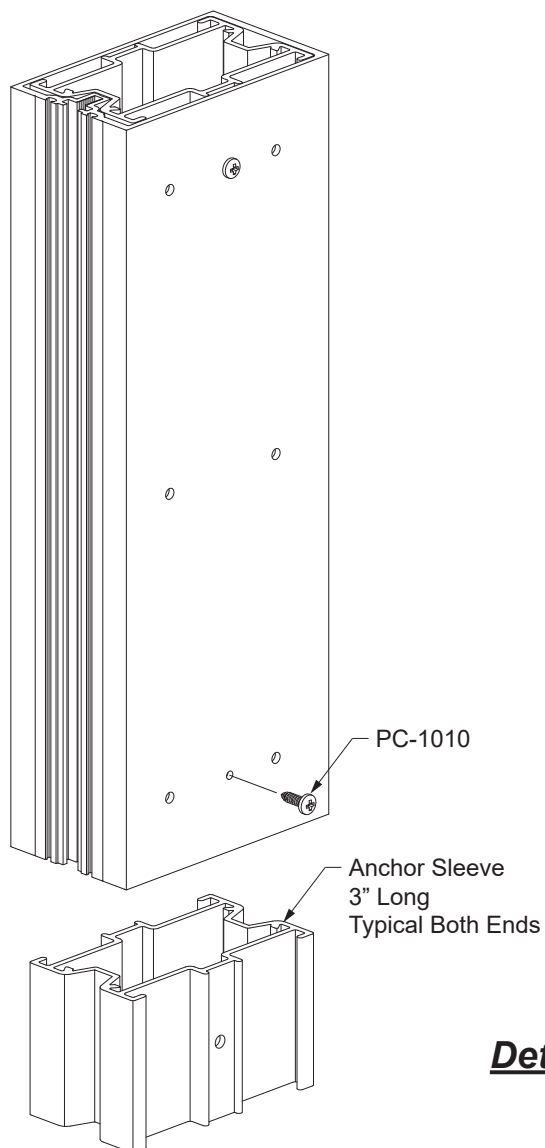
### STEP 3

### INSTALL END ANCHOR SLEEVES

Mullions and jambs require 3" long anchor sleeves at the head and the sill (Outside Corner SSG mullions use a different end anchor which has its own sleeve.)

-Secure the sleeve into the end of the mullion using one PC-1010 fastener.

See **Detail 7**.



**Detail 7**

## FRAME FABRICATION

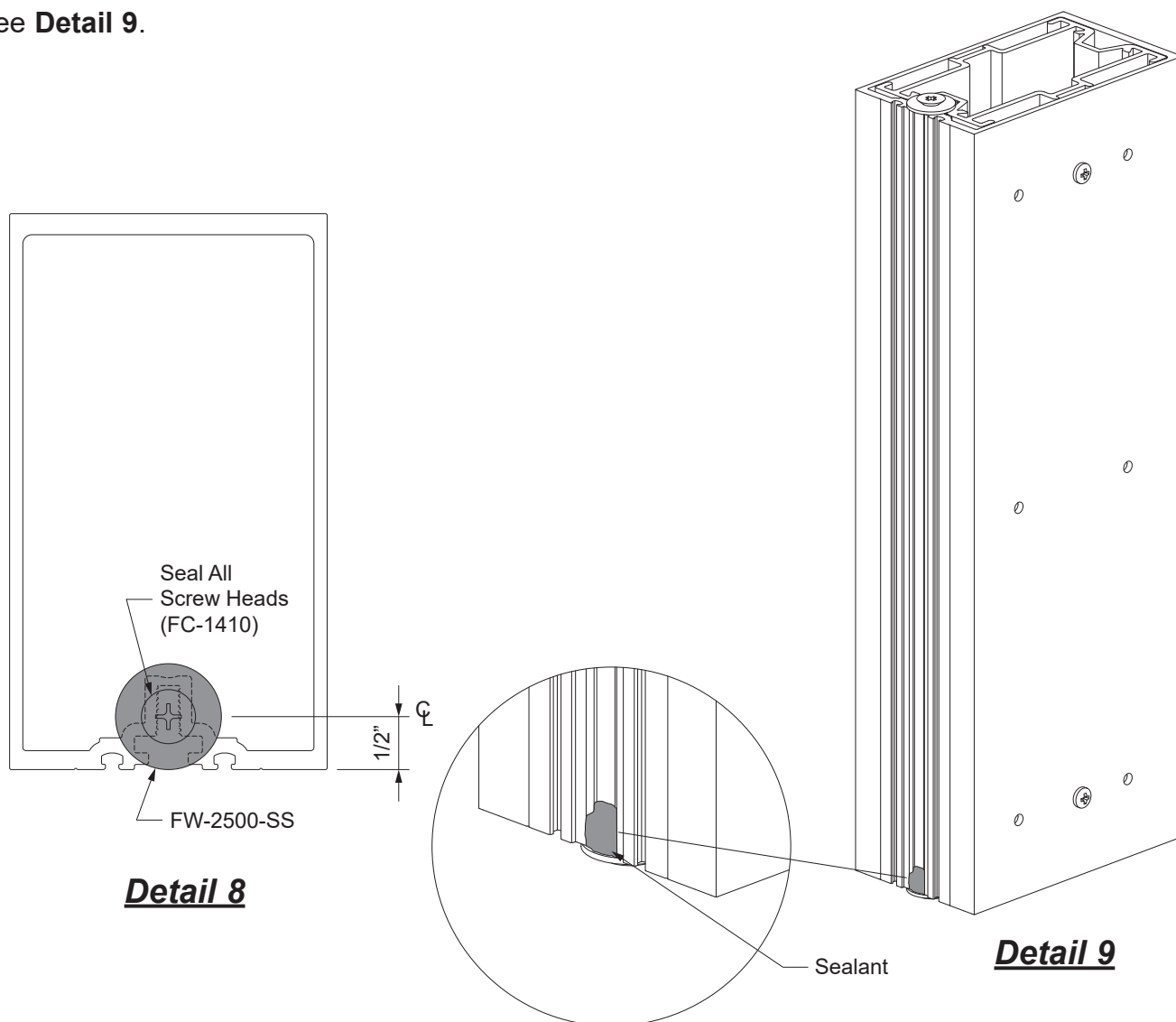
### STEP 4

#### ATTACH MULLION END CAPS

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

- Clean the mullion ends and mullion end caps with a cleaner and method approved by the sealant manufacturer.
- Apply sealant to the spline cavity and along the front of the mullions on both ends prior to installing mullion end caps, FW-2500-SS.
- Attach the mullion end caps to each end of the mullion with FC-1410 fasteners as shown in **Detail 8**.
- Tool the excess sealant flush between the mullion end cap and the mullion.
- Seal over all screw heads.
- At the bottom of the mullions, apply sealant to the center cavity to a height of 1/2".

See **Detail 9**.



## FRAME FABRICATION

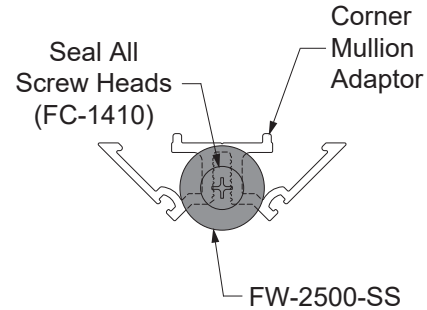
### STEP 4 (Continued)

#### ATTACH MULLION END CAPS AT CORNER MULLIONS

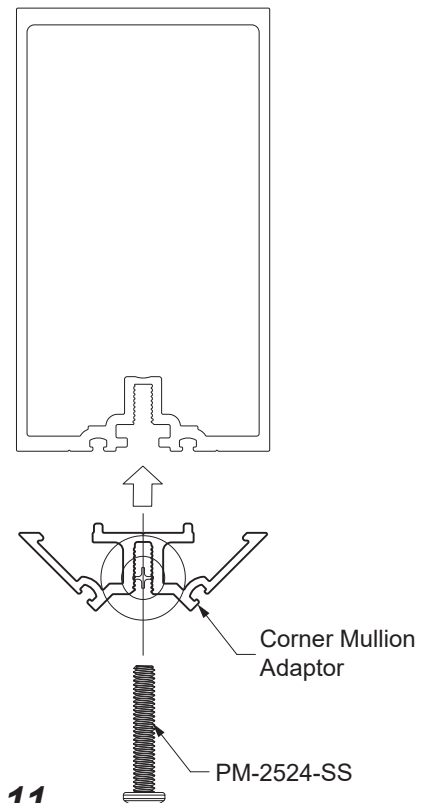
At the outside corners, end caps are installed at the outside corner mullion adaptors.

- Clean the corner adaptor ends and mullion end caps with a cleaner and method approved by the sealant manufacturer.
- Apply sealant to the spline cavity and along the front of the adaptor on both ends prior to installing mullion end caps, FW-2500-SS.
- Attach the mullion end caps to each end of the adaptor with FC-1410 fasteners as shown **Detail 10**.
- Tool the excess sealant flush between the corner adaptor end cap and the mullion.
- Seal over all screw heads.
- Fasten the corner mullion adaptor onto the corner mullion using PM-2524-SS screws at 9" on center. Tighten the screws to 70 inch-pounds.

See **Detail 11**.



**Detail 10**



**Detail 11**

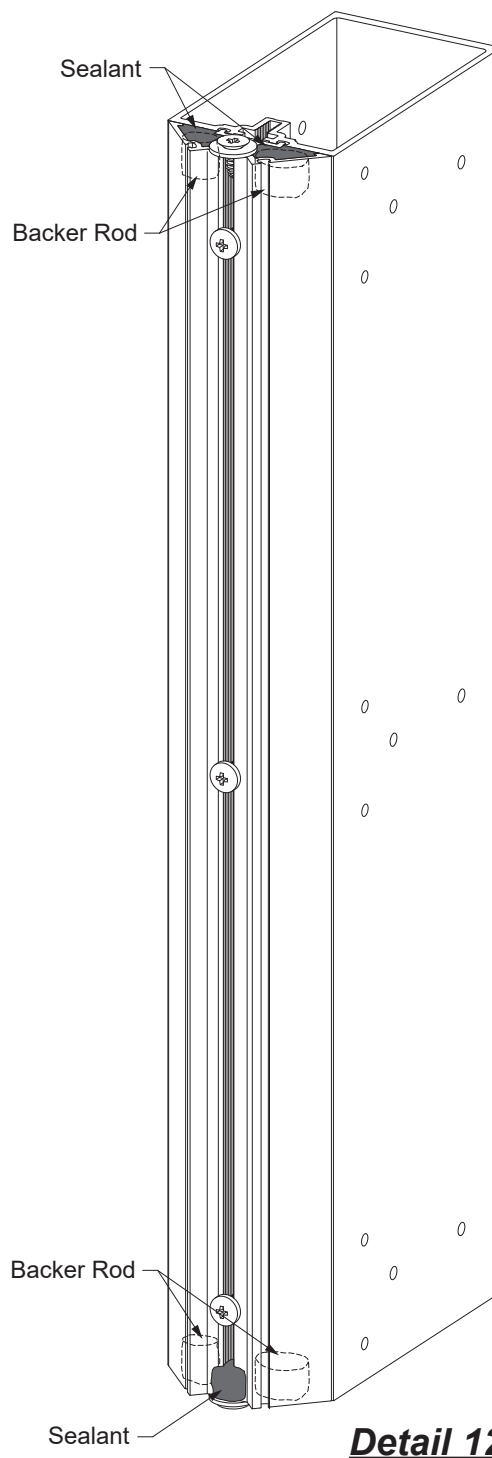
**FRAME FABRICATION**

**STEP 4 (Continued)**

**ATTACH MULLION END CAPS AT CORNER  
MULLIONS**

- At the bottom of the corner adaptor, apply sealant to the screw raceway to a height of 1/2".
- Insert backer rods inside the cavities at the top and bottom of the corner adaptor and apply sealant to close off the cavities.

See **Detail 12**.



## FRAME FABRICATION

### STEP 5 ATTACH SHEAR BLOCKS FOR HORIZONTALS

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

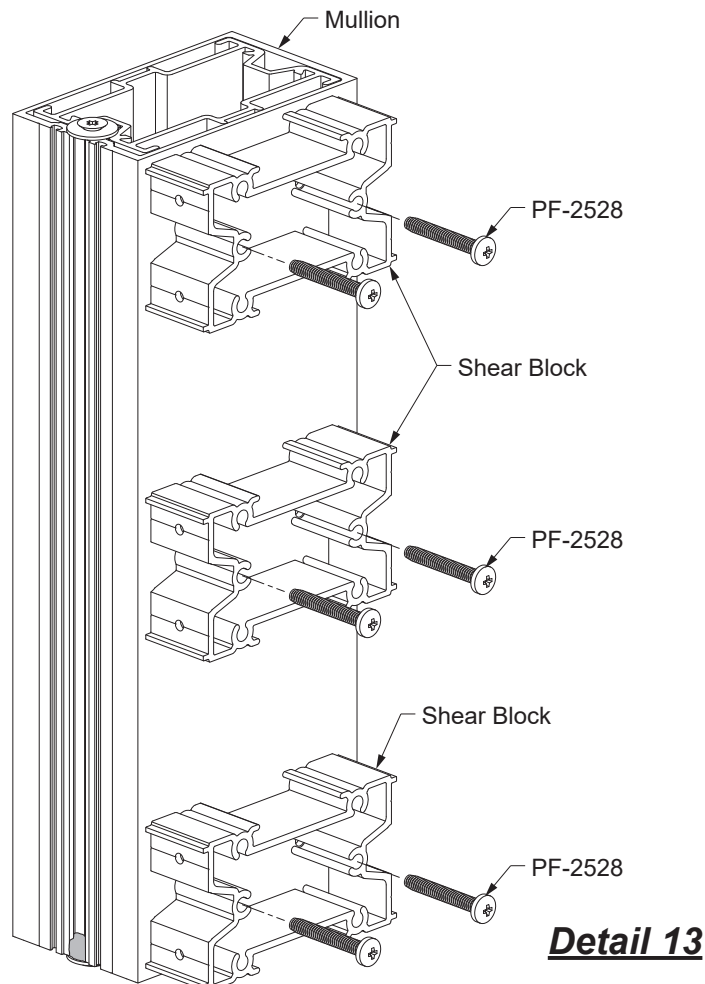
-Attach the shear blocks to jambs and verticals with two PF-2528 fasteners per block.

See **Detail 13**.

**Note:** Tight tolerance will ensure proper fit and appearance of the pre-glazed cassettes into the daylight openings.

-Additional fasteners may be required to accomodate special project conditions.  
-Alternate holes can be utilized to correct fabrication errors.

**Note:** See **Step 2** on **Page 12** when using reinforcing.



## FRAME FABRICATION

### STEP 5A

#### ATTACH SHEAR CLIPS AT SSG CORNER MULLION

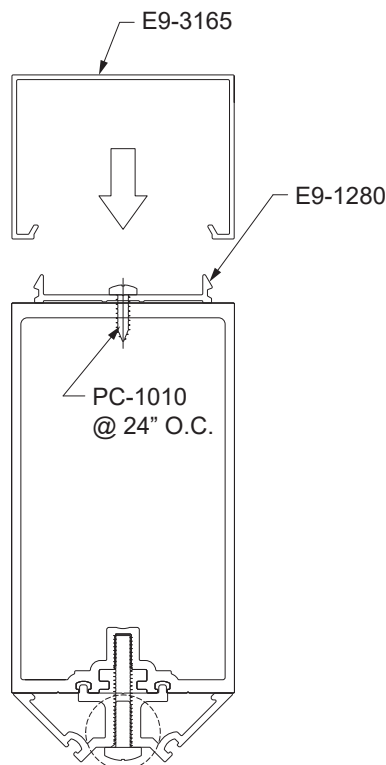
-Prior to installing the shear clips for the mitered head, sill, and horizontals, the interior cover must be installed. Attach the interior cover base E9-1280 to the back of the corner mullion with PC-1010 screws at 24" maximum on center. Then snap on the interior cover.

See **Detail 14**.

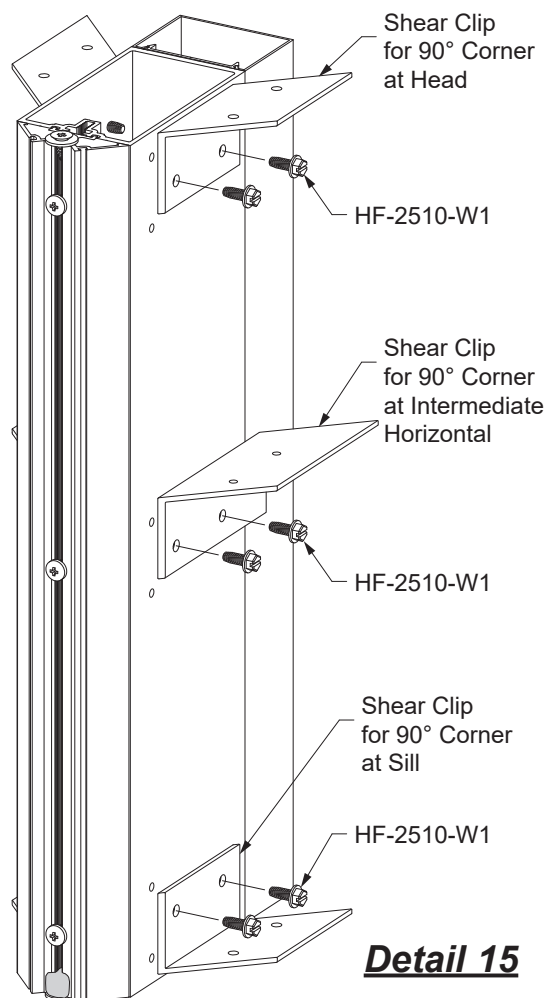
-Attach the shear blocks to jambs and verticals with two HF-2510-W1 fasteners per block. If steel reinforcing is required use HF-2516-W1 fasteners

See **Detail 15**.

**Note:** the shear clip at the intermediate horizontal does not have clear holes at the horizontal portion of the clip. Tap holes are to be field drilled upon installation of the intermediate horizontal.



**Detail 14**



**Detail 15**



## FRAME FABRICATION

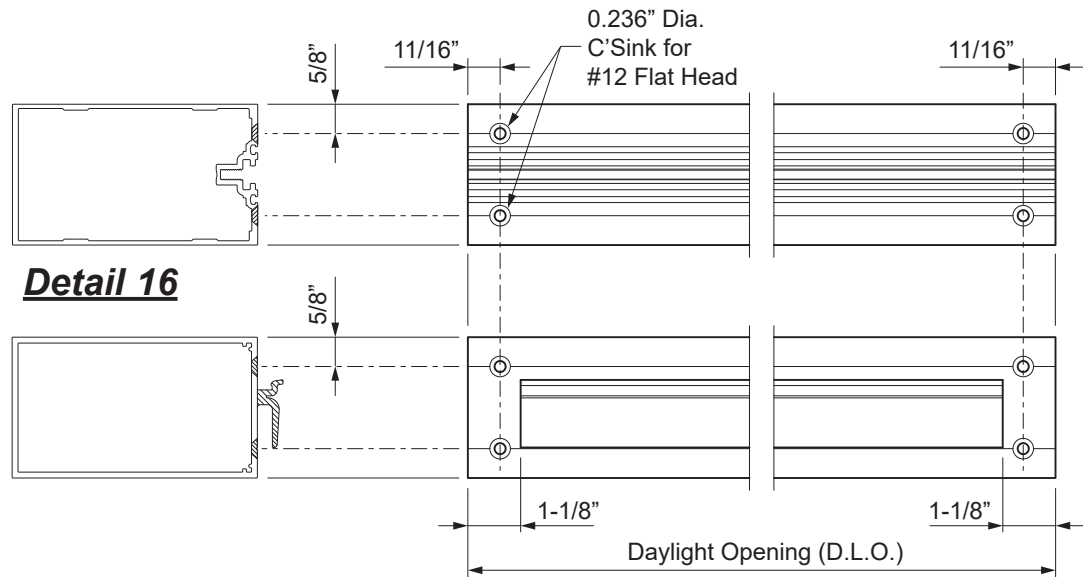
### STEP 6

#### FABRICATE HORIZONTAL MEMBERS

- Cut all horizontal members to the Daylight Opening as shown on the approved shop drawings.
- Cut all horizontal flush fillers to the Daylight Opening minus(-)  $\frac{1}{32}$ ".
- Horizontal members must be fabricated for shear block/clip attachment as follows:

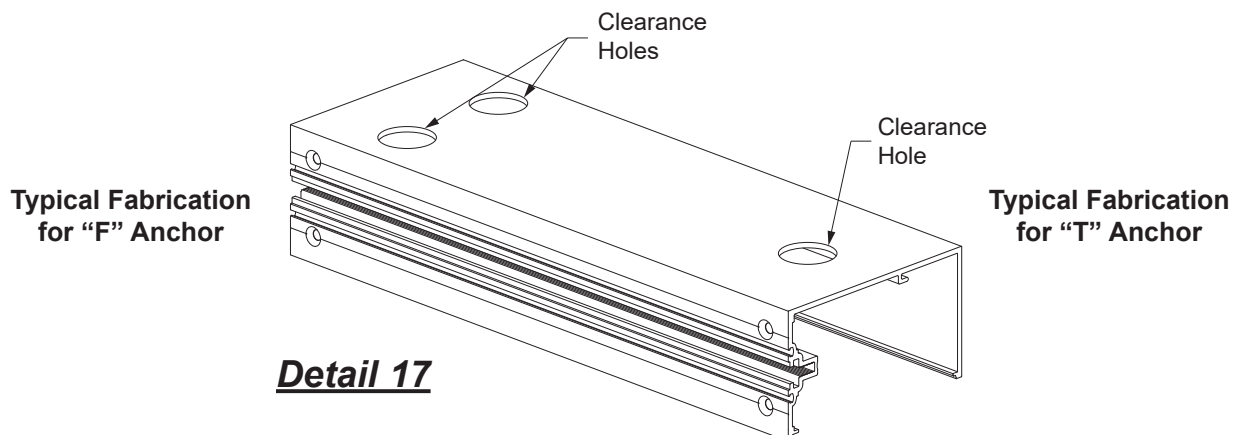
#### Horizontals with Concealed Fasteners:

- Layout hole locations on the face of the horizontal at both ends as shown below.
- Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners. Screw heads must be flush with face of horizontal.
- Notch the face of the E9-3242 tubular horizontal as shown in **Detail 16**.



#### Head and Sill Horizontal Member Anchor Preps:

- Drill appropriate size clearance holes at each end of the mullion as shown in **Detail 17**, or according to shop drawings or engineering calculations to align with corresponding anchor holes in "T" and "F" end anchors.



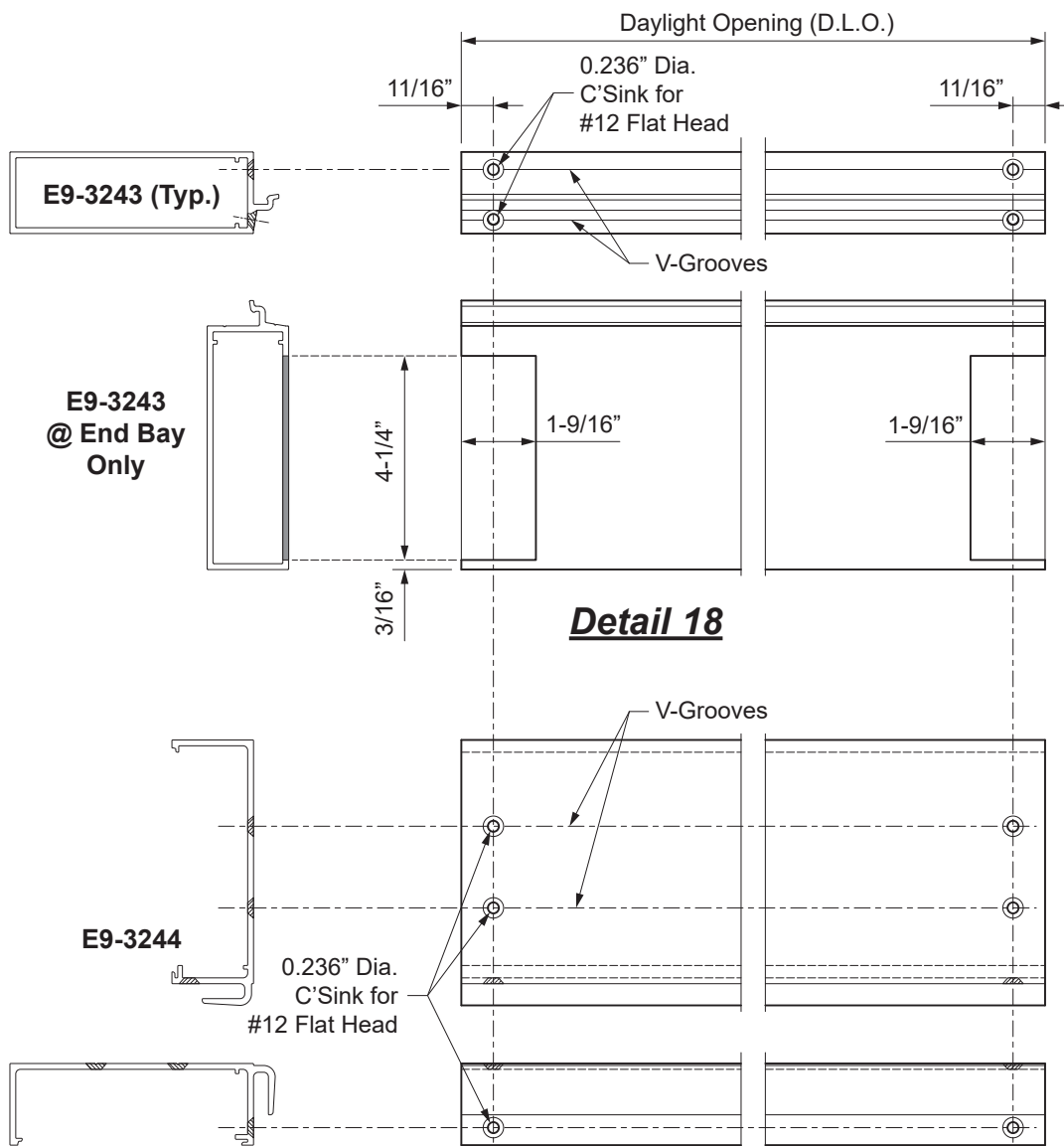
**FRAME FABRICATION**

**STEP 6 (Continued)**

**FABRICATE HORIZONTAL MEMBERS**

**Expansion Horizontals:**

- Layout hole locations on the face of the horizontal at both ends as shown below.
- Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners. Screw heads must be flush with face of horizontal.
- For end bays only, notch both ends of the E9-3243 tubular horizontal as shown below in **Detail 18**.



## FRAME FABRICATION

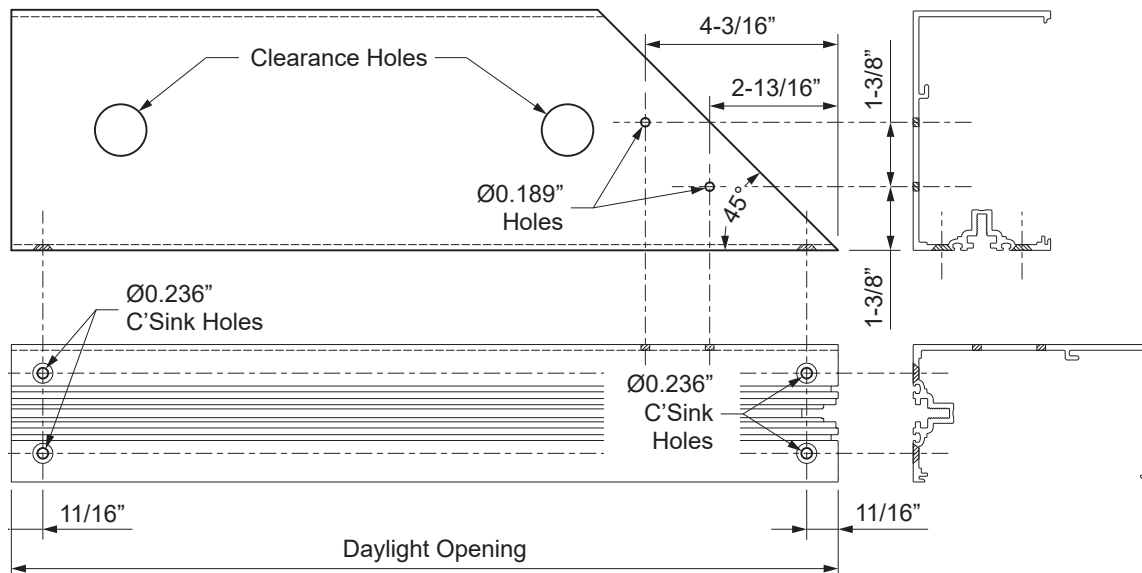
### STEP 6 (Continued)

### FABRICATE HORIZONTAL MEMBERS

#### Mitered Open-Back Head & Sill at Corners:

- Layout hole locations on the face of the horizontal at both ends as shown below.
- Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners. Screw heads must be flush with face of horizontal.
- Drill 0.189" diameter tap holes at locations shown for the corner shear clip.

See **Detail 19**.



**Detail 19**

## FRAME FABRICATION

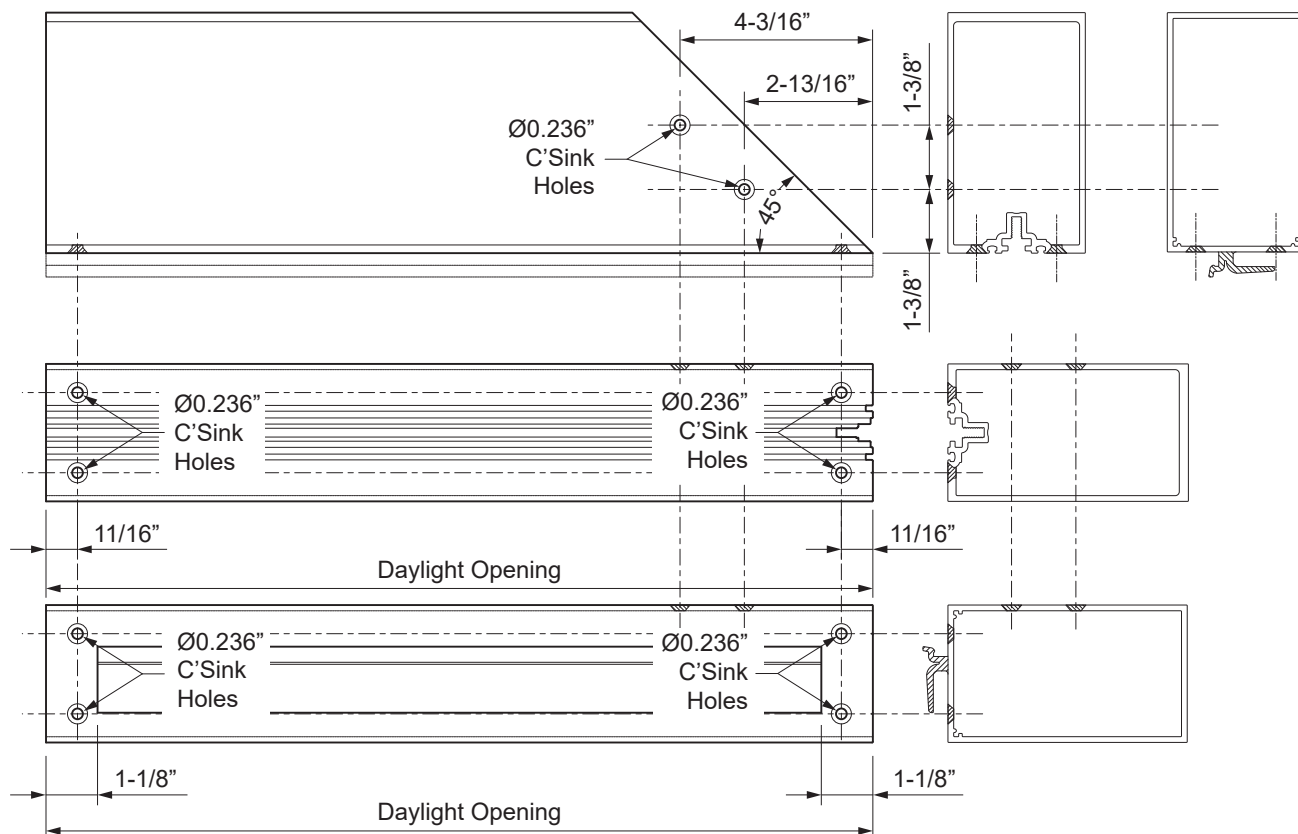
### STEP 6 (Continued)

### FABRICATE HORIZONTAL MEMBERS

#### Mitered Intermediate Horizontal at Corners:

- Notch the face of the E9-3242 tubular horizontal as shown in **Detail 20**.
- Layout hole locations on the face of the horizontal at both ends as shown below.
- Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners. Screw heads must be flush with face of horizontal.

See **Detail 20**.



**Detail 20**

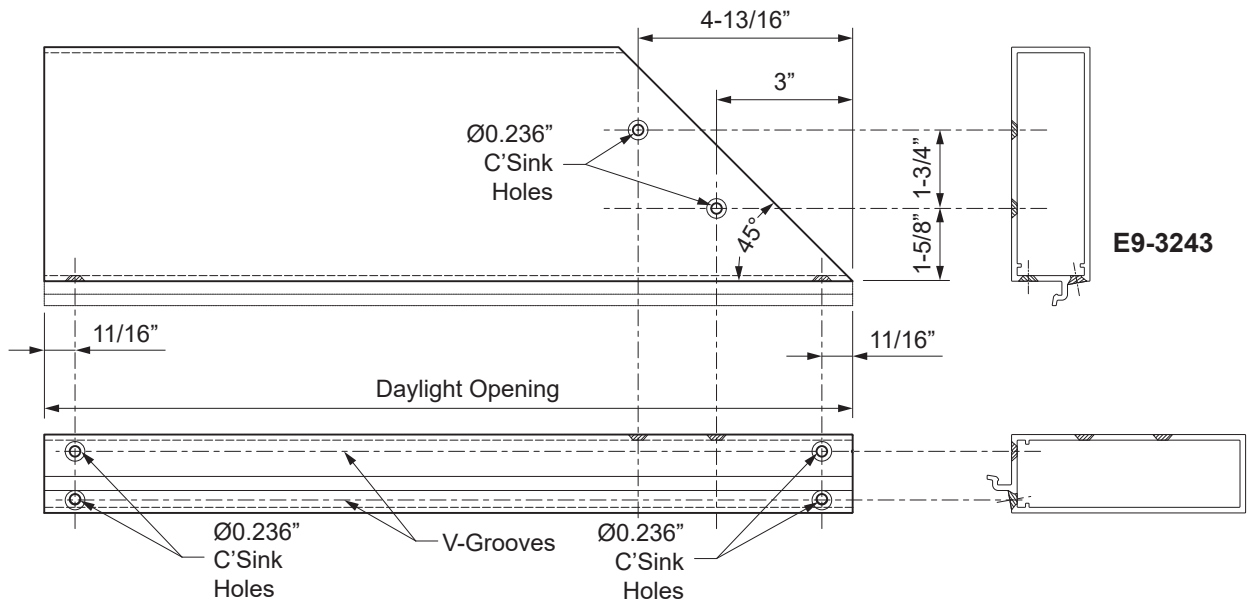
## FRAME FABRICATION

### STEP 6 (Continued) FABRICATE HORIZONTAL MEMBERS

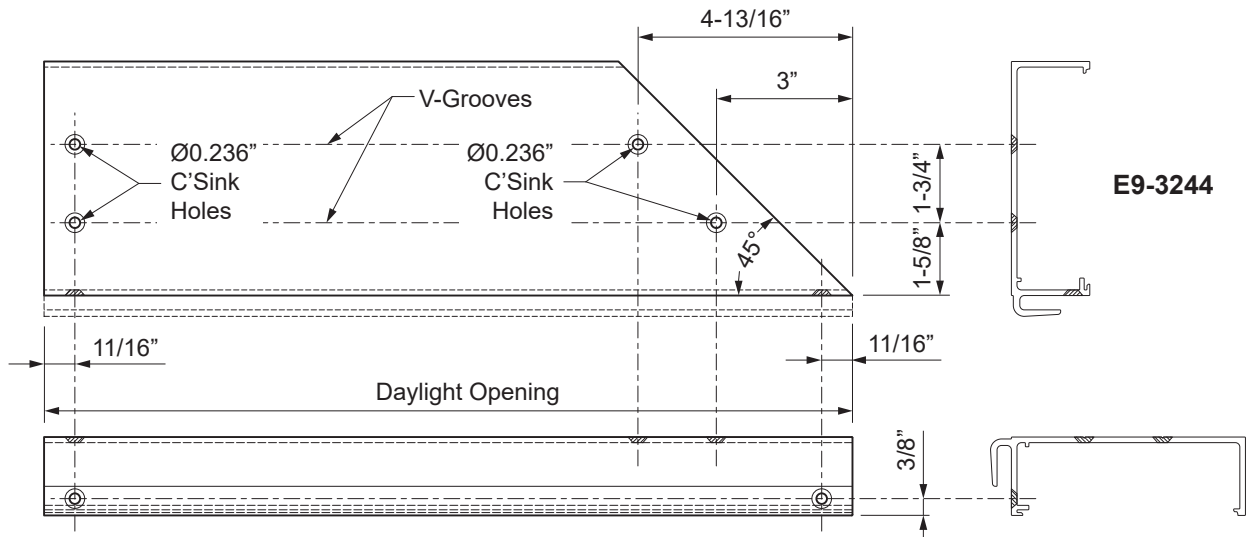
#### Expansion Horizontals at Corners:

- Layout hole locations on the face of the expansion horizontal at both ends as shown below and at the top of the horizontal as indicated in the detail below.
- Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners. Screw heads must be flush with face of horizontal.

See **Detail 21**.



**Detail 21**



## FRAME FABRICATION

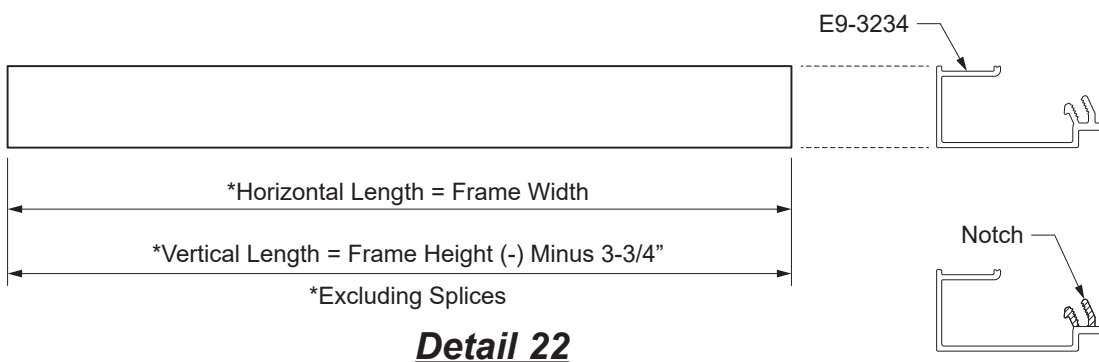
### STEP 7

#### FABRICATE PERIMETER TRIM

-Cut E9-3234 perimeter trim for heads and jambs as shown in **Detail 22**.

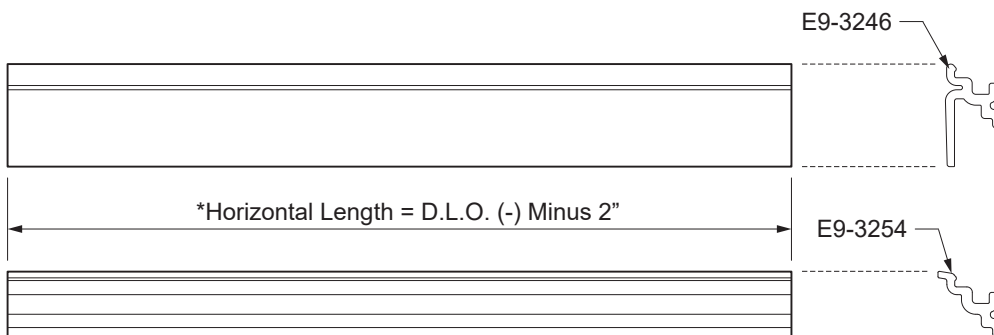
-For elevations over 24' in length or height, perimeter trim must be spliced. Perimeter trim splice joint must be 1/2" and located no more than 18' between splice joints, best location at the mid-point of a Daylight Opening. Refer to **Detail 62** on **Page 49** for attachment of the silicone splice sleeve.

-Notch perimeter trim 1-1/4" from each splice end as shown in **Detail 23**.



**Detail 22**

**Detail 23**



**Detail 24**

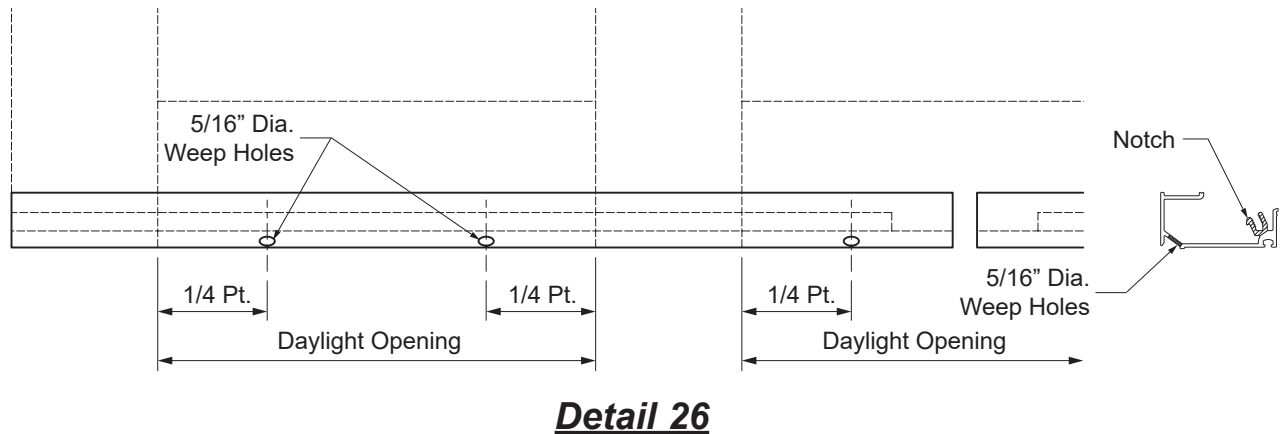
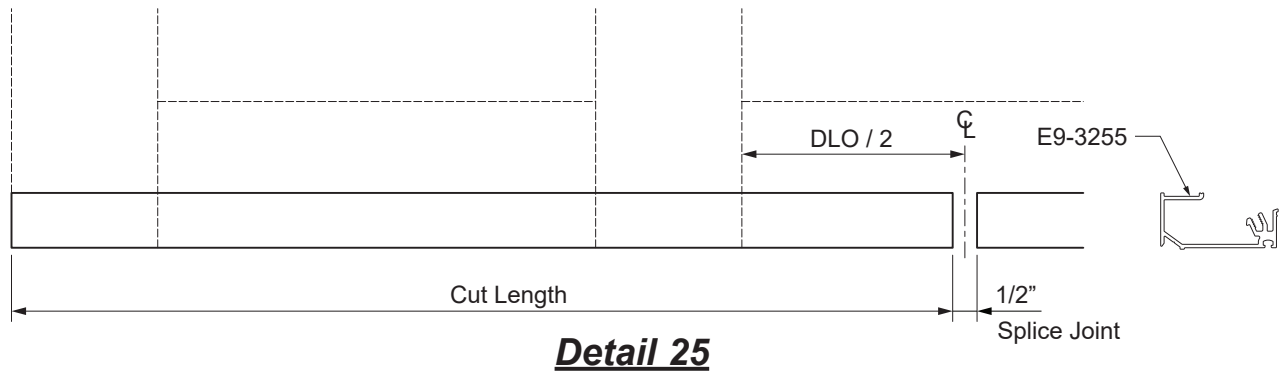
-Cut E9-3246 horizontal adaptors and E9-3254 sill adaptor to Daylight Opening minus(-) 2". See **Detail 24**.

## FRAME FABRICATION

### STEP 7 (Continued)

#### FABRICATE PERIMETER TRIM

- Cut E9-3255 sill trim as shown in **Detail 25**.
- For elevations over 24' in length or height, sill trim must be spliced. Sill trim splice joint must be 1/2" and located no more than 18' between splice joints, best location at the mid-point of a Daylight Opening. Refer to **Detail 61** on **Page 49** for attachment of the silicone splice sleeve.
- Notch perimeter trim 1-1/4" from each splice end as shown in **Detail 26**.
- Drill 5/16" weep holes at 1/4 points of each Daylight Opening.

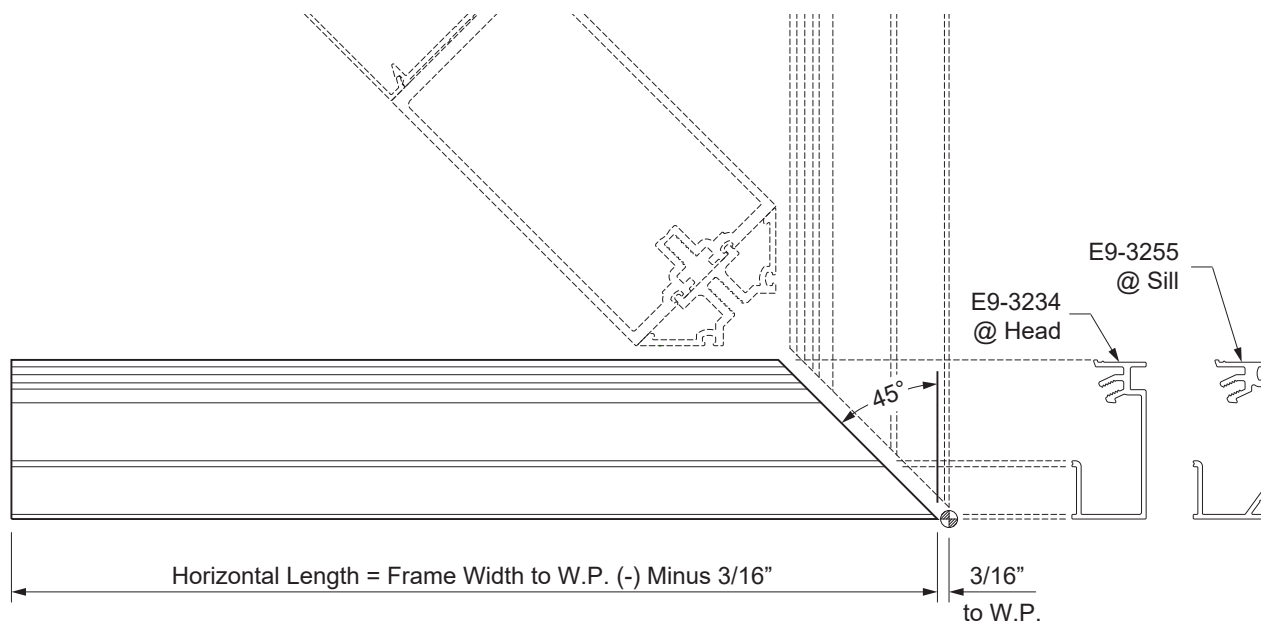


**FRAME FABRICATION**

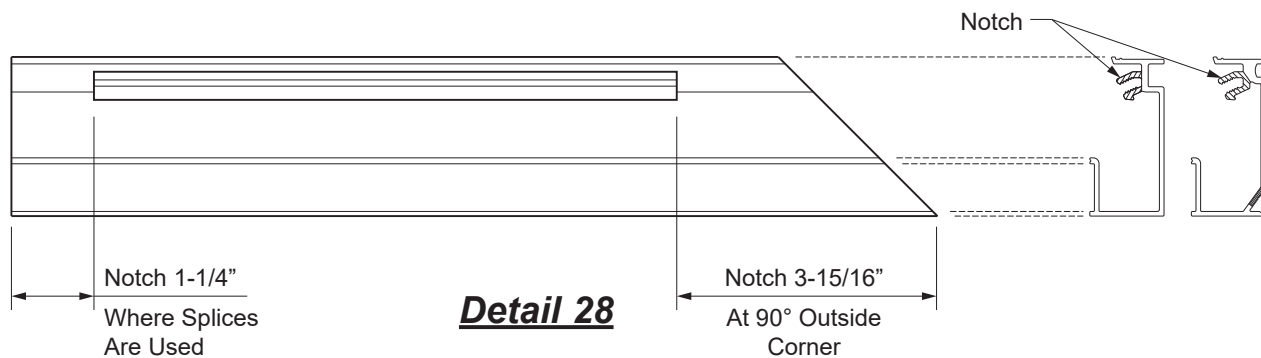
**STEP 7 (Continued)**

**FABRICATE PERIMETER TRIM AT 90° OUTSIDE CORNER**

- Miter cut head and sill perimeter trim as shown in **Detail 27**.
- Notch the mitered end by 3-15/16" as shown in **Detail 28**.
- For elevations over 24' in length, perimeter trim must be spliced. Perimeter trim splice joint must be 1/2" and located no more than 18' between splice joints. Refer to **Detail 61** on **Page 49**.
- Notch the end at the splice by 1-1/4". Do not notch the horizontal perimeter trim at the jambs.
- Refer to **Detail 65** on **Page 52** for perimeter trim splice at corner mullions.



**Detail 27**



**Detail 28**



## FRAME FABRICATION

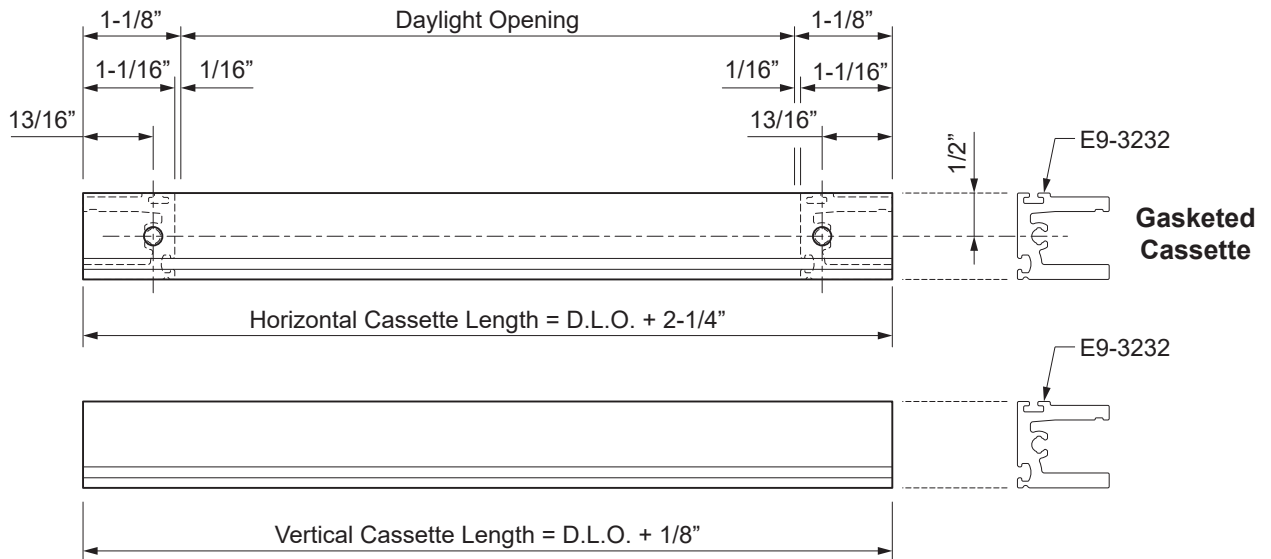
### STEP 8

### FABRICATE GLAZING CASSETTES

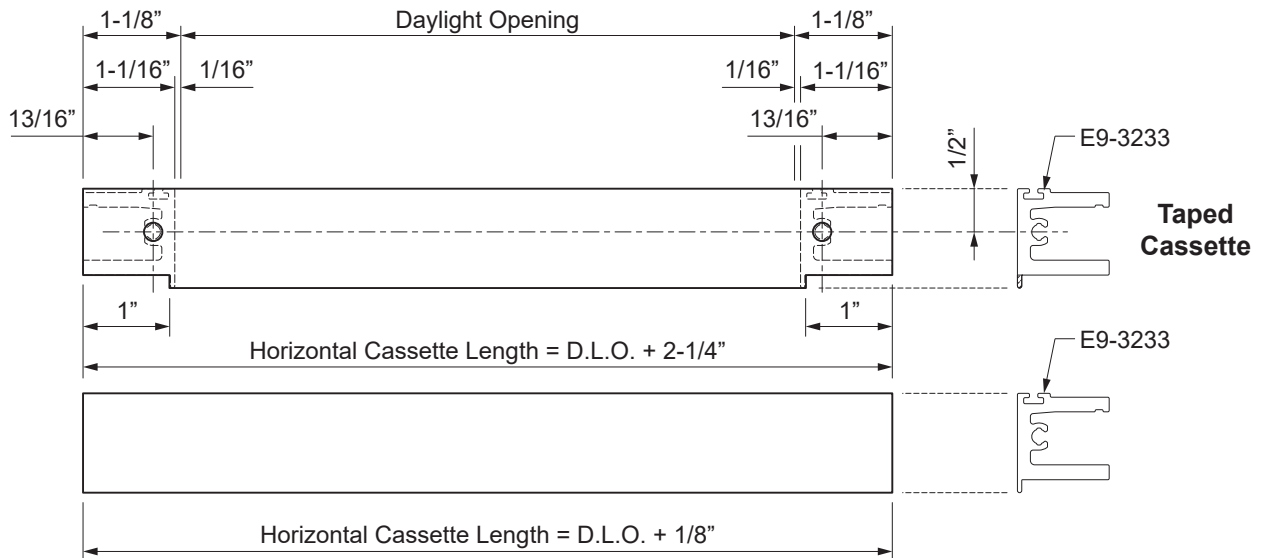
#### For Typical Cassette Fabrication:

- Cut the glazing cassette horizontal to Daylight Opening plus (+) 2-1/4".
- Drill 0.189" dia. (#12 drill bit) holes into the glazing cassette horizontal for vertical glazing cassette attachment at the locations indicated.
- For taped cassettes, notch 1" from both ends of the legs as shown below.
- Cut the glazing cassette vertical to Daylight Opening plus (+) 1/8".

See **Detail 29**.



**Detail 29**



## FRAME FABRICATION

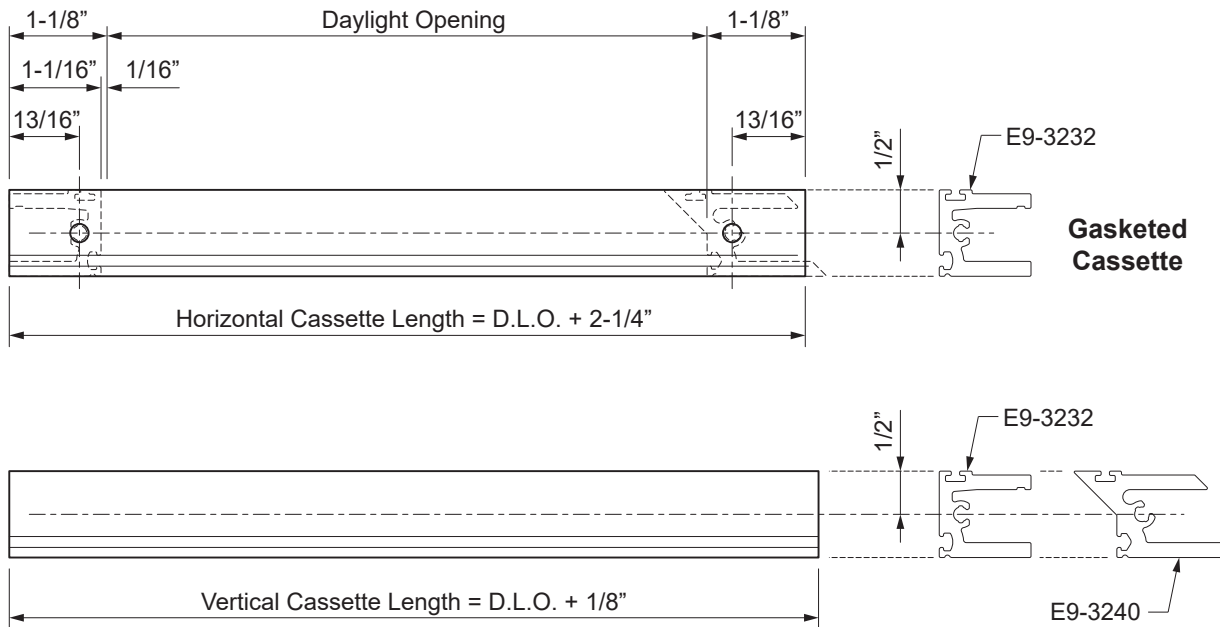
### STEP 8 (Continued)

### FABRICATE GLAZING CASSETTES

#### For 90° Outside Corner Gasketed Cassette Fabrication:

- Cut E9-3232 glazing cassette horizontal to Daylight Opening plus (+) 2-1/4".
- Drill 0.189" dia. (#12 drill bit) holes into the glazing cassette horizontal for vertical glazing cassette attachment at the locations indicated. Do this prior to notching the legs.
- Cut E9-3232 and E9-3240 vertical glazing cassette members to Daylight Opening plus (+) 1/8".

See **Detail 30**.



**Detail 30**

## FRAME FABRICATION

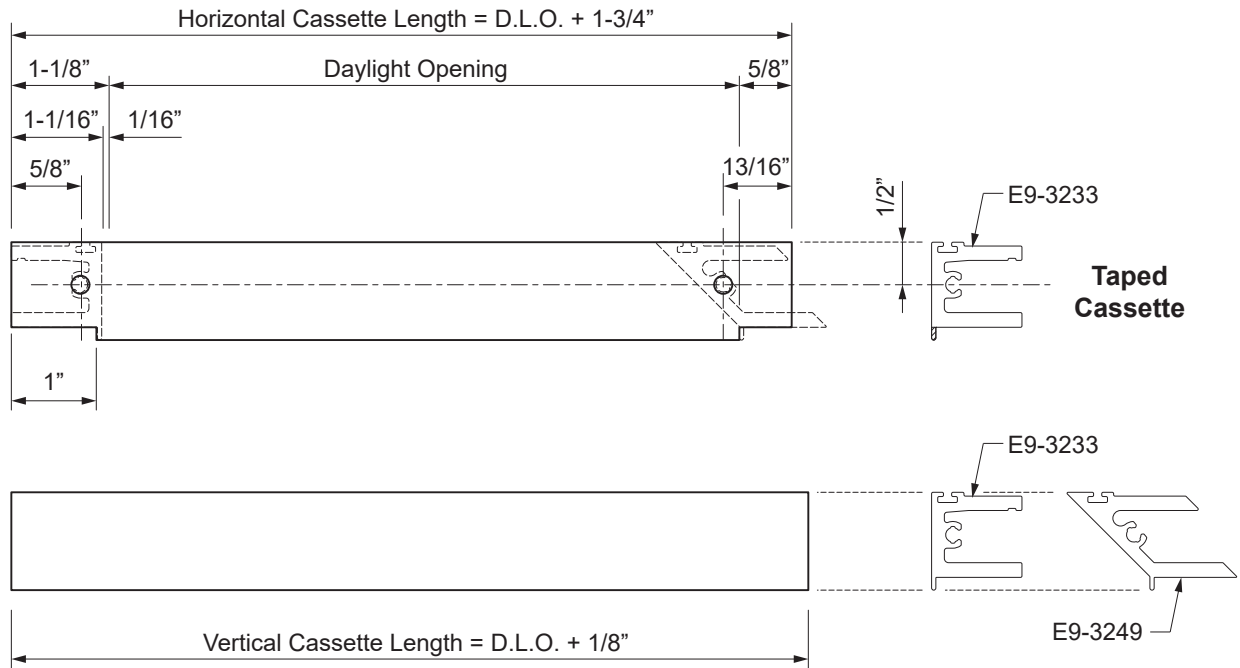
### STEP 8 (Continued)

### FABRICATE GLAZING CASSETTES

#### For 90° Outside Corner Taped Cassette Fabrication:

- Cut E9-3233 glazing cassette horizontal to Daylight Opening plus (+) 1-3/4".
- Drill 0.189" dia. (#12 drill bit) holes into the glazing cassette horizontal for vertical glazing cassette attachment at the locations indicated. Do this prior to notching the legs.
- Notch 1" from the leg at the intermediate mullion, and 5/8" from the leg at the corner.
- Cut E9-3233 and E9-3249 glazing cassettes vertical to Daylight Opening plus (+) 1/8".

See **Detail 31**.



**Detail 31**

## FRAME FABRICATION

### STEP 8 (Continued)

#### ASSEMBLE GLAZING CASSETTES

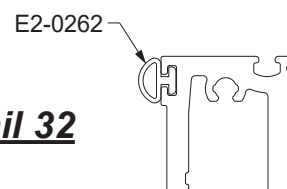
-Cut E2-0262 gaskets to size:

Horizontal Gasket = glazing cassette perimeter width.

Vertical Gasket = glazing cassette perimeter height.

-Install vertical and horizontal gaskets into the reglets of the glazing cassette.

-Crimp horizontal cassette perimeter to keep horizontal gasket in place.



**Detail 32**

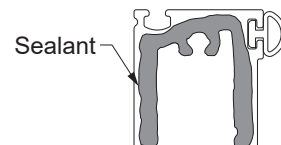
See **Detail 32**.

-Slide in setting block chair E1-3052 (E1-3051 for expansion horizontal) and position at 1/4 points.

-Apply a small amount of sealant to the topside of the chair. Adhere setting block E2-7017 to the topside of the setting block chair.

-Clean each end of the vertical glazing cassette with isopropyl alcohol using two cloth cleaning method.

-Apply silicone sealant to the both ends of the vertical glazing cassette.



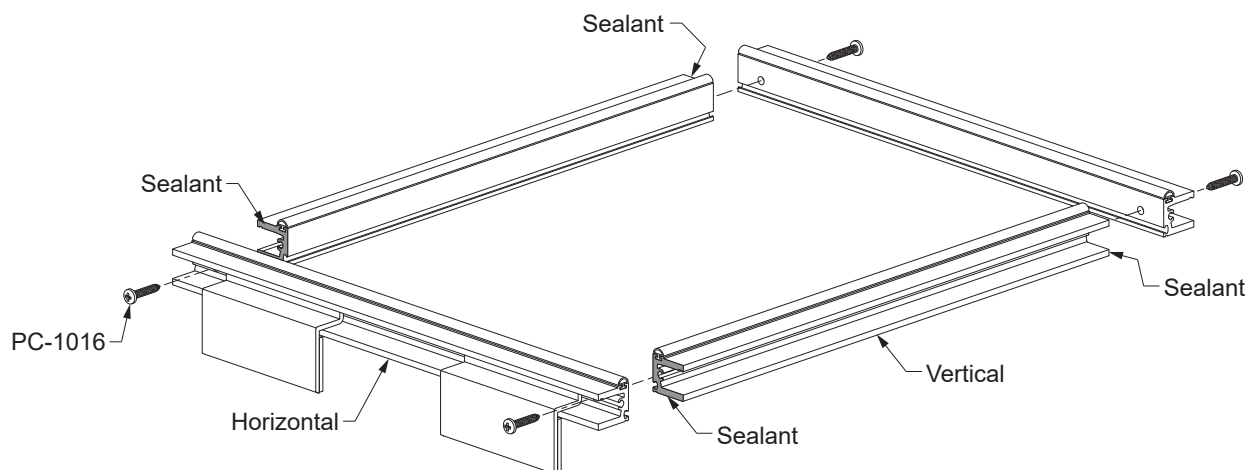
See **Detail 33**.

-Assemble cassette units by fastening PC-1016 screws through holes at the ends of horizontals and into the splines of the verticals.

-Clean excess sealant.

**Detail 33**

See **Detail 34**.



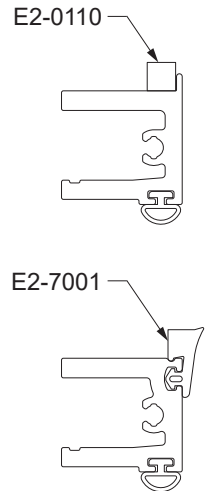
**Detail 34**

## FRAME FABRICATION

### STEP 8 (Continued) ASSEMBLE GLAZING CASSETTES

#### Apply Glazing Spacer Tape

- For gasketed cassettes, cut E2-7001 to D.L.O.
- For taped cassettes: cut E2-0110 spacer tape to size:  
Horizontal Spacer Tape = glazing cassette length minus (-) 1".  
Vertical Spacer Tape = glazing cassette length.
- Clean surfaces of the glazing cassette that will come into contact with the spacer tape with isopropyl alcohol.
- Horizontal spacer tape is centered on the glazing cassette, leaving 1/2" from each end.
- Tape locations are as shown. Apply pressure to bond the tape to the glazing cassette. Do not allow the tape to twist or catch debris.

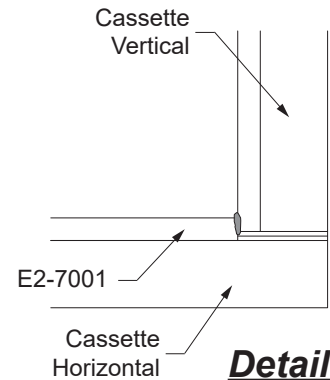


**Detail 35**

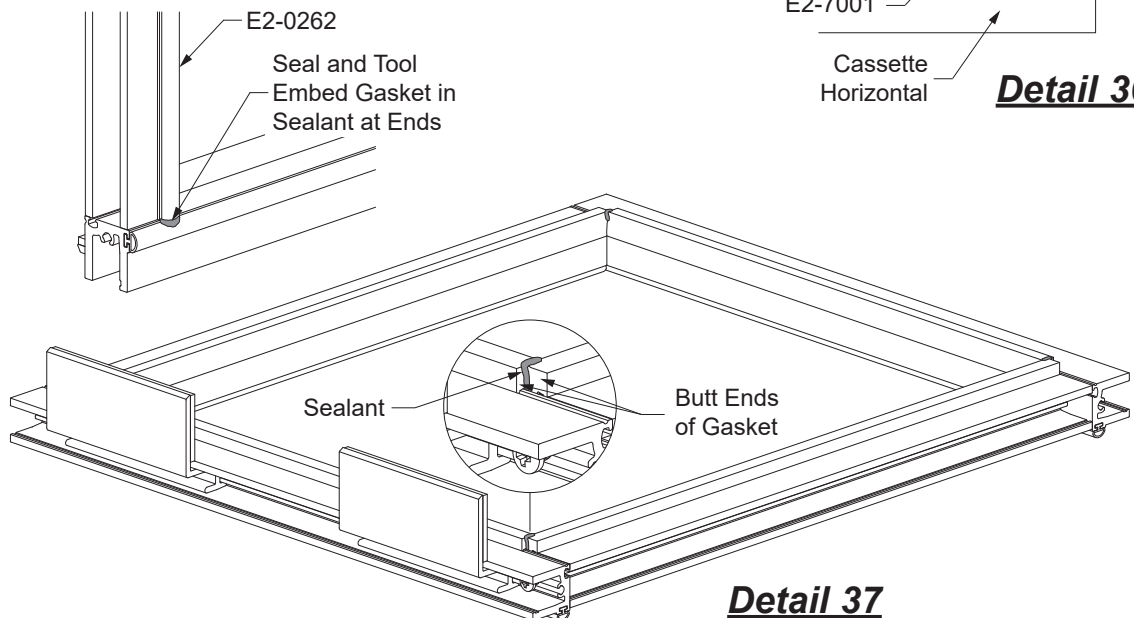
See **Details 35 and 36**.

- Pull back the liner of the glazing tape 3" from each end. Do not allow the tape to catch debris.
- Apply and tool sealant to the joints of the spacer tape.

See **Detail 37**.



**Detail 36**



**Detail 37**

## FRAME FABRICATION

### STEP 8 (Continued) ASSEMBLE GLAZING CASSETTES

See chart on right for glass sizes.

- Lay the glass on a flat surface with the interior glass surface facing up.
- Check the assembled cassette frame for squareness prior to application of structural silicone sealant.
- Prepare glass and frame for application of structural silicone sealant in accordance with sealant manufacturer's instructions. See note on **Page iii**.

**Note:** Tight tolerance will ensure proper fit and appearance of the pre-glazed cassette into the daylight openings. If the glass is over/under sized, align the bottom of the cassette with the bottom of the glass and center the frame vertically with the center of the glass.

Glass Width (Taped, 70psf)		Right Side	
		Standard Mullion	Corner Mullion
Left Side	Standard Mullion	D.L.O. + 2-1/4"	D.L.O. + 2-1/2"
	Corner Mullion	D.L.O. + 2-1/2"	D.L.O. + 2-3/4"

Glass Width (Gasketed, 90psf)		Right Side	
		Standard Mullion	Corner Mullion
Left Side	Standard Mullion	D.L.O. + 2-1/4"	D.L.O. + 3"
	Corner Mullion	D.L.O. + 3"	D.L.O. + 3-3/4"

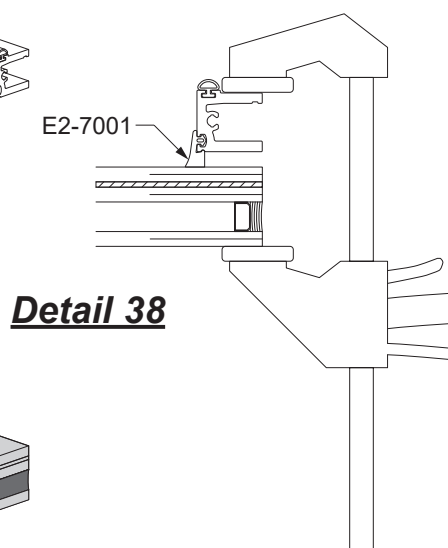
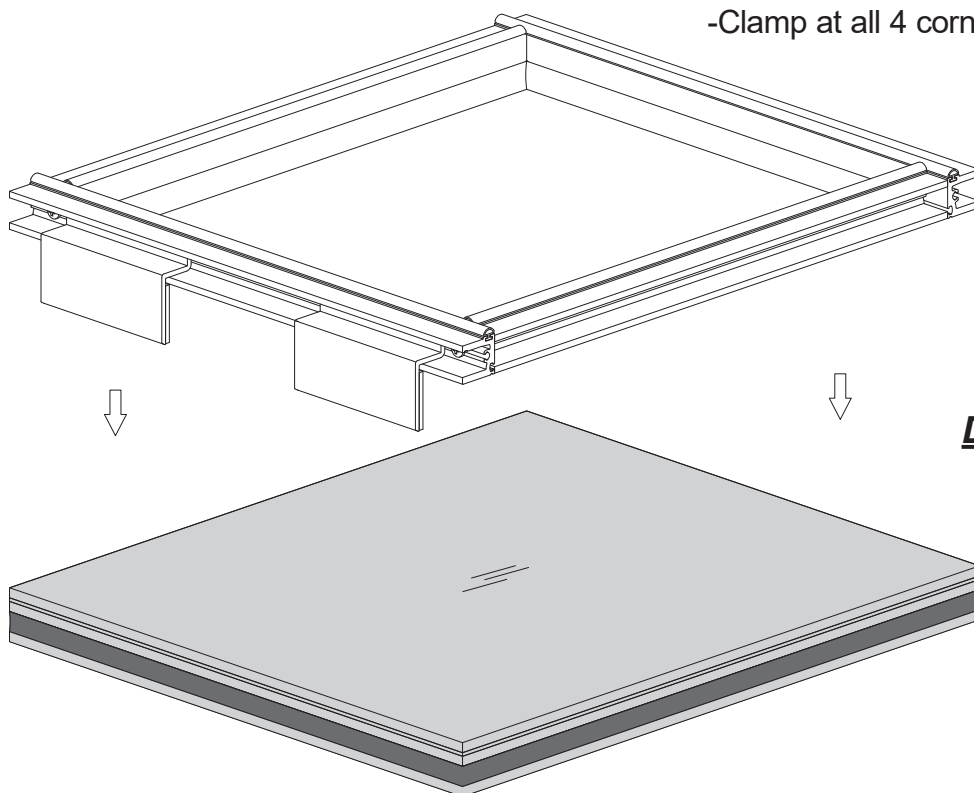
Glass Height		Top	
		Standard Horiz.	Expansion Horiz.
Bottom	Standard Horiz.	D.L.O. + 2-1/4"	D.L.O. + 2-3/4"
	Expansion Horiz.	D.L.O. + 2-3/4"	D.L.O. + 3-1/4"

#### For Gasketed Cassettes:

- Set the cassette onto the glass, ensuring proper glass bites on all sides. A square frame template is recommended for typical D.L.O's.

See **Detail 38**.

- Clamp at all 4 corners & midpoints of D.L.O.



**Detail 38**

## FRAME INSTALLATION

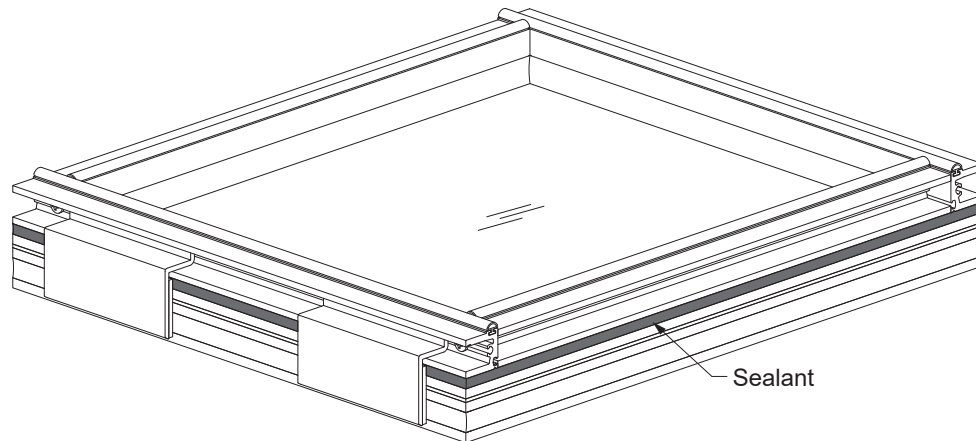
### STEP 8 (Continued)

#### ASSEMBLE GLAZING CASSETTES

##### For Taped Cassettes:

- Peel back 3" of the tape liner from each end of the E2-0110 glazing tape.
  - Adhere the cassette to the glass using the E2-0110 glazing tape. Ensure the 3" of exposed glazing tape liner is exposed for removal.
  - Ensure squareness of cassette with insulating glazing unit.
  - Peel off the remaining glazing tape liner.
  - Press the frame firmly onto the glass for good adhesion.
- Ensure all areas of glass and frame that will contact the structural silicone sealant have been prepared to receive the sealant prior to its application. See note on **Page iii**.
- Apply and tool structural silicone sealant inside the void between the cassette and the glass in accordance with sealant manufacturer's instructions. Wipe all silicone flush. Cleaning off any excess silicone will ensure an easier toggle installation.
- Inspect to make certain there are no voids or gaps in sealant. **See note on Page iii.**
- Allow sealant to fully cure per the sealant manufacturer's recommendations before moving glazed cassettes.

See **Detail 39**.



**Detail 39**

**Note:** Once the sealant has cured, masking tape can be applied to the face of the glass at the edges as shown in **Detail 76** on **Page 59** while the cassette is in the shop. This will ensure a proper caulk joint at the mullion face.

## FRAME INSTALLATION

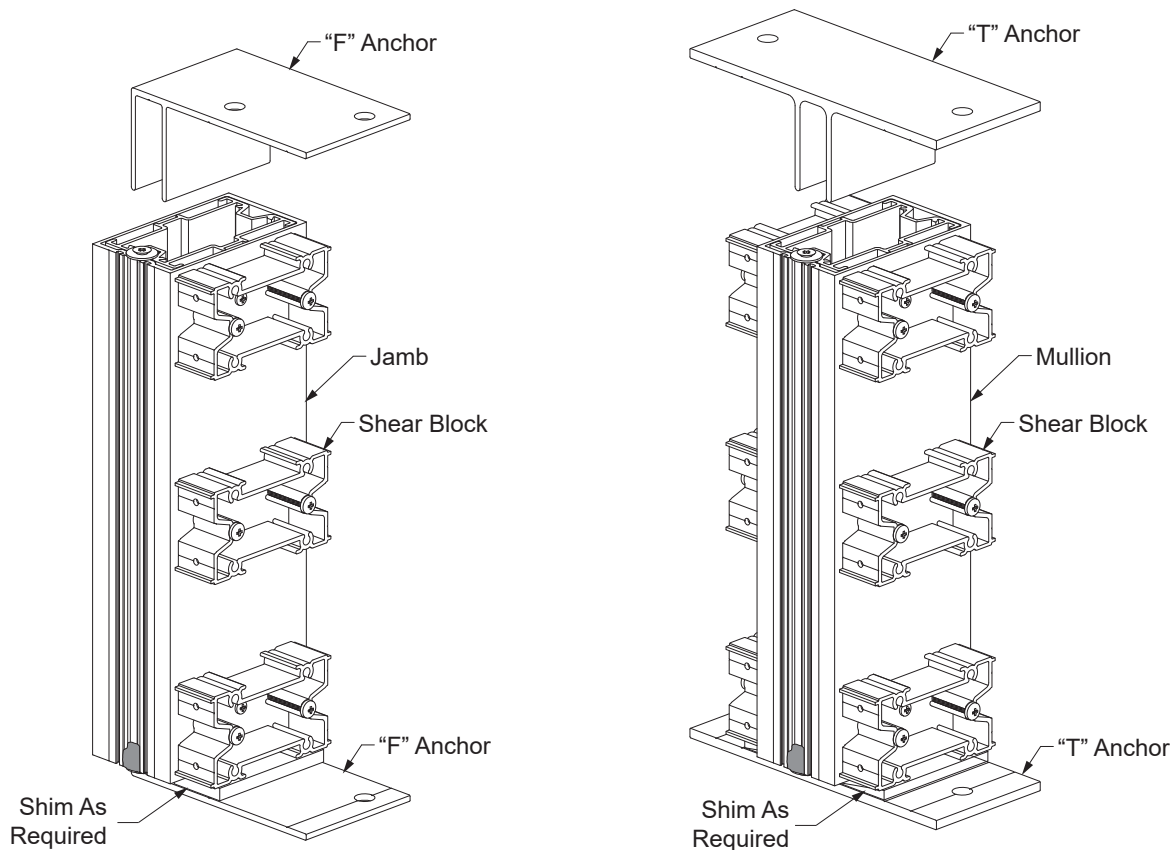
### STEP 9

#### JAMB/MULLION INSTALLATION WITH MULLION END ANCHORS

- Insert mullion "T" and "F" end anchors into the top and bottom of the mullions before erecting them into the opening.
- Position the jamb and intermediate mullions and attach them to the structure.

See **Detail 40**.

**Note:** Shim under the mullions to transfer glazing dead loads to the building structure.



**Detail 40**



## FRAME INSTALLATION

### STEP 9A 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. Fill the notch at the raceway with sealant.

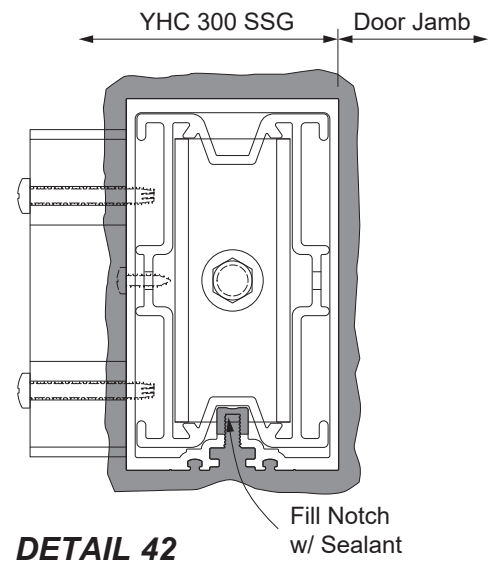
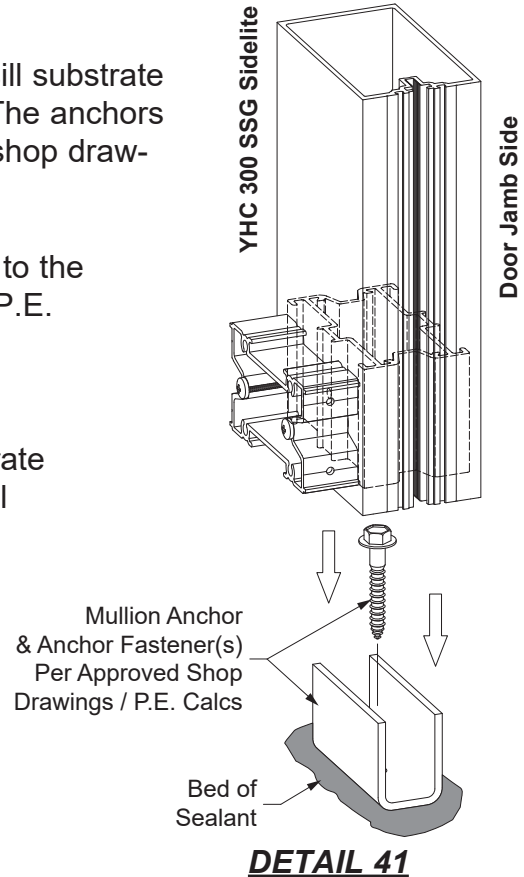
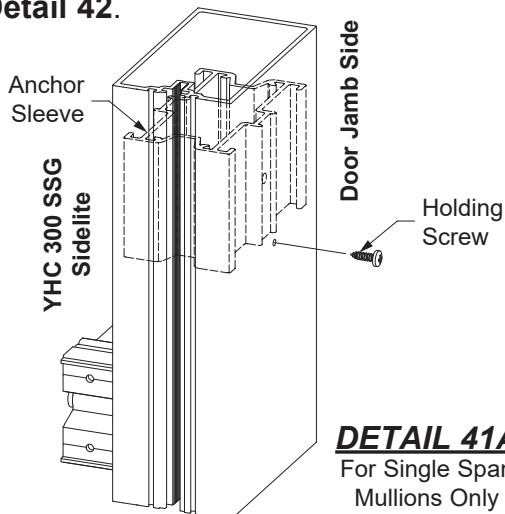
See **Detail 41**.

**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 41A**.

- 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 42**.

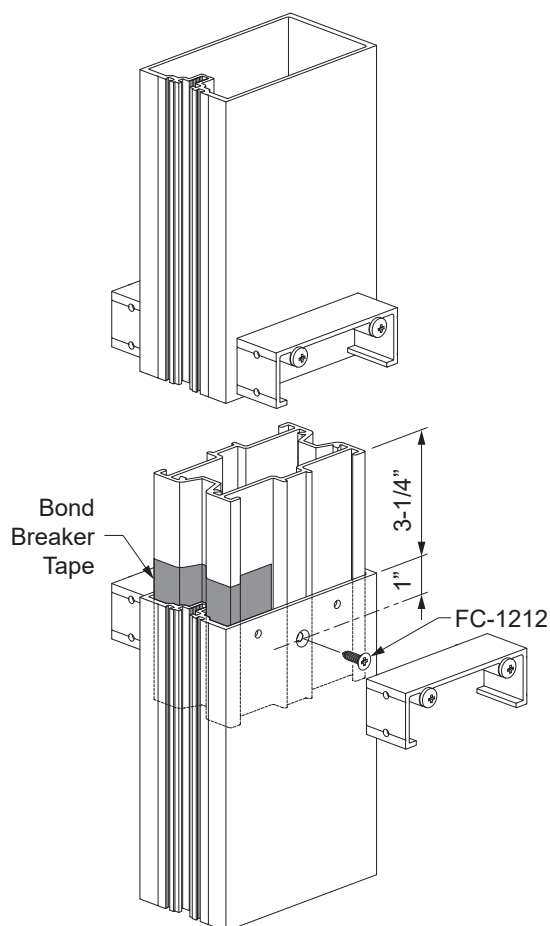


**FRAME INSTALLATION**
**STEP 10**
**TYPICAL MULLION SPLICE**

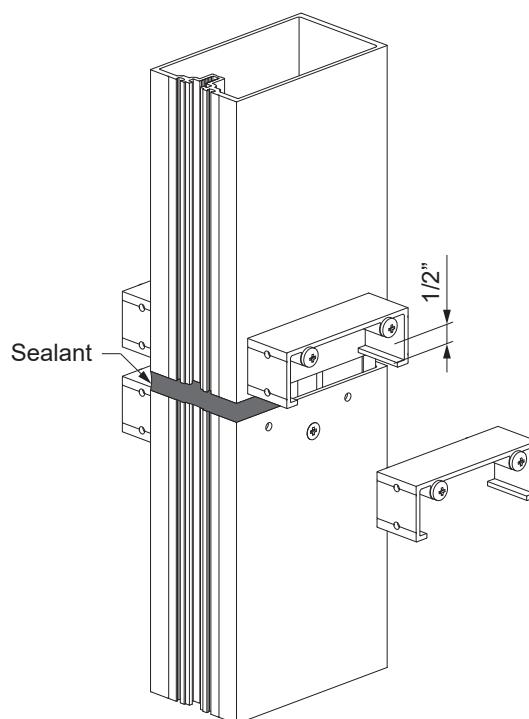
Mullion splices occur at the expansion horizontals for the 2-sided toggle system.

- 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, leaving 3-1/4" of the splice exposed. Match drill 0.189" splice sleeve tap holes into the splice sleeve and attach with (2) two FC-1212 fasteners, on both sides of the lower mullion.
- Slide the upper mullion down over the splice sleeve, leaving a 1/2" gap between the upper and lower mullion.
- Apply and tool sealant to the face and sides of the splice sleeve. See Note on **Page iii**.

See **Detail 43**.



***Detail 43***  
Shear Block  
Removed for  
Clarity



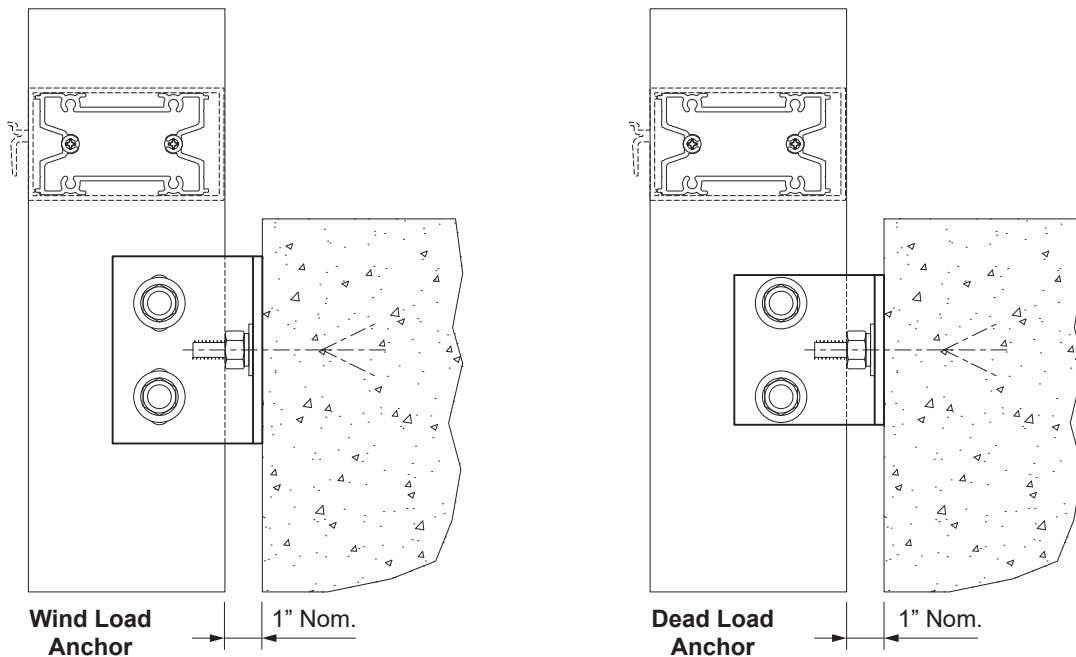
## FRAME INSTALLATION

### STEP 11

#### INSTALL WIND LOAD / DEAD LOAD ANCHORS

-Install steel wind load and dead load anchor clips. Anchor clips are normally template or line set before mullions are hung. When using standard YKK AP anchors, typical space between the back of the vertical mullion and the anchoring substrate to be 1" nominal.

See **Detail 44**.



**Detail 44**

**FRAME INSTALLATION**

**STEP 11 (Continued)**

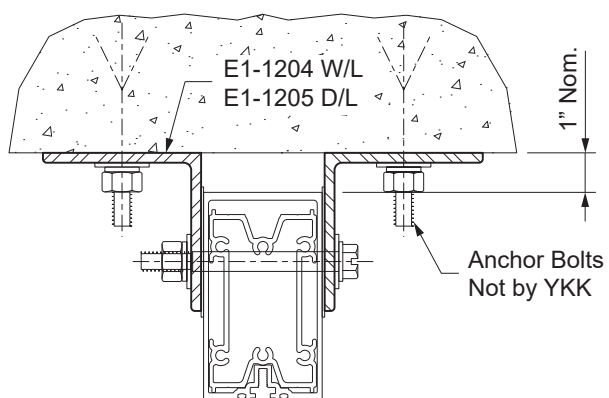
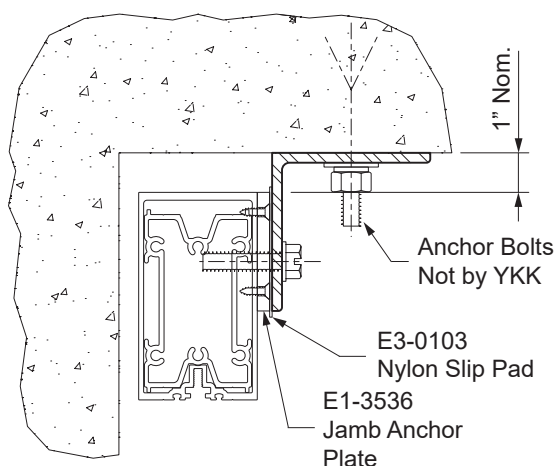
**INSTALL WIND LOAD / DEAD LOAD ANCHORS**

-After positioning vertical mullions, drill and install appropriate diameter anchor bolts.

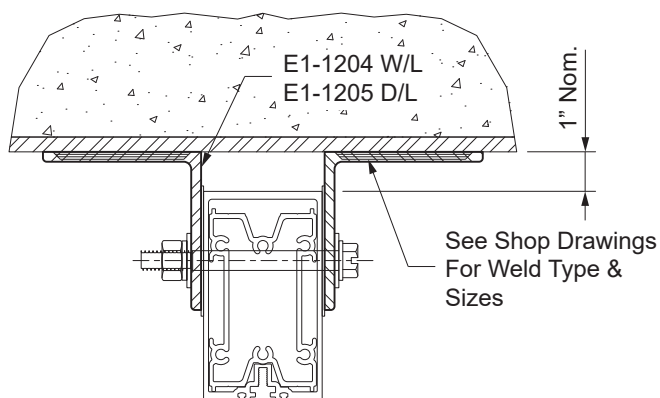
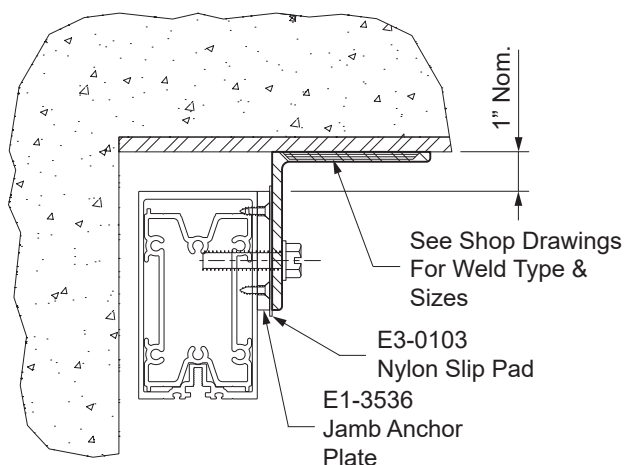
All anchors and bolts must be checked by a qualified engineer.

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

See **Detail 45**.

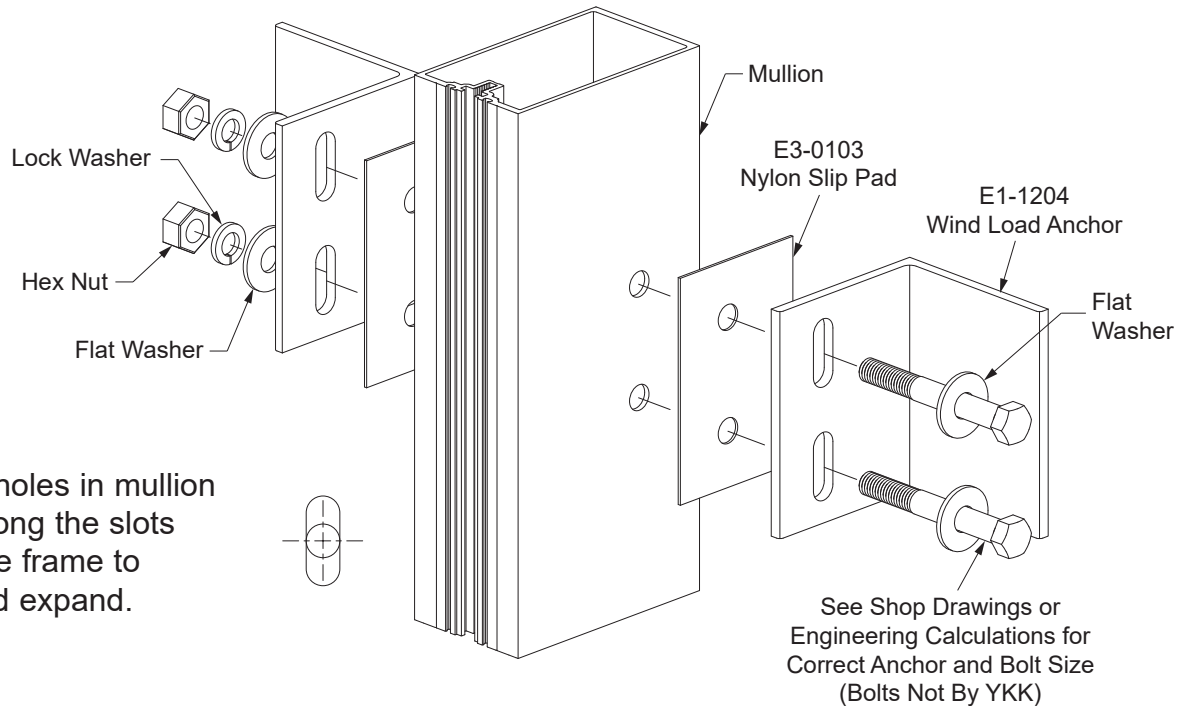


**Detail 45**



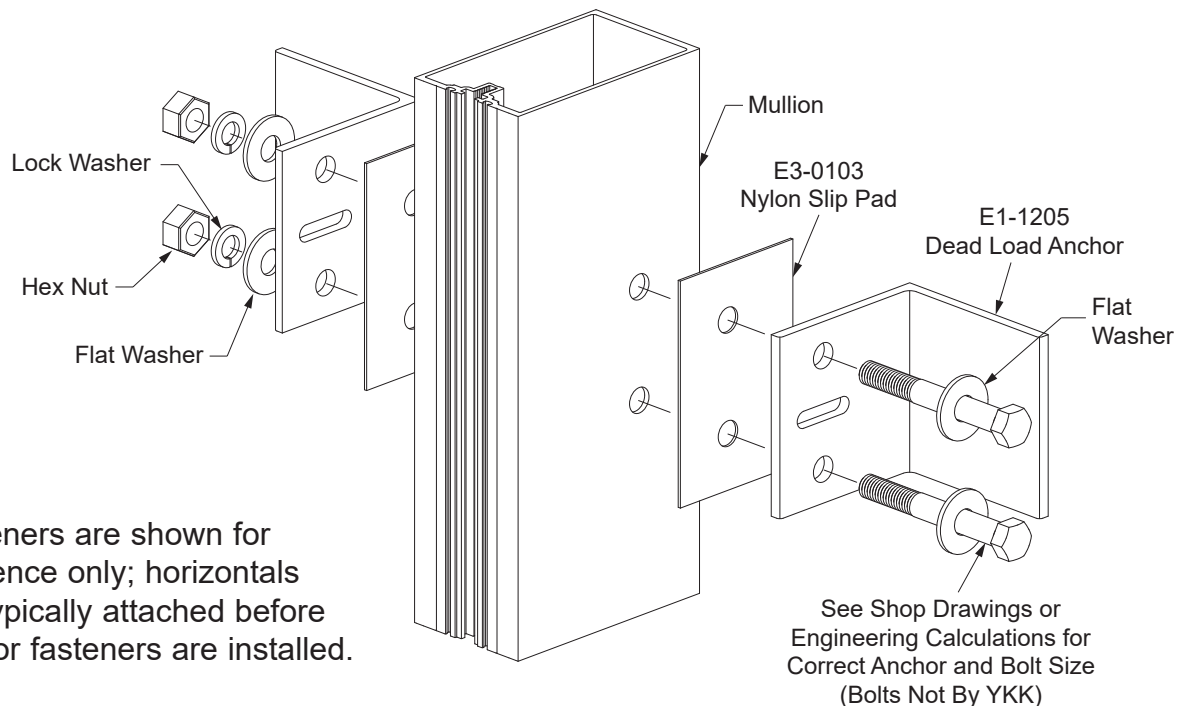
## FRAME INSTALLATION

### TYPICAL WIND LOAD ANCHOR



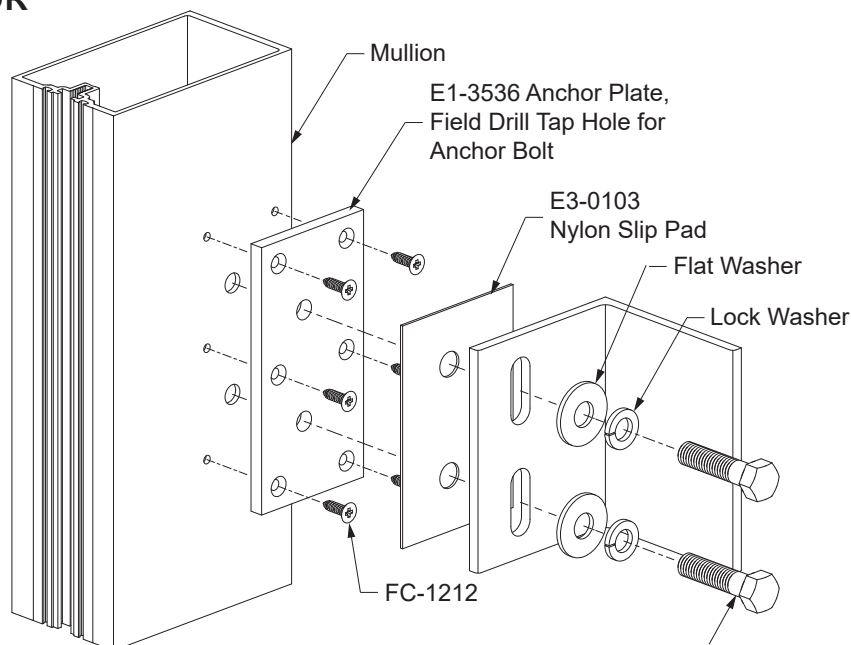
### Detail 46

### TYPICAL DEAD LOAD ANCHOR



## FRAME INSTALLATION

### JAMB WIND LOAD ANCHOR



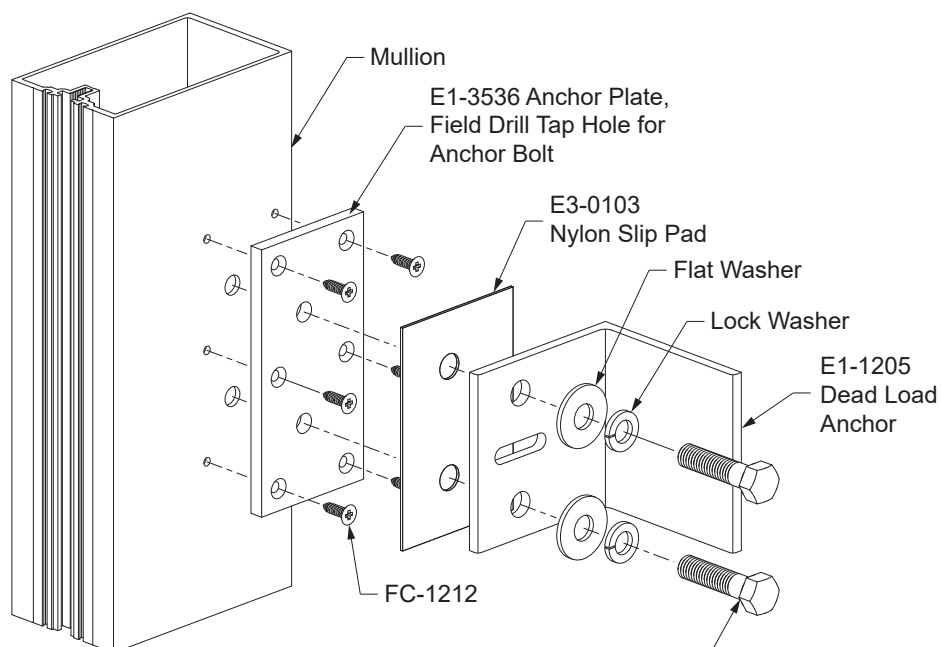
**Note:** Drill tap holes in mullion centered along the slots to permit the frame to contract and expand.



See Shop Drawings or Engineering Calculations for Correct Anchor and Bolt Size (Bolts Not By YKK)

### Detail 47

### JAMB DEAD LOAD ANCHOR



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

See Shop Drawings or Engineering Calculations for Correct Anchor and Bolt Size (Bolts Not By YKK)

## FRAME INSTALLATION

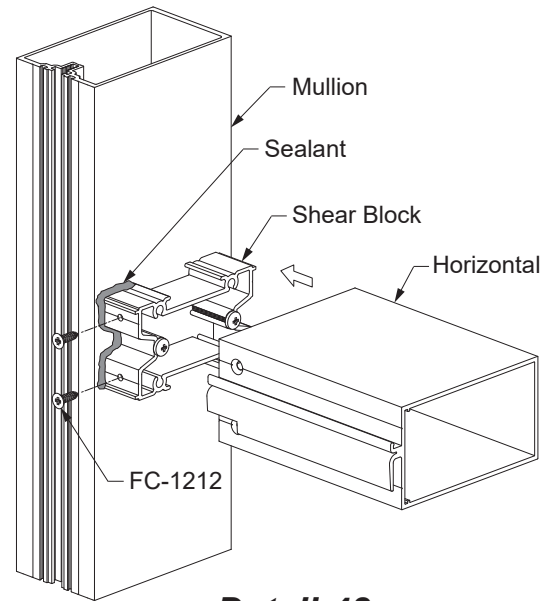
### STEP 12

#### 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 vertical, apply sealant to the front of the shear block as shown.
- Slide the horizontal members towards the vertical and attach them to the shear blocks at each end with two FC-1212 fasteners.
- Tool and wipe away any excess sealant at the vertical to horizontal joints.
- Seal horizontal to shear block fastener heads.

See **Detail 48**.



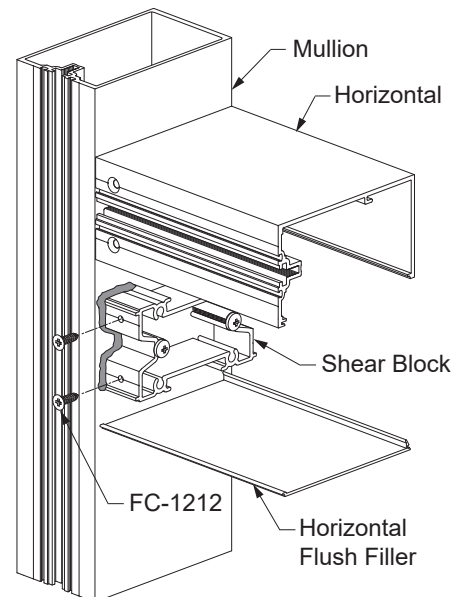
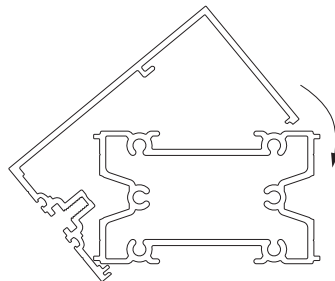
**Detail 48**

#### For Two Piece Horizontals:

**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 vertical, apply sealant to the front of the shear block as shown.
- Rotate the horizontal down over the shear clip. Make sure the horizontal and vertical glazing pockets are flush.
- Attach the horizontals to the shear blocks with two FC-1212 fasteners.
- Snap on the horizontal flush filler.
- Seal horizontal to shear block fastener heads.

See **Detail 49**.



**Detail 49**

## FRAME INSTALLATION

### STEP 12 (Continued)

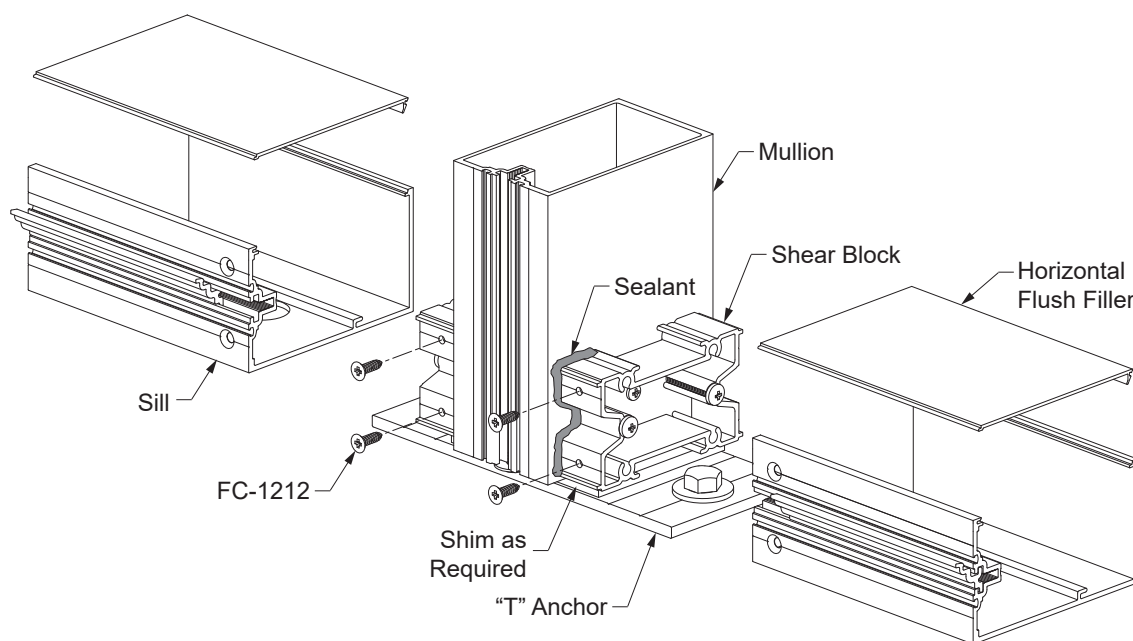
### ATTACH HEAD AND SILL MEMBERS

**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 mullion, apply sealant to the front of the shear block as shown. Slide in horizontal and sill adaptors before attaching horizontal members to verticals.

-Seal head/sill to shear block fastener heads.

See **Detail 50**.



**Detail 50**



## FRAME INSTALLATION

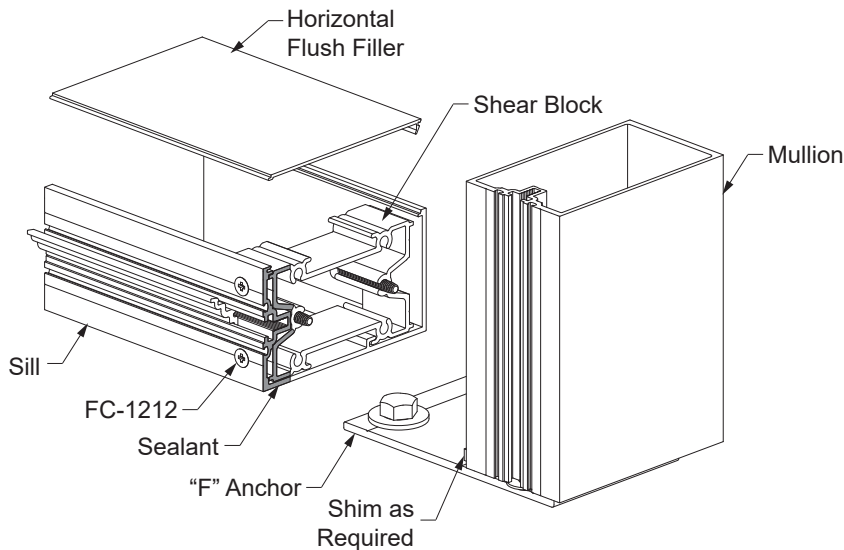
### STEP 12 (Continued) ATTACH HEAD AND SILL MEMBERS

#### Open Back Head & Sill Members at End Bays:

- To clear the mullions at end bays, shear blocks must be pre-attached to the head and sill members through the face of the mullion with FC-1212 fasteners
- Just prior to attaching the horizontal members to the mullion, slide in sill adaptors in to the sill, and apply sealant to the front of the horizontal and shear block as shown.
- Position the head/sill members into place and attach the shear blocks to the mullions with two PF-2528 fasteners per shear block.
- Snap on the mullion flush filler.
- Seal head/sill to shear block fastener heads.

See **Detail 51**.

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



**Detail 51**

## FRAME INSTALLATION

### STEP 12 (Continued)

#### ATTACH HORIZONTAL MEMBERS AT CORNER MULLION

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

-Just prior to attaching the horizontal members to the corner mullion, apply sealant to the front of the horizontal at the mitered end as shown in **Detail 52**.

-Insert E9-3254 horizontal adaptors into the sill and E9-3246 into the non-tubular horizontals.

-Attach the horizontal members at the mitered end to the corner mullion at the shear blocks with two FC-1210 fasteners.

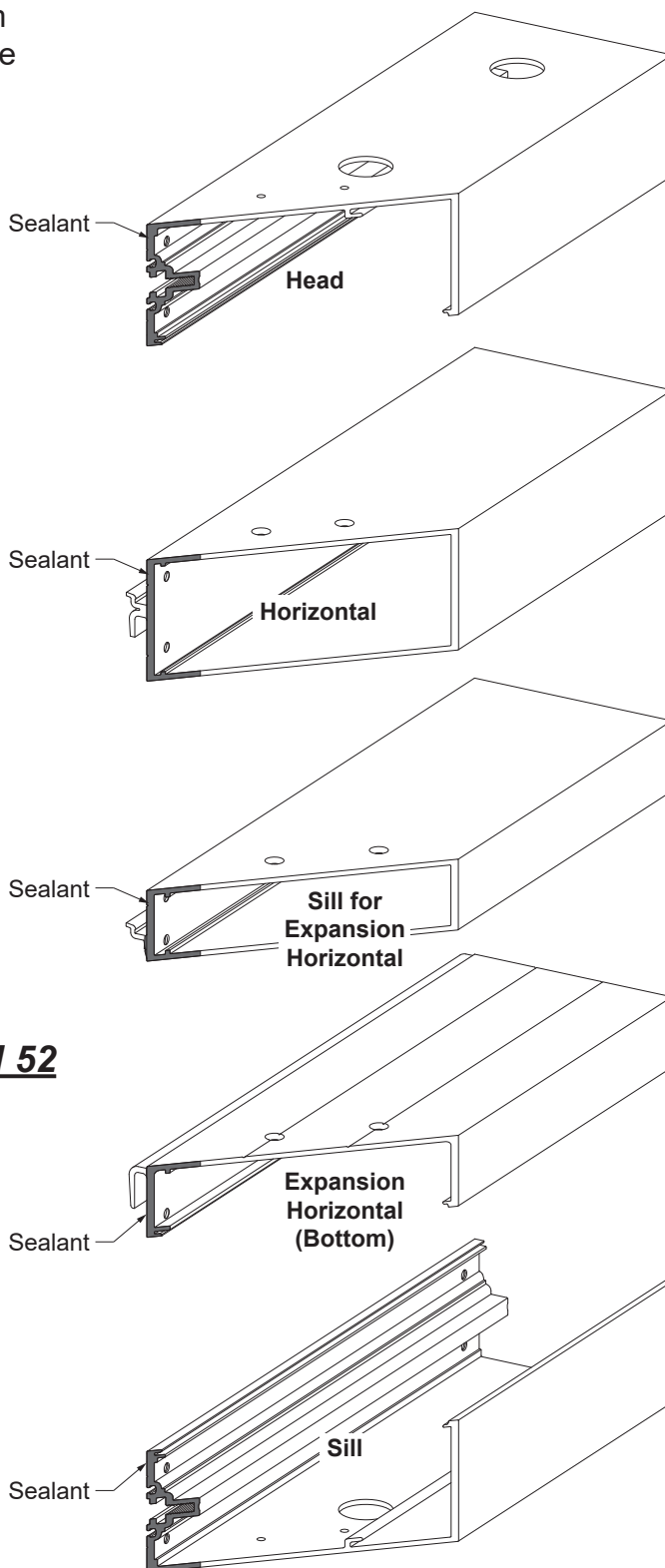
See **Detail 53**.

-Tool and wipe away any excess sealant at the vertical to horizontal joints.

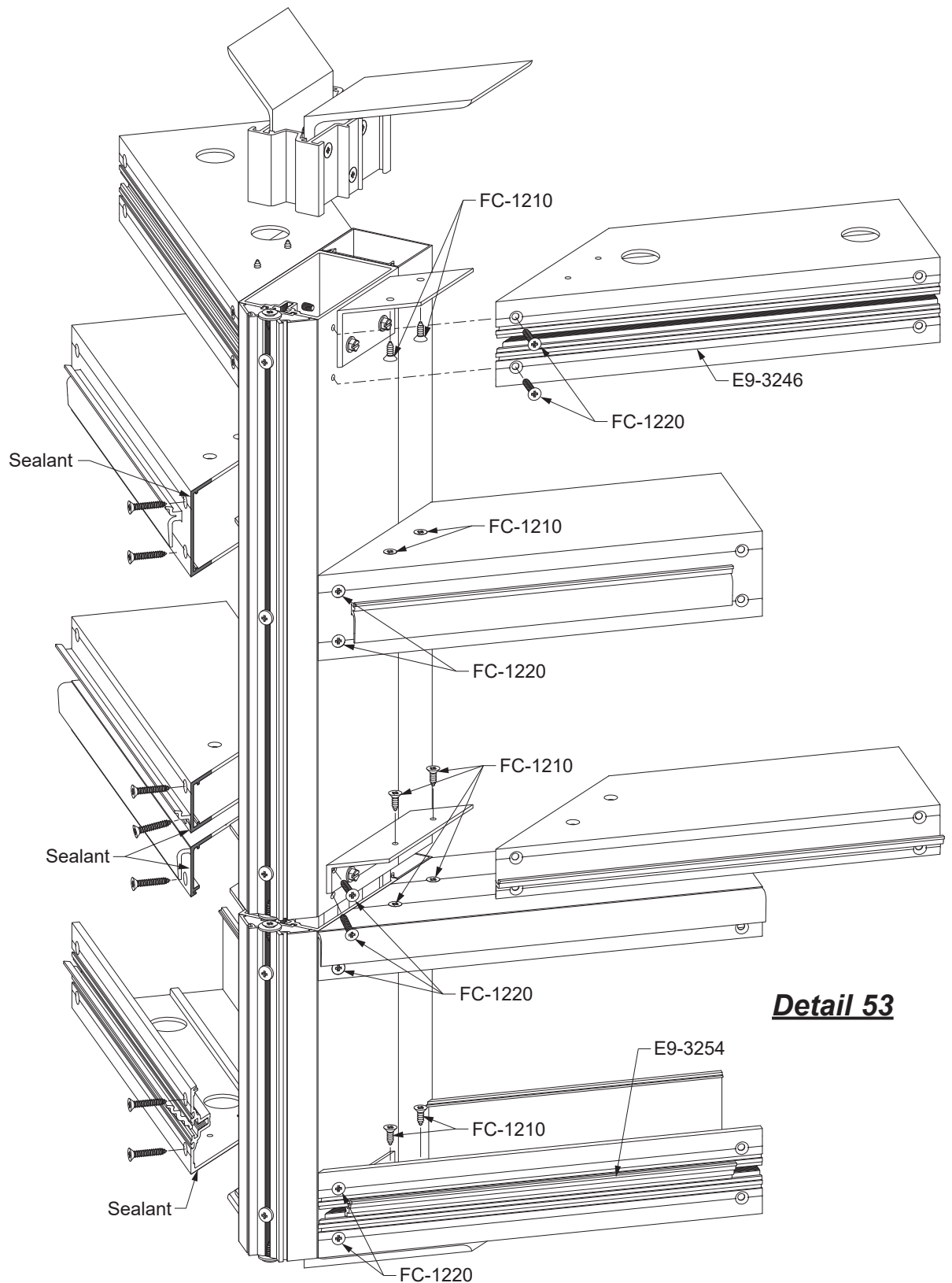
-Fasten FC-1220 screws into the front of the mitered horizontals into the corner mullion. Seal these fastener heads.

See **Detail 53**.

### **Detail 52**



## FRAME INSTALLATION



## FRAME INSTALLATION

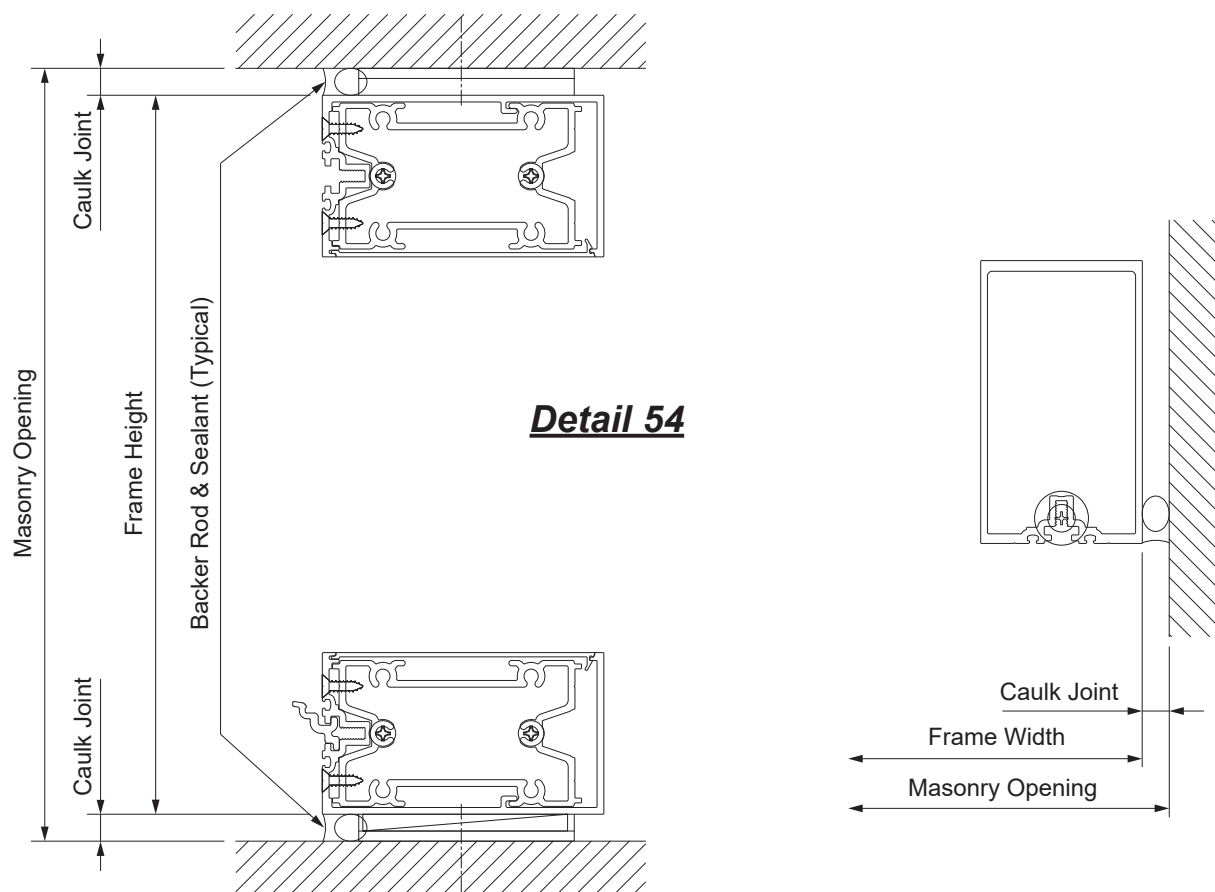
### STEP 13

#### APPLY PERIMETER SEALANT

- Clean the area around the perimeter of the frame with cleaner and method approved by sealant manufacturer. **Note:** Taping the front face of the mullion is recommended to keep the surface free of sealant.
- Place backer rod between the perimeter of the frame and the substrate.
- Apply sealant to the perimeter of the frame. Tool the sealant to ensure a water tight joint.

See **Detail 54**.

**Note:** Additional space at the caulk joint may be required to allow for expansion and/or contraction of the system per a qualified engineer's review, (1/2" minimum).

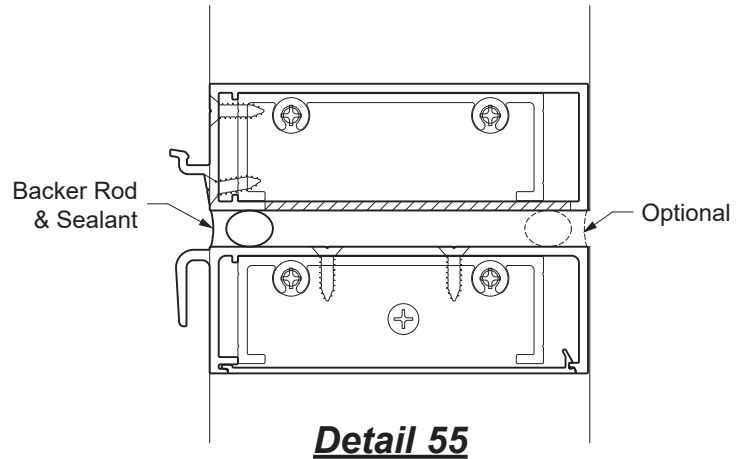


## FRAME INSTALLATION

### STEP 13A SEAL EXPANSION HORIZONTAL

- Clean the area between the horizontals with cleaner and method approved by sealant manufacturer.
- Place backer rod between the horizontals at the front.
- Apply and tool sealant to the front of the horizontal gap.

See **Detail 55**.

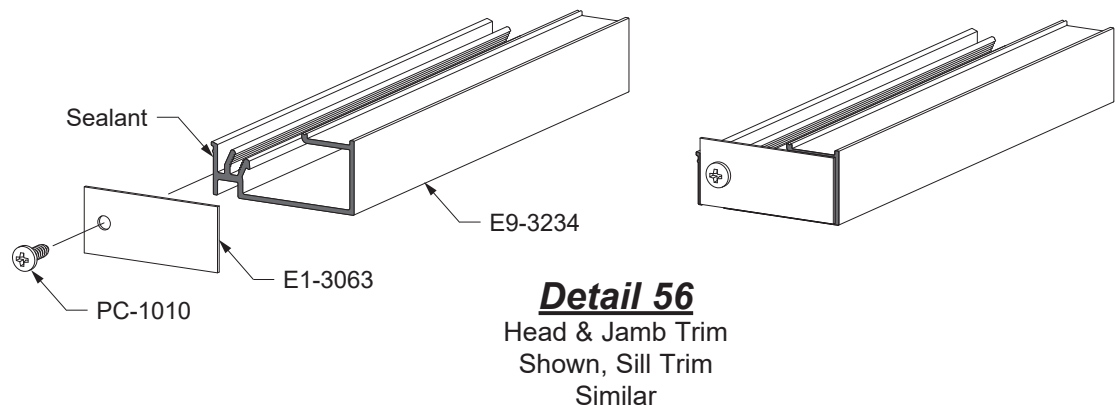


### STEP 14 ATTACH PERIMETER TRIM

#### Sill and Jamb Perimeter Trim

**Note:** E1-3063 end cap be attached at each end of the head, sill and jamb perimeter trim.

- Clean all joint surfaces using cleaner approved by sealant manufacturer.
- Apply sealant to the E9-3234 perimeter trim as shown in **Detail 56**. (Use E9-3255 trim at sill.)
- Fasten the E1-3063 end cap to the E9-3234 perimeter trim (E9-3255 at sill) with one PC-1010 screw.
- Clean and remove excess sealant.



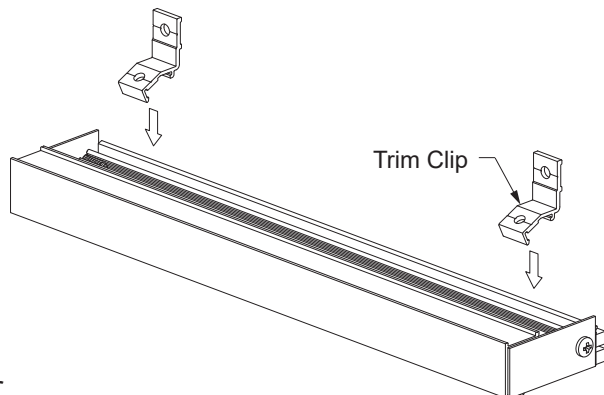
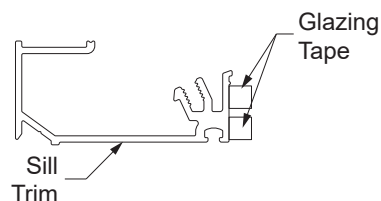
## FRAME INSTALLATION

### STEP 14 (Continued) ATTACH PERIMETER TRIM

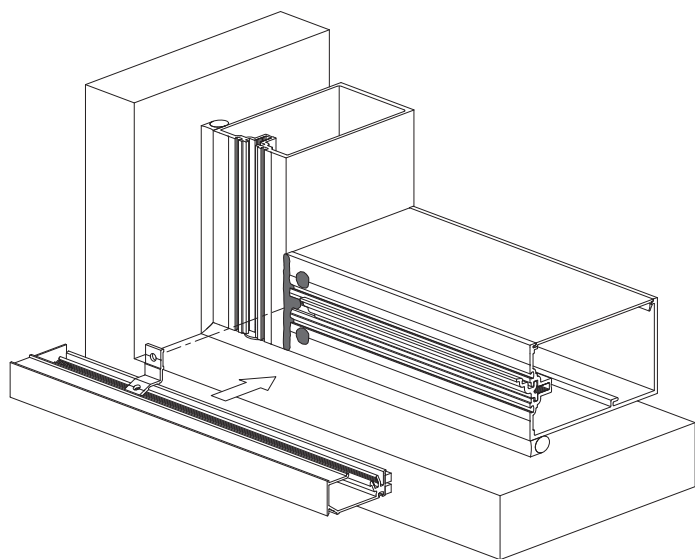
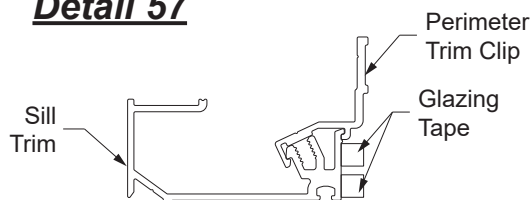
#### Sill Perimeter Trim

- Apply E2-0110 spacer tape to the entire length of the E9-3255 perimeter trim member.
  - Attach E1-3543 perimeter trim clip to the E9-3255 perimeter trim member 1-1/4" from each end and at all intermediate mullion locations. Trim clip locations can be adjusted after perimeter trim is adhered to the sill member
- See **Detail 57**.

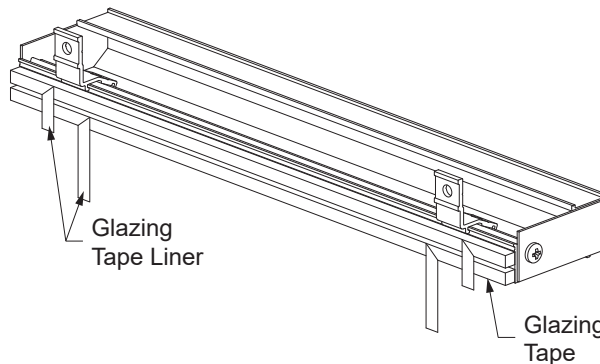
- Pull back the tapes liner of the perimeter trim 2" from each end to expose the adhesive backing.
  - Press the perimeter trim firmly onto the sill member.
  - Pull the remaining tape liner from the tape of the perimeter trim while continuing to press the perimeter trim firmly against the sill member.
- See **Detail 58** and **Detail 59**.



#### **Detail 57**



#### **Detail 58**



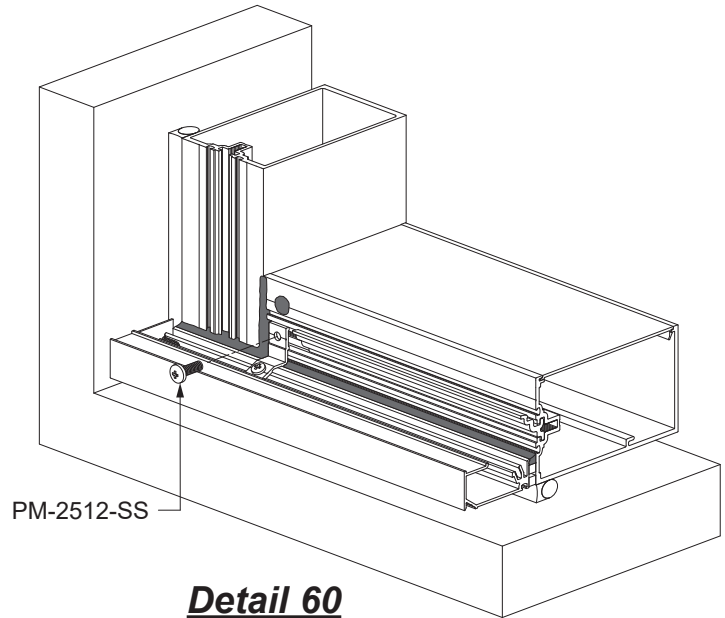
#### **Detail 59**

## FRAME INSTALLATION

### STEP 14 (Continued) ATTACH PERIMETER TRIM

#### Sill and Head Perimeter Trim

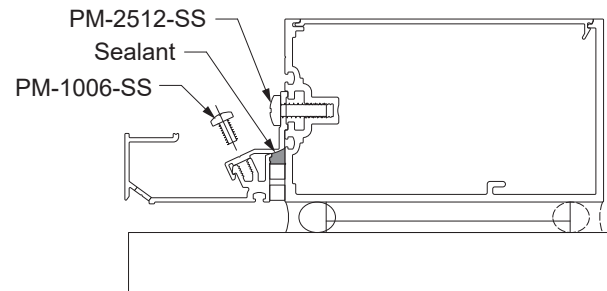
- Using PM-2512-SS fasteners, fasten the perimeter trim clips into the spline of the sill.
- Using PM-1006-SS fasteners, fasten the perimeter trim clip into the spline of the perimeter trim.
- Apply continuous sealant to the top of the gap between the sill and the perimeter trim, such that water will be allowed to drain through the weep holes. Fill any voids at the verticals.



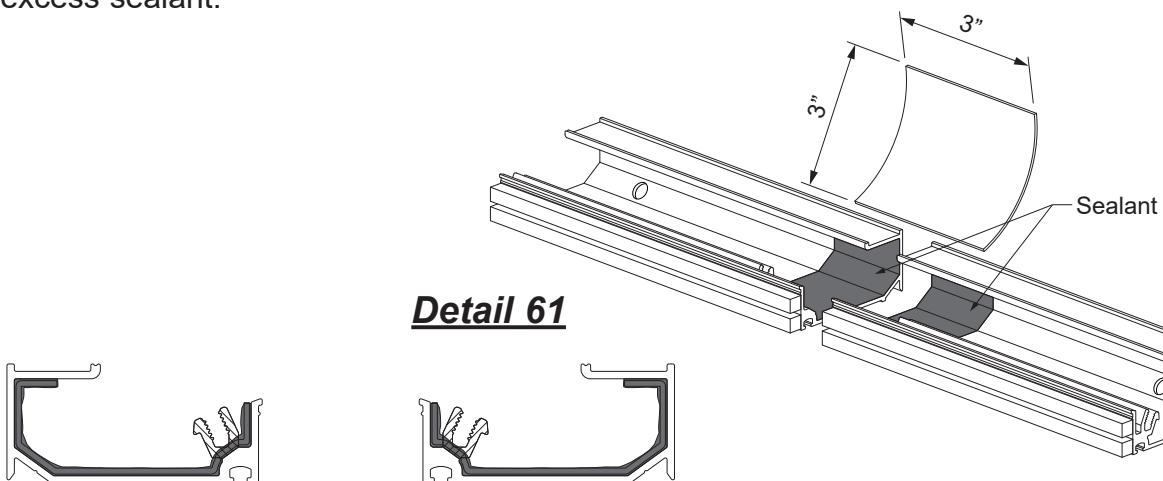
See **Detail 60**.

#### Sill Perimeter Trim Splice

- Cut E2-0070 silicone splice sleeve to 3" x 3".
- Clean perimeter trim and silicone splice sleeve per sealant manufacturer's recommendations at the splice location.
- Seal the perimeter trim at the splice location as shown in **Detail 61**, before positioning the flashing. Fit the silicone splice sleeve into the perimeter trim.
- Tool excess sealant.



#### **Detail 61**



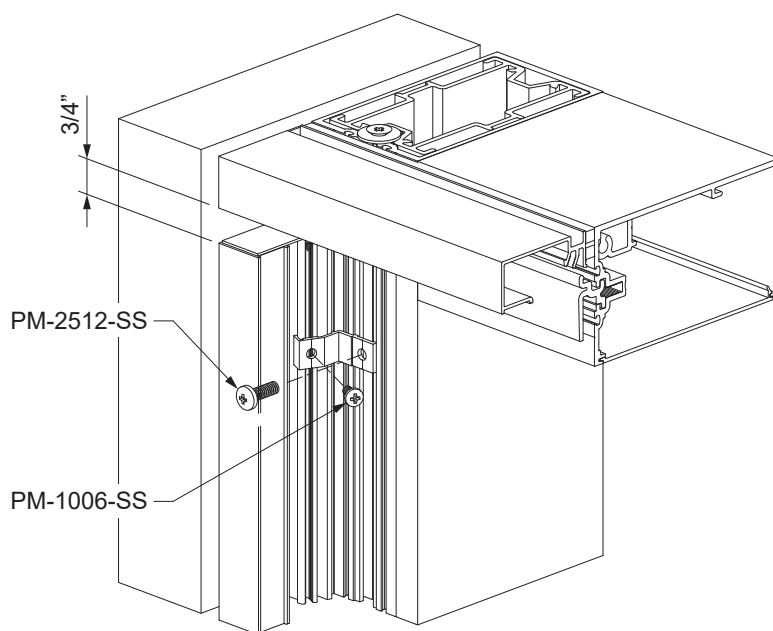
## FRAME INSTALLATION

### STEP 14 (Continued) ATTACH PERIMETER TRIM

#### Jamb Perimeter Trim

- Prepare the perimeter trim at jamb locations as stated on **Page 47**.
- Trim clips should be located 3" from each end of the perimeter trim, and at 27" maximum on center.
- Using PM-2512-SS fasteners, fasten the perimeter trim clips into the spline of the jamb member.
- Using PM-1006-SS fasteners, fasten the perimeter trim clip into the spline of the perimeter trim.

See **Detail 62**.



### **Detail 62**

Head Condition Shown, Sill Condition Similar



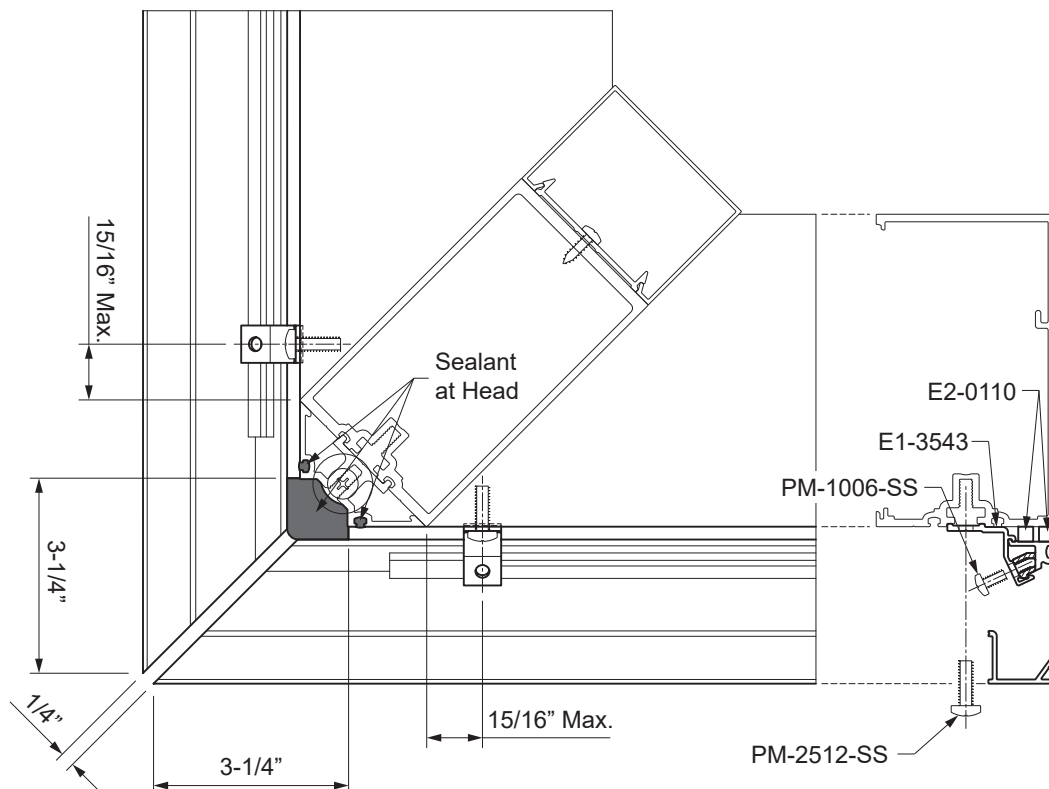
## FRAME INSTALLATION

### STEP 14 (Continued) ATTACH PERIMETER TRIM

#### 90° Outside Corner Perimeter Trim

- Cut E2-0110 spacer tape to mitered perimeter trim length minus 3-1/4", and adhere it to the mitered perimeter trim.
- Adhere the mitered perimeter trim to the head and sill, leaving a 1/4" gap at the corner.
- Trim clips should be located no more than 15/16" from the end of the daylight opening and at 3' on center thereafter.
- Using PM-2512-SS fasteners, fasten the perimeter trim clips into the spline of the jamb member.
- Using PM-1006-SS fasteners, fasten the perimeter trim clip into the spline of the perimeter trim.
- At the head, fill the void between the perimeter trim and the mullion with backer rods and sealant.

See **Detail 63**.



**Detail 63**

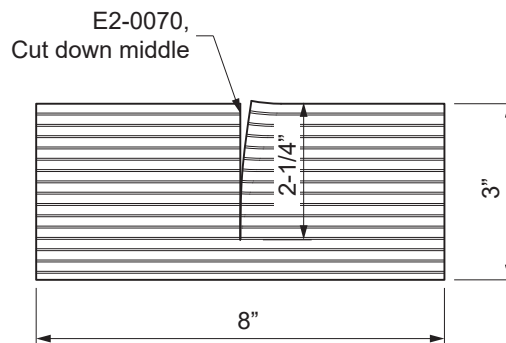
## FRAME INSTALLATION

### STEP 14 (Continued) ATTACH PERIMETER TRIM

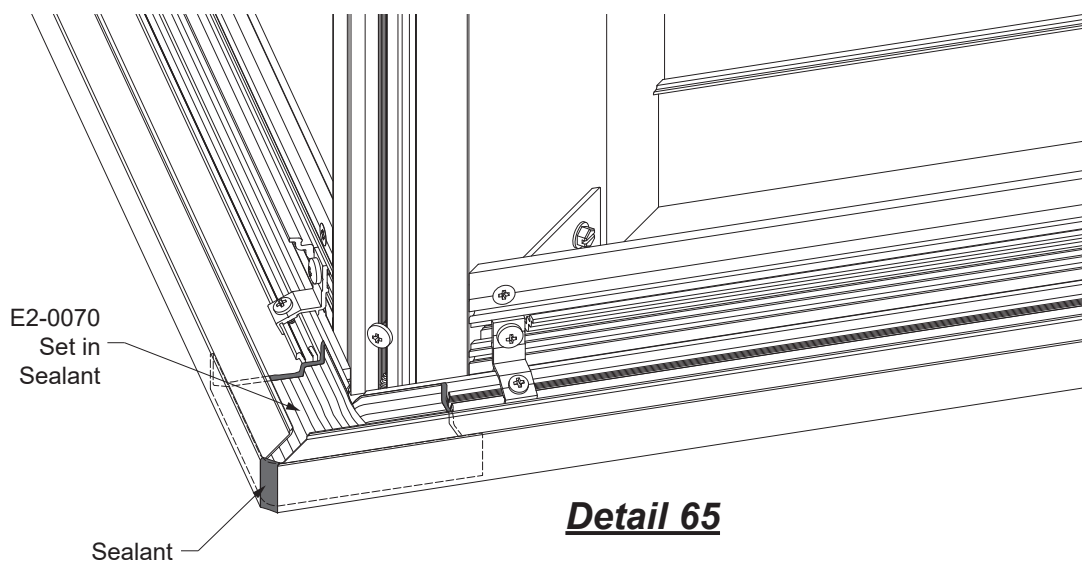
#### 90° Outside Corner Perimeter Trim

- Cut a E2-0070 silicone sheet to the dimensions shown on **Detail 64**.
- Cut the sheet down the middle to allow the sheet to be folded over and overlapped.
- Adhere the sheet into place with sealant.
- Apply sealant to the face and substrate side of the gap in the corner perimeter trim.

See **Detail 65**.



**Detail 64**



**Detail 65**

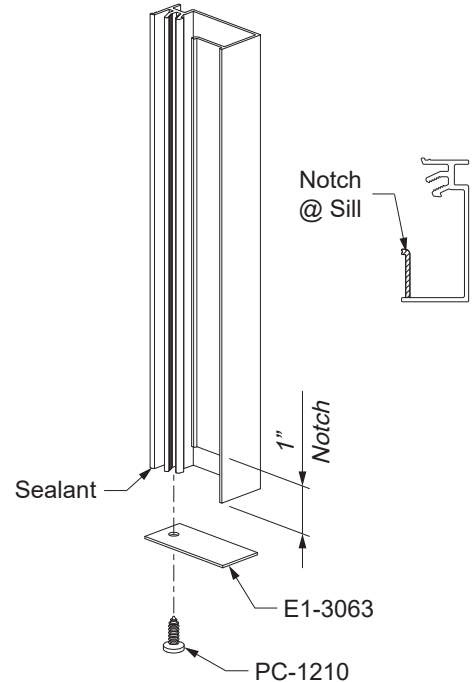
## FRAME INSTALLATION

### STEP 14A

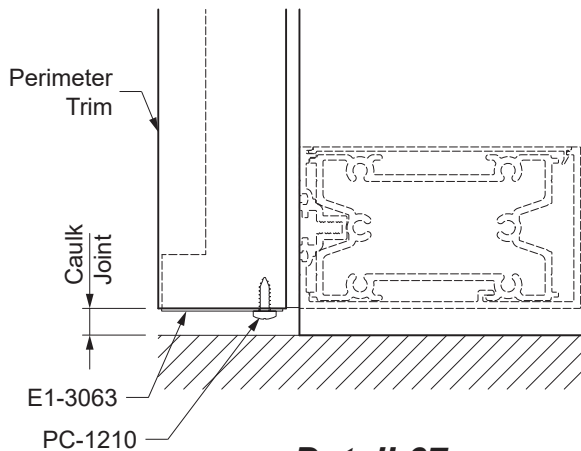
#### INSTALL PERIMETER TRIM AT DOOR JAMB

- Cut the vertical perimeter trim to Door Opening Height minus 3/4" and minus the Caulk Joint at the sill.
- Notch the bottom of the perimeter trim by 3/4" as shown in **Detail 66**.
- Apply sealant to the ends of the vertical trim, and attach E1-3579 end caps at each end with PC-1210 fasteners.
- Cut E2-0110 spacer tape to the length of the perimeter trim, and apply it to the perimeter trim as previously stated in **Page 48**.
- Attach perimeter trim clips to the perimeter trim at 3" from each end and at 27" maximum on center, shown similarly on **Detail 62** on **Page 50**.
- Using PM-2512-SS fasteners, fasten the perimeter trim clips into the spline of the mullion.
- Using PM-1006-SS fasteners, fasten the perimeter trim clip into the spline of the perimeter trim. Allow the same space above the sill substrate as the caulk joint at the sill.

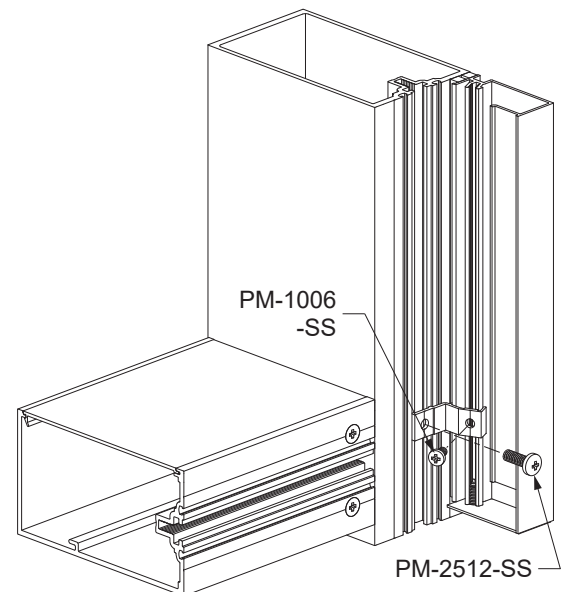
See **Details 67 & 68**.



**Detail 66**



**Detail 67**



**Detail 68**

**FRAME INSTALLATION**
**STEP 14A (Continued)**
**INSTALL PERIMETER TRIM AT DOOR JAMB**

Perimeter trim at the sill member is to be cut to overlap the mullion at the door jamb by 1-1/8". This perimeter trim is also to be notched at the end by 1-1/4" as previously shown on **Page 25**.

-Cut E2-0110 spacer tape to the length of the perimeter trim, and apply it to the perimeter trim as previously stated in **Page 48**.

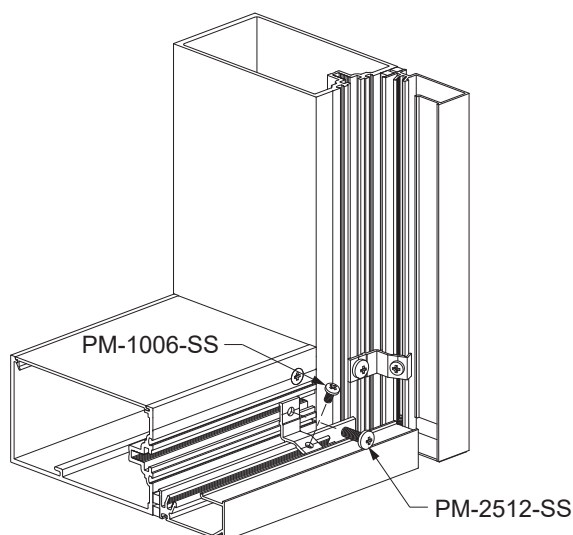
-Using PM-2512-SS fasteners, fasten the perimeter trim clips into the spline of the sill.

-Using PM-1006-SS fasteners, fasten the perimeter trim clip into the spline of the perimeter trim.

See **Detail 69**.

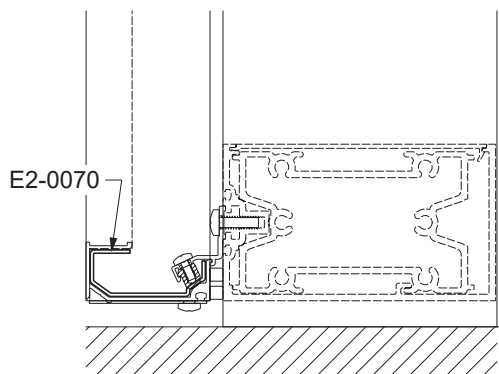
-Cut a 2-1/4" x 2" piece of E2-0070 silicone sheet, and adhere it with sealant to span the gap between the sill perimeter trim and the trim at the door jamb.

-Apply sealant to the front of the sheet and the cavity behind the sheet.

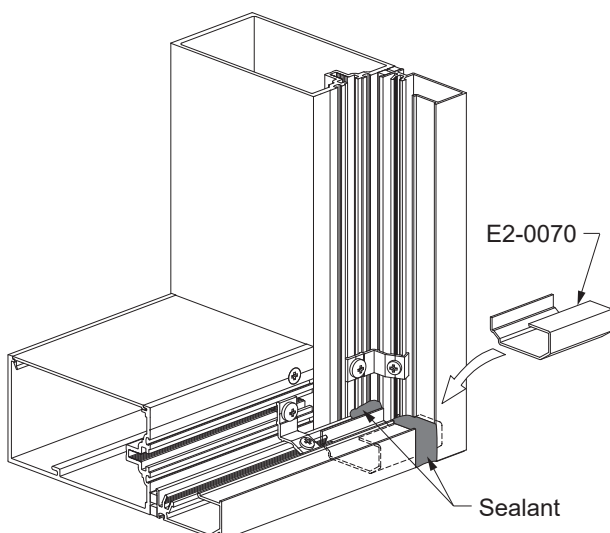


**Detail 69**

See **Details 70 & 71**.



**Detail 70**



**Detail 71**

## FRAME INSTALLATION

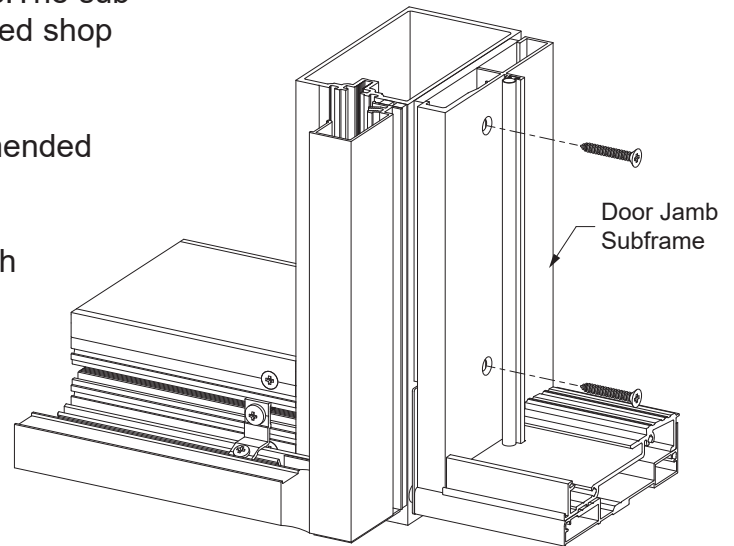
### STEP 15 INSTALL DOOR SUBFRAMES

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.

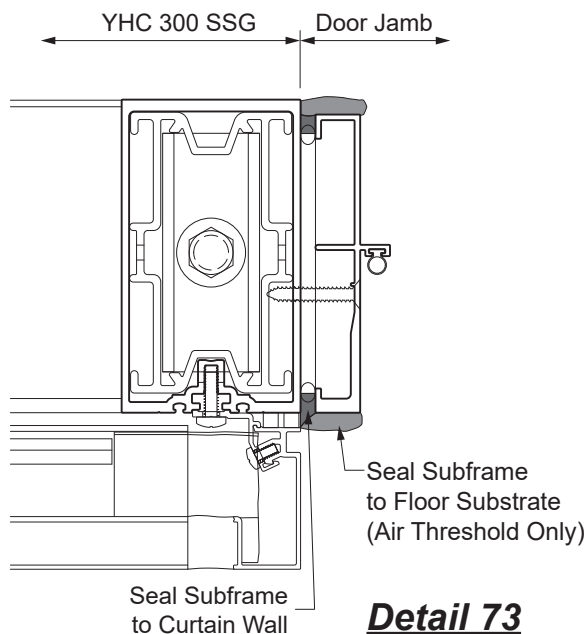
-Clean all sealant contact surfaces as recommended by the sealant manufacturer.

-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.

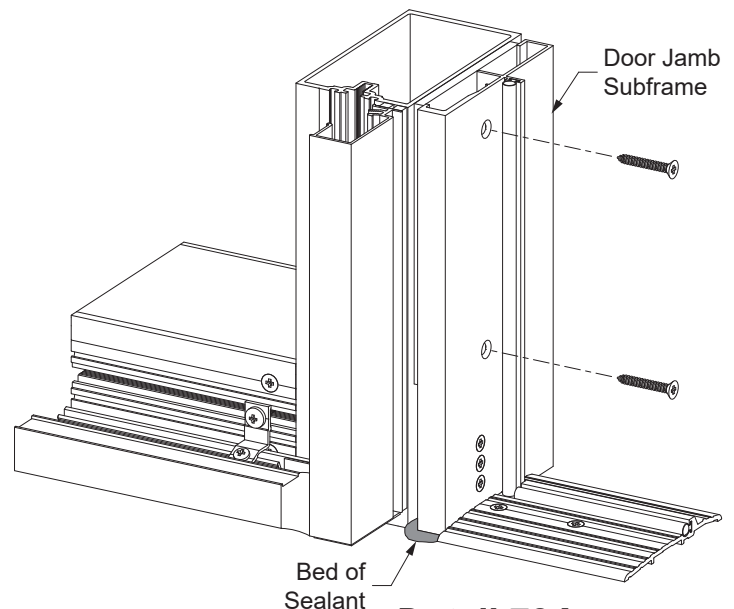
-Apply and tool sealant between the door jamb subframe and the curtain wall framing. For air-resistant thresholds, apply and tool sealant to the bottom of the jamb subframe as shown in **Details 72(A) & 73**.



**Detail 72**



**Detail 73**



**Detail 72A**

## GLAZING

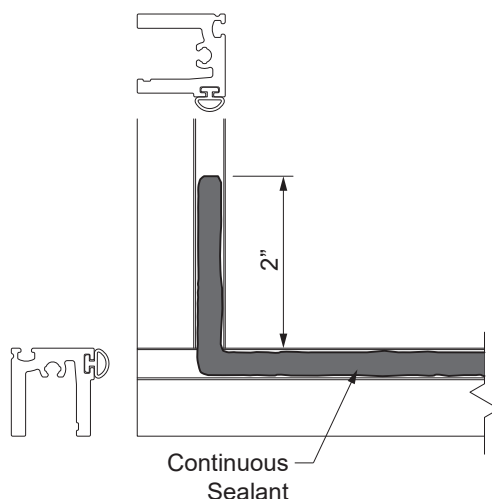
### STEP 16

#### INSTALL CASSETTES USING HORIZONTAL ADAPTORS

-Note, toggle bar assemblies are located 9" on center as a standard, or possibly closer per engineering calculations and approved shop drawings. Prior to setting the glass, mark the toggle bar fastener locations on each mullion and horizontal before the glass is in place. This will enable the glazers to locate the temps between the clips, thus avoiding the same hole location being used twice.

-Glazing is done from the ground up.

-At the bottom unit, apply a non-curing silicone grease (DOW III or equal) to the length of the bottom bulb gasket and 2" up the sides. This will aid in preventing water penetration and reduce the friction between the gasket and the face of the mullion. See **Detail 74**.



**Detail 74**

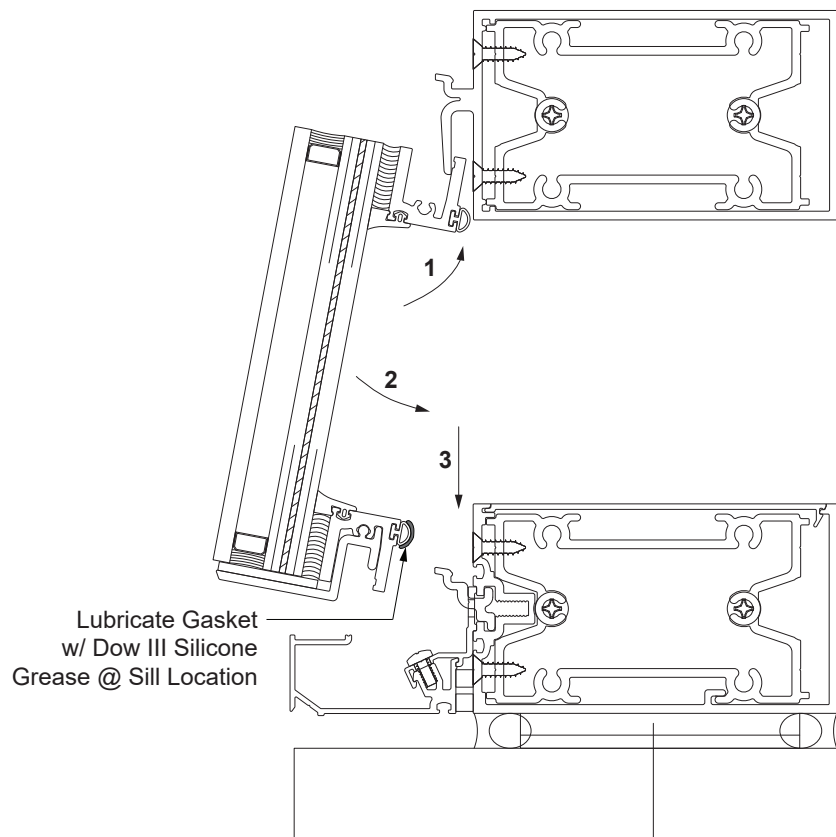
## GLAZING

### STEP 16 (Continued)

### INSTALL CASSETTES USING HORIZONTAL ADAPTORS

-Center the glazed cassette unit vertically into the opening, tilting the bottom of the glass inward. Gently rest the weight of the glass onto the setting block chairs. See **Detail 75**.

**Note:** The gasket at the cassette frame will have to compress slightly to engage into the adaptors. Spraying the gasket with isopropyl alcohol will lubricate the gasket and aid in installation.



**Detail 75**

## GLAZING

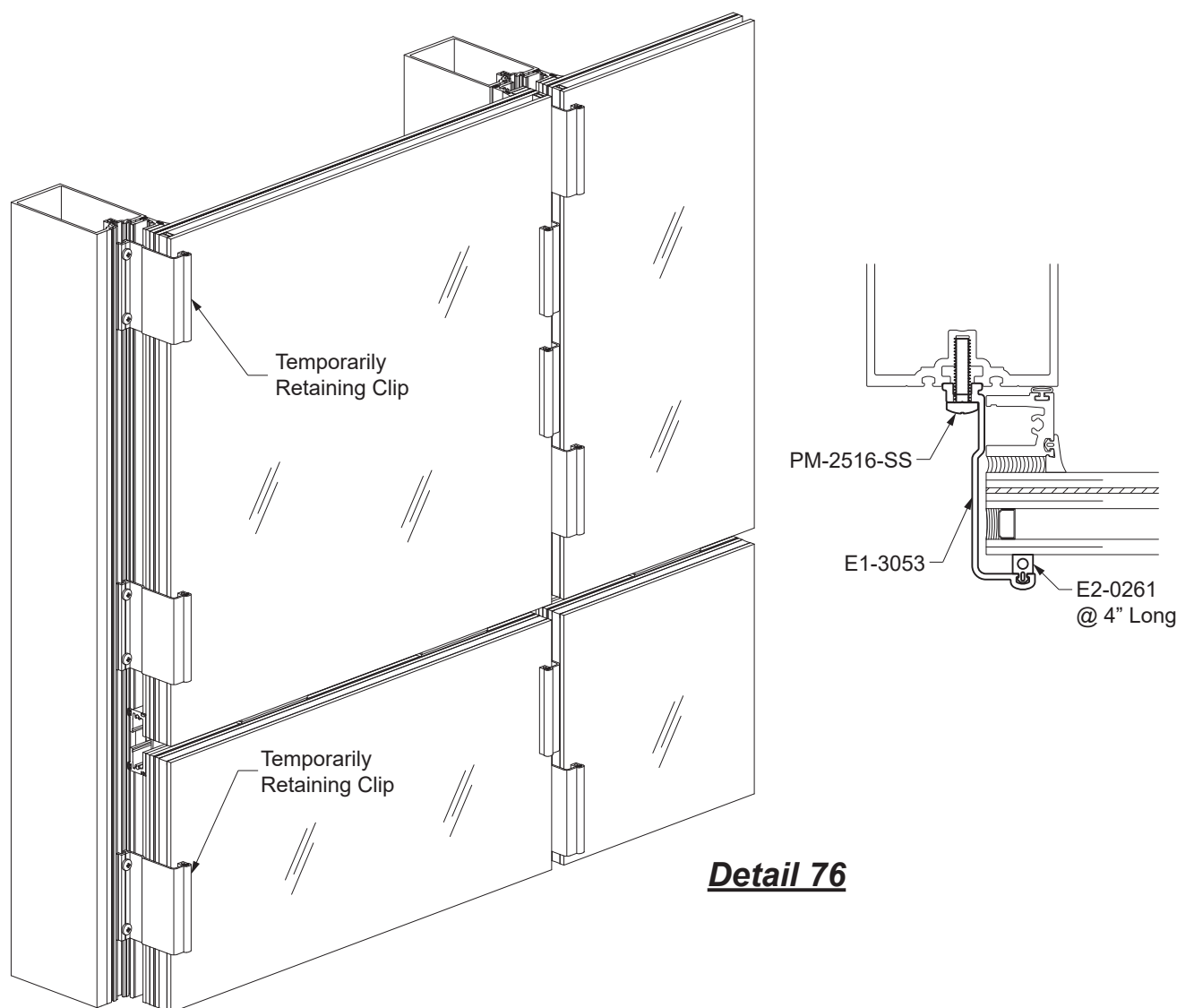
### STEP 17

#### INSTALL TEMPORARY RETAINING CLIPS

-Immediately install E1-3053 temporary retaining clips, every 2' on center, into the center spline of the mullion along the vertical and horizontal edge of the unit with (2) PM-2516-SS fasteners per clip and 4" of E2-0261 SSG glazing spacer per clip.

See **Detail 76**.

-Check to see if the inside of the cassette is centered with the daylight opening. The cassette should be 1/16" inward at each of the vertical and horizontal mullions.



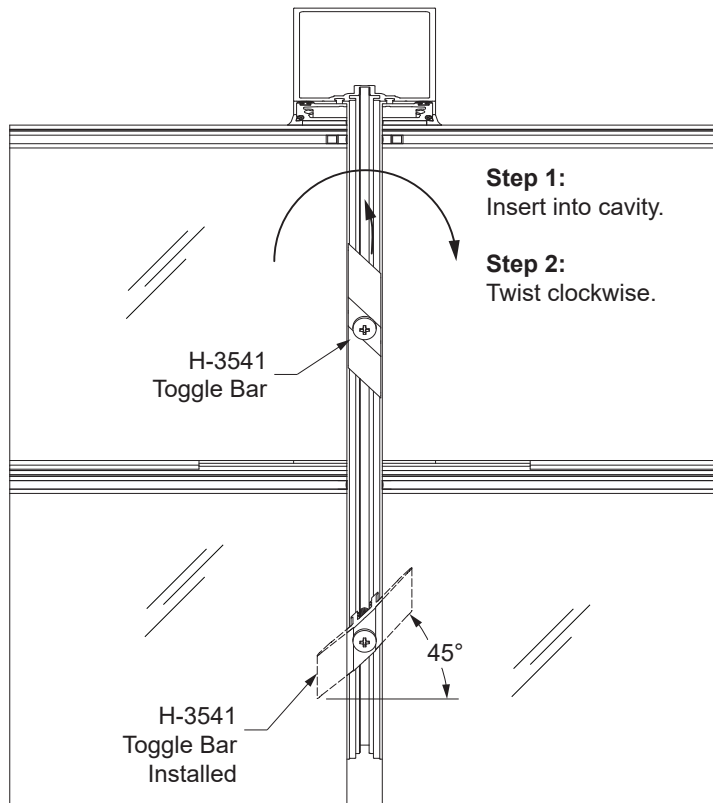
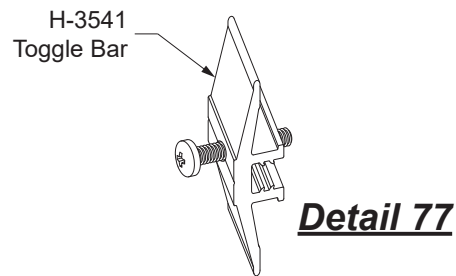


## GLAZING

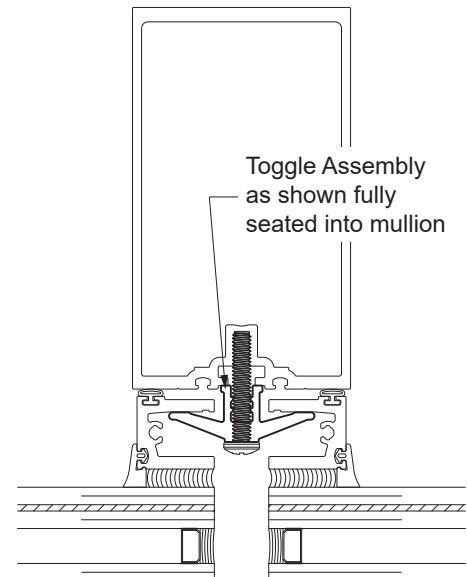
### STEP 18 INSTALL TOGGLE BAR ASSEMBLIES

-After the adjoining glass is installed, the H-3541 toggle bar assemblies (shown in **Detail 77**) can then be installed at 9" maximum on center. Slide the toggle assembly into 3/4" gap between the glass. Slowly start the fastener the first 45 degrees, which should turn the toggle bar 45 degrees and engage itself into the proper position within the two adjoining cassettes. Continue screwing the fastener approx. 3/8" deep until the toggle is fully seated against the mullion, fully engaging the cassettes. Remove temporary clips after toggles are installed.

**NOTES:** Do not re-use a screw location twice, which may weaken the strength of the attachment. If a toggle bar strips the tongue of the mullion, relocate the toggle bar approximately 1/2" away from the intended location. Toggles will not fully seat onto the mullion unless they are positioned at a 45° angle as shown in **Detail 78**.



**Detail 78**



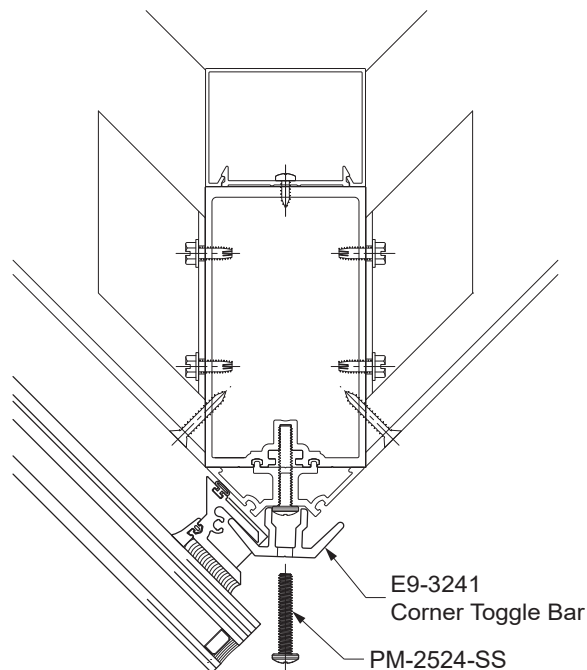
## GLAZING

### STEP 19

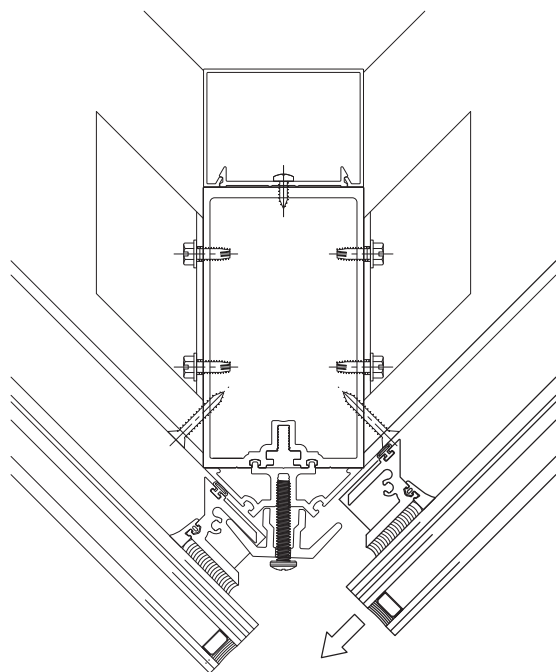
#### INSTALLING CASSETTES AT OUTSIDE CORNERS

- Install the first glazed unit at one side of the corner.
- Install the toggle bar assemblies on the other side of the cassette not at the corner.
- Install the corner adaptor with PM-2524-SS screws, leaving a 1/4" short of full engagement. See **Detail 79**.
- Install the second cassette on the other side of the corner, and maneuver it inward to the corner adaptor as shown in **Detail 80**.
- Install the toggle bar assemblies for this cassette, and tighten the fasteners for the corner toggle bar to 70 inch-pounds.

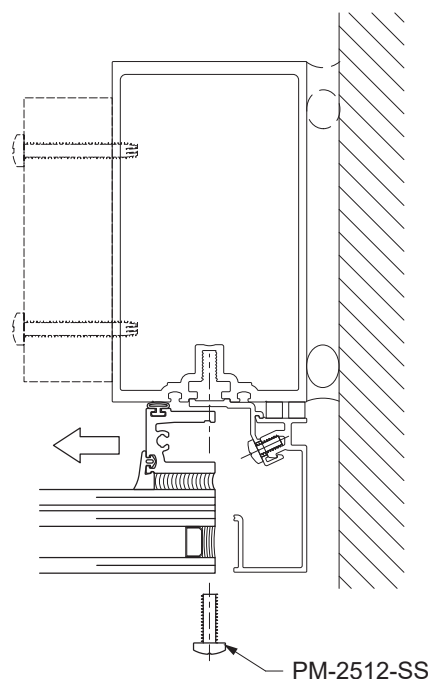
**Note:** If the other side of the corner glazing unit is at a jamb, then the PM-2512-SS screws at the jamb trim clip will need to be temporarily removed to allow the corner cassette to slide. Reinstall the screws after the cassette is set into place. See **Detail 81**.



**Detail 79**



**Detail 80**



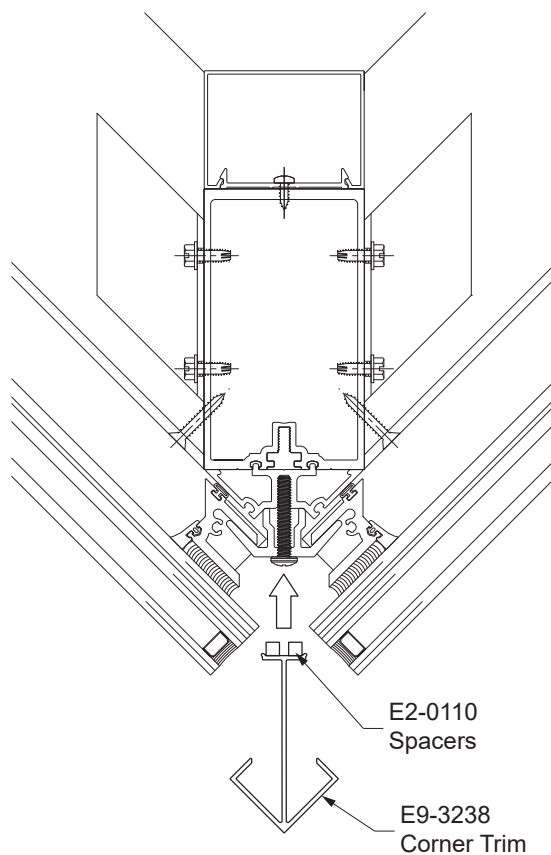
**Detail 81**

## GLAZING

### STEP 19 (Continued)

#### INSTALLING CASSETTES AT OUTSIDE CORNERS

- Cut the E9-3238 corner trim to length of the corner toggle bar and adhere E2-0110 spacers to the corner trim also cut to the same length.
- Adhere the corner trim to the corner toggle bar as shown in **Detail 82**.



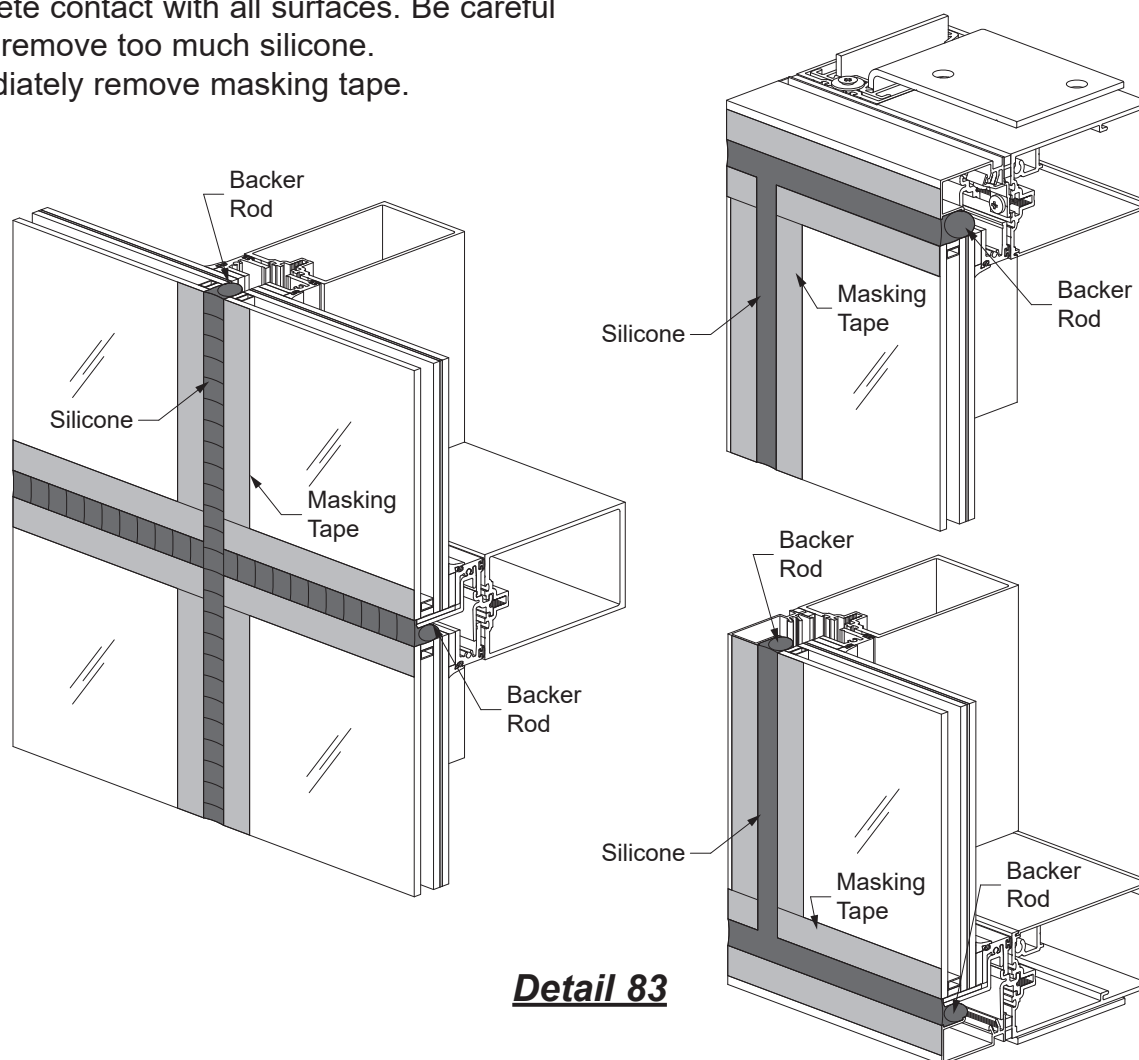
**Detail 82**

## GLAZING

### STEP 20

#### APPLY EXTERIOR WEATHERSEAL

- After toggle bars are in place, insert an approved open cell backer rod into the glass joint.
- Clean all silicone contact surfaces and joints with cleaner and method recommended by sealant manufacturer.
- Apply masking tape to the edges of the glass as shown in **Detail 83**.
- Apply silicone sealant into the cavity between the lites of glass. Use positive pressure so that the silicone sealant completely fills the cavity.
- Using a nylon 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.
- Immediately remove masking tape.



**Detail 83**

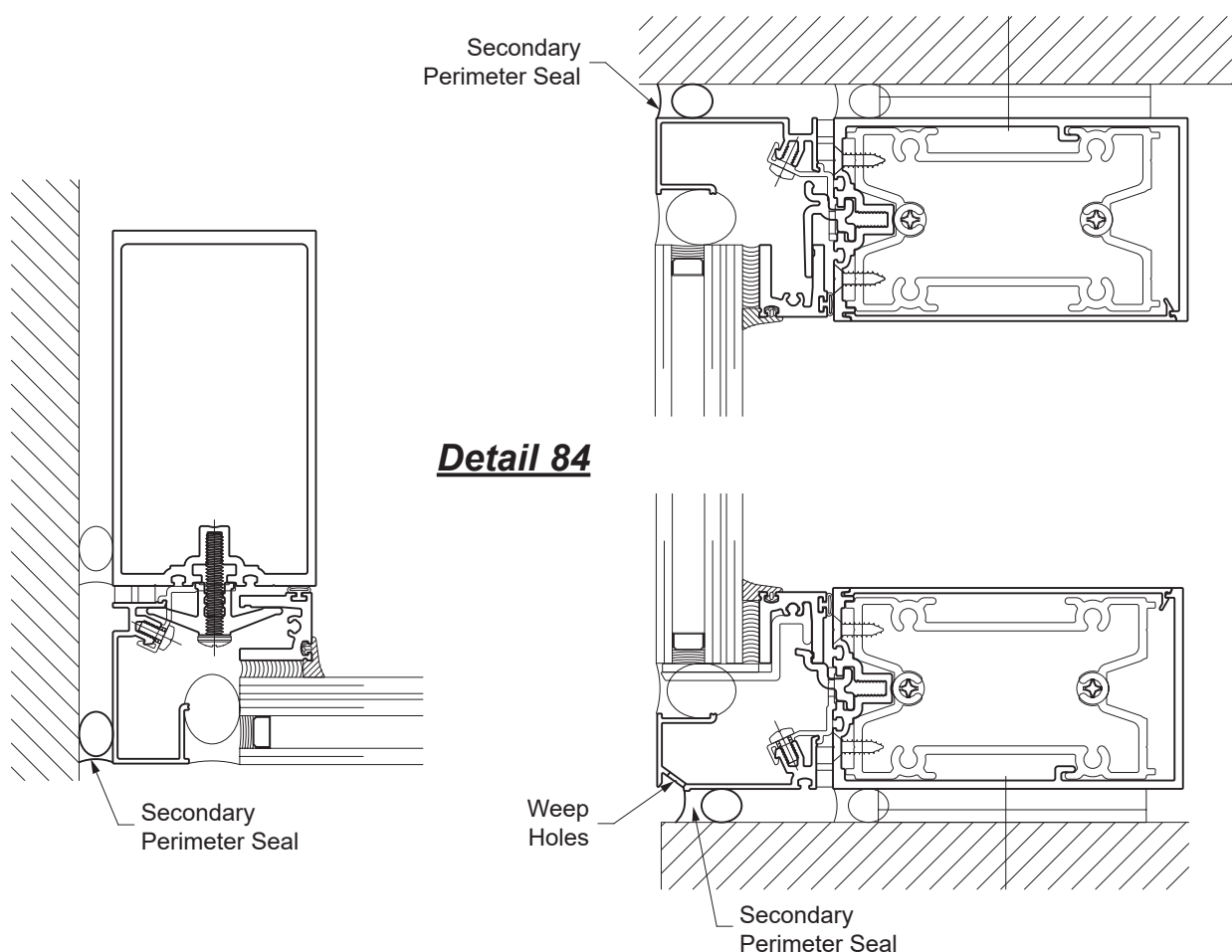
**Note:** Do not permit the silicone to skin over before it is tooled.  
Immediately remove masking tape after tooling the silicone.

## GLAZING

### STEP 21

### INSTALL SECONDARY PERIMETER SEALS

- Carefully read and follow sealant manufacturers sealant recommendations.
- Make sure all silicone contact surfaces and joints have been cleaned with cleaner and method recommended by sealant manufacturer.
- Install backer rod and apply sealant to the areas indicated in **Detail 84**. Do not block the weep holes at the sill.





270 Riverside Parkway  
Suite 100  
Austell, Georgia 30168  
[www.ykkap.com](http://www.ykkap.com)