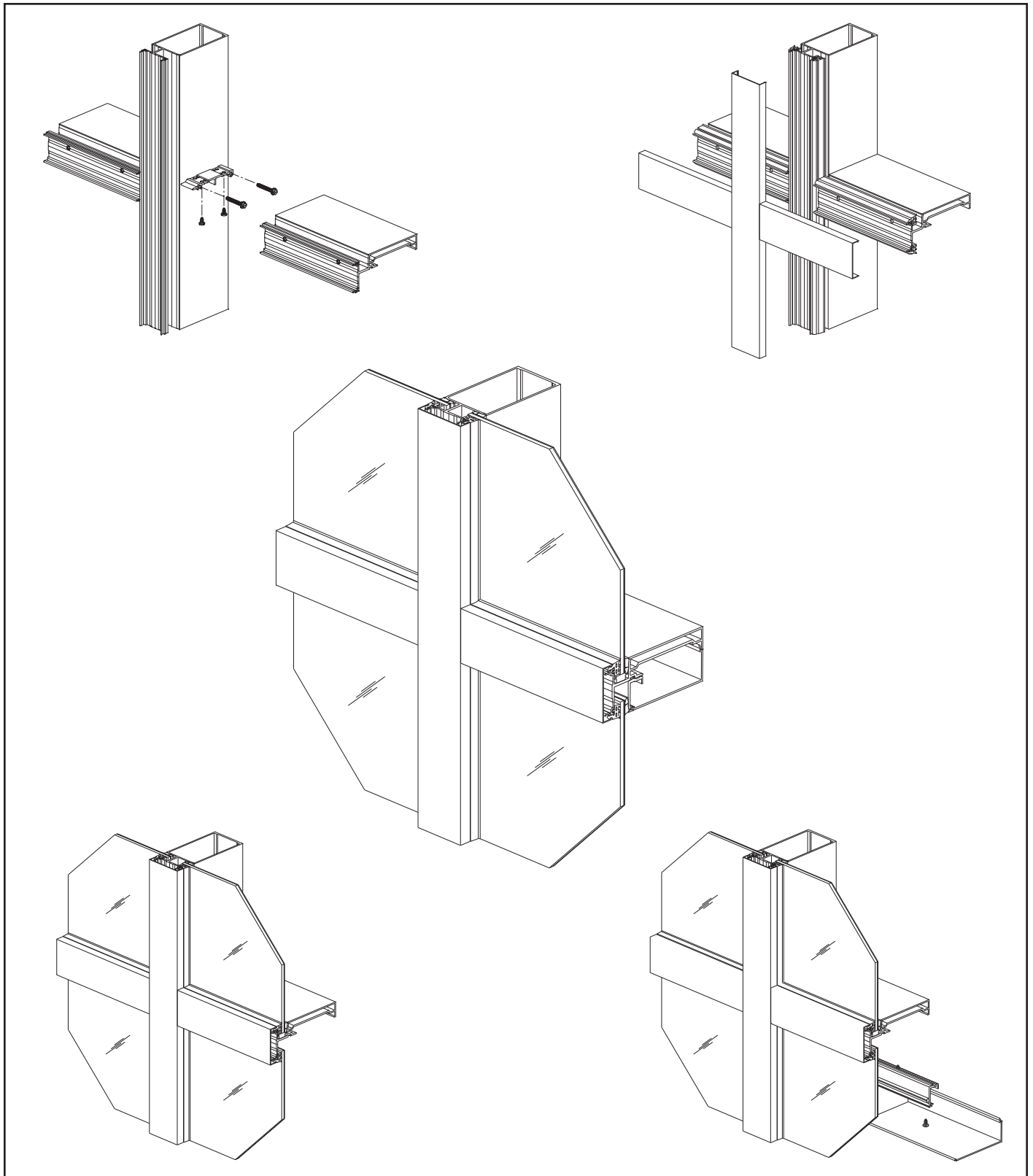


## YHC 300 IG Inside Glazed Curtain Wall System



## Installation Manual



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## **Installation Notes**

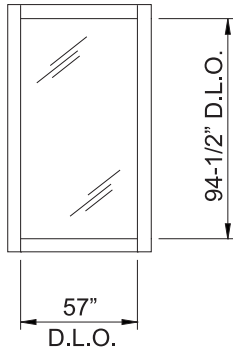
1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact 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 quantity and quality upon receipt, YKK AP must be notified immediately of any discrepancies in shipment. Check to make sure that you have the required shims, sealants, supplies and tools necessary for the installation.
4. Carefully check the openings and surrounding conditions that will receive your material. Remember, if the construction is not per the construction documents, it is your responsibility to notify the general contractor in writing. Any discrepancies must be brought to the general contractor's attention before you proceed with the installation.
5. All work must start from, and be referenced to bench marks, offset lines and/or column centerlines established by the architectural drawings and the general contractor.
6. All vertical mullions must be installed plumb, square, level, and true, and in accordance with approved shop drawings, these installation instructions and AAMA Book 8, installation of aluminum curtain walls.
7. 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.
8. Any material substitutions must be of equal or greater quality.
9. Make certain that material samples have been sent for compatibility testing for all manufacturer's sealants involved. Make certain that sealants have been installed in strict accordance with the manufacturer's recommendations and specifications:
  - A. Specified metal to metal joints use DOW CORNING<sup>®</sup> 795 or 995.
  - B. All metal to Large Missile Impact glazing, must use DOW CORNING<sup>®</sup> 995.
  - C. Perimeter caulk joints must use DOW CORNING<sup>®</sup> 795.
  - D. Outside of Dade County YKK AP recommends DOW CORNING<sup>®</sup> 795 for perimeter and metal to metal joints or equal product.
10. Consult sealant manufacturer for proper backer rod selection.

**Dade County installation must always be items A, B, and C.**

## Installation Notes

11. Remember to isolate, in an approved manner, all aluminum from uncured masonry or other incompatible materials.
12. System-to-structure fasteners are not supplied by YKK AP. Fasteners called out on shop drawings are to indicate minimum sizes for design loading.
13. All substrates which the framing system is anchored to must be structurally sound.
14. Entrances are to be installed plumb, square, level, and true.
15. If any questions arise concerning YKK AP products or their installation, contact YKK AP for clarification before proceeding.
16. YKK AP curtain wall framing is typically completed before drywall, flooring and other products which may still be in process. Take the extra time wrap and protect the work produced.
17. Concrete, mortar, plaster, muriatic acid and other alkaline and acid based construction and cleaning materials may be very harmful to finishes and should be removed with water and mild soap immediately or permanent damage or staining of the finishes will occur. A spot test is recommended before any cleaning agent is used, and abrasive type cleaners must never be used.
18. YKK AP cutting tolerances are plus zero, minus one thirty second unless otherwise noted.
19. Glass and glazing building codes governing the design and use of products vary widely. YKK AP America Inc., does not control the selection of products, product configurations, operating hardware, and function, or glazing materials, and YKK AP assumes no responsibility for these design considerations. It is the responsibility of the design professional, owner, architect, specifier, general contractor, and the installer to make these selections in strict accordance with all applicable codes.
20. Check our website, [www.ykkap.com](http://www.ykkap.com), for the latest installation manual update prior to commencing work.

**Florida Applications for 90 psf:**



Maximum day light opening for Dade County is:

Width = 57"

Height = 94-1/2"

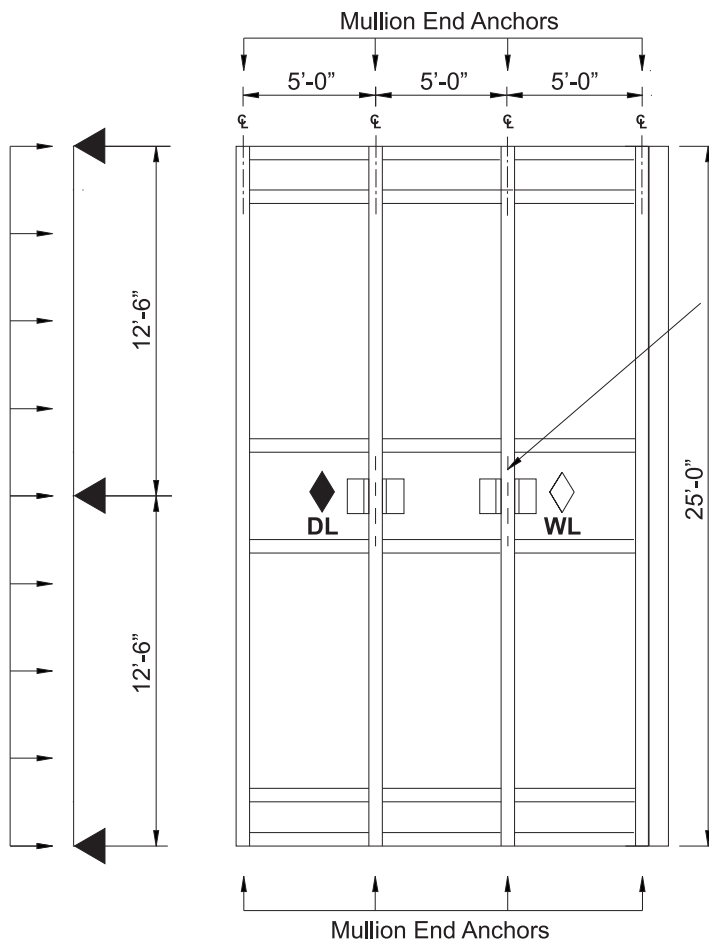
Maximum glass size:

Width = 58-1/2"

Height = 96"

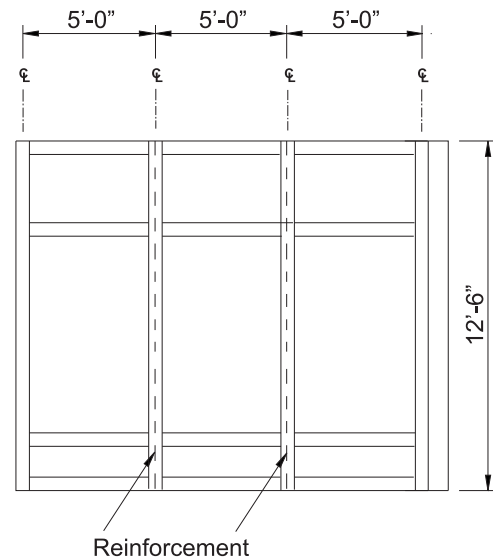
The maximum\* twin span of 25'-0" has a reinforcement sleeve, E1-3007, attached at midpoint. Reinforcement is anchored with wind load or dead load anchors midway.

\* Maximum anodized length is 24'-0".



**TWIN SPAN**

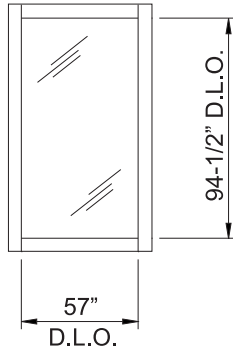
Midspan reinforcement



**SINGLE SPAN**

For continuous mullions with either twin spans or unequal spans with uniformly distributed load on multiple anchors, consult YKK AP.

## Florida Applications for 120 psf:



Maximum day light opening for Dade County is:

Width = 57"

Height = 94-1/2"

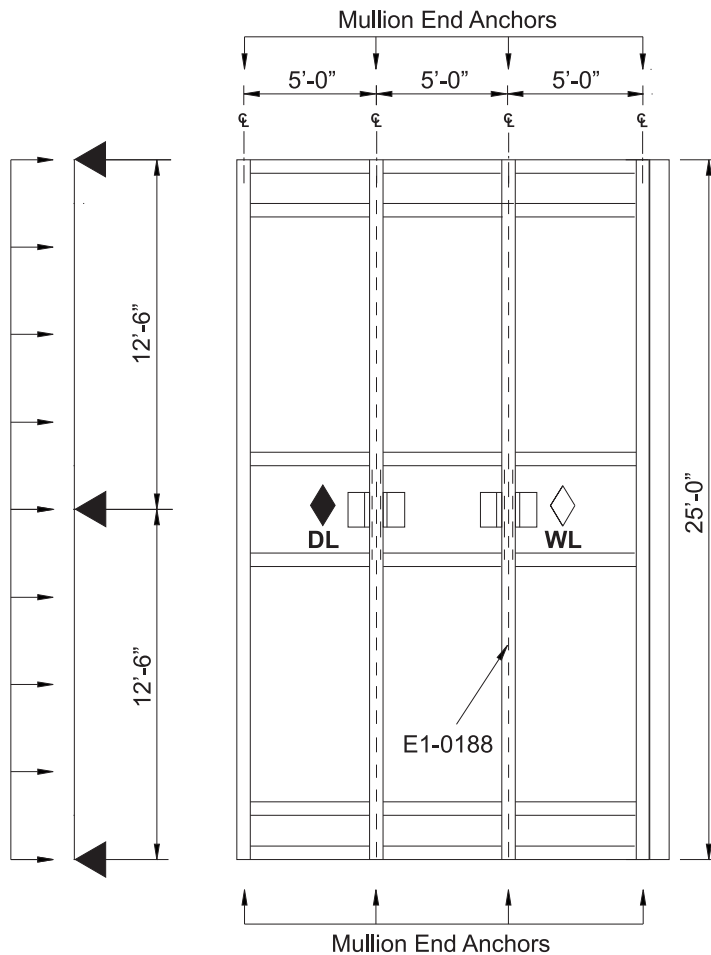
Maximum glass size:

Width = 58-1/2"

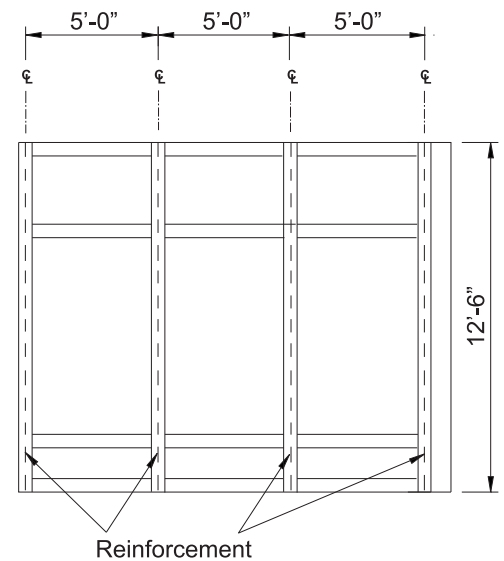
Height = 96"

The maximum\* twin span of 25'-0" has steel reinforcement, E1-0188, attached to intermediate verticals. Both mullion and reinforcement are anchored with wind load or dead load anchors midway.

\* Maximum anodized length is 24'-0".



**TWIN SPAN**



**SINGLE SPAN**

For continuous mullions with either twin spans or unequal spans with uniformly distributed load on multiple anchors, consult YKK AP.

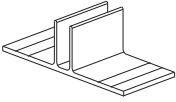

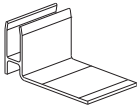







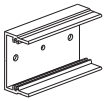

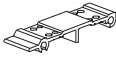
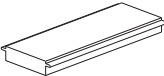


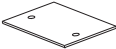


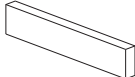












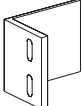

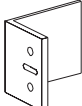





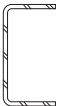

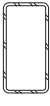

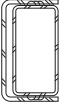






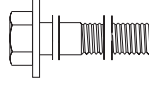

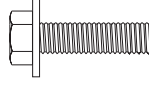
## FRAMING MEMBERS

	<b>Mullion</b> For Single Glazing	<b>E9-3108</b>		<b>Intermediate Face Cover</b>	<b>E9-3161</b>
	<b>Jamb Mullion</b> For Single Glazing	<b>E9-3118</b>		<b>Perimeter Face Cover</b> For Single Glazing	<b>E9-3170</b>
	<b>Head</b> For Single Glazing	<b>E9-3115</b>		<b>Perimeter Face Cover</b> For Insulated Glazing	<b>E9-3171</b>
	<b>Intermediate Horizontal</b> For Single Glazing	<b>E9-3114</b>		<b>Interior Glass Stop</b> For Single & Insulated Glazing	<b>E9-3137</b>
	<b>Sill</b> For Single Glazing	<b>E9-3116</b>		<b>Interior Glass Stop</b> For Single Glazing of Insulated Members	<b>E9-3139</b>
	<b>Mullion</b> For Insulated Glazing	<b>E9-3121</b>		<b>Glazing Pocket Filler</b> For Single Glazing	<b>E9-3166</b>
	<b>Jamb Mullion</b> For Insulated Glazing	<b>E9-3122</b>		<b>Glazing Pocket Filler</b> For Insulated Glazing	<b>E9-3169</b>
	<b>Head</b> For Insulated Glazing	<b>E9-3124</b>		<b>Glazing Adaptor</b> For Single Glazing of Insulated Members	<b>E9-3147</b>
	<b>Intermediate Horizontal</b> For Insulated Glazing	<b>E9-3123</b>		<b>1" x 1" Angle</b> For 90° Inside & Outside Corners	<b>E9-9302</b>
	<b>Sill</b> For Insulated Glazing	<b>E9-3125</b>		<b>1-1/2" x 1-1/2" Angle</b> For 90° Outside Corners	<b>E9-9303</b>
	<b>Interior Horizontal Snap Cover</b>	<b>E9-3168</b>		<b>Standard Door Jamb</b> Elastomer Weathering E2-0051 Included	<b>AS-3180</b>
	<b>Flush Filler</b> For Sill Members	<b>E9-3162</b>		<b>Optional Transom Bar</b> Elastomer E2-0051 & E2-0062 Included	<b>AS-3181</b>

## ACCESSORIES

	<b>Intermediate Mullion Mullion "T" End Anchor</b>	<b>E1-3003</b>		<b>Exterior Glazing Gasket</b> For 1/4" & 5/16" Single Glazing & 1" Insulated Glazing	<b>E2-0360</b>
	<b>Jamb Mullion "F" End Anchor</b>	<b>E1-3004</b>		<b>Interior Push-In Spacer</b> For All Large Missile Impact Glazing	<b>E2-0359</b>
	<b>Splice Sleeve</b> 6" Long	<b>E1-3005</b>		<b>Interior Arrow Spacer</b> For 7/16" & 9/16" Single Glaz. 130 psf Small Missile Impact	<b>E2-0367</b>
	<b>Anchor Sleeve</b> 3" Long	<b>E1-3006</b>		<b>Interior Wedge Gasket</b> For All 90 psf & 120 psf Small Missile Impact Glazing	<b>E2-0361</b>
	<b>Reinforcement Sleeve</b> 29" Long	<b>E1-3007</b>		<b>Interior Wedge Gasket</b> For 1/4" & 1" Non-Impact Glazing	<b>E2-0240</b>
	<b>Shear Block</b> For Transom Bar and Opt. 90° Outside Corner End Bays	<b>E1-3001</b>		<b>Setting Block</b> For Single Glazing	<b>E2-0364</b>
	<b>Shear Block</b> For Attachment of Horizontal Members to Vertical Members	<b>E1-3019</b>		<b>Setting Block</b> For Insulated Glazing	<b>E2-0363</b>
	<b>Face Cover Splice Sleeve</b>	<b>E1-3009</b>		<b>Joint Plug</b> (Single Glazing)	<b>E2-0374</b>
	<b>Mullion End Cap</b> For Single Glazing	<b>E1-3020</b>		<b>Joint Plug</b> (Insulating Glazing)	<b>E2-0384</b>
	<b>Mullion End Cap</b> For Insulated Glazing	<b>E1-3021</b>		<b>Side Block</b> (Single Glazing) For Shallow Pocket	<b>E2-9907</b>
	<b>Isolator Tape</b> 1/8" x 7/16" Use with Perimeter Pressure Plates	<b>E2-0239</b>		<b>Anti-Walk Block</b> (Insulated Glazing) For Shallow Pocket	<b>E2-0533</b>
	<b>Exterior Glazing Gasket</b> For 9/16" Single Glazing & 1-3/16" Insulated Glazing	<b>E2-0351</b>		<b>Anti-Walk Block</b> (Single & Insulated Glazing) For Deep Pocket	<b>E2-0807</b>
	<b>Exterior Glazing Gasket</b> For 3/8" & 7/16" Single Glazing	<b>E2-0352</b>		<b>Thermal Isolator Clip</b>	<b>E3-0037</b>

## ACCESSORIES

	<b>Wind Load / Dead Load Anchor Slip Pad</b>	<b>E3-0103</b>		<b>#12 x 1-1/4" FHSMS Type AB</b> Zinc Plated Steel For Attachment of Horizontal to Shear Block E1-3001	<b>FC-1220</b>
	<b>Wind Load Anchor*</b> Refer to Shop Drawings for Anchor Dimensions	<b>E1-1204</b>		<b>#14 x 2" FHSMS Type AB</b> Zinc Plated Steel For Attachment of Door Jamb to Vertical	<b>FC-1432</b>
	<b>Dead Load Anchor*</b> Refer to Shop Drawings for Anchor Dimensions	<b>E1-1205</b>		<b>#14 x 3-1/2" FHSMS Type AB</b> Zinc Plated Steel For Attachment of Transom Bar to Door Head	<b>FC-1456</b>
	<b>Jamb Anchor Plate</b> 3" x 6" x 5/16" Thk.	<b>E1-3536</b>		<b>#10 x 5/8" PHSMS Type AB</b> Zinc Plated Steel, For Attachment of Anchor Sleeve, Splice Sleeve & Mullion End Cap	<b>PC-1010</b>
	<b>Steel Reinforcing</b> As Required See NOA or Contact YKK AP	<b>E1-0175</b>		<b>#12 x 1/2" PHSMS Type AB</b> Zinc Plated Steel, For Attachment of Shear Block E1-3019 & Glass Stops to Horizontal	<b>PC-1208</b>
	<b>Steel Reinforcing</b> As Required See NOA or Contact YKK AP	<b>E1-0186</b>		<b>1/4"-20 x 5/8" HWHTCS Type F</b> , Zinc Plated Steel For Attachment of Shear Block E1-3001 to Vertical	<b>HF-2510 -W1</b>
	<b>Steel Reinforcing</b> As Required See NOA or Contact YKK AP	<b>E1-0187</b>		<b>1/4"-20 x 1-3/4" HWHTCS Type F</b> , Zinc Plated Steel For Attachment of Shear Block E1-3019 to Vertical	<b>HF-2528 -W1</b>
	<b>Steel Reinforcing</b> As Required See NOA or Contact YKK AP	<b>E1-0188</b>		<b>1/2"-13 Nut HHMS</b> Zinc Plated Steel For Attachment of Mid Anchors (Wind Load / Dead Load)	<b>HM-5000</b>
	<b>#8-32 x 1/2" FHTCS Type F</b> Zinc Plated Steel For Attachment of Face Cover Splice Sleeve	<b>FF-0808</b>		<b>1/2" Flat Washer</b> Zinc Plated Steel For Attachment of Mid Anchors (Wind Load / Dead Load)	<b>WW-5000</b>
	<b>#10 x 1-1/2" FHSMS Type AB</b> Zinc Plated Steel For Attachment of Glazing Adaptor E9-3147 at Sill	<b>FC-1024</b>		<b>1/2" Lock Washer</b> Zinc Plated Steel, For Attachment of Mid Anchors (Wind Load / Dead Load)	<b>WS-5000</b>
	<b>#10 x 3/4" FHTS (Tek)</b> Stainless Steel For Attachment of Glazing Adaptor E9-3147	<b>FS-1012</b>		<b>1/2"-13 x 4-1/2" HHMS Gr. 5</b> Zinc Plated Steel, For Attachment of Mid Anchors (Wind Load / Dead Load)	<b>HM-5072</b>
	<b>#12 x 3/4" FHSMS Type AB</b> Zinc Plated Steel For Attachment of Mullion Splice Sleeve	<b>FC-1212</b>		<b>1/2"-13 x 2" HHMS Gr. 5</b> Zinc Plated Steel, For Attachment of Mid Anchors @ Jamb (Wind Load / Dead Load)	<b>HM-5032</b>

**Note:** Anchor fasteners are not furnished by YKK AP. See Florida Product Approvals or consult YKK AP for anchor requirements.

All anchors are assumed in 3,000 PSI concrete. Anchor bolt size will vary according to engineering calculations.

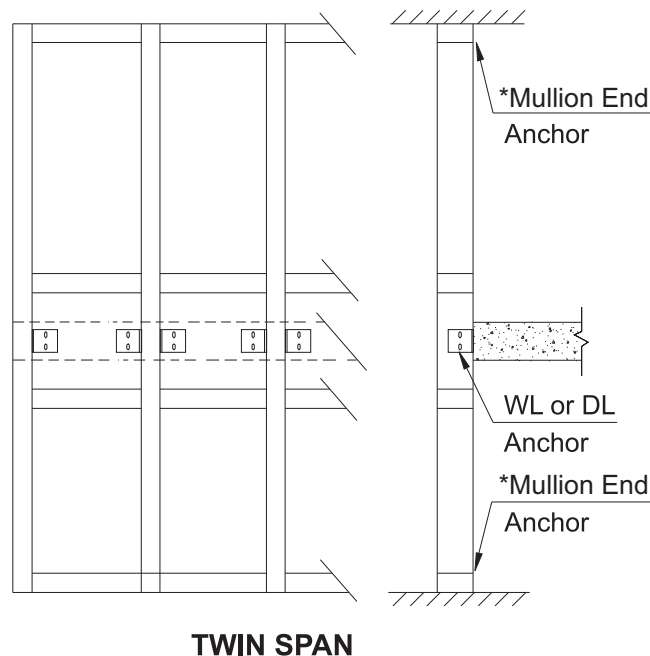
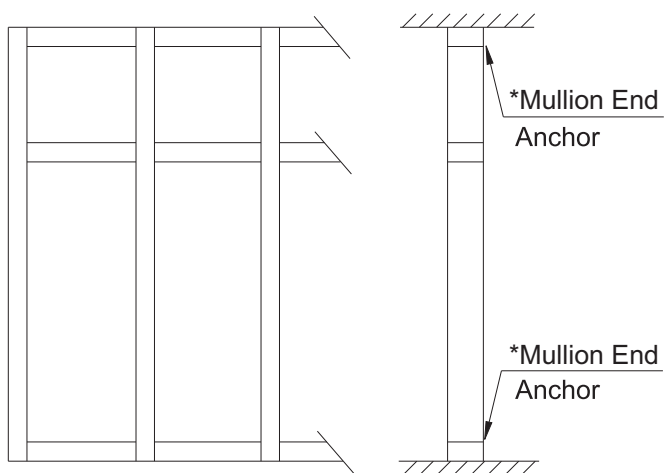
\* Exact size of wind/dead load anchors should be determined from loads calculated on each individual curtain wall.

## FRAME FABRICATION

### FRAME TYPES / ANCHORING METHODS:

**Note:** The following is a guideline for types of frames. Refer to the shop drawings or consult YKK AP 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.



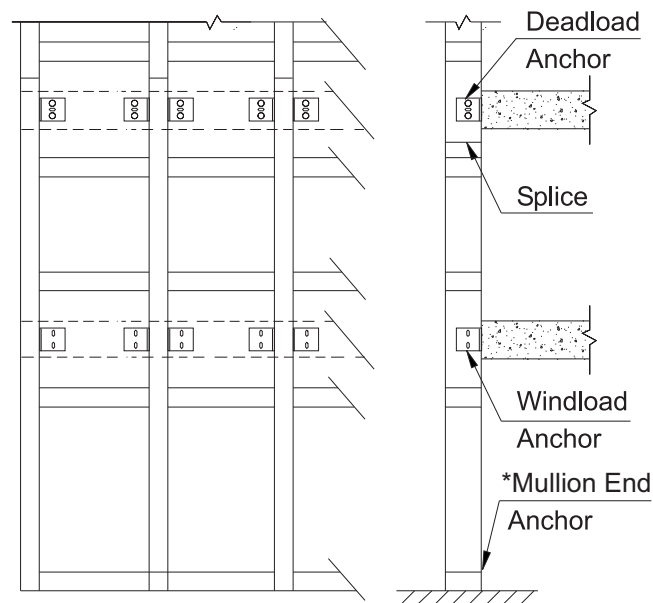
Smaller units may be assembled on the ground and tipped in place.

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

\*Mullion end attachment will be "F" and/or "T" mullion end anchors. Refer to shop drawings or consult YKK AP.

**Note:** Structure must be capable of resisting all loads imposed by anchor reactions.

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



## FRAME FABRICATION

### Using mullion end anchors:

YHC 300 IG has two possible end anchoring conditions: “T” for intermediate mullions and “F” for jamb mullions.

-“Door Jamb” anchors are used with mullions at a door jamb and are specified by the approved shop drawings or P.E. calcs.

Jamb and intermediate mullions should be pre-assembled with shear blocks, end anchors, and steel or aluminum reinforcing if necessary.

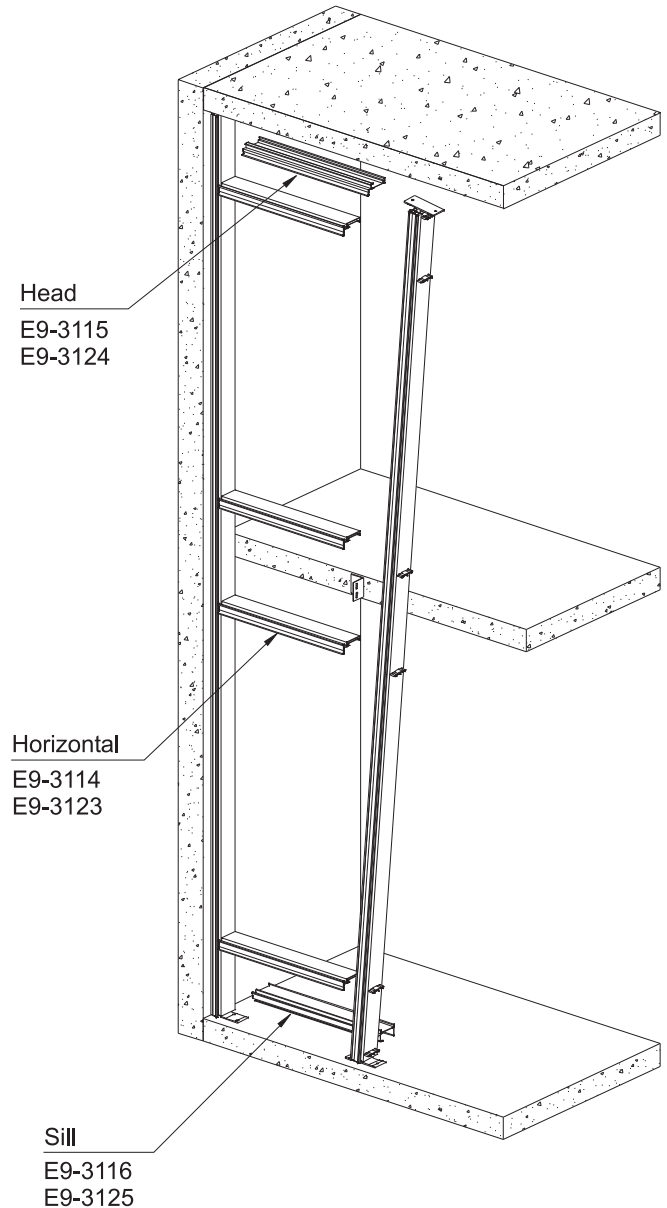
### Framing members:

-Open back members, E9-3115 (single) & E9-3124 (insulated), are used at the head.

-Open back members, E9-3114 (single) & E9-3123 (insulated), are used for intermediate horizontals to slide over the shear blocks.

-Open back members, E9-3116 (single) & E9-3125 (insulated), are used at the sill.

**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.

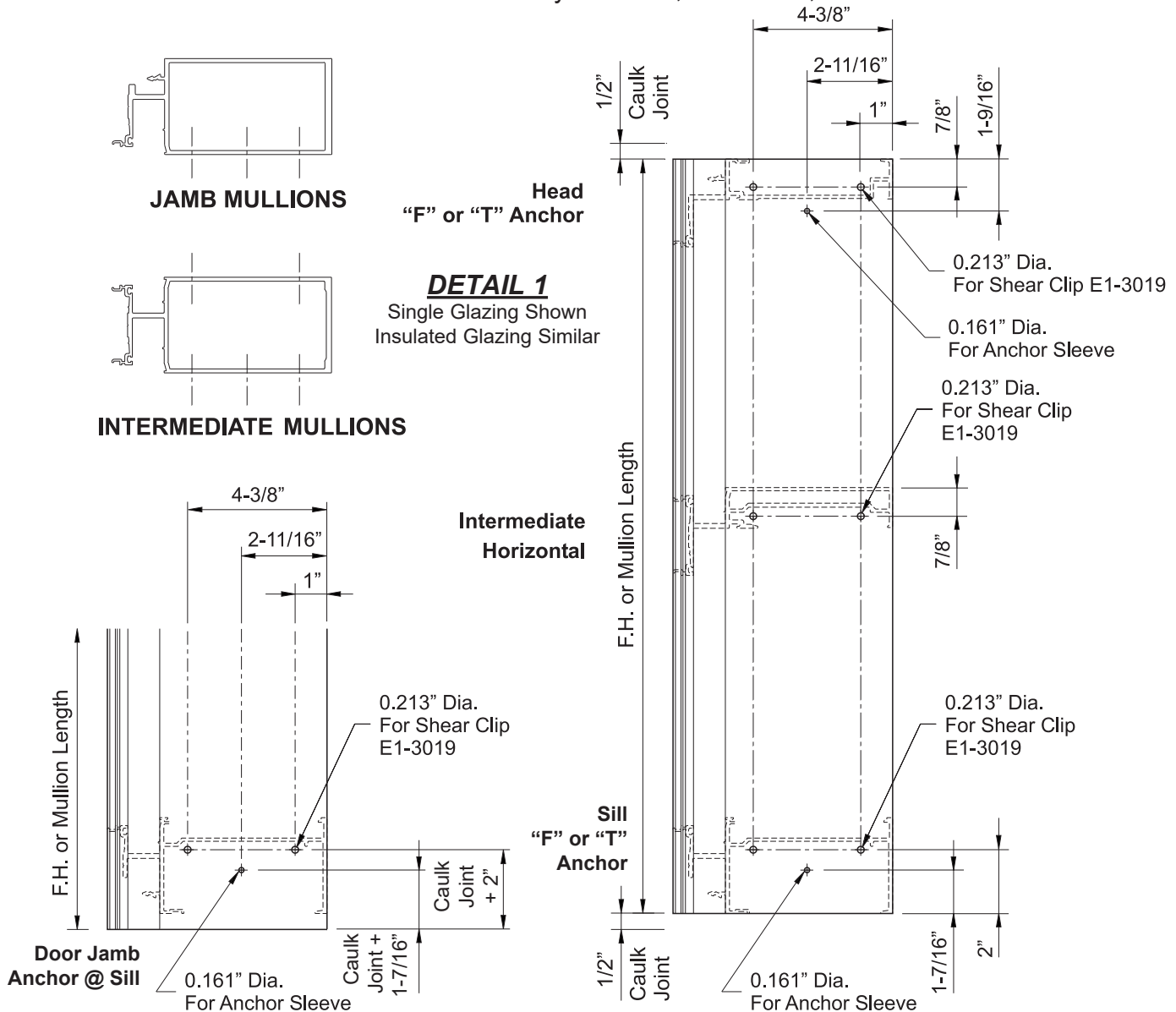
**Note:** Door jamb mullions are sealed directly against the sill substrate without a shim space at that location.

#### STEP 2

-Mullion hole locations for attachment of shear block, E1-3019, are shown below:

-Locate and drill holes in vertical and jamb mullions at the locations shown in **Detail 1**, or use a short piece of head, horizontal and sill with shear block attached as a template.

**Note:** Mullion hole locations and diameters vary for head, horizontal, and sill conditions.



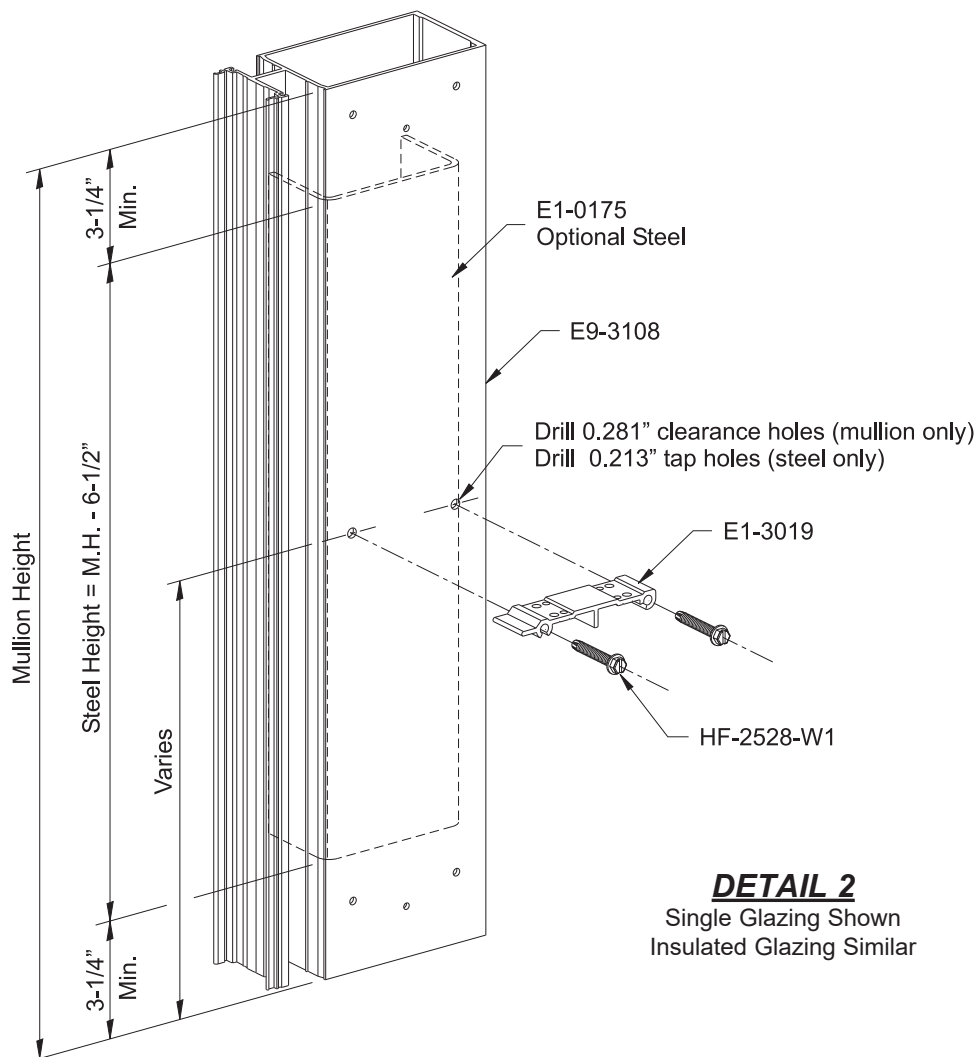
## FRAME FABRICATION

### STEP 3 USING ALTERNATE REINFORCEMENT

- Reference your shop drawings for the location of horizontals. Steel channels are always fastened through the shear block.
- At shear block locations, drill a 0.281" dia. (#9/32 drill bit) clearance hole through the mullion only. Be careful not to drill a hole in the steel channel.
- Reinforcing must allow clearance for anchor sleeve; locate reinforcing a minimum of 3-1/4" from the end of the mullion.
- Drill 0.213" diameter (#3 drill bit) tap holes in the steel channel through the shear block holes.
- Attach shear block, E1-3019 using two HF-2528-W1 Type F fasteners.

See **Detail 2**.

**Note:** Steel reinforcement requirements must be determined by a qualified engineer.



#### **DETAIL 2**

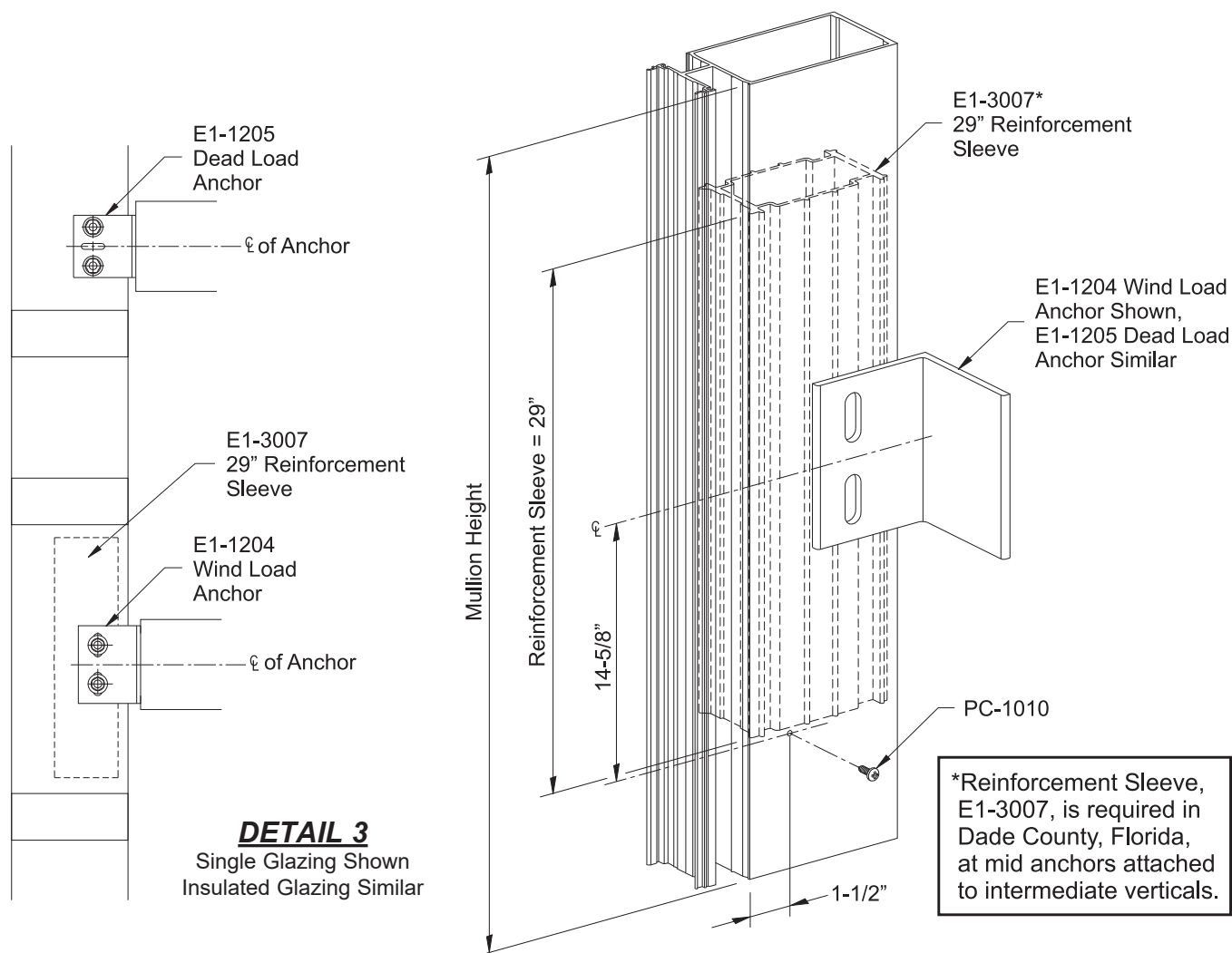
Single Glazing Shown  
Insulated Glazing Similar

## FRAME FABRICATION

### STEP 3 (CONTINUED) USING ALTERNATE REINFORCEMENT

#### Using Reinforcement Sleeve, E1-3007:

If the engineering calculations require the mullions to be reinforced at anchor locations with additional aluminum, E1-3007 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 E1-3007 at wind load or dead load anchors see **Detail 3**.
- 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\" and 1-1/2\" from the front of mullion to locate hole for PC-1010 fastener as a stop for E1-3007 reinforcement sleeve.
- Drill a 0.161\" diameter (#20 drill bit) hole into the vertical.
- Install PC-1010 fastener as shown.
- See **Detail 3**.



## FRAME FABRICATION

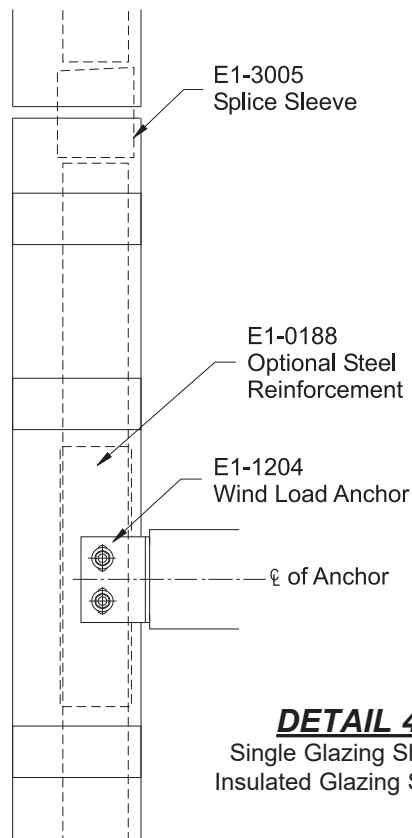
### STEP 3 (CONTINUED)

#### Using Alternate Reinforcement, E1-0188:

If engineering calculations require that twin or multiple span mullions be reinforced with additional steel, E1-0188 may be used. Checking stress levels at point load areas will require different anchors. A qualified engineer should do these calculations.

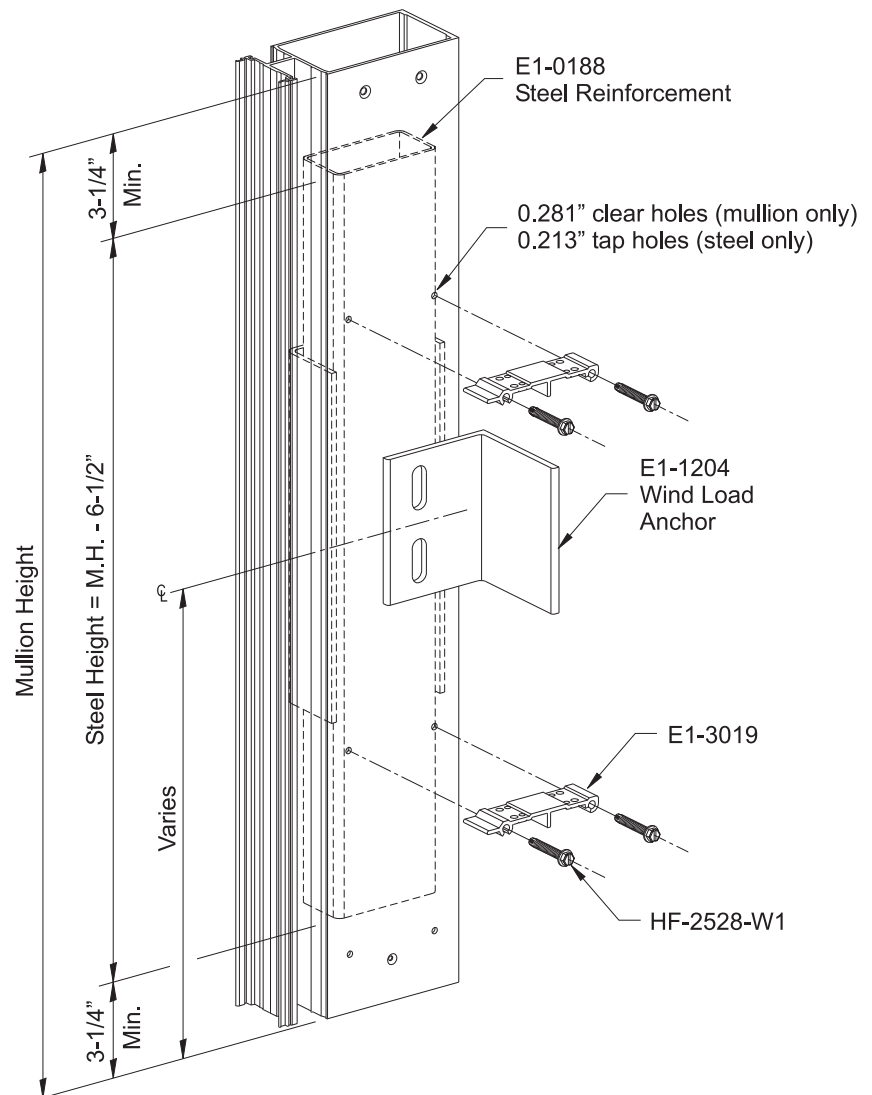
- Reference your shop drawings for the location of horizontals. Steel reinforcement is always fastened through the shear block, E1-3019.
- Drill a 0.281" diameter hole in the vertical being careful not to drill a hole in the steel reinforcement. Reinforcing must allow clearance for anchor sleeve; locate reinforcing a minimum of 3-1/4" from the end of the mullion.
- Drill a 0.213" diameter (#3 drill bit) holes in the steel channel through the shear block holes.
- Attach shear block, E1-3019 using two HF-2528-W1 Type F fasteners.

See **Detail 4**.



**DETAIL 4**  
Single Glazing Shown  
Insulated Glazing Similar

- When locating E1-0188 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.



## FRAME FABRICATION

### STEP 4

#### SHEAR BLOCKS FOR HORIZONTALS

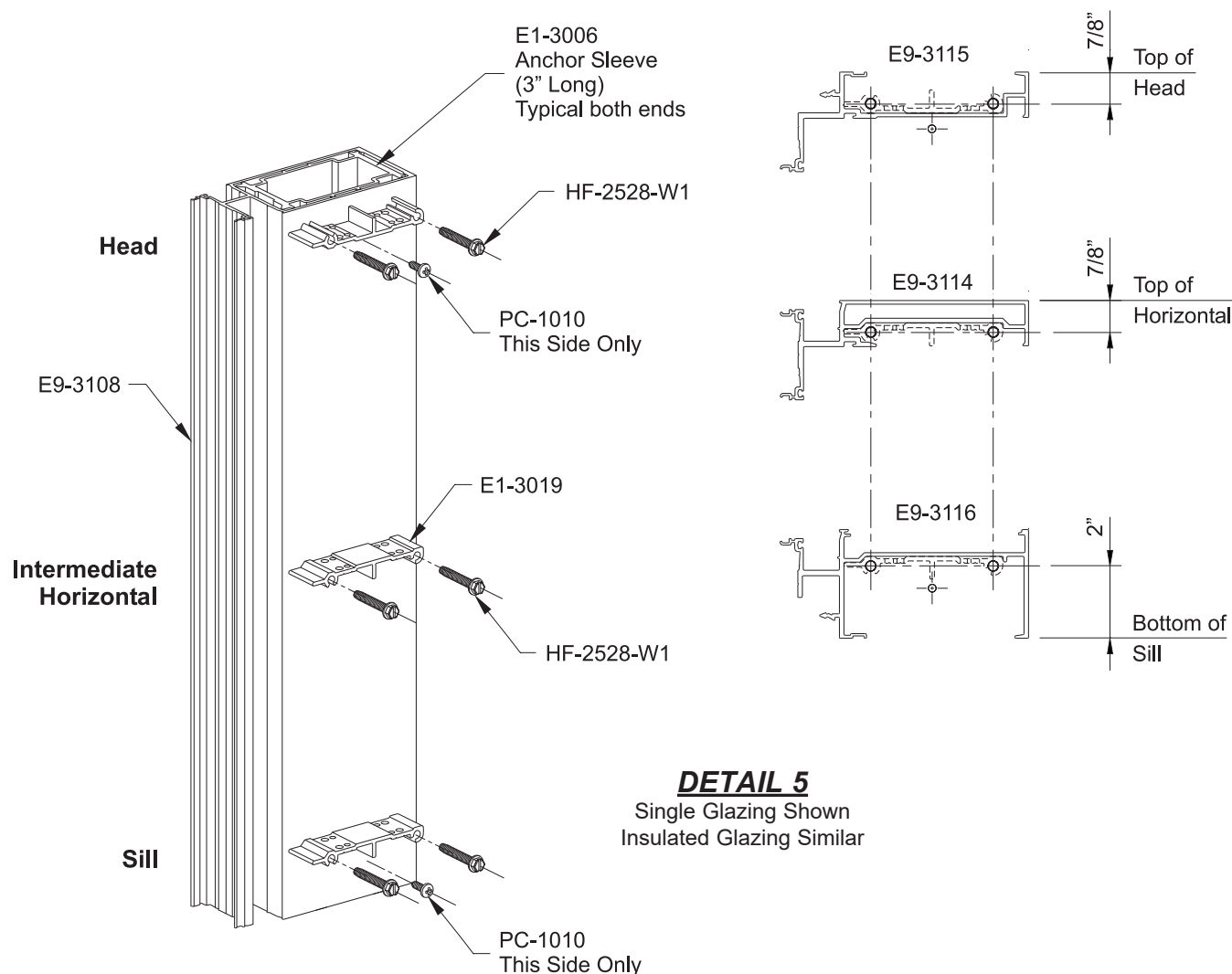
Anchor sleeve, E1-3006, centers the “F” and “T” mullion end anchors and must be installed before attaching shear blocks to the vertical members.

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

Shear blocks, E1-3019, are used to attach horizontal members to the jamb and intermediate mullions.

- Fasten shear blocks to the mullion with two HF-2528-W1 fasteners per block.

See **Detail 5**.



## FRAME FABRICATION

### STEP 5

### FABRICATE HORIZONTAL MEMBERS

- Cut head, horizontal, and sill members to the daylight opening between mullions.
- Cut all flush fillers and interior covers to the daylight opening minus(-) 1/32".

**Note:** Flush fillers and interior covers are not required at spandrel conditions.

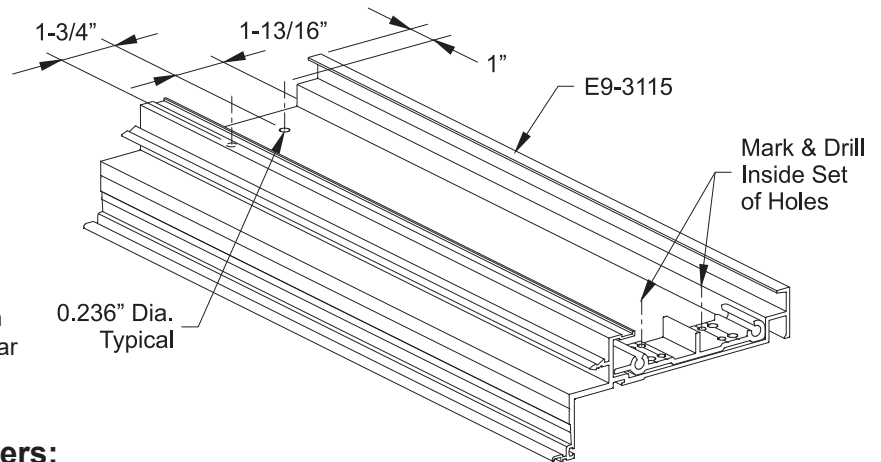
#### For Head Members:

- Use shear block, E1-3019, positioned against the edge of the mullion and pulled to the front of the mullion as a guide to locate holes for shear block attachment.
- Position center punch over inside set of shear block holes to mark the hole locations.
- Remove the shear block and drill **0.236" diameter** (#B drill bit) holes in the sill member.
- Position the shear block on the other end of the mullion and repeat this step.

See **Detail 6**.

**Note:** Drill appropriate size clearance holes at each end of the mullion according to shop drawings or engineering calculations to clear anchor bolts and nuts.

**DETAIL 6**  
Single Glazing Shown  
Insulated Glazing Similar

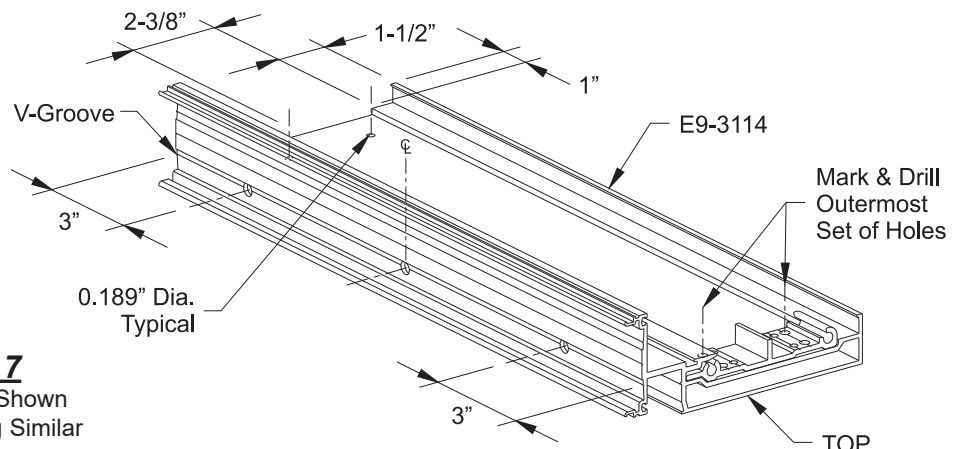


#### For Intermediate Horizontal Members:

- Turn the horizontal over so that the top is facing down.
- Use shear block, E1-3019, as previously instructed to locate holes for shear block attachment.
- Position center punch over outermost shear block holes to locate the hole locations.
- Remove the shear block and drill **0.189" dia.** (#12 drill bit) holes through the web of the mullion only.
- Repeat this step on the other end of the mullion.
- Drill a 0.313" diameter (#O drill bit) weep hole 3" from each end of the sill and one in the middle of the sill along the bottom "V"-groove on the face of the sill.

See **Detail 7**.

**DETAIL 7**  
Single Glazing Shown  
Insulated Glazing Similar



## FRAME FABRICATION

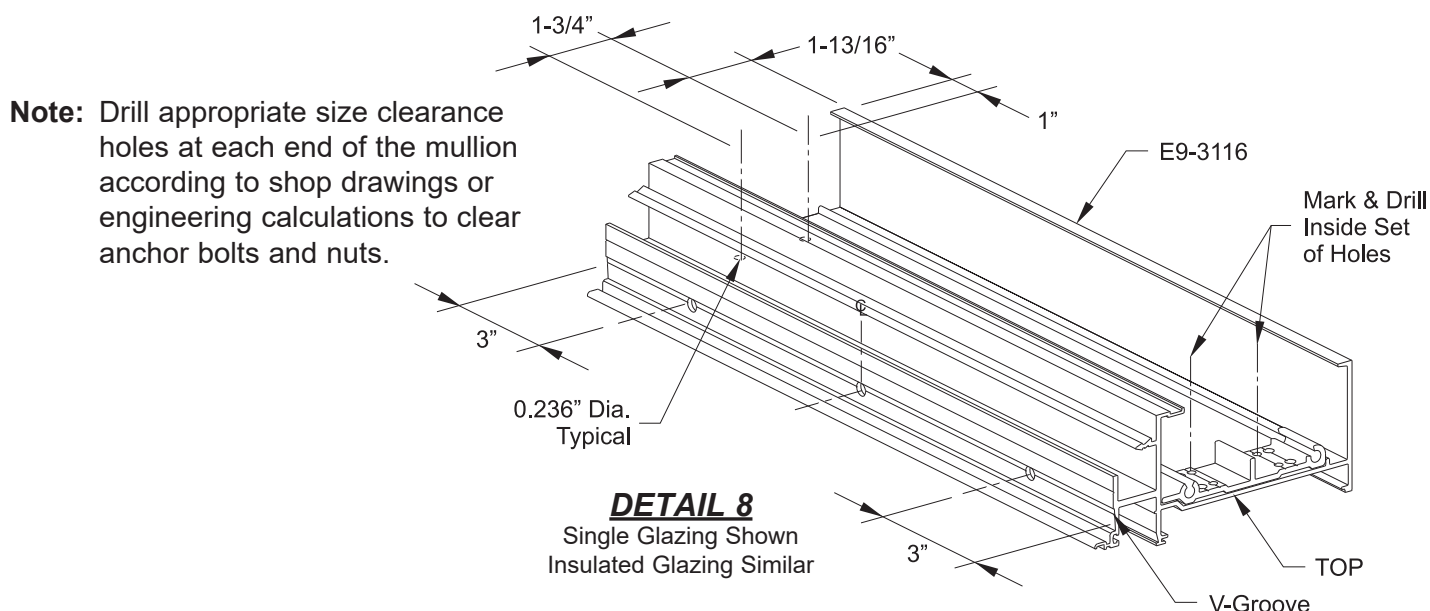
### STEP 5 (Continued)

### FABRICATE HORIZONTAL MEMBERS

#### For Sill Members:

- Turn sill over so that the top of the sill is facing down.
- Use shear block, E1-3019, as previously instructed to locate holes for shear block attachment.
- Position center punch over inside set of holes to mark hole locations.
- Remove shear block and drill 0.236" diameter (#B drill bit) holes in the sill member.
- Repeat this step on the other end of the mullion.
- Drill a 0.313" diameter (#O drill bit) weep hole 3" from each end of the sill and one in the middle of the mullion along the bottom "V"-groove on the face of the sill.

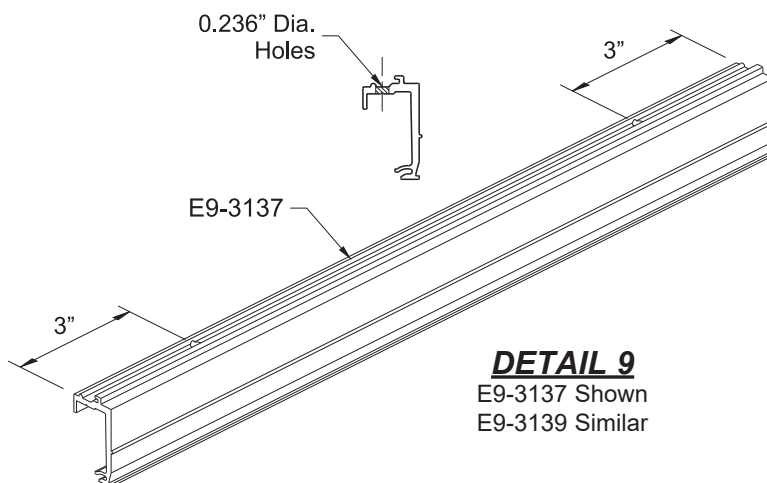
See **Detail 8**.



#### For Glass Stops:

- Cut all glass stops to the daylight opening minus(-) 1/32".
  - Drill 0.236" diameter (#B drill bit) holes 3" from each end along the "V"-Groove.
- See **Detail 9**.

**Note:** Please refer to shop drawings for appropriate glazing details.



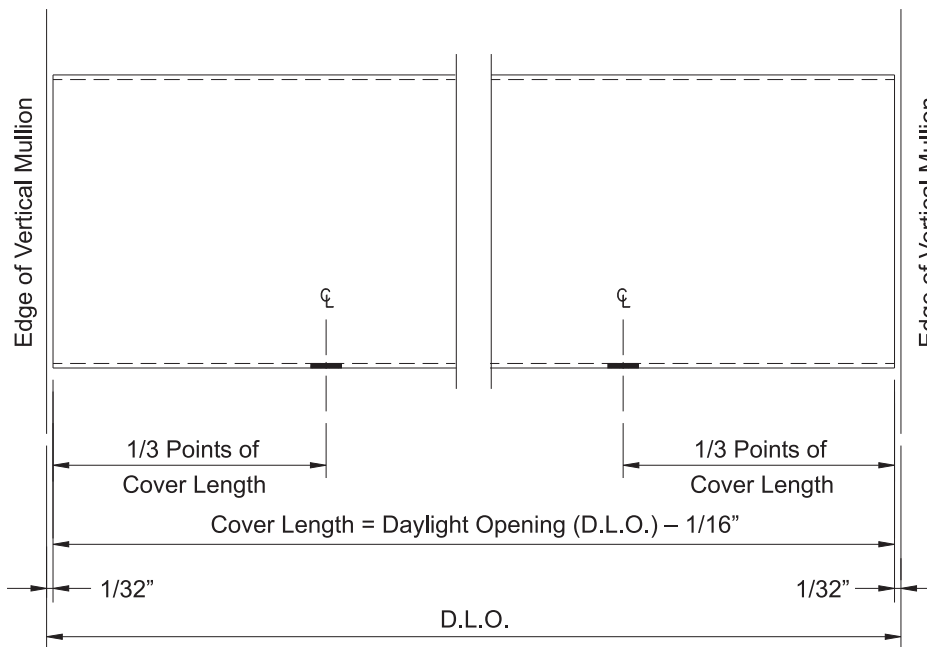
## FRAME FABRICATION

### STEP 6

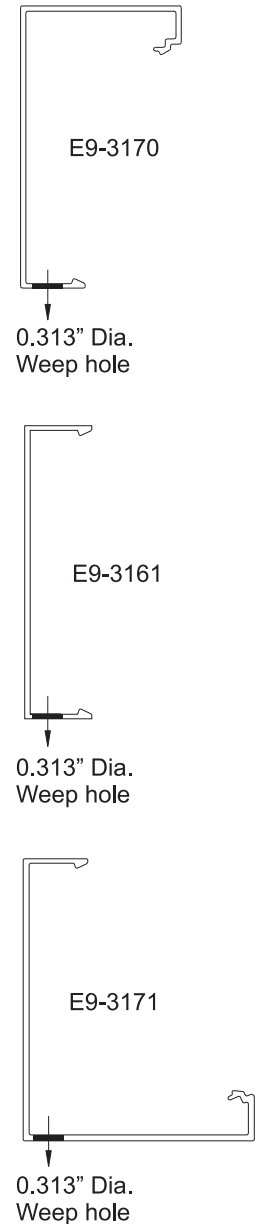
#### FABRICATE HORIZONTAL FACE COVERS

- Cut all horizontal covers to the daylight opening between mullions minus(–) 1/16".
- Drill two 0.313" diameter weep holes at 1/3 points of cover as shown.

See **Detail 10**.



**DETAIL 10**



### STEP 7

#### FABRICATE VERTICAL FACE COVERS

- Cut vertical covers to the same length as the mullions **unless the mullions are spliced**. If the mullions are spliced, cut covers to accommodate for expansion joint or butt splice.

See **Detail 12** on **Page 15** (Typical Mullion Splice).

## FRAME FABRICATION

### STEP 8

### FABRICATE MULLIONS FOR SPLICES

#### Splice locator screw:

- Measure down 2-5/8" on the side of the vertical and in 1-1/2" from the front of the mullion and mark the hole location.
- Drill a 0.161" diameter (#20 drill bit) diameter hole for the splice locator screw.

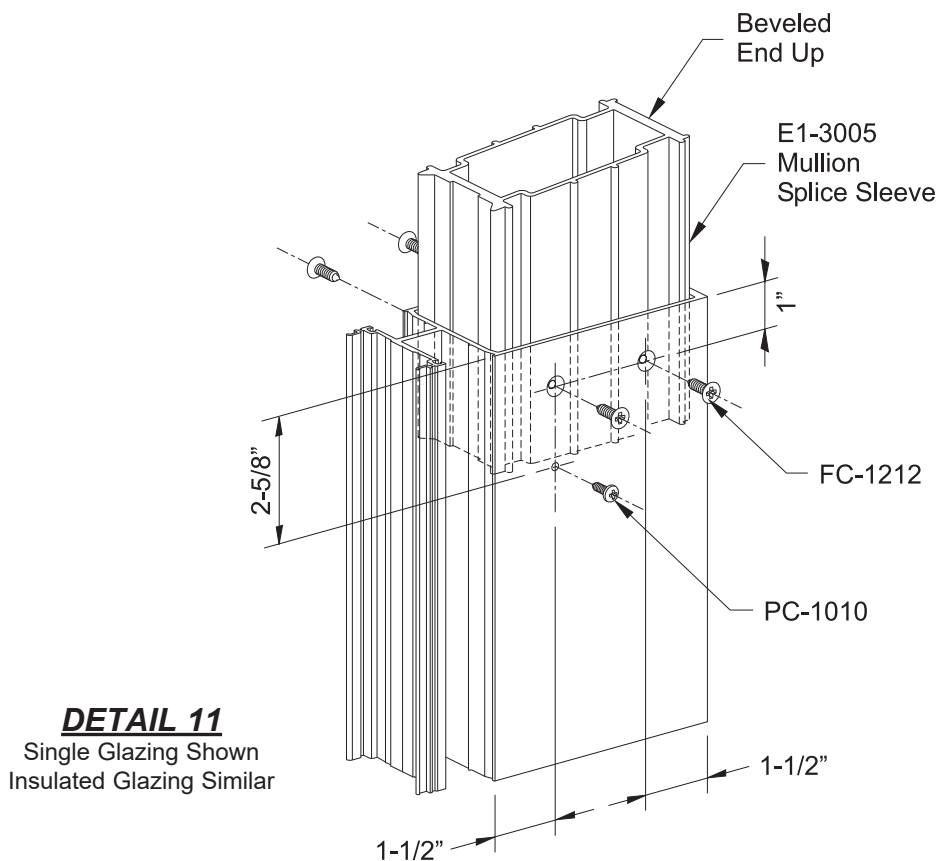
#### Splice sleeve attachment fasteners:

- 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) PC-1010 fastener into the side 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 11**.



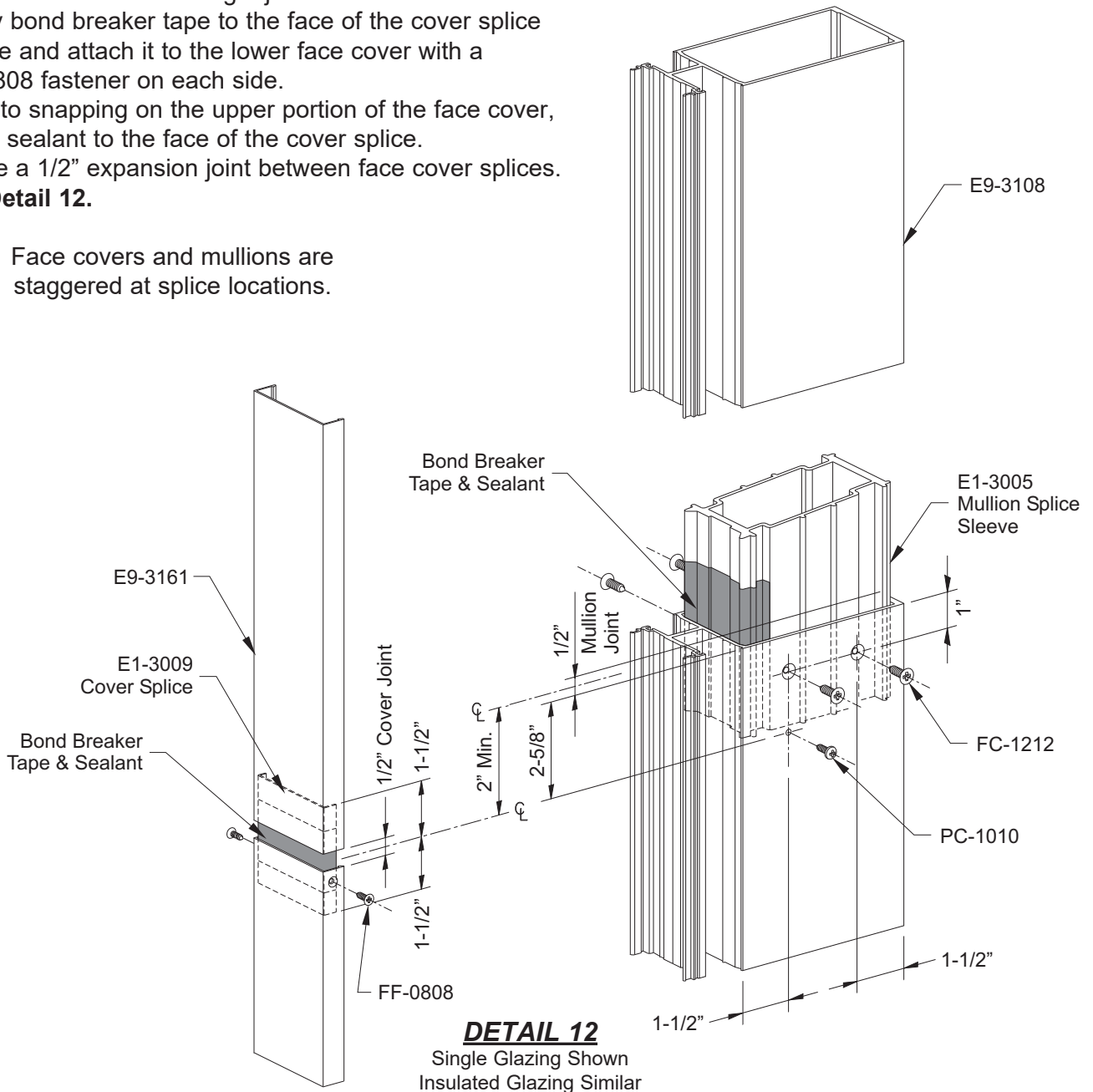
## FRAME INSTALLATION

### STEP 9

#### TYPICAL MULLION SPLICE

- 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.
- 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 sealant to the face of the cover splice.
- Leave a 1/2" expansion joint between face cover splices. See **Detail 12**.

**Note:** Face covers and mullions are staggered at splice locations.



## FRAME INSTALLATION

### STEP 10

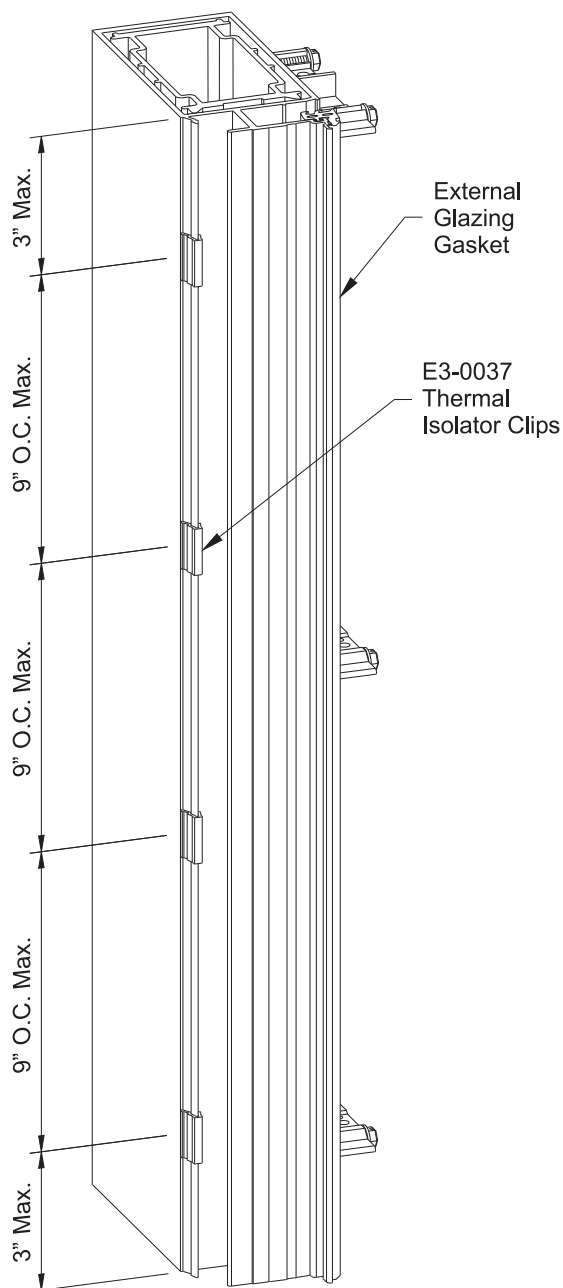
#### INSTALL EXTERIOR GLAZING GASKETS & THERMAL ISOLATOR CLIPS AT JAMBS

-Cut vertical external glazing gaskets to the mullion length and install into jamb gasket reglets.  
Be careful not to stretch the gaskets when installing.

-Snap the thermal isolator clips, E3-0037, on the jamb mullions 3" from each end and then 9" O.C. maximum.  
See **Detail 13**.

**Caution:** Do not attach face cover until jamb is anchored and the perimeter is caulked.

**DETAIL 13**



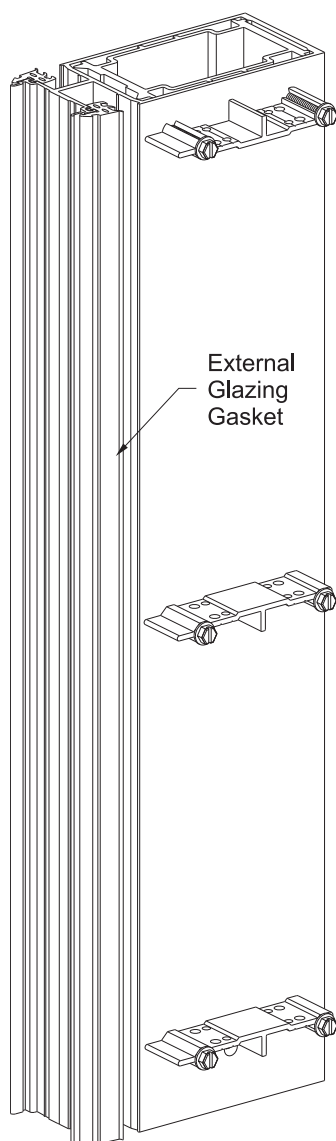


## FRAME INSTALLATION

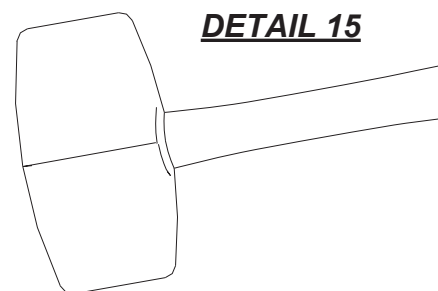
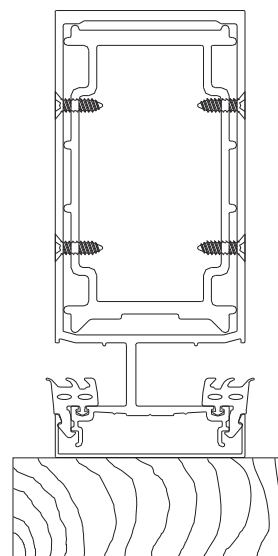
### STEP 11 INSTALL EXTERIOR GLAZING GASKETS AT INTERMEDIATE MULLIONS

-Cut vertical external glazing gaskets to the mullion length and install into gasket reglets.  
Be careful not to stretch the gaskets when installing.

See **Detail 14**.



**DETAIL 14**



**DETAIL 15**

### STEP 12 INSTALL INTERMEDIATE MULLION FACE COVERS

-Snap on exterior vertical covers, E9-3161, using a mallet and a clean scrap piece of lumber.  
-Carefully tap in the vertical face cover; start at one end work down towards the other end.  
Make sure the face cover is fully engaged with the exterior glazing gaskets.

See **Detail 15**.

**Caution:** Do not attach face covers to jamb members at this point.

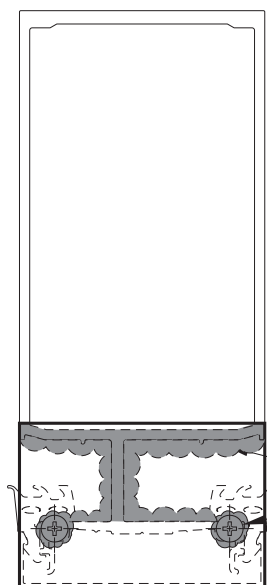
## FRAME INSTALLATION

### STEP 13

#### INSTALL MULLION END CAPS

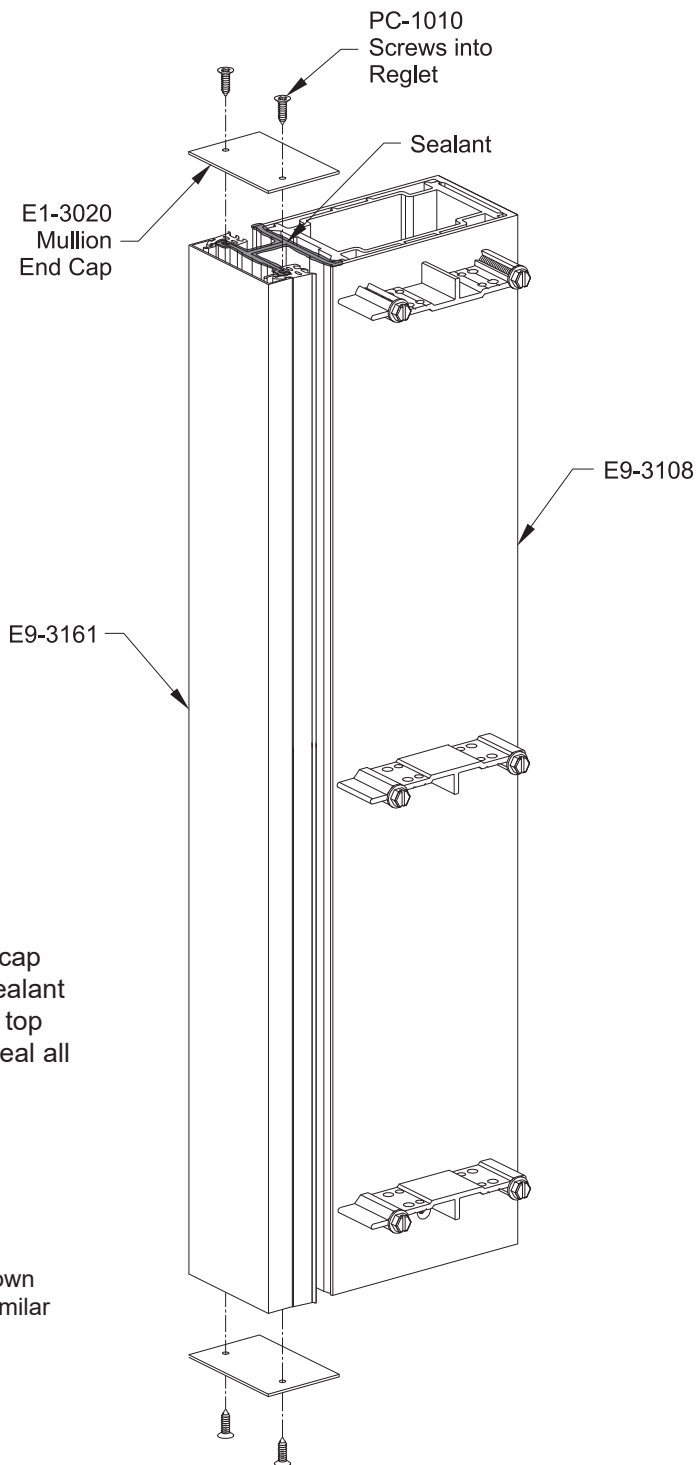
- Apply sealant to reglet opening and edge of mullion prior to installing mullion end caps, E1-3020 for single glazing or E1-3021 for insulated glazing.
- Prior to erecting mullions and jambs, install mullion end caps using two PC-1010 fasteners at each end of the mullion.
- Apply and tool sealant to all screw heads.

See **Detail 16**.



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

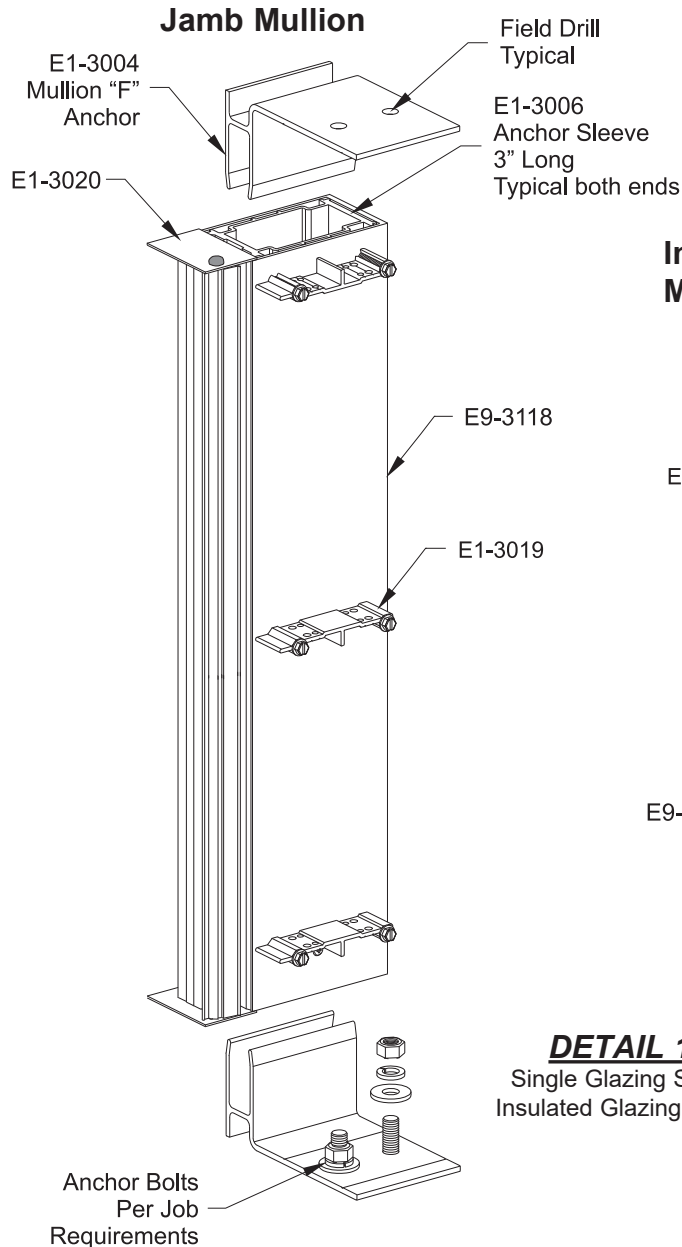
***DETAIL 16***  
Single Glazing Shown  
Insulated Glazing Similar



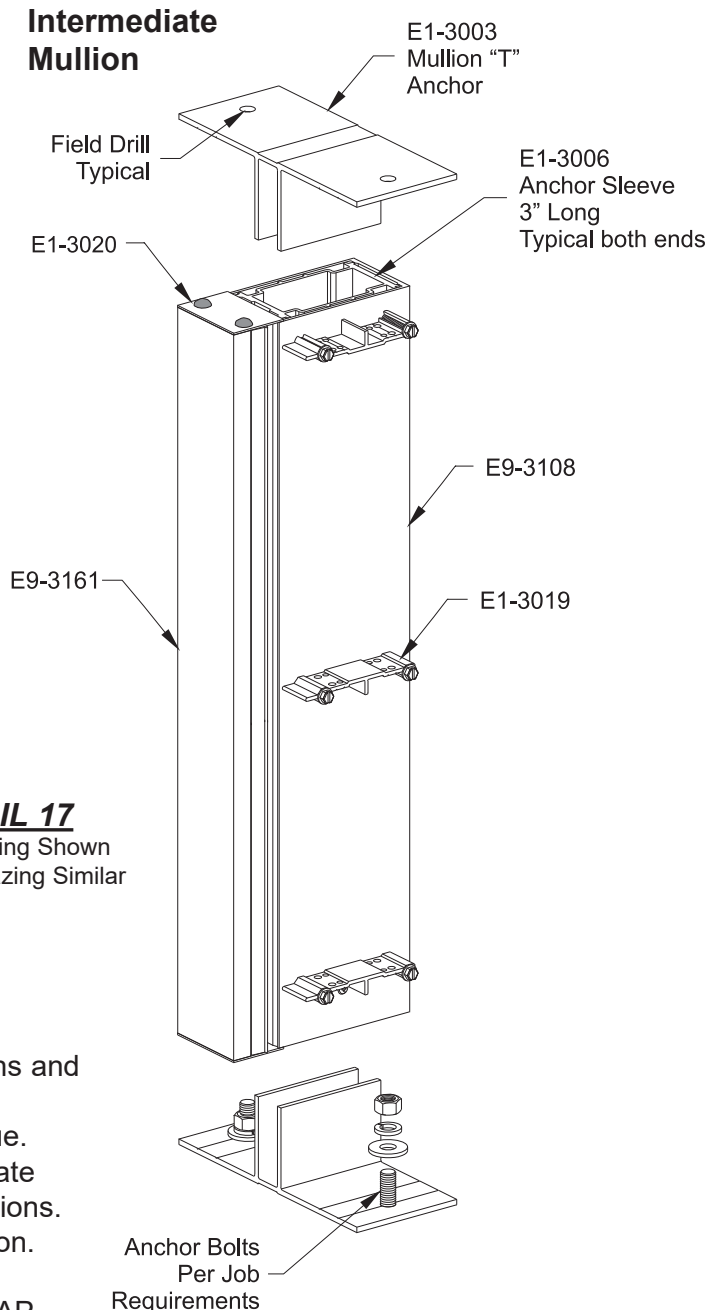
**CAUTION:** Make sure that mullion end cap location does not interfere with the installation of mullion end anchors.

## FRAME INSTALLATION

### STEP 14 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.



**DETAIL 17**  
Single Glazing Shown  
Insulated Glazing Similar

-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" and "F" anchors for appropriate anchor fasteners according to engineering calculations. Consult YKK AP if load requirements are in question.

-Install anchor fasteners per job requirements.

**Note:** Anchor fasteners are not supplied by YKK AP. See **Detail 17**.

## FRAME INSTALLATION

### STEP 14A VERTICAL INSTALLATION AT DOOR JAMB END ANCHORS

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

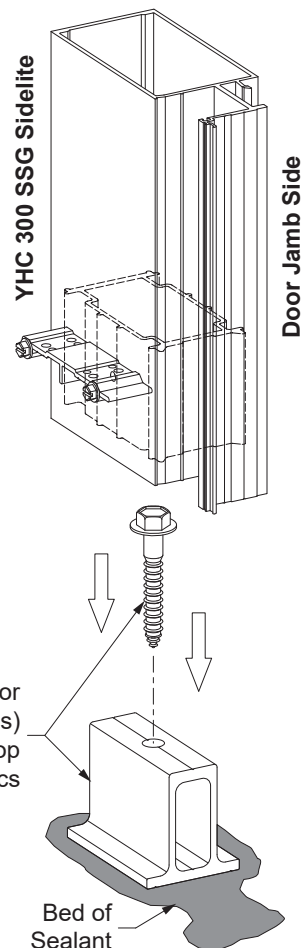
- Locate the mullion anchor for the door jamb and install it to the substrate according to the approved shop drawings and P.E. calculations.
  - Clean all contact surfaces as recommended by sealant manufacturer.
  - Set the mullion on the anchor, directly onto the sill substrate in a bed of sealant. Avoid using shims at this location.
- See **Detail 18**.

**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.

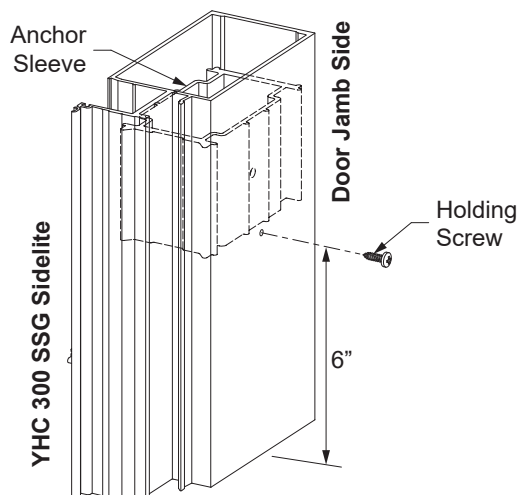
See **Detail 18A**.

- 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.

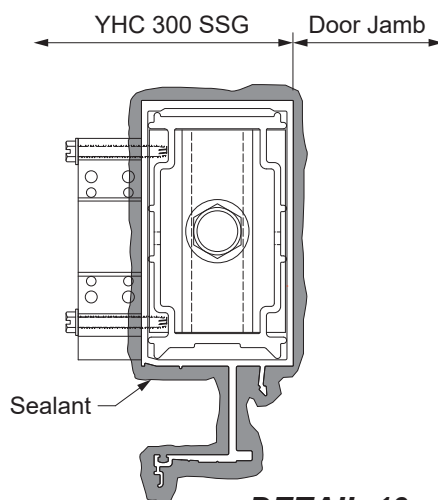
See **Detail 19**.



**DETAIL 18**  
Single Glazing Shown  
Insulated Glazing Similar



**DETAIL 18A**  
Single Glazing Shown  
Insulated Glazing Similar



**DETAIL 19**  
Single Glazing Shown  
Insulated Glazing Similar

## FRAME INSTALLATION

### STEP 15

### INSTALL WIND LOAD/DEAD LOAD ANCHORS

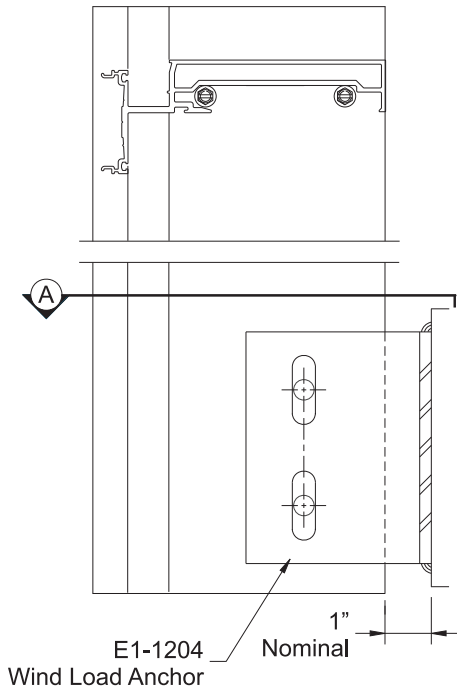
-Install steel mullion mid anchors:

Wind Load Anchor, E1-1204. See **Detail 20**.

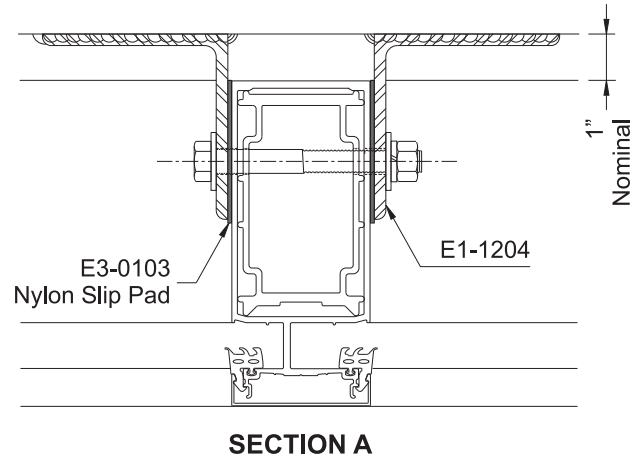
Dead Load Anchor, E1-1205. See **Detail 21**.

**Note:** Required anchors and bolt size will vary based on project requirements.

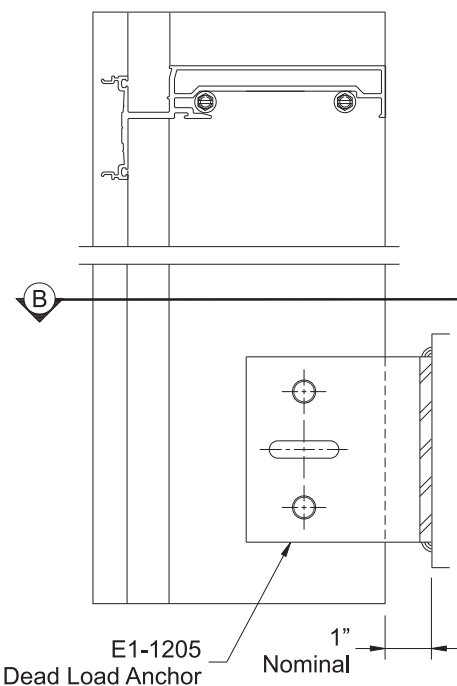
Consult a qualified engineer or YKK AP.



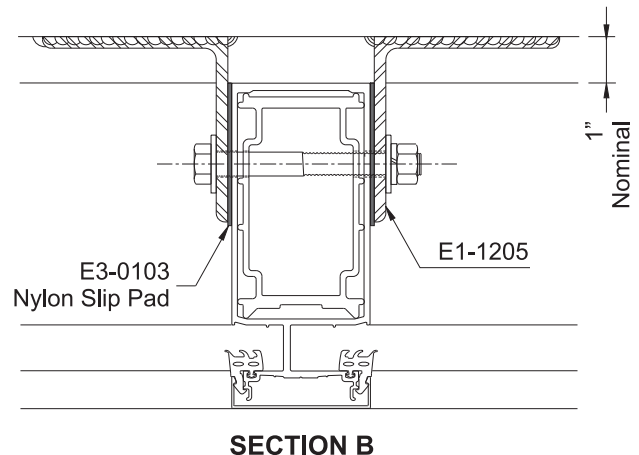
**DETAIL 20**



- 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, E3-0103, **must** be installed between mullion and mid anchors.



**DETAIL 21**



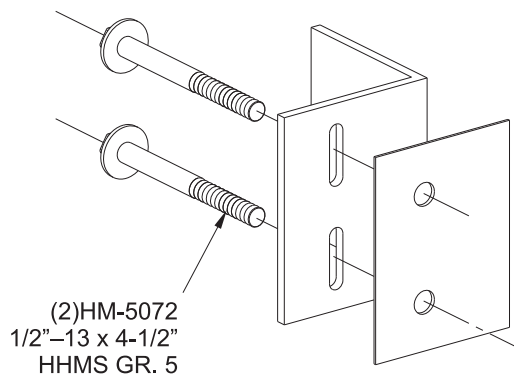
## FRAME INSTALLATION

### STEP 15 (CONTINUED)

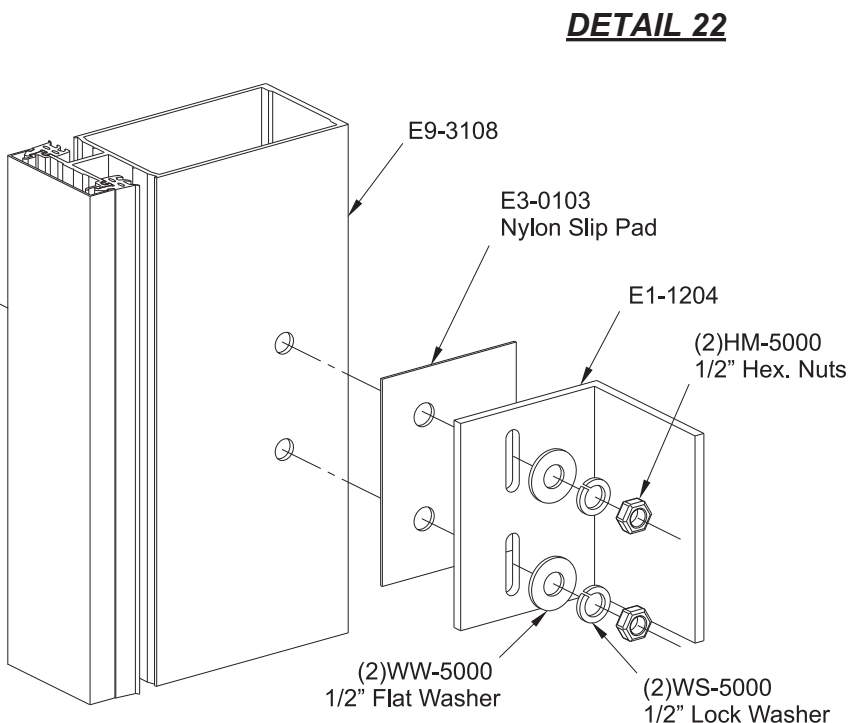
#### INSTALL WIND LOAD/DEAD LOAD ANCHORS

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

#### TYPICAL WIND LOAD ANCHOR

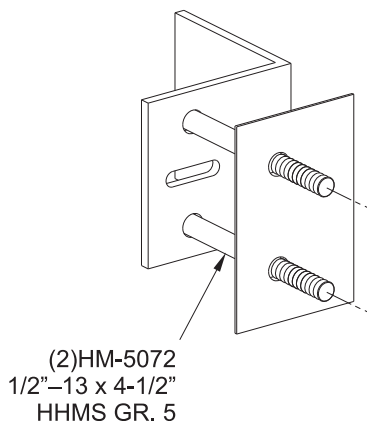


-Drill holes in the mullion in the center of the slots to permit the frame to expand and contract.

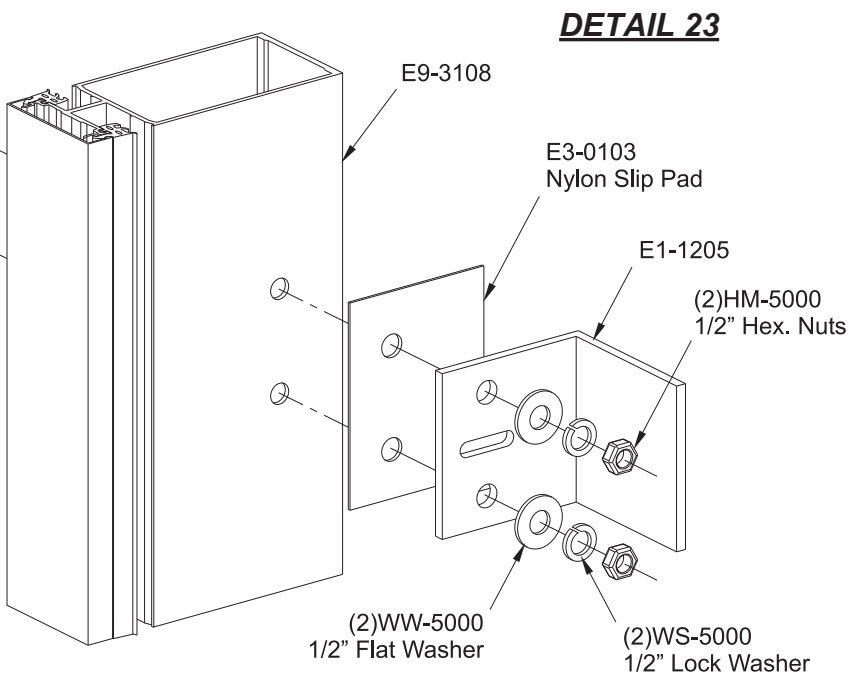


#### DETAIL 22

#### TYPICAL DEAD LOAD ANCHOR



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



#### DETAIL 23

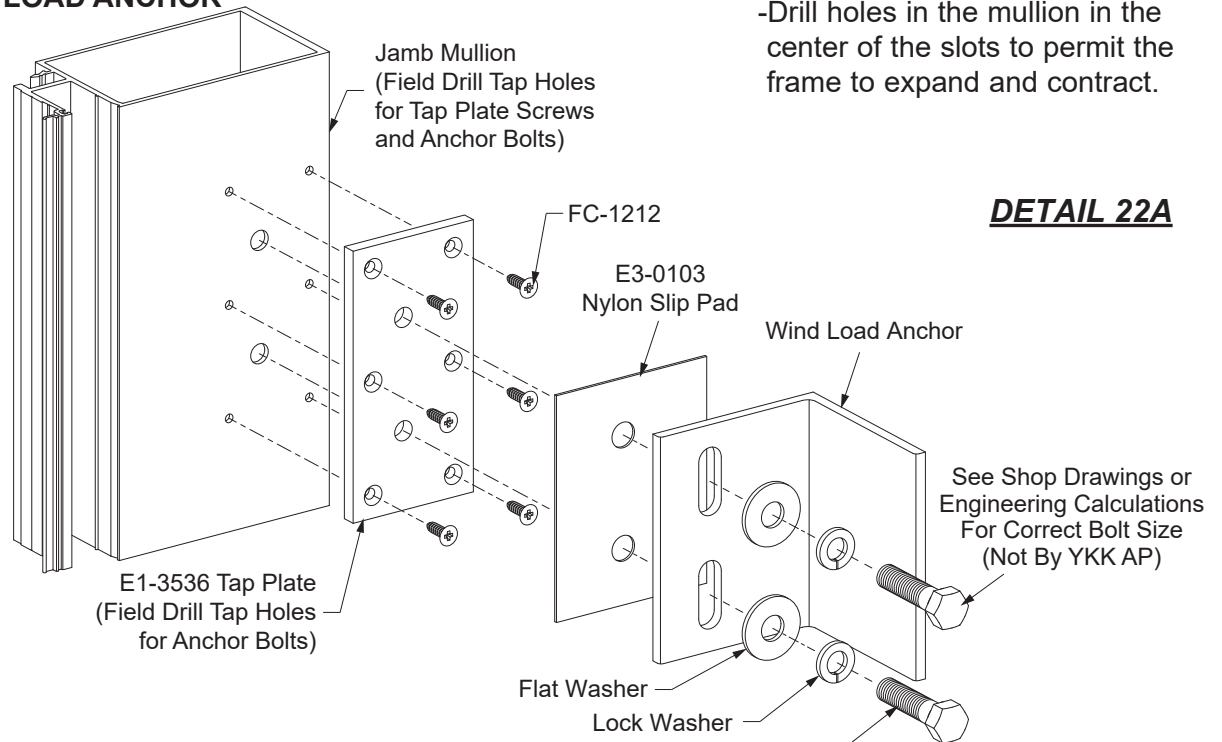
## FRAME INSTALLATION

### STEP 15 (CONTINUED)

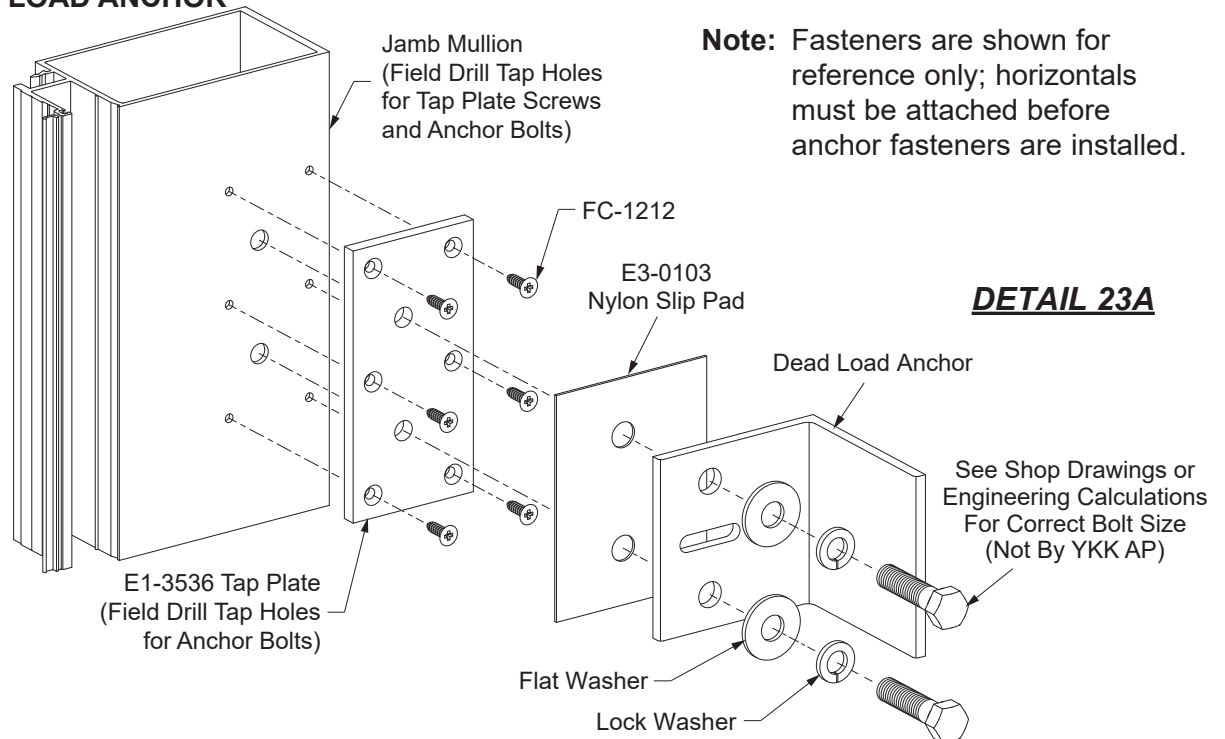
### INSTALL WIND LOAD/DEAD LOAD ANCHORS

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

#### JAMB WIND LOAD ANCHOR



#### JAMB DEAD LOAD ANCHOR



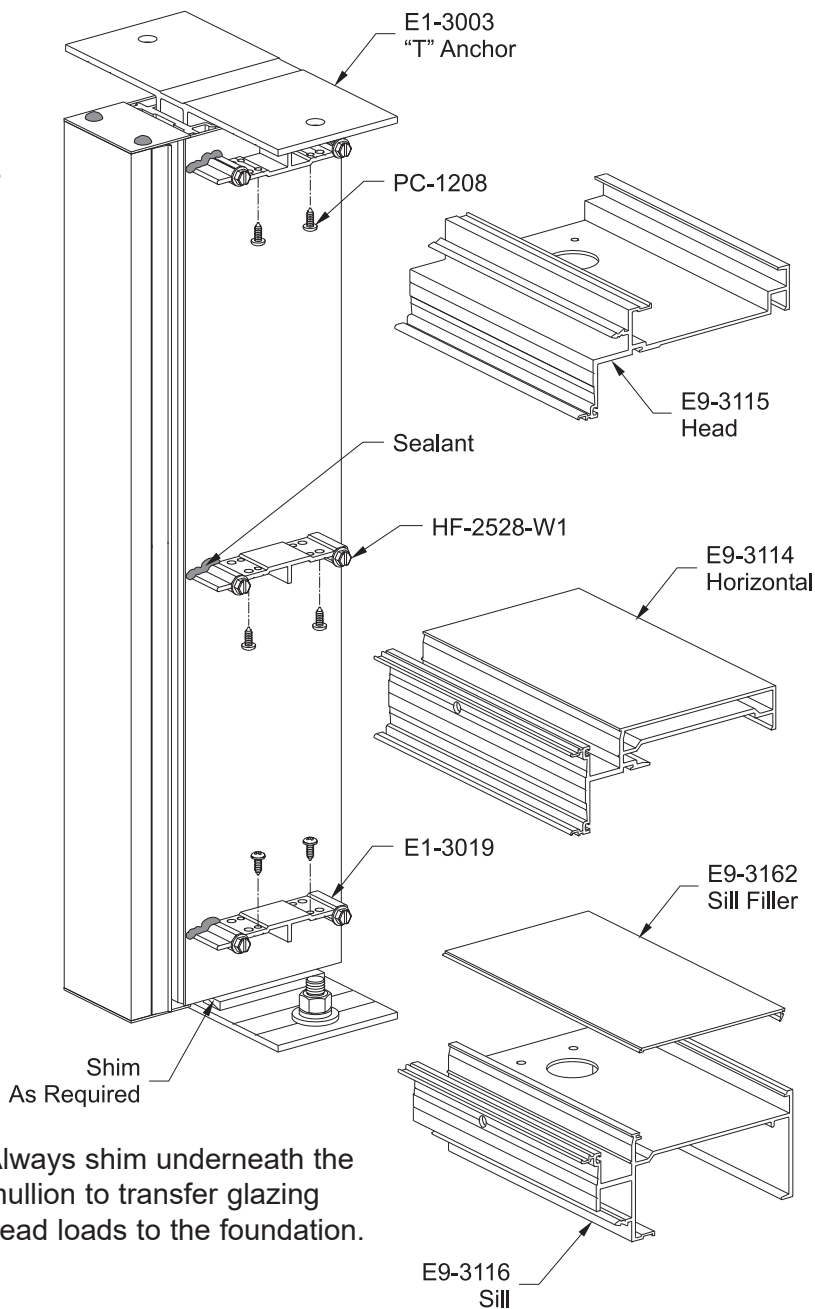
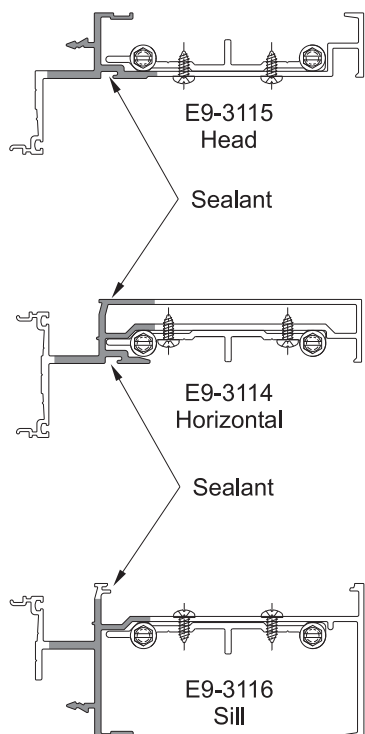
## FRAME INSTALLATION

### STEP 16

### ATTACH HORIZONTAL MEMBERS

- Just prior to attaching the horizontals to the mullion, apply sealant to front of the shear blocks as shown in **Detail 24**.
- Apply sealant to the ends of the horizontals as shown below before attaching to the shear blocks.
- Attach the head, horizontal, and sill members to the shear blocks with two PC-1208 fasteners at each end.
- Tool and wipe away any excess sealant. See **Detail 24**.

**Note:** Before applying any sealant, clean aluminum surfaces using cleaner and method approved by Dow Corning for 795 sealant.



**Note:** Always shim underneath the mullion to transfer glazing dead loads to the foundation.

### **DETAIL 24**

Single Glazing Shown  
Insulated Glazing Similar



## FRAME INSTALLATION

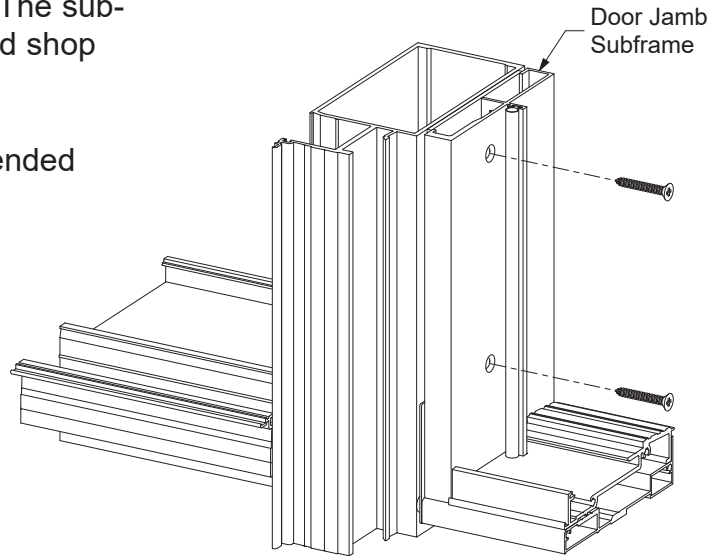
### STEP 17 INSTALL DOOR SUBFRAMES

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 sub-frame members are determined by the approved shop drawings.

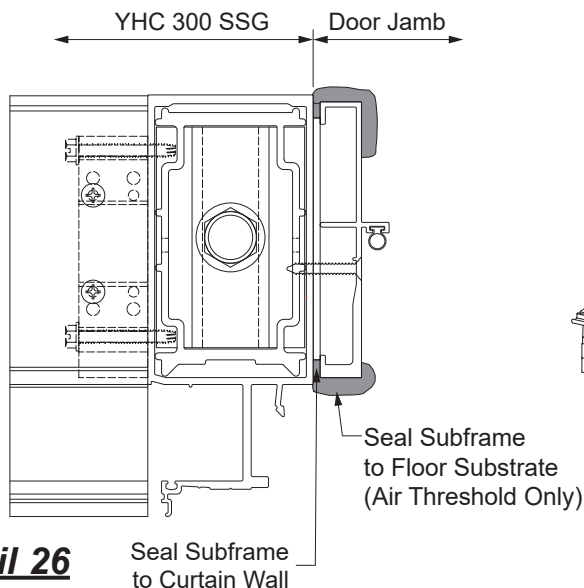
-Clean all sealant contact surfaces as recommended by the sealant manufacturer.

-Install the jamb subframe onto the mullion with fasteners according to the approved shop drawings and/or P.E. calculations. 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 25(A) & 26**.

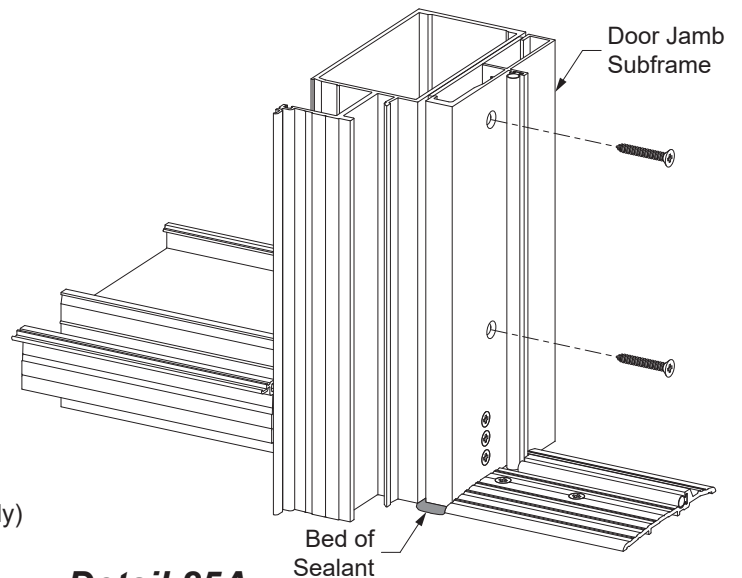


***Detail 25***  
Water-resistant  
Threshold Shown



***Detail 26***

Seal Subframe  
to Curtain Wall



***Detail 25A***  
Air-resistant  
Threshold Shown

## FRAME INSTALLATION

### STEP 18

#### APPLY PERIMETER SEALANT

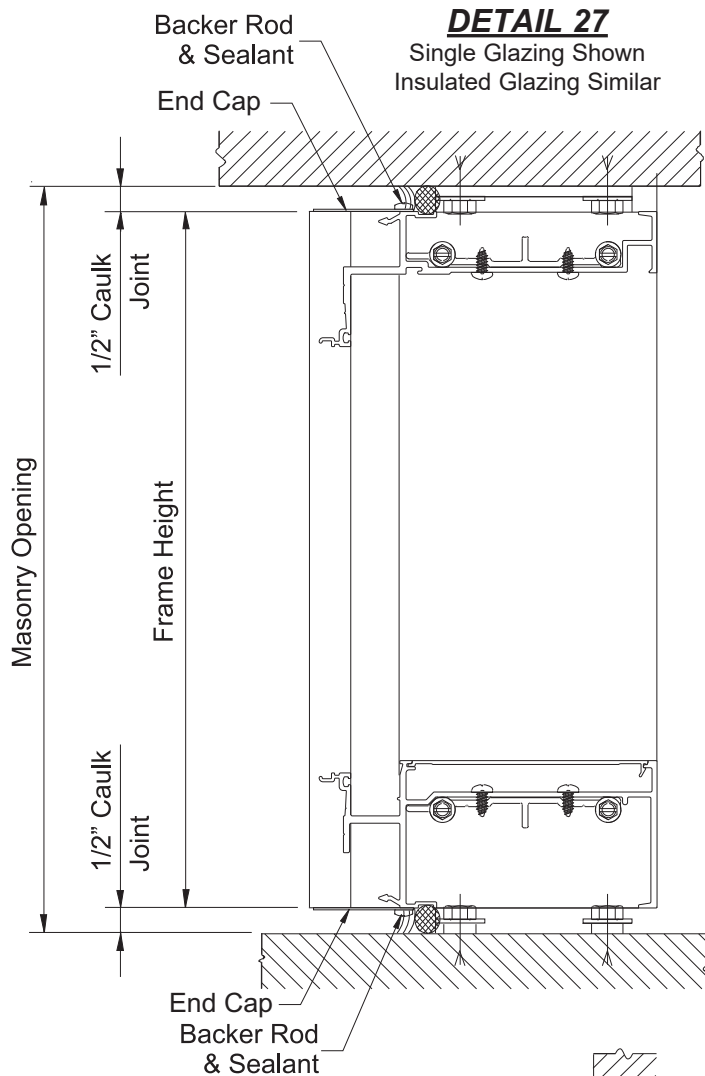
- Position backer rod around perimeter of frame.
  - Clean around perimeter of frame using cleaner and method approved by Dow Corning for 795 sealant.
  - Apply Dow Corning® 795 sealant to the perimeter of the frame. Make sure sealant does not contact the thermal isolator clips and extrusion leg.
  - Wipe off any excess sealant immediately.
- See **Detail 27**.

### STEP 19

#### INSTALL JAMB FACE COVERS

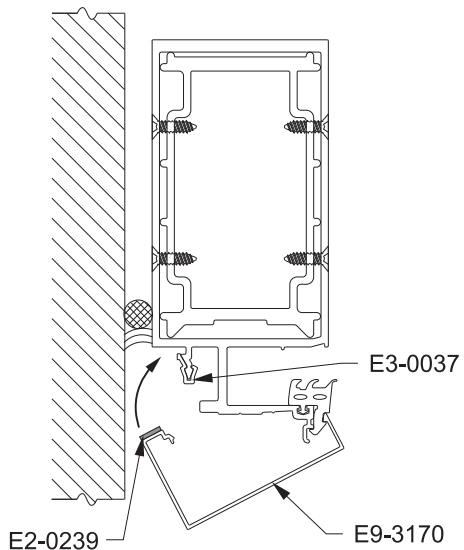
- Install isolator tape, E2-0239, onto the inside leg of the perimeter face cover, E9-3170 for single glazing or E9-3171 for insulated glazing.
- Install jamb face covers by first setting the cover on the glazing gasket and then rolling it over to engage with the thermal isolator clips, E3-0037.

See **Detail 28**.



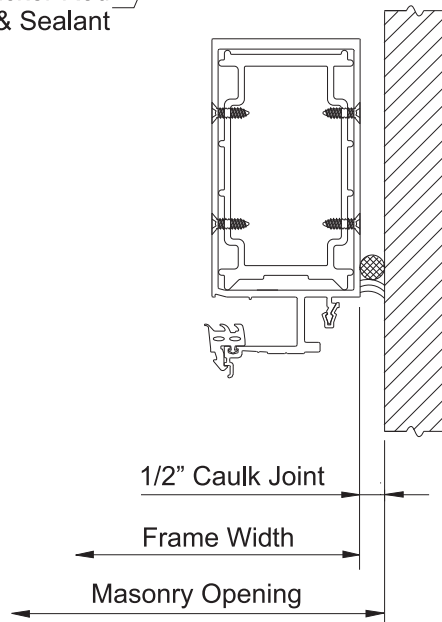
#### **DETAIL 27**

Single Glazing Shown  
Insulated Glazing Similar



#### **DETAIL 28**

Single Glazing Shown  
Insulated Glazing Similar



## GLAZING

### STEP 20 INSTALL JOINT PLUGS

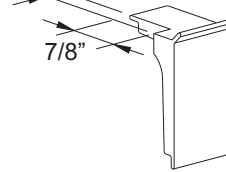
-The opening where the horizontal, head, and sill glazing pockets meets the vertical must be plugged and sealed with joint plugs E2-0374 (single), E2-0384 (insulating).

See **Detail 29**.

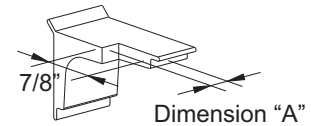
-Joint plugs must be notched around the vertical glazing gasket as shown in **Detail 30**.

-Refer to chart for notch size in relationship to glass thickness.

Dimension "A"

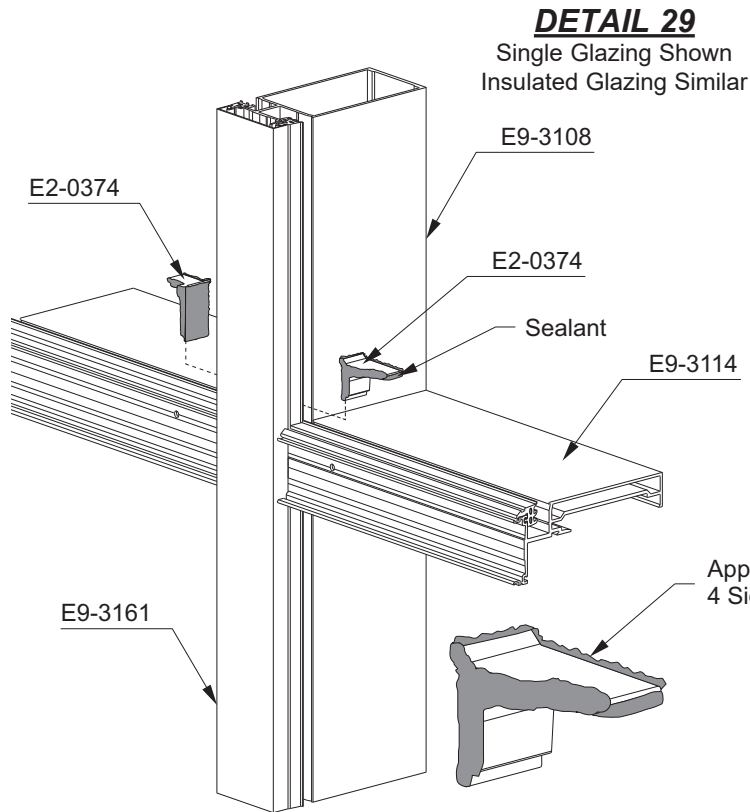


### **DETAIL 30**



GLASS THICKNESS	DIM "A" NOTCH
9/16"	1/4"
3/8"	5/16"
5/16"	3/8"
1/4"	1/2"

**Note:** Before applying any sealant, clean aluminum surfaces using cleaner and method approved by Dow Corning for 795 sealant.



### **DETAIL 29**

Single Glazing Shown  
Insulated Glazing Similar

- Apply sealant to all four contact sides of the joint plug.
- Install the joint plug into the cavity. Press down until the lip of the joint plug overlaps the top of the glazing pocket of the horizontal. See **Detail 33** on **Page 28**.
- Apply and tool sealant to completely cover the top of the joint plug.
- Tool the excess sealant along the edges of the joint plug to seal the cavity.

Apply Sealant to All  
4 Sides of Joint Plug

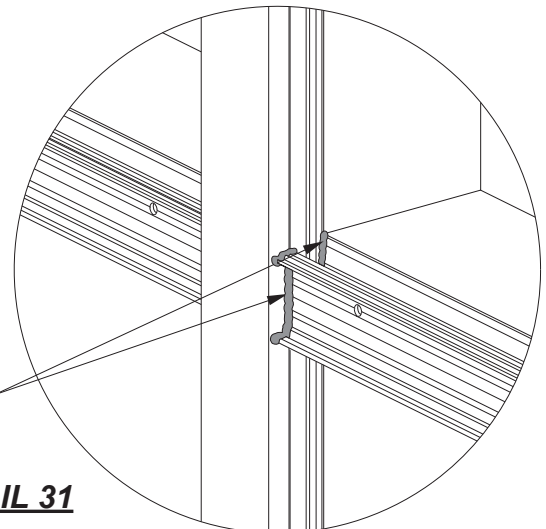
-Apply sealant to vertical to horizontal joints with Dow Corning® 795 sealant.  
-Tool the sealant where the face of the horizontal meets the vertical down to the end dam.

-Tool the sealant where the pressure plate meets the vertical face cover to complete the seal at this joint.

See **Detail 31**.

Apply & Tool Sealant  
to Cover Vertical to  
Horizontal Intersection

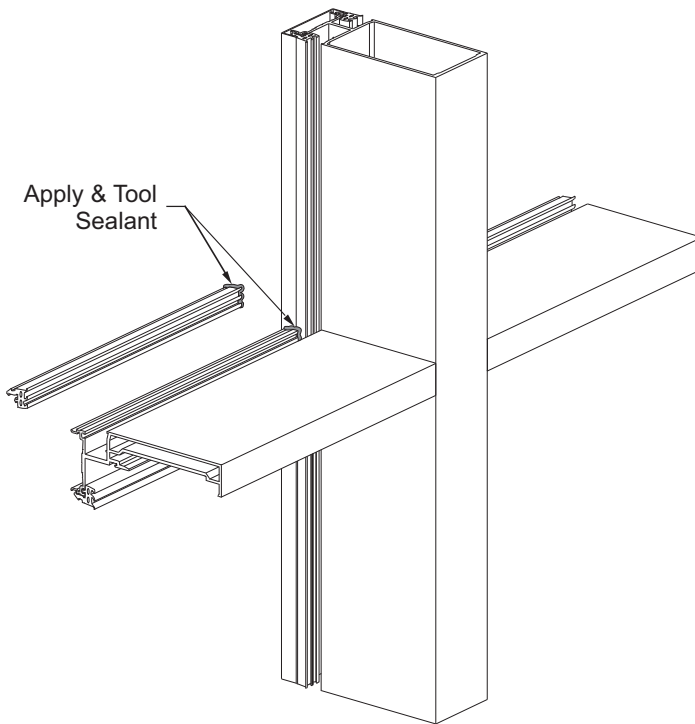
### **DETAIL 31**



## GLAZING

### STEP 21 INSTALL HORIZONTAL EXTERIOR GLAZING GASKETS

- Cut horizontal exterior gaskets to daylight opening plus(+) 3/16" extra for every foot of width.
- Apply sealant in the gasket reglets from the gasket corner 3" out in both directions.
- Install the horizontal exterior gaskets.
  - Apply sealant to each end of the horizontal gasket.
  - Insert the gasket into the reglet at each end first and then insert the gasket at the midpoint of the opening.
  - Push the gasket into the reglet starting at the midpoint and work towards each end.
- Tool the sealant at the gasket intersection.

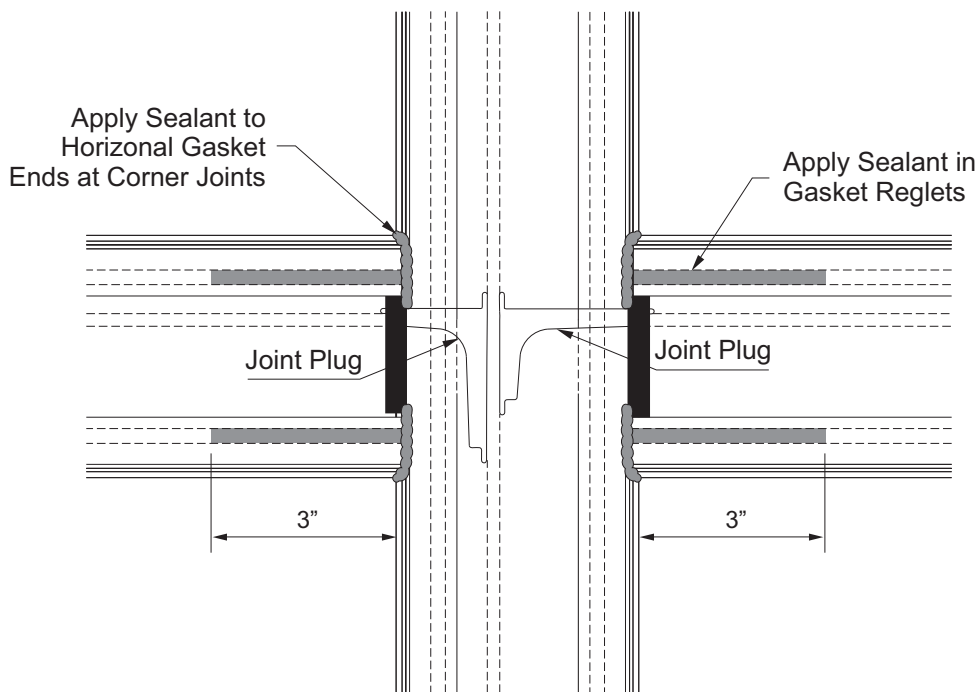


See **Detail 32**.

**Note:** Before applying any sealant, clean aluminum surfaces using cleaner and method approved by Dow Corning for 795 sealant.

#### **DETAIL 32**

Single Glazing Shown  
Insulated Glazing Similar



## GLAZING

### STEP 22 INSTALL HORIZONTAL FACE COVERS

#### For Intermediate Horizontal Covers:

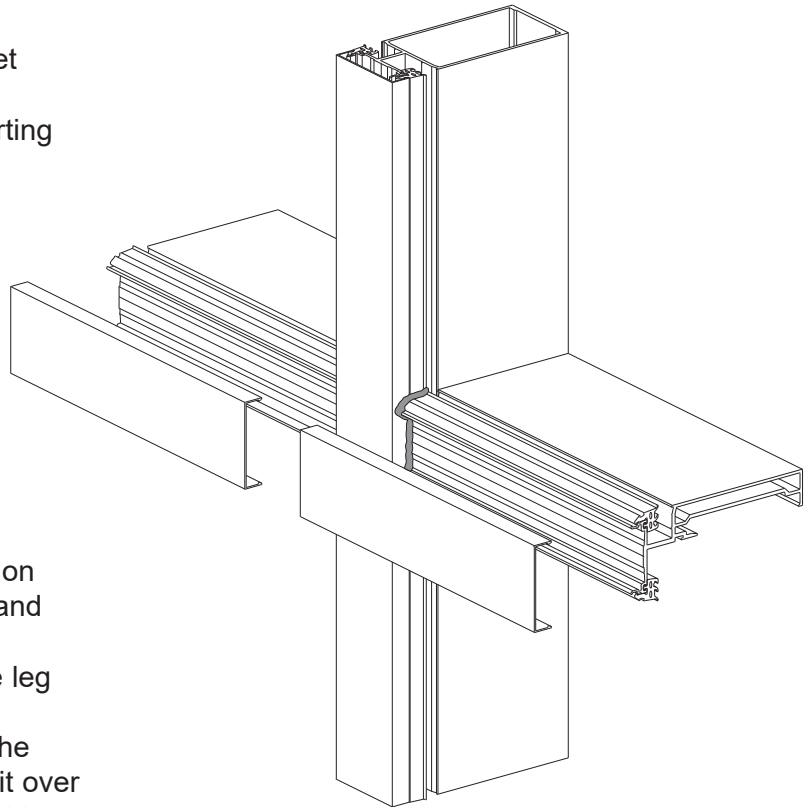
- Snap on horizontal face covers using a mallet and a clean scrap piece of lumber.
- Carefully tap in the horizontal face cover starting at one end work towards the other end. Make sure the face cover is fully engaged with the exterior glazing gaskets.

See **Detail 33**.

#### For Perimeter Horizontal Covers:

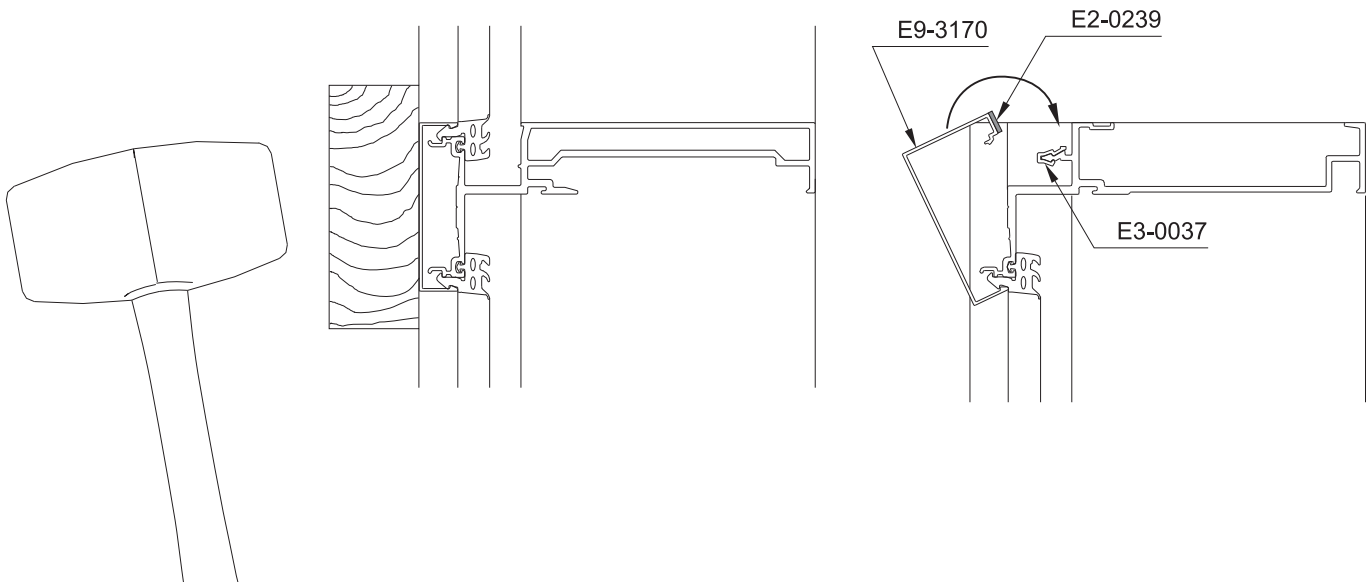
- Snap on the thermal isolator clips, E3-0037, on the head and sill mullions 3" from each end and no more than 9" O.C.
- Install isolator tape, E2-0239, onto the inside leg of the perimeter face cover, E9-3170.
- Install perimeter face covers by first setting the cover on the glazing gasket and then rolling it over to engage with the thermal isolator clips, E3-0037.

See **Detail 33**.



#### **DETAIL 33**

Single Glazing Shown  
Insulated Glazing Similar



## GLAZING

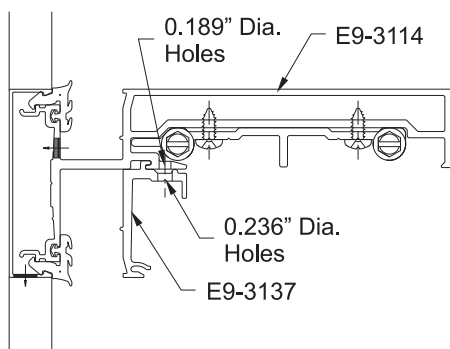
### STEP 23

#### PREP HORIZONTALS FOR GLASS STOPS

##### Transfer Hole Locations from the Glass Stops to the Horizontal:

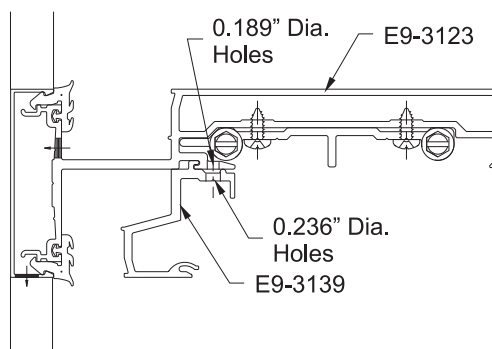
- Place the glass stop in reglet making sure it is pushed up against the vertical and pushed all the way towards the back of the horizontal.
- Using the glass stop as a guide, transfer the hole locations to the horizontal.
- Remove the glass stop and drill 0.189" diameter (#12 drill bit) holes through the horizontal.

See **Detail 34**.



**SINGLE GLAZING  
With Standard Stop**

#### **DETAIL 34**



**INSULATED GLAZING  
With Single Glazing Stop**

### STEP 24

#### INSTALL GLASS

- Locate setting blocks, E2-0364 (single glazing) or E2-0363 (insulated glazing) at 1/4 points of horizontal or according to engineering calcs.

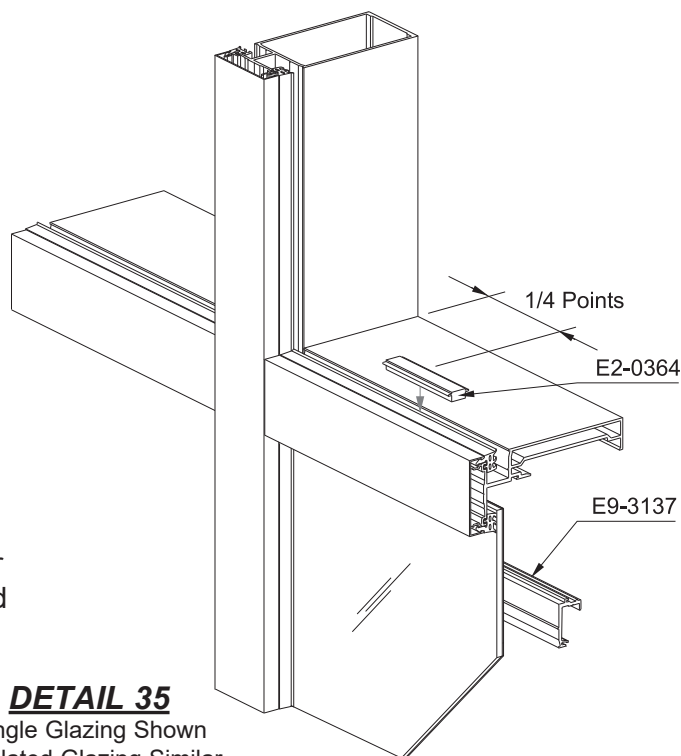
See **Detail 35**.

- For single glazing side blocks, E2-9907, must be installed at the midpoint of vertical shallow pockets.

- For insulated glazing w-blocks, E2-0533, must be installed at the midpoint of vertical shallow pockets.

See **Detail 36** on the next page.

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

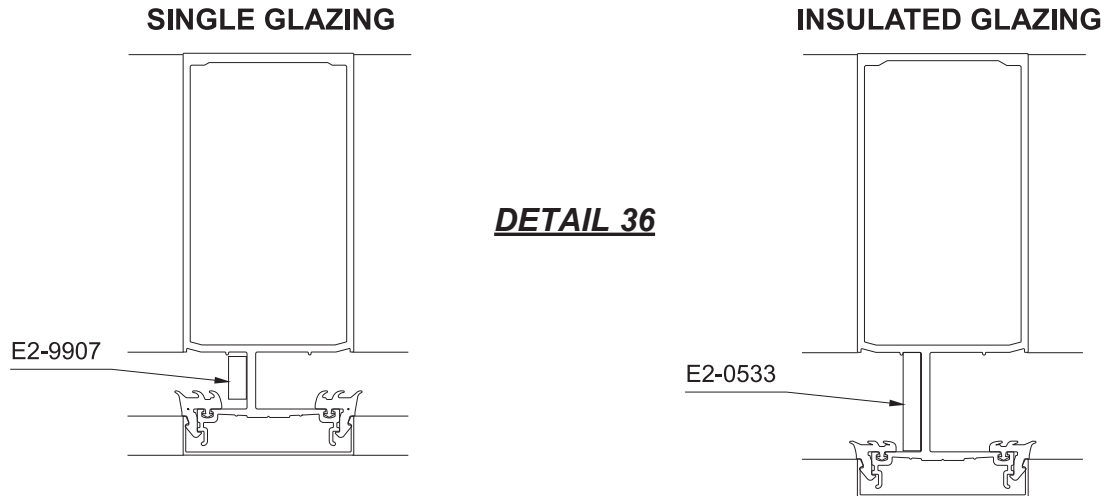


#### **DETAIL 35**

Single Glazing Shown  
Insulated Glazing Similar

## GLAZING

### STEP 24 (Continued) INSTALL GLASS



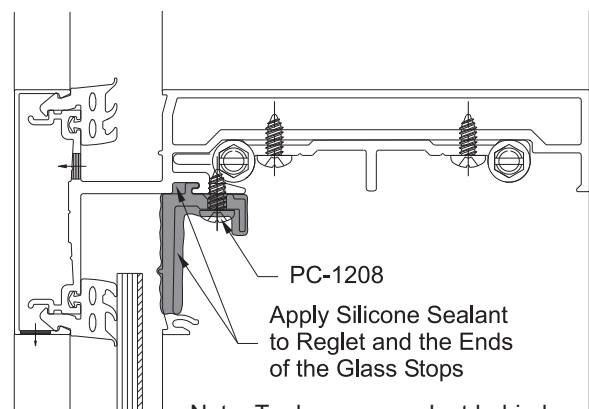
- Clean all sealant contact surfaces and joints with isopropyl alcohol (50%) and wipe clean with lint-free cotton cloths using the “two cloth method.” Priming may be required for certain finishes.
- Carefully install the glass into the frame and center it in the opening. Make sure that setting blocks and spacers are properly aligned with the glass.

**GLASS SIZE = D.L.O. + 1-1/2”  
(HORIZONTAL & VERTICAL)**

**Note:** For glazing spandrel areas where intermediate mullion anchors interfere with the installation of the glass, see the glazing instructions on the next page.

- Apply Dow Corning® 795 sealant along the length of the glass stop reglet on the head and horizontal.
- Apply Dow Corning® 795 sealant to the ends of the glass stop, E9-3137, stopping short of the filler reglet.
- Carefully install the glass stop into place and tool the excess sealant behind the ends of the glass stop to ensure a proper seal.
- Fasten the glass stop to the horizontal at each end with a PC-1208 fastener.

See **Detail 37**.

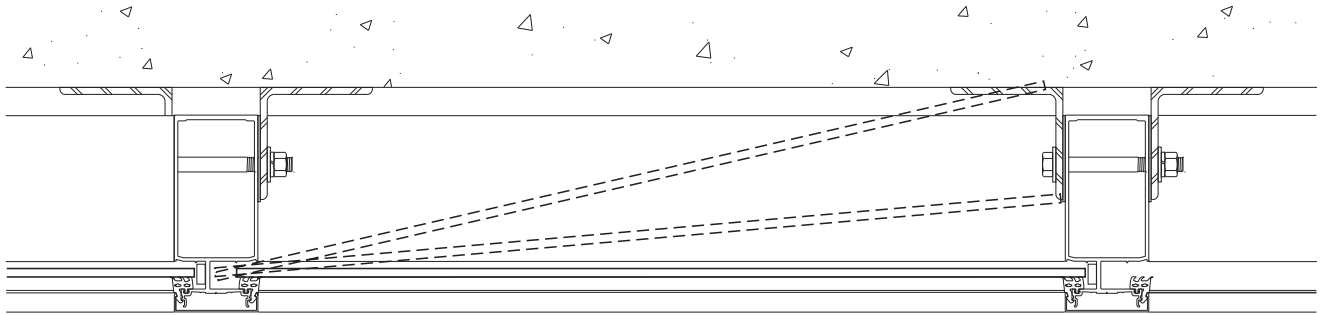


Note: Tool excess sealant behind glass stop to ensure a proper seal.

### **DETAIL 37**

Single Glazing Shown  
Insulated Glazing Similar

## GLAZING



### **DETAIL 38**

Single Glazing Shown  
Insulated Glazing Similar

The introduction of mullion mid anchors at the spandrel areas of the YCW 300 IG Curtain Wall System will require a different approach to glazing the lites of glass that are directly in front of the anchors.

The mullion mid anchors and anchor bolts reduce the horizontal dimension between the mullions and will interfere with the installation of the glass.

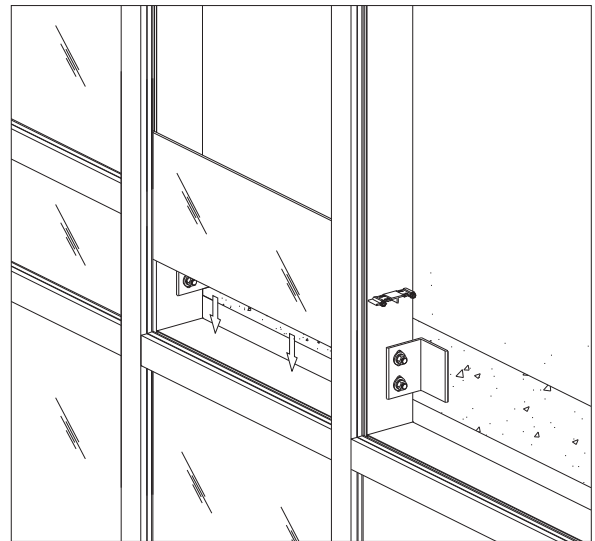
**Please follow the instructions below to glaze spandrel areas with mid anchor interference:**

- During the erection of the curtain wall, leave the horizontals off that are directly above the lites of glass that go in front of the anchors.
- Install the lites of glass above the anchors and carefully slide the units down onto the horizontal below.

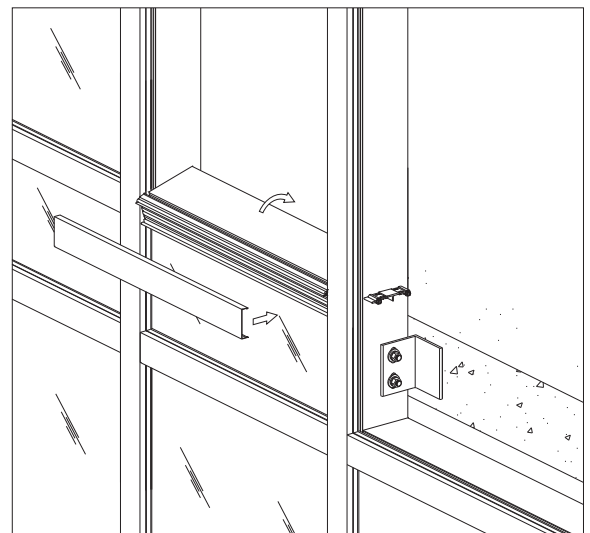
See **Details 38 & 39.**

- Install the exterior glazing gaskets onto the horizontal and attach the horizontal.
- Install the joint plugs and apply sealant to the vertical/horizontal joints with Dow Corning® 795 as instructed in **Step 20** on **Page-27**.
- Install the horizontal covers and proceed with glazing the rest of the lites.

See **Detail 40.**



### **DETAIL 39**



### **DETAIL 40**



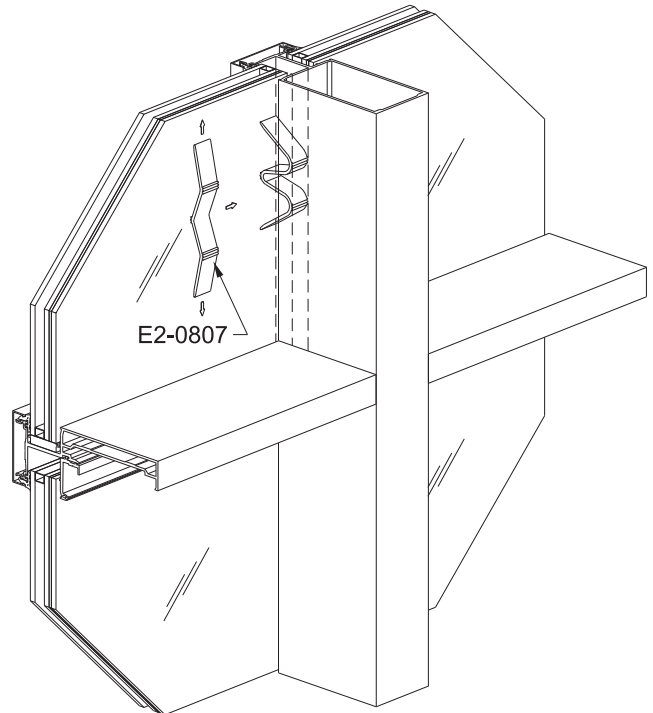
## GLAZING

### STEP 25 INSTALL ANTI-WALK BLOCKS & INTERIOR GLAZING GASKETS

**For 90psf & 120psf Small Impact Glazing:**

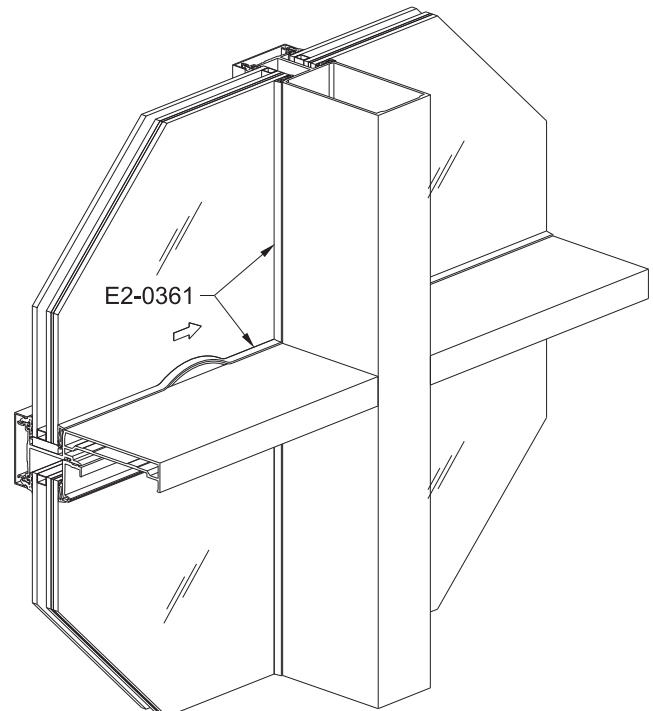
**NOTE:** For 130psf Small Missile single glazing details contact YKK AP.

- Install one anti-walk block, E2-0807, in the deep glazing pocket of each mullion, centered along the vertical daylight opening.
  - Flatten the anti-walk block against the inside surface of the glass and push it into the opening between the glass and the mullion until it is released into the glazing pocket.
- See **Detail 41**.



**DETAIL 41**  
Insulated Glazing Shown  
Single Glazing Similar

- Cut horizontal & vertical interior gaskets, E2-0361, to daylight opening plus(+) 3/16" per foot of length.
  - Install the vertical gaskets first then the horizontal gaskets.
  - Insert the ends of the gasket first and then the middle. Push the remainder of gasket into the reglet starting at the midpoint and work towards each end.
  - Apply and tool sealant to all gasket joints.
- See **Detail 42**.



**DETAIL 42**  
Insulated Glazing Shown  
Single Glazing Similar

## GLAZING

### STEP 26

### INSTALL INTERIOR GLAZING SPACERS

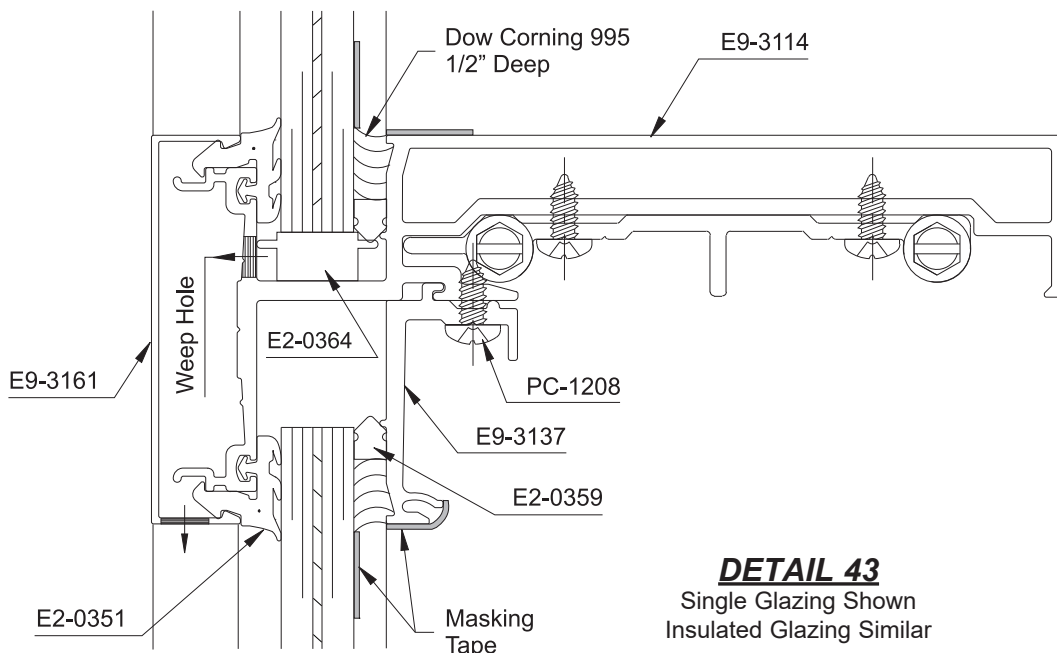
#### For All Large Missile Impact Glazing:

- Cut vertical interior glazing spacers, E2-0359, to daylight opening plus(+) 2".
- Cut horizontal interior glazing spacers, E2-0359, to daylight opening plus(+) 1" and add 1/8" per foot of opening width.
- Install vertical glazing spacers first; center the spacers along the opening and push them in with a putty knife starting from the middle and work towards the ends.
- Install the horizontal glazing spacers next in the same manner.

**Caution: Do not stretch the glazing spacers while installing them.**

- Fasten the glass stop to the horizontal at each end with a PC-1208 fastener.
- Make sure all sealant contact surfaces and joints have been cleaned with isopropyl alcohol (50%) with lint-free cotton cloths using the "two cloth method."
- Apply masking tape to the aluminum and glass as shown in **Detail 43**.
- Apply Dow Corning 995 structural sealant into the cavity between the mullion and glass. Exert positive pressure so that the sealant completely fills the cavity.
- Using a spatula or other non-scratching implement, tool the sealant immediately making sure the sealant makes complete contact with all surfaces. Be careful not to remove too much sealant.
- Remove masking tape within ten minutes of tooling; do not allow sealant to skin.

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



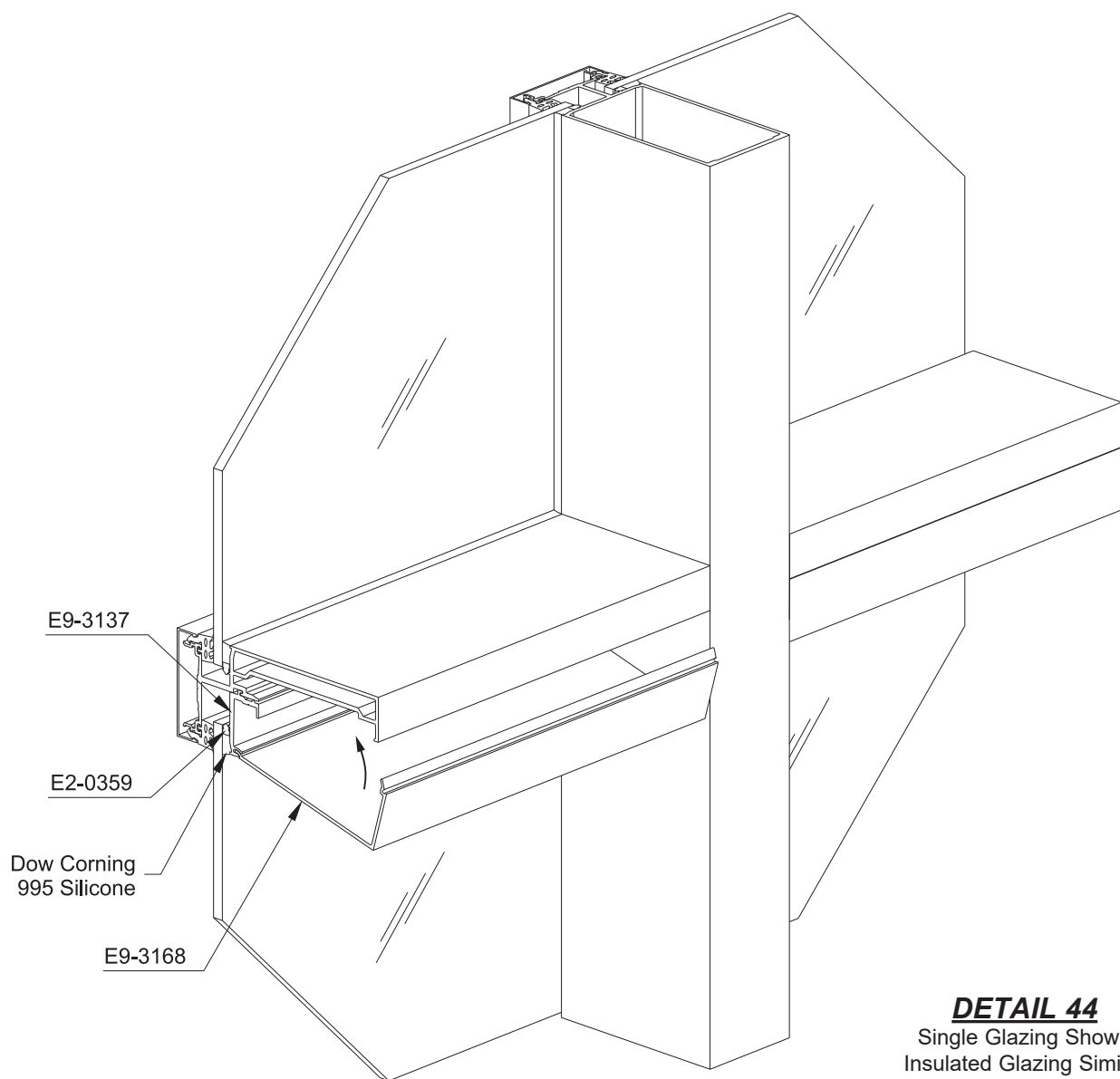
## GLAZING

### STEP 27 INSTALL INTERIOR SNAP COVERS

-Install the horizontal interior snap covers by inserting the front edge of the cover into the recess at the bottom of the glass stop and rolling it up to snap onto the back of the head or horizontal.

**Note:** Cover not required at spandrel areas.

See **Detail 44**.



#### **DETAIL 44**

Single Glazing Shown  
Insulated Glazing Similar



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