

# SERIES 5600

## OUTSIDE GLAZED SCREW SPINE CURTAIN WALL INSTALLATION INSTRUCTIONS



Part NO. YS56

November 2016

WHERE WINDOWS ARE JUST THE BEGINNING®



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**Note: these installation instructions are a supplement to the approved shop drawings and are to be used in conjunction with those drawings.**

### **Minimizing Condensation**

Note: Please reference EFCO's "Understanding Condensation" brochure which can be obtained through your EFCO representative.

Condensation will form on any surface when unfavorable conditions (interior temperature and relative humidity and exterior temperature) are present. When the formation of excessive condensation is a concern, it is highly recommended that a design professional is utilized to perform an analysis of the shop drawings to recommend the best possible installation methods. Please contact your EFCO representative for information on EFCO's Thermal Analysis Services.

Many current installation practices lead to an increase in the possibility of the formation of condensation. Though not all inclusive, the list of examples below illustrates conditions under which condensation is likely to occur:

1. Bridging system thermal break with non-thermally broken metal flashing or lintels that are exposed to the exterior
2. System exposure to cold air cavities
3. Interior relative humidity levels not maintained at recommended levels, see EFCO's "Understanding Condensation" brochure
4. Inadequate separation between system and surrounding condition at perimeter
5. Product combinations during the shop drawing stage that result in bridging thermal breaks of one or all products involved

## Section I: General Notes & Guidelines

- I. **HANDLING / STORING / PROTECTING ALUMINUM** - The following precautions are recommended to assure early acceptance of your products and workmanship.
  - A. **HANDLE CAREFULLY** - Store with adequate separation between components so the material will not rub together. Store material off the ground. Protect materials against weather elements and other construction trades.
  - B. **KEEP MATERIAL AWAY FROM WATER, MUD, AND SPRAY** - Prevent cement, plaster, and other materials from contacting with and damaging the finish. Do not allow moisture to be trapped between the finished surface and the wrapping material.
  - C. **PROTECT MATERIALS AFTER ERECTION** - Wrap or erect screens with plastic sheeting over material. Cement, plaster, terrazzo, and other alkaline materials are very harmful to the finish and are to be removed with soap and water before hardening. Under no circumstances should these materials be allowed to dry or permanent staining will occur.
  
- II. **GENERAL GUIDELINES** - The following practices are recommended for all installations:
  - A. **REVIEW APPROVED SHOP DRAWINGS** – Become thoroughly familiar with the project. Shop drawings govern when conflicting information exists in these installation instructions.
  - B. **INSTALL ALL FRAMING MATERIAL PLUMB, LEVEL, AND TRUE** – Proper alignment and relationships to benchmarks and column centerlines, as established by the architectural drawings and the general contractor, must be maintained.
  - C. The sequence of erection should be coordinated with the project superintendent to prevent delays and minimize the risk of material damage.  
**Note: If preset anchors are required, coordinate and supervise anchor placement with the general contractor.**
  - D. Verify that all job site conditions and accompanying substrates receiving the installation are in accordance with the contract documents. If deviations occur, notification must be given **IN WRITING** to the general contractor and differences resolved before proceeding further with the installation in the questionable area.
  - E. Prevent all aluminum from coming in direct contact with masonry or dissimilar materials by means of an appropriate primer.

## Section I: General Notes & Guidelines

- F. Follow EFCO framing installation and glazing instructions.
- G. Verify contents of all material shipments received upon arrival. Verify quantities and correct finishes. **NOTIFY EFCO IMMEDIATELY OF ANY DISCREPANCIES OR DAMAGE, WHICH MAY HAVE OCCURRED.**
- H. Throughout these instructions the term "**SEALANT**" will appear. For the purposes of these instructions, sealant is to be defined as the following:

SEALANT - A weather resistant, gunnable liquid filler which when cured provides a resilient, flexible ( $\pm 50\%$  movement capability) air and water seal between similar and dissimilar materials.

All sealant must meet **ASTM C 920, CLASS 50.**

**BUTYL SEALANT-** A non-skinning, non-hardening material (**NAAMM Reference Standard 5C-1**)

**NOTE:** All sealant must be compatible with all surfaces where adhesion is required, including other sealant surfaces. All frame surfaces should be clean, dry, dust, and frost free. If a primer is required, it must be applied to clean surfaces. All perimeter substrates shall be clean and properly treated to receive sealant.

This system is designed and has been tested to utilize butyl or silicone sealants at all internal joineries, i.e., joint plugs, gasket intersections, etc.

Regardless of the sealant used, the customer should contact the sealant manufacturer to determine compatibility and adhesion. Follow sealant manufacturer's proper application procedures and quality assurance programs for weather sealing.

Maintain caulk joints as shown in the approved shop drawings. Unless specified otherwise, most sealant manufacturers recommend a 3/8" minimum perimeter caulk joint. A 3/4" minimum joint is recommended at the head condition to accommodate thermal expansion and contraction. A 3/4" minimum joint is required at the jamb conditions to accommodate installation.

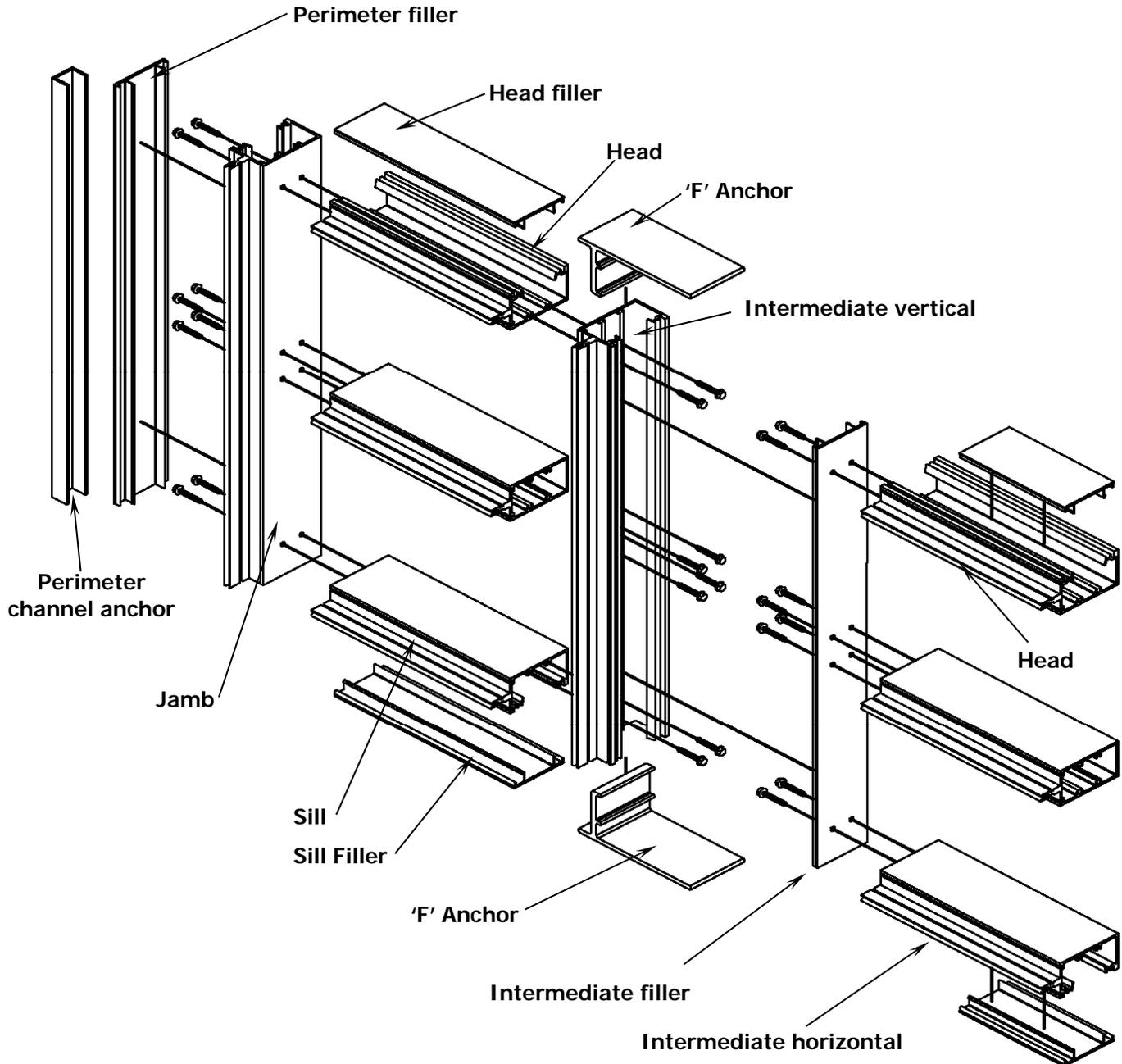
Anchoring surfaces of perimeter construction must be level and plumb within the adjustable limits of the head, jamb, and sill framing.

## Section II: Frame Unit Assembly & Frame Sealing

### STEP #1 ASSEMBLE OUTSIDE GLAZED FRAME MEMBERS.

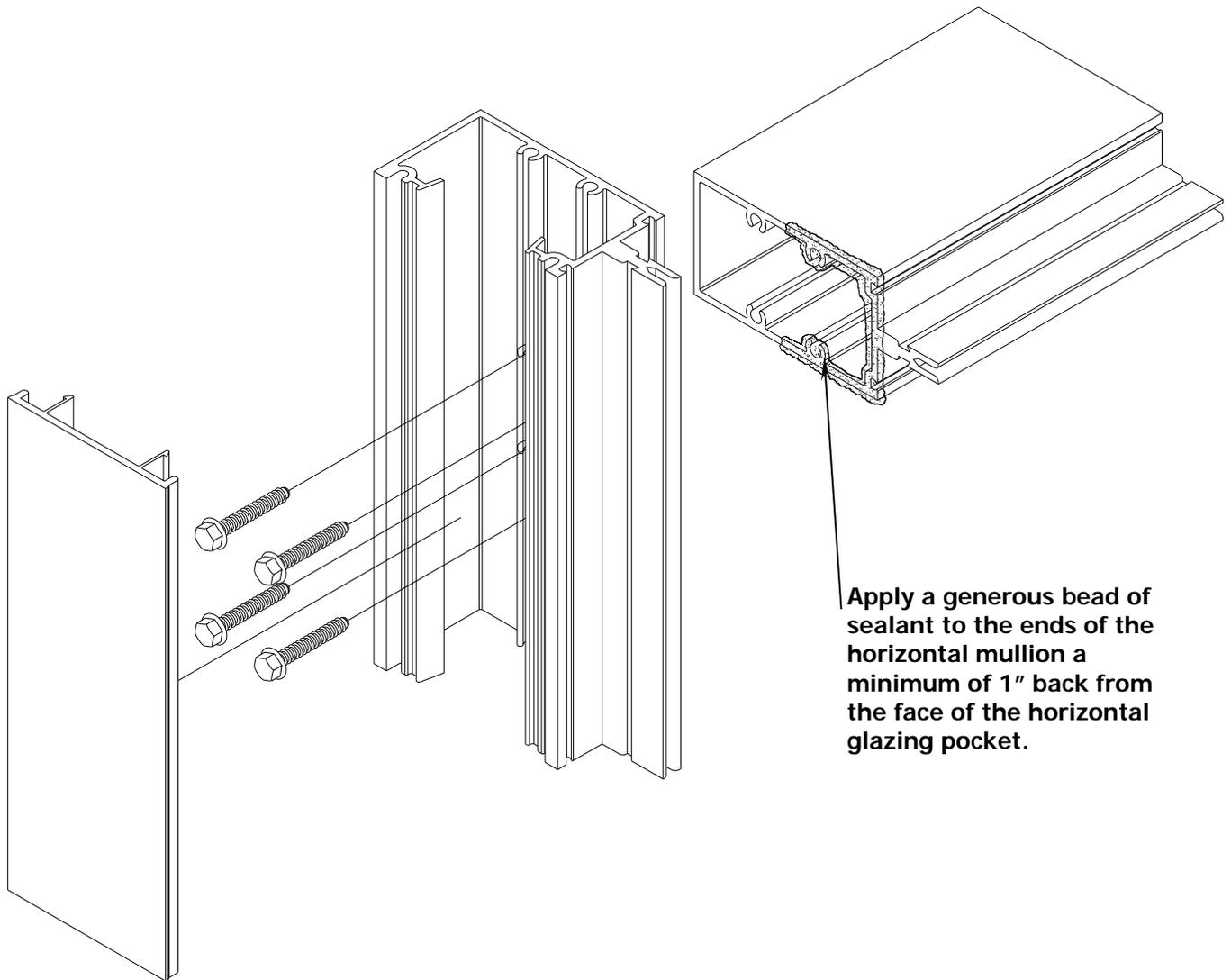
Note: Sealant must be applied to the ends of each horizontal member before assembly. (See enlargement page #6).

Frame assembly screws:  
1/4"-14 X 1" HWSMS 18-8  
typical



Note: Head and sill fillers above and below 'F' anchors are cut short to avoid anchor bolts.

## Section II: Frame Unit Assembly & Frame Sealing



Apply a generous bead of sealant to the ends of the horizontal mullion a minimum of 1" back from the face of the horizontal glazing pocket.

Frame gaskets may be used as an alternate method for frame sealing and are NOT BY EFCO. Use .062 X 3" PVC foam tape with adhesive on one side. Apply the gasket to the end of the horizontals, assemble, and trim the excess gasket from around the horizontal.

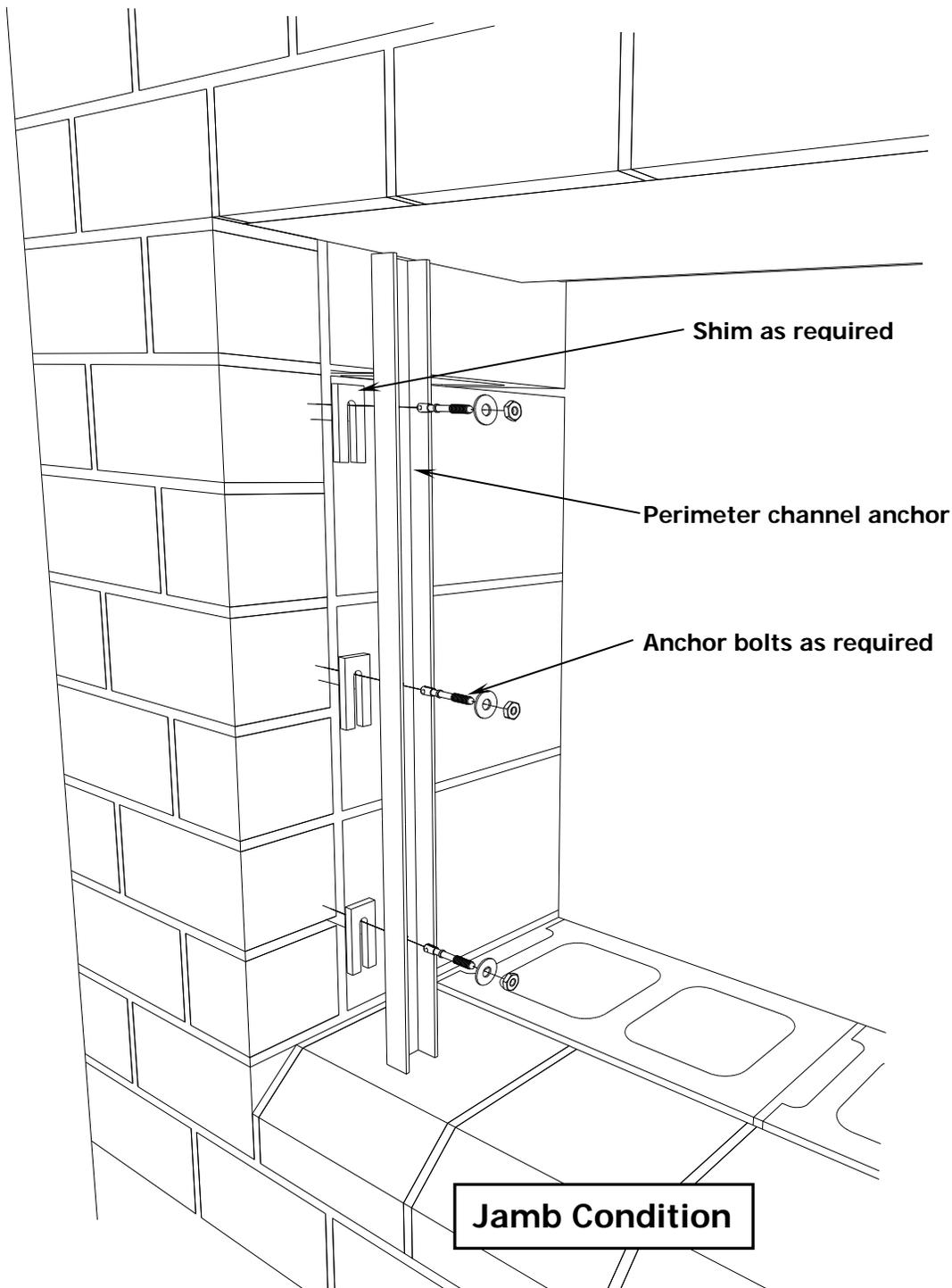
**NOTE:** Gasket material used must be compatible with the sealants used for the installation.

**AFTER EACH FRAME UNIT ASSEMBLY IS COMPLETE, WIPE OFF ALL EXCESS SEALANT AND ALLOW THE FRAME UNIT TO CURE.**

## Section III: Typical Anchorage Methods

### STEP #1 INSTALL FRAME COMPONENTS

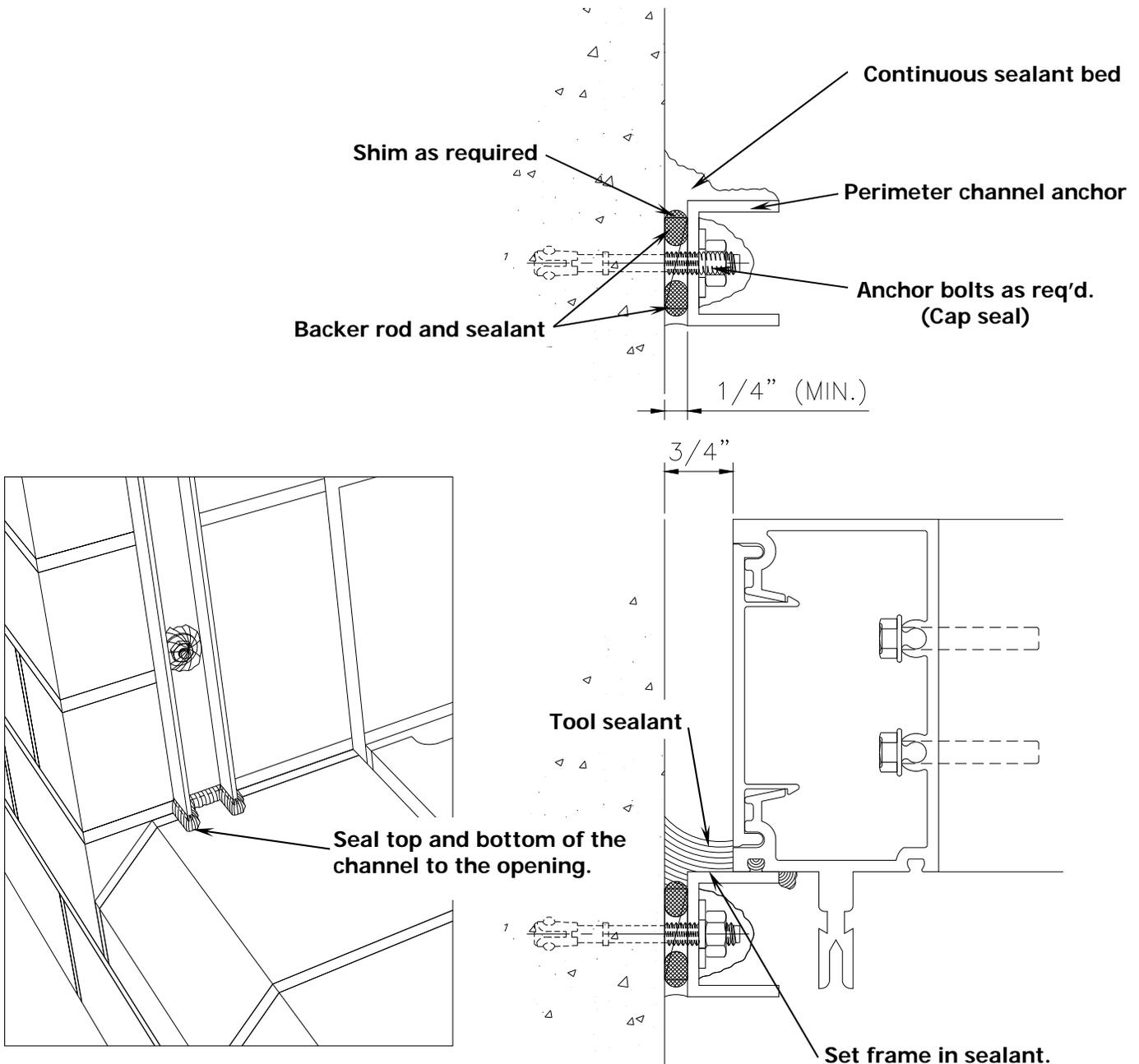
Install perimeter channel anchors to the jamb conditions with appropriate shims and anchor bolts. The channel must be set to proper benchmarks for the final position of the wall. The top and bottom of the channels should align with the top of the head and bottom of the sill frame dimensions. Refer to the approved shop drawings for job specific conditions, anchor bolt sizes and locations. Install assemblies according to approved shop drawings.



## Section III: Typical Anchorage Methods

### STEP #2 INSTALL FRAME COMPONENTS

- A.) Apply backer rod and sealant at the perimeter channel anchor.
- B.) Apply a bed of sealant along the back of the channel for the full height of the frame.
- C.) Seal each end of the channel to the condition. (See inset below).
- D.) Set the first assembled frame into the opening in a bed of sealant. Apply temporary retainers at the frame perimeter. (See 'Tool the sealant' with a trowel as shown.)

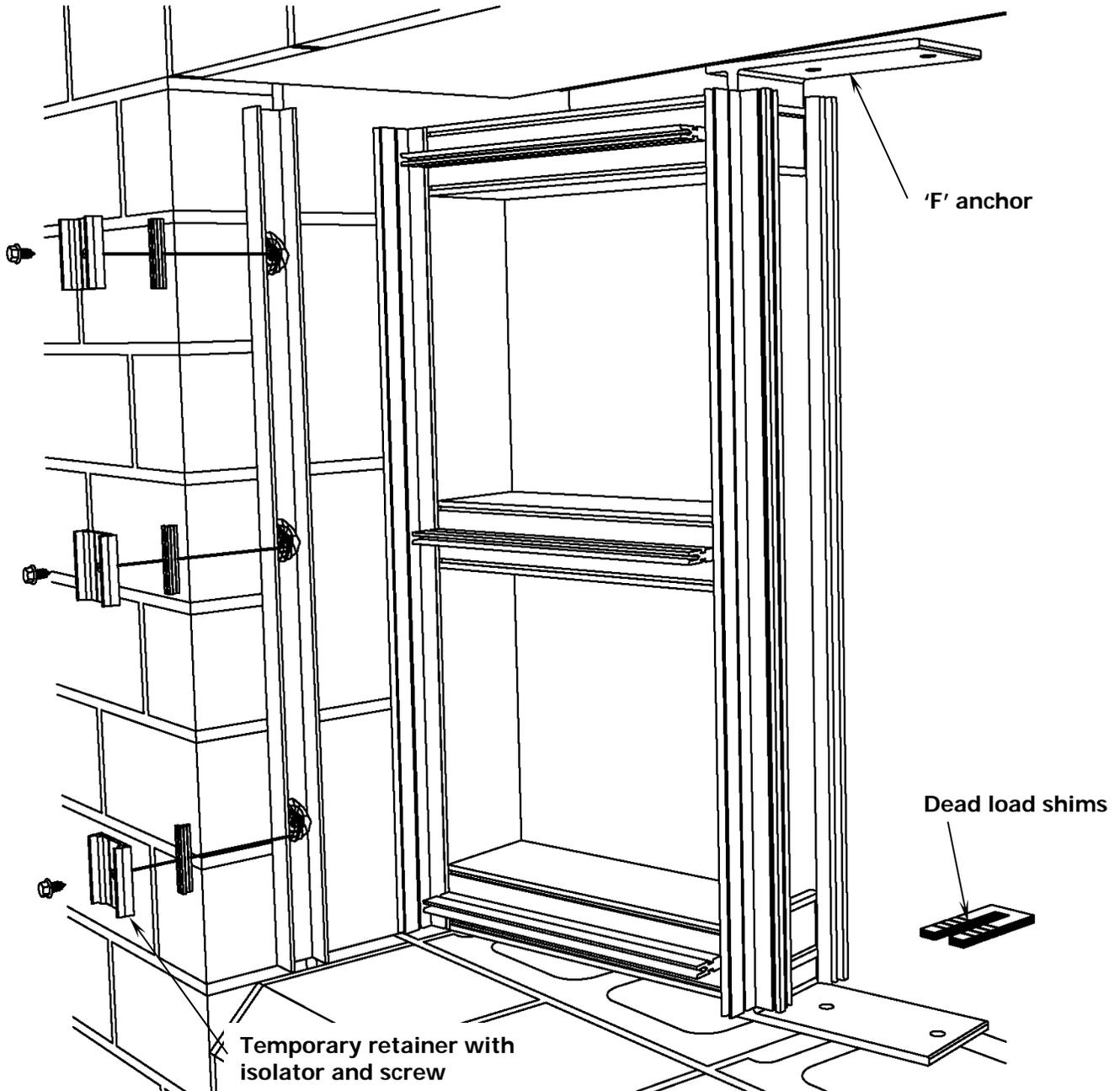


**Jamb Condition**

## Section III: Typical Anchorage Methods

### STEP #3 INSTALL FRAME COMPONENTS

- A.) Insert 'F' anchors into each end of the intermediate vertical, and set frames into openings.
- B.) Use temporary retainers at the jamb conditions to hold the frame in position. Space the temporary retainers 18" to 24" on the jamb.
- C.) Using dead load shims beneath each vertical mullion to level the frame, make all necessary adjustments to properly locate the frame to establish benchmarks.

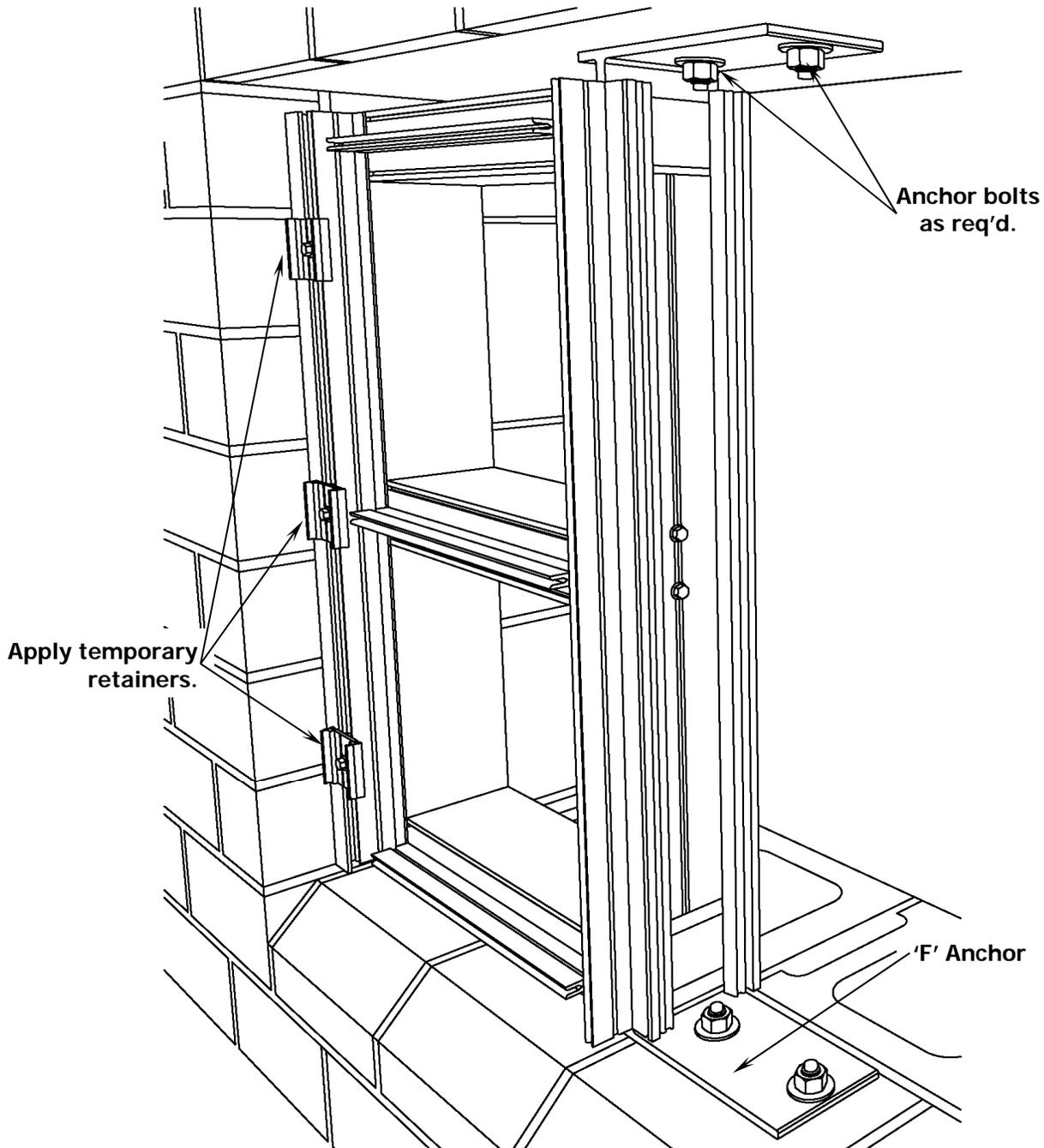


**Note:** Temporary retainers are available from EFCO by request only and are not included in the cost of the materials for the project.  
**Note:** Refer to approved shop drawings for shimming guidelines.

## Section III: Typical Anchorage Methods

### STEP #4 INSTALL FRAME COMPONENTS

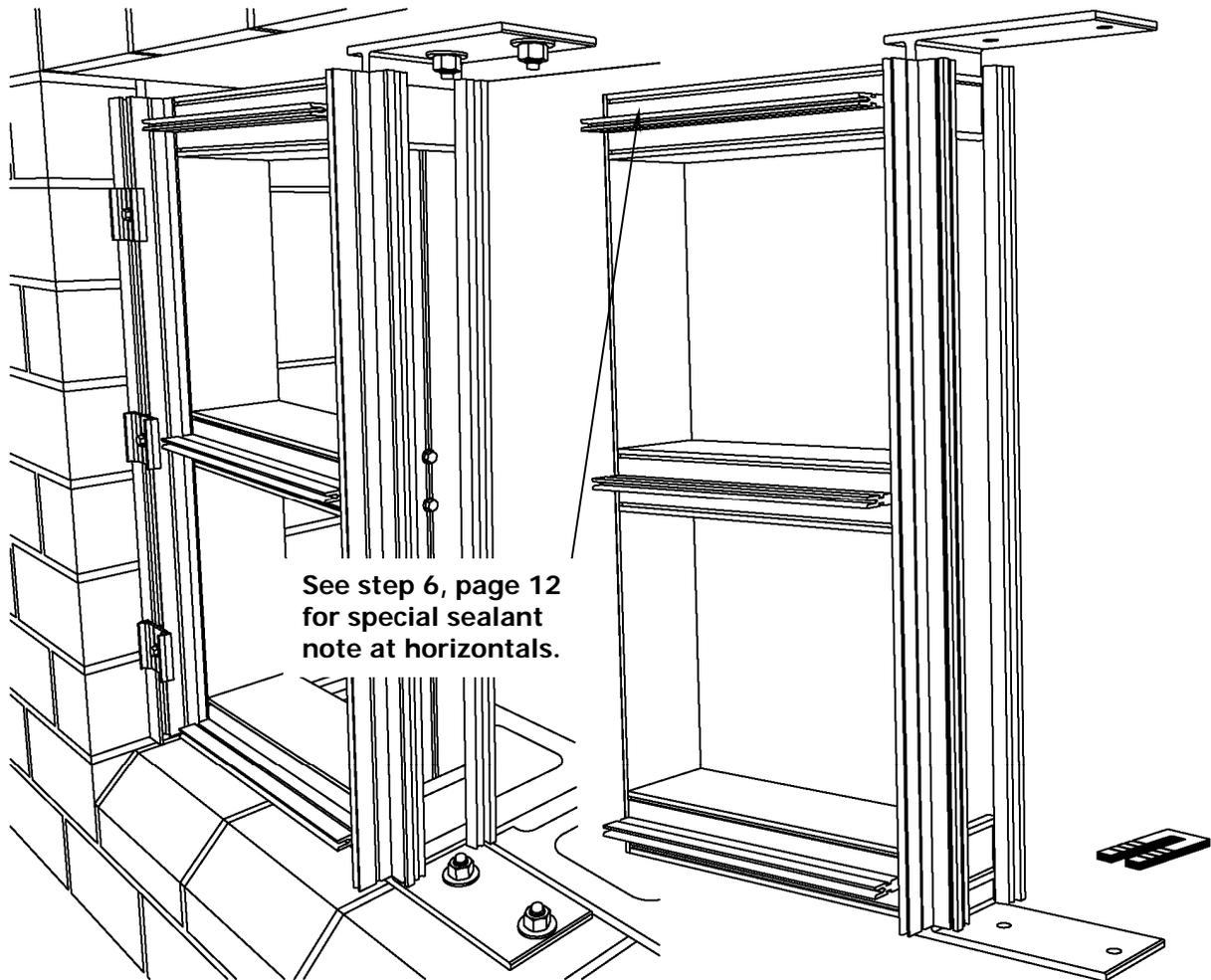
After the frame is plumb and all adjustments have been made, match drill through the holes in the 'F' anchor into the surrounding substrate, and apply the anchor bolts. Anchor bolt size, type, quantity, and location vary. Refer to approved shop drawings for more information.



## Section III: Typical Anchorage Methods

### STEP #5 INSTALL FRAME COMPONENTS

Repeating steps 3 and 4, set each successive frame into the opening snapping the verticals and fillers at each frame until all frames are installed up to the last frame at the opposite jamb. Check frequently to ensure the installed framing is in proper position with regard to established benchmarks.

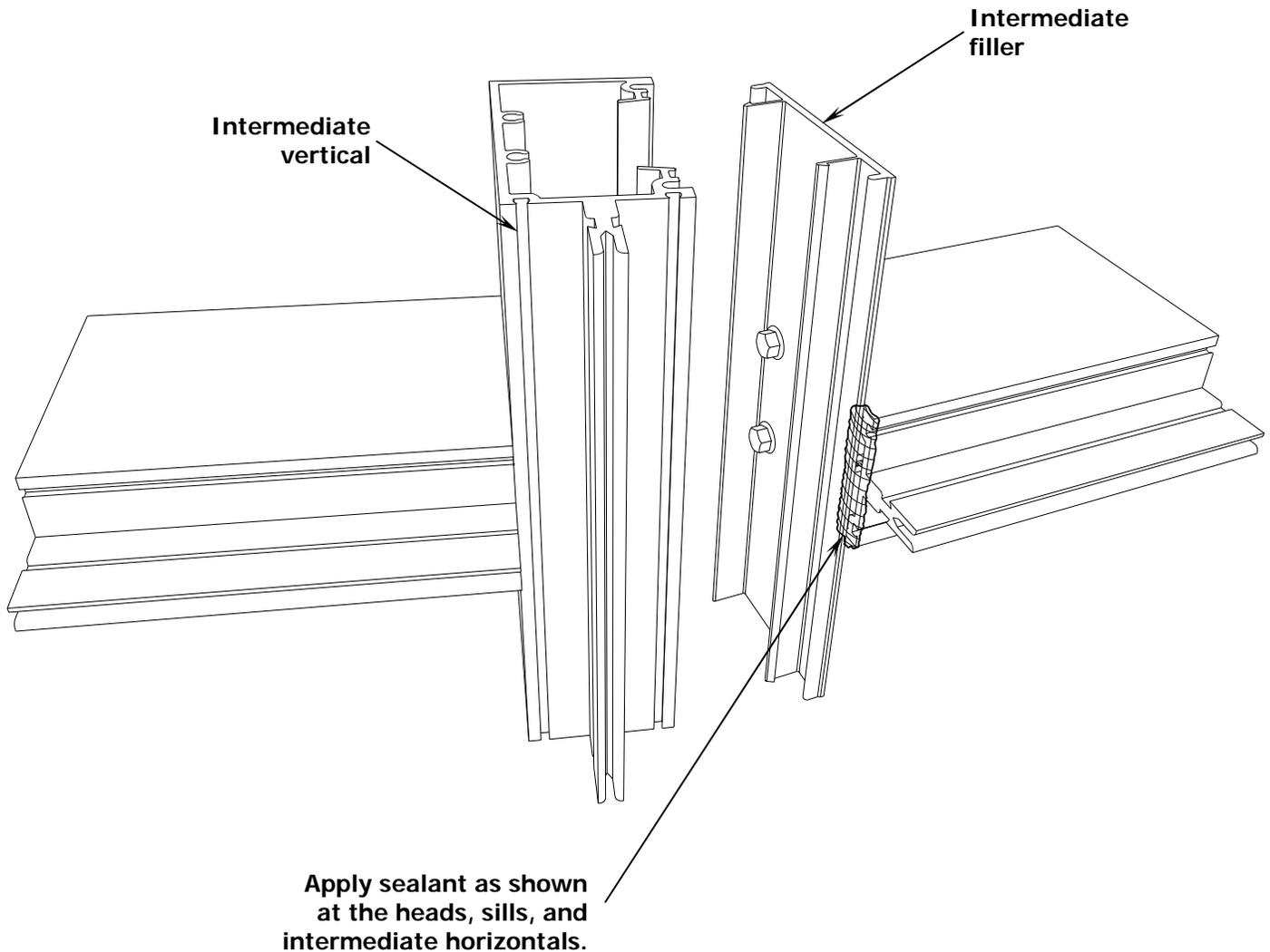


**\* NOTE: On long runs, check overall frame dimensions at every fifth opening to avoid dimensional build-up. The commercial cut length tolerance is  $\pm 1/16"$ . It is critical to check every fifth unit for location relative to established benchmarks.**

## Section III: Typical Anchorage Methods

### STEP #6 SPECIAL SEALANT NOTE

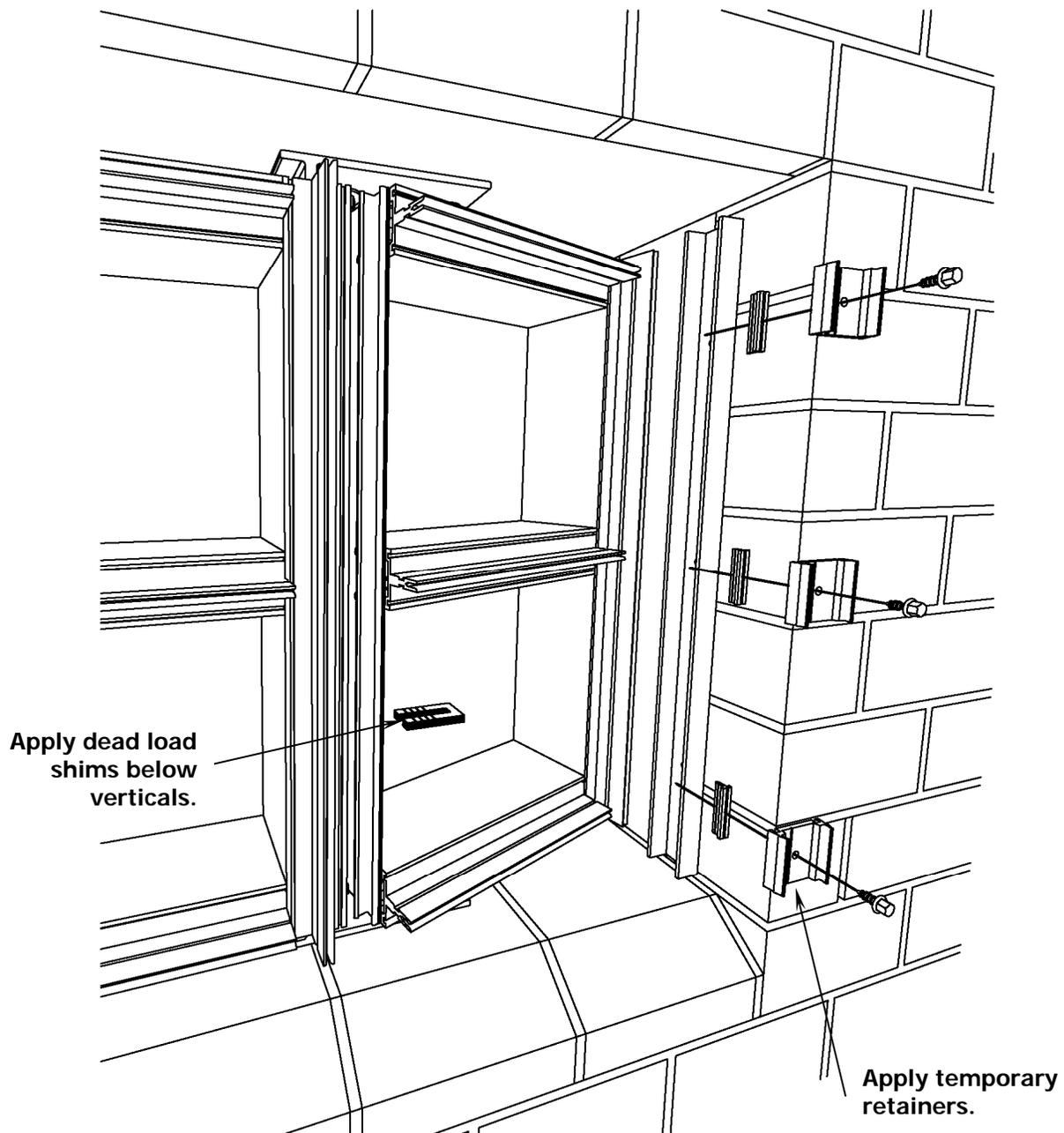
Seal the vertical fillers at the intersection of the heads, sills, and intermediate horizontals immediately before snapping the filler and the vertical mullions together. Tool the sealant smooth with the face of the glazing pocket, and remove excess sealant from the glazing reglets.



## Section III: Typical Anchorage Methods

### STEP #7 INSTALL FRAME COMPONENTS

Set the last frame in the run into the opening mating the filler with the intermediate vertical, and rotate the frame around to the perimeter anchor channel until the filler and vertical snap together. Using dead load shims beneath each vertical mullion to level the frame, make all necessary adjustments to properly locate the frame to established benchmarks, and apply the temporary retainers.



## Section III: Typical Anchorage Methods

### STEP #8 INSTALL FRAME COMPONENTS – Welded Dead Load Anchors

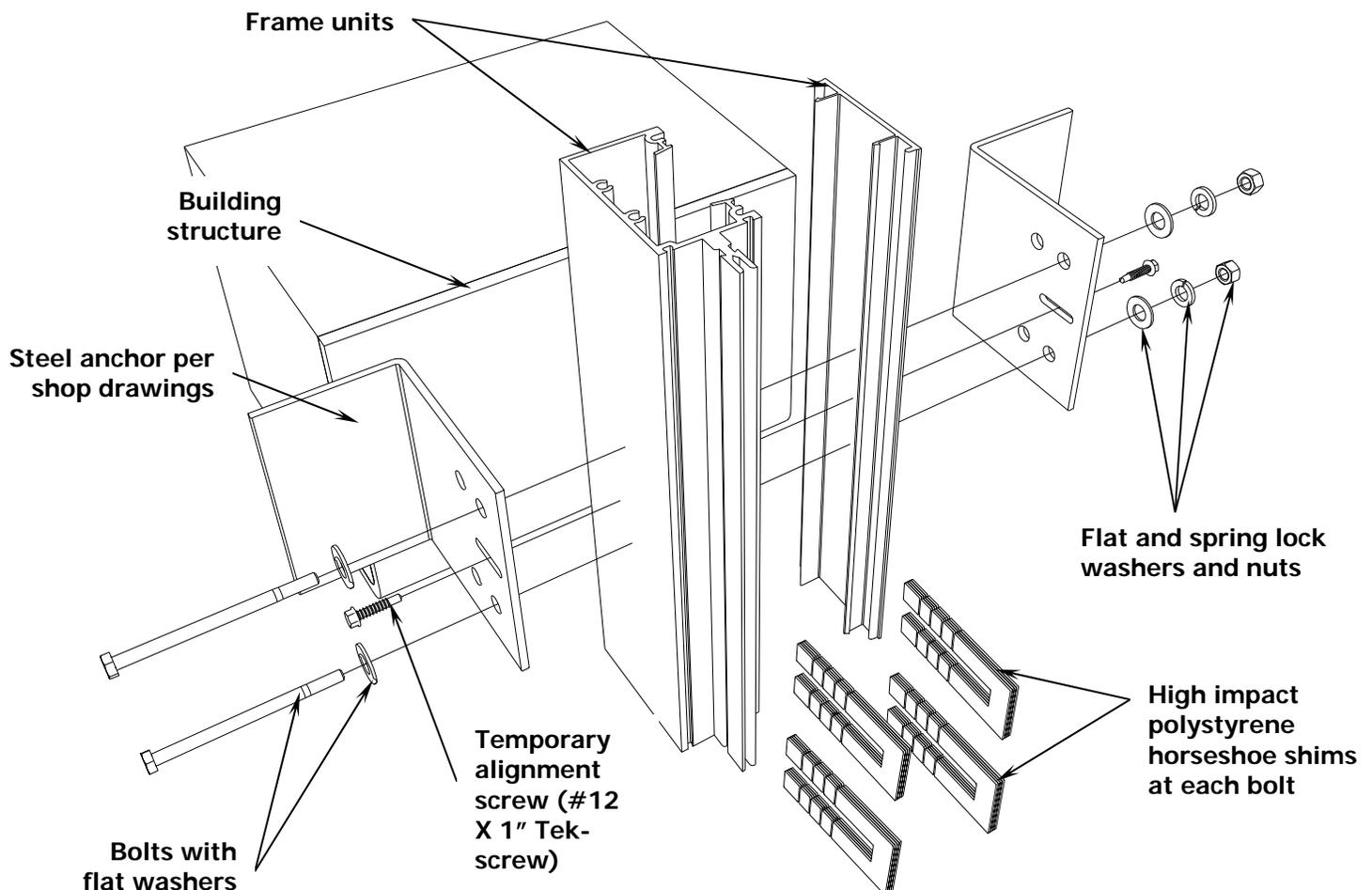
For installations with multi-spans, set the frame into the opening as instructed in previous steps and apply the dead load anchors to the jambs with temporary screws at the proper location at the floor slab. Refer to approved shop drawings for more information.

When the frame is properly aligned, and is level and plumb, weld the anchors to the building structure. Match drill the mullion through a set of holes in the anchor. **NOTE:** The holes must be a minimum of 1 1/2" from the back of the mullion in order to clear the back flange of any steel reinforcement located inside the system, as may be required on a job specific basis.

Use a bolt with a flat washer at the head end and a flat washer and a spring lock washer next to the nut as shown. Shim at each bolt as indicated. The nut must be tightened sufficiently to completely compress the spring lock washer, but not deform the mullion. The threads of the bolt must be "staked", or "Loctite" must be used to prevent the nut from loosening from the bolt.

Refer to approved shop drawings for anchor locations, bolt sizes, welding requirements, and other job specific information.

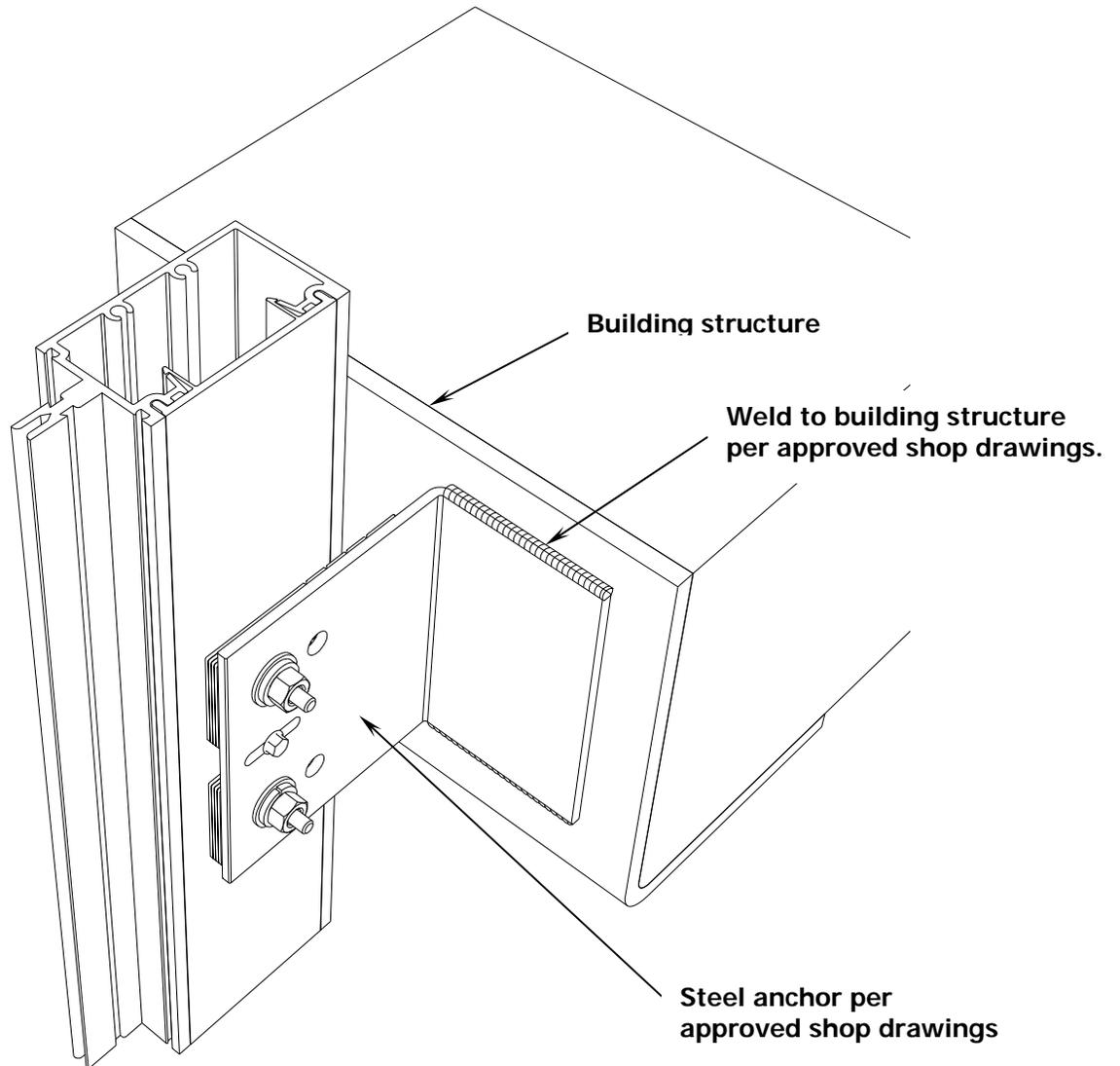
**NOTE:** For special instructions regarding wind load anchors, see page 16, step 9.



WELDED DEAD LOAD ANCHOR

## Section III: Typical Anchorage Methods

**NOTE:** When welding, protect installed metal and glass from weld splatter.



**NOTE:** The elevation of the structure must be within the adjustment limits of the anchoring system. See approved shop drawings for limitations.

## Section III: Typical Anchorage Methods

### STEP #9 INSTALL FRAME COMPONENTS – Welded Wind Load Anchors

For installations with multi-spans, follow applicable notes from step 8 above.

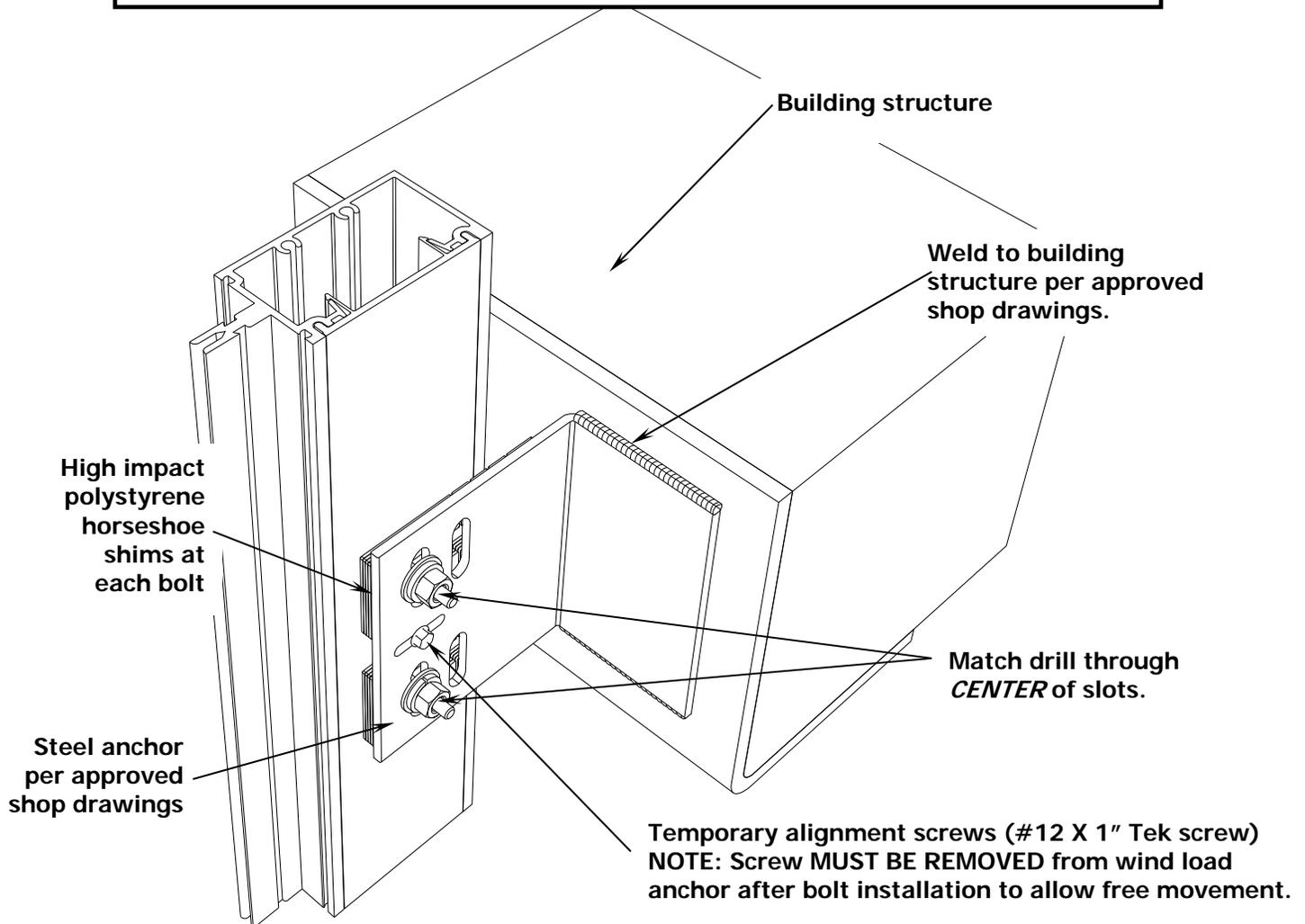
Match drill the mullion through the *CENTER* of a set of slots in the anchor. **NOTE:** The holes must be a minimum of 1 1/2" from the back of the mullion in order to clear the back flange of any steel reinforcement located inside the system, as may be required on a job specific basis.

Use a bolt with a flat washer at the head end and a flat washer and a spring lock washer next to the nut as shown. Shim at each bolt as shown.

**Important:** The nut must be tightened sufficiently to completely compress the spring lock washer. Back the nut off a quarter to half turn to allow free movement of the connection. The threads of the bolt must be "staked", or "Loctite" must be used to prevent the nut from loosening from the bolt. Remove the temporary alignment screws.

Refer to approved shop drawings for anchor locations, bolt sizes, welding requirements, and other job specific information.

**NOTE:** When welding, protect installed metal and glass from weld splatter.



### WELDED WIND LOAD ANCHORS

## Section III: Typical Anchorage Methods

### STEP #10 INSTALL FRAME COMPONENTS – Bolted Dead Load Anchors

For installations with multi-spans, follow applicable notes from step 8.

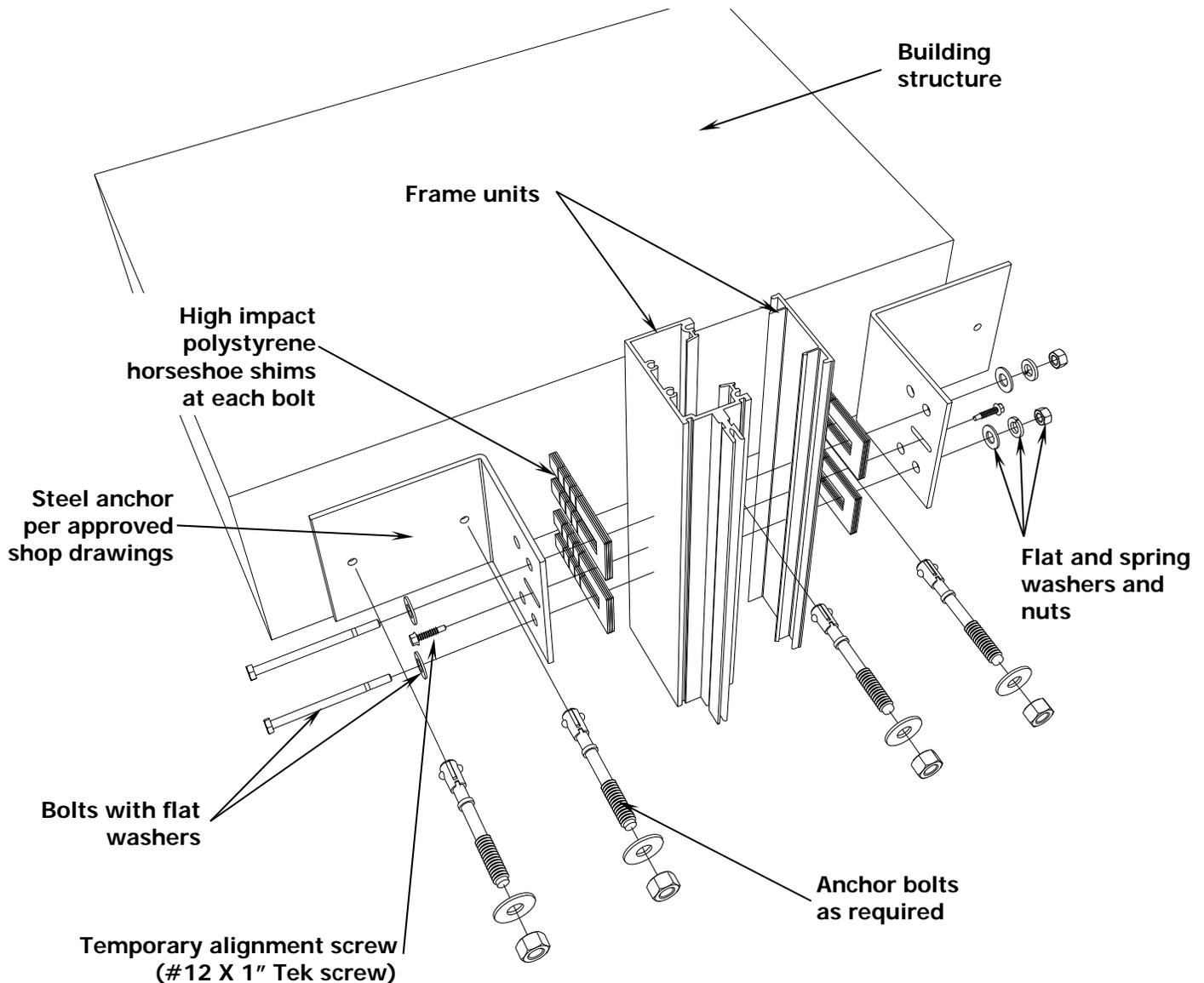
When the frame is properly aligned and is level and plumb, match drill the slab through anchor, and install anchor bolts securing the anchor to the building structure.

Match drill the mullion through a set of holes in the anchor. NOTE: The holes must be a minimum of 1 1/2" from the back of the mullion in order to clear the back flange of any steel reinforcement located inside the system, as may be required on a job specific basis.

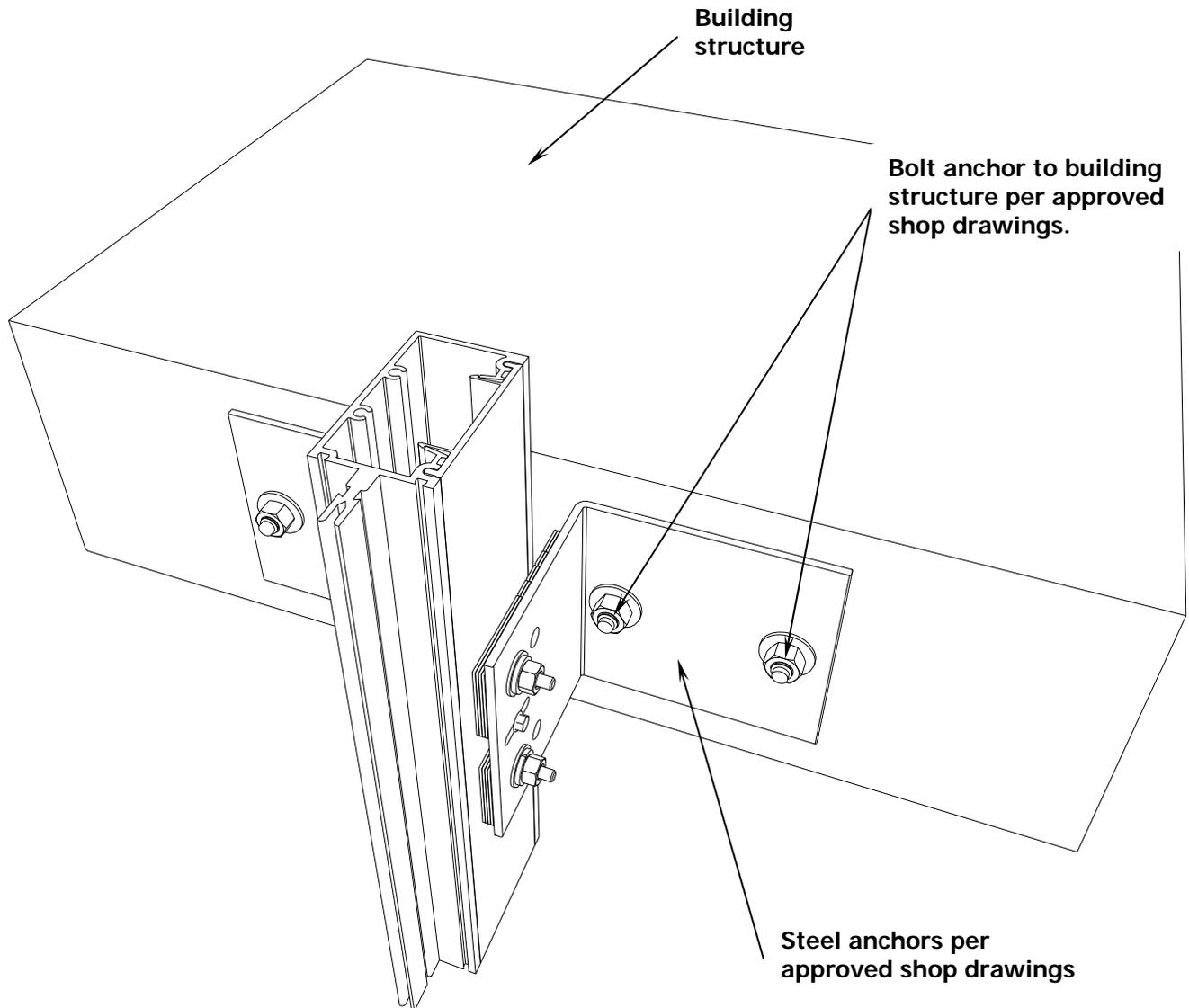
Use a bolt with a flat washer at the head end and a flat washer and a spring lock washer next to the nut as shown. Shim at each bolt as shown.

Refer to approved shop drawings for anchor locations, bolt sizes, embedment, as well as anchor dimensions.

NOTE: For special instructions regarding wind load anchors see page 19, step 11.



## Section III: Typical Anchorage Methods



**NOTE:** The elevation of the structure must be within the adjustment limits of the anchoring system. See approved shop drawings for limitations.

**BOLTED DEAD LOAD ANCHORS**

## Section III: Typical Anchorage Methods

### STEP #11 INSTALL FRAME COMPONENTS – Bolted Wind Load Anchors

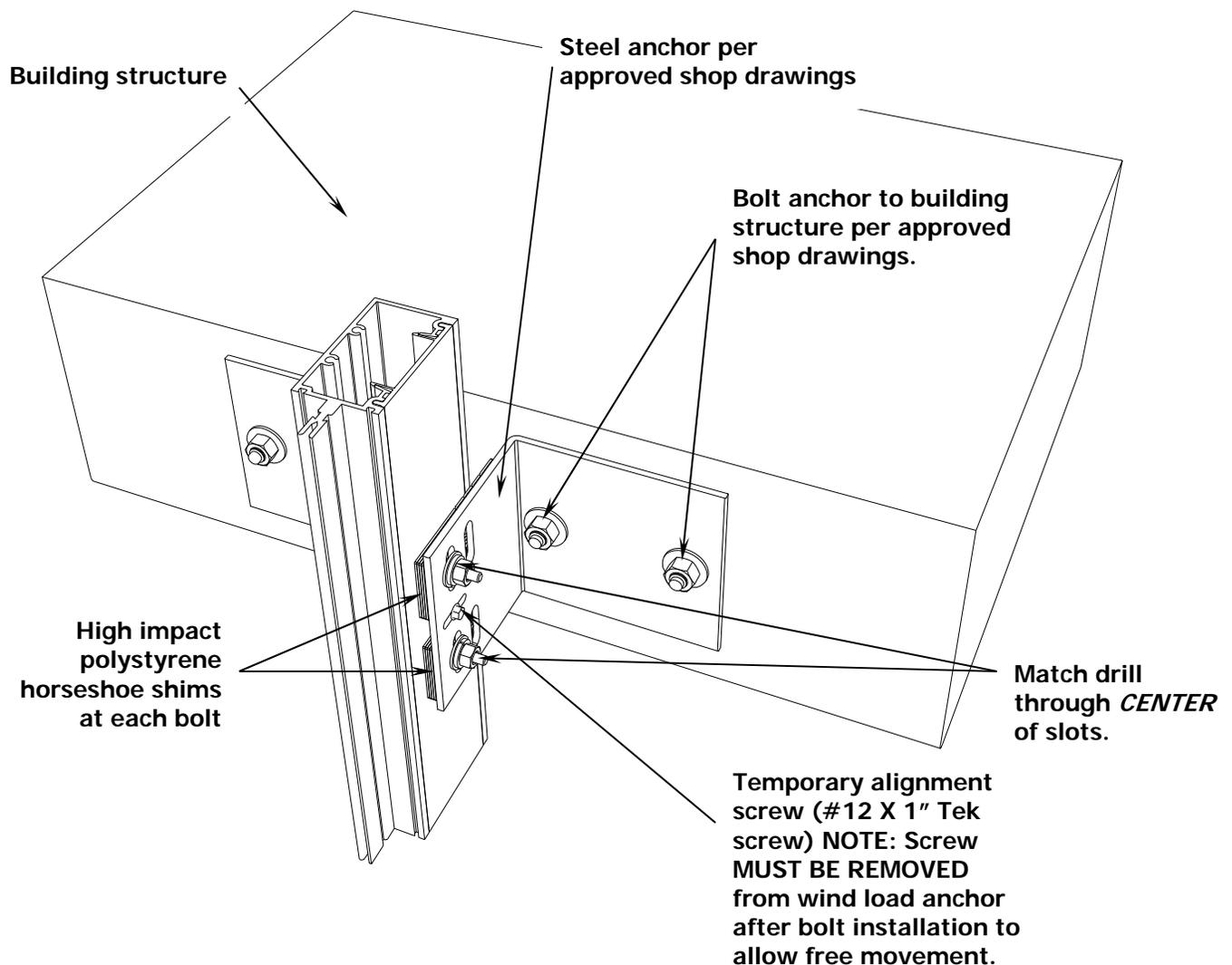
For installations with multi-spans, follow applicable notes from step 10.

Match drill the mullion through the *CENTER* of a set of slots in the anchor. **NOTE:** The holes must be a minimum of 1 1/2" from the back of the mullion in order to clear the back flange of any steel reinforcement located inside the system, as may be required on a job specific basis.

Use a bolt with a flat washer at the head end and a flat washer and a spring lock washer next to the nut as shown. Shim at each bolt as shown.

**Important:** The nut must be tightened sufficiently to completely compress the spring lock washer. Back the nut off a quarter to half turn to allow free movement of the connection. The threads of the bolt must be "staked", or "Loctite" must be used to prevent the nut from loosening from the bolt. Remove the temporary alignment screws.

Refer to approved shop drawings for anchor locations, bolt sizes, welding requirements, and other job specific information.

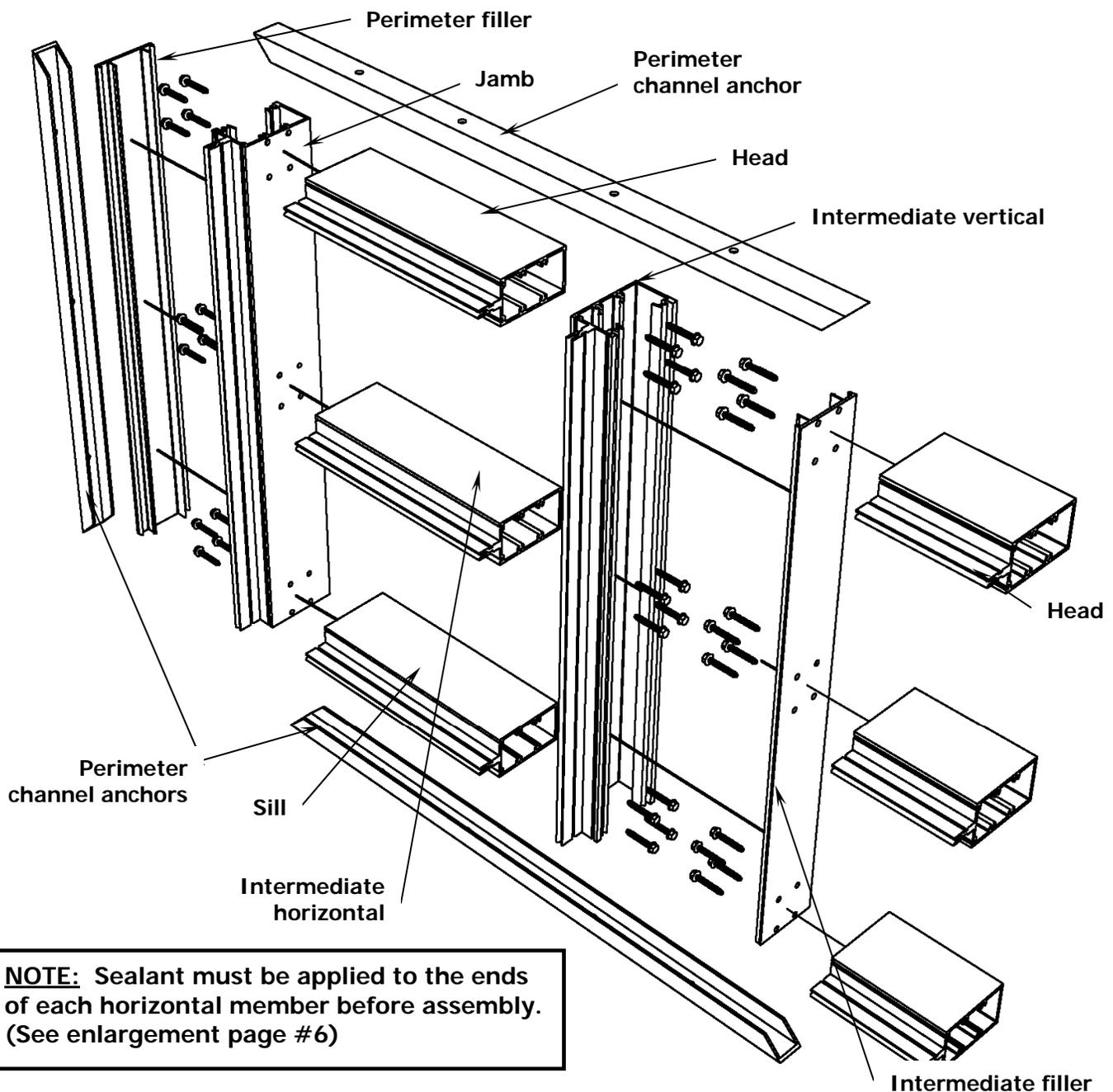


### **BOLTED WIND LOAD ANCHORS**

## Section IV: Frame Unit Assembly & Frame Sealing (Punched Openings)

### STEP #1 Assemble Outside Glazed Frame Members

Using the perimeter channel anchor on four sides of the curtain wall elevation is typically used for small openings, where the frames can be partially assembled off-site, moved to the job site, and then groups of frames are snapped together. This allows groups of frames to be set into the opening all at one time. This method of anchorage is limited due to the structural limitations of the channel anchors. Please consult with the structural engineer responsible for the shop drawings for the specific project. This type of installation also requires that there be no obstructions (such as floor slabs) that prevent the frames from being installed from the interior.

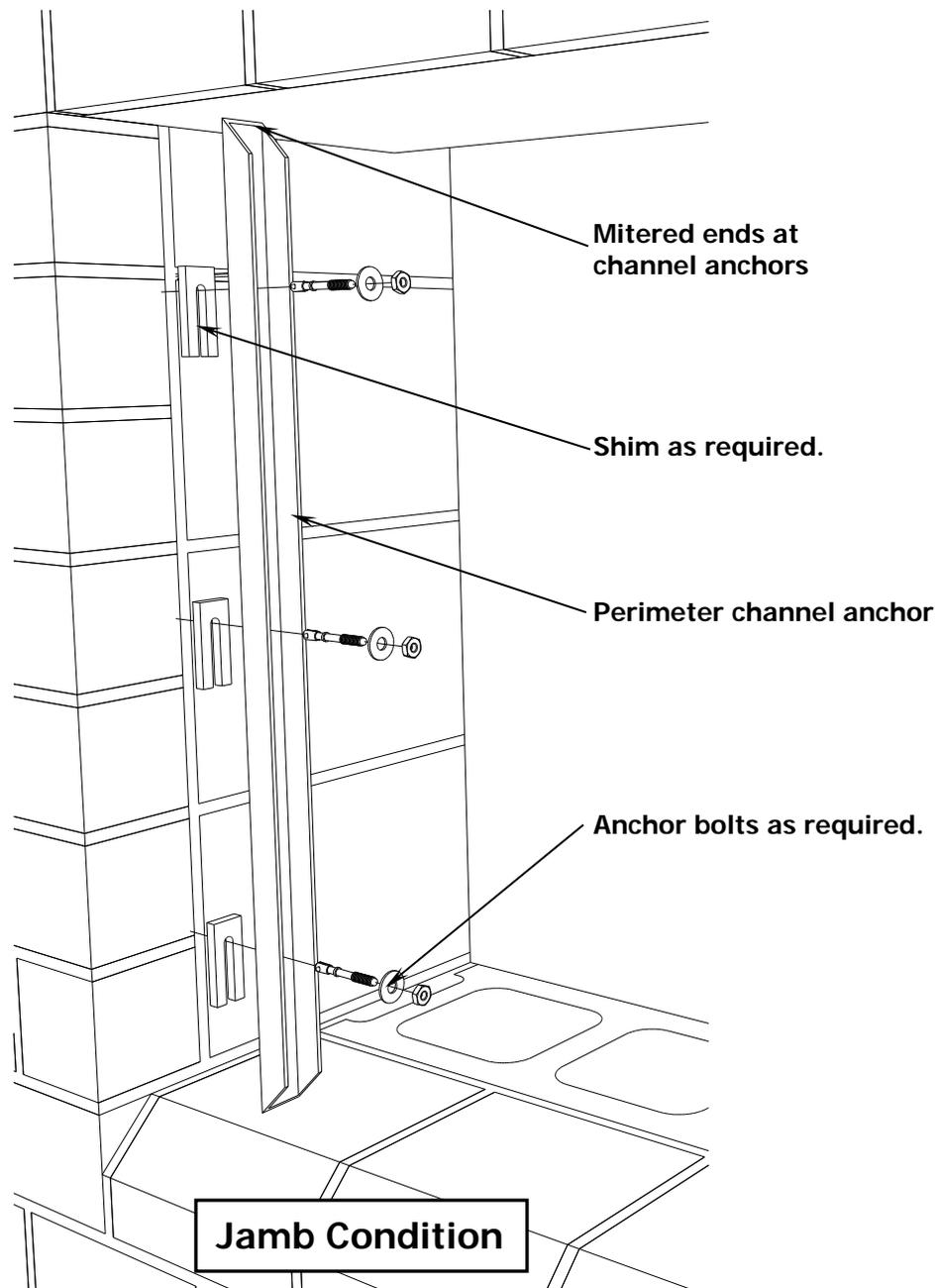


## Section V: Alternate Anchorage Method (Punched Openings)

### STEP #1 Install Frame Components

Install perimeter channel anchor to the jamb conditions with appropriate shims and anchor bolts. The channel must be set to proper benchmarks for final position of the wall. The ends of the channels should be mitered for continuity, and should run the rough opening dimension minus the caulk joint dimension between the anchor channels and surrounding condition or frame dimension plus 1".

Refer to approved shop drawings for job specific conditions, anchor bolt sizes, and locations. Install assemblies according to approved shop drawings.

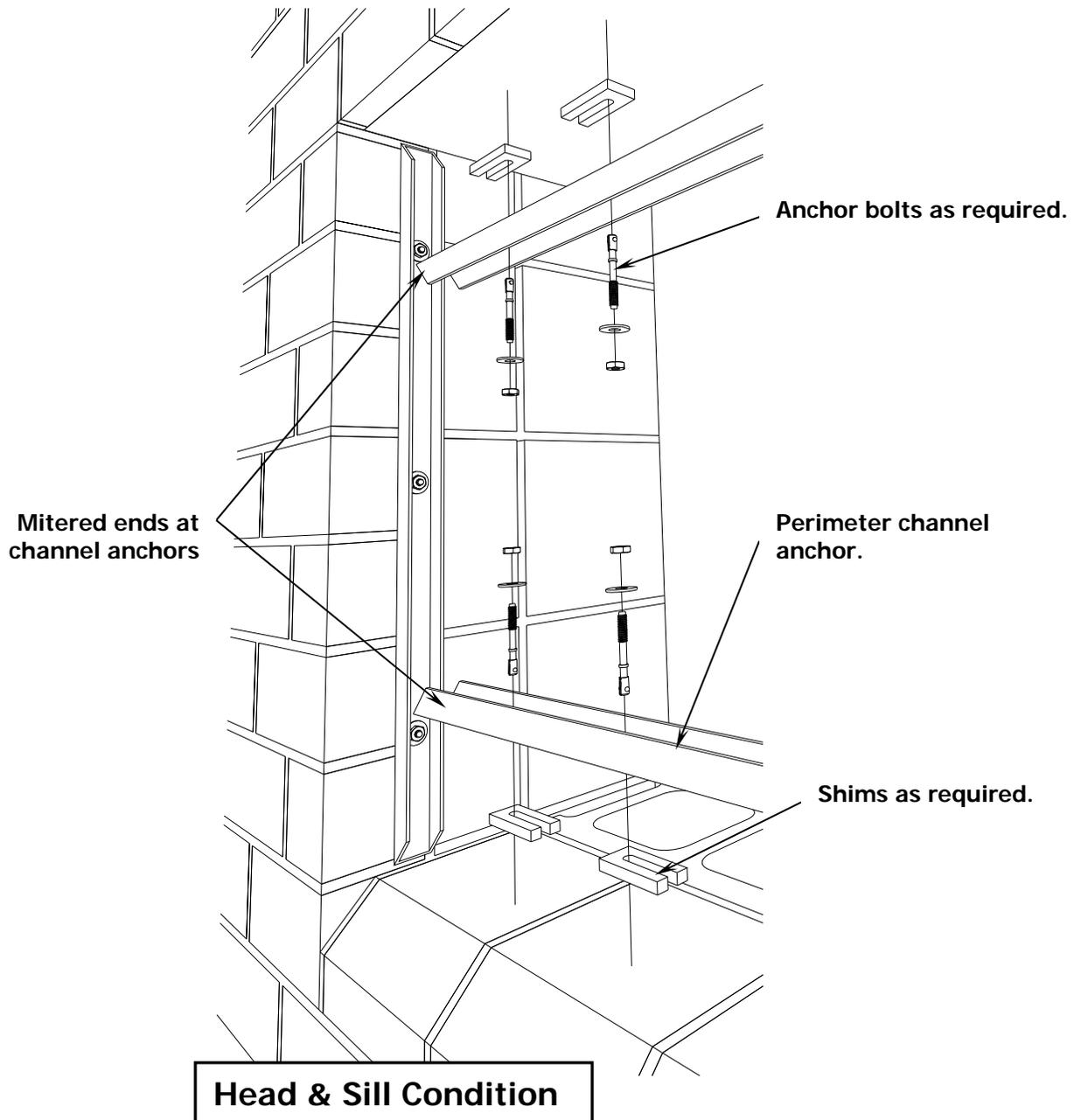


## Section V: Alternate Anchorage Method (Punched Openings)

### STEP #2 Install Frame Components

Install perimeter channel anchor to the head and sill with appropriate shims and anchor bolts. The channel must be set to proper benchmarks for final position of the wall. The ends of the channels should be mitered for continuity, and should abut and seal to the ends of the anchor channels at the jambs. See inset at step #3.

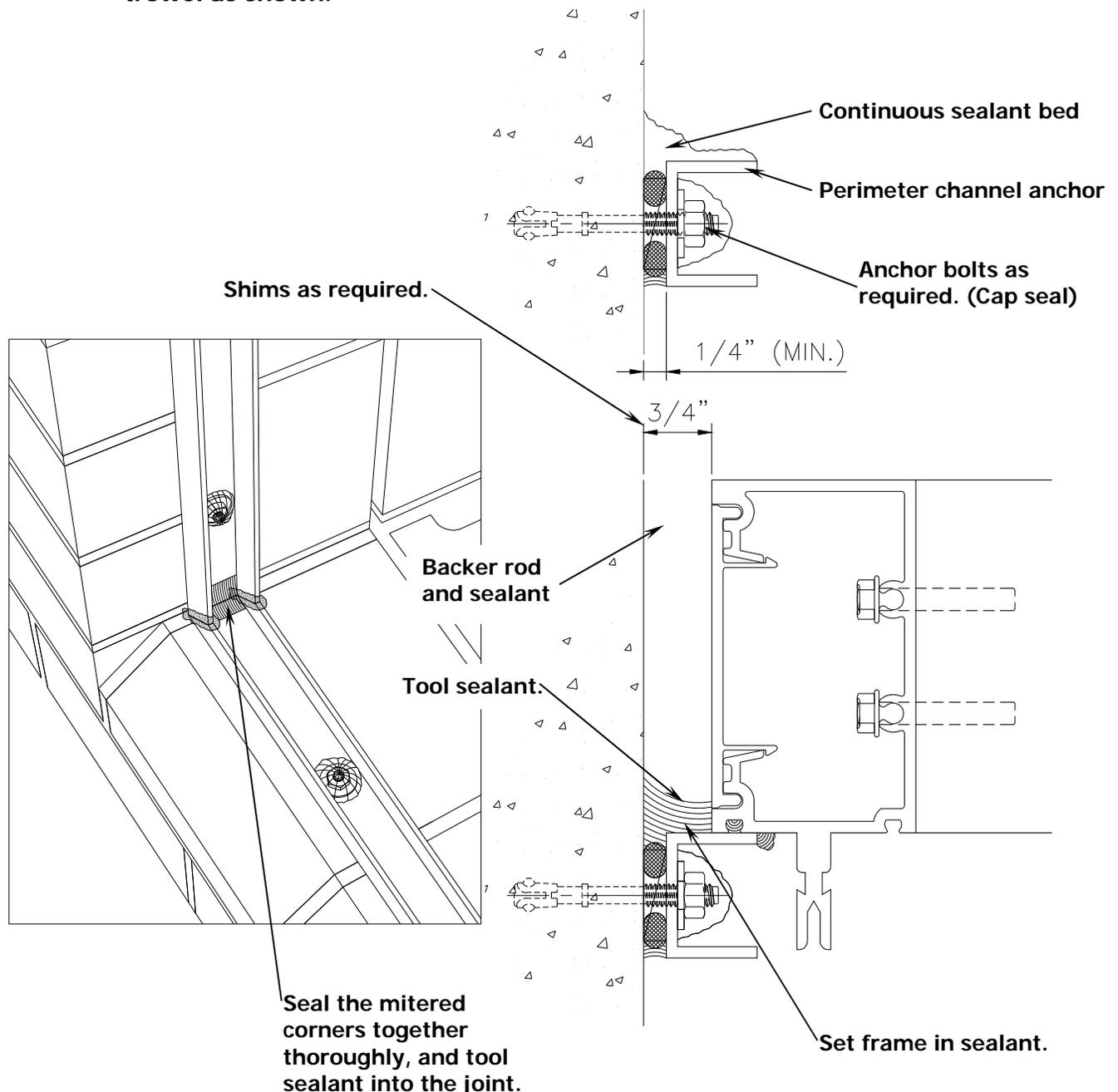
Refer to approved shop drawings for job specific conditions, anchor bolt sizes, and locations. Install assemblies according to approved shop drawings.



## Section V: Alternate Anchorage Method (Punched Openings)

### STEP #3 Install Frame Components

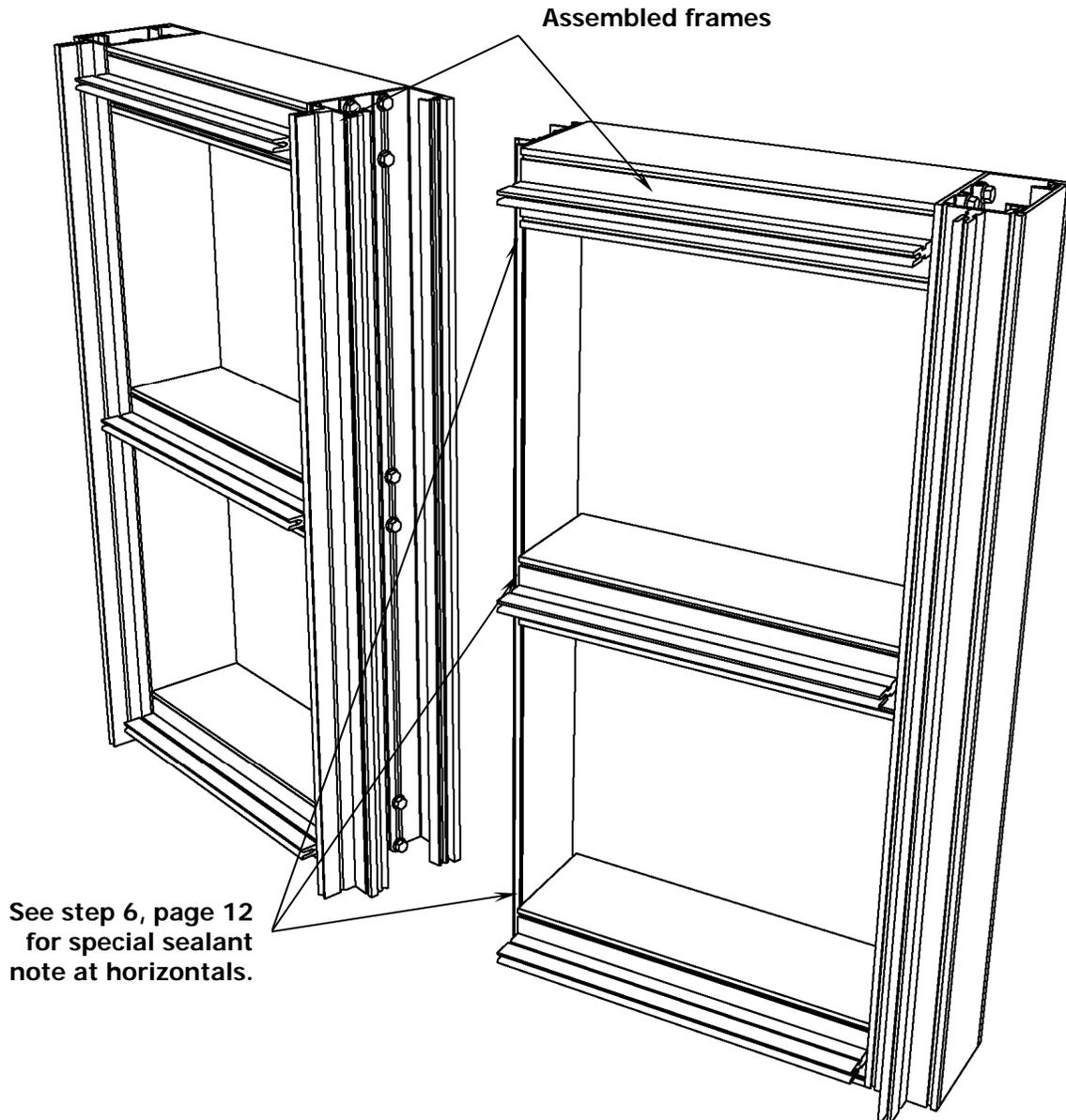
- A.) Apply backer rod and sealant at the perimeter channel anchor.
- B.) Seal the mitered ends of the channel as shown. (See inset below.)
- C.) Apply a bed of sealant along the back of the channel on all four sides of the opening.
- D.) Set the first group of frames into the opening in the bead of sealant. The frames must be set immediately after the sealant is applied for proper installation.
- E.) Apply temporary retainers at the frame perimeter. Tool the sealant with a trowel as shown.



## Section V: Alternate Anchorage Method (Punched Openings)

### STEP #4 Side stack Preassembled Frames

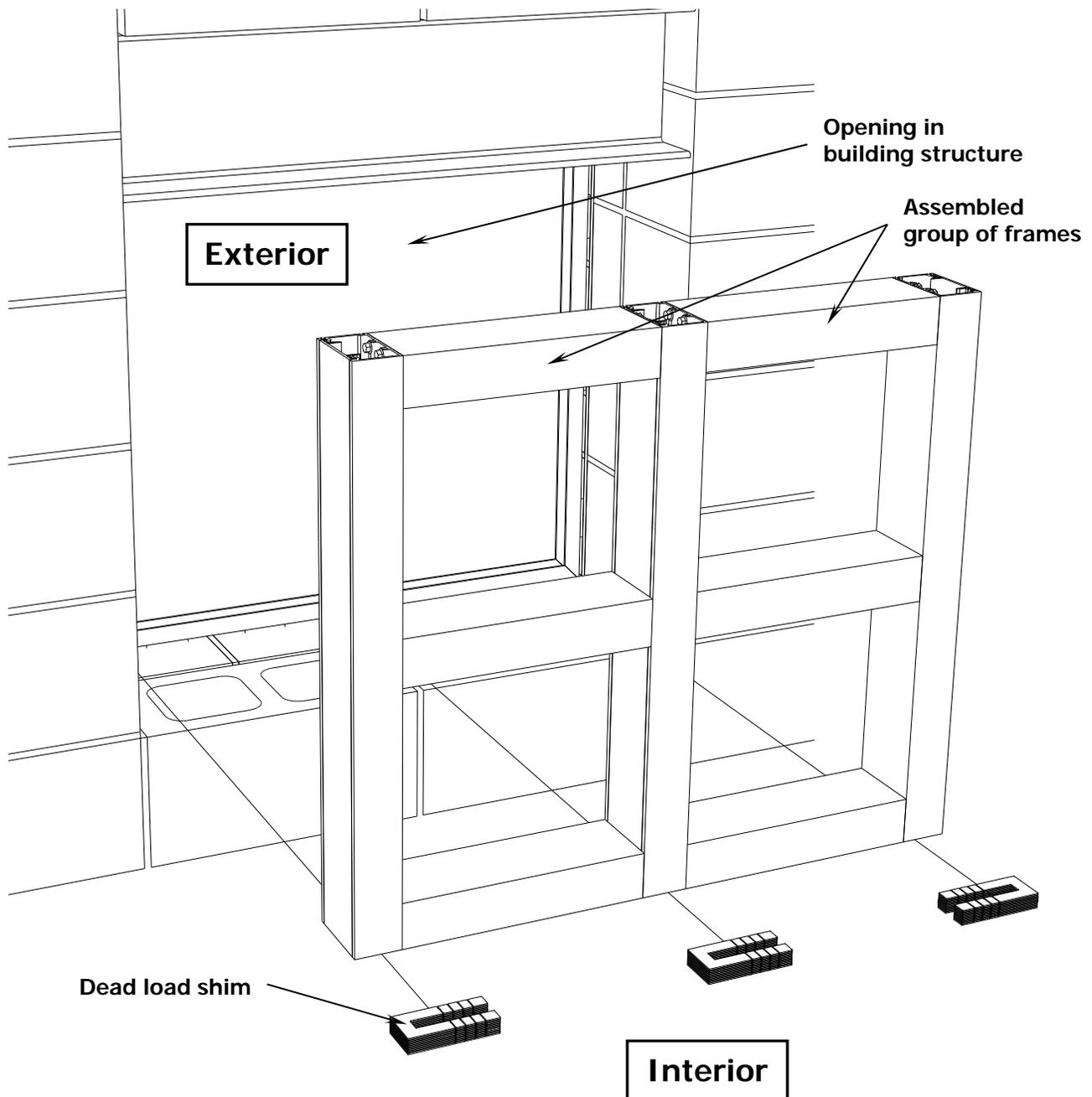
Frames can be partially assembled off-site and moved to the jobsite. Then, groups of frames may be snapped together, allowing them to be set into the opening at one time. The size of the group of frames to be installed is limited by the field's handling capacity due to the weight and size of the assemblies.



## Section V: Alternate Anchorage Method (Punched Openings)

### STEP #5 Set Group of Frames

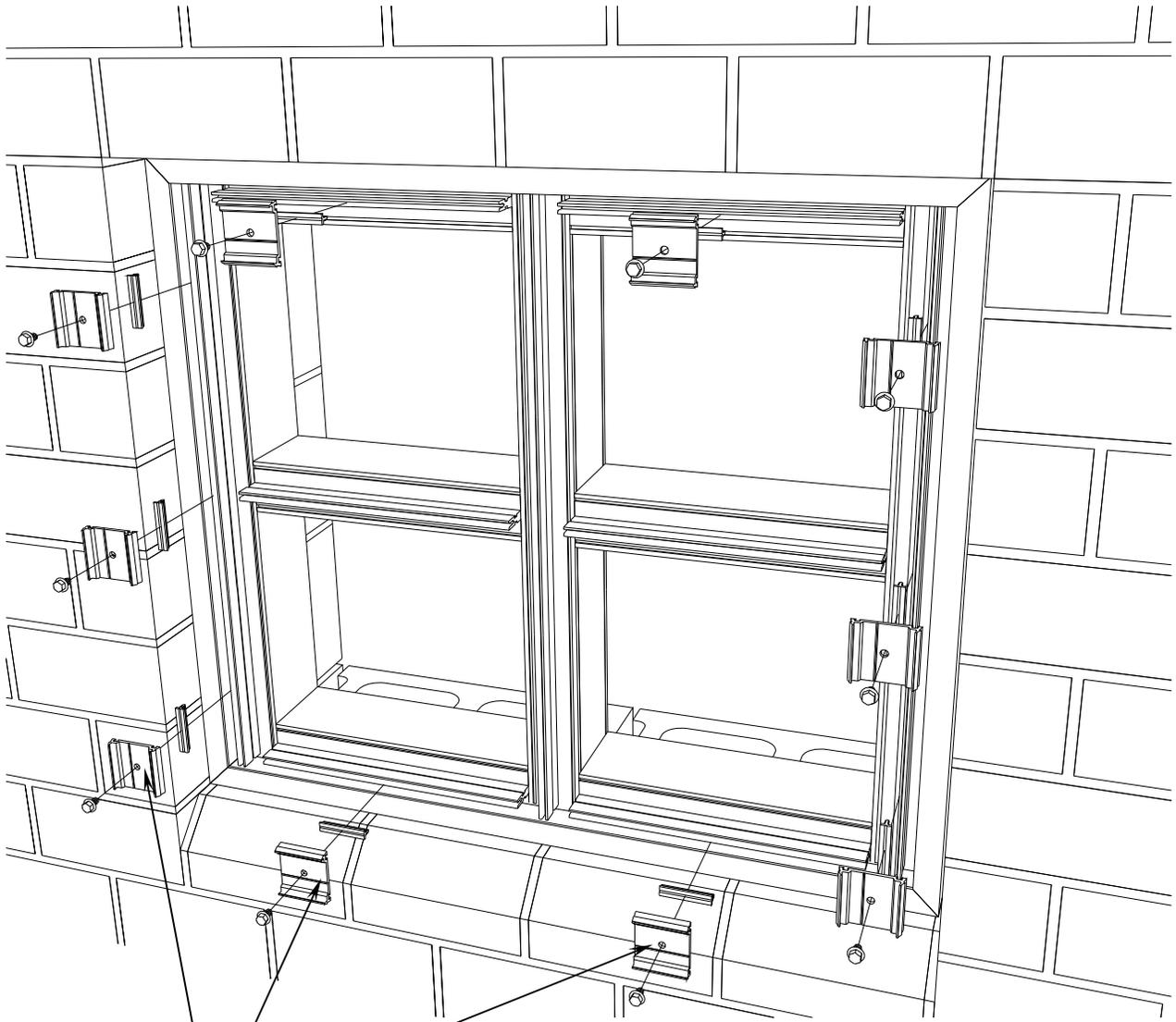
Set the assembled groups of frames into the opening on a bed of sealant at the perimeter anchor channels. See step 4, page 24.



## Section V: Alternate Anchorage Method (Punched Openings)

### STEP #6 Set Group of Frames

After the frame is plumb, all adjustments have been made, and the frames have been properly installed relative to established benchmarks, use temporary retainers at the perimeter of the curtain wall elevation to hold the frame in position. Space the temporary retainers approximately 18" to 24" around the perimeter. Insert additional dead load shims as needed beneath each vertical mullion to level and align the horizontals.



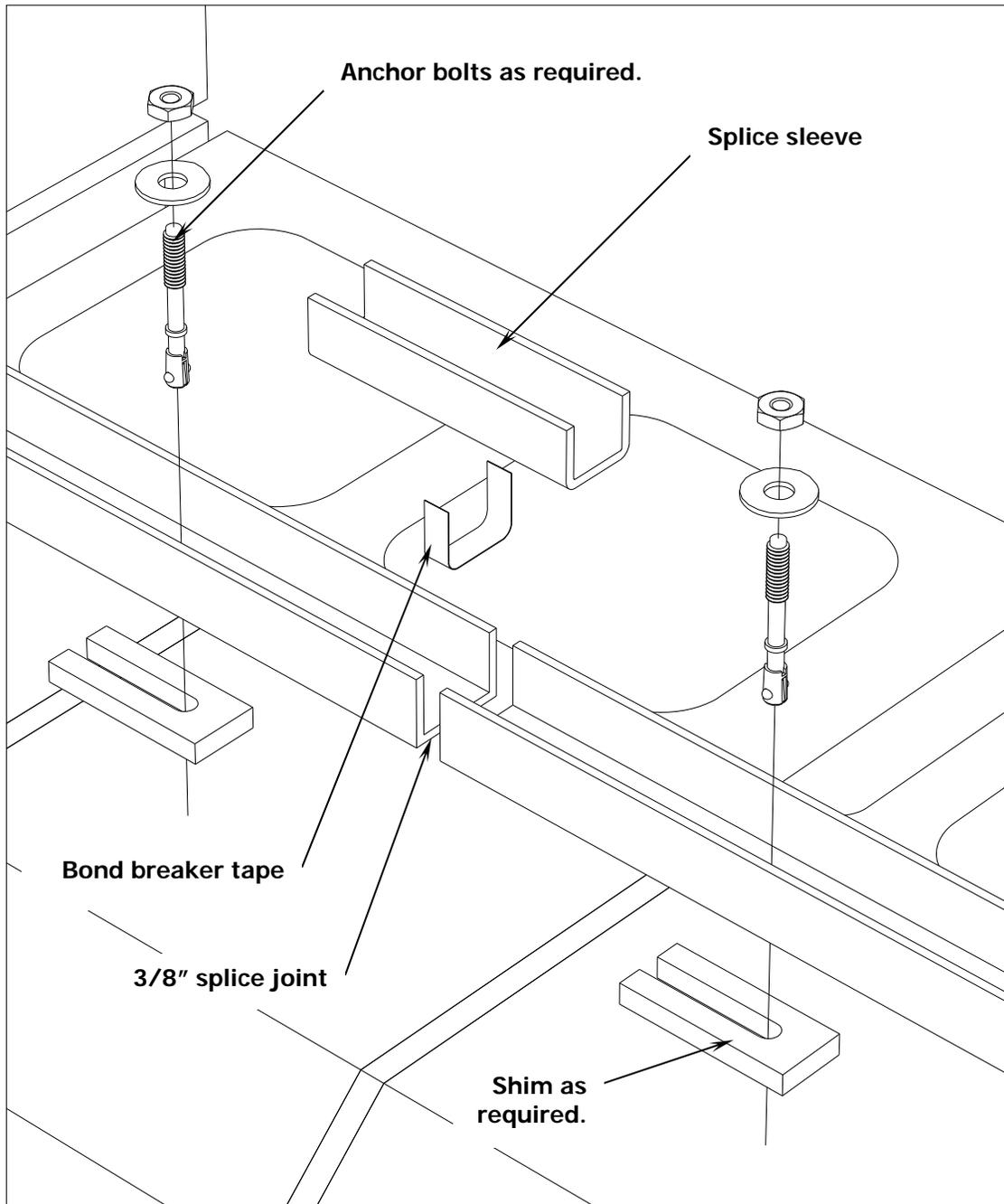
**Exterior View**

Apply temporary retainers at perimeter.

## Section VI: Perimeter Channel Splice (Punched Openings)

### STEP #1 Splice Perimeter Channel

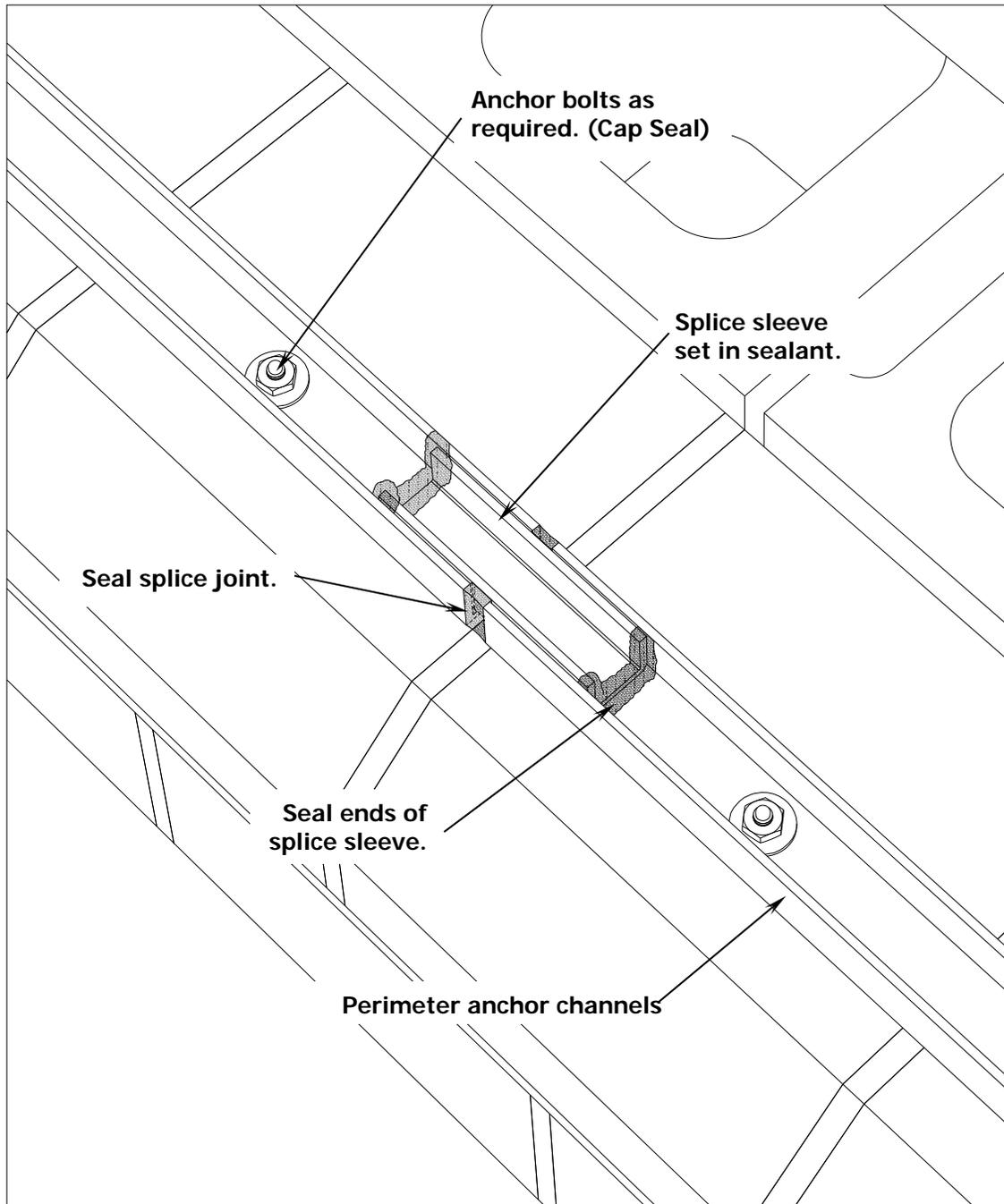
Install the perimeter channel to the head and sill conditions with appropriate shims and anchor bolts. The channel must be set to proper benchmarks for the final position of the wall. The nominal gap for the splice joint is 3/8". Apply bond breaker tape to the splice sleeve.



## Section VI: Perimeter Channel Splice (Punched Openings)

### STEP #2 Seal Splice Perimeter Channel

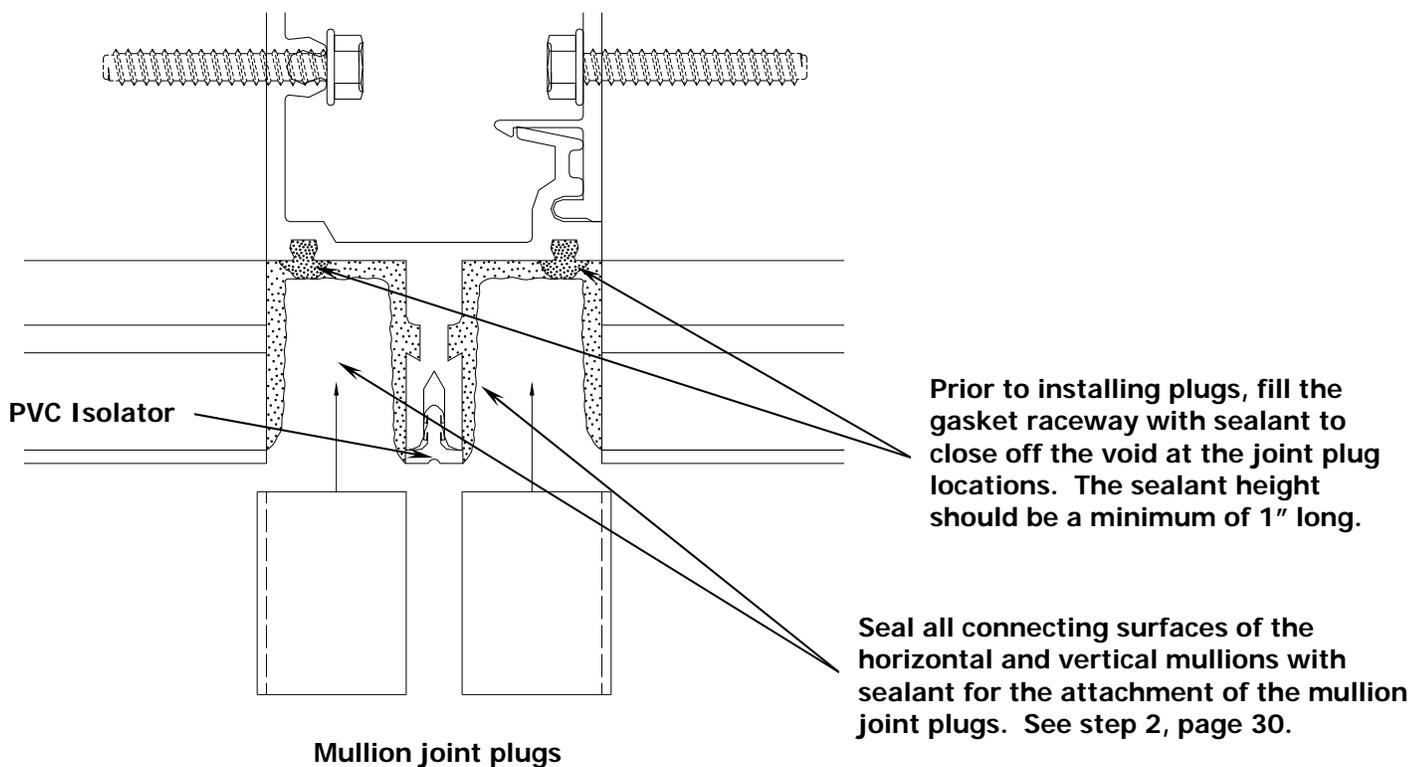
Apply a bed of sealant into area of the channel anchor that will receive the splice sleeve. Set the splice sleeve in place. Apply additional sealant at the ends of the splice and into the splice joint. Tool the sealant smooth, filling all voids.



## Section VII: Glazing Preparation

### STEP #1 Install Thermal Isolators and Prepare for Mullion Plugs

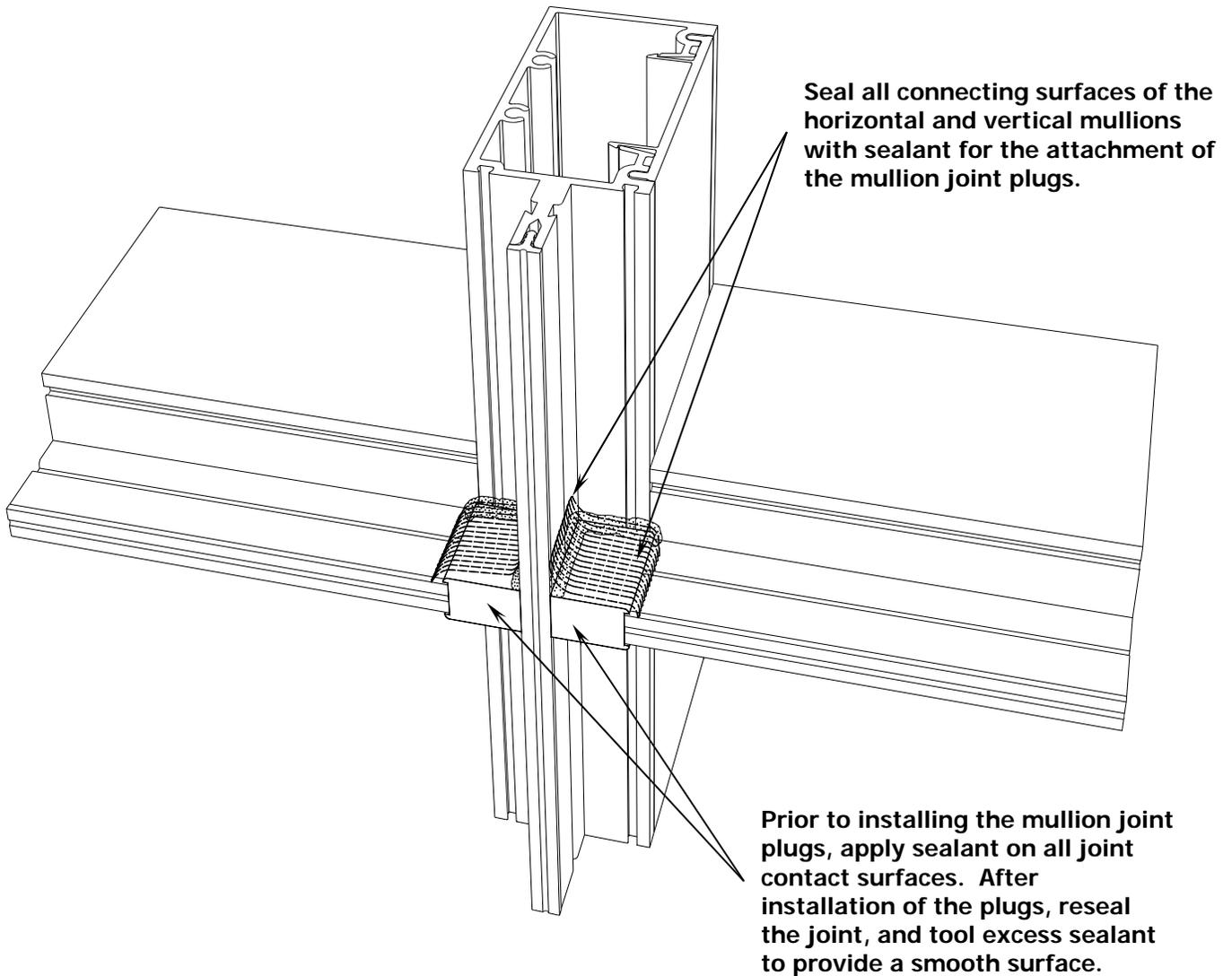
- A.) Remove the thermal isolator from the reels and allow to relax and shrink. Do NOT stretch the isolator, prior to or during installation.
- B.) Install the 90 Durometer PVC thermal isolator into position in the screw race of the vertical and horizontal mullions.
- C.) Run all vertical isolators continuous and butt together as required. Run the horizontal isolator to the ends of the horizontal members.
- D.) Prepare for mullion plugs as shown below.



## Section VII: Glazing Preparation

### STEP #2 Install Joint Plugs

A.) Seal the vertical gasket raceway, and slip in the mullion joint plugs at the horizontal to vertical intersections as indicated.

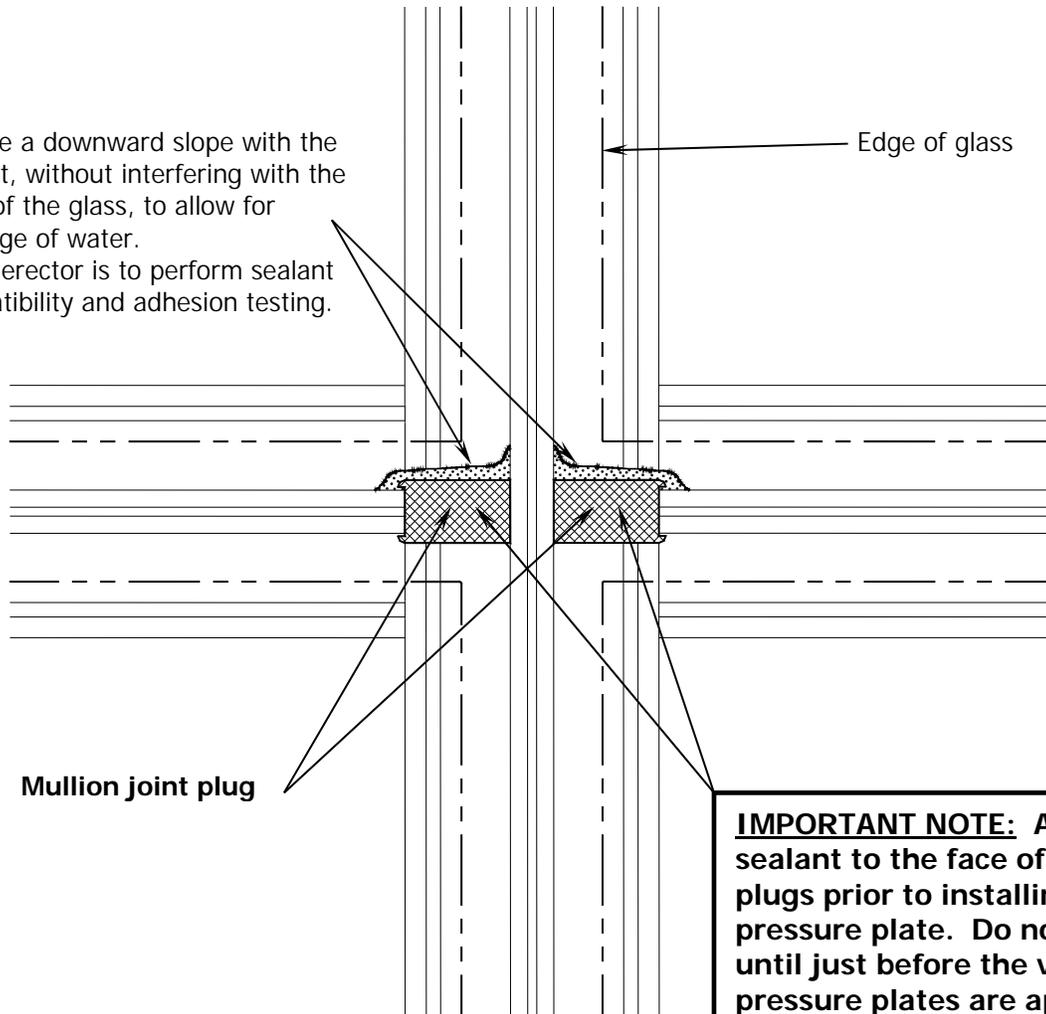


## Section VII: Glazing Preparation

### STEP #2 Install Joint Plugs(Continued)

Provide a downward slope with the sealant, without interfering with the edge of the glass, to allow for drainage of water.

\* The erector is to perform sealant compatibility and adhesion testing.



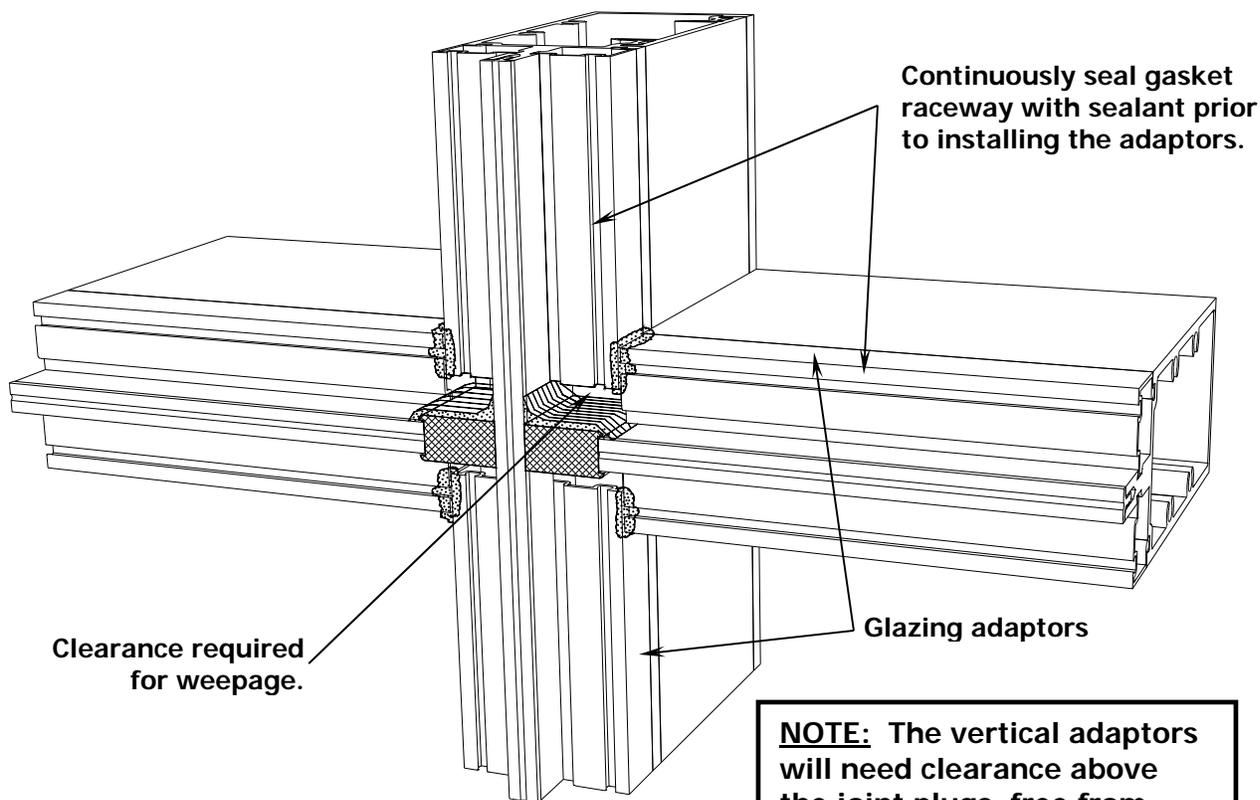
**IMPORTANT NOTE:** Apply sealant to the face of the joint plugs prior to installing the pressure plate. Do not seal until just before the vertical pressure plates are applied. Sealant must not be allowed to "skin" over before installing the pressure plate.

**Elevation of Joinery  
at Horizontals Prior  
to Setting the Glass**

## Section VII: Glazing Preparation

### STEP #3 Install Glazing Adaptors

- A.) Prior to installing the glazing adaptors, seal the full length of the gasket raceway with sealant.
- B.) Snap the glazing adaptors in place in the sealant, starting with the verticals. Allow at least 1/8" clearance from the bottom of the glazing adaptors to the top of the joint plugs to allow for weepage.
- C.) Apply sealant to the ends of the horizontal adaptors prior to setting them into position. Snap the horizontal adaptors in place between the vertical adaptors. Seal the face of the adaptor intersections with sealant. Tool all sealant joints, and remove all excess sealant.



GLAZING COMBINATIONS

Glazing	Adaptors		Exterior	Interior	
	Center Stem		Preset	Preset	
	EP80	6736	WNE0	WEQ2	WNE0
1/4"	X		X		X
5/16"	X		X	X	
1/2"		X	X		X
9/16"		X	X	X	
1"			X		X
1 1/4"	*See note below		X		X
1 5/16"	*See note below		X	X	

\* 1 1/4" & 1 5/16" GLAZING REQUIRES  
EM80 PRESSURE PLATE TO BE USED.

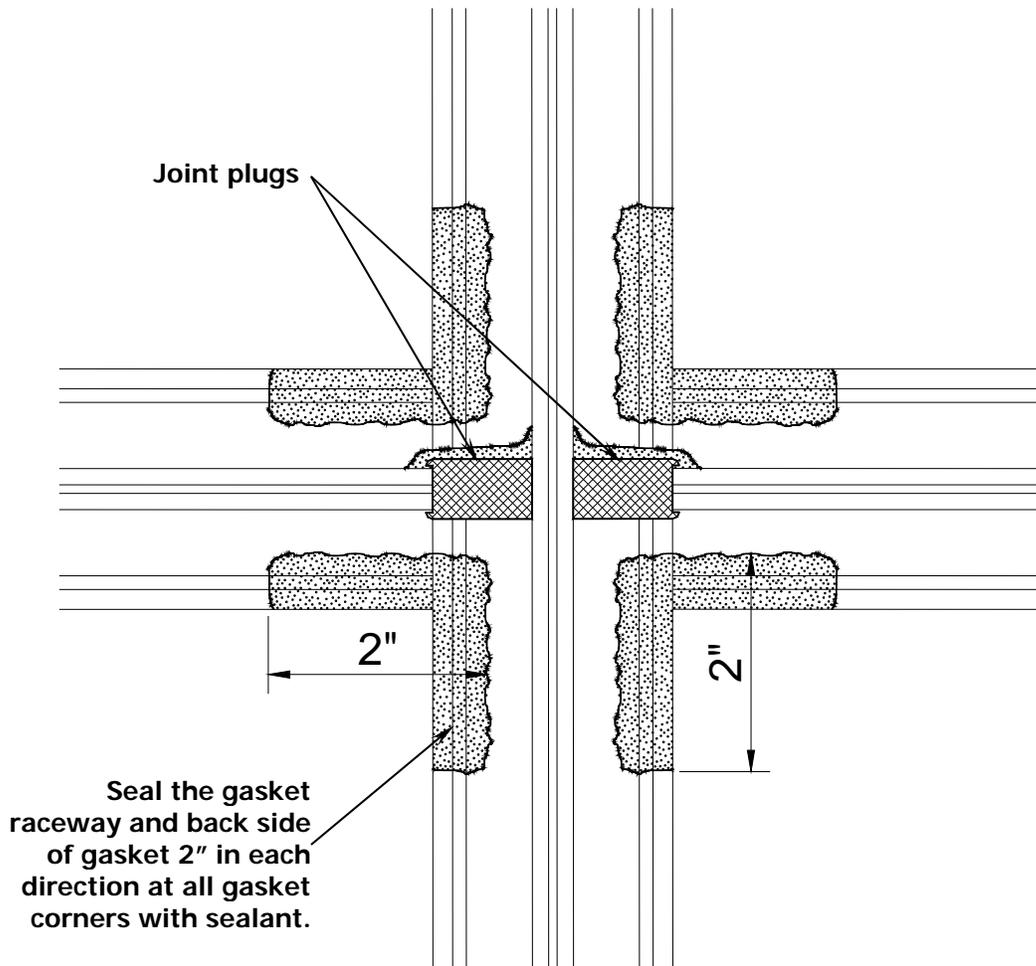
**NOTE:** The vertical adaptors will need clearance above the joint plugs, free from sealant for weepage.

**Glazing Adaptor Cut Formula:**  
 Vertical = D.L.O. + 1"  
 Horizontal = D.L.O. - 1/16"

## Section VII: Glazing Preparation

### STEP #4 Install Gaskets in Mullion

- A.) Remove the glazing gasket from reel and allow them to relax and shrink.
- B.) Apply into the raceways a minimum of 2" in each direction from the corners of the D.L.O. (Refer to the illustration below.)
- C.) Once the gaskets have relaxed, cut them, and install the gaskets into position. The interior vertical gaskets must be cut vertical D.L.O. plus 1 3/4". Press the gasket in place, starting at the center of the D.L.O. Crowd in the excess at the ends. The vertical gaskets should run through and extend past the horizontal gaskets.
- D.) Cut the horizontal gaskets D.L.O. plus 1/2", and press the gasket in place, starting at the center of the D.L.O. Crowd in the excess at the ends.
- E.) Seal all gasket corners, and butt the joints as indicated in the illustration on page 34.

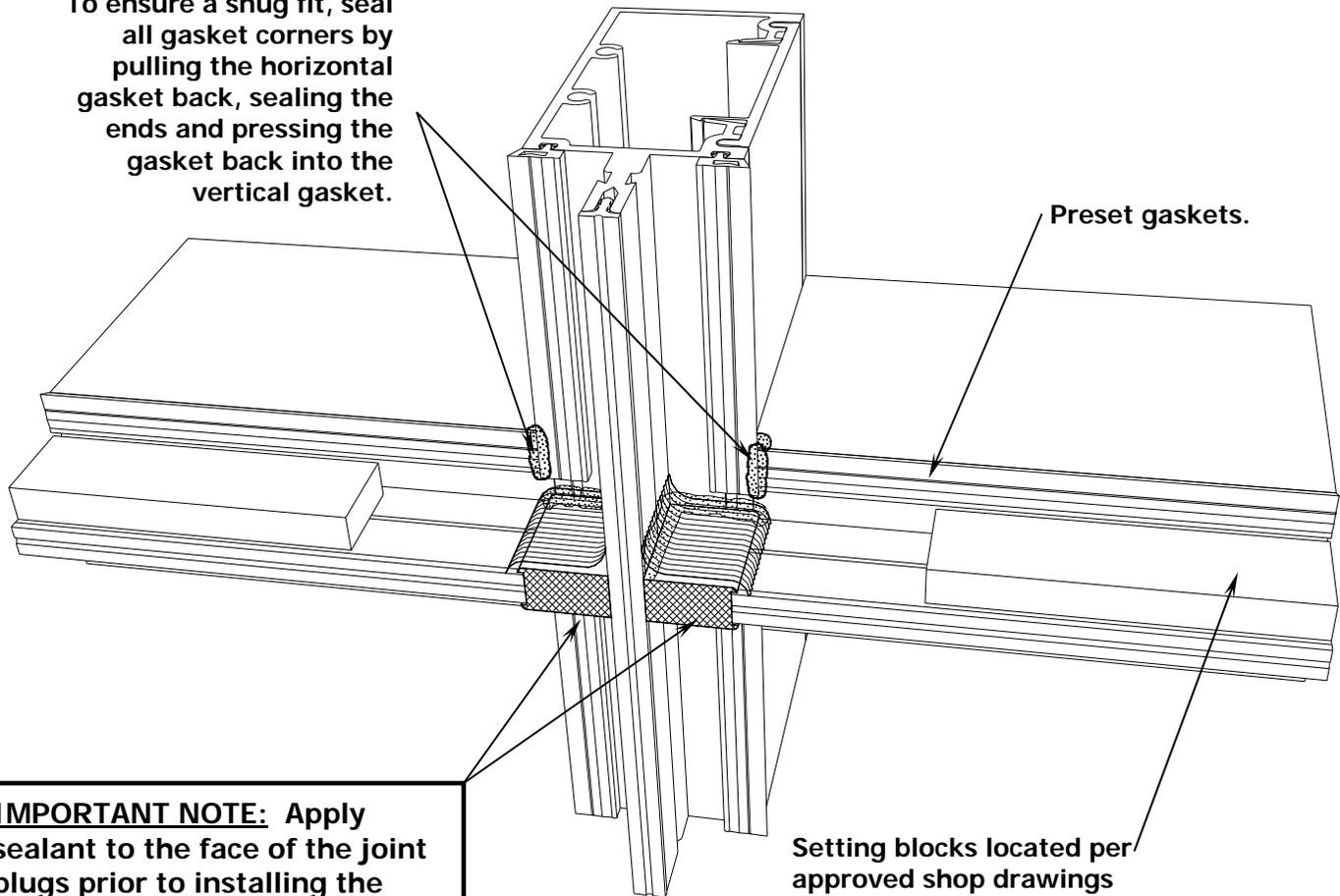


## Section VII: Glazing Preparation

### STEP #4 Install Gaskets In Mullion(Continued)

**IMPORTANT NOTE:** The glazing must be set immediately after positioning the setting blocks (see step #5) **BEFORE** the sealant begins to cure. Secure the glazing with temporary glazing retainers. The glazing retainers should be located close to the corners of the glazing infill and spaced not more than 30" on center, depending on infill size. If the sealant hardens before the glazing infill has been set, proper gasket compression at the corners will be impeded and will result in leakage.

To ensure a snug fit, seal all gasket corners by pulling the horizontal gasket back, sealing the ends and pressing the gasket back into the vertical gasket.



**IMPORTANT NOTE:** Apply sealant to the face of the joint plugs prior to installing the pressure plate. Do not seal until immediately before the vertical pressure plates are applied. Sealant must not be allowed to "skin" over before installing the pressure plate.

**Customer / Installer Note:** EFCO setting blocks are typically 4" in length with different depths. If the glazing infill is "NOT BY EFCO" and glazing sizes are larger than 40 square feet, the glazing details must be reviewed by the glazing manufacturer for proper setting block size.

### STEP #5 Install Setting Blocks

Position and install the setting blocks as directed on the approved shop drawings.  
**NOTE:** Do NOT set setting blocks in a bed of sealant. This can cause interference when the glass and horizontal covers are applied.

## Section VIII: Glazing Installation

### STEP #1 Install Glazing Infill

- A.) Install the proper glazing infill product into the opening using suction cups to gently lower the infill onto the setting blocks.
- B.) Position the infill glazing in the center of the opening, maintaining a 1/2" glass bite around the entire perimeter.
- C.) Lift the infill slightly off the setting blocks, and press the glass firmly against the interior glazing gaskets at the sill horizontal.

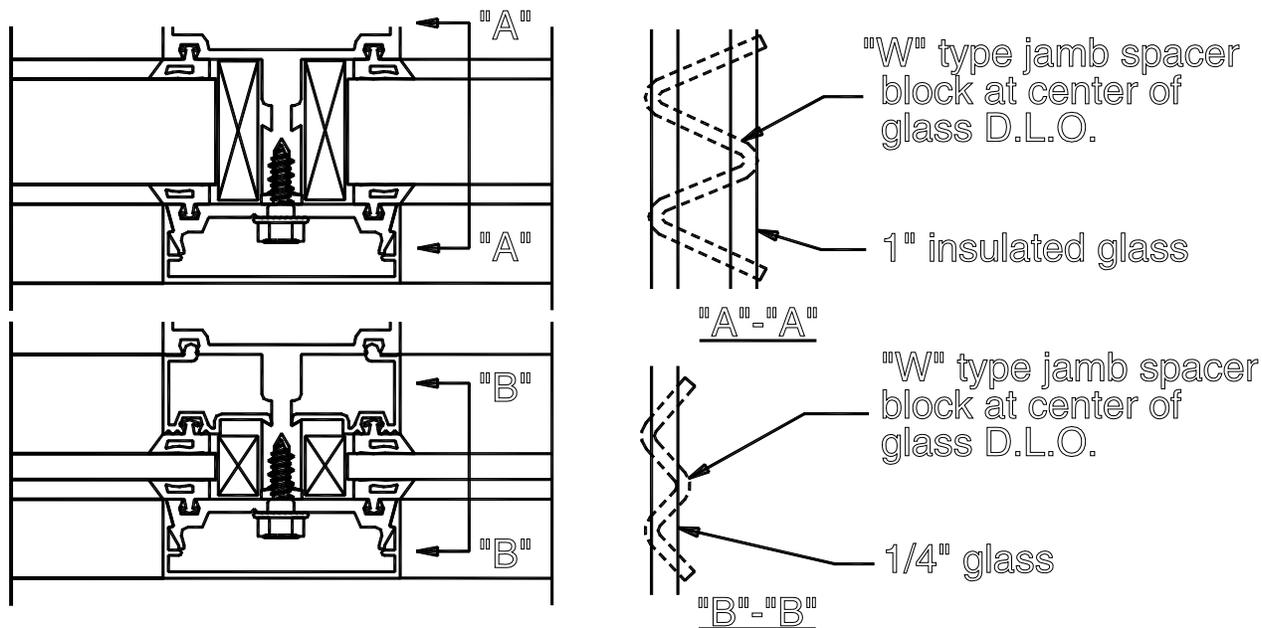
### STEP #2 Install Temporary Retainers

- A.) Depending on the installation sequence, it may be desirable to install temporary glazing retainers to hold the glazing infill in the opening. Apply the retainers as needed; HOWEVER, it is strongly suggested that retainers be spaced no more than 30" apart. They are intended for SHORT-TERM temporary applications only and are not to be left UNATTENDED or OVER NIGHT. (TEMPORARY RETAINERS DO NOT MEET STRUCTURAL LOAD REQUIREMENTS AND CAN FAIL UNDER MINIMAL DESIGN LOADS.)

### STEP #3 Install Anti-Walk Blocks

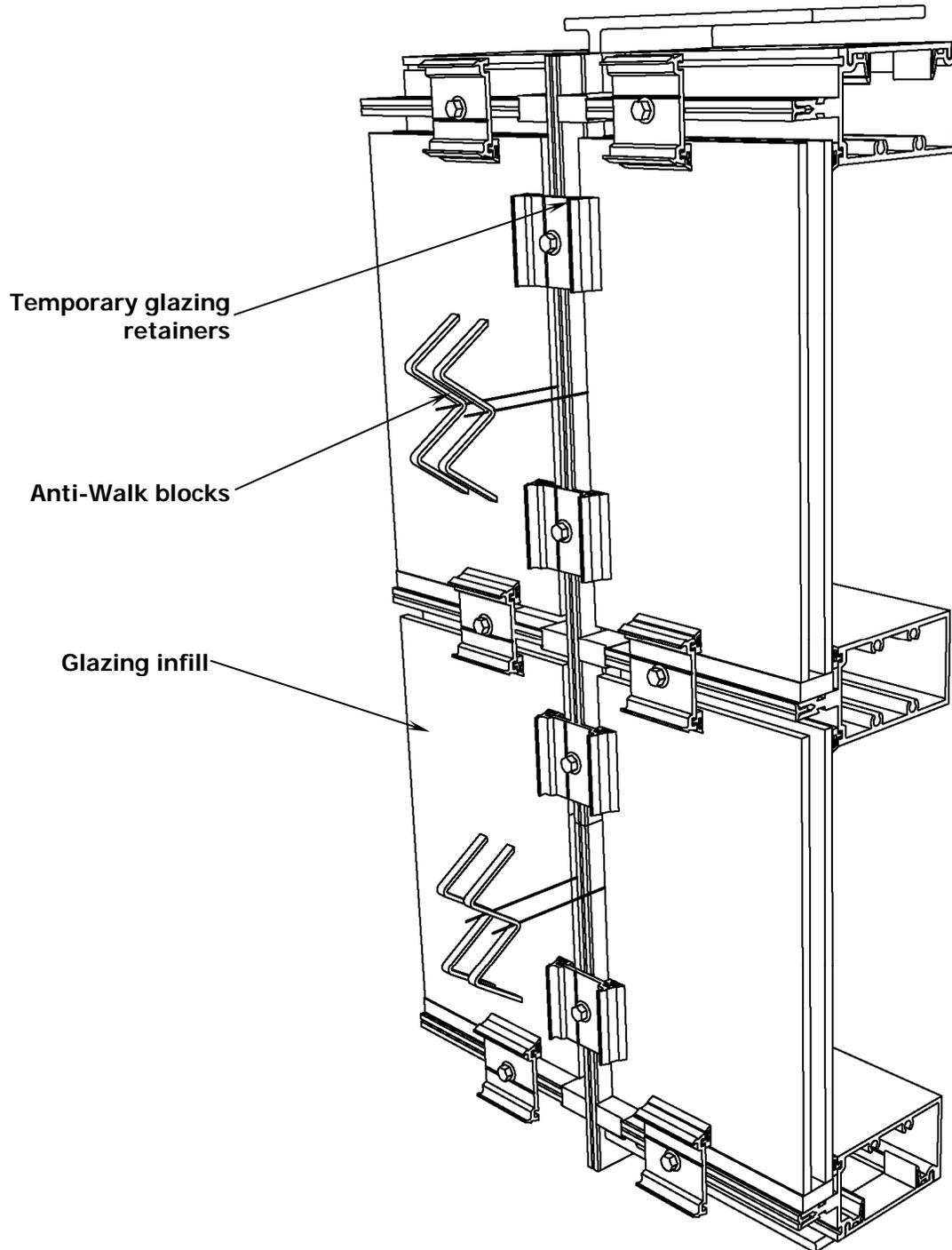
- F.) Install and position anti-walk blocks in the jamb pocket at approximately the center of the vertical D.L.O.

**NOTE:** The typical glass bite for the captured system is 1/2". Glass sizes are based on D.L.O. plus 1" formula.  
**NOTE:** Impact glazing glass bite is 3/4". Glass sizes are based on D.L.O. plus 1 1/2" formula.



**NOTE:** Clean all glazing pockets prior to glazing. This step is necessary to avoid clogging the weep system, as well as to prevent staining of the exterior metal and glass surfaces.

## Section VIII: Glazing Installation

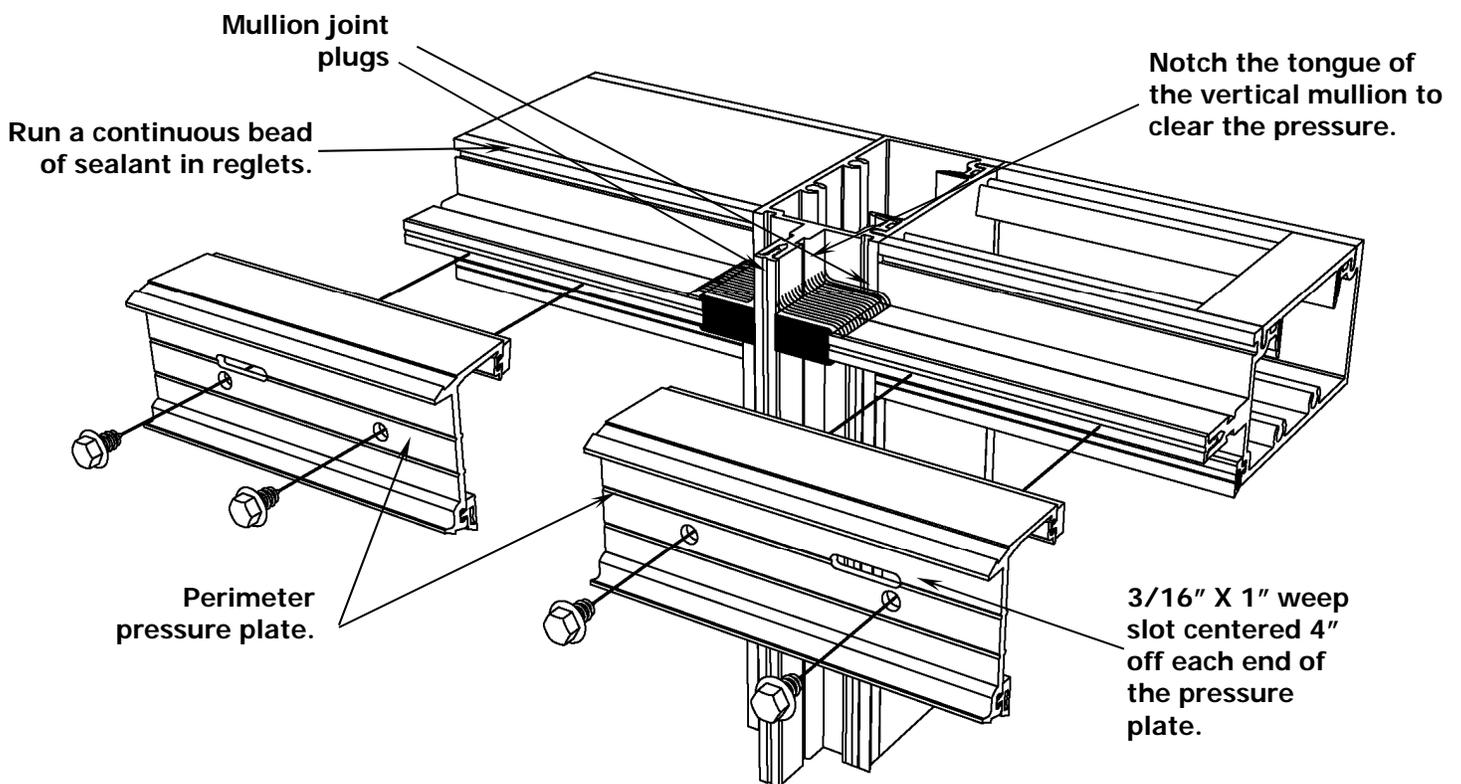


**NOTE:** Temporary retainers are available from EFCO by request only and are not included in the cost of the material for the project.

## Section IX: Pressure Plates

### STEP #1 Prepare Perimeter Pressure Plates

- A.) Remove the exterior gasket material from the reel, and allow the gasket to relax and shrink.
- B.) Apply the glazing gaskets to the pressure plates. Horizontal gaskets are cut D.L.O. plus  $\frac{1}{2}$ ".
- C.) Run a bead of sealant continuously in the glazing gasket reglets as shown.

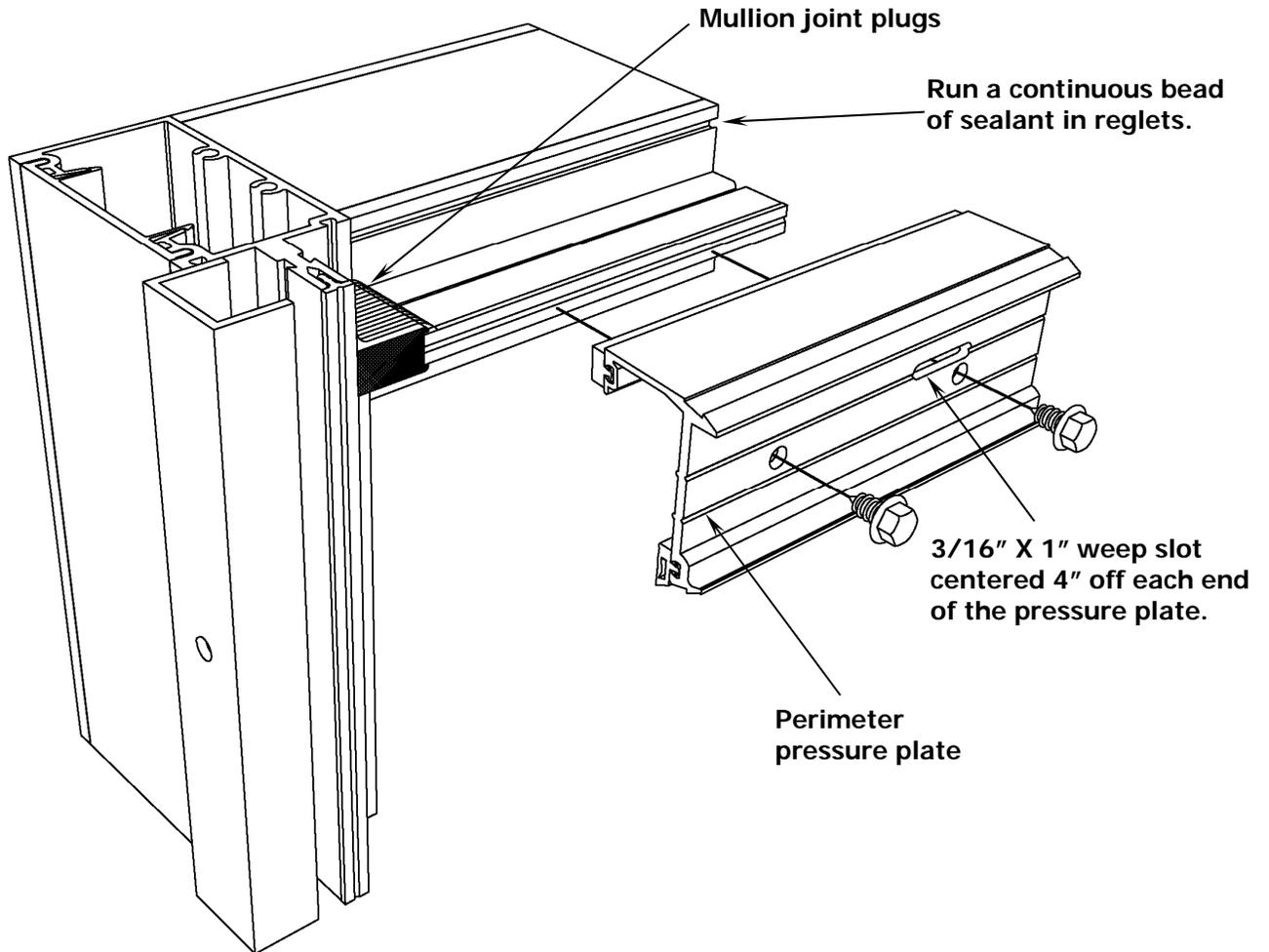


Perimeter Pressure Plate Fabrication at Intermediate Vertical

## Section IX: Pressure Plates

### STEP #2 Attach Perimeter Pressure Plates

- A.) Notch the perimeter pressure plates at the jamb as shown. The head detail is shown; the sill detail is opposite hand.



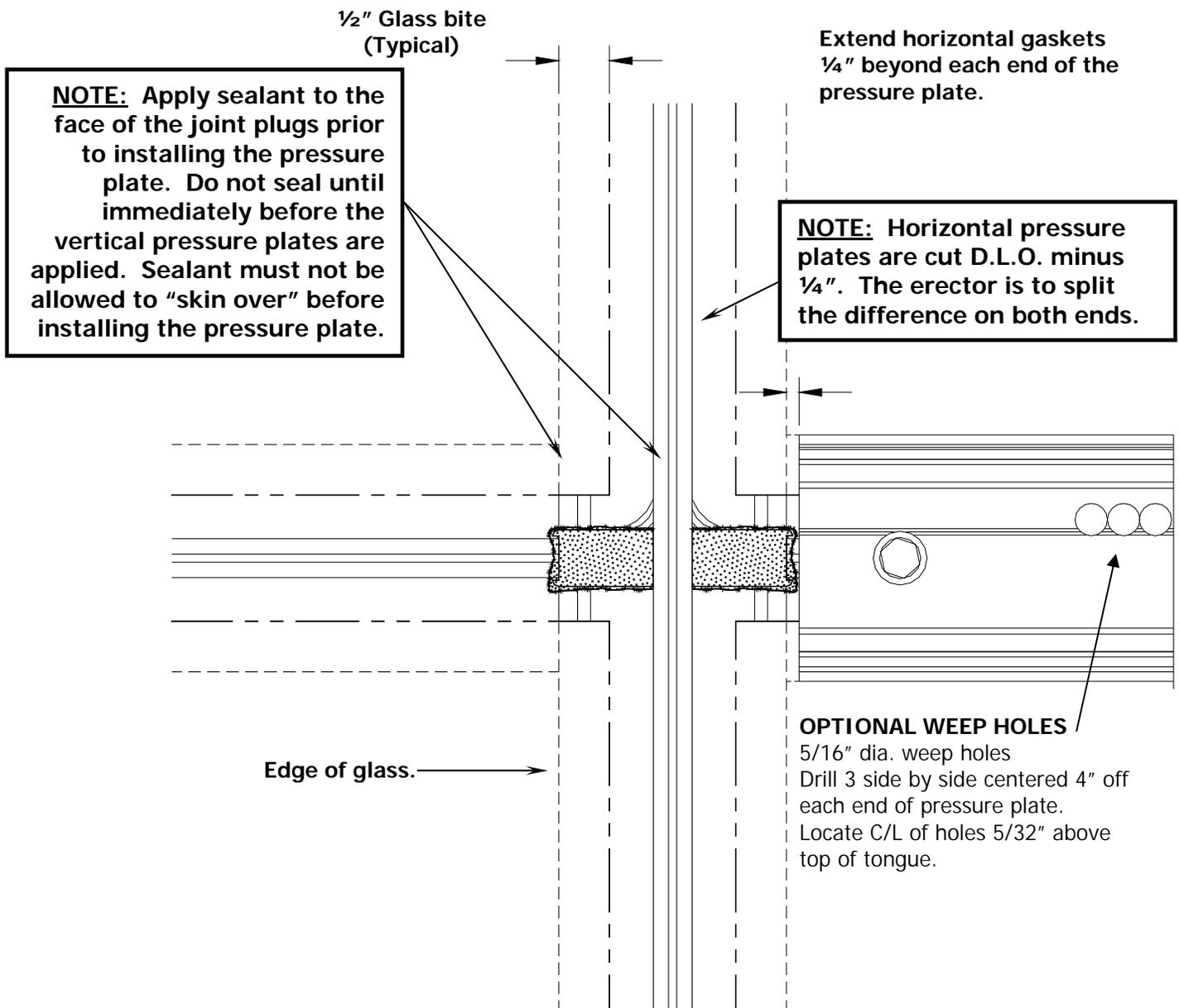
## Section IX: Pressure Plates

### STEP #3 Apply Gaskets to Perimeter Pressure Plates

- A.) Remove the exterior gasket material from reel and allow the gasket to relax and shrink.
- B.) Apply the glazing gaskets to pressure plates. Gaskets must be cut flush at both ends of the vertical pressure plates, except in multi-span applications, where the gaskets are to extend 1" beyond the top end to span across the expansion joint. The pressure plate should extend 3" past the splice. (See page 45.)

### STEP #4 Seal Perimeter Pressure Plates

- A.) Apply sealant to the face of the mullion joint plugs prior to installation of the vertical pressure plates.

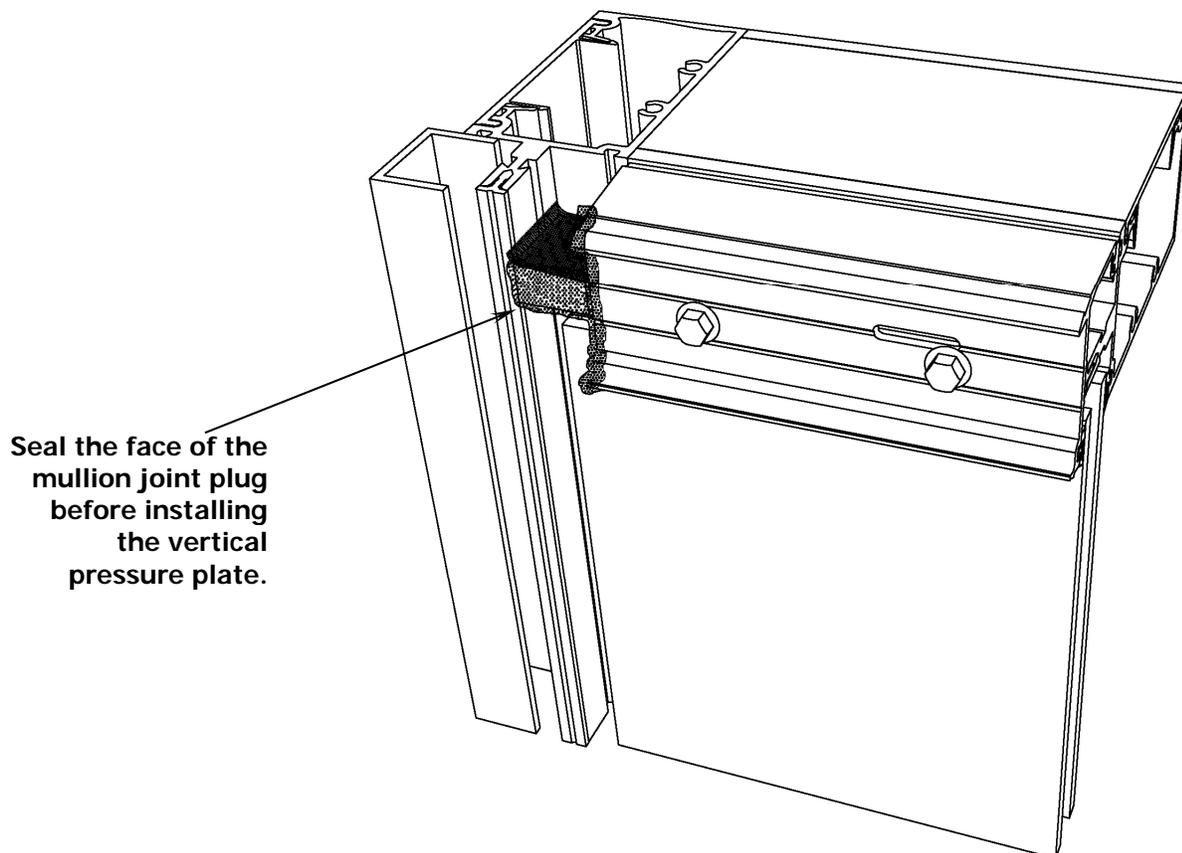


## Section IX: Pressure Plates

### STEP #5 Apply Pressure Plates

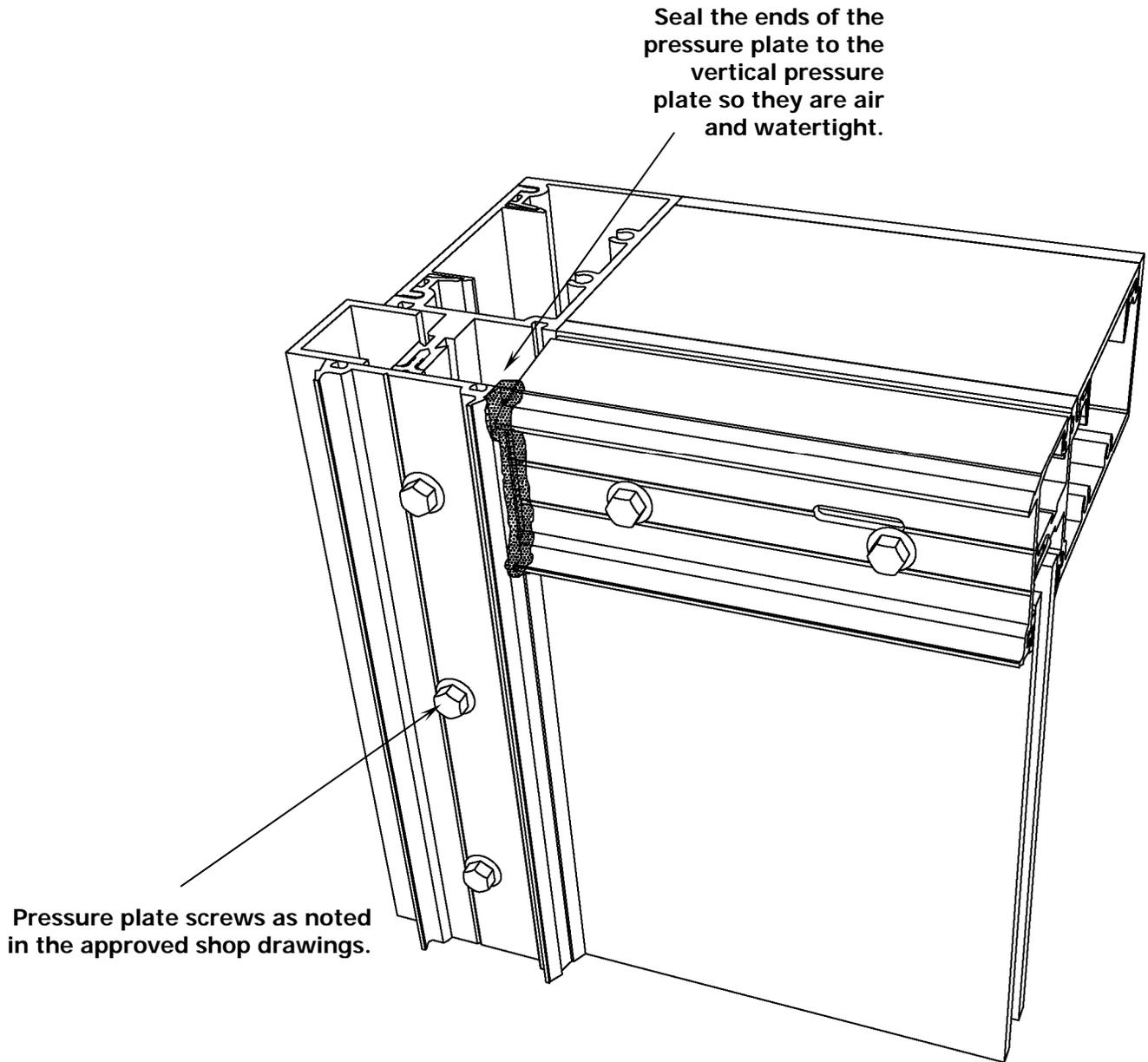
- A.) First, attach the horizontal perimeter pressure plates, then the vertical pressure plates, followed by the intermediate horizontal pressure plates. Attach the pressure plates with the appropriate fasteners as shown in approved shop drawings. Locate the screws at 6" center to center and a maximum of 3" from the ends of each pressure plate. Torque screws to 80 inch-pounds. When possible, it is recommended to work from the center of the pressure plate to the ends on the horizontals and from the sill upward on the vertical pressure plates.
- B.) In cold weather, first torque all pressure plate screws to 40 inch-pounds. Once all four sides have been clamped down, torque all screws to 80 inch-pounds.
- C.) Seal all joints between the vertical and horizontal pressure plates with sealant to provide an air and watertight seal.
- D.) Close off the ends of the anchor channel with backer rod, and seal as shown below.

**NOTE:** The glazier should always place a screw in the vertical pressure plate, directly opposite of each horizontal. This is necessary to provide maximum control of pressure on the mullion plugs, which provides a critical sealing function.



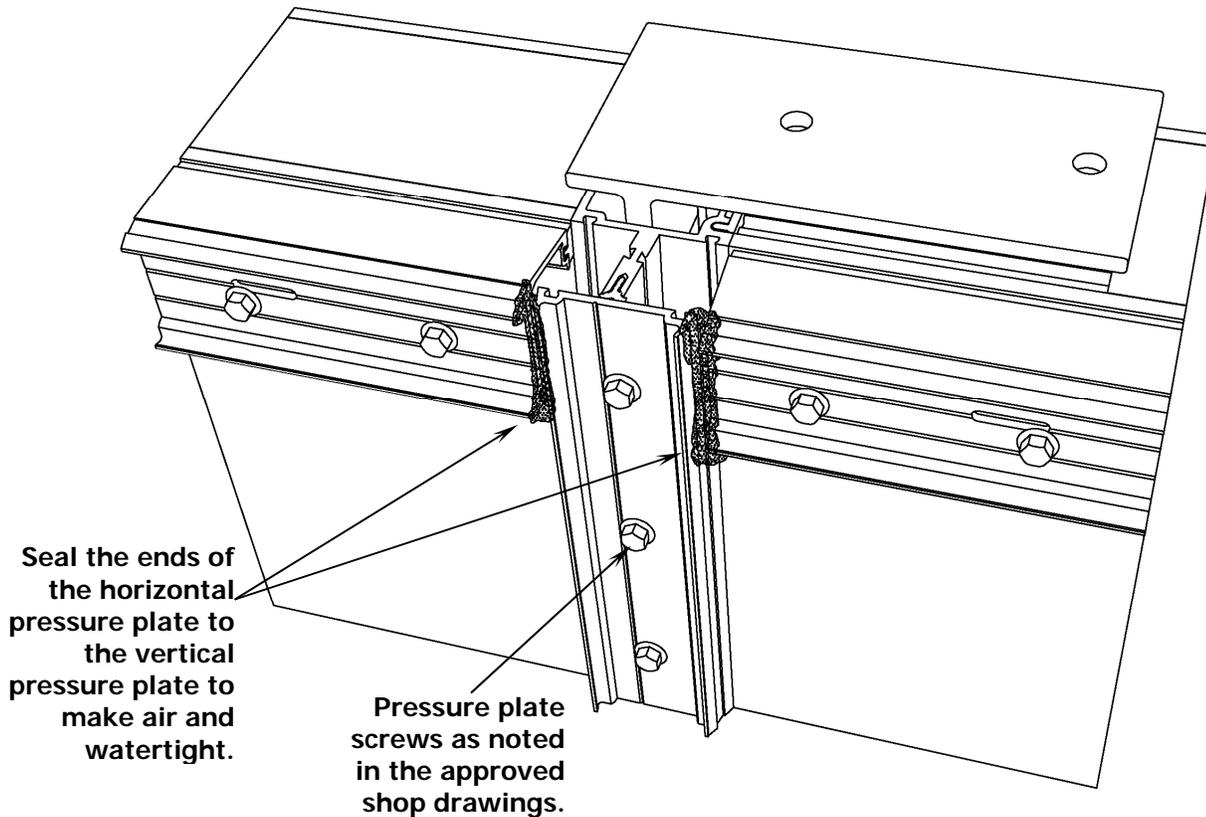
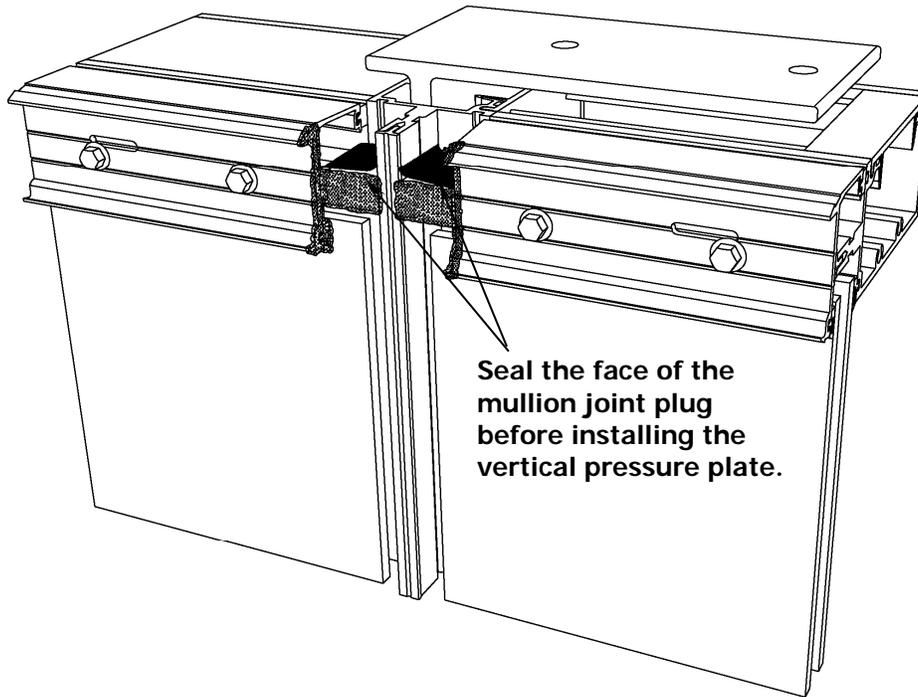
**Perimeter Pressure Plate at Jamb**

## Section IX: Pressure Plates



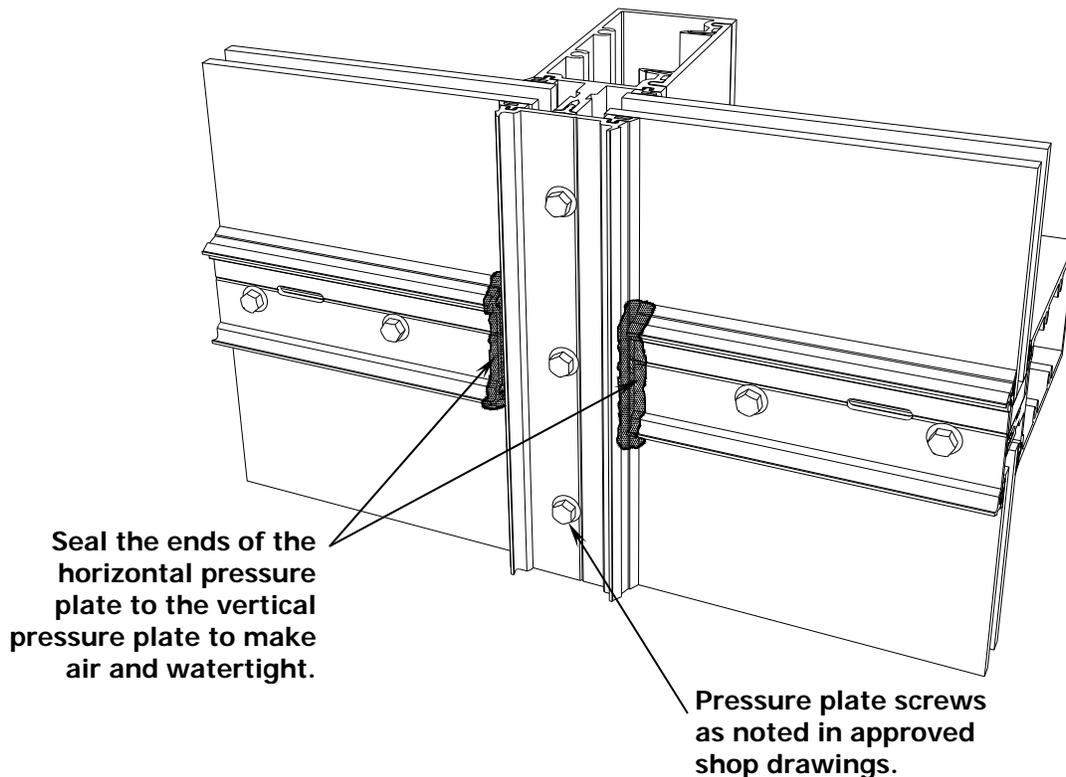
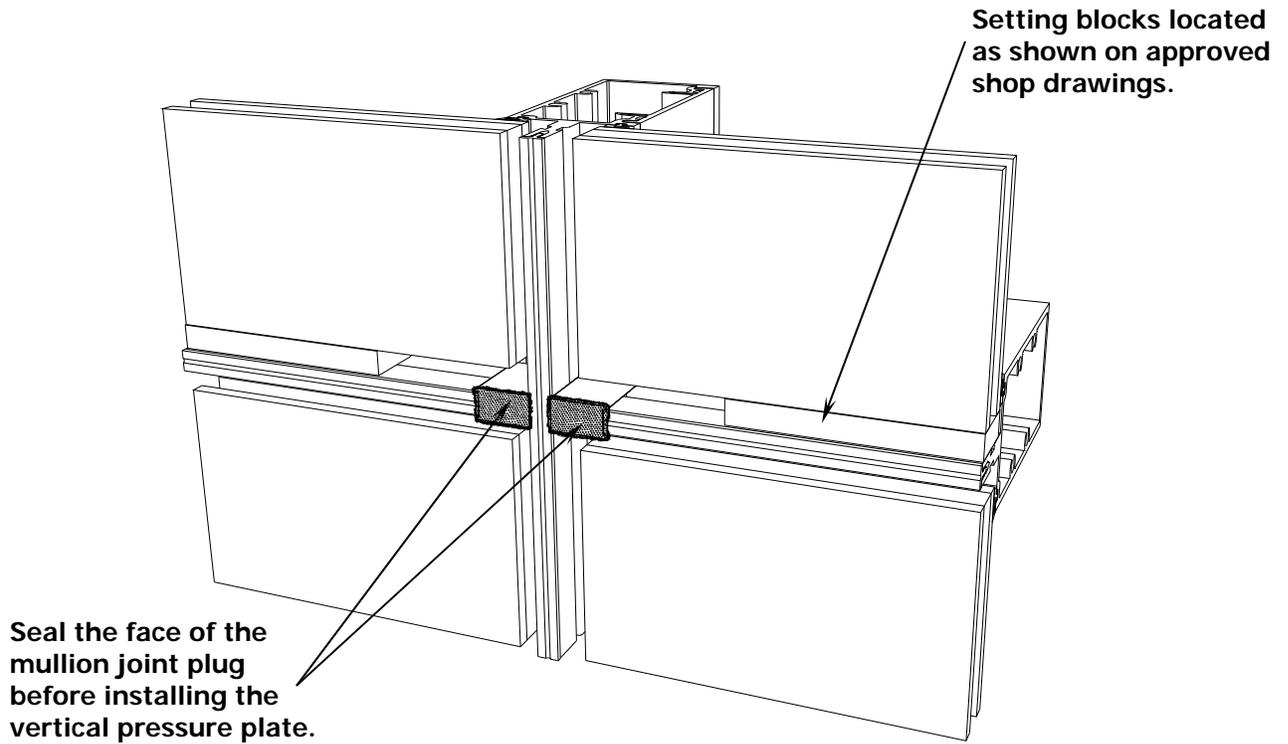
**Perimeter Pressure Plate at Jamb**

## Section IX: Pressure Plates



**Perimeter Pressure Plate at Head  
(Sill Similar)**

## Section IX: Pressure Plates

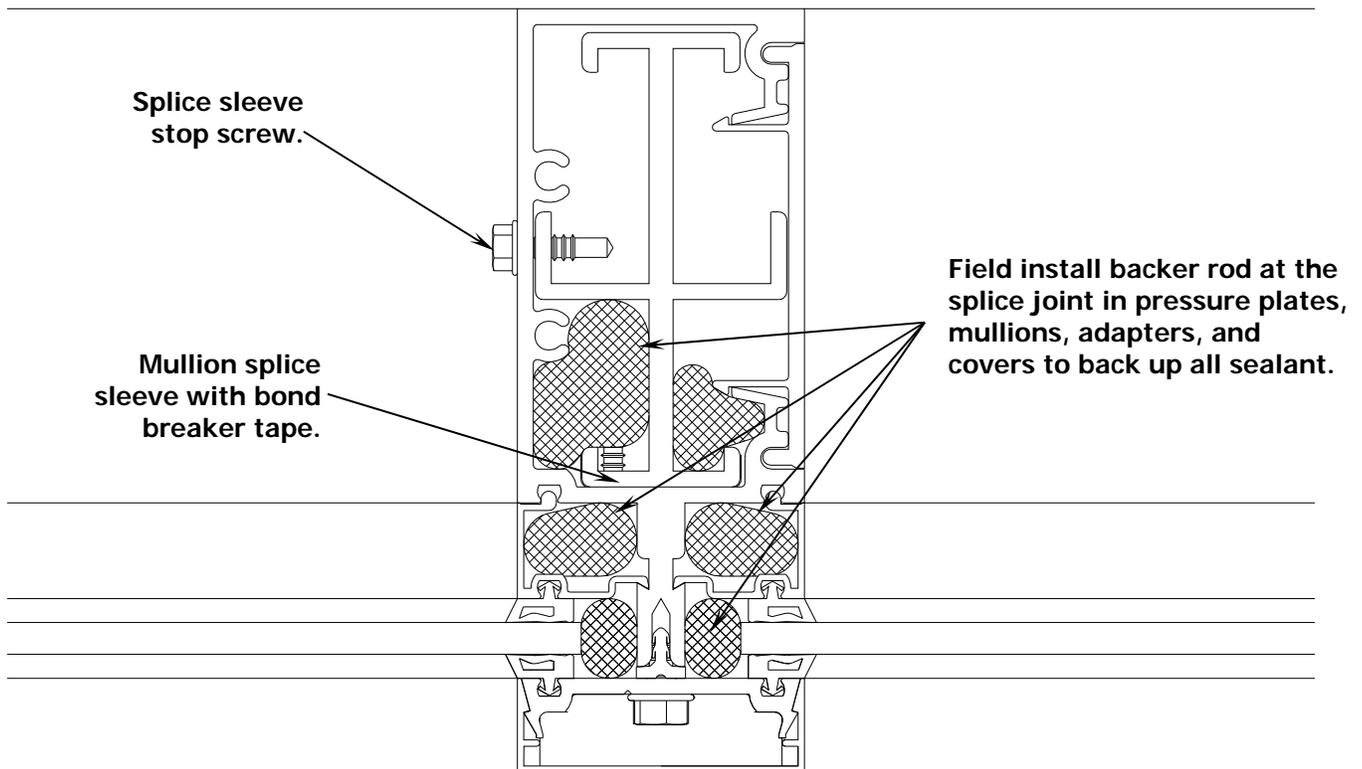


**Intermediate Pressure Plate**

## Section X: Vertical Splice Joints

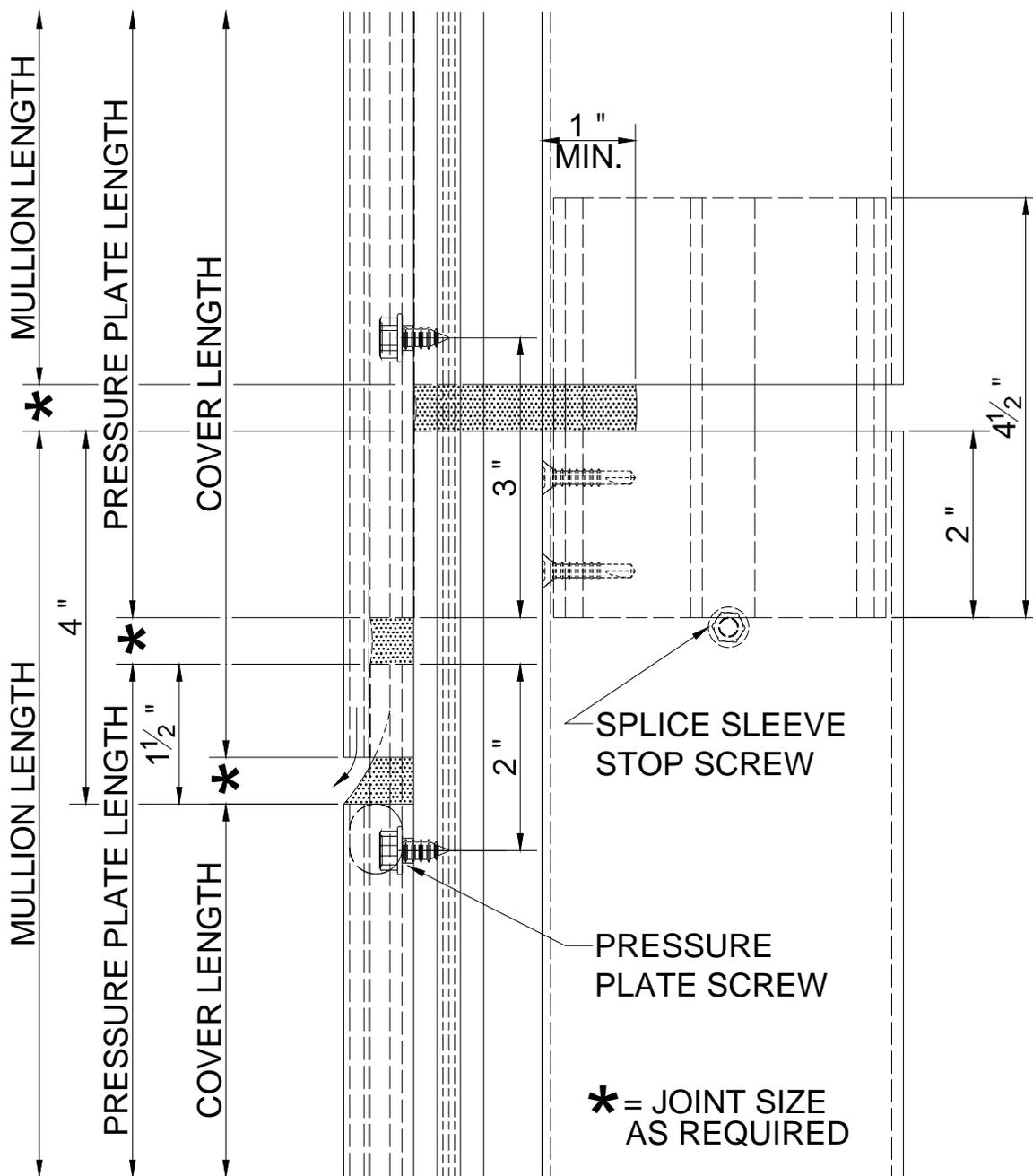
### STEP #1 Locate Splice Joints

- A.) Splice joints should occur at spandrel areas (if possible). Refer to approved shop drawings for actual locations.
- B.) Depending on job specific requirements, the splice sleeve may be shop or field assembled in the top of the lower mullion. If materials are field fabricated, use the following assembly instructions. Where head clearance is insufficient to allow the top mullion to be lifted over the splice sleeve, a retractable sleeve will be used. The sleeve is to be taped into the bottom of the top mullion and dropped down to the stop screw in the mullion below.
- C.) **GENERAL NOTE:** The following pages depict a splice joint of  $\frac{1}{2}$ ". The required joint width must be determined at the design stage and shown on the approved shop drawings on a job specific basis. The actual width of this joint depends on the expected movement of the building structure.
- D.) Refer to this section for cover splice locations, pressure plate splice locations, and sealing instructions.
- E.) Once a final check of expansion joint placement and mullion position is made, the final match drilling of mullion through anchor holes may be completed.



Plan View-Mullion Splice

## Section X: Vertical Splice Joints



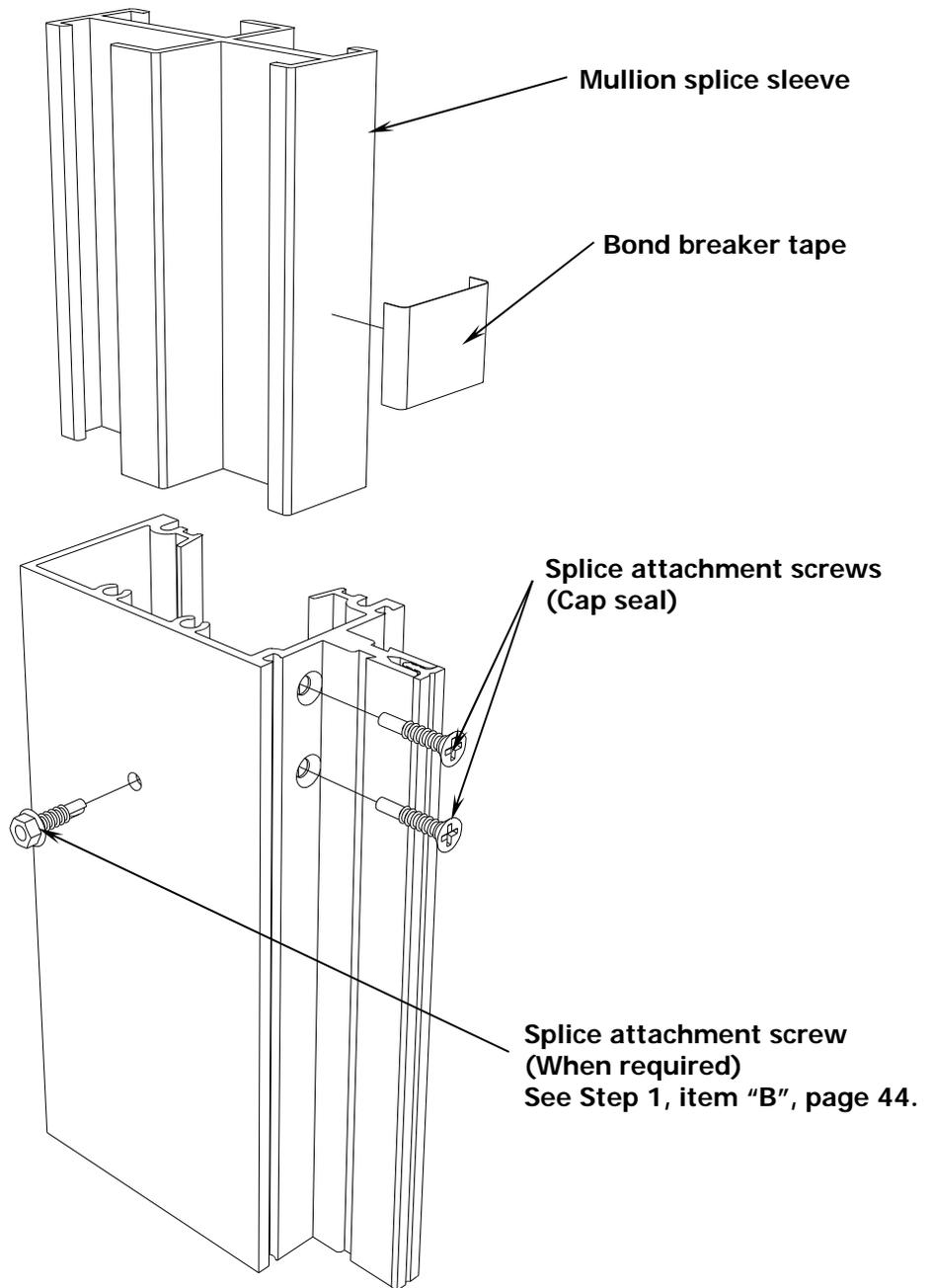
**NOTE:** All anchors must be "fixed" before glazing begins.

Side View-Mullion Splice

## Section X: Vertical Splice Joints

### STEP #2 Attach Mullion Splice Sleeve

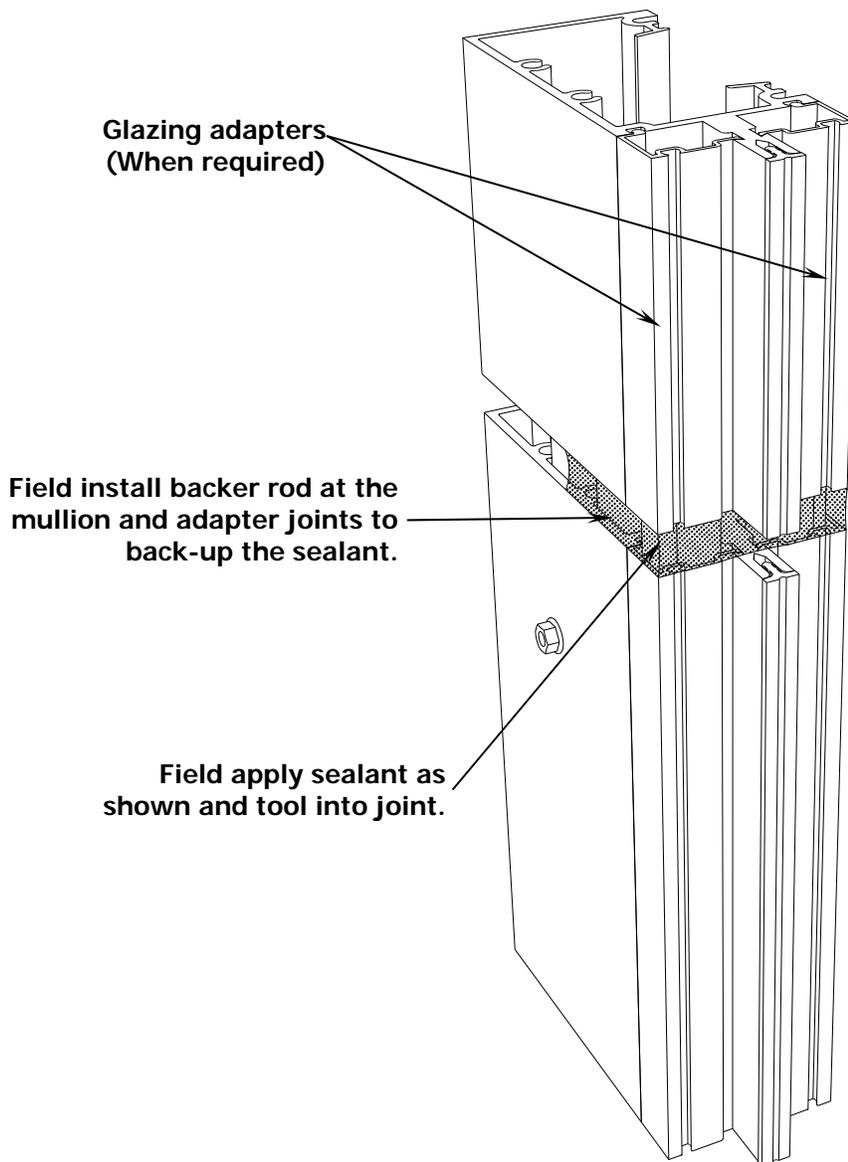
- A.) Apply bond breaker tape to the mullion splice sleeve.
- B.) For standard installation, attach the mullion splice sleeve to the top of the lower mullion with splice sleeve attachment screws. Cap seal the fastener heads.



## Section X: Vertical Splice Joints

### STEP #3 Install Adapters and Seal Mullion Splice

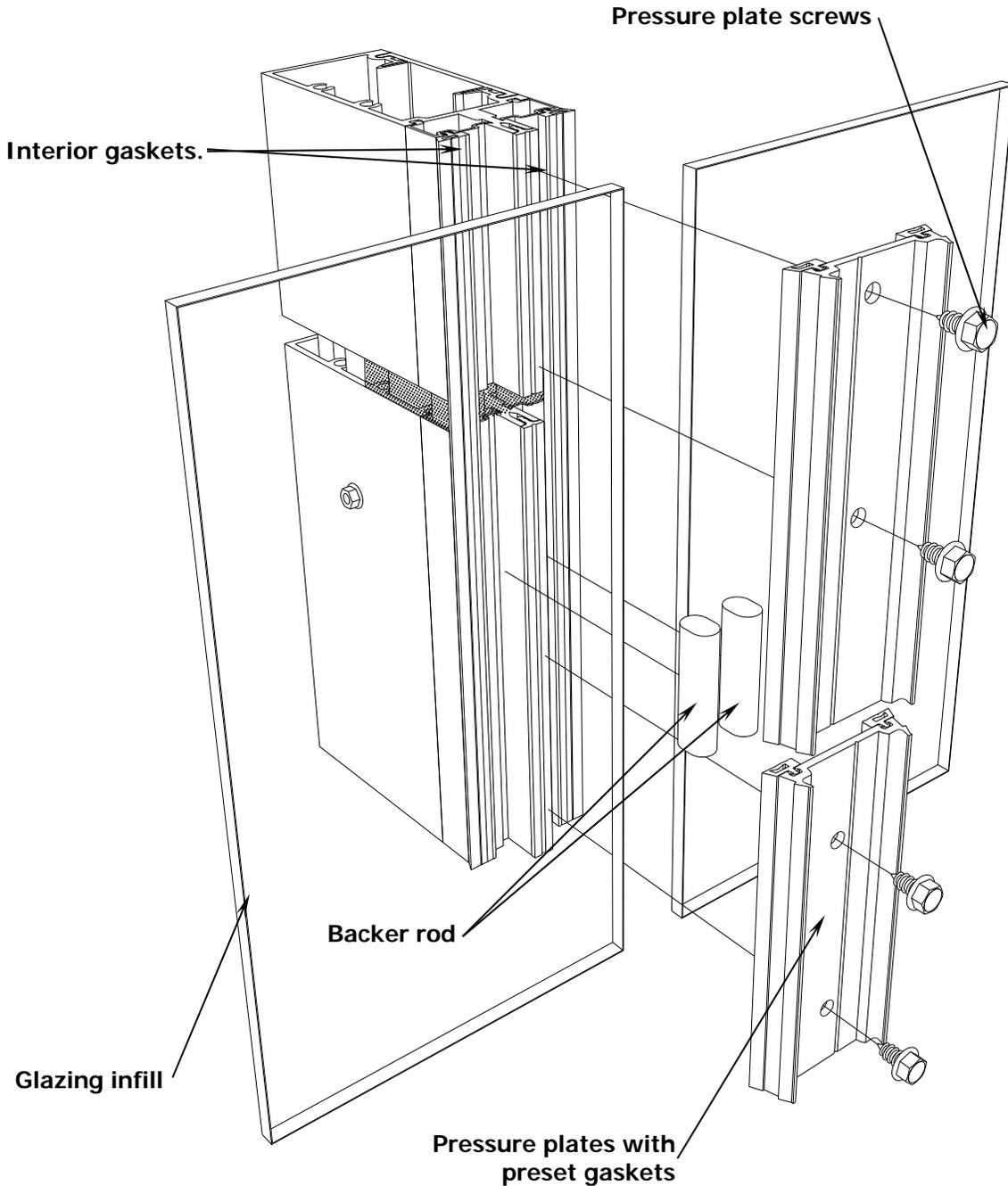
- A.) Seal gasket races continuously and snap-in adapters, if required.
- B.) Install backer rod to back-up sealant at adapter and mullion joints.
- C.) Apply sealant and tool into joints.



## Section X: Vertical Splice Joints

### STEP #4 Install Pressure Plate and Seal Mullion Splice

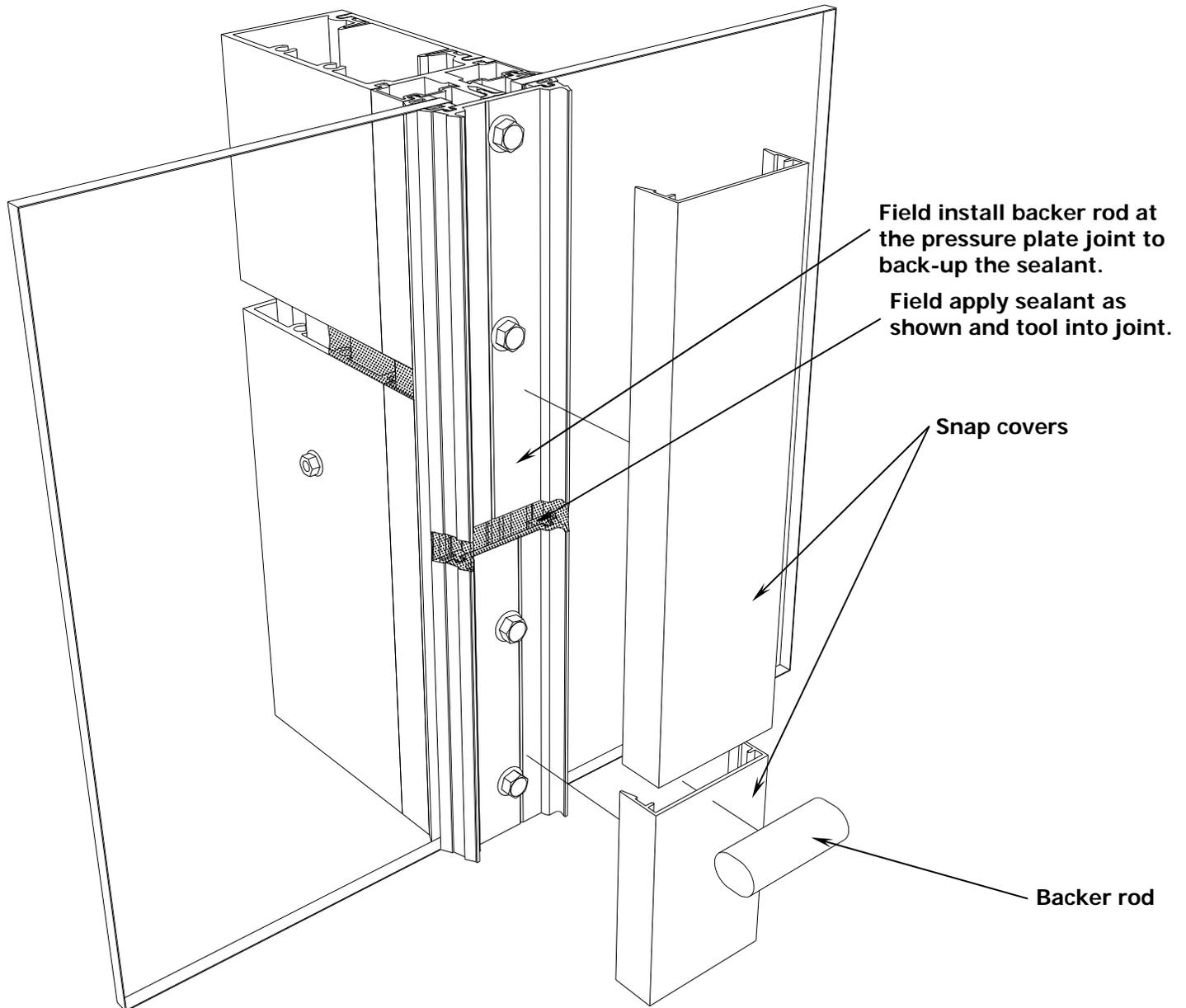
- A.) Install the interior gaskets allowing them to span the mullion splice joint.
- B.) Set the glazing infill into the opening as previously instructed.
- C.) Apply the pressure plates and backer rod at the splice joint, and torque the pressure plate screws as required.



## Section X: Vertical Splice Joints

### STEP #5 Install and Seal Mullion Splice and Cover

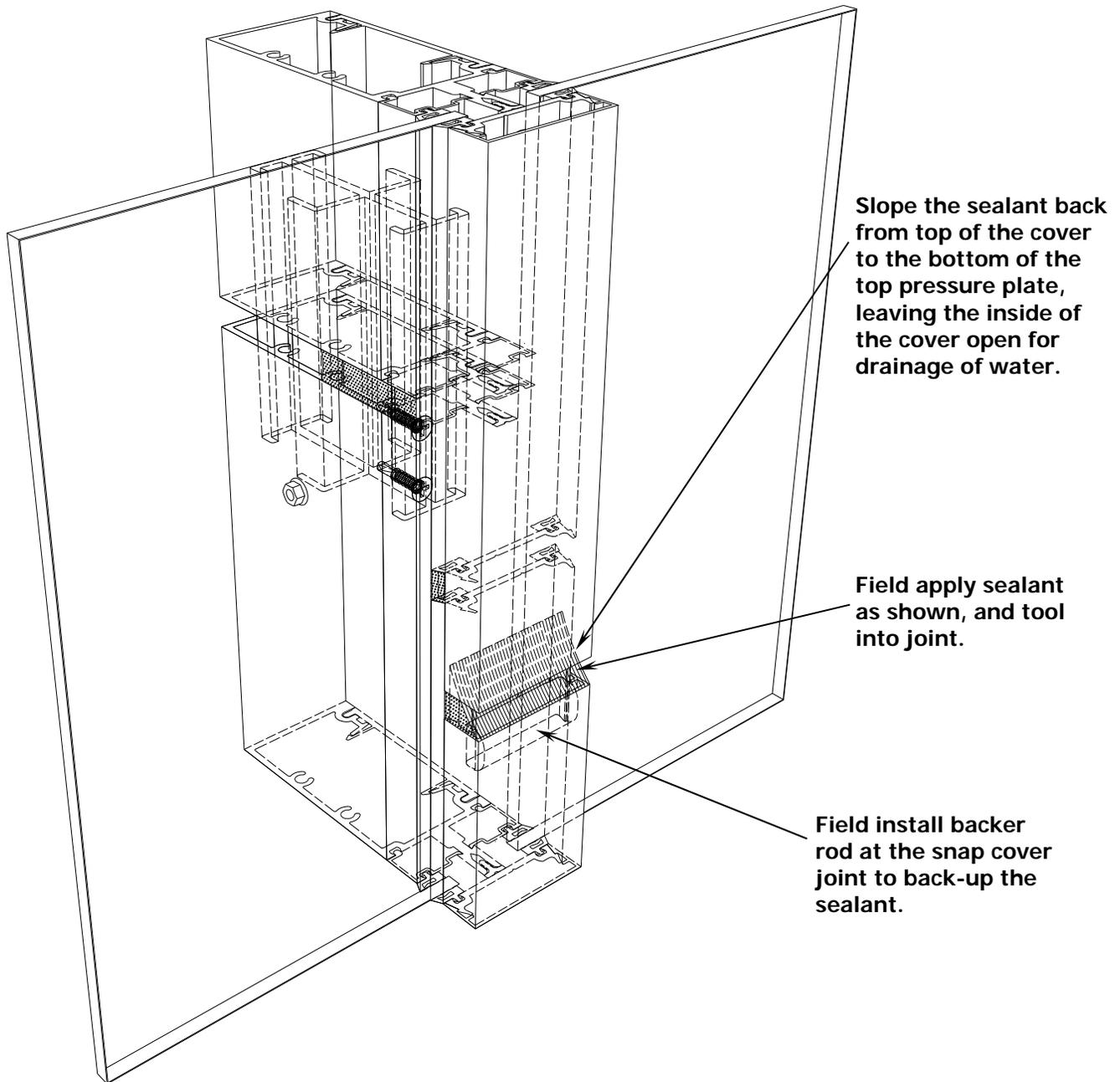
- A.) Seal the pressure plate splice joint and tool thoroughly.
- B.) First, apply the lower cover, and seal as shown in step 6, page 50, then apply the upper cover. Covers should be installed as shown in Section XI.



## Section X: Vertical Splice Joints

### STEP #6 Seal Snap Covers

- A.) Seal and tool the snap covers as shown.
- B.) Use backer rod to back-up the sealant joint.

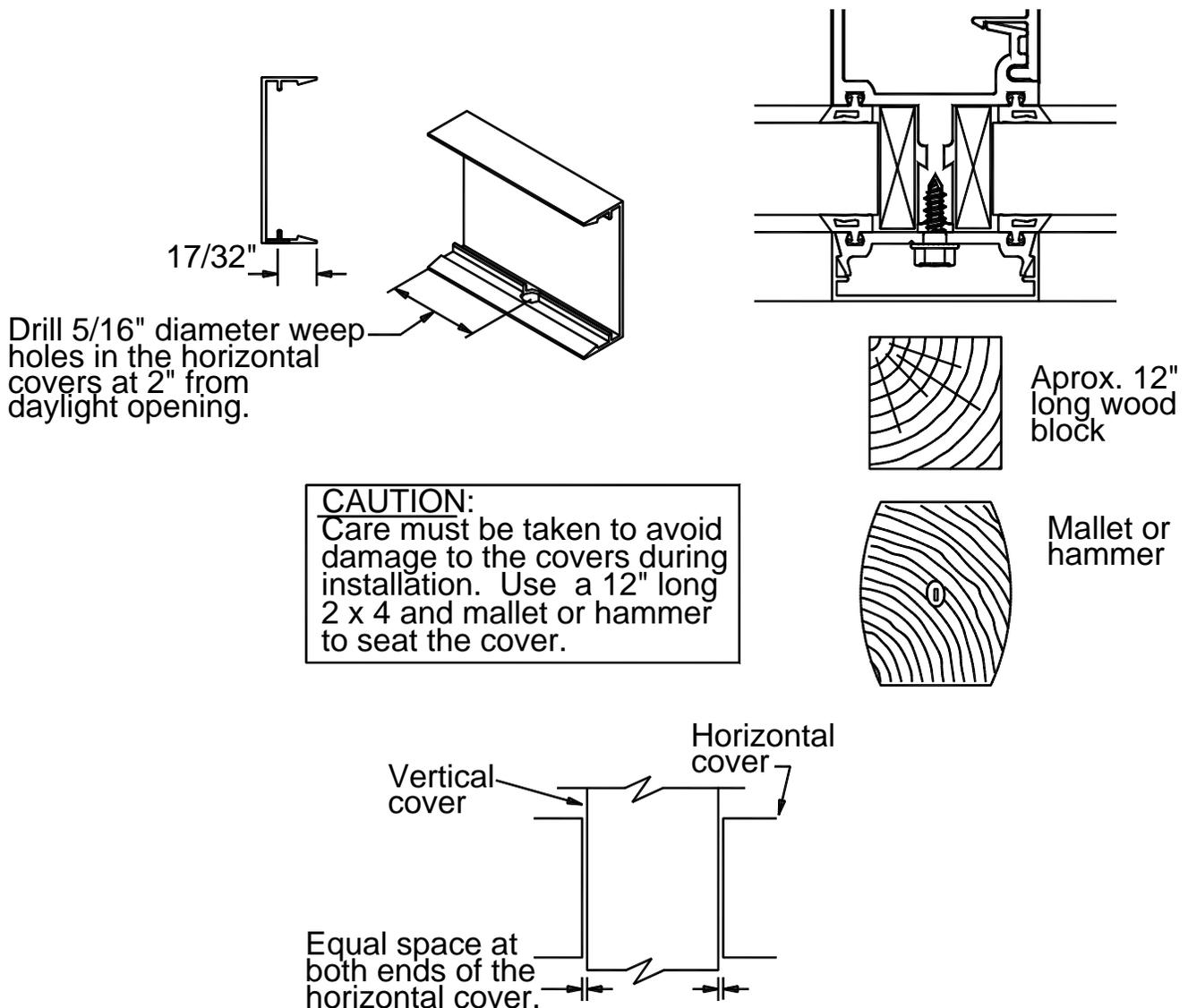


## Section XI: Exterior Cover Installation

### STEP #1 Apply Snap Covers

- A.) Locate and apply the vertical covers as shown on the approved shop drawings. Engage one side, then use the mallet and block to engage the opposite side.
- B.) Center the horizontal snap cover in the opening, and apply it in the same manner as described above. Gaps at the ends should split equally and are provided to allow for thermal movement and weepage.

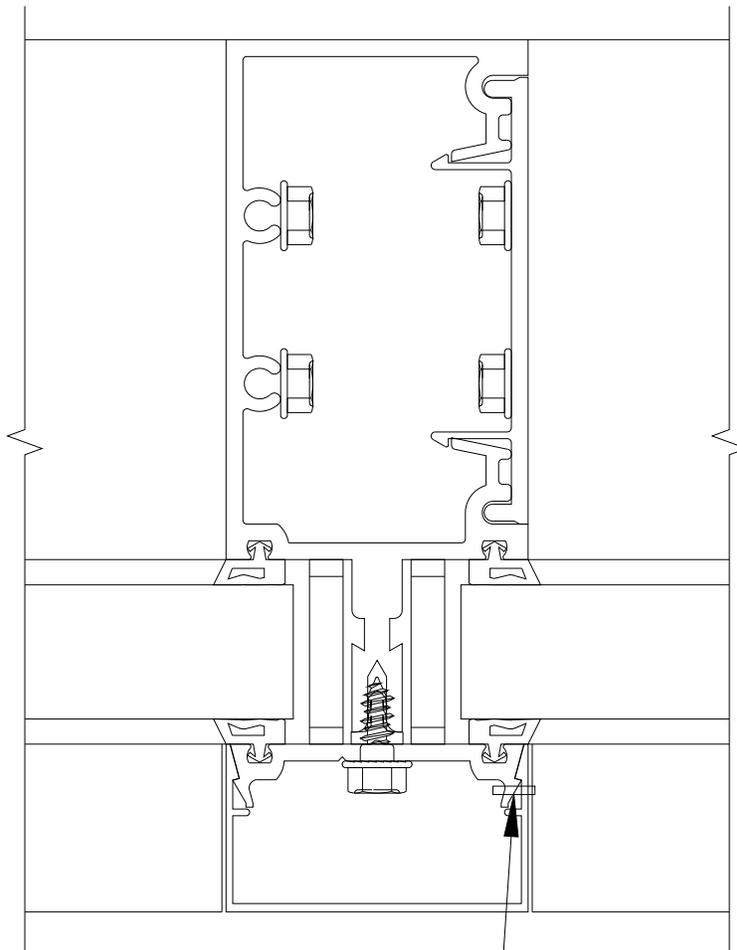
**NOTE:** Exterior horizontal snap covers are cut D.L.O. minus 1/16". The erector is to split the difference on both ends.



## Section XI: Exterior Cover Installation

### STEP #2 Secure Snap Covers

- A.) On vertical covers 1" depth and over, install a 1/16" X 5/16" roll pin at the horizontal cover locations to prevent slippage.
- B.) On horizontal covers 1" depth and over, it is necessary to mechanically attach the cover as shown or similar to what is shown below.

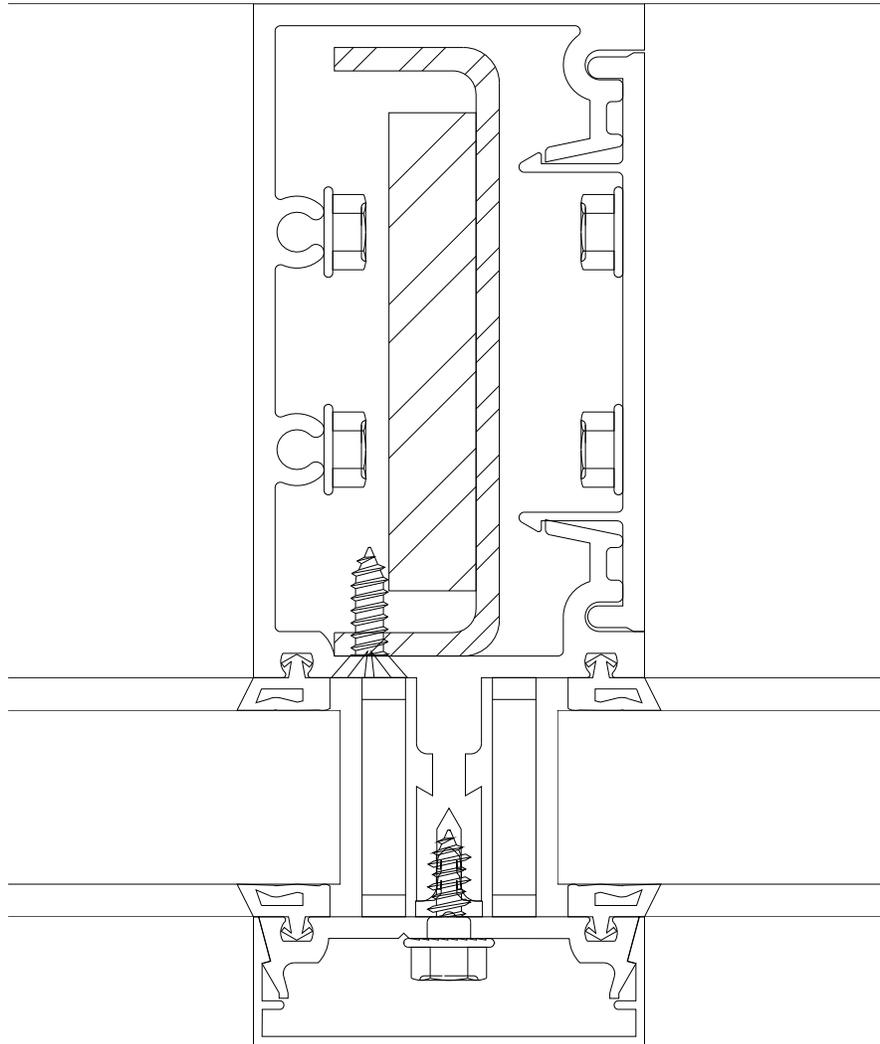


1/16" x 5/16" roll pin

## Section XII: Reinforcing

### STEP #1 Install Steel Reinforcement

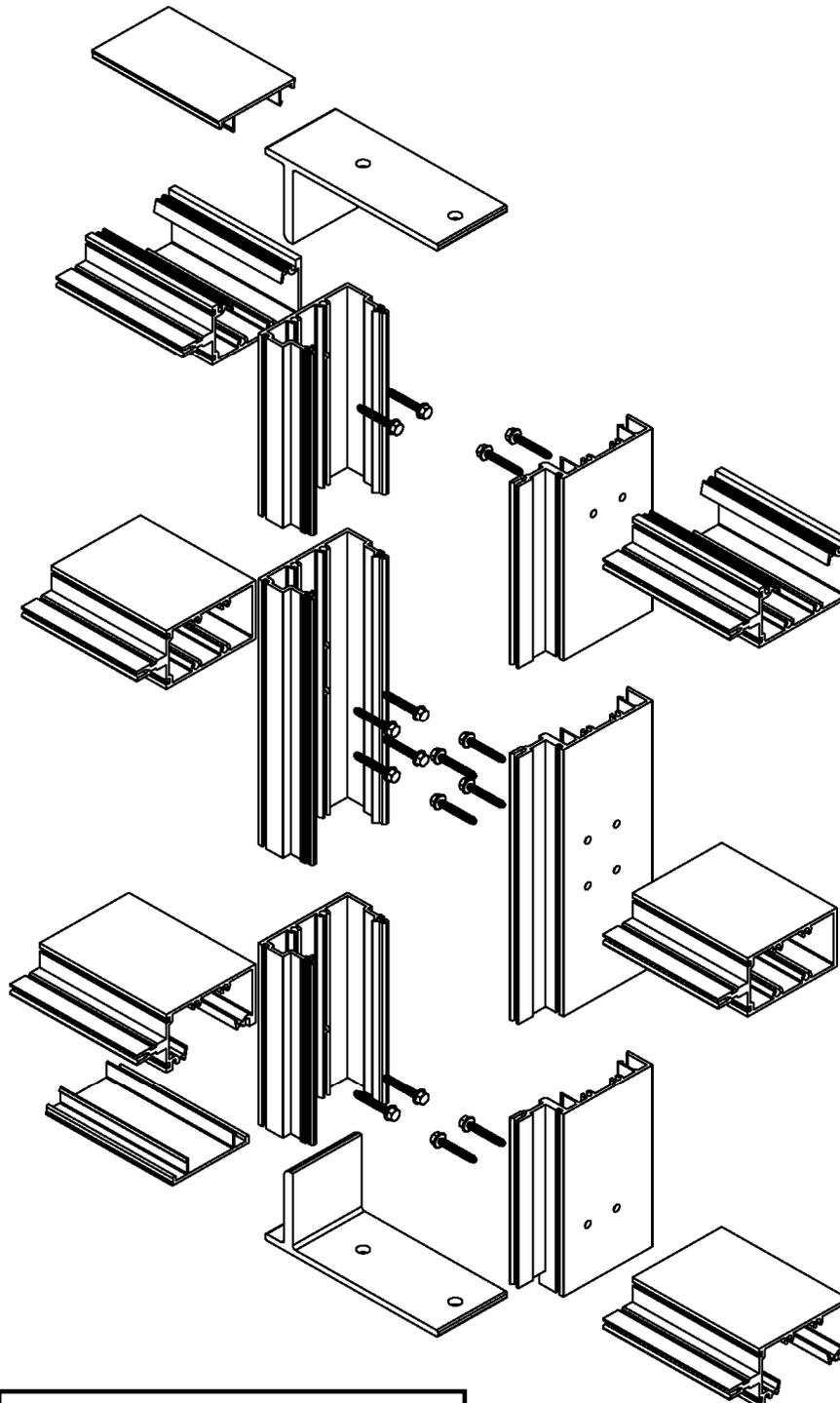
At large spans or high wind load areas, steel reinforcement may be necessary. Reinforcement requirements will vary from project to project, elevation to elevation. Refer to the approved shop drawings for reinforcement requirements and locations.



**When steel reinforcement is factory installed into mullions, fasteners will be used to prevent damage or slippage of the steel during shipment. This practice is also recommended for the customer on stock length orders.**

## Section XIII: Intermediate Vertical Expansion Mullion

Vertical intermediate expansion mullions are used in place of the typical intermediate vertical and filler to accommodate the thermal expansion and contraction in wide bay runs. Refer to the approved shop drawings for locations. Bay runs are not to exceed 20'-0" without an expansion mullion.



Vertical Expansion Mullion