



# RELIANCE™ - TC SS

## Inside Glazed

installation & glazing manual

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### NOTE

THE INSTALLATION DETAILS FOUND IN THIS PACKAGE ARE GENERIC AND ARE FOR REPRESENTATION ONLY WITH THE INTENT OF GIVING THE INSTALLATION TEAM A VISUAL REPRESENTATION AS TO HOW THE ASSEMBLIES TYPICALLY INSTALL. THE SHOP SUBMISSION DRAWINGS AND DETAILS ARE THE GOVERNING DOCUMENTS AND AS SUCH THIS PACKAGE IS TO BE USED ONLY AS A RESOURCE. FOLLOW SEALANT MANUFACTURERS' RECOMMENDATIONS FOR USE AND APPLICATION OF ALL STRUCTURAL SILICONE SEALANT AND WEATHER SEAL SILICONE SEALANT.

**CUSTOMER / PROJECT QUALITY ASSURANCE PROCEDURES ARE SEPARATE DOCUMENTS AND ARE TO BE FOLLOWED IN CONJUNCTION WITH THIS MANUAL.**

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# RELIANCE™ - TC SS Curtain Wall Inside Glazed

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## IMPORTANT NOTICE:

Completely read these instructions prior to beginning work. These recommendations are for general erection/installation procedures only. For actual job conditions, see shop drawings if applicable. For perimeter anchor types and spacing, refer to the approved shop drawings or consult structural engineer/project design professional.

## GENERAL NOTES

The **Reliance™-TC SS** curtain wall system is intended for fabrication, assembly, sealing, installation and glazing by professionals with appropriate knowledge and experience of the system(s) and their incorporation into various building conditions.

Check all shop drawings and installation instructions to become familiar with the project before work begins. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and only cover the most common conditions.

## GLAZING PRACTICES

The air and water performance of the **Reliance™-TC SS** curtain wall system is directly related to the completeness and integrity of the installation process, including but not limited to the assembly seals of the framing joinery, the installed glazing gaskets, and the alignment of the framing joinery glazing plane. Before glazing, verify the glazing pocket width and glazing infill thickness, as both must be in tolerance to assure adequate edge pressure and to achieve the desired air and water performance levels. (In general, framing systems utilizing 1" insulating glass are designed to accommodate a thickness variance of +/- 1/32"). Note: Excessive pressure can cause glass breakage and/or IGU failure. Consult the glass manufacturer for their recommended edge pressure per lineal inch. To achieve the designed and tested air and water performance, best practices include:

1. Surfaces to be sealed should be cleaned with isopropyl alcohol or solvent and dried as recommended by sealant manufacturer to remove all dirt and cutting oils. Sealant at shear blocks should be a minimum 3/16" diameter nominal placed completely around the top, face and bottom of the shear block without gaps in the sealant. Exposed surfaces should be cleaned after installing the horizontal. Inspect joint for complete sealant contact, especially where the horizontal meets the face of the vertical member. Repair joint as required.
2. Glazing gaskets should be cut 1/4" longer per foot, and lay flat, preferably for 24 hours.
3. Gaskets should be cut as single monolithic pieces and "crowded" during their installation to avoid corner gaps caused by post-installation relaxation.
4. The interior glazing gasket should be installed so as to avoid stretching, buckles, or tears.
5. Corners must be cut square, and at a slight angle when required to conform to the bevel on the intersecting gasket; sealed and butted together.
6. Gasket corner joinery must also be crowded, and sealant applied onto the gasket contact frame surface and into gasket reglet raceway where applicable.
7. Gasket corner seals are to be done just prior to installing glass, while the sealant is still wet and uncured, and ensure exterior gaskets are installed so as to place the glass into its final in-service condition and allow the sealant to conform to optimum configuration. Note: If the sealant cures prior to glazing, the cured sealant could create excessive edge pressure onto the glass and has the potential to cause glass breakage.
8. The glass must be checked for squareness, size dimension, and thickness along the edges paying attention to any variances from center edge to corner edge.
9. Check the placement of the installed glass and verify there is proper edge bite into the pocket, and proper edge clearance from framing elements.

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10. After sealant has set and a representative amount of the wall has been installed and glazed (250 square feet or more) run a water hose test in accordance with AAMA 501.2 specifications to check installation. On large projects the hose test should be repeated during the glazing operation. Consult and follow NGA's GANA Manual and FGMA Glazing Manual for proper glazing technique and procedure.

Vertical movement of mullion at intermediate floors requires special expansion joints and glazing materials. For designs and applications that may require greater movement, or special considerations please contact your local Oldcastle BuildingEnvelope® facility.

## ARCHITECTURAL PRODUCT

It is the responsibility of Oldcastle BuildingEnvelope® to supply a system to meet the architect's specification.

## BUILDING CODES

Oldcastle BuildingEnvelope® does not control the application nor selection of its product configurations, sealant, or glazing materials, and assumes no responsibility thereof. It is the responsibility of the owner, architect, and installer to make these selections in strict compliance with applicable laws and building codes.

## PERIMETER SEALANTS

Due to varying job conditions, all perimeter sealants used should be approved by the sealant manufacturer to ensure the sealant will function for the conditions shown in these instructions and shop drawings. Sealants must be compatible with all surfaces where adhesion is required, including other sealant surfaces. Use primers where directed by sealant manufacturer. Be sure to store sealants at recommended temperature and check container for remainder of shelf life before using.

## STRUCTURAL SEALANTS

The fabrication and installation of a structural silicone-glazed (SSG) or wet glazed system requires more technical knowledge and experience than is required for a conventional pressure-glazed or dry glazed system. The glazing contractor should take all steps as outlined and required by the structural silicone sealant manufacturer, glass fabricator, framing manufacturer, and the project professional engineer of record as well as follow local building code requirements and industry best practices to ensure the proper installation and safe performance of the SSG system.

The glazing contractor for each project needs to ensure compliance with each step, including, but not limited to, design reviews, formal adhesion testing, formal compatibility testing, project specification compliance, validating procedures, field testing, and quality control validation of installed product and surrounding conditions.

Testing of component materials for use in a SSG or wet glazed system is mandatory to fulfill project specifications and warranty requirements and must be submitted by the glazing contractor to the structural silicone manufacturer. All materials that comprise the structural silicone joint, such as the framing system (with the job-specific finish) and job-specific glass must be tested by the structural silicone manufacturer for compatibility and adhesion. All other accessory materials in contact with the structural silicone, such as setting blocks, spacers, gaskets, sweeps, air seals and expansion joints, must also be submitted to the silicone sealant manufacturer for compatibility testing.

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To ensure that nothing has changed in formulation or chemistry since the initial tests, subsequent testing during periodic time frames of the project is to be conducted to confirm continued acceptance of the material for use on the project. To ensure the structural performance and integrity of the insulating glass unit (IGU), the glazing contractor must submit the project shop drawings to the glass fabricator to obtain approval for use of their product(s) in any 2, 3 or 4-sided SSG applications.

Quality control procedures for field glazing are to be increased beyond those required for shop glazing. Job conditions will normally have dust, dirt, and other construction debris on the surfaces where structural silicone is to be applied. Great care should be exercised in cleaning and preparing these surfaces for silicone application. The recommendations of the silicone sealant manufacturer are to be strictly enforced and followed. The fabrication and installation of the SSG system and its components, whether shop or field glazed, should be governed by a quality control program, and all steps, procedures, and test reports should be documented throughout the project.

Prior to installation of any SSG system, refer to industry documents (e.g., AAMA Curtain Wall Design Guide Manual, ASTM C1401-14, and AAMA SSGDG-17) for detailed instructions and recommendations.

**THE GLAZING CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ENSURING COMPLIANCE WITH THE ABOVE AND ASSUMES FULL LIABILITY FOR ANY ISSUES ARISING FROM NONCOMPLIANCE.**

## **MATERIAL AND WORK ACCEPTANCE**

### **OLDCASTLE BUILDINGENVELOPE® MATERIALS**

Check all material upon arrival for quality and to assure against shipping damage. Any visible damage must be noted on the freight bill at the time of receipt. If a claim is required, then the receiving party must process a claim with the freight company.

### **OTHER TRADES WORK**

Completely check construction that will receive your materials against contract documents. Notify general contractor by letter of any discrepancies before proceeding with work. Failure to do so constitutes acceptance of work by other trades.

## **MATERIAL HANDLING, PROTECTION, AND STORAGE**

Handle the material carefully. Stack with adequate separation so that the material will not rub together. Store material off the ground. Protect against the elements and other construction hazards by using a well-ventilated covering away from other trades. Remove material from package if it is wet or located in a damp area.

### **SHOP**

- Cardboard wrapped or paper interleaved material must be kept dry. Immediately remove aluminum from cardboard or paper interleaved materials should it get wet to prevent staining or etching the aluminum finish.
- Check arriving materials for quantity and keep record of where various materials are stored.

### **JOB SITE**

- Material at job site must be stored in a safe place well removed from possible damage by other trades.
- Cardboard wrapped or paper interleaved materials must be kept dry. Immediately remove aluminum from cardboard or paper interleaved materials should it get wet to prevent staining or etching the aluminum finish.

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- Keep record of where various materials are stored.
- Protect materials after erection. Cement, plaster, and other alkaline solutions are harmful to the finish.

## EXPANSION JOINTS

Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at standard size. Actual dimensions may vary due to perimeter conditions and/or differences in metal temperature between the time of fabrication and time of installation. For example, a 12-foot unrestrained length of aluminum extrusion can expand or contract 3/32 of an inch over a 50-degree Fahrenheit change. Any movement potential should be accounted for at time of the installation.

## GLASS

Glazing gaskets are designed for a compression fit against glass and can accommodate (+/- 1/32"). Be sure to check overall glass size and thickness. Consult glass manufacturer for correct setting block location and length for glass sizes in excess of 40 sq./ft.

## CLEANING

Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA 609.1 for anodized aluminum and AAMA 610.1 for painted aluminum. Cement, plaster, terrazzo, alkaline and acid-based materials used to clean masonry are very harmful to finishes and should be removed immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used. Aluminum shall be cleaned with plain water containing a mild detergent. No abrasive agent shall be used.

## GENERAL CONSTRUCTION NOTES

- A. Study these instructions, shop drawings, erection drawings, and architectural drawings before starting any work. Follow installation and glazing instructions.
- B. Completely check construction which will receive your materials against contract documents. Notify the general contractor by letter of any discrepancies before proceeding with your work since this constitutes acceptance of work by other trades.
- C. Coordinate protection of installed materials with general contractors and other trades.
- D. Do not install wall if there is a walkway with a downslope towards an entrance or a storefront.
- E. All materials are to be installed plumb and level.
- F. All work should start from an established benchmark and column centerlines established by the architect and the general contractor.
- G. Protect all aluminum to be placed directly in contact with uncured masonry or incompatible materials with a heavy coat of zinc chromate or bituminous paint.
- H. After sealant is set and a representative amount of the wall has been glazed (500 square feet or more), run a water hose test to check installation. On large jobs, hose test should be repeated during glazing operation. Test should be conducted in accordance with AAMA 501.2 specifications. This test should not be performed at entrances installed in the system.

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## SUGGESTIONS FOR IMPROVING SYSTEM THERMAL PERFORMANCE

To maintain or improve your wall installation the following items should be considered.

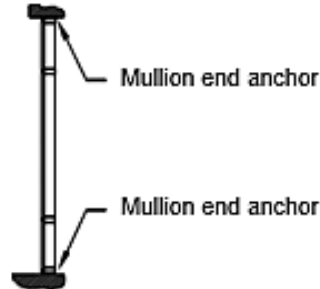
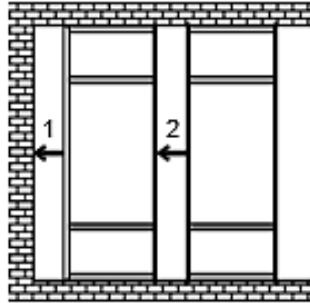
- A. Blinds or drapes prevent warm air from adequately flowing over the window surface.
- B. Warm air ventilators too far from the window will not adequately wash the window with air to prevent condensation.
- C. In extreme conditions the fan of the heating system should not cycle on and off but should run continuously.
- D. Some heating systems have a water injection feature that can raise humidity levels. the higher the humidity level the more likely condensation or frost will form. Raising the temperature and reducing humidity will usually solve the problem.
- E. On rare occasions an extremely cold storm may cause frost to appear on the glass framing. A space heater and electric fan blowing along the plane of the window wall can reduce or eliminate this temporary condition.

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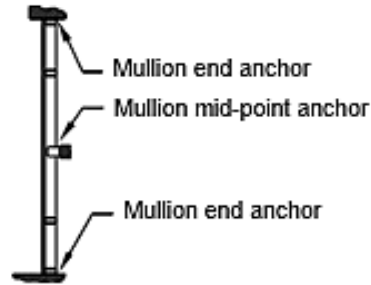
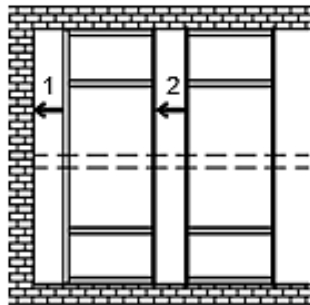
## INSTALLATION TYPES

### 1.0 Reference Diagrams

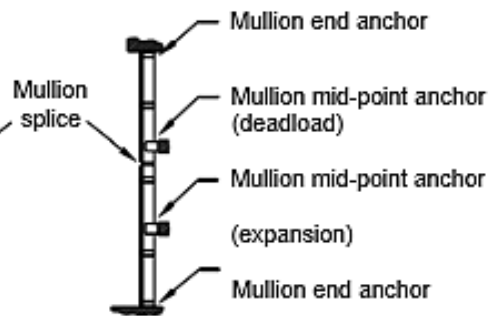
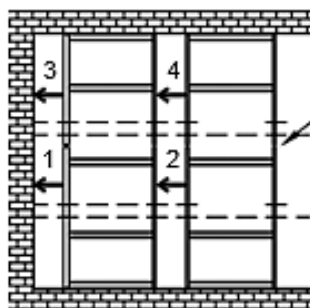
The following diagrams represent common types of installation for this product. Refer to approved shop drawings for specifics regarding splicing and anchoring of frame



Single Span



Twin Span



Multi-Span

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## **FRAME FABRICATION**

**Note:** The opening must be square and plumb before installation.

### **2.0 Frame Fabrication**

**Note:** Unless otherwise noted, the details shown in these instructions reflect the 7 1/4" system. Part numbers and dimensions in parentheses ( ) refer to the 6" system. Instructions for other back member depths are similar. Note: Structural silicone glazed vertical mullion is referred to as "SSG mullion"

- 2.1 Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 1/2" minimum clearance for shimming and caulking around perimeter of frame.
- 2.2 Cut material to size. **See FIGURE 1** for guide. Layout vertical mullions so that two shallow pockets will NOT be adjacent to each other. **See MULLION LAYOUT.**

#### **Frame Members**

Verticals	FRAME HEIGHT (ROUGH OPENING minus top & bottom joints)
Vertical Face Covers	FRAME HEIGHT (vertical covers run through)
Intermediate Horizontals	Daylight Opening (D.L.O.) minus 1/16"
Head and Sill Members	D.L.O. minus 1/16"
Horizontal Face Covers	D.L.O.

#### **Accessories**

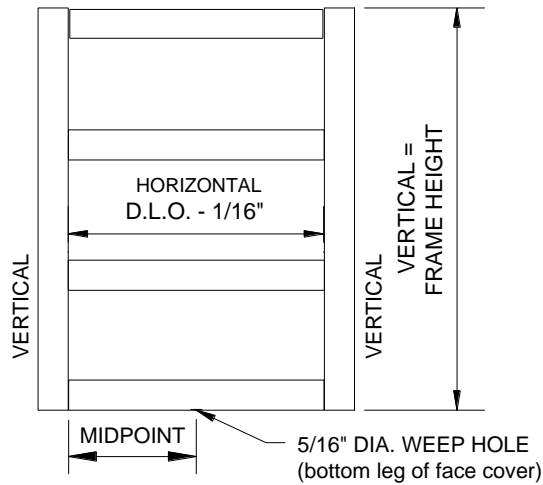
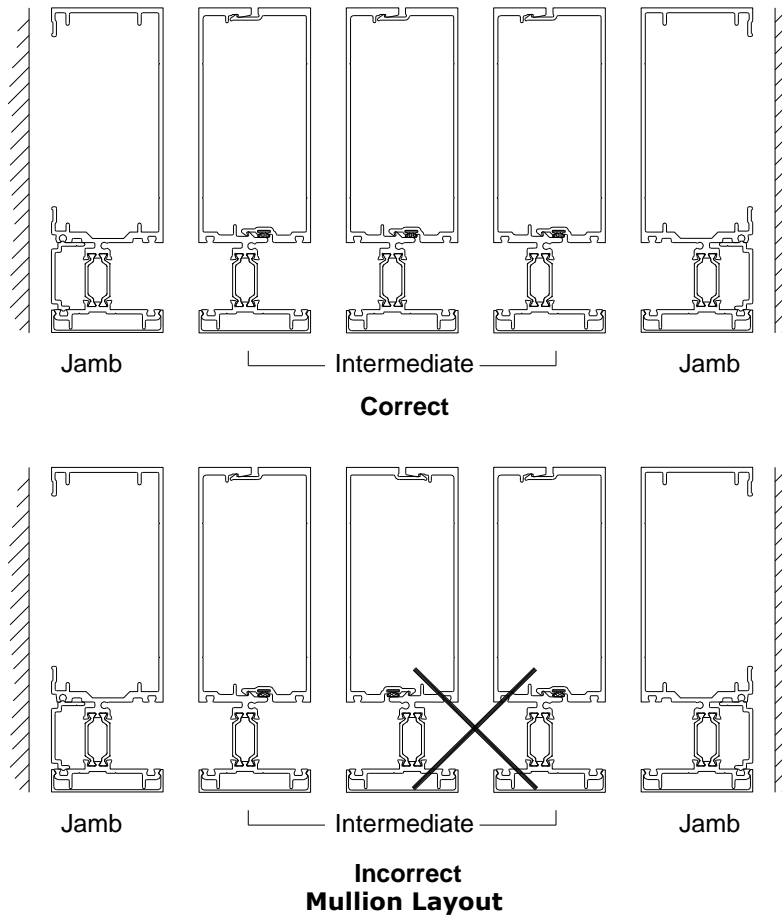
Vertical gaskets	D.L.O. plus 1" plus allowance*
Horizontal gaskets	D.L.O. plus allowance*
Silicone Spacer Gaskets	D.L.O. plus 1" plus allowance*
Vertical Air Seal Gasket	Vertical length

*\*Glazing gaskets should be cut 1/4" longer per foot of aluminum extrusion. Set aside and lay flat until ready to glaze.*

#### **Other Members (as required)**

Glass Stops	D.L.O. minus 1/16"
Sill Filler	D.L.O. minus 1/16"
Door jamb subframe	DOOR OPENING plus 3/4"
Door header subframe	DOOR OPENING minus 1/32"
Flush door horizontal pressure plate	D.L.O. minus 1/16"
Flush door horizontal face cover	D.L.O. minus 1/16"

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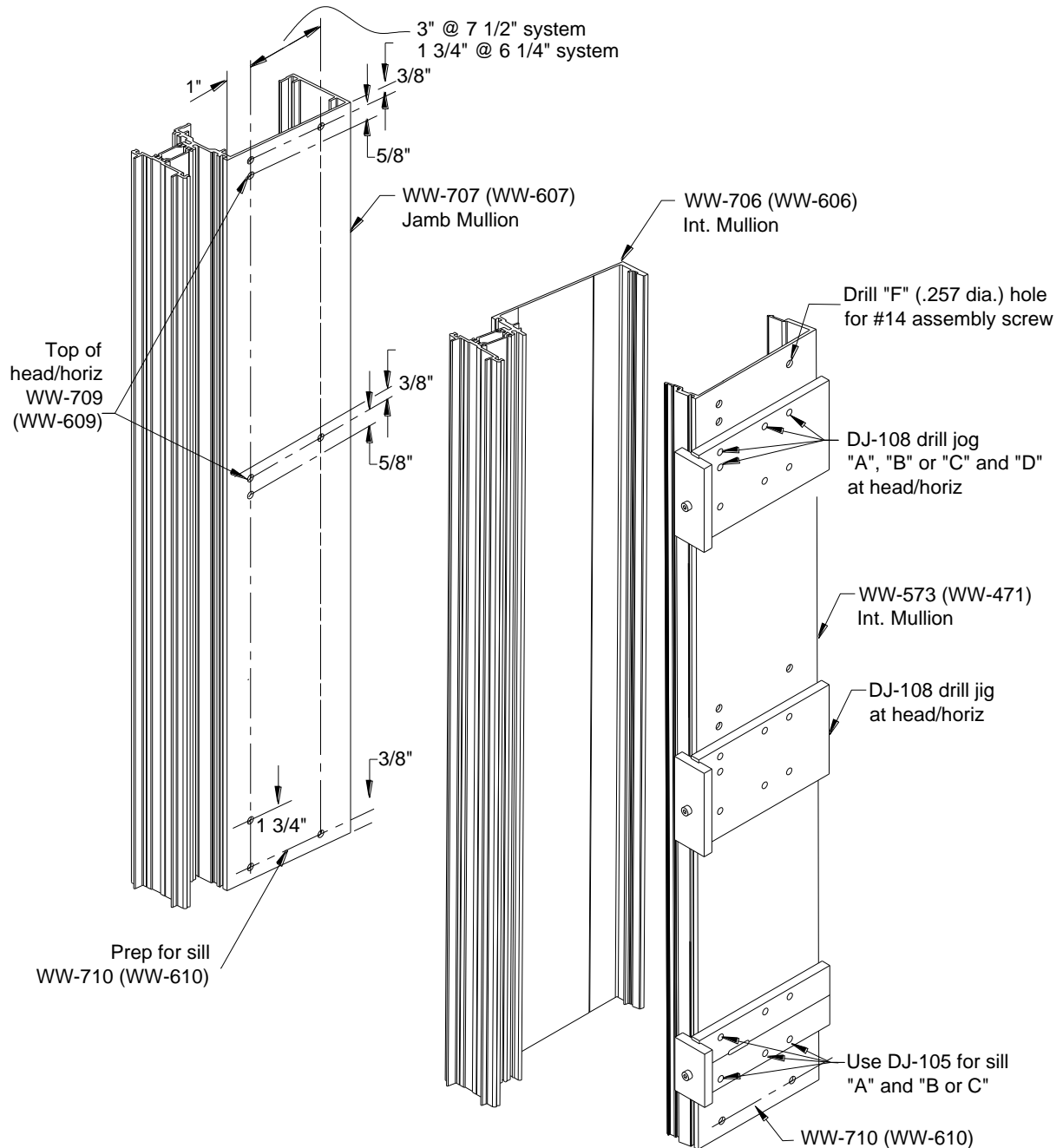
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## 3.0 Vertical Fabrication

3.1 Fabricate vertical mullions for horizontal and head members with EZ Punch tooling or **DJ-108** drill jig. Use 'F' drill (.257 dia.) for assembly screws. Prep for sill members with EZ Punch tooling or **DJ-105** drill jig. Prep at intermediate horizontals, mark line at top of horizontal and align drill jig with that line as shown in **FIGURE 2**.



**Figure 2: Vertical Mullion Fabrication**

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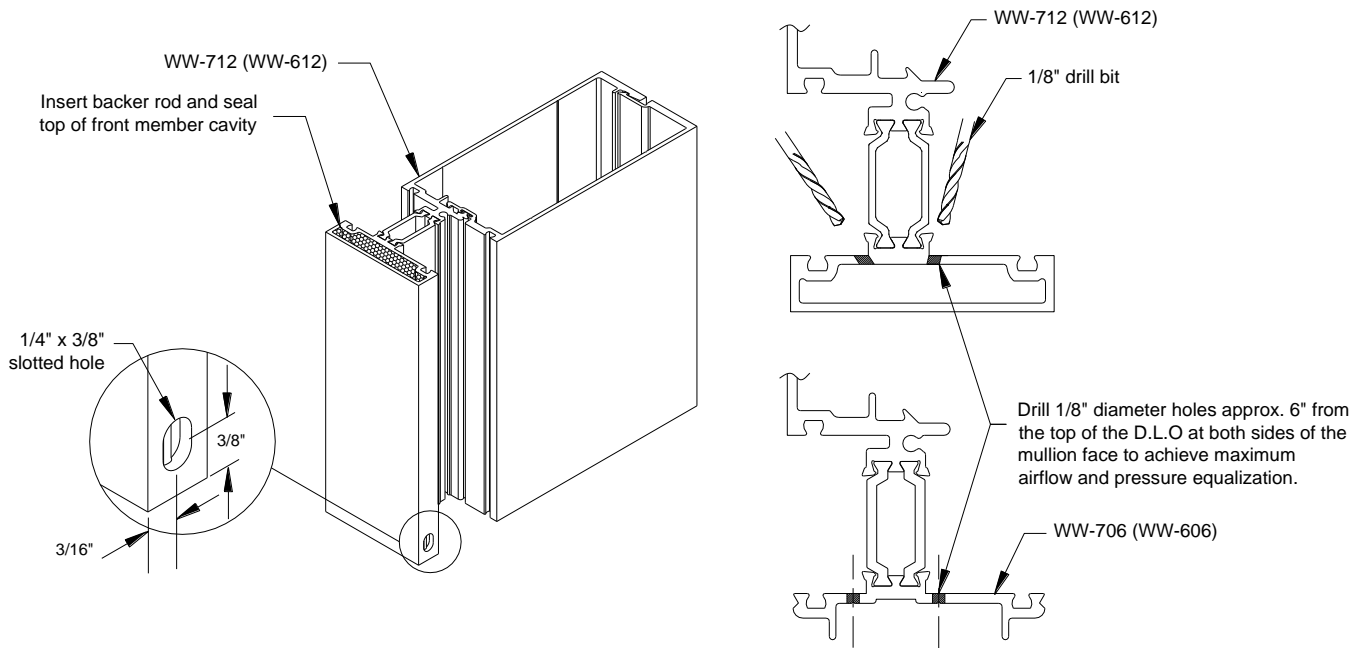
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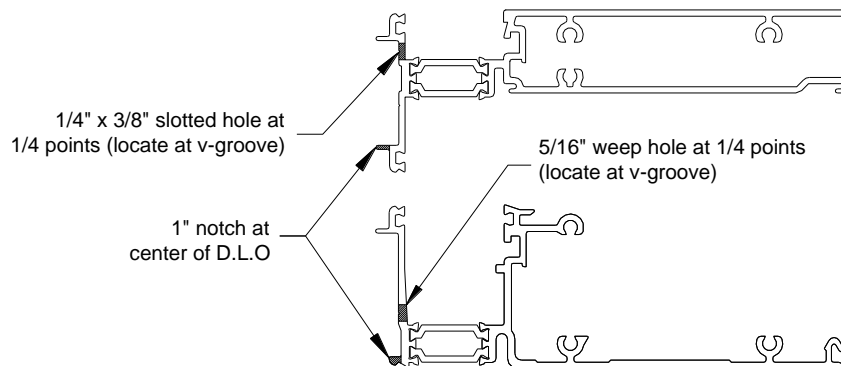
- 3.2 For the optional vertical composite, WW-712, fabricate a 1/4" x 3/8" long weep hole, centered 3/8" from the bottom of the mullion. **See FIGURE 3.**



**Figure 3: Vertical Mullion Fabrication**

## 4.0 Horizontal and Cover Fabrication

- 4.1 Drill 5/16" dia. weep holes at 1/4 points in horizontal, head and sill members as shown in **FIGURE 4.**
- 4.2 Drill (1) 5/16" dia. weep hole at the bottom of each horizontal face cover at the centerline of the D.L.O. **See FIGURE 5.** Note: For SSG applications, face covers typically run across SSG mullions, so there will be multiple holes in each horizontal face cover. Maximum length of horizontal face covers at SSG applications should be 20 feet.
- 4.3 Make a 1/8" x 1/2" notch on both sides of horizontal, head, and sill to allow cover engagement. **See FIGURE 6.**



**Figure 4: Horizontal Weep Hole Fabrication**

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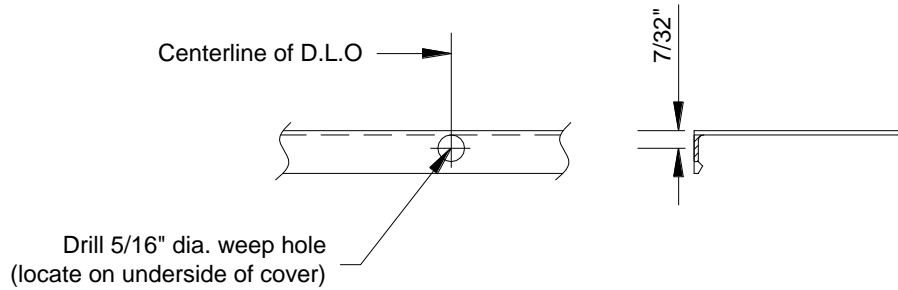


Figure 5: Horizontal Face Fabrication

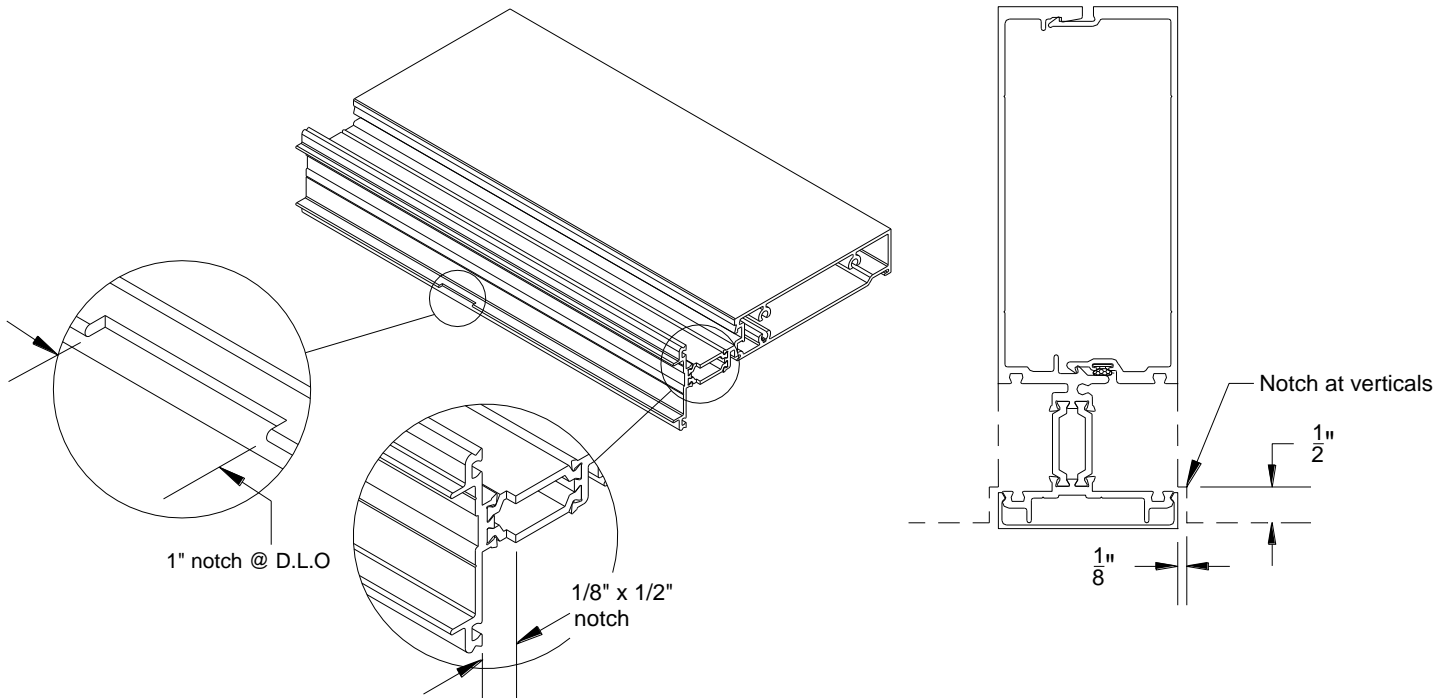


Figure 6: Horizontal Notching

## **FRAME INSTALLATION AND ASSEMBLY**

### **5.0 Frame Assembly**

- 5.1 Starting with the left jamb of the opening, lay out verticals and horizontals for assembly of the bay. **See FIGURE 7.**
- 5.2 Apply sealant to ends of horizontals prior to attaching to verticals. If steel reinforcing is required, install now. **See FIGURE 8.**
- 5.3 Attach intermediate horizontals and sill members using FS-8 fasteners. **See FIGURE 8.** Tool excess sealant at horizontal-to-vertical joints.
- 5.4 Install IW-193-01 (IW-183-01) head anchor sleeve into top of WW-706 composite mullion. Sleeve to be installed prior to attaching head member. Attach sleeve anchors using FS-9 assemble screws fastened into head extrusion. **See FIGURE 8.**

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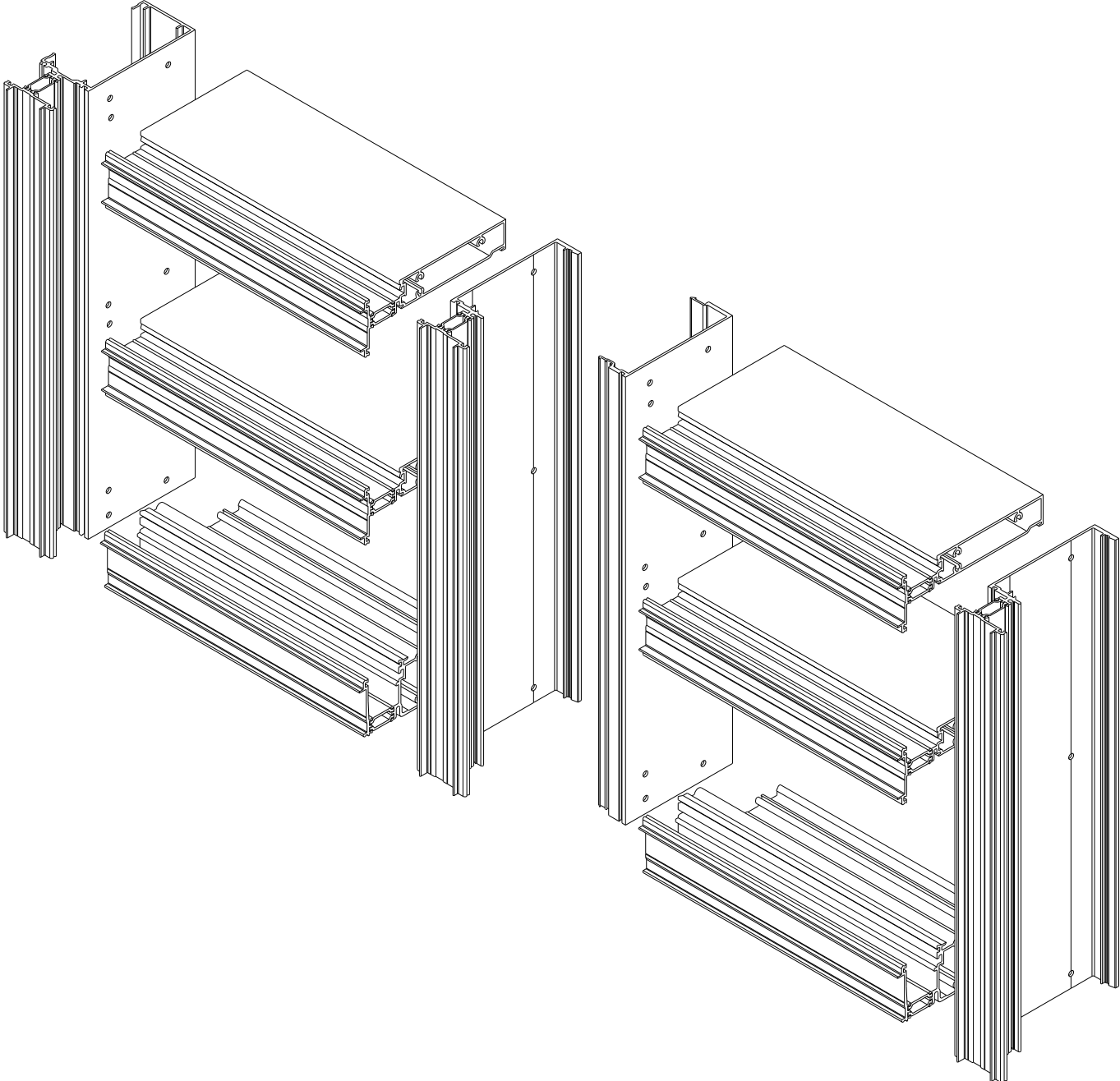


Figure 7: Frame Assembly Guide

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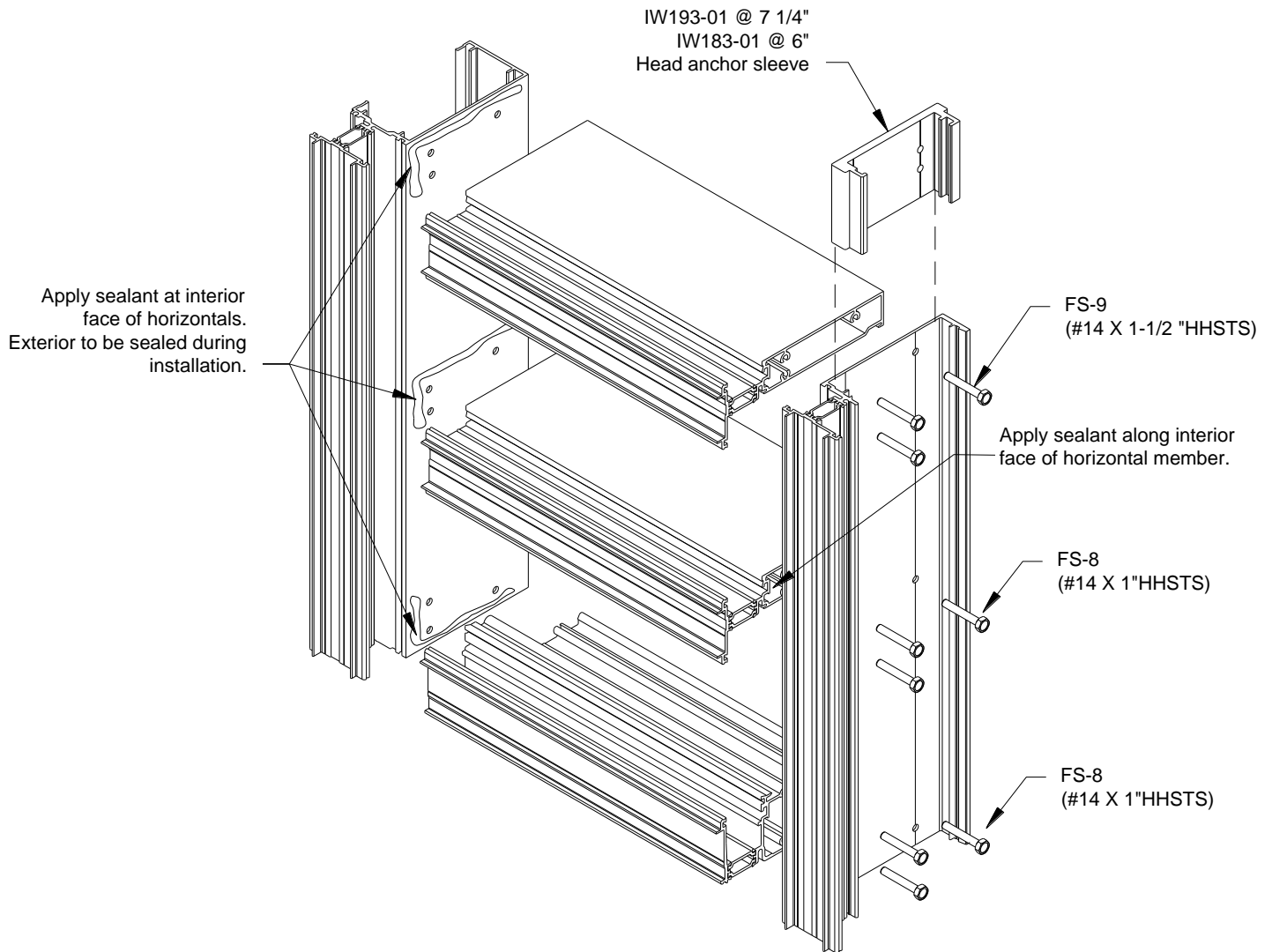
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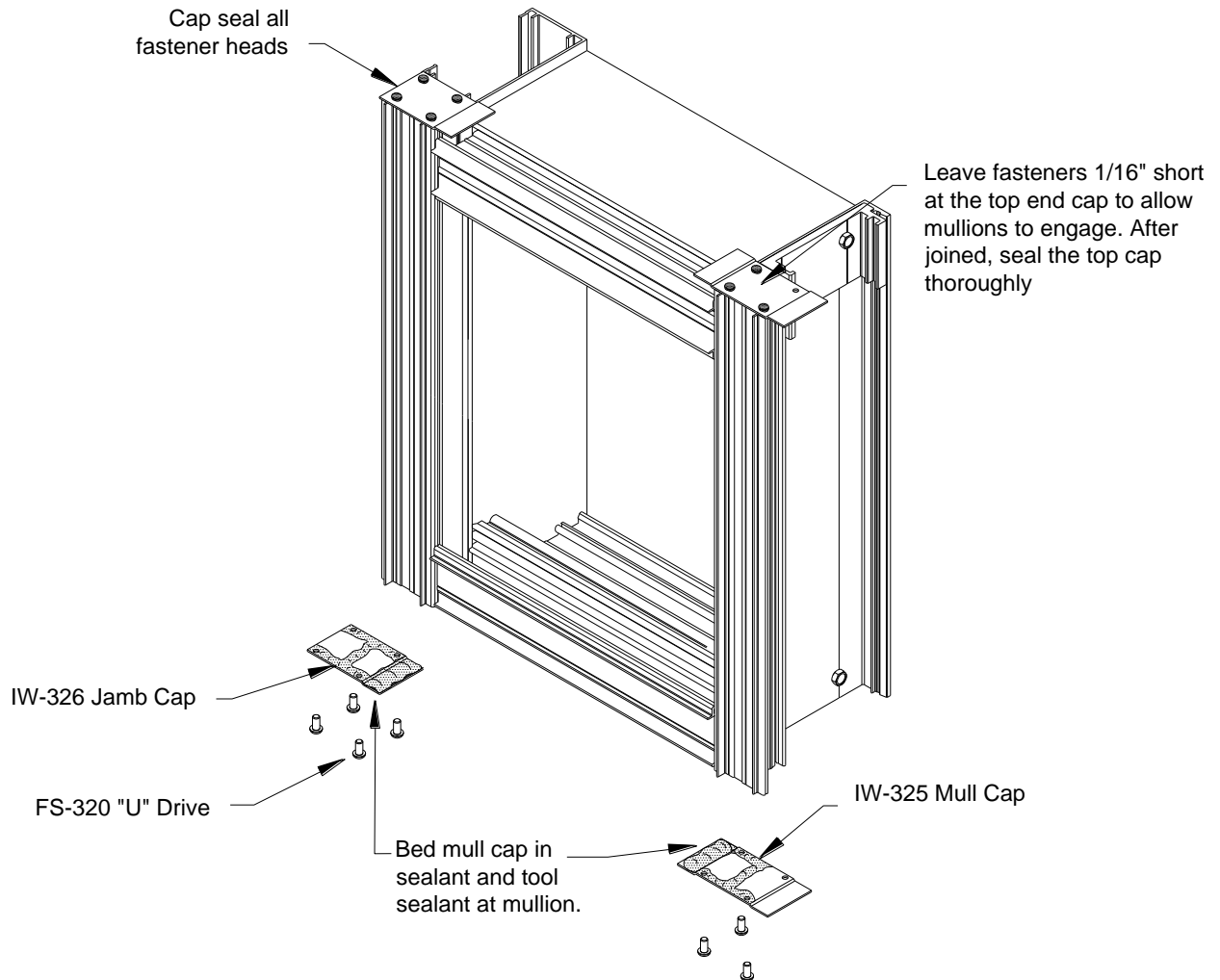
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**Figure 8: Frame Assembly & Sealant**

- 5.5 If mullions are spliced, slide splice sleeves into the bottom of the upper bay mullion. Secure with tape. Install one (1) FS-322 #14 x 1" TEK screw into the top of the lower bay mullion to act as a stop screw for the splices during frame installation. **See SECTION 10.**
- 5.6 After units are assembled. Install mull caps to each end of vertical mullions and jambs. IW-325 at verticals and IW-326 cap at jambs will be bed in sealant and attached to mullion with FS-320 drive screws. Sealant must be tooled around inside of glazing pocket and on mating surfaces between mull cap, head/sill and verticals. **See FIGURE 9.** Note: SSG mullions will not use mull caps. Bridges will be field installed at SSG verticals.

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**Figure 9: Mull Cap Installation**  
(SSG mullions do not use mull caps, see FIGURE 43)

## 6.0 Frame Anchoring

**Note:** Anchor type and sizes vary per job requirements. Details shown in these instructions are to be used as a guide only. Refer to approved shop drawings for actual conditions.

- 6.1 **Reliance™-TC SS** can be anchored to the building condition by either hard fastening directly through the head/sill member, **see FIGURE 10**, or slide-in mullion anchors that fit inside the vertical mullions. **See FIGURES 11 & 12**. If using the slide-in anchors, install into ends of mullions prior to erecting the frame.
- 6.2 Starting with the first bay, install into opening plumb and level. Check perimeter to maintain proper caulk joint. Anchor to structure per approved shop drawings.
- 6.3 Seal mull caps at head and sill. This is a critical seal and care must be taken to insure that a proper seal is formed. Excess sealant should be tooled around glazing pocket and from the joint side of the connection to ensure a full seal is made between the mull cap and horizontal member. **See FIGURE 14**.

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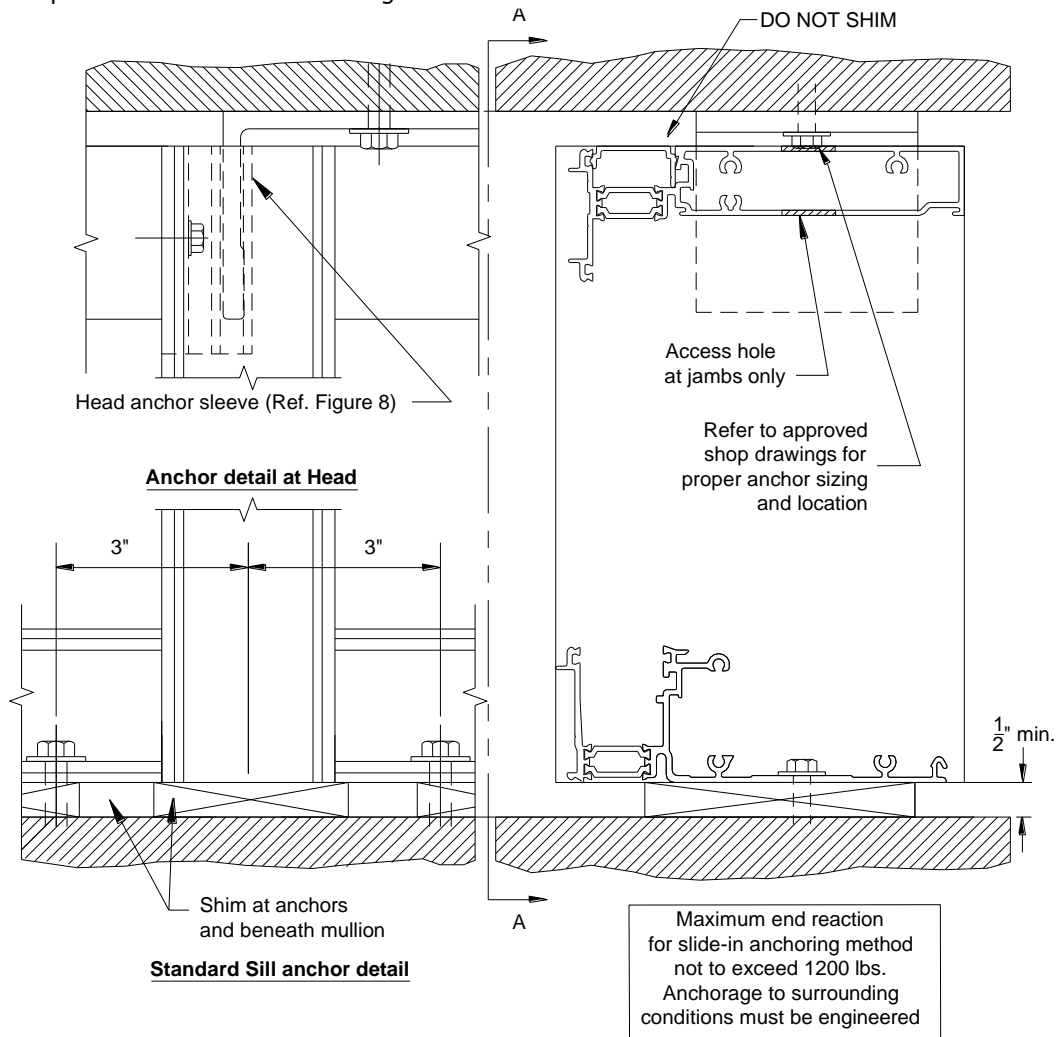
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- 6.4 Sealant must be applied to end of horizontal, head and sill or on intersecting surface prior to assembly of units. Once sealant is applied set next bay into opening by engaging mullion halves together. Ensure that bottom of mullion halves align. Anchor this bay to structure.  
**See FIGURE 14**
- 6.5 Repeat steps 6.2 through 6.4 until all bays are installed. Check D.L.O. and diagonal dimensions every four bays to ensure correct spacing and frame squareness to prevent dimensional buildup.
- 6.6 If mullions are spliced, release splice sleeves from upper mullions and allow to fall onto the set screws at the lower mullions. Attach to lower mullions with (2) FS-8 #14 x 1" HH. Refer to "VERTICAL SPLICING" section for sealing instructions.
- 6.7 At SSG mullions, apply sealant to all contact surfaces on vertical and horizontal mullions where zone bridges will be installed. Apply sealant to horizontal tongue receptor on zone bridge and install at the end of each horizontal, head and sill members. Tool any excess sealant around front end of zone bridge where the thermal isolator runs through. Tool sealant in the glazing pockets to ensure a watertight fit.



**Figure 10: Hard Anchor Method**

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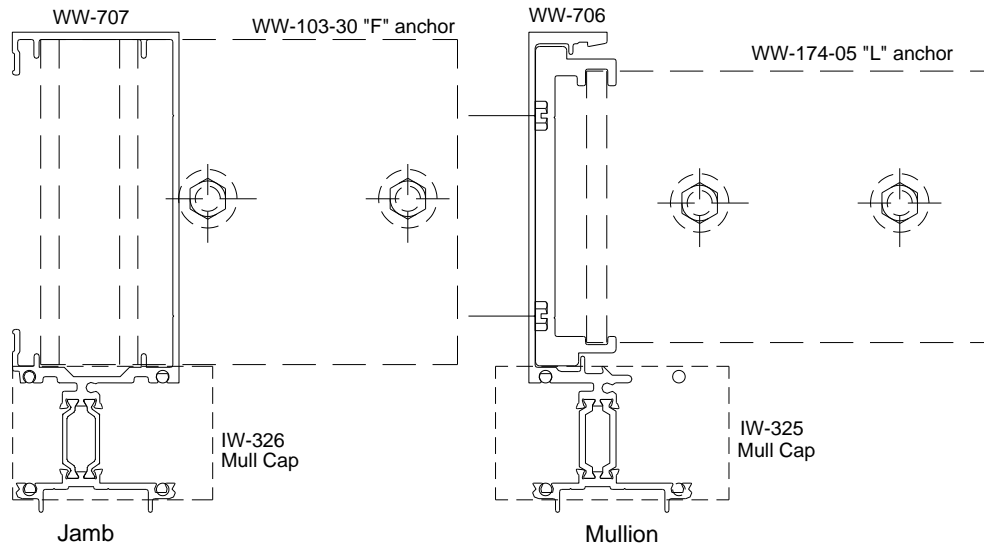
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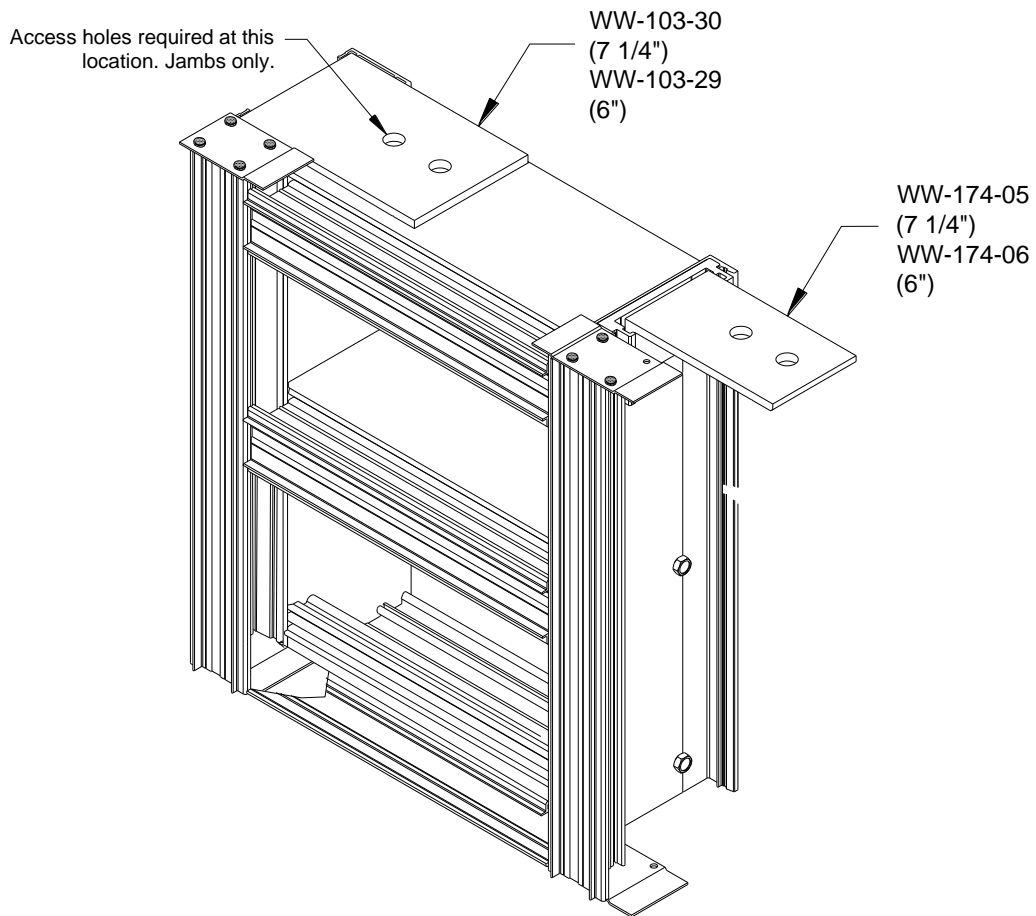
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**Figure 11: Slide-In Anchor Method (Top View)**



**Figure 12: Slide-In Anchor Method**

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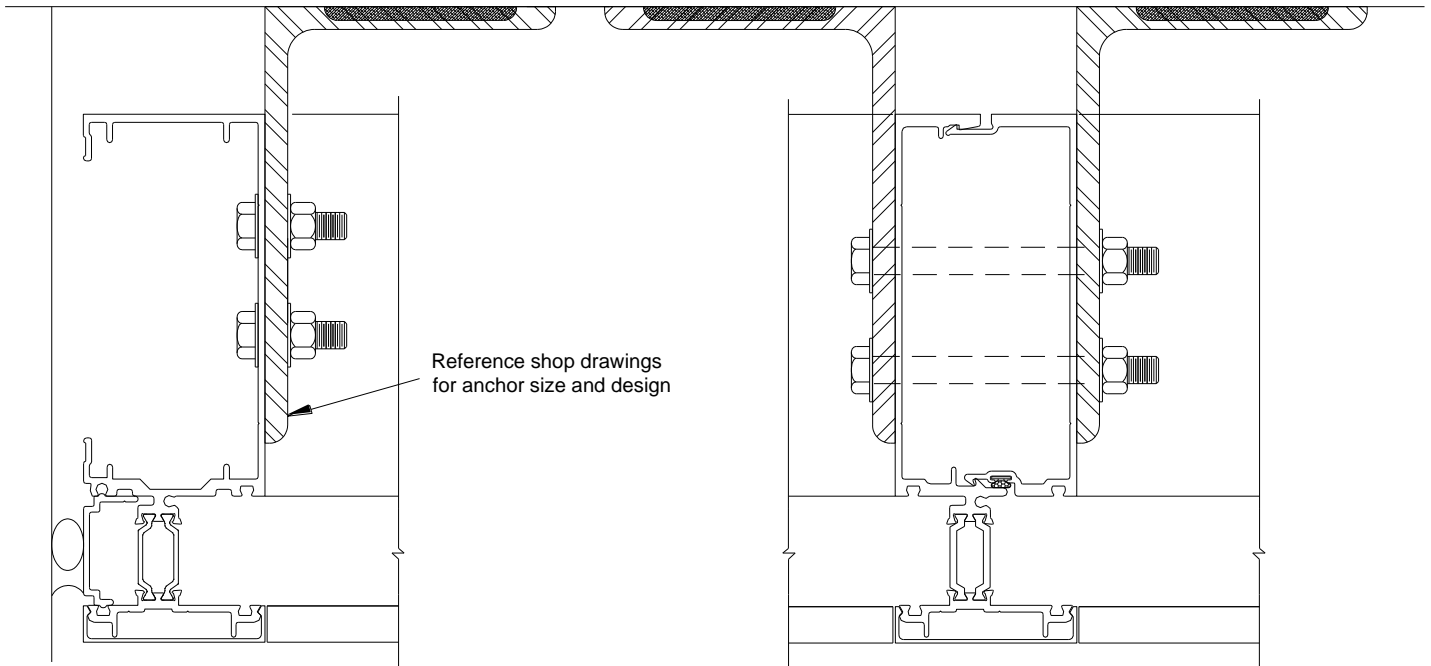
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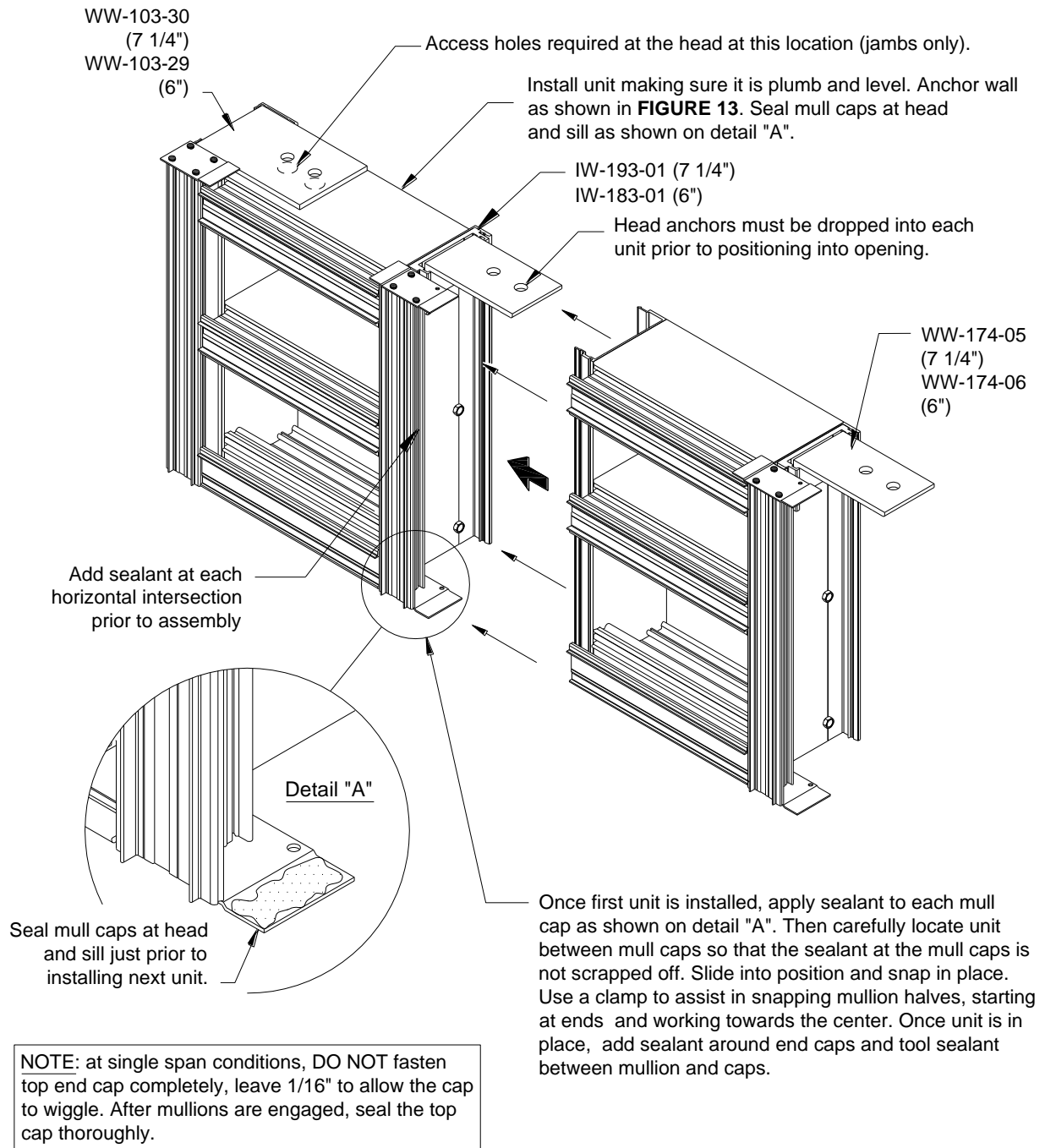
## RELIANCE™ - TC SS Curtain Wall Inside Glazed

- 6.8 Mid span anchors will be located based on engineer's calculations. Typical anchors are shown in **FIGURE 13**. Size and design of anchor, as well as bolt size and quantity to be based on project requirements and engineer's calculations.
- 6.9 Apply continuous bead of sealant between all SSG mullion halves and tool into space provided. **See FIGURE 15**.



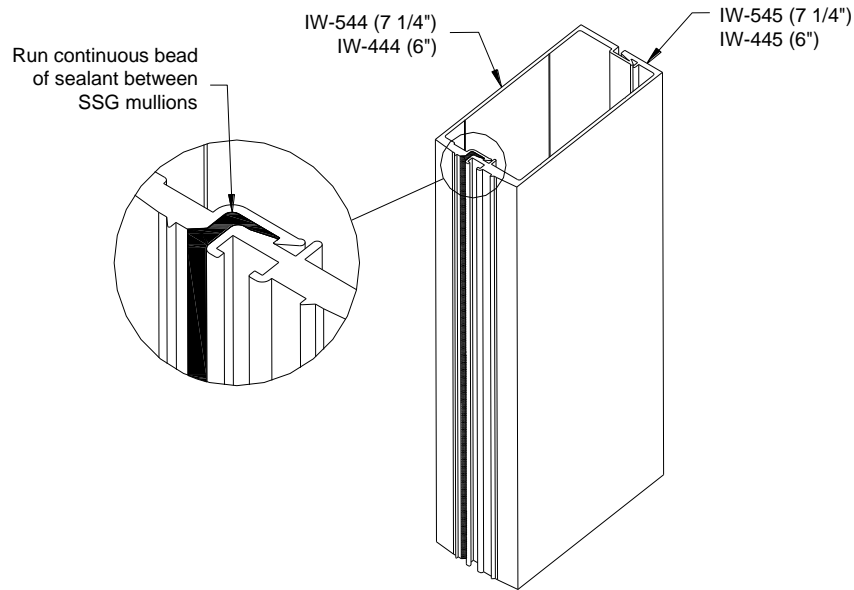
**Figure 13: Mid Span Anchors**

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**Figure 14: Vertical Mullion Installation**

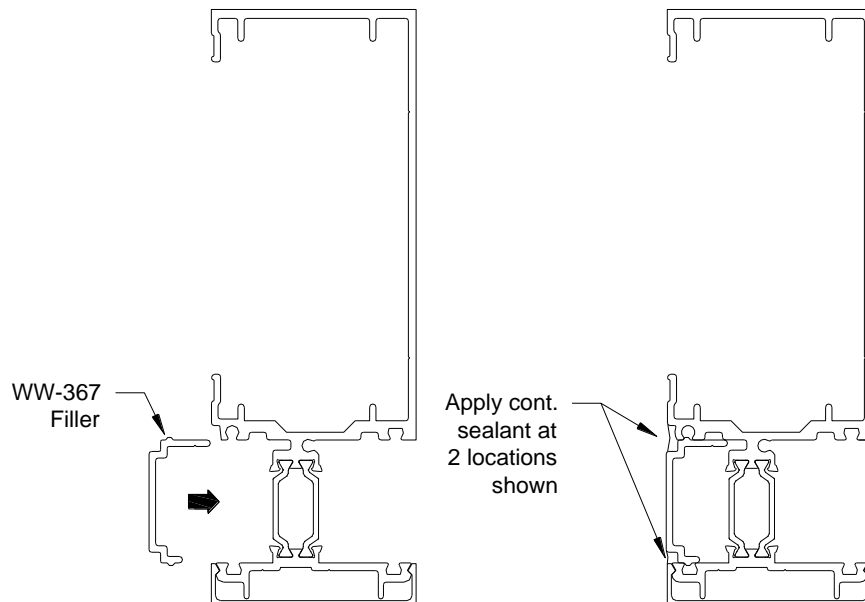
# RELIANCE™ - TC SS Curtain Wall Inside Glazed



**Figure 15: Sealant Between SSG Mullions**

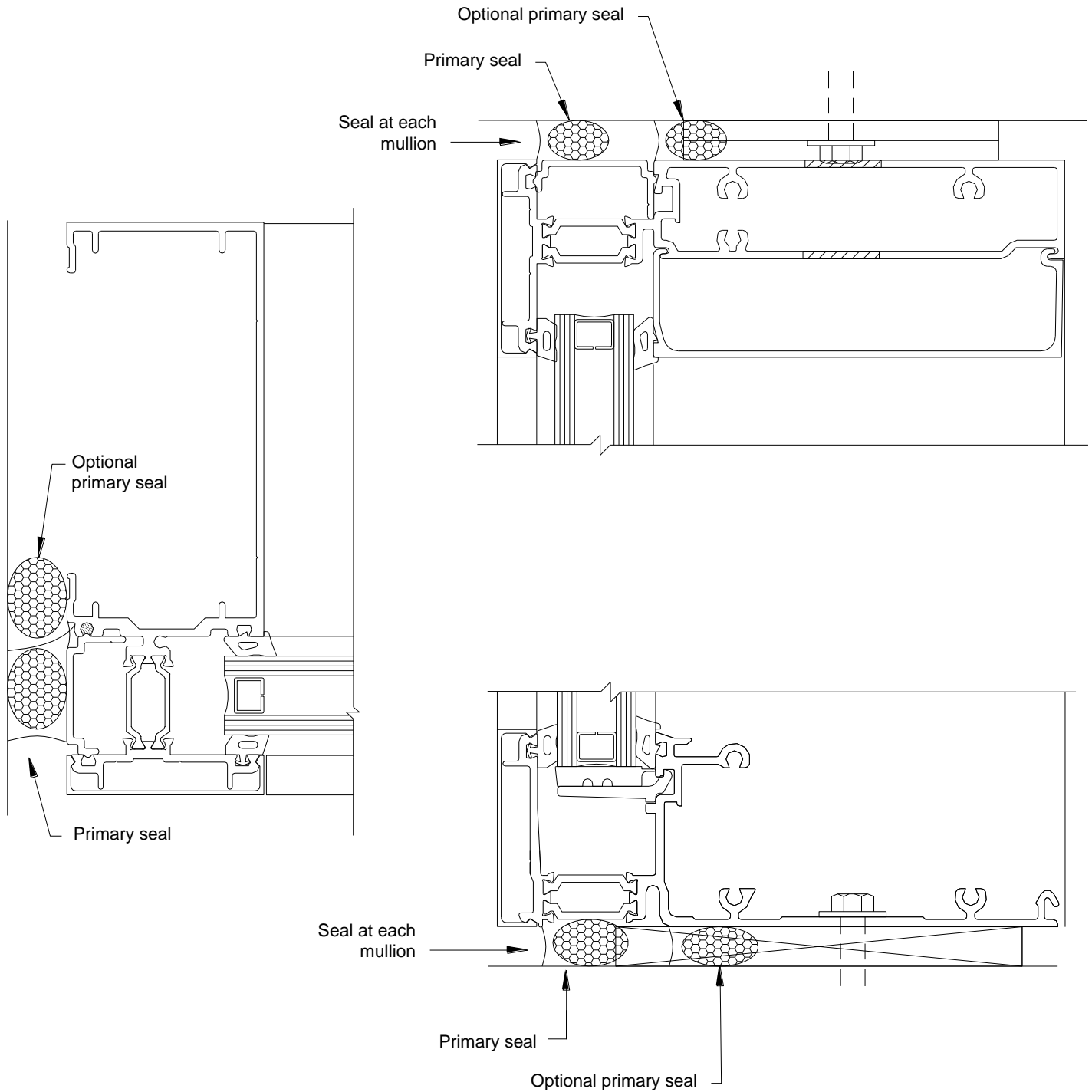
## 7.0 Pocket Filler Attachment & Perimeter Seal

- 7.1 Insert WW-367 filler into the jamb gasket reglet and run a continuous line of sealant the full length of pocket filler, as shown in **FIGURE 16**.
- 7.2 When all framing members are installed, apply the perimeter seal. **See FIGURE 17**. The interior perimeter seal is not required for system performance but may be required for cosmetic purposes.



**Figure 16: Pocket Filler Attachment at Jamb**

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**Figure 17: Alternate Perimeter Sealant Locations**

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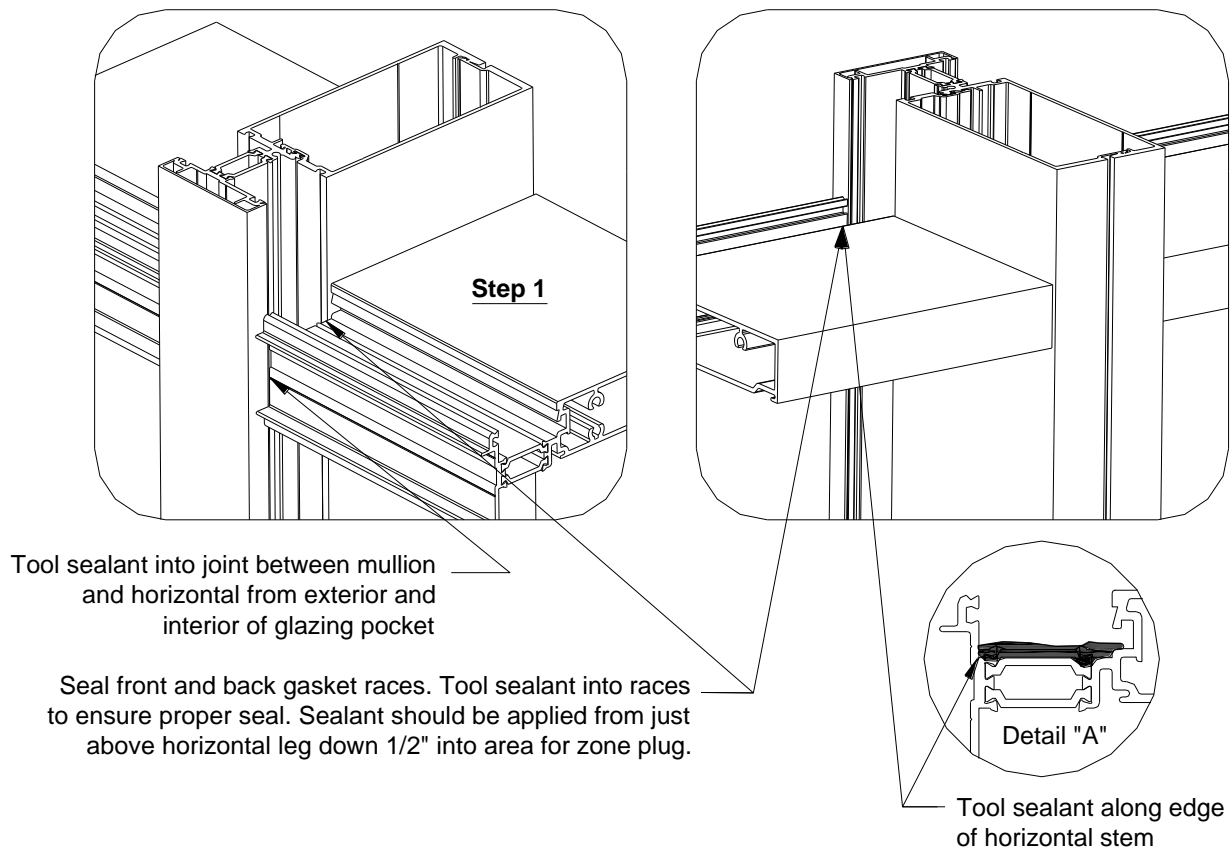
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## 8.0 Zone Plugs

- 8.1 Seal gasket races and adaptor tracks. Proper sealant of these tracks is critical to ensure water does not drain through the tracks into glazing pocket below or penetrate interior of building at glass stops. Run sealant 1/2" down from top of stem of horizontal tooling sealant into the gasket race. Apply sealant along edge of horizontal and tool over edge along stem.  
**See FIGURE 18.**
- 8.2 Place bead of sealant around glazing pocket at location where zone plug will be located prior to inserted into pocket. Also lay bead of sealant across top of stem of horizontal. Place WW-364 zone plug into shallow pocket or WW-365 into deep pocket so that it may rotate over stem and snap into position. **See FIGURE 19.** Apply additional sealant around top of zone plug at mullion and horizontal. Marry sealant with sealant previously applied into gasket races and tracks.
- 8.3 Run sealant up 1" onto wall of mullion and top of horizontal, tooling sealant into edges of thermal strips Tool sealant between zone plug, mullion and horizontal to insure a proper seal.  
**See FIGURE 20**
- 8.4 Once sealant is cured. It is recommended that weep holes in horizontal be plugged, and each horizontal pocket filled with water. If water leaks through at any connection, drain pocket, dry and reseal. Then repeat until leaks have been resolved.
- 8.5 Note: zone plugs will be installed at all sill and intermediate horizontals.



**Figure 18: Seal Gasket Race**

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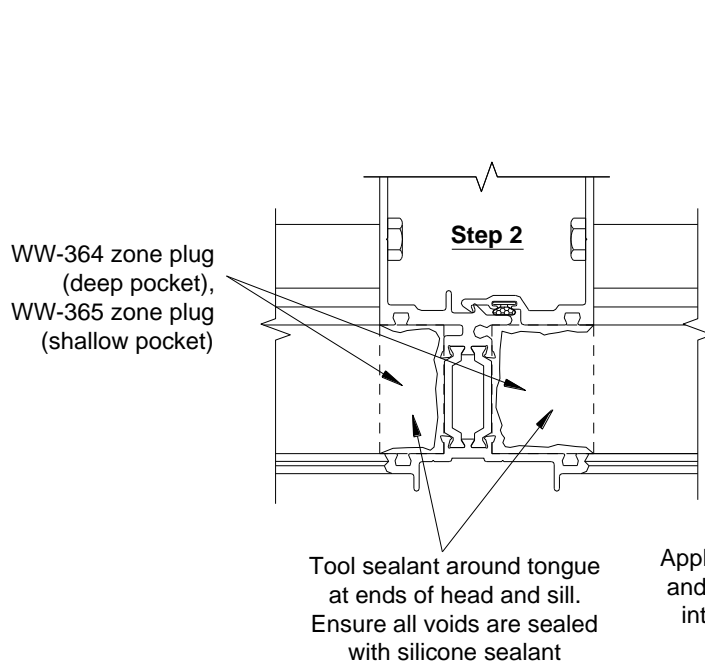


Figure 19: Zone Plugs (Top View)

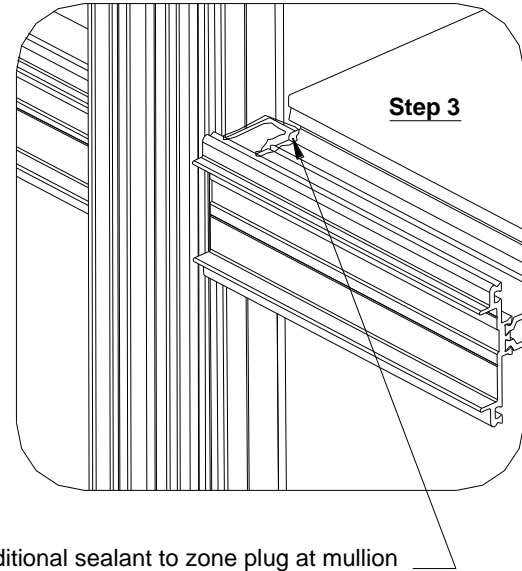


Figure 20: Zone Plug Installation

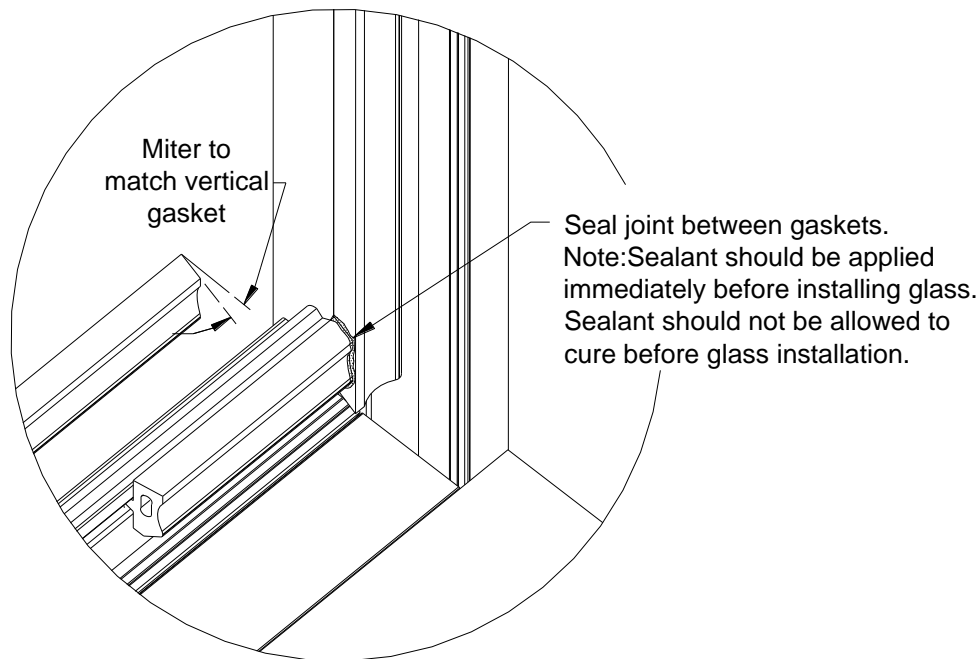
## GLAZING

### 9.0 Gasket Installation & Setting Glass

- 9.1 To avoid silicone curing before glass is set in place and contamination from job-site debris, glazing prep must be performed as each opening is glazed. Also consider the following:
- Gasket should be cut 1/4" per foot longer than openings to allow for relaxation prior to installing. Do not pre-seal the gaskets in the entire frame; install and seal gaskets as you are ready to set glass in each opening.
  - If the vertical mullion is spliced, run gasket through the splice joint, setting gasket in fresh silicone at splice joint, trimming the gasket dart as necessary to form an airtight seal. Glazing gaskets at verticals run through; horizontal gaskets butt into vertical gaskets.
  - Crowd the gaskets into corners, cutting the horizontal gaskets at an angle to match bevel on vertical gaskets. Pulling the horizontal gasket back, seal joint between the corners of the gaskets just prior to setting the glass. Release the gasket back to its original position, making sure sealant fills the entire joint. **See FIGURE 21.**
- 9.2 Position setting blocks at correct location (two per lite). Refer to approved shop drawings or deadload charts. Lubricating the top of the setting block will help insure proper setting of glass. Note: Consult glass manufacturer for correct setting block location and length for glass sizes in excess of 40 sq. ft. **See FIGURE 22A.**
- 9.3 Insert WW-150 glass stop into the opening and engage with WW-709 head. Install a short gasket into the middle of the DLO to hold in place and then insert the wedge gasket, crowding into the corners as shown on **FIGURE 22.** Engage WW-548 sill cover with WW-710 sill as shown in **FIGURE 23.**

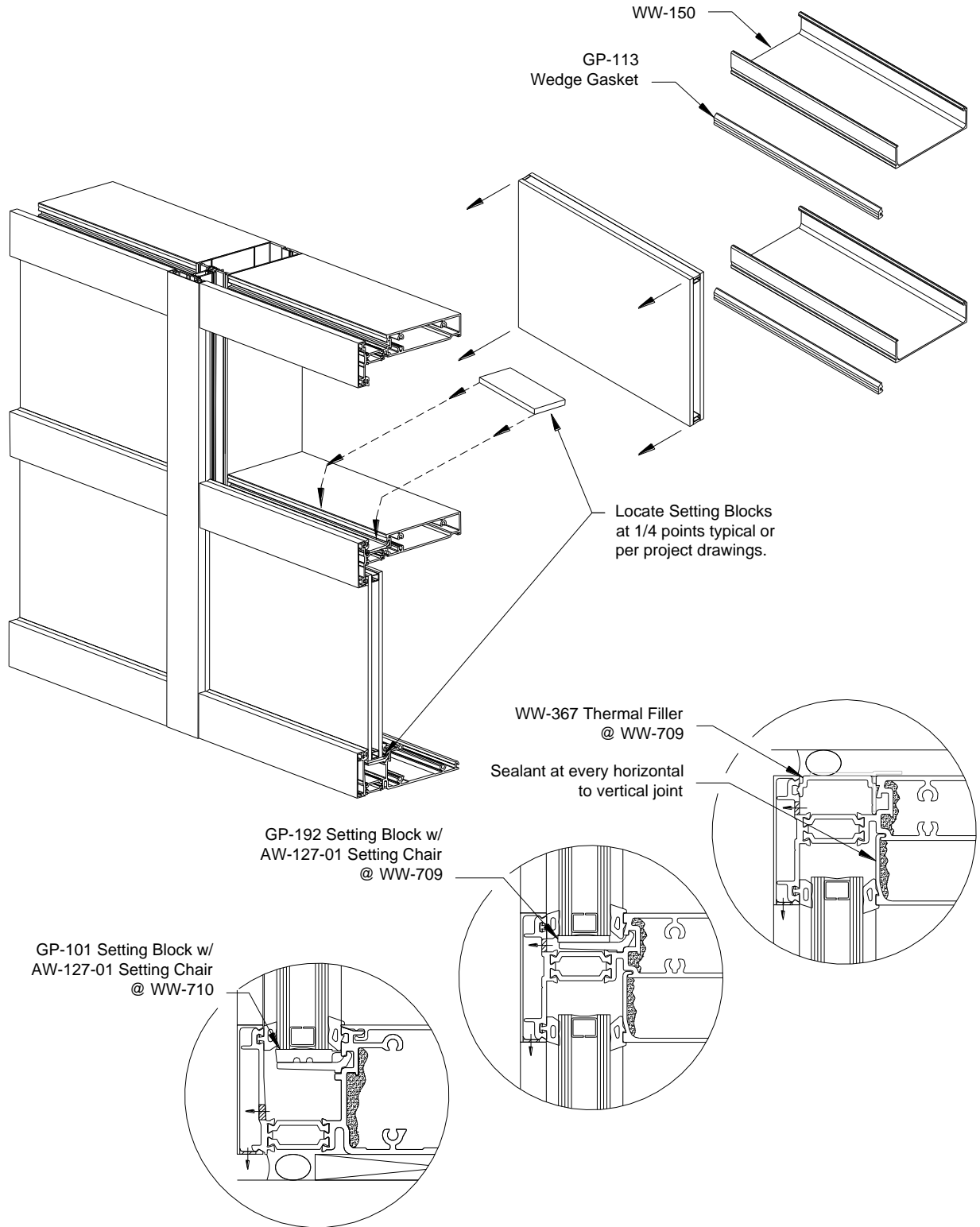
## RELIANCE™ - TC SS Curtain Wall Inside Glazed

- 9.4 Insert GP-114 shallow side block and set glass in opening from the interior. System should be glazed from bottom to top. Place one edge of the glass into the deep pocket of the vertical. Swing the glass into the adjacent vertical pocket and lower onto setting blocks, ensuring that the glass bite is equal on all sides. CAUTION: Be certain that glass is placed firmly against exterior gasket to ensure a proper seal and to avoid binding of the glass on the setting block. **See FIGURE 24.**
- 9.5 Temporarily hold glass in place at each corner with 4" long interior wedge gaskets. Locate at the corners for proper sealing of gasket joint. Temporary pieces of wedge may also be required at the center of each horizontal if glass edges are greater than 4" in length.
- 9.6 Install GP-115 "W" blocks at centerline of each lite along vertical edges. For framing that may be subject to seismic events, consult glass manufacturer for preferred location, **FIGURE 24.**
- 9.7 Repeat steps 9.1 through 9.5 until all glass is set, working row by row up the elevation.
- 9.8 For elevations requiring vertical mullion splices, refer to the VERTICAL SPLICING section, **SECTION 10**, before continuing the installation.
- 9.9 Vertical gasket runs 1/2" deep into each glazing pocket. Notch gasket, caulk and compress horizontal gasket into the vertical gasket and crowd the gasket at the center of the DLO moving in each direction as shown in **FIGURE 25A.**
- 9.10 Install vertical face covers, then horizontal face covers leaving equal gap at the ends. Make sure weep hole is on bottom. To prevent damaging snap-on face caps during installation, hold a short piece of 2" x 4" wood block over the cap and strike with a dead blow soft face hammer. Strike cap at clip locations. Do not hit the face cap directly with a mallet. **See Detail "A", FIGURE 25B.**



**Figure 21: Seal at Gasket Corners**

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**Figure 22: Glazing & Setting Block Placement**

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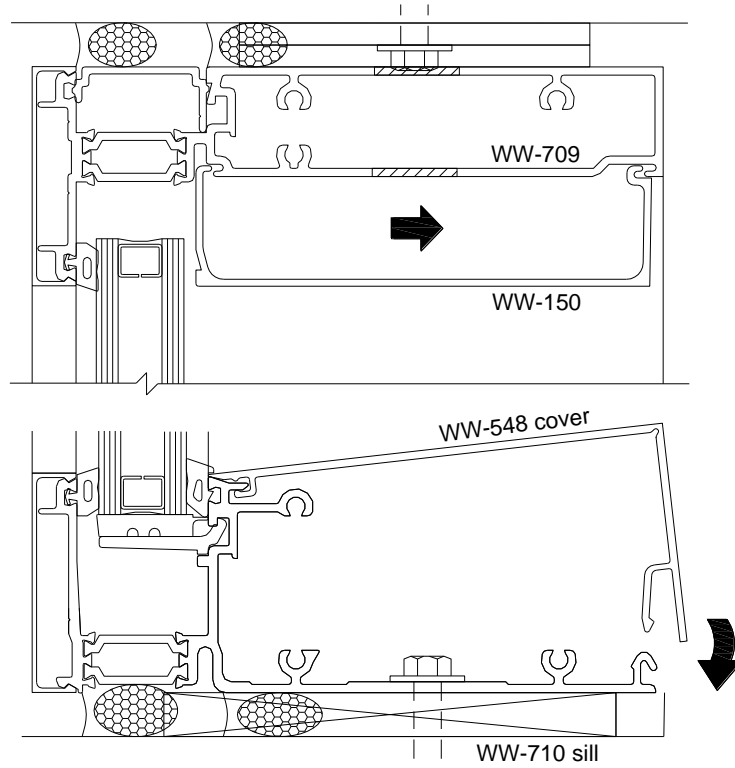
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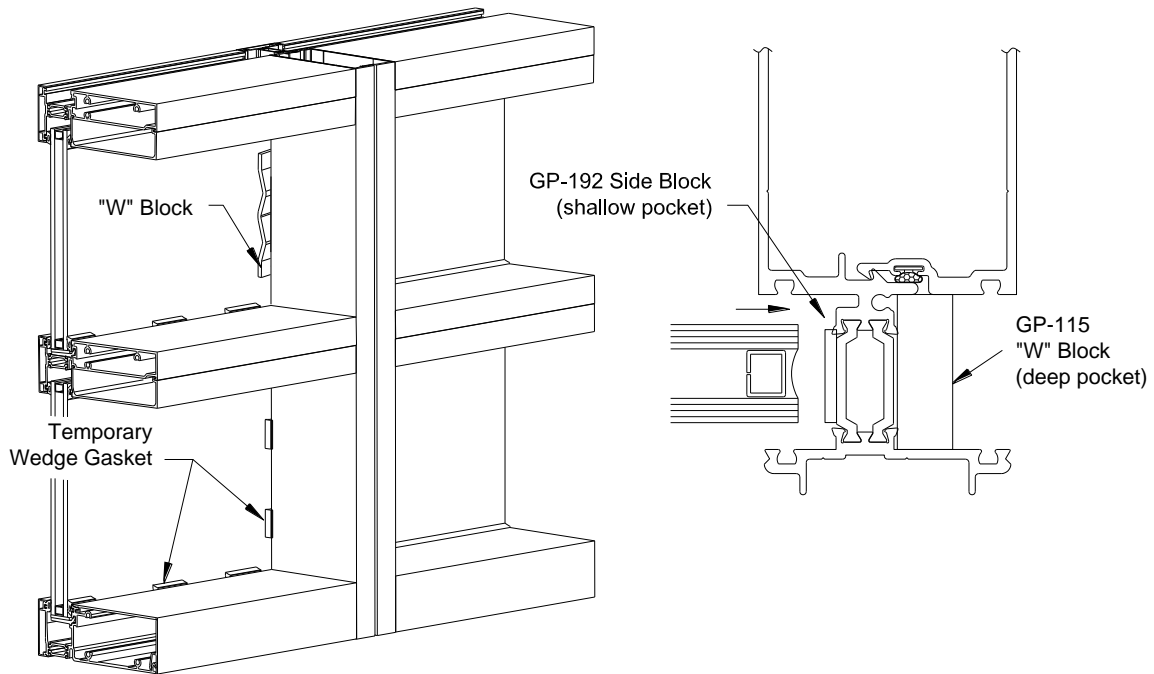
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**Figure 23: Glass Stop and Head/Sill Cover Installation**



**Figure 24: Glazing Retainer & Side Block Install**

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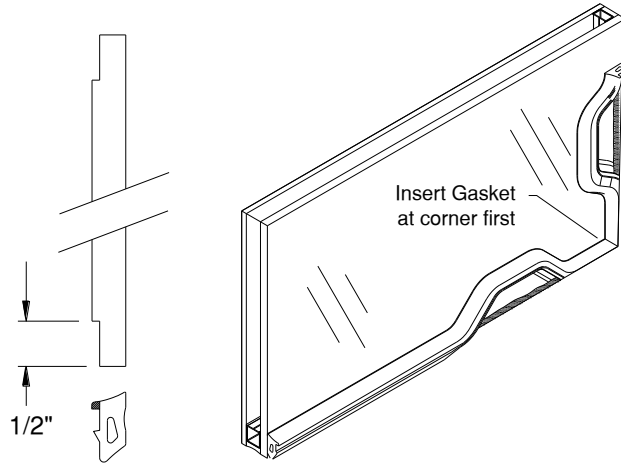
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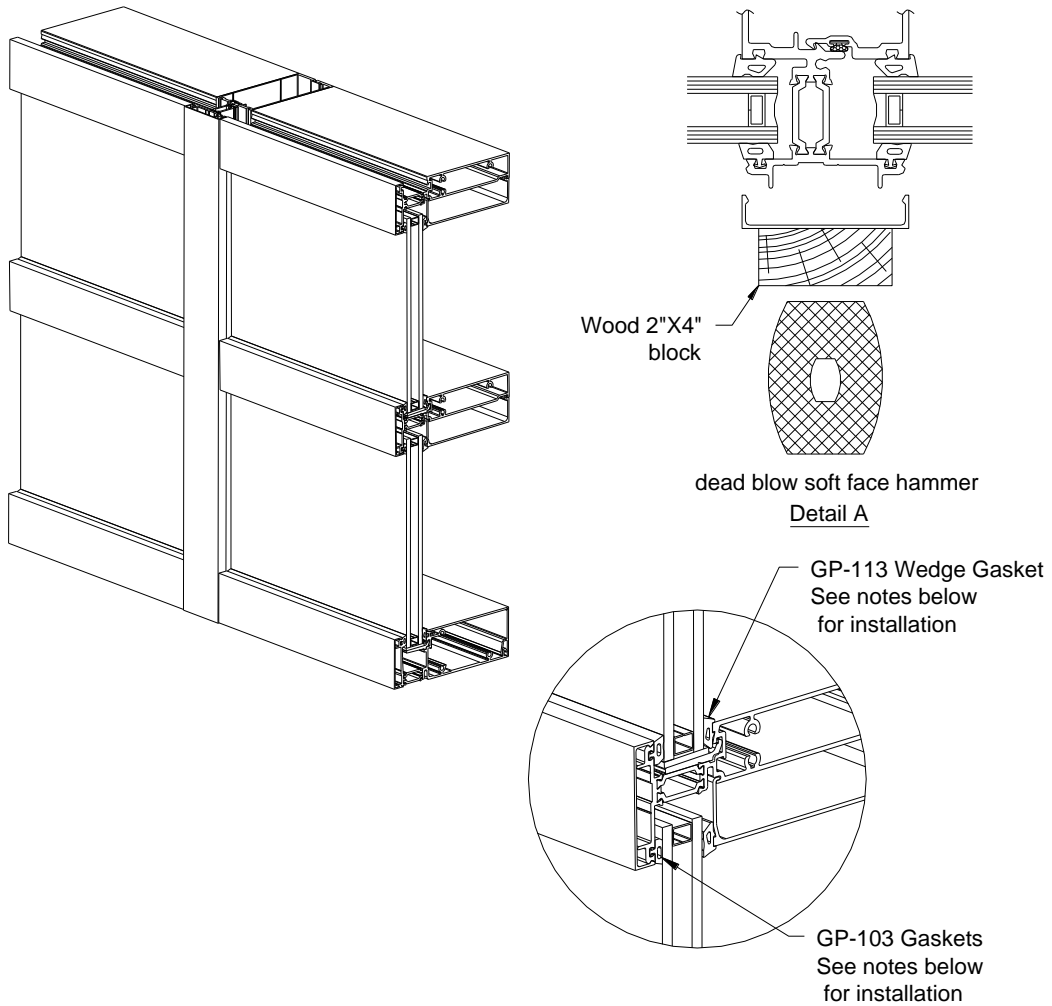
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**Figure 25A: Wedge Gasket Installation**



**Figure 25B: Cover Install & Glazed Assembly**

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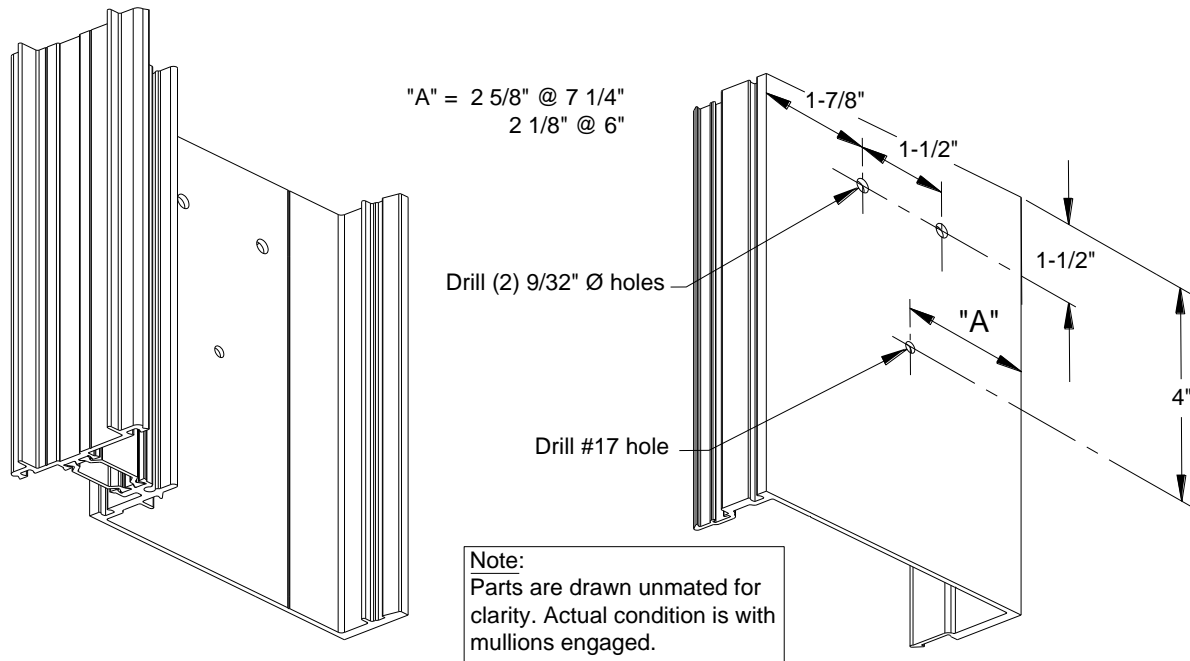
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## 10.0 Standard Vertical Splice

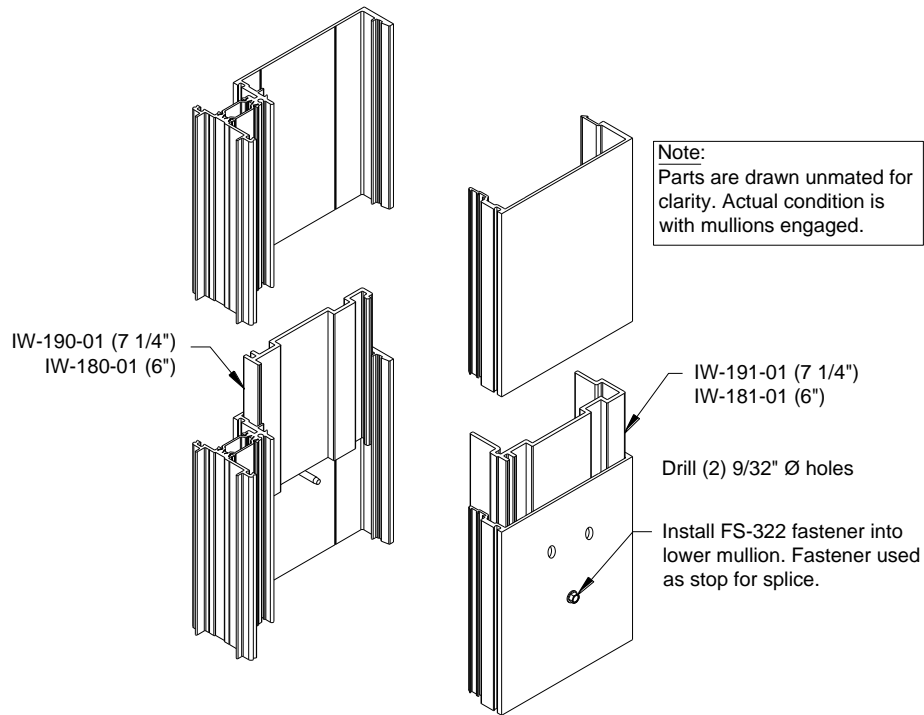
**Note:** Follow sealant manufacturer's guidelines for proper joint width based on anticipated movement. A minimum 1/2" joint is recommended. Standard splice joints are engineered to accommodate thermal expansion only. They do not allow for movement in floor levels. Refer to approved shop drawings for special circumstances or contact your nearest Oldcastle BuildingEnvelope® facility.

- 10.1 Tape splice sleeve into upper section of vertical mullion. **See FIGURE 26.**
- 10.2 Drill (2) 9/32" dia. holes in lower mullion for splice attachment and one 7/32" hole in lower mullion stop screw. Install (1) FS-322 drill flex fastener into lower mullion for splice stop.
- 10.3 When erecting wall, lower splice sleeve into lower mullion until it contacts stop screw. Attach splice to mullion with (2) FS-8 fasteners, **FIGURE 27.** Add (2) FS-8 fasteners to upper mullion for hard splice conditions. **See FIGURE 30.**
- 10.4 Apply bond breaker tape and seal splice joint along, **See FIGURE 28.**
- 10.5 Seal splice joint along interior face of mullion back 1" on each side and seal exterior face of mullion between ends of mullion and caulk blocks. **See FIGURES 29A & 29B.**

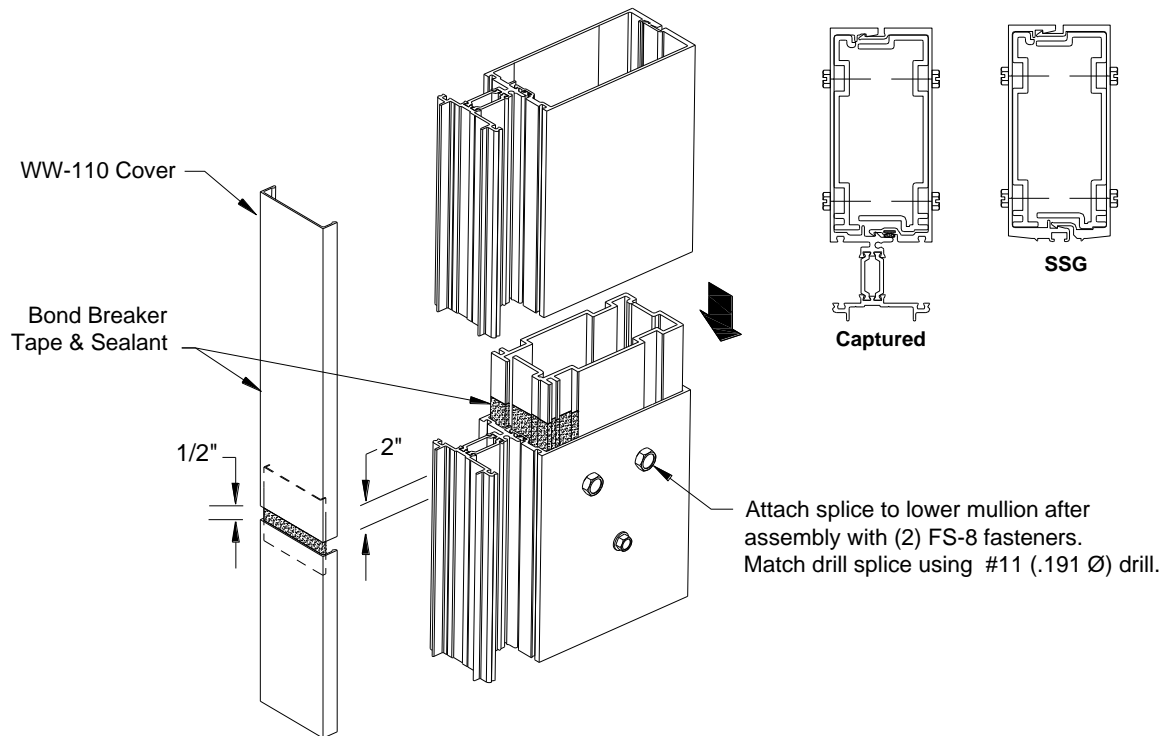


**Figure 26: Vertical Fabrication for Splice**

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**Figure 27: Splice Assembly**



**Figure 28: Cover and Bond Breaker Splice Assembly at Intermediate Mullion**

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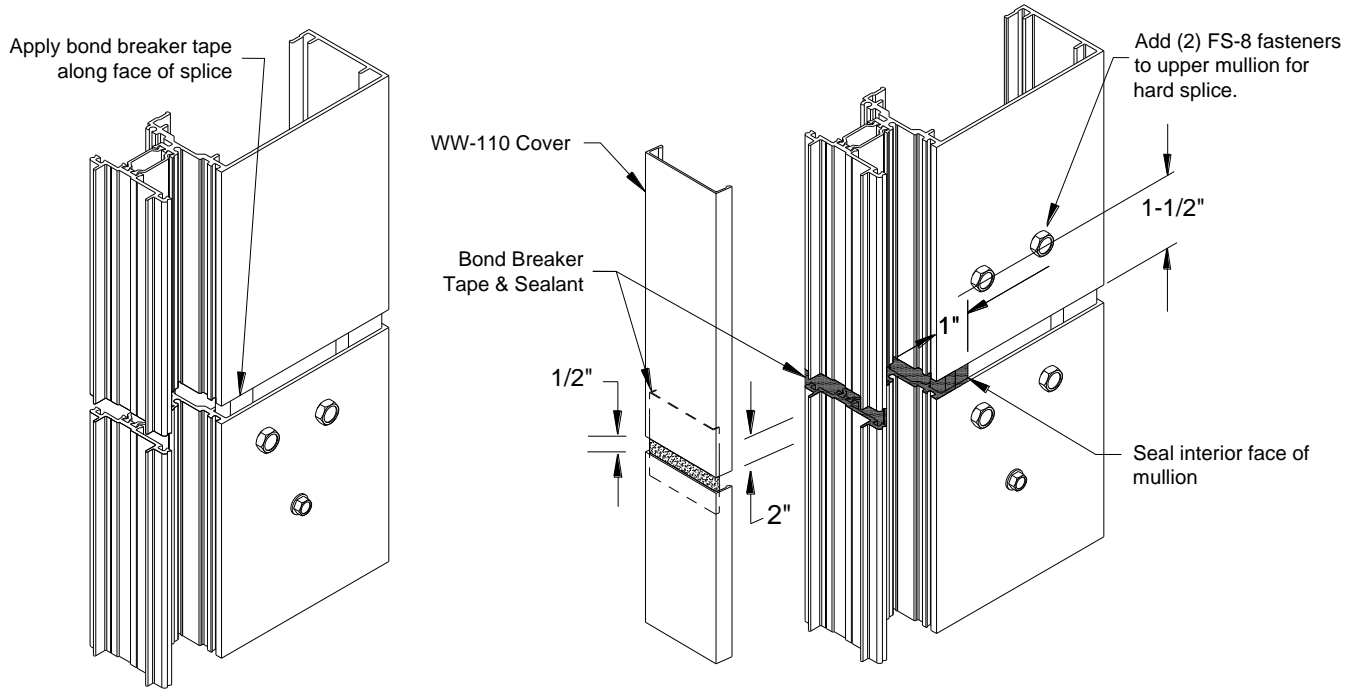
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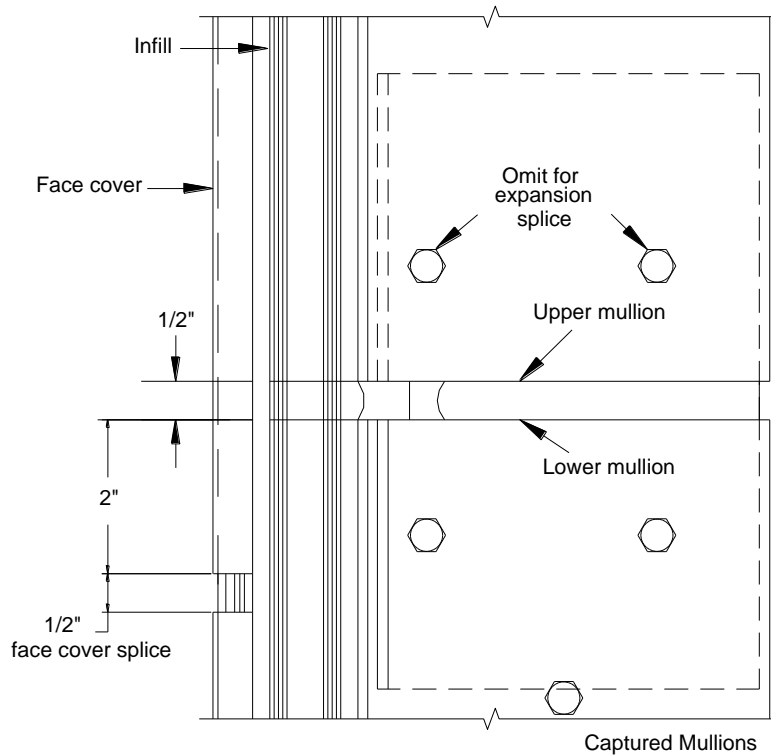
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**Figure 29A: Splice Assembly at Jamb**

**Figure 29B: Splice Sealant at Jamb**



**Figure 30: Vertical Splice Joint**

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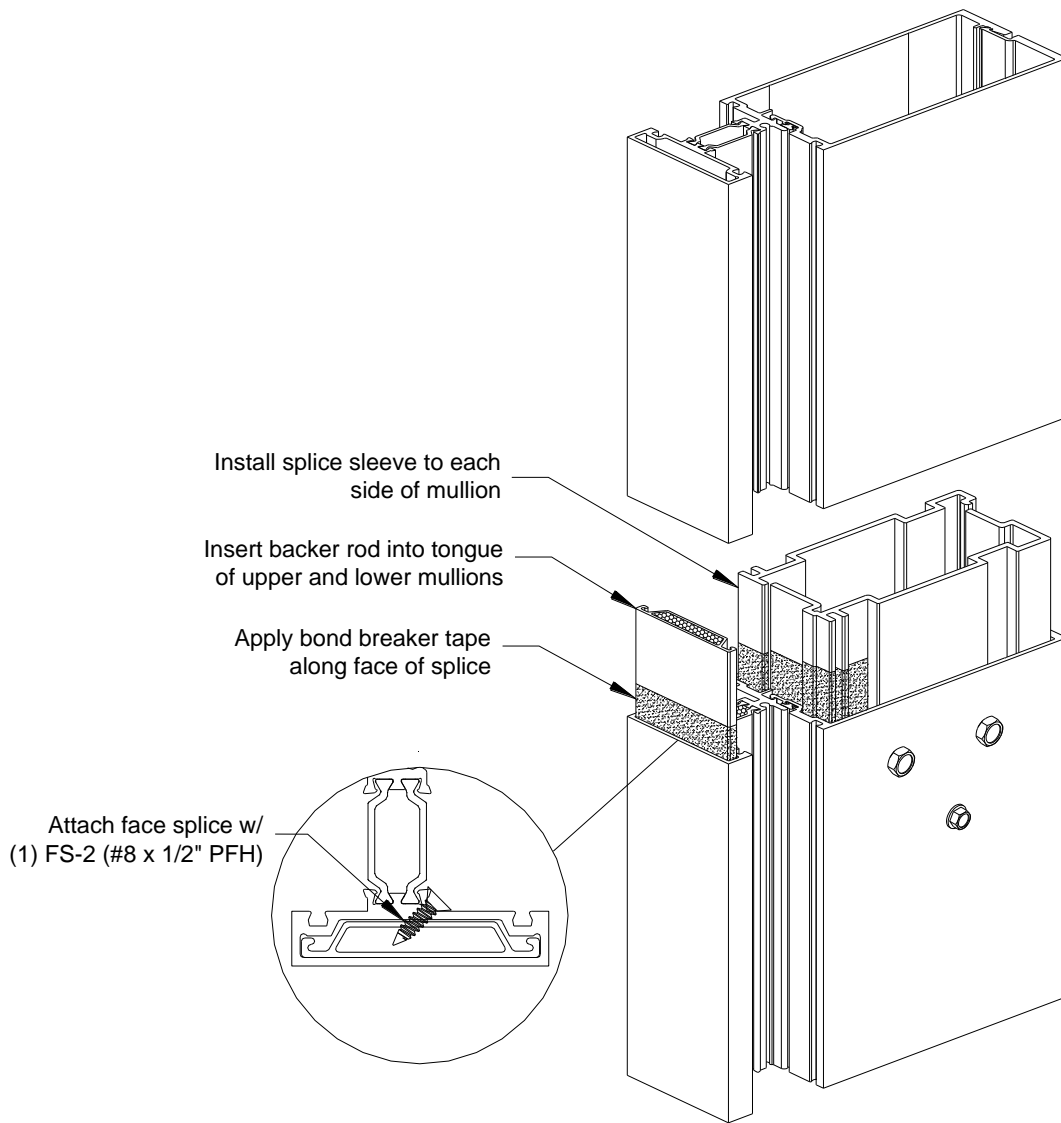
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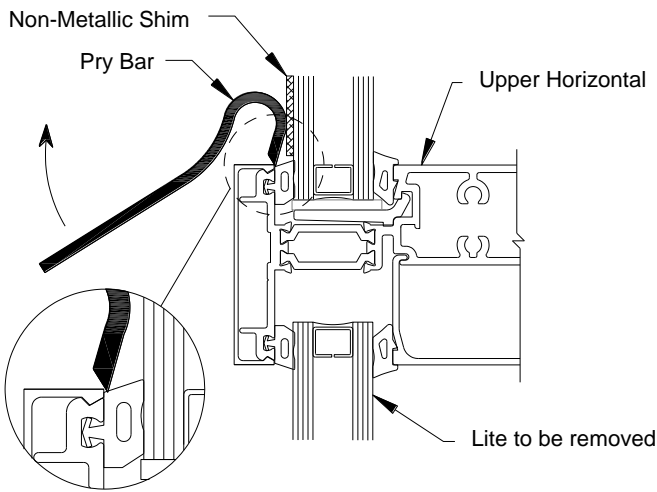
**Figure 31: Optional Mullion Composite Splicing**

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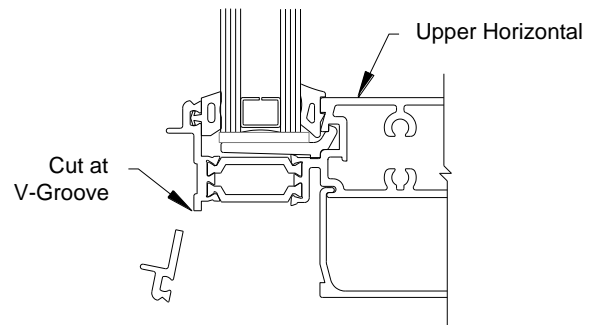
## REGLAZING

### 11.0 Reglazing Procedure

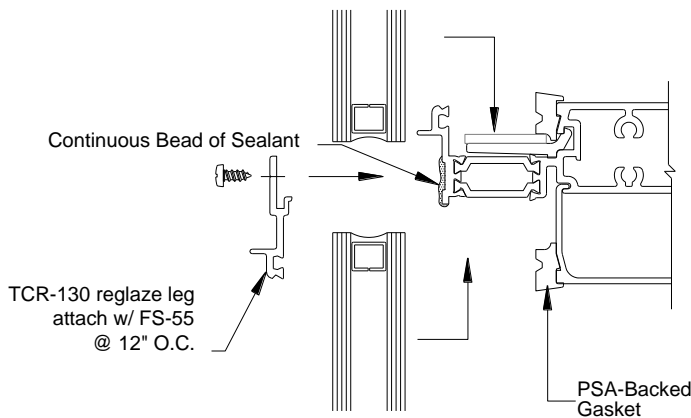
- 11.1 WHEN REGLAZING FROM THE INTERIOR, remove interior wedge, remove old glass and clean glazing pocket of any debris or glass and reglaze per glazing instruction on **SECTION 9**.
- 11.2 WHEN REGLAZING FROM THE EXTERIOR, carefully remove face covers surrounding the lite of glass to be deglazed. **See FIGURE 32**.
- 11.3 Remove lower section of upper horizontal as shown in **FIGURE 33**.
- 11.4 Remove lite of glass and existing interior gaskets from the opening. Clean debris and sealant from the framing members.
- 11.5 Install GP-100 gaskets into framing. Set new lite of glass, centered in opening.
- 11.6 Install TCR-130 leg. Set in continuous bead of sealant and attach with FS-55 fastener @ 12" O.C cap seal all fasteners. **See FIGURES 34-35**.



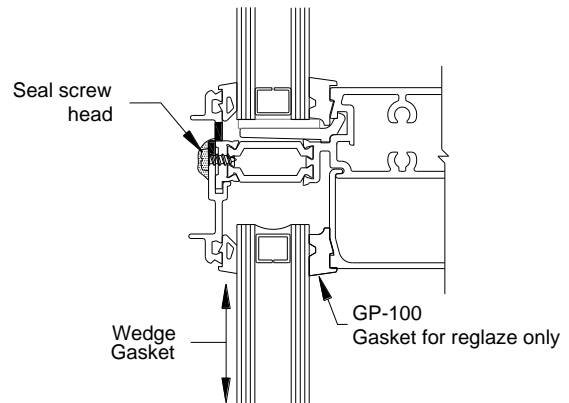
**Figure 32: Cap Removal**



**Figure 33: Deglazing**



**Figure 34: Reglazing**

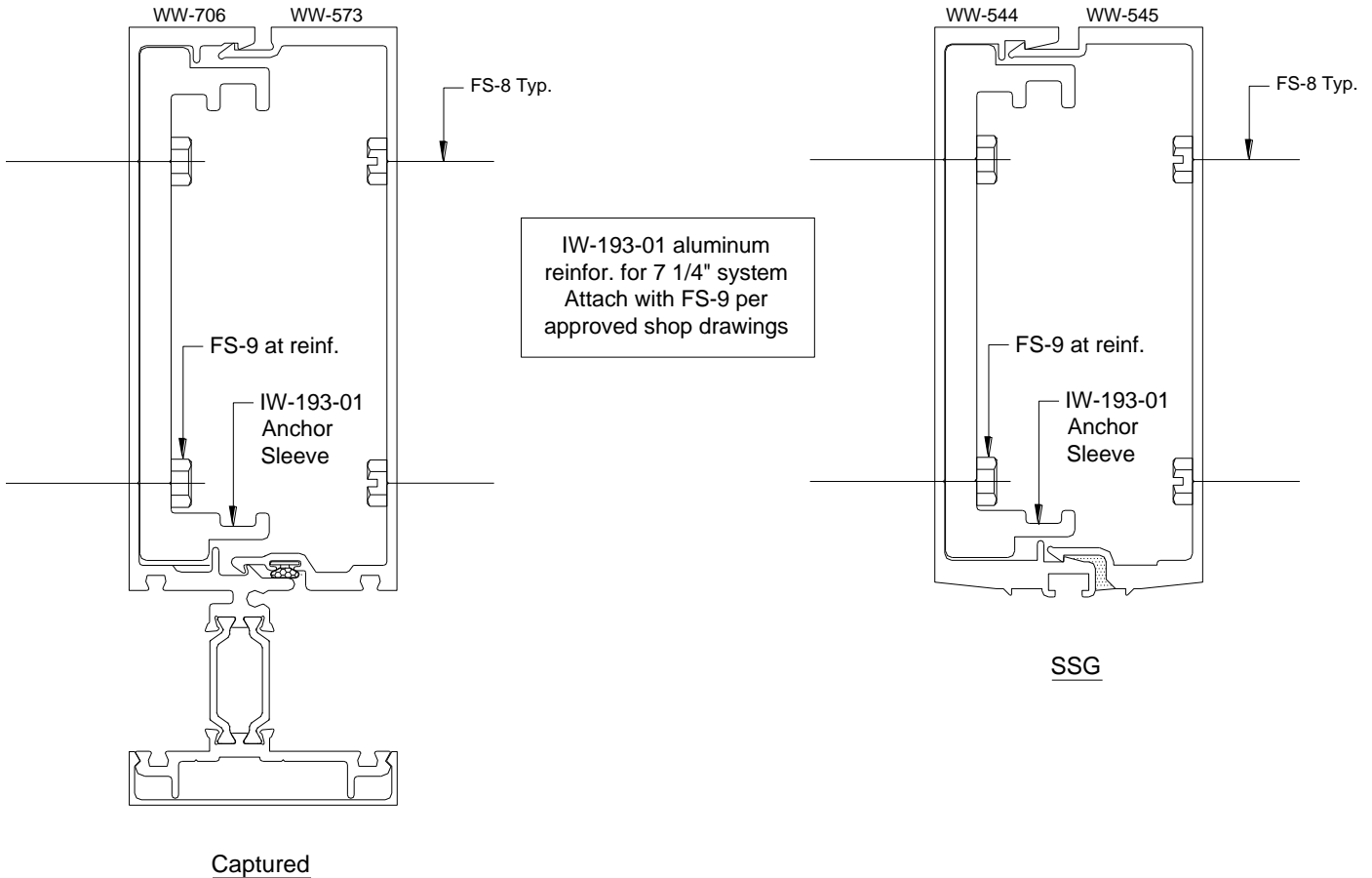


**Figure 35: Reglazing**

## REINFORCEMENT

### 12.0 Mullion Reinforcement

**Note:** Refer to wind load charts in the detail catalog for single span and equal twin span conditions. For all other conditions such as unequal twin spans, knee brace, and multi-span conditions, contact your local Oldcastle BuildingEnvelope® facility for mullion reinforcing requirements or consult a qualified professional engineer. Refer to approved shop drawings for placement, size, and quantity of reinforcing required and means of attachment.

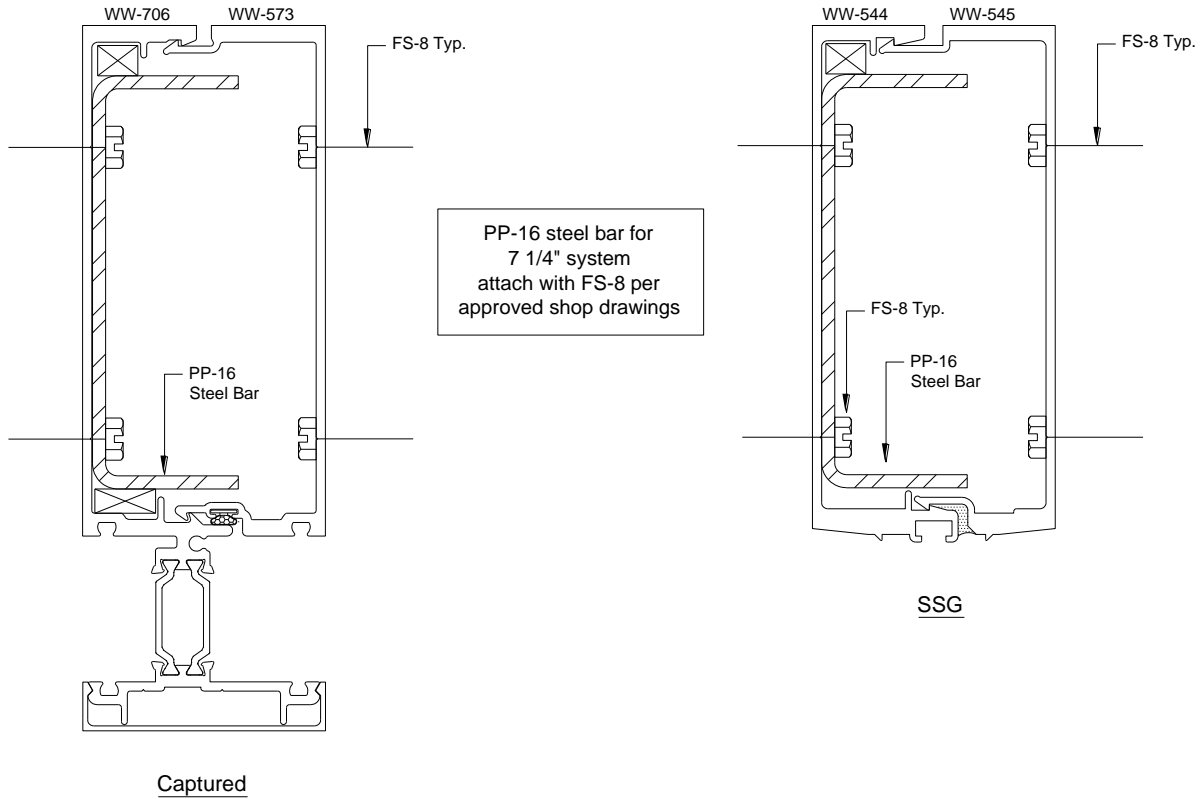


**Figure 36: Typical Aluminum Reinforcement Attachment**

#### General Notes:

1. IW-183-01 & IW-193-01 aluminum reinforcement may be used continuously without steel depending on structural requirements.
2. In all cases where either the continuous IW-183-01 or IW-193-01 is used, FS-9 frame assembly fasteners will be applied through the reinforcement sleeve anchor. **See FIGURE 36.**
3. In cases where steel attached directly to side wall of mullion, assemble frame through steel with FS-8 fasteners. **See FIGURE 37.**
4. See manual for attachment location and procedure.

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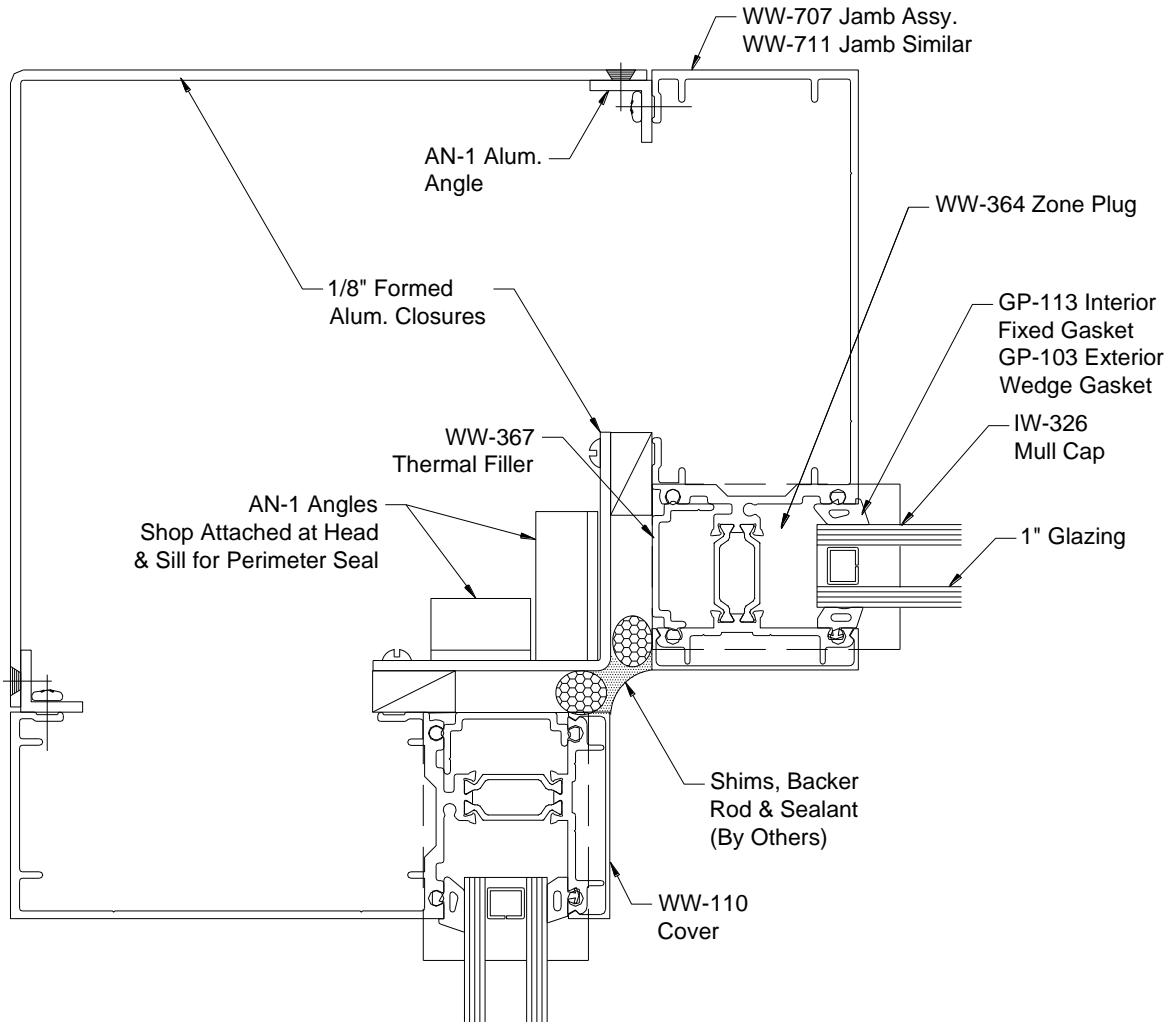
**Figure 37: Typical Steel Reinforcement Attachment**

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## CORNERS

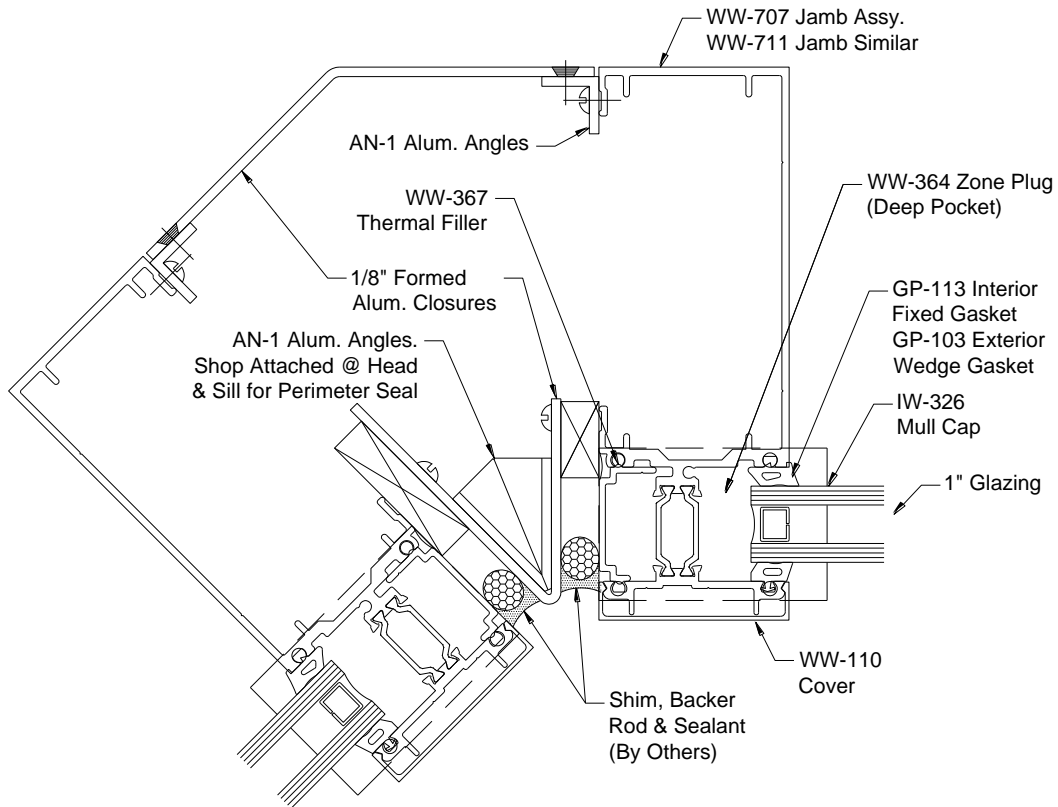
### 13.0 Captured Inside 90° & 135° Corner Assemblies

**Note:** Fabricate and assemble as shown below. **FIGURES 38 & 39** shows the basic layout of the standard one-piece Corner Mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.



**Figure 38: Captured IS 90° Corner Assembly**

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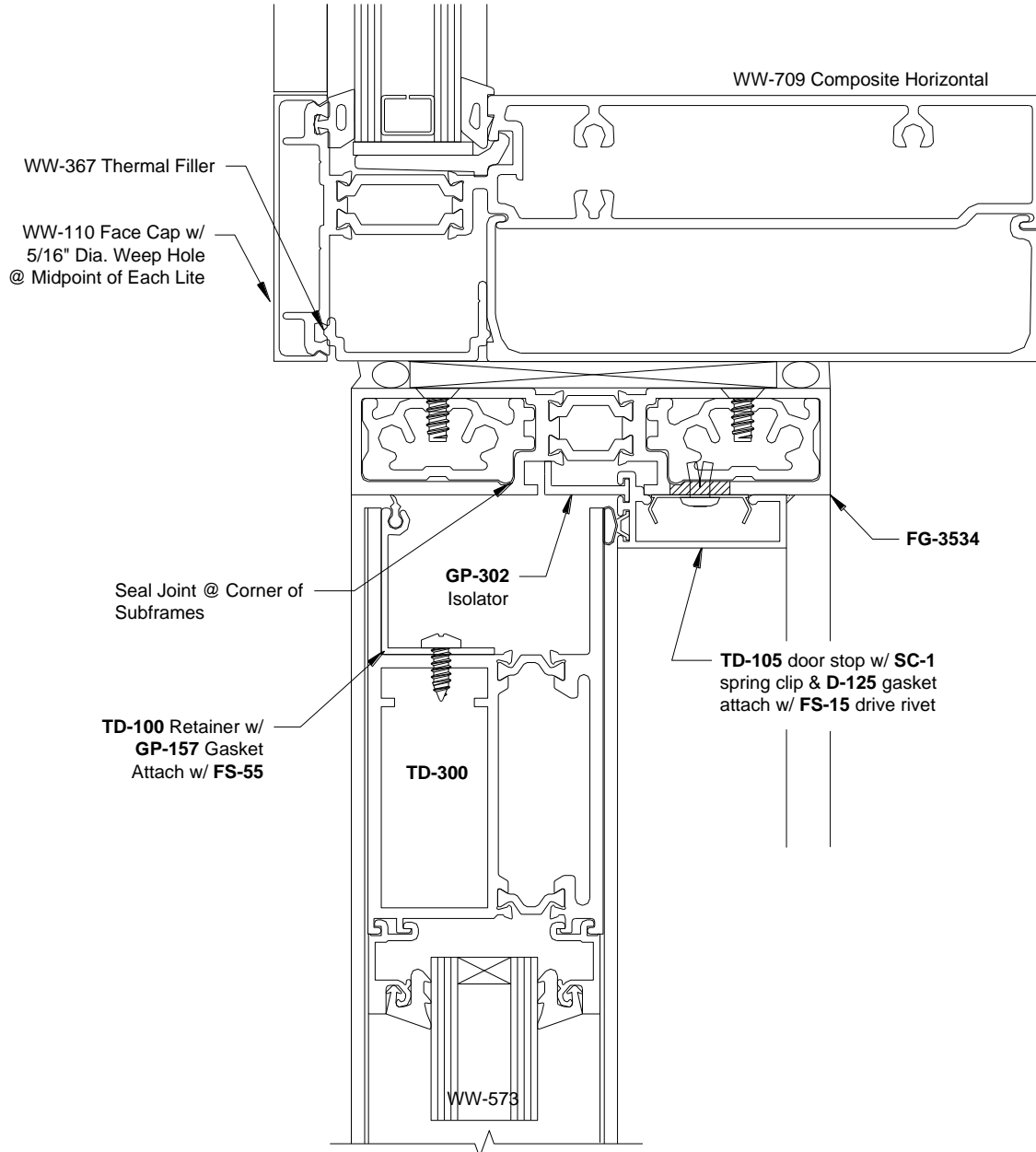
**Figure 39: Captured IS 135° Corner Assembly**

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## **DOOR FRAMING**

### **14.0 ENTRANCES**

**Note:** Fabricate and assemble as shown in **FIGURES 40 & 41**. Refer to SECTION 8 for the fabrication and installation of the WW-366 Pocket Filler.



**Figure 40: Attaching Subframes**

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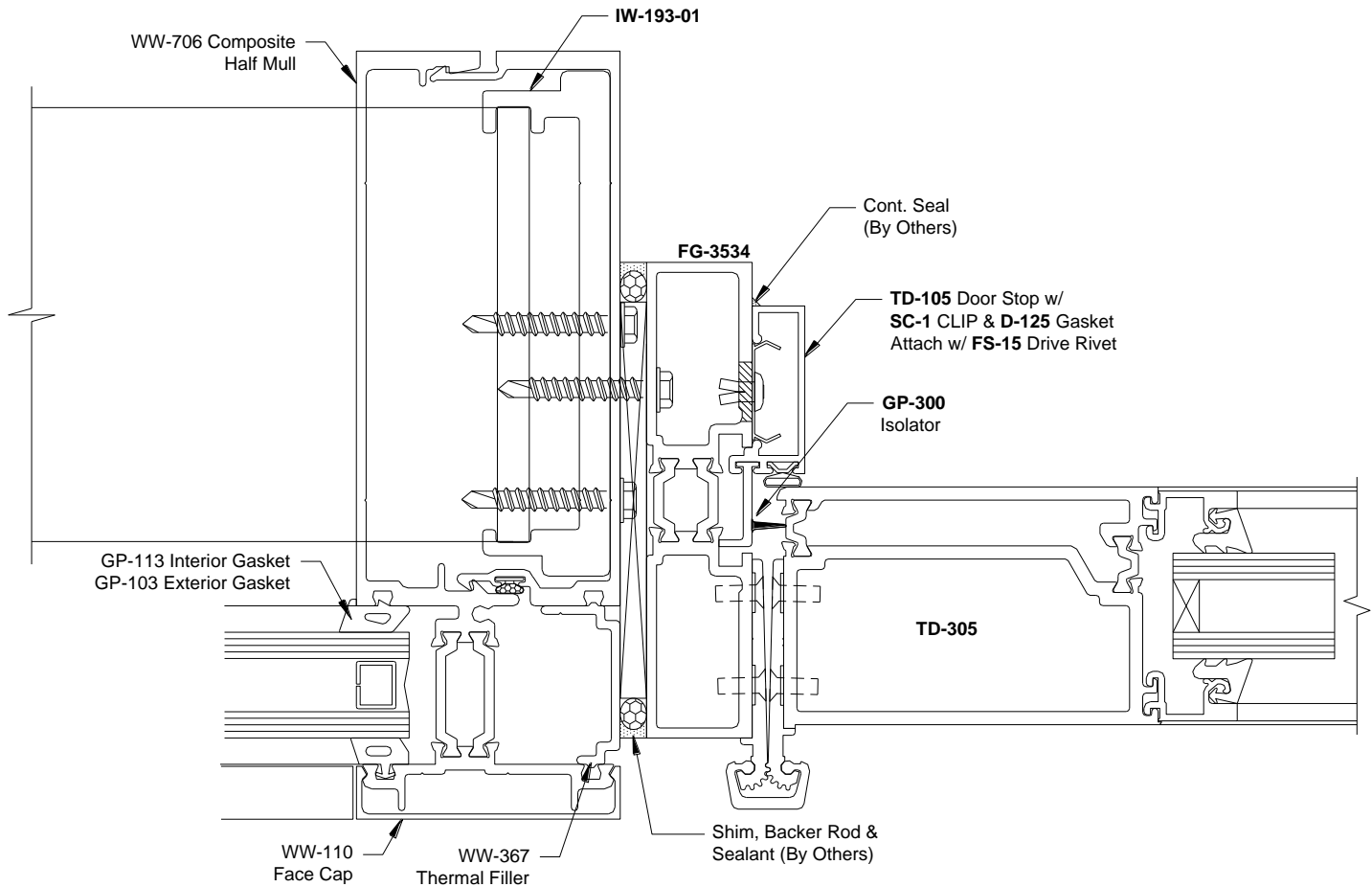
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**Figure 41: Attaching Subframes**

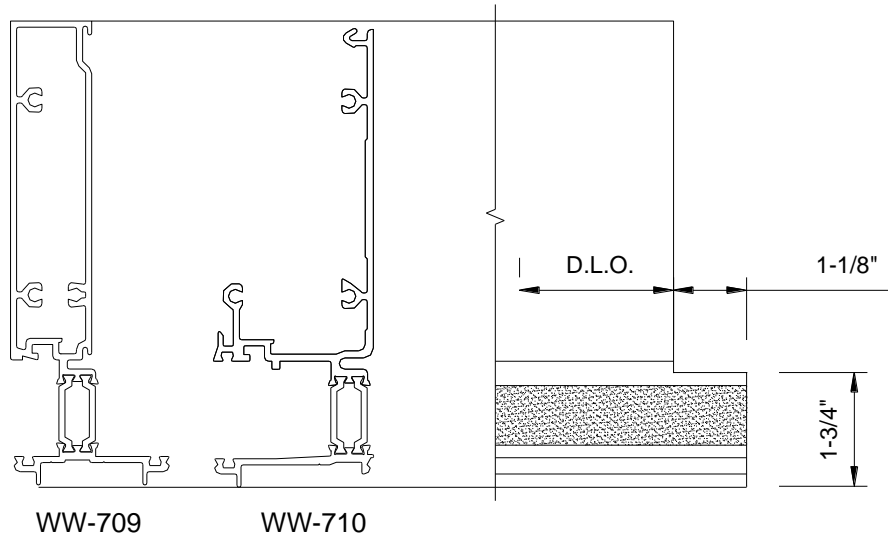
## **SSG HORIZONTAL INSTALL**

### **15.0 Fabrication and Assembly**

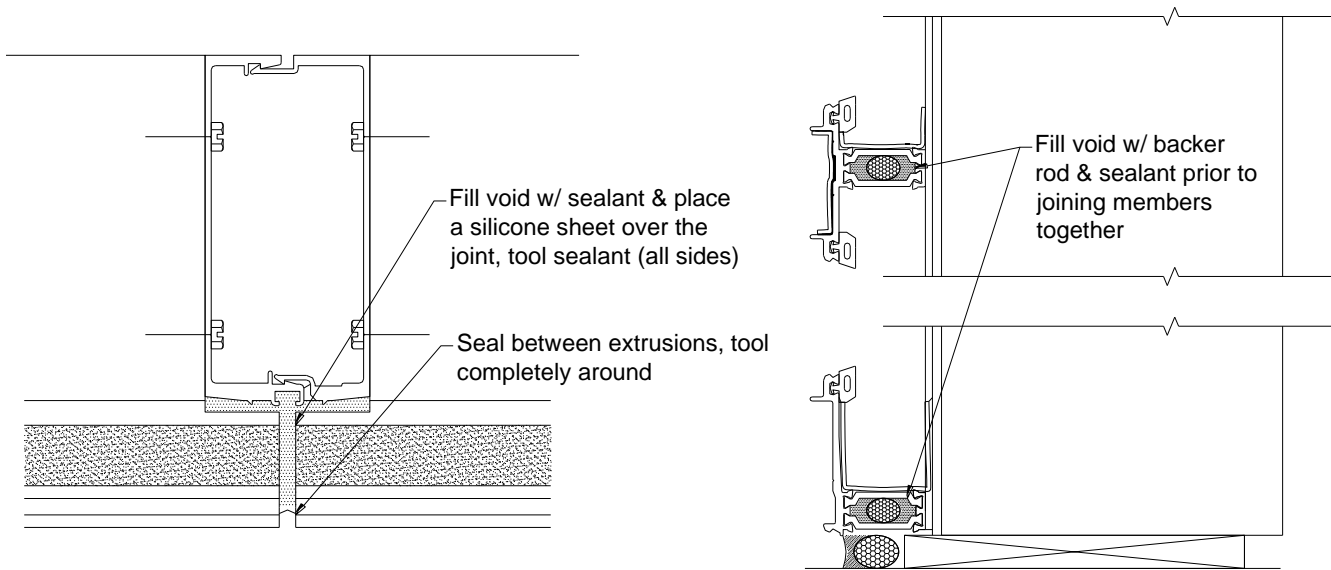
**Note:** For SSG applications, face covers typically run across mullions, so there will be multiple holes in each horizontal face cover.

- 15.1 Notch horizontal members, WW-709 and WW-710, 1-1/8" x 1-3/4" at SSG condition. See **FIGURE 42**.
- 15.2 Fill void with sealant and place a silicone sheet over the joint, tool sealant, all sides. Seal between extrusions, tool completely around. Fill void with backer rod and sealant prior to joining members together. See **FIGURE 43**.
- 15.3 Move adjacent glass to allow new glass to be inserted from the inside of the building. See **FIGURE 44**.

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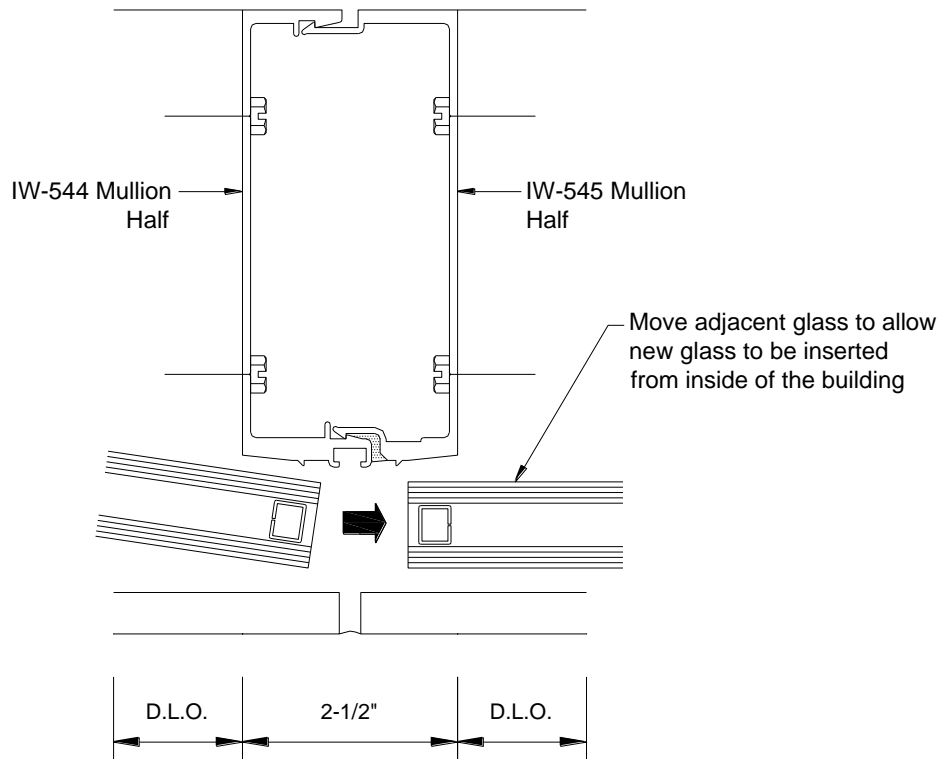


**Figure 42: Horizontal Notch at SSG Condition**



**Figure 43: Frame Assembly at SSG**

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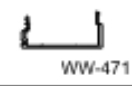






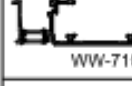

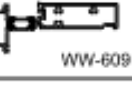


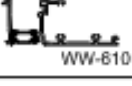


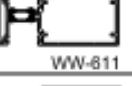

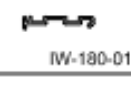


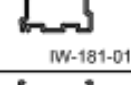

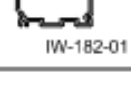
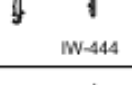
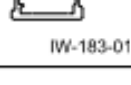

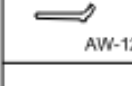

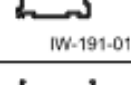


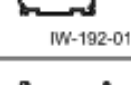

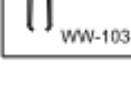
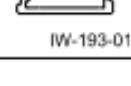


**Figure 44: Glazing at SSG**

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## PARTS LIST

Parts not shown to scale.

4" BACKMEMBERS 6" SYSTEM DEPTH		5 1/4" BACKMEMBERS - cont'd 7 1/4" SYSTEM DEPTH		STANDARD ACCESSORIES All System Depths and Infills	
	Head/Horizontal Glazing Bead used w/ WW-609		Vertical Half (Right)		"T" Anchor for IW-544
	Sill Cover used w/ WW-610		Jamb Composite		"T" Anchor for IW-444
	Vertical Half (Right)		Vertical Half (Left)		Zone Plug Deep Pocket
	Vertical Half (Left)		Head/Horizontal Composite		Zone Plug Shallow Pocket
	Jamb Composite		Sill Composite		Vertical End Cap
	Head/Horizontal Composite		Jamb Composite Optional		Jamb End Cap
	Sill Composite		Vertical Half Optional		Thermal Pocket Filler
	Jamb Composite Optional		SSG Vertical (Left)		Vertical Mullion Splice for IW-444 & WW-600
	Vertical Half Optional		SSG Vertical (Right)		Vertical Mullion Splice for IW-445 & WW-471
	SSG Horizontal				Jamb Mullion Splice for WW-601
	SSG Vertical (Left)	<b>STANDARD ACCESSORIES</b> All System Depths and Infills			Head Anchor Sleeve for IW-444 & WW-600
	SSG Vertical (Right)				Setting Chair
<b>5 1/4" BACKMEMBERS</b> 7 1/4" SYSTEM DEPTH			Typical Cover		Vertical Mullion Splice for IW-545 & WW-573
	Head/Horizontal Glazing Bead used w/ WW-709		"F" Anchor for WW-601 Jamb Mullion		Jamb Mullion Splice for WW-701
	Sill Cove used w/ WW-710		"F" Anchor for WW-701 Jamb Mullion		Head Anchor Sleeve IW-544 & WW-700

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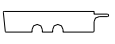




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



## STANDARD ACCESSORIES All System Depths and Infills

 CW-998	Bulb Gasket Intermediate Verticals
 GP-101	Setting Block
 GP-103	Typical Gasket 1/4" F.C.
 GP-113	Wedge Gasket
 GP-192	Setting Block / Side Block
 GP-115	"W" Block



## STANDARD FASTENERS

 FS-8	#14 x 1" Phillips Hex Head Horizontals to Verticals & Splice Sleeves to Mullions
 FS-9	#14 x 1-1/2" Phillips Hex Head - for Steel Reinforcement
 FS-115	#10 X 1" Phillips Pan Head SMS B PT
 FS-202	#8 X 1/2" Phillips Pan Head
 FS-320	#10 x 1/2" U-Drive Fastens Mull Caps
 FS-322	#12-14 x 1" Hex Washer Head Drillflex Fastens Pressure Plate to Mullion (IW-442 & IW-542) & Attach Splices
 FSN-37	1/4"-20 Hex Nut
 FSW-65	1/4" Lock Washer

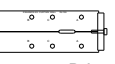
## DOOR EXTRUSIONS

 D-186	Door Subframe (3/4" Sightline)
 F-16	Door Header OHCC (2" Sightline)
 DS-1	Flush Door Frame & Optional D-186 Door Stop (Use with SC-1 Clip)
 SC-1	Spring Clip for DS-1 Door Stop
 FS-15	3/16" x 7/16" Drive Rivet Fastens SC-1 Clip

## STEEL REINFORCEMENT

 CW250-PP-16	Steel Channel for WW-700, WW- 706 (20'-1")
 RS-21	Steel Channel for IW-440 & IW-444, (20'-1")

## DRILL FIXTURES

 DJ-105	Drill Jig for Vertical WW-WW-576 / WW-471 prep for mullions
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# RELIANCE™ - TC SS Curtain Wall Inside Glazed

## **INSTALLATION CHECKLIST**

- Before installation, verify correct steel reinforcing is attached properly and located correctly.
- Horizontal face covers should have one 5/16" weep hole at the center of the cover.
- Bond breaker tape should be applied to prevent 3 sided adhesion. Examples: mullion splice sleeve, cover sleeve, etc., prior to sealing.
- End caps should be fully sealed and fastened to both ends of all vertical mullions.
- Nylon Slip Pads should be used between all windload/deadload anchors and mullions.
- Sealant should be applied around the front of the shear blocks just prior to attachment of the horizontal mullions to the shear blocks at all vertical/horizontal joints.
- Backer rod and 1/4" minimum caulk joint at jambs head, and sill.
- Verify all horizontal/vertical intersections have joint plugs. Apply sealant to surfaces of joint plug and insert between horizontal/vertical. Tool excess sealant.
- Sealant over horizontal/vertical mullion joint seam, and any exposed horizontal shear block fasteners.
- Glazing adapters applied with a continuous bead of sealant in the mullion glazing race before inserting and fastening the adapters. Also, ensure the adapter to end cap has been sealed.
- Interior vertical gaskets cut to D.L.O. + 1/4" per foot + 1". Interior horizontal gaskets should be cut to D.L.O. + 1/4" per foot
- After interior gaskets are installed, pull both horizontal and vertical gaskets out of the glazing race at the corners and seal the reglet 3" over the horizontal and 3" up the vertical mullion. Press the gaskets back into the races and seal the seam at the vertical/horizontal gasket intersection. Do not allow sealant to cure before setting glass.
- Setting blocks placed on the horizontals at their appropriate locations for the size of the glass. The setting blocks should not obstruct the path of water to the weep holes in the pressure plates.
- Side blocks positioned on both sides of each lite of glass at the centerline of the vertical daylight opening. Additional side blocks are required for seismic conditions.