



Oldcastle BuildingEnvelope™

RELIANCE-SS CURTAIN WALL

INSTALLATION AND GLAZING MANUAL

*Note: Installation and Glazing Manuals are product specific. **FOR REVIEW ONLY!***

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Quick Reference Guide

1. Torque pressure plate screws to 90 IN-LBS
2. Glass Sizing:
 - Field Glazing - 1/2" bite @ Captured mullions
 1" bite @ SSg Verticals
 1/2" glass bite at horizontals
 - Shop Glazing - 9/16" bite @ Captured mullions
 1" bite @ SSg Verticals
 9/16" glass bite at horizontals
3. Locate pressure plate screws @ 9" o.c. (1 1/2" from ends)

GENERAL INFORMATION

PRODUCT USE

The **Reliance-SS** curtain wall system is intended for installation by glazing professionals with appropriate experience. Subcontractors without experience should employ a qualified person to provide field instruction and project management.

Oldcastle BuildingEnvelope™ does not control the application or selection of its product configurations, sealant or glazing material 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.

Consult sealant manufacturer for review and recommendation of sealant application. Follow sealant manufacturer's recommendations and literature for proper installation.

The air and water performance of the **Reliance-SS** curtain wall system is directly related to the completeness and integrity of the installation process both the seal installed at the horizontal to vertical connections and the glazing gasket installed at the interior side of the glass. All pressure plates must also be installed properly. To insure top performance for this system, particular attention should be given to the following procedures:

1. Surfaces to be sealed should be cleaned with isopropyl alcohol or solvent and dried as recommended by sealant manufacturer to remove dirt and cutting oils. Sealant at horizontal to vertical connections should be a minimum 3/16" diameter bead on surfaces where horizontal abutts vertical per glazing instructions herein. No gaps should be visible 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. The interior glazing gasket should be installed so as to avoid stretching, buckles or tears. Corners must be cut square, sealed and butted together. To avoid damage to gasket and corner joints during glazing, glass should be level and straight during installation.
3. Vertical movement of mullion at intermediate floors requires special expansion joints and glazing materials. **See page 14** for details which permit 1/4" movement. For designs and applications that may require greater movement or special considerations please contact your local Oldcastle BuildingEnvelope™ facility.

Variations on the details shown are inevitable and are not the responsibility of Oldcastle BuildingEnvelope™ when drawn by others. Oldcastle BuildingEnvelope™ strongly encourages its customers to use its Engineering department for calculations and shop drawings.

For Structural Silicone Glazing applications, the stress on the silicone should not exceed 20 PSI. Consult sealant manufacturer for specific applications to ensure proper loading on silicone joint. Alternate spacer gaskets are available to accommodate larger sealant contact widths. Consult your nearest Oldcastle BuildingEnvelope™ facility for assistance.

Consult glass manufacturer for correct setting block location and length for glass sizes in excess of 40 sq.ft.

PROTECTION AND STORAGE

Handle all material carefully. Do not drop from the truck. Stack with adequate separation so the material will not rub together. Store material off the ground, protecting against the elements and other construction hazards by using a well ventilated covering. Remove material from package if wet or located in a damp area. For further guidelines consult AAMA publication **"Care and Handling of Architectural Aluminum From Shop to Site."**

GENERAL INFORMATION

CHECK MATERIAL

Check glass dimensions for overall size as well as thickness. Oldcastle BuildingEnvelope™ cannot be held responsible for gaskets that are not water tight due to extreme glass tolerances. The **Reliance-SS** curtain wall system is designed to accommodate glass or panels measuring 1" and 1/4" in thickness (+/- 1/32").

Check all material upon arrival at job site for quality and to determine any shipping damage.

Using the contract documents, completely check the surrounding conditions that will receive your materials.

Notify the general contractor by letter of any discrepancies before proceeding with the work. Failure to do so constitutes acceptance of work by other trades.

Check shop drawings, installation instructions, architectural drawings and shipping lists to become familiar with the project. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and cover the most common conditions. Due to varying job conditions all sealant must be approved by the sealant manufacturer to insure it will perform per the conditions shown on the instructions and shop drawings. The sealant must be compatible with all surfaces in which adhesion is required, including other sealant surfaces. Use primers where directed by sealant manufacturer. Properly store sealant at the recommended temperatures and check sealant for remainder of shelf life before using.

FIELD CONDITIONS

All material to be installed must be plumb, level and true. Aluminum to be placed in direct contact with masonry or incompatible material should be isolated with a heavy coat of zinc chromate, bituminous paint or non-metallic material.

After sealant is set and a representative amount of the wall has been glazed (250 sq.ft. or more), perform 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.

CLEANING MATERIALS

Cement, plaster terrazzo, alkaline and acid based materials used to clean masonry are very harmful to finishes. Any residue should be removed with water and mild soap immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used. Refer to the **Architectural Finish Guide** in the Detail Catalog.

EXPANSION JOINTS

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

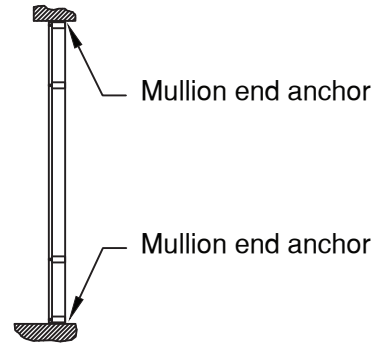
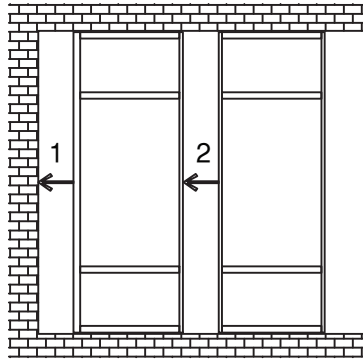
SUGGESTIONS FOR IMPROVING SYSTEM THERMAL PERFORMANCE

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

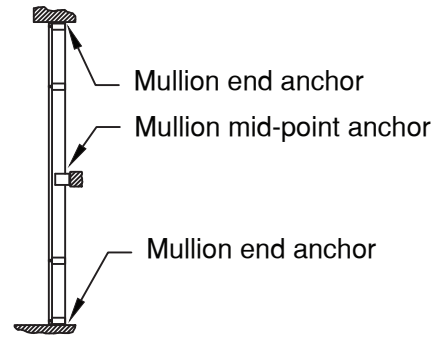
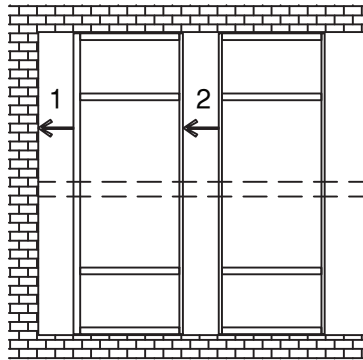
- A. Blinds or drapes prevent warm air from adequately flowing over the window surface.
- B. Warm air ventilators too far from the window will not adequately wash the window with air to prevent condensation.
- C. In extreme conditions the fan of the heating system should not cycle on and off, but should run continuously.
- D. Some heating systems have a water injection feature that can raise humidity levels. The higher the humidity levels the more likely condensation or frost will form. Raising the temperatures 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.

INSTALLATION TYPES

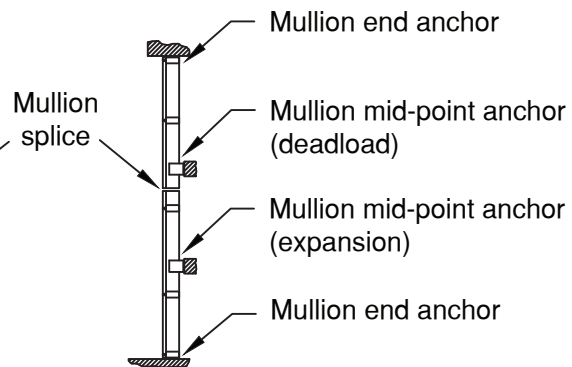
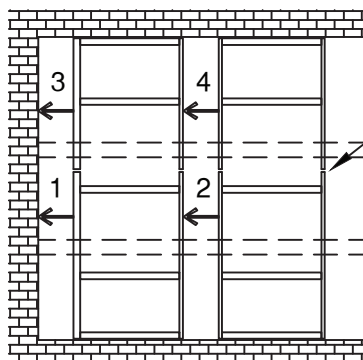
The following diagrams represent common types of installations for this product. Refer to approved shop drawings for specifics regarding splicing and anchoring of frame.



Single Span



Twin Span



Multi-Span

FRAME FABRICATION

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, unless noted otherwise. Instructions for other backmember depths are similar. **NOTE:** Structural silicone glazed vertical mullion is referred to as "SSG mullion"

- 1.1. Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 1/2" minimum clearance for shimming and caulking around perimeter of frame
- 1.2. Cut material to size. SEE FIGURE 1, page 4 for guide.

Frame Members

Verticals

Vertical Pressure Plates
Vertical Face Covers
Intermediate Horizontals
Head and Sill Members
Horizontal Pressure Plates
Horizontal Face Covers
Head & Sill Interior Covers

FRAME HEIGHT
(ROUGH OPENING minus top & bottom joints)
FRAME HEIGHT minus 1/4"
FRAME HEIGHT (vertical covers run through)
Daylight Opening (D.L.O.)
D.L.O.
D.L.O. minus 1/4"
D.L.O. minus 1/16"
D.L.O. minus 1/16"

Accessories

Glazing Gaskets

Exterior
Interior at Verticals

Interior at Horizontals

Silicone Spacer Gaskets
Thermal Isolator

Pressure Plate length plus allowance*
D.L.O. plus 1" plus allowance*
(vertical gaskets run through)
D.L.O. plus allowance*
D.L.O. plus 1" plus allowance*
Vertical length (crowd in place to avoid gaps at ends)
(cut back 3/4" from bottom of vertical mullions)

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)

Glazing Adaptors

Horizontal
Vertical

D.L.O. minus 1/32"
D.L.O. plus 1"

*See "VERTICAL SPLICING" instructions, page 31, for special instructions on cut lengths and fabrication in these areas.

Door Subframe

Jamb
Header

DOOR OPENING plus 1"
DOOR OPENING minus 1/32"

Flush Door Pressure Plate

Jamb
Header

DOOR OPENING plus 3/4"
DOOR OPENING minus 1/16"

Flush Door Face Cover

Jamb
Header

DOOR OPENING plus 2 1/2"
DOOR OPENING minus 1/16"

Glass Sizing

Field Glazing

Captured Mullions
SSG Verticals

1/2" glass bite typical (D.L.O. plus 1")
1" glass bite at verticals (D.L.O. plus 2")
1/2" glass bite at horizontals (D.L.O. plus 1")

Shop Glazing

Captured Mullions
SSG Verticals

9/16" glass bite typical (D.L.O. plus 1 1/8")
1" glass bite at verticals (D.L.O. plus 2")
9/16" glass bite at horizontals (D.L.O. plus 1 1/8")

FRAME FABRICATION

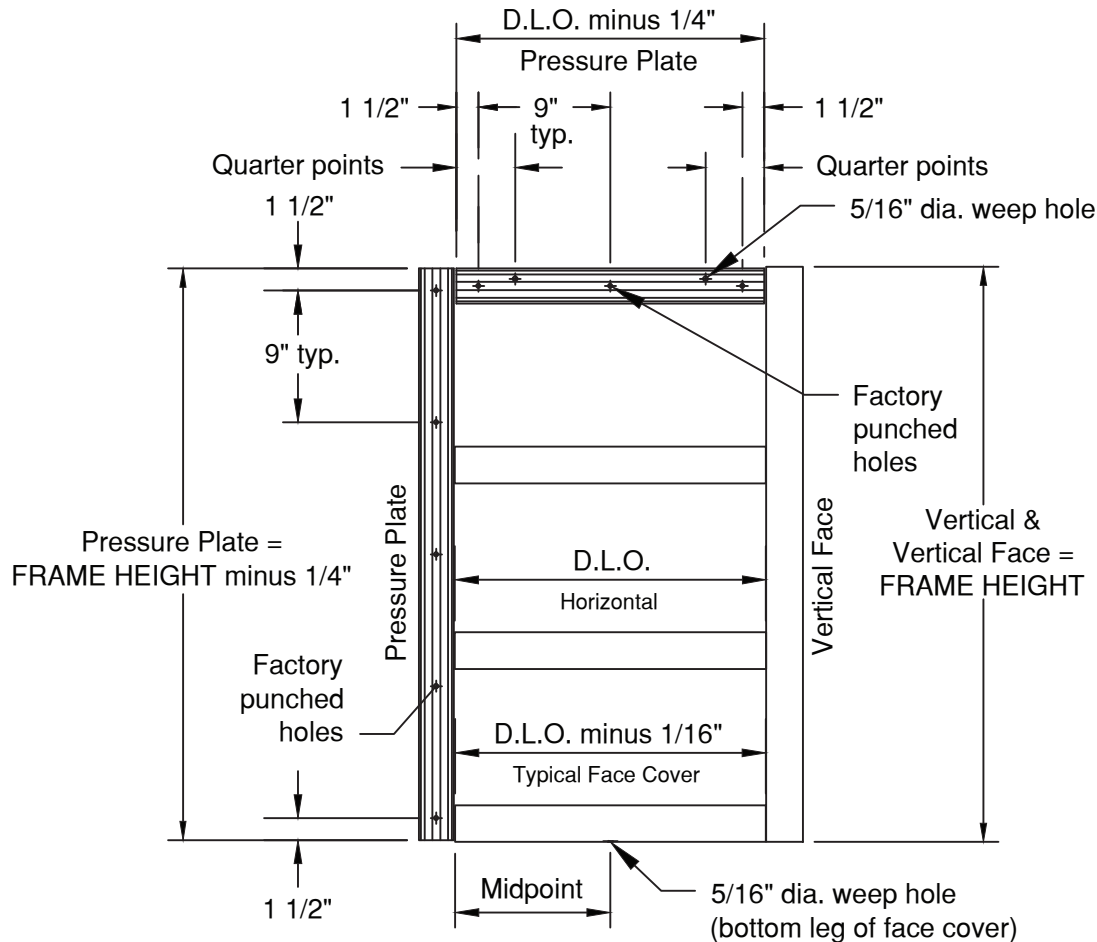


FIGURE 1

Material Fabrication Guide

- 1.3 Fabricate vertical mullions for horizontal members with EZ Punch tooling or DJ-105 drill jig. When using the drill jig, drill holes 'A' and 'B' for the 7 1/4" system and 'A' and 'C' for the 6" system. Use 'F' drill (.257 dia.) for assembly screws. Drill all four holes. **SEE FIGURE 2, page 6.** When working from horizontal centerlines, align the slot milled into the drill jig with the centerline. Drill (1) 5/16" diameter weep hole at face of captured mullions, 1/2" from the bottom of each mullion. **SEE FIGURE 3, page 7.**
- 1.4 Install and seal end caps to top and bottom of jamb mullions with (1) FS-320 #10 x 1/2" U-drive screw. **SEE FIGURE 4, page 7.**
- 1.5 Drill 5/16" dia. weep holes at 1/4 points in the horizontal pressure plates. 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, page 7.**
NOTE: For SSG applications, face covers typically run across SSG mullions, so there will be multiple holes in each horizontal face cover.
- 1.6 All pressure plates have factory punched holes for screws at 9" O.C. To ensure proper pressure on the glazing, 7/32" dia. holes may need to be drilled at the ends of each horizontal pressure plate as required. Locate holes at 1 1/2" maximum from the ends of the pressure plate.

FRAME FABRICATION

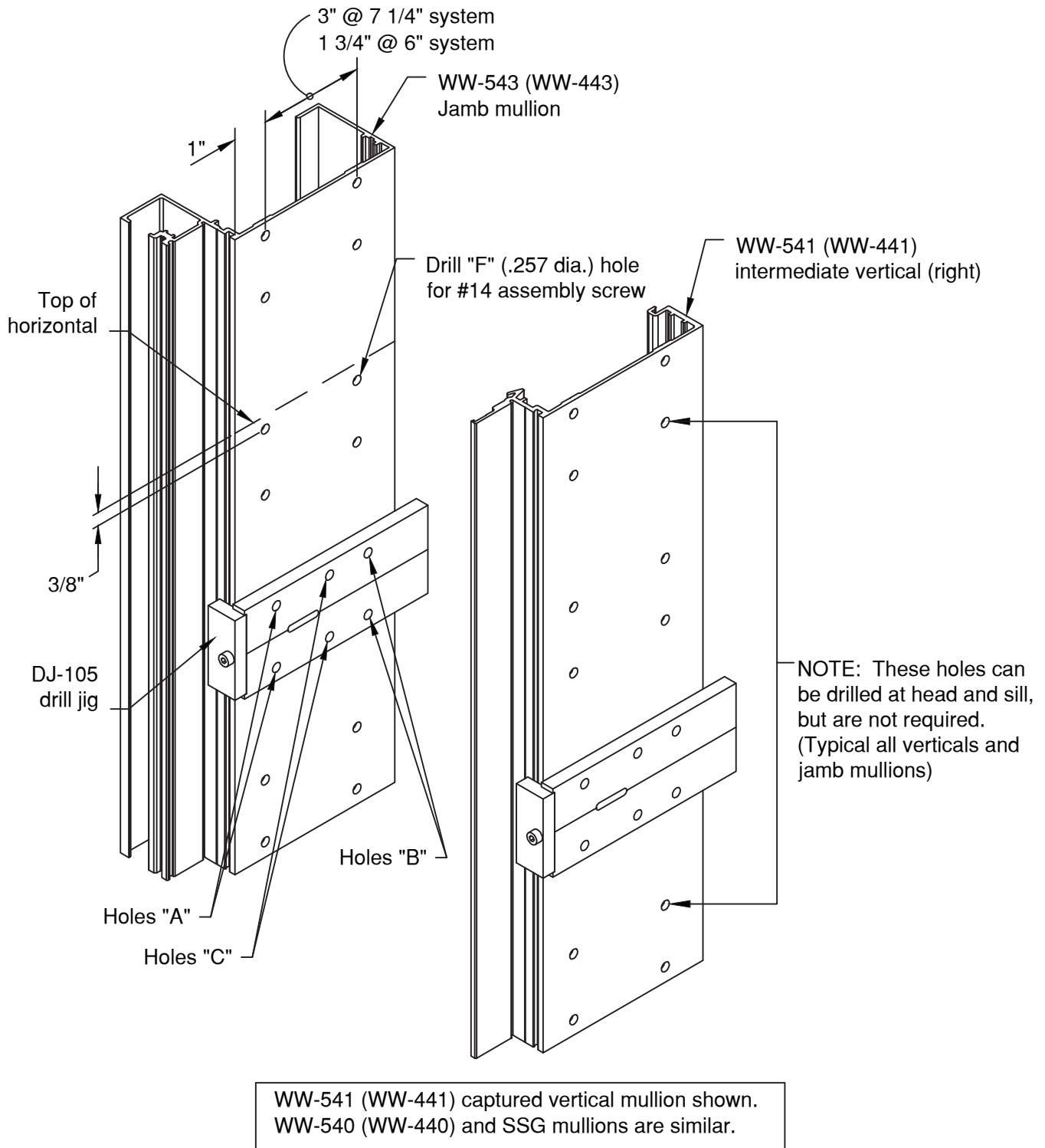


FIGURE 2
Vertical Fabrication

FRAME FABRICATION

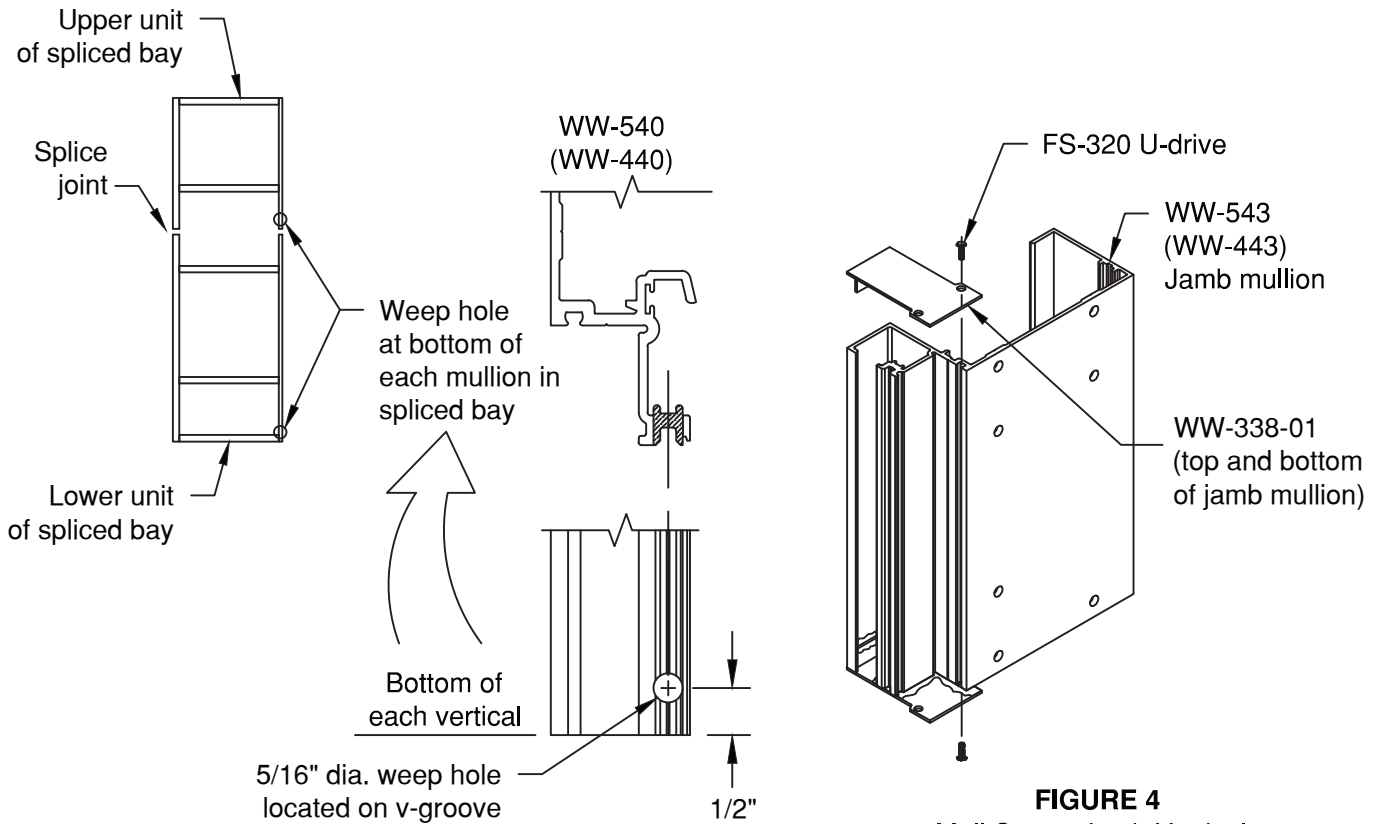


FIGURE 3

5/16" Dia. Hole at Captured Vertical

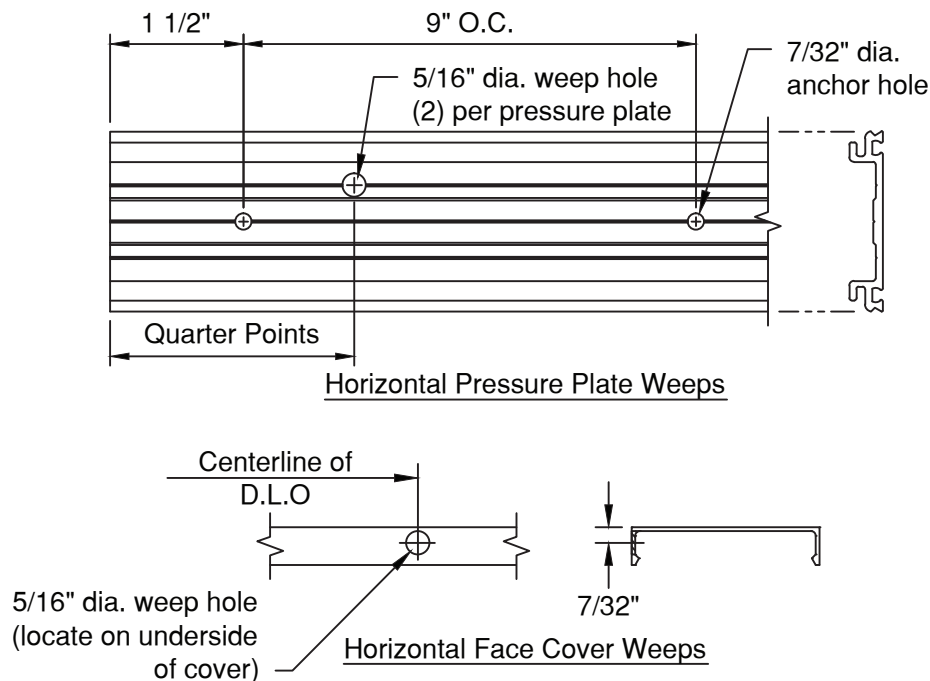


FIGURE 5

Horizontal Weep Holes

FRAME FABRICATION

- 1.7 Drill a #29 (.136 dia.) hole at top and bottom in each half of the intermediate vertical mullions for the mullion cap. **SEE FIGURE 6.**

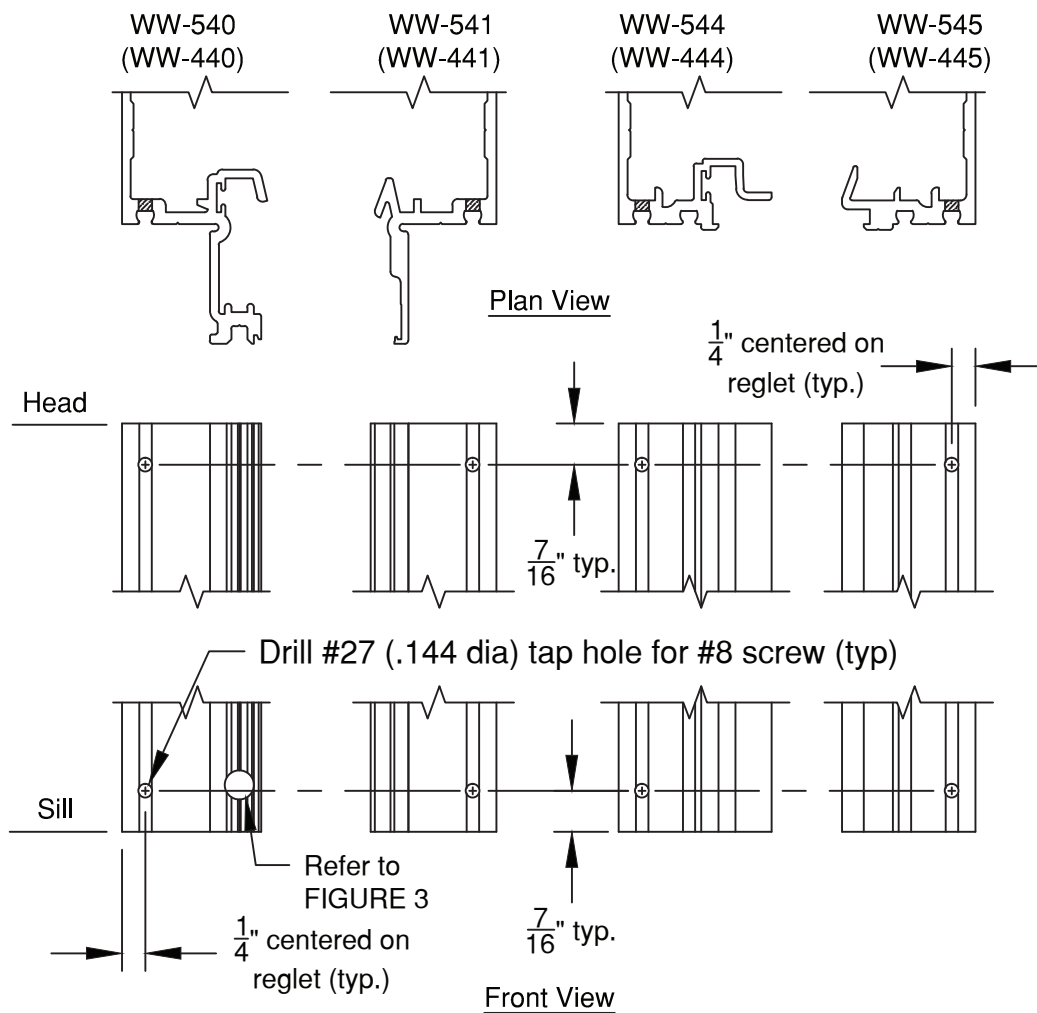


FIGURE 6
Vertical Prep for Mull Caps

- 1.8 For slide-in mullion anchors, see approved shop drawings for size and location of anchor bolts. Drill access holes in head and/or sill members as required for access to anchors.

- 1.9 For SSG mullions requiring 1/4" glazing adaptors, drill and countersink holes in adaptors at 12" O.C. for a #10 flat head screw. **SEE FIGURE 7.**

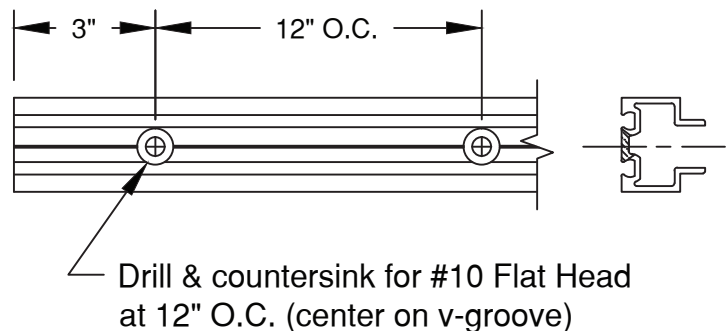


FIGURE 7
SSG Glazing Adaptors

FRAME ASSEMBLY

- 2.1 Starting with the left jamb of the opening, lay out verticals and horizontals for assembly of the bay. **SEE FIGURE 8.**
- 2.2 Apply sealant to ends of horizontals prior to attaching to verticals. Attach to verticals with FS-8 #14 x 1" Hex Head screw. Three screws are required at each head and sill; four are required at intermediate horizontals. **SEE FIGURE 9.** Tool excess sealant at horizontal-to-vertical joints.
- 2.3 Install GP-134 bulb gasket into race at center of captured and SSG mullions. Crimp ends of mullion to lock into position. **SEE FIGURE 9.** If steel reinforcing is required, install now. **SEE FIGURE 47, page 34**
- 2.4 If mullions are spliced, slide splice sleeves into the bottom of the upper bay mullion. Secure with tape. **SEE FIGURE 10.** 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 FIGURE 11, page 11.**
- 2.5 After bay is assembled, apply sealant to all contact surfaces on vertical and horizontal mullions where the zone plugs will be installed (captured mullions only). Apply sealant to horizontal tongue receptor on zone plug and install at the end of each horizontal, head and sill. Tool any excess sealant around front end of zone plug where thermal isolator abuts the zone plug. Tool sealant in the glazing pockets to ensure a watertight fit. **SEE FIGURE 12, page 12**

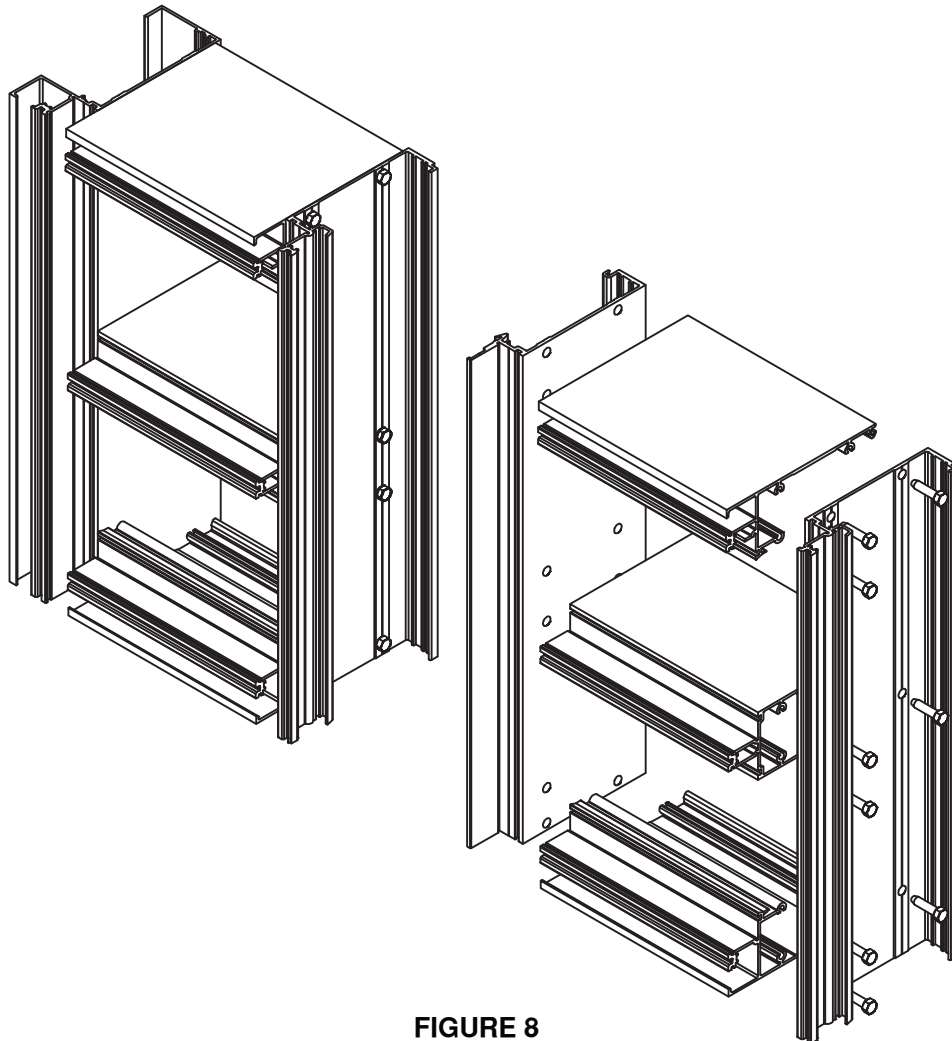


FIGURE 8
Frame Assembly Guide

FRAME ASSEMBLY

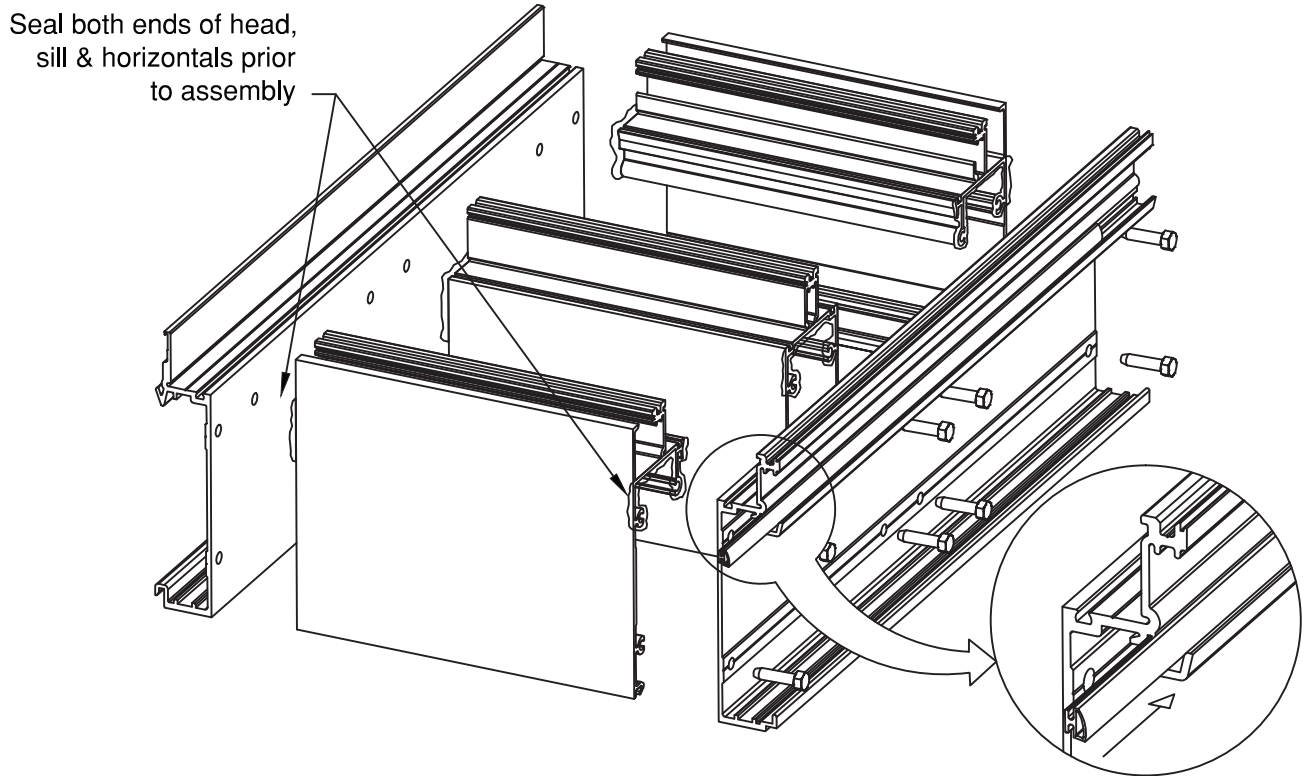


FIGURE 9
Frame Assembly Guide

GP-134
Air Seal Gasket Installation

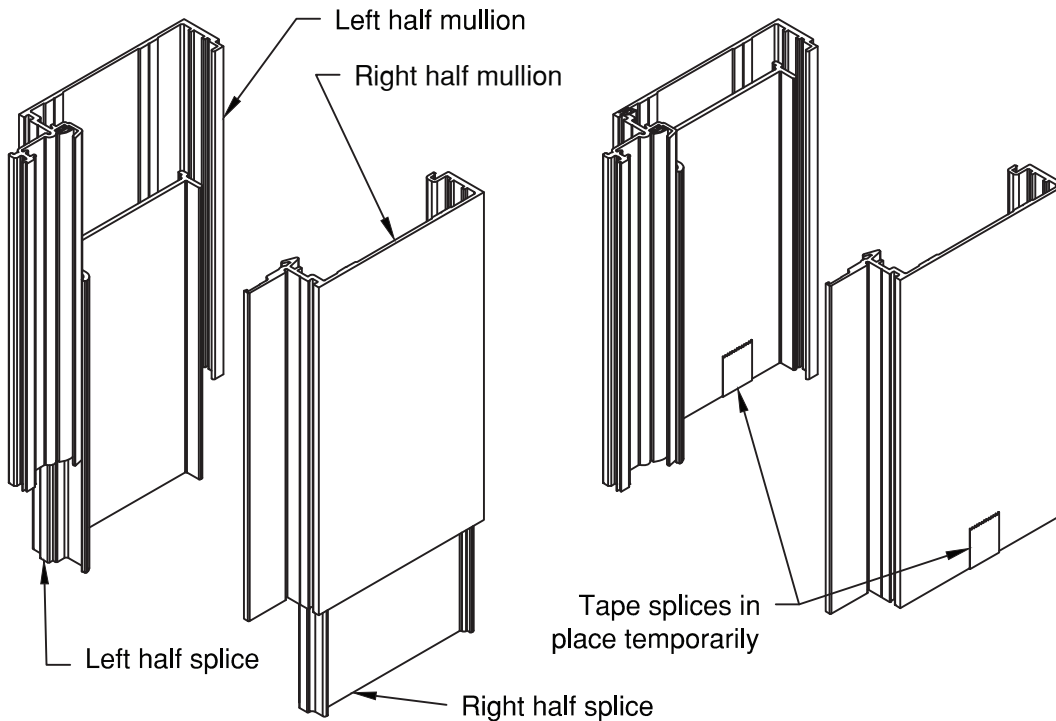


FIGURE 10
Installing Splice in Upper Mullions
(Captured Shown; SSG Similar)

FRAME FABRICATION

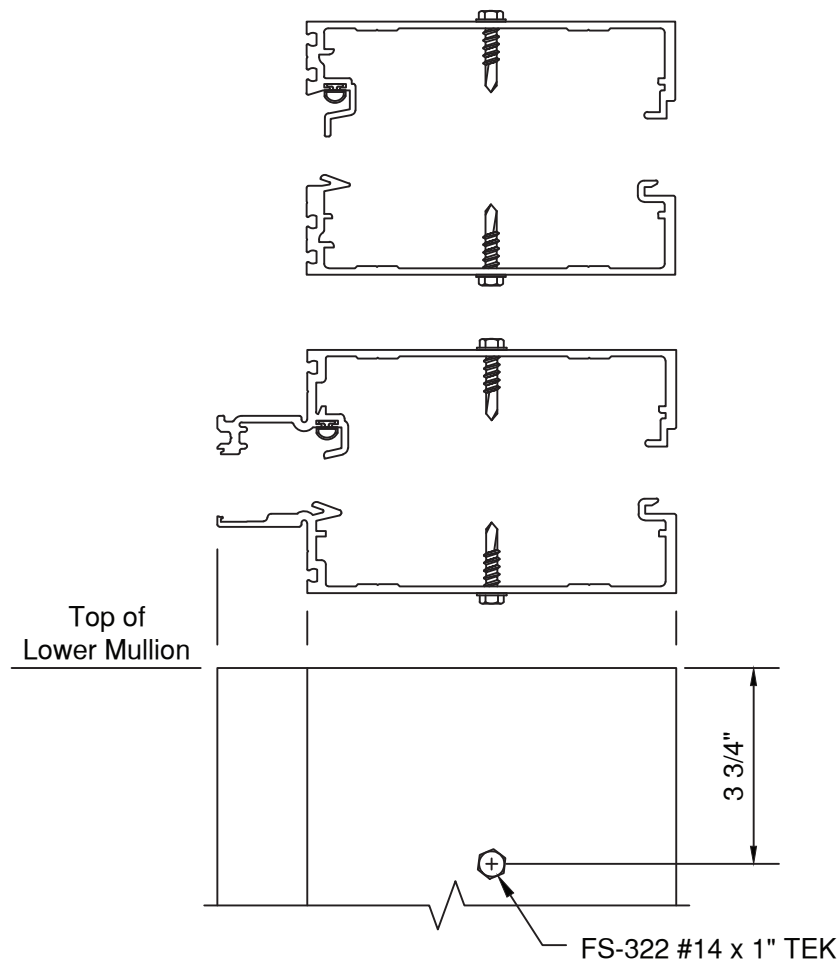


FIGURE 11
Splice Stop Screw

- 2.6 For field glazing, go to step 2.7. If pre-glazing glass, refer to steps 2.8 and 2.9.
- 2.7 Install interior gaskets, running the vertical gaskets through and abutting the horizontal gaskets with a slight bevel. For SSG mullions, install GP-105 spacer gasket on the inner most reglets of the mullion. **DO NOT SEAL GASKETS UNTIL JUST PRIOR TO SETTING GLASS.** Proceed to **FRAME INSTALLATION, page 15.**
- 2.8 If pre-glazing any part of the bay, install the GP-106 interior (frame) gasket in the openings to be pre-glazed. Vertical gaskets run through.

NOTE: The Reliance-SS system is designed for limited pre-glazing. It is ideal for pre-glazing spandrel lites. Consider weight, staging and handling issues when determining whether pre-glazing is the correct method for a given application.

- 2.9 To pre-glaze lites, make sure frame is set glass side up, squared and level. Thoroughly clean edges of glass and frame where silicone will be contacting. Seal around edges of glass. **SEE FIGURE 13, page 13** for captured mullions and **FIGURE 14, page 14** for SSG mullions. Tool sealant and set frame aside while silicone cures.
- 2.10 Repeat steps 2.1 to 2.9 until all bays have been assembled.

FRAME FABRICATION

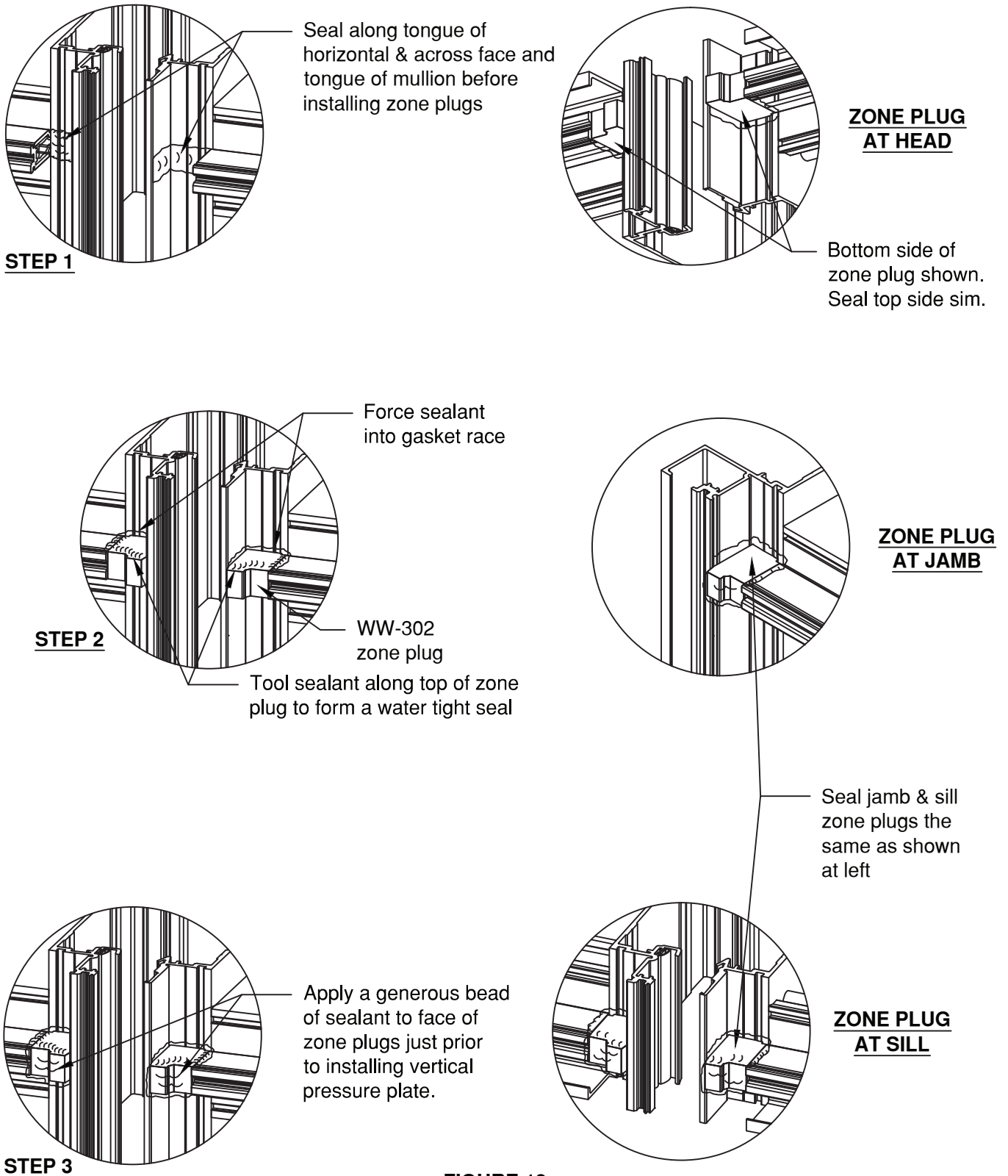


FIGURE 12

Zone Plug Installation - Captured Mullions

FRAME PRE-GLAZING

PRE-GLAZING

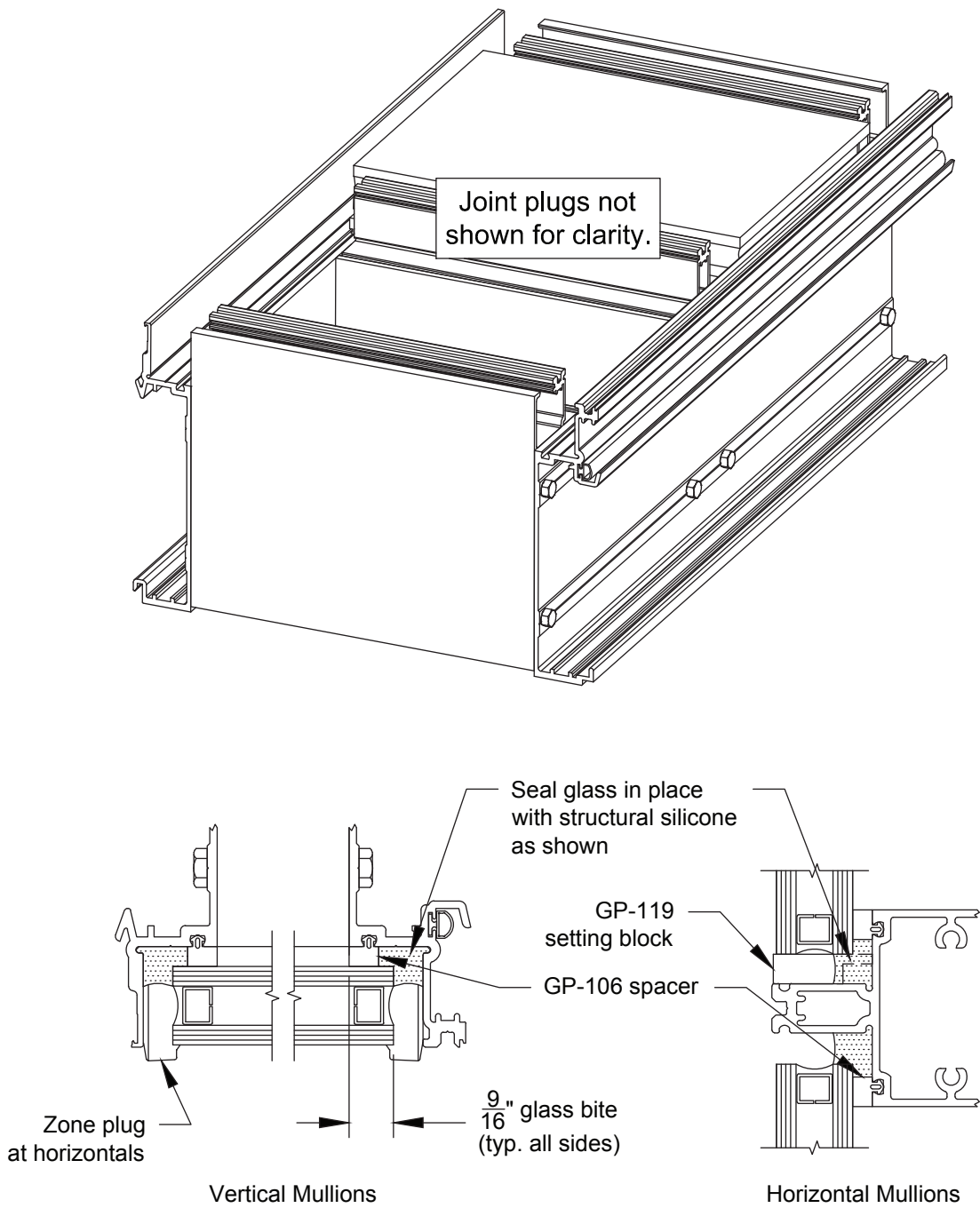


FIGURE 13
Pre-Glazing Captured Mullions

FRAME PRE-GLAZING

PRE-GLAZING

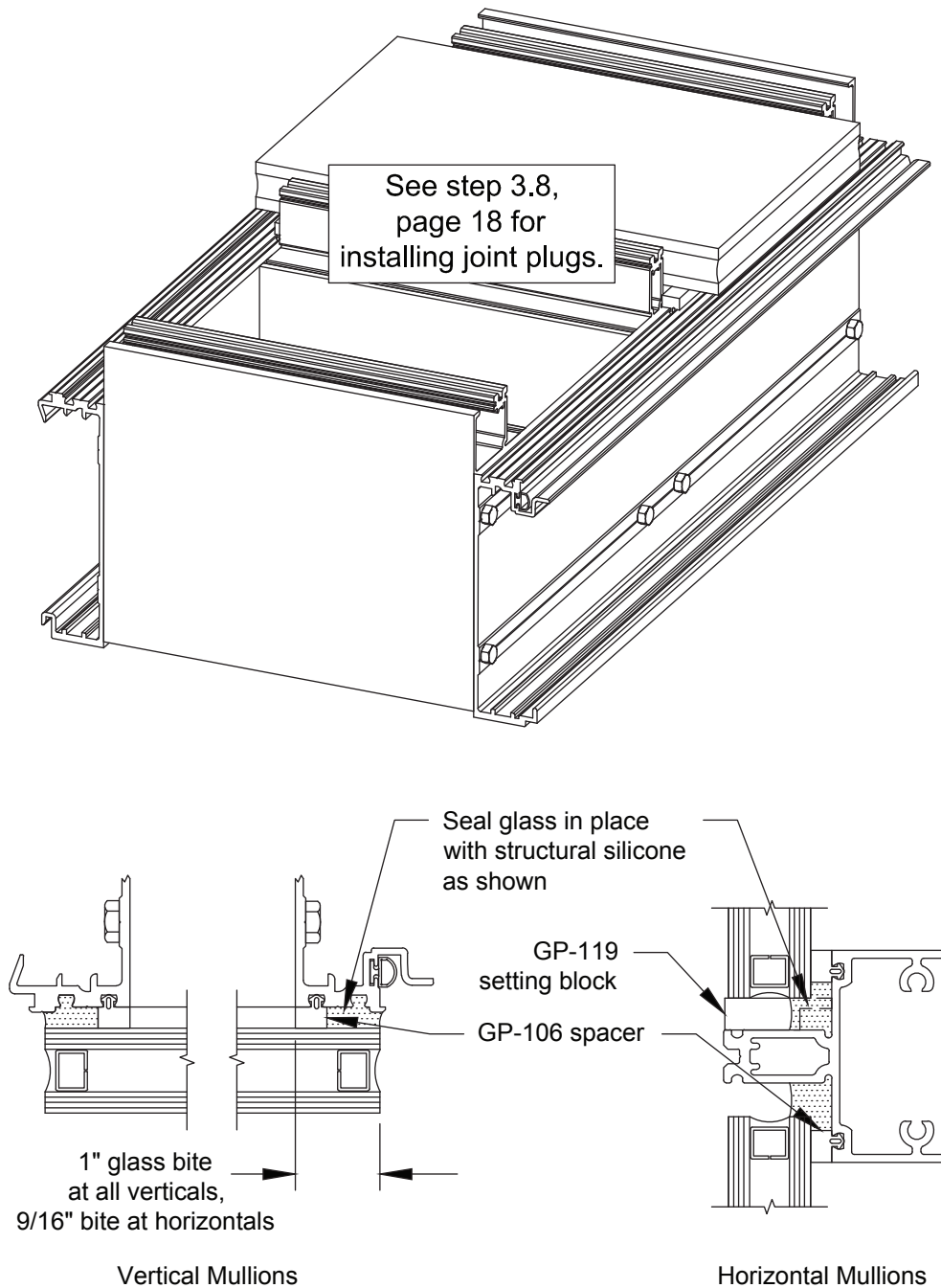


FIGURE 14
Pre-Glazing SSG Mullions

FRAME INSTALLATION

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.

3.1 Reliance-SS can be anchored to the building condition by either hard fastening directly through the head/sill member (**FIGURE 15**) or slide-in mullion anchors that fit inside the vertical mullions (**FIGURE 16**). If using the slide-in anchors, install into ends of mullions prior to erecting the frame.

3.2 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.

3.3 Just prior to setting next bay into opening, seal bulb gasket at sill to 6" above bottom of mullion. **NOTE: THIS 6" SEAL IS REQUIRED AT THE SILL AND BOTTOM OF MULLIONS AT SPLICE JOINT. SEE FIGURE 17, page 17.**

3.4 Set next bay into opening by engaging mullion halves together. Ensure that bottom of mullion halves align. Anchor this bay to structure. For SSG mullions, pin halves together at centerline of horizontals and centerline of D.L.O. with FS-56 #10 x 1/2" Phillips Flat Head screw (or as noted by approved shop drawings). Seal heads of screws. **SEE FIGURE 18, page 17.**

3.5 Temporarily set captured mullions together using WW-333-01 retainer. Locate at 6" from sill, mid-lite and 6" above each splice location. **SEE FIGURE 19, page 18.**

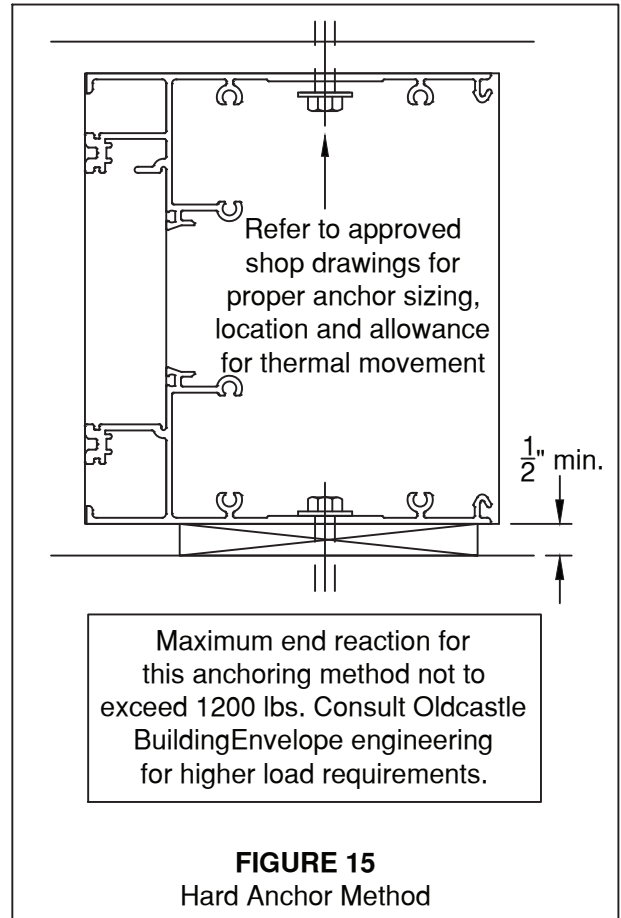
3.6 Repeat steps 3.3 through 3.5 until all bays are installed. Check D.L.O. and diagonal dimensions every four bays to ensure correct spacing and frame squareness to prevent dimensional buildup.

3.7 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-322 #14 x 1" TEK screws. **Refer to "VERTICAL SPLICING" section, page 26, for sealing instructions.**

3.8 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. **SEE FIGURE 20, page 18.**

3.9 Prior to installing mullion caps at top and bottom of all intermediate verticals, seal end caps thoroughly. Install onto mullion with (2) FS-202 #8 x 1/2" Phillips Pan Head screw. **SEE FIGURE 21, page 19.** Tool sealant and cap seal all screws. **THIS IS A CRITICAL SYSTEM SEAL.** Use care when installing mullion end caps to ensure that the bulb gasket seal (step 3.3) is married with the end cap seal.

3.10 When all framing members are installed, apply the perimeter seal. **SEE FIGURE 22, page 19.** The interior perimeter seal is not required for system performance, but may be required for cosmetic purposes. Perimeter sealing must be completed prior to glazing.



FRAME INSTALLATION

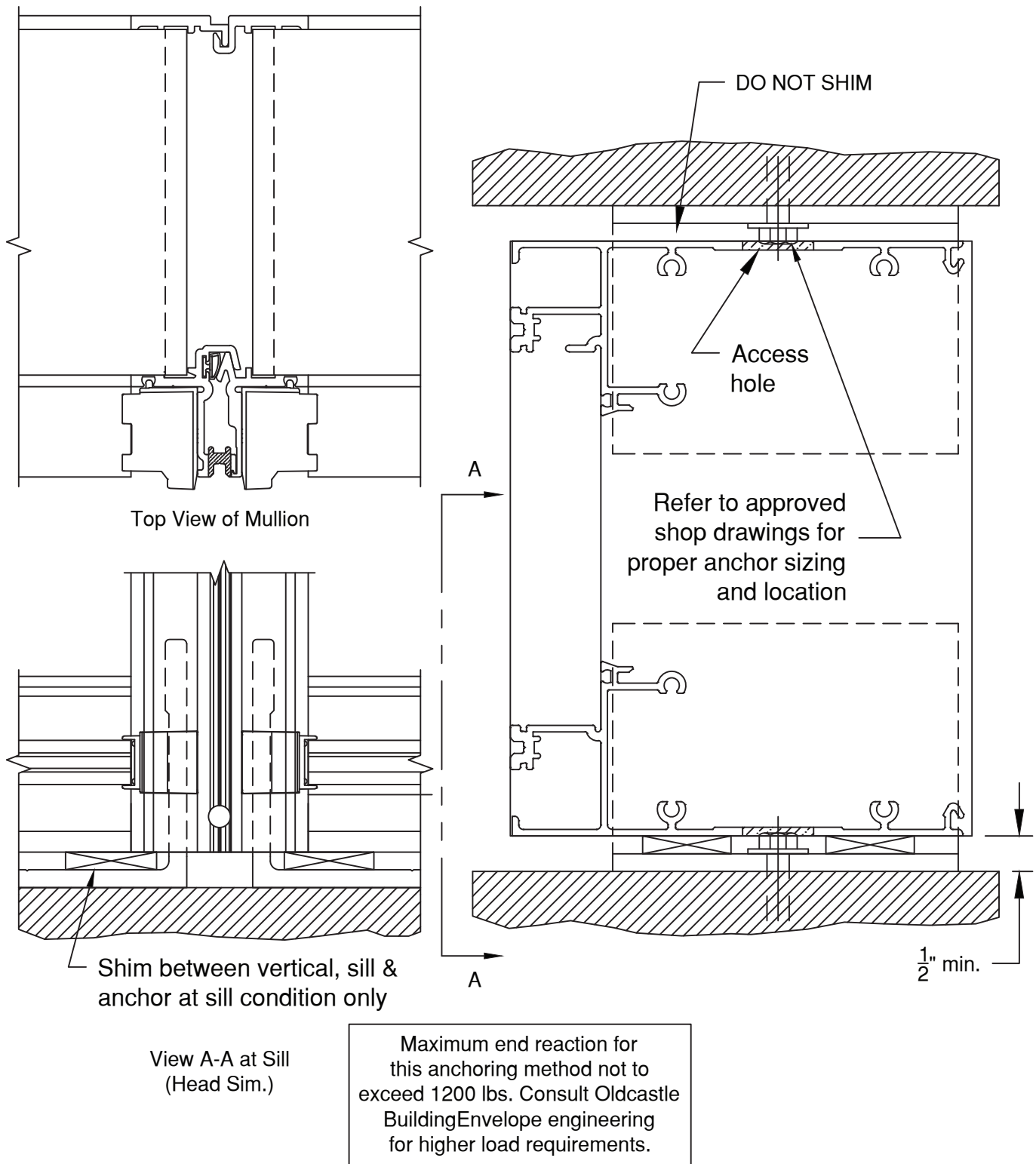


FIGURE 16
Slide-In Anchor Method

FRAME INSTALLATION

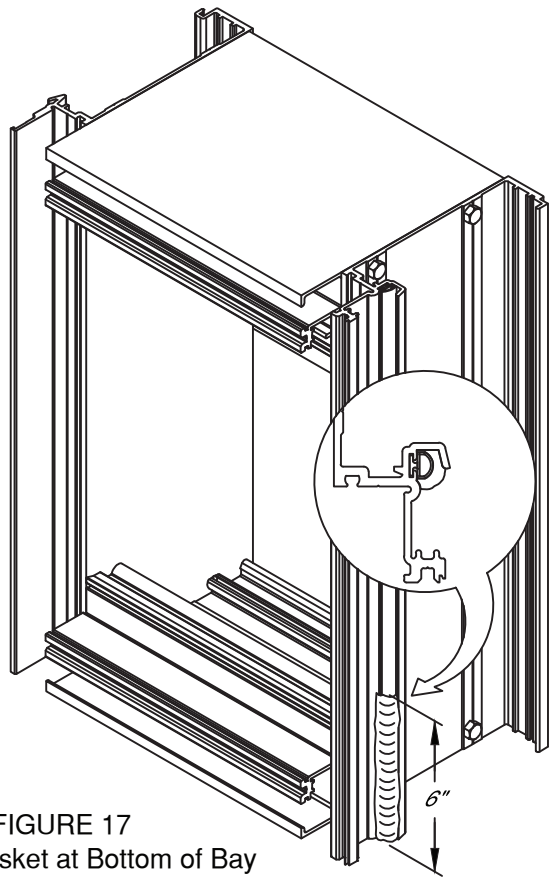


FIGURE 17
Sealing Gasket at Bottom of Bay

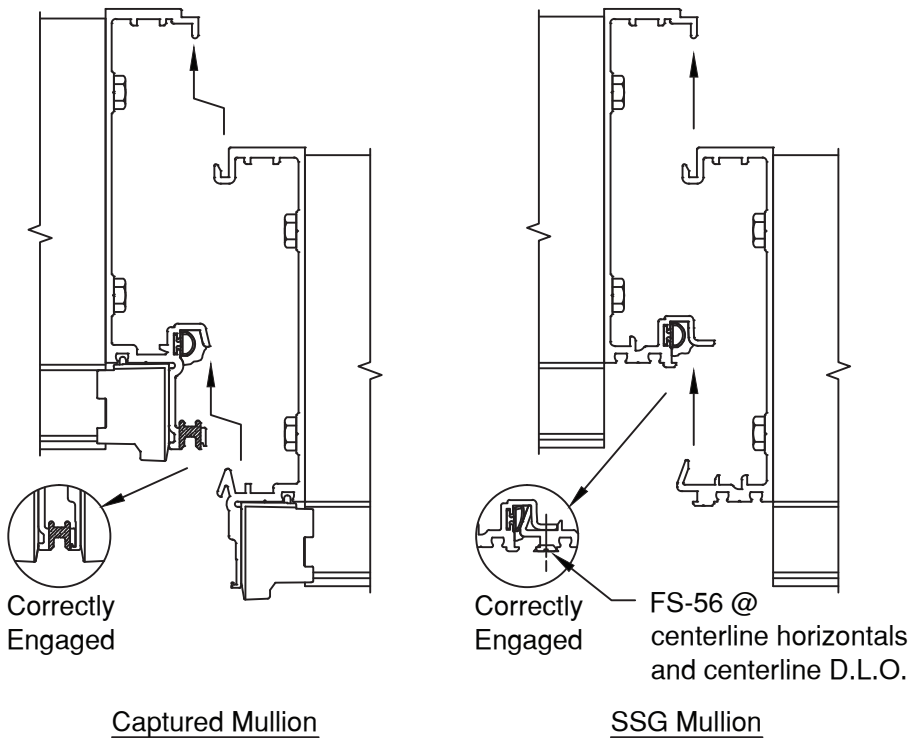


FIGURE 18
Mullion Engagement

FRAME INSTALLATION

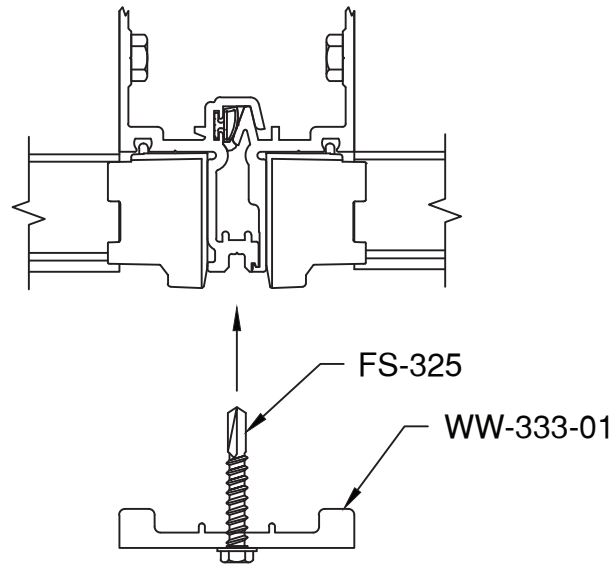


FIGURE 19
Temporarily Setting
Captured Mullions

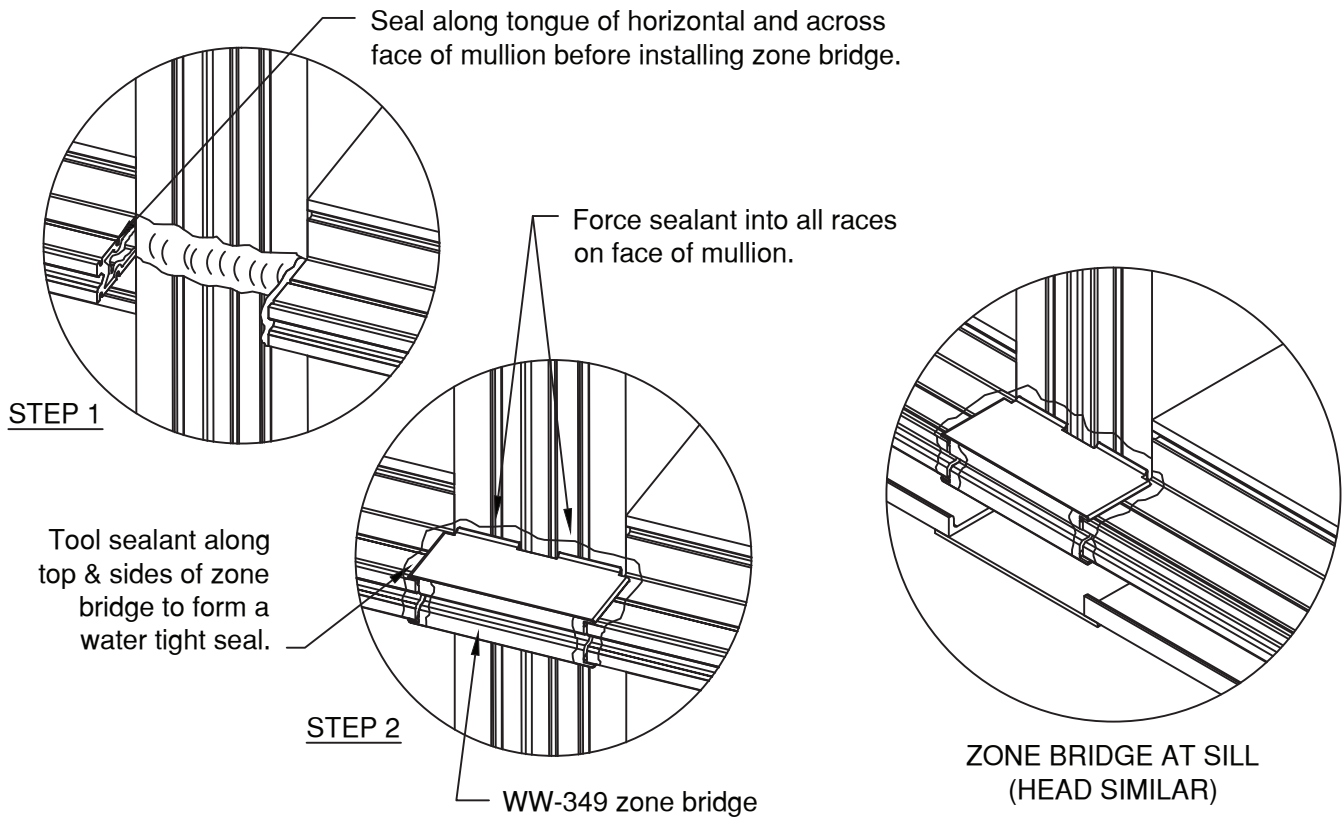


FIGURE 20
Zone Bridge Installation - SSG Mullions

FRAME INSTALLATION

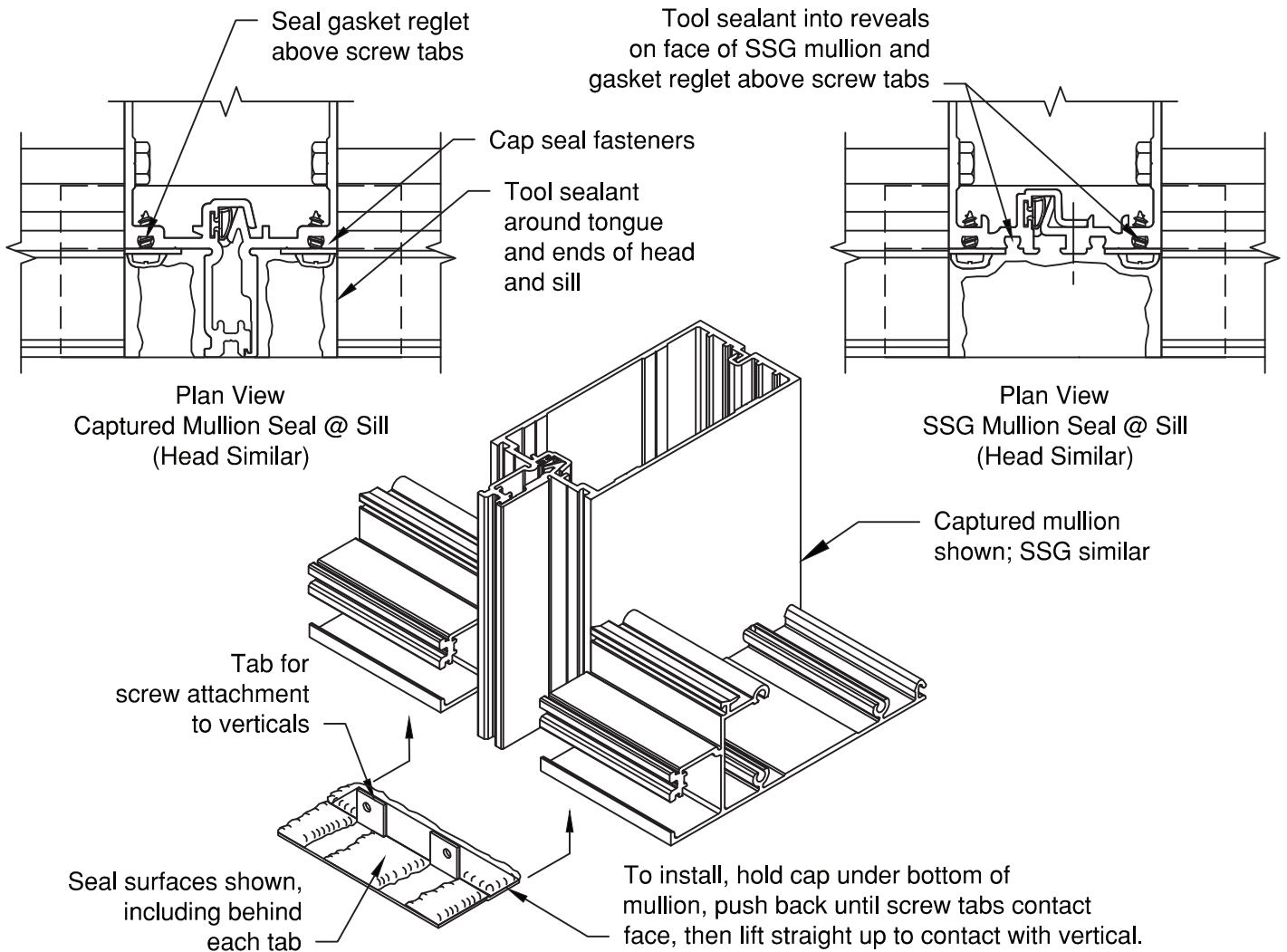


Figure 21
Installing Mullion Caps
(Head Similar)

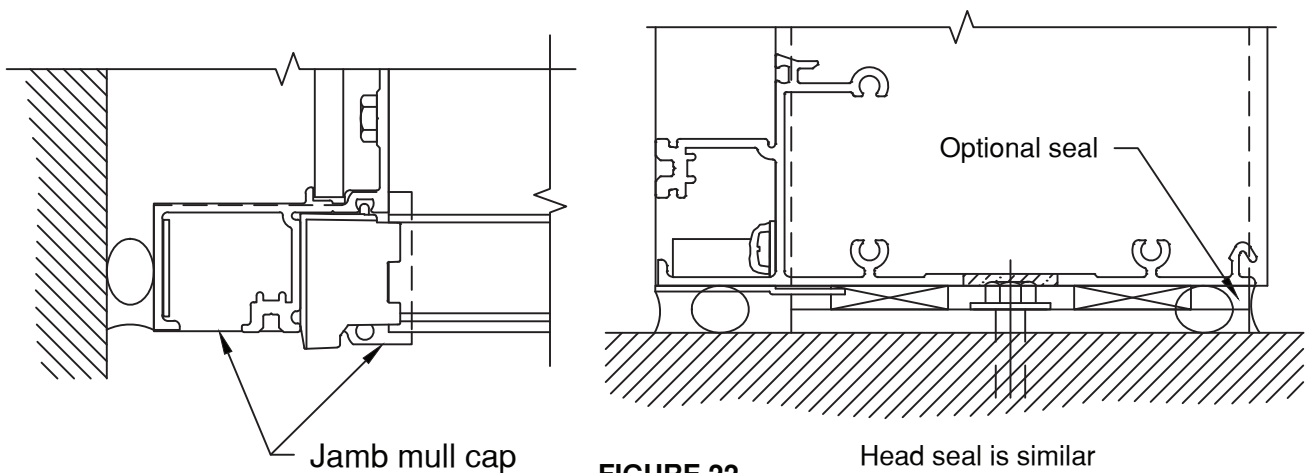


FIGURE 22
Perimeter Seal

GLAZING

Start glazing the frame at the bottom and work up. **SEE FIGURE 23** for glass size calculations at corner mullions. Refer to "VERTICAL SPLICING" section prior to glazing if mullions are spliced.

Note: Steps 4.1 through 4.16 refer to field glazing of standard 1" infill. For openings requiring transition glazing with adaptors, refer to "TRANSITION GLAZING", page 25.

- 4.1 Install face gaskets into all pressure plates. Crowd gaskets into pressure plates to avoid gaps caused by relaxation of gasket material. Gaskets should extend about 1/8" beyond end of pressure plates. If not done so already, install frame gaskets in mullions. **See step 2.7, page 11.**

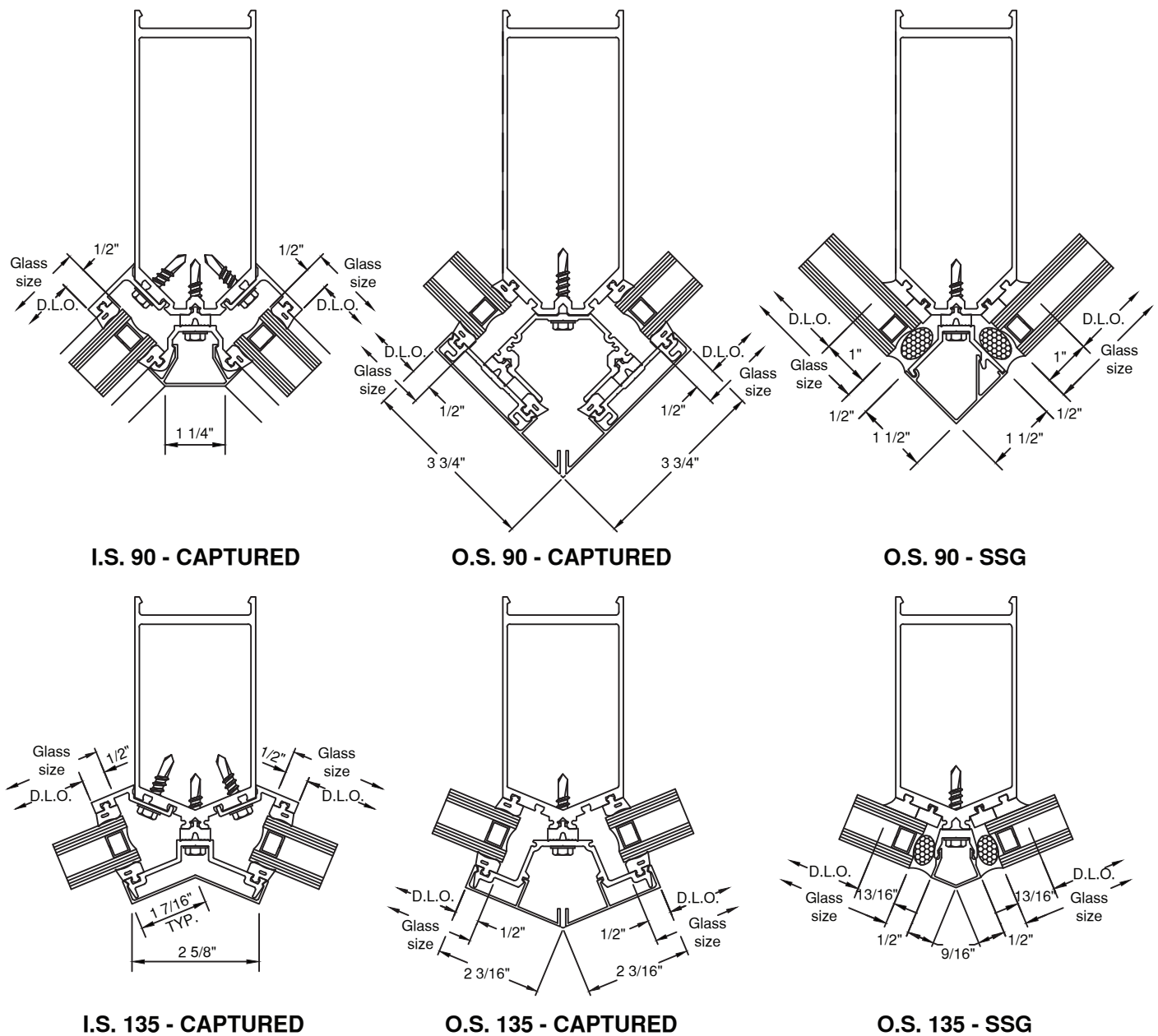
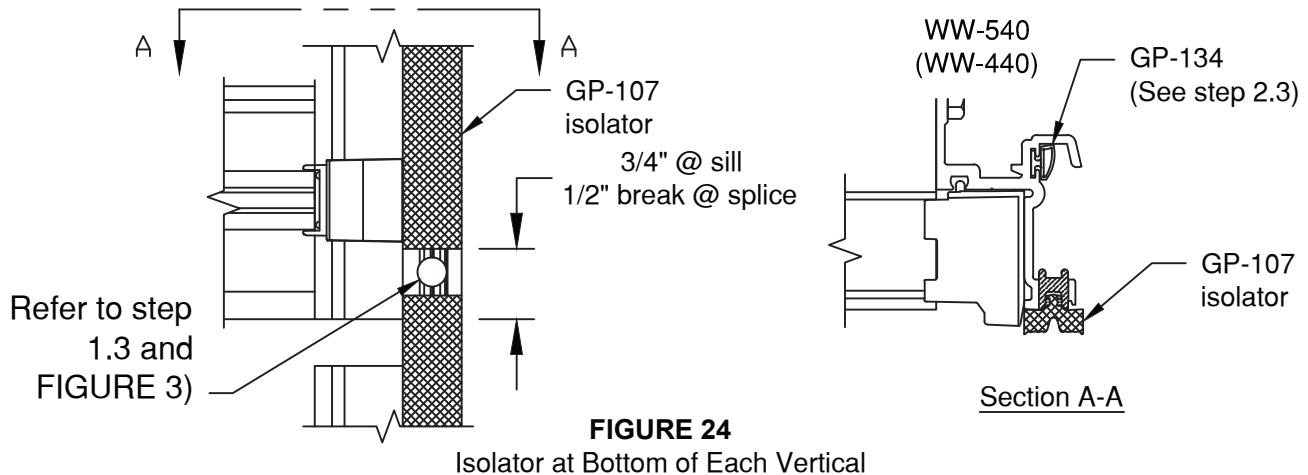


FIGURE 23
Glass Size Calculations at Corners

GLAZING

- 4.2 Install GP-107 thermal isolator into groove on face of mullion tongues. Run through at vertical splice joints. Cut short 1/8" from the head and sill and cut around the 5/16" weep hole at the bottom of each mullion section. SEE FIGURE 24. NOTE: Mullion splices must be sealed before installing GP-107 isolator. Refer to page 14 for instructions.



- 4.3 Note: To avoid silicone curing before glass is set in place and contamination from job-site debris, glazing prep work must be done as each opening is glazed. Do not pre-seal the gaskets in the entire frame; seal only the gaskets in the opening for which you are ready to set glass.
- ? For mullions that are spliced, run interior (frame) gasket through the splice joint. Trim the gasket dart as required to form an air tight seal. If mullion splice seal is cured, set gasket in fresh silicone.
 - ? Crowd gaskets into corners, cutting horizontal gaskets at a slight angle to conform to the bevel on vertical gaskets.
 - ? Pulling the horizontal gasket back at the ends, seal joint at gasket corners **JUST PRIOR TO GLAZING THE OPENING**. Release the gasket back to its original position, making sure sealant fills the entire joint.
 - ? Tool corner joints after glass is set and temporary glazing retainers are in place.

NOTE: Sealant is not required at the horizontal gasket abutting and SSG mullion. This gap will be sealed during application of the structural silicone.

- 4.4 Position setting blocks at correct locations (two per lite). Refer to approved shop drawings or deadload charts. Lubricating the top of the setting blocks will help ensure proper setting of glass. Note: Consult glass manufacturer for correct setting block location and length for glass sizes in excess of 40 sq.ft.
- 4.5 Set glass in opening. Ensure that glass bite is equal on all sides. **CAUTION:** Be certain that glass is placed firmly against interior gasket to ensure a proper seal and to avoid binding the glass on the setting block.
- 4.6 Temporarily hold glass in the opening with WW-333-01 temporary glazing retainers and FS-325 screw. Torque screws to 60 in-lbs. Use the SPW-PP-3 retainer for SSG verticals.
- ? WW-333-01 temporary glazing retainers must be applied at each glass edge 3" from the corner of the glass. Glass edges greater than 4' in length but less than 8' require an additional retainer at the glass mid-span.
 - ? Retainers are intended for short term use only. Additional retainers may be required to withstand full design wind load pressures.
 - ? Full length pressure plates must be installed if severe weather or high wind loads are anticipated.
- SEE FIGURES 25 & 26.**

GLAZING

4.7 If required, install GP-111 (1" glass) or GP-112 (1/4" spandrel) side blocks with silicone at centerline of each lite, along vertical edges, or per approved shop drawings. For framing that will be subjected to seismic events, consult glass manufacturer for preferred location. **NOTE: Side blocks are not required at SSG mullions.**

4.8 Repeat steps 4.3 through 4.7 until all glass is set, working row by row up the elevation.

4.9 Just prior to installing vertical pressure plates, apply sealant to face of each horizontal zone plug. **SEE FIGURE 27.** Vertical pressure plates must be installed before horizontal pressure plates are applied. **FS-325 pressure plate screws must be located 1 1/2" from horizontal & vertical mullion intersections in order to maintain proper compression on the glass. Drill additional 7/32" holes in pressure plates as required.**

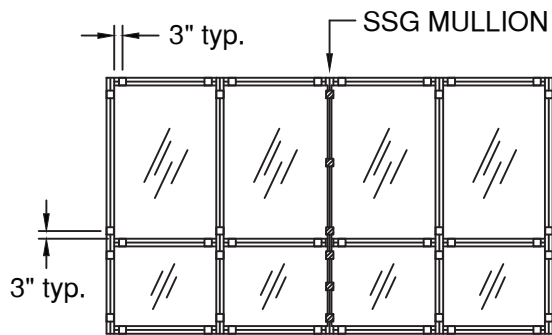


FIGURE 25

Typical Location of Temporary Glazing Retainers

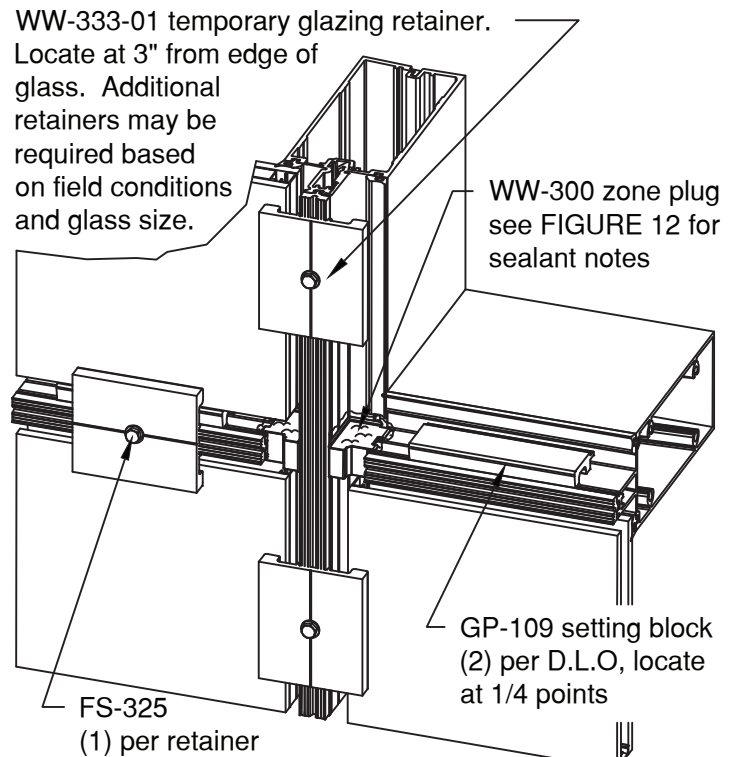


FIGURE 26

Temporary Glazing Instructions

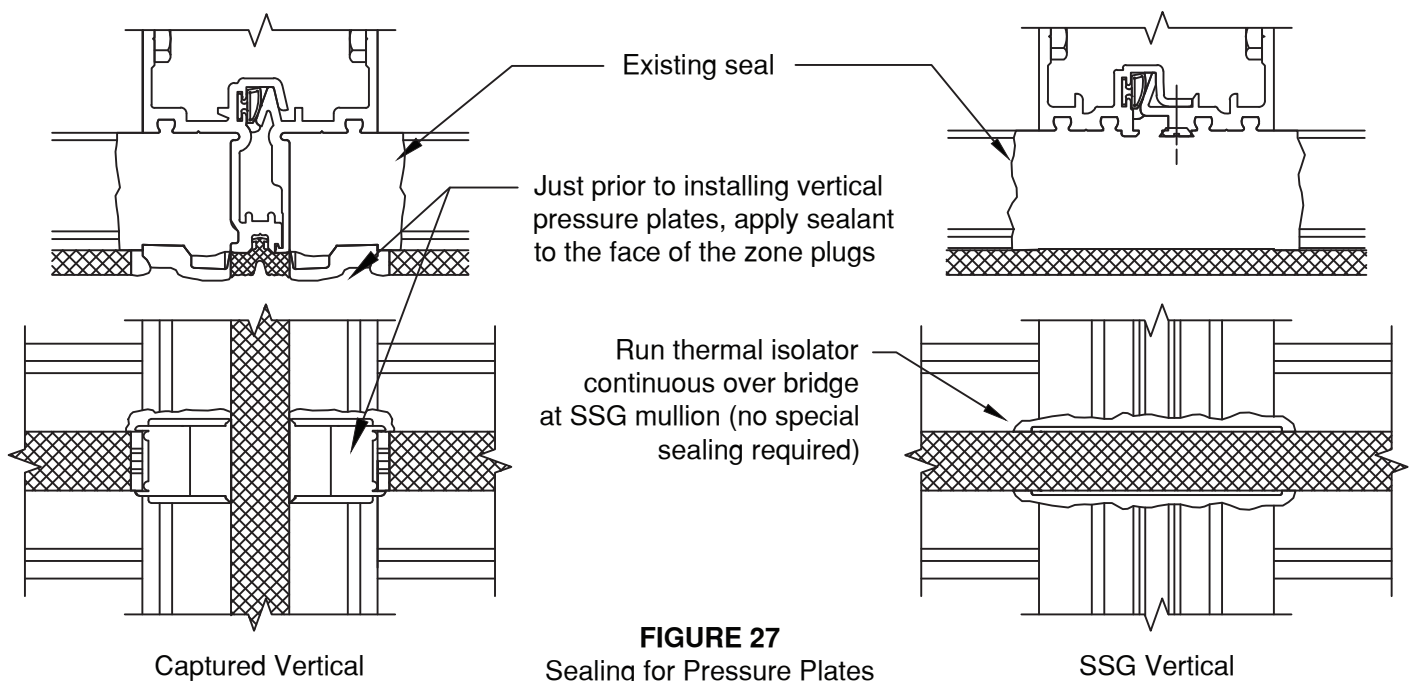
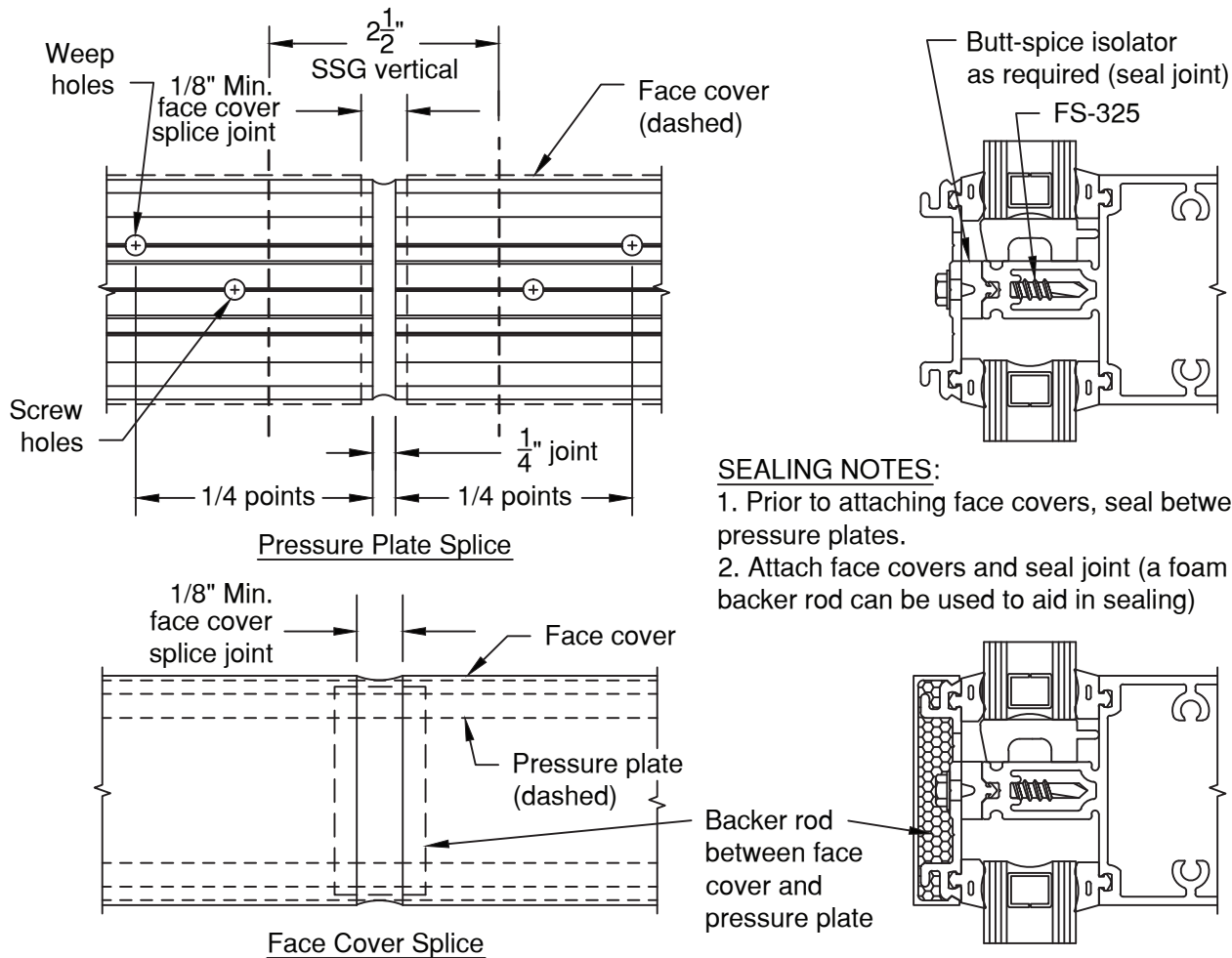


FIGURE 27

Sealing for Pressure Plates

FRAME INSTALLATION



SEALING NOTES:

1. Prior to attaching face covers, seal between pressure plates.
2. Attach face covers and seal joint (a foam backer rod can be used to aid in sealing)

FIGURE 28

Pressure Plate/Face Cover Splicing & Sealing at SSG Mullions
(Intermediate Horizontal Shown; Head & Sill Similar)

- 4.10 After removing vertical temporary retainers, install vertical pressure plates with FS-325 screws, holding the pressure plates back 1/8" from the ends of the vertical mullion. **DO NOT OVERTORQUE.**
- 4.11 After removing horizontal temporary retainers, center horizontal pressure plates in opening, leaving 1/8" gap on each end. Make sure that weep holes are on the top side of the pressure plate. Install using FS-325 screws. **DO NOT OVER TORQUE. NOTE: Horizontal pressure plates and face covers run continuous over SSG mullions, not to exceed 3 lites in length. SEE FIGURE 28** for splicing and sealing instructions.
- 4.12 After all pressure plates are installed on the frame, **torque the FS-325 screws to 90 in-lbs.** The use of either a drill motor with a torque limiter or torque wrench can be used. If using a cordless drill, check torque periodically since battery usage may affect the torque setting.
- 4.13 Install vertical face covers. Using a wood block to protect the cover, apply with a dead blow soft face hammer. Pin the vertical face covers once per length as required, concealing pin at a horizontal location.
- 4.14 Insert backer rod into cavity at the top (head) of each vertical mullion. Seal off end of vertical, sloping sealant back to marry with the perimeter seal. **SEE FIGURE 29.**

FRAME INSTALLATION

- 4.15 Seal horizontal pressure plates against the vertical face covers. Tool sealant into the joint. **SEE FIGURE 30.**
- 4.16 Install horizontal face covers, leaving an equal gap at each end. Make sure the weep hole in the face cover is facing down.

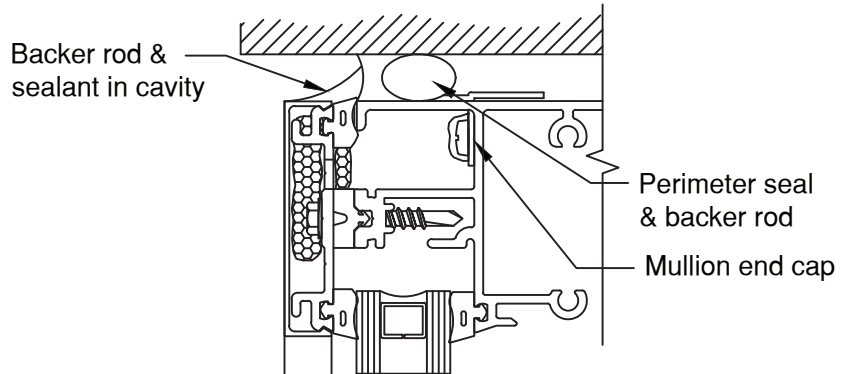
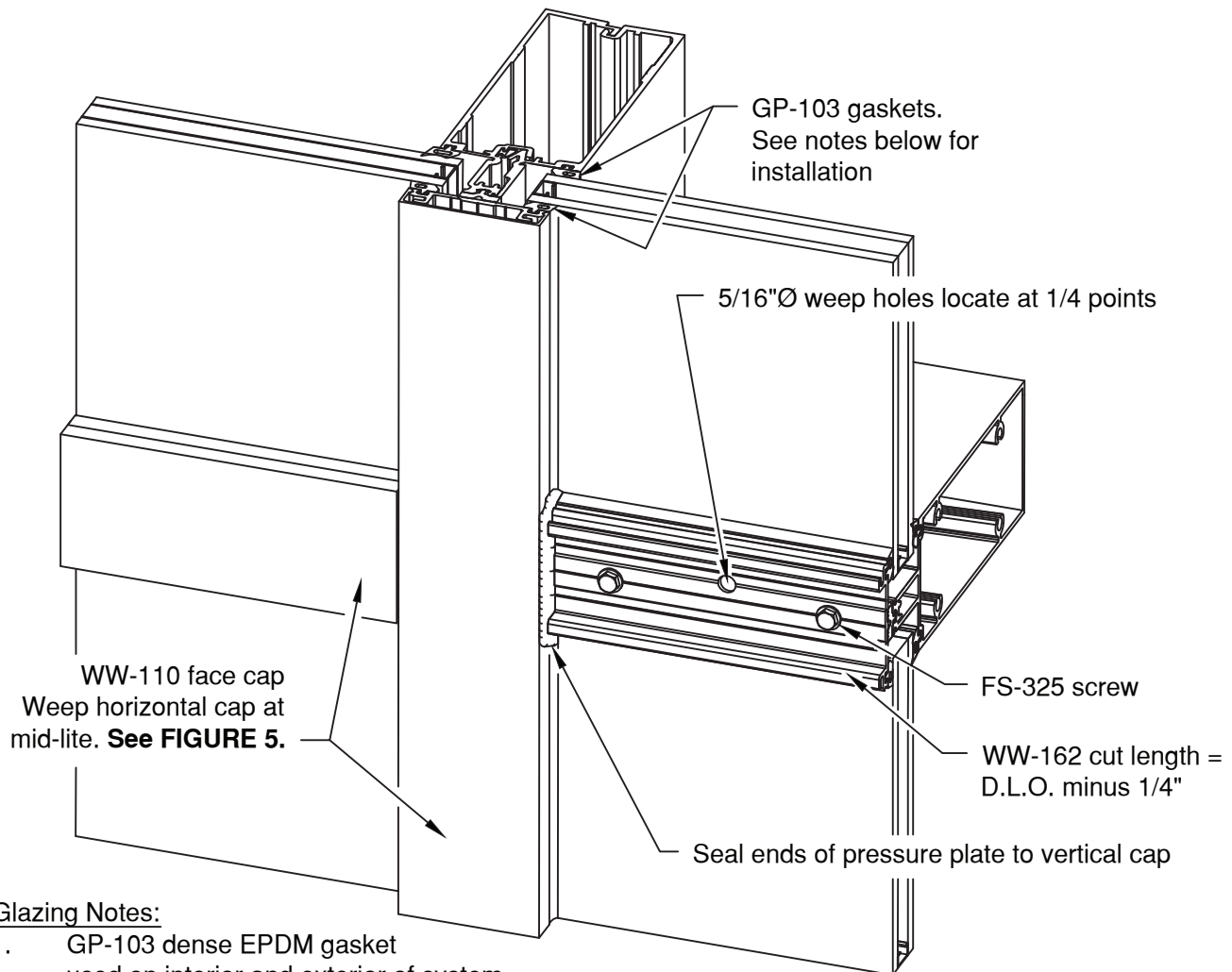


FIGURE 29
Sealing Top of Captured Verticals



Glazing Notes:

1. GP-103 dense EPDM gasket used on interior and exterior of system.
2. Remove gaskets from reels and allow to relax overnight before installing.
3. Cut gaskets to allow minimum 1/4" per foot for any relaxation of gasket that may occur after installation.

FIGURE 30
Sealing Horizontal Pressure Plates

TRANSITION GLAZING

Refer to "VERTICAL SPLICING" section, page 14, for instructions on sealing adaptors at vertical mullion splices.

A.1 Install vertical adaptors first, leaving an equal overlap into each pocket. For captured verticals and all horizontals, insert the leg into the vertical reveal, then snap the hook side into the glazing reglet. **SEE FIGURE 31.** Refer to **VERTICAL SPLICING, page 14**, if vertical mullion is spliced within a spandrel lite. Transition adaptors must be installed after mullion splice is sealed.

A.2 For SSG mullions, install adaptor legs into the mullion glazing reglets. Secure to mullion with FS-119 #10 x 1 3/8" Phillips Flat Head screw 3" from the ends and 12" O.C. Cap seal screws. **SEE FIGURE 31.**

A.3 Install horizontal adaptors maintaining an equal gap at each end. **Note: For horizontal adaptors that are adjacent to SSG mullions, a small notch must be made to the tongue engagement hook in order to clear the SSG mullion bridge.** **SEE FIGURE 32.** Once all adaptors have been installed in the opening, seal all joints between the vertical and horizontal adaptors. Run a bead of sealant in the groove formed between the adaptor and mullion. This seal must be continuous around the opening and must marry with the seal at the horizontal to vertical adaptor joints. **SEE FIGURE 33.**

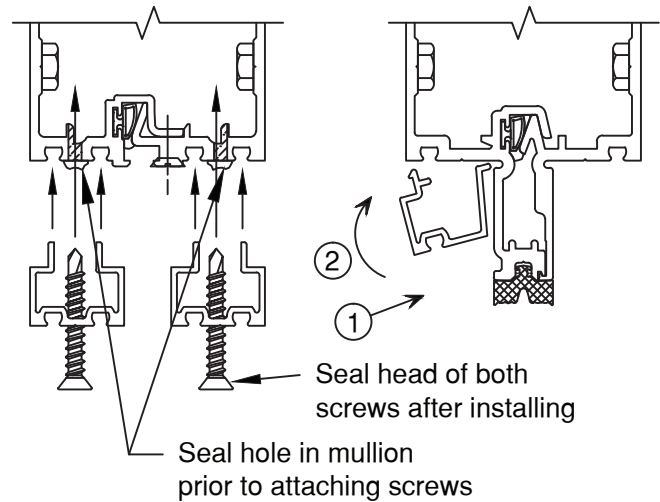


FIGURE 31
Installing Glazing Adaptors

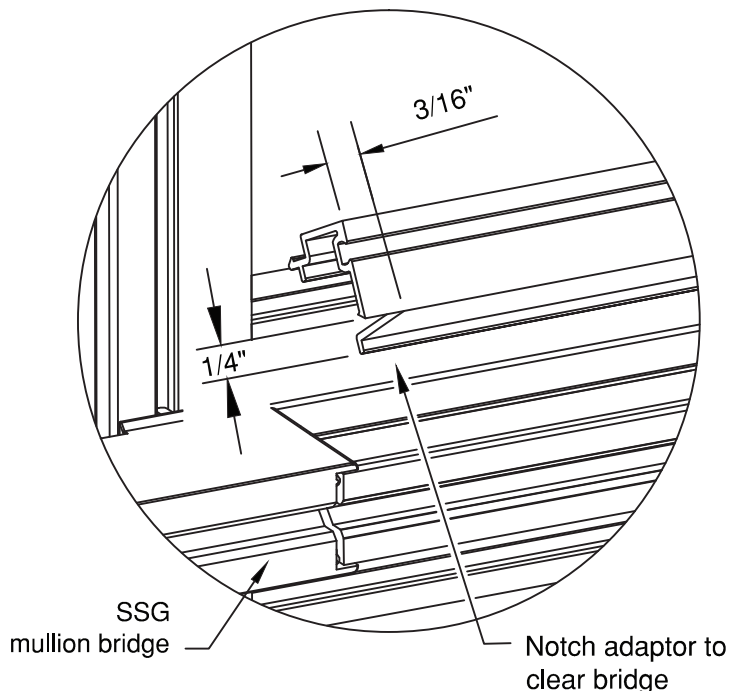


Figure 32
Notching Adaptor for SSG Mullion Bridge

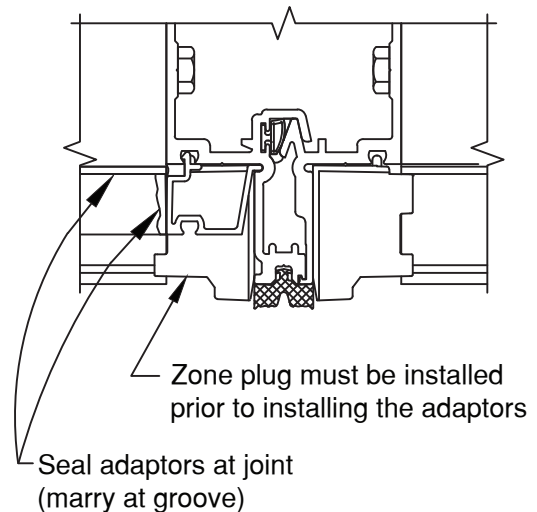


FIGURE 33
Sealing Glazing Adaptors

VERTICAL SPLICING

Follow sealant manufacturer's guidelines for proper joint width based on anticipated movement. A minimum 1/2" joint is recommended. **Note: 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.

- B.1 Apply bond breaker tape to the face of splice sleeves, returning back on the sides 1" minimum. Insert backer rod into the hollow at the top of the lower vertical mullion, sealing this void. Seal between top and bottom mullions from the front of the tongue to 1" behind the glass pocket. Follow the contour of the glazing reglets with the sealant to ensure a good seal when gaskets are installed. **SEE FIGURE 34.**

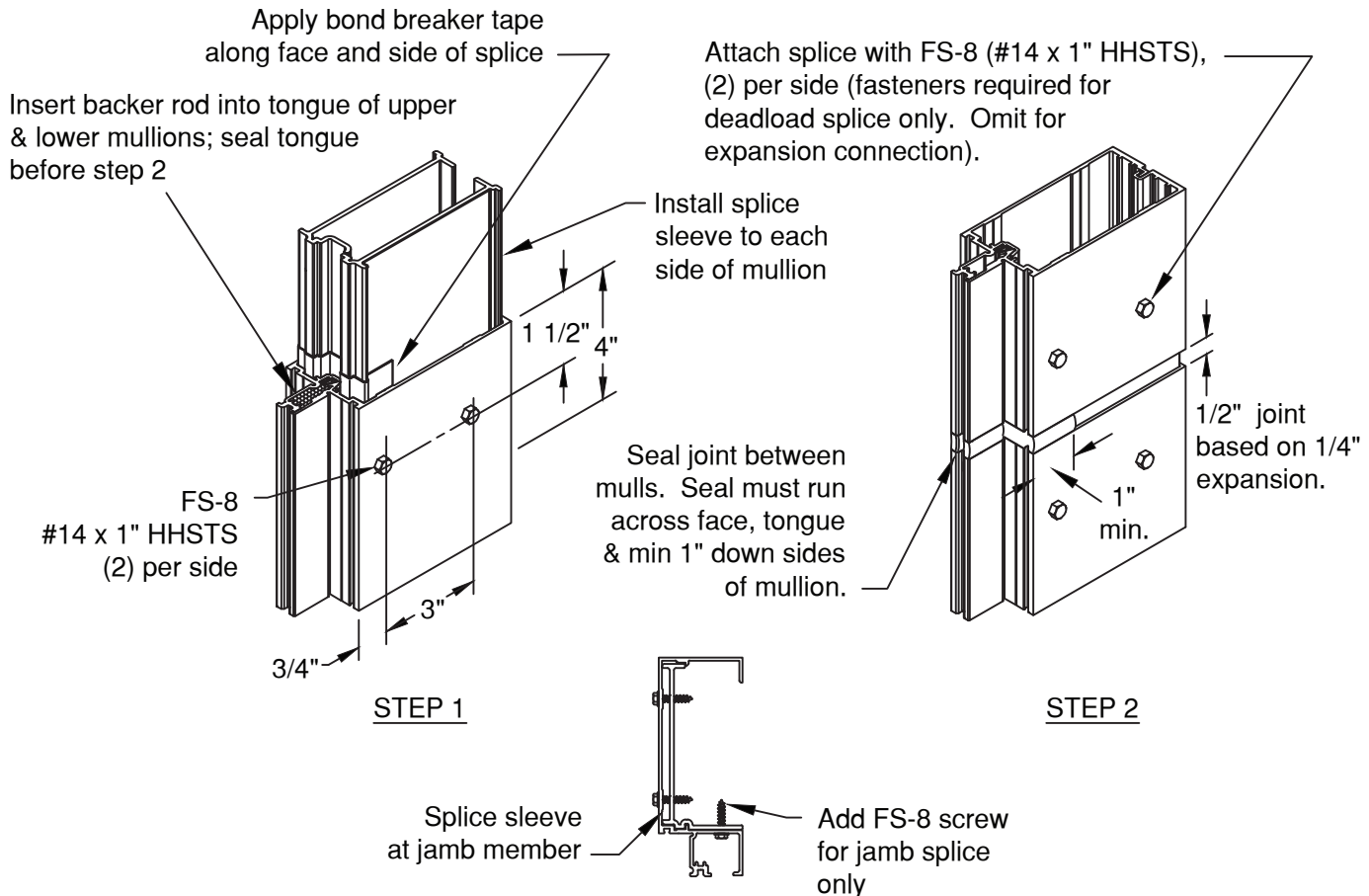


Figure 34
Vertical Splicing

- B.2 **CAPTURED MULLION SPLICES:** Splices can be located between horizontals. Discontinue glazing adaptors at splice joints. Install backer rod into cavity and seal between adaptors. Marry adaptor seal with main mullion seal. **Refer to step B.1** above for sealing notes at glazing reglets.
- B.3 **SSG MULLION SPLICES:** Splices must be located directly below a horizontal. Run horizontal adaptor through, stopping the vertical adaptor at the mullion splice. Notch horizontal adaptor to clear vertical mullion and seal per **FIGURE 35, page 15.**
- B.4 Offset pressure plates and face covers per **FIGURE 36, page 15**, sealing pressure plate and face cover joints as shown in **FIGURE 37, page 15.**

VERTICAL SPLICING

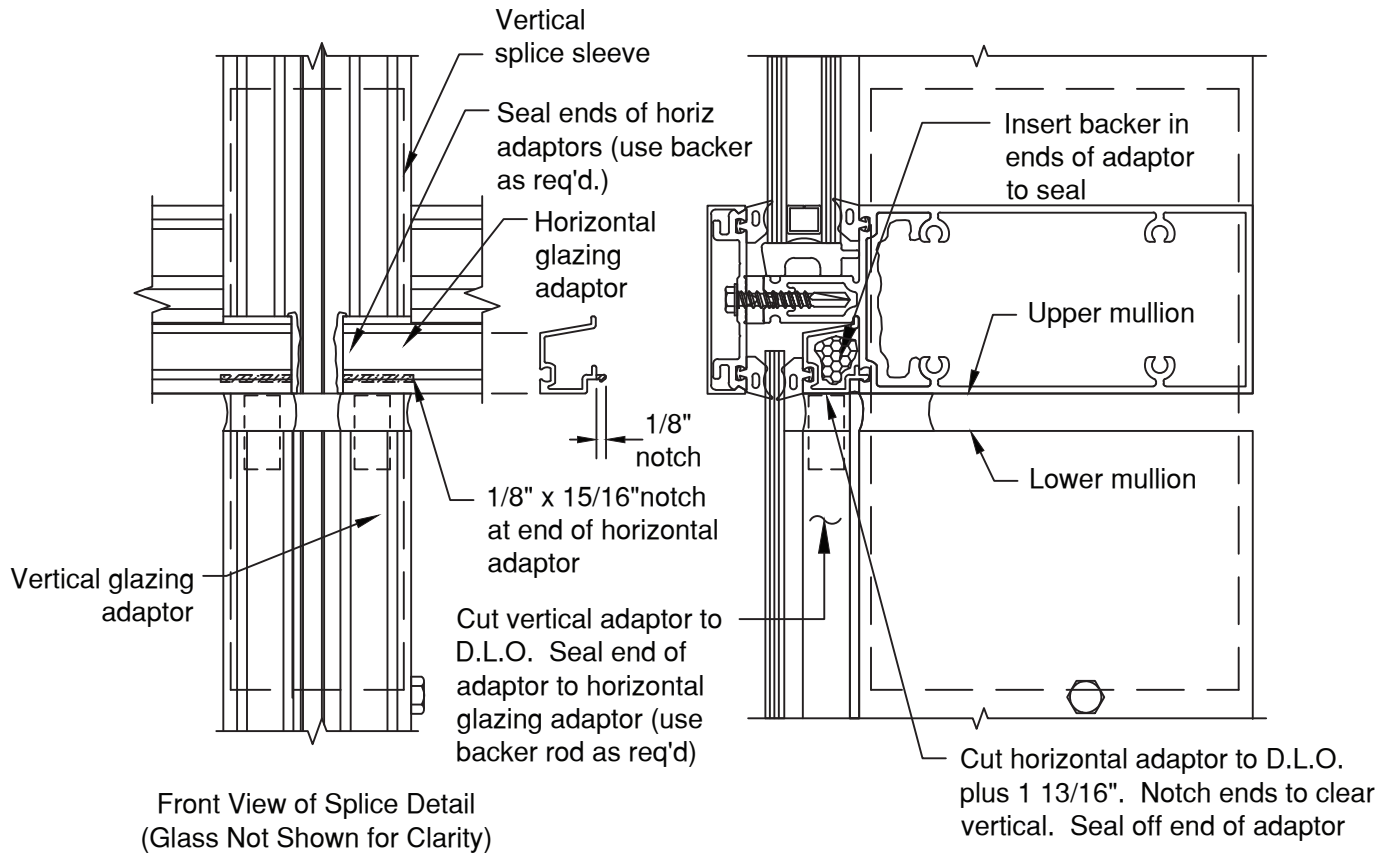


Figure 35
Glazing Adaptors at SSG Vertical Splice

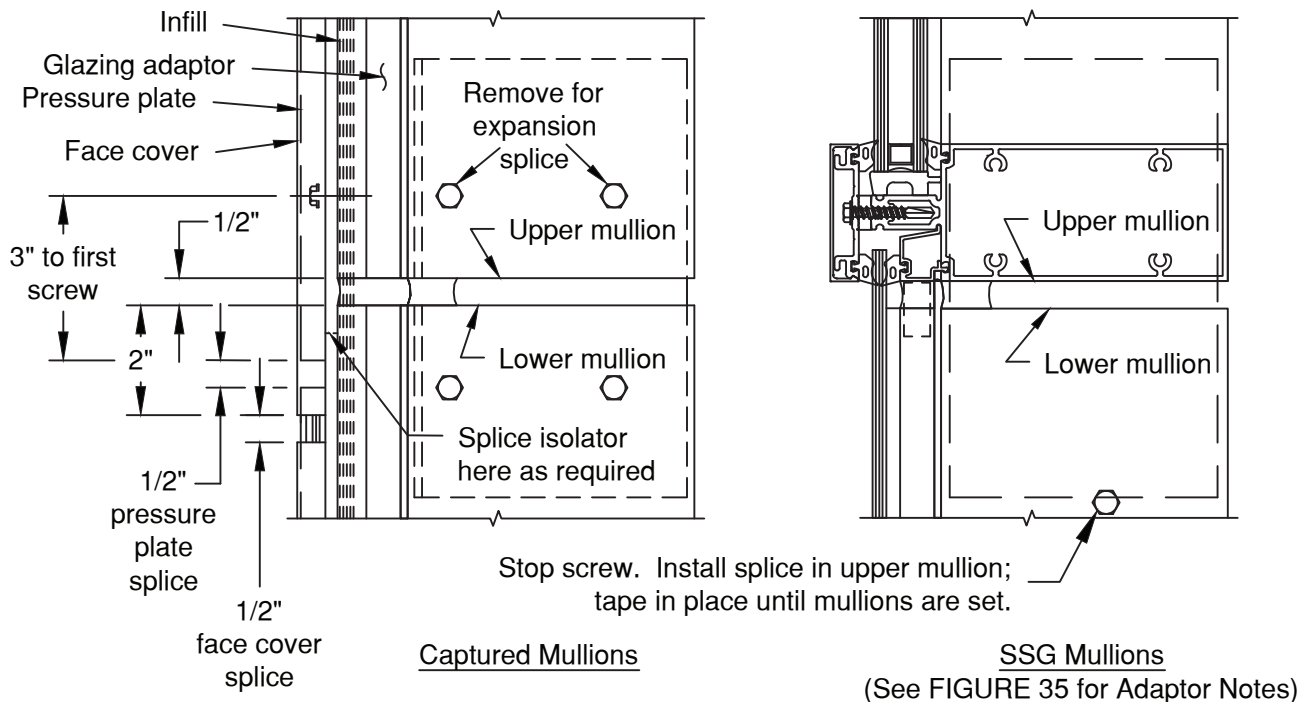


FIGURE 36
Vertical Mullion Splice

VERTICAL SPLICING

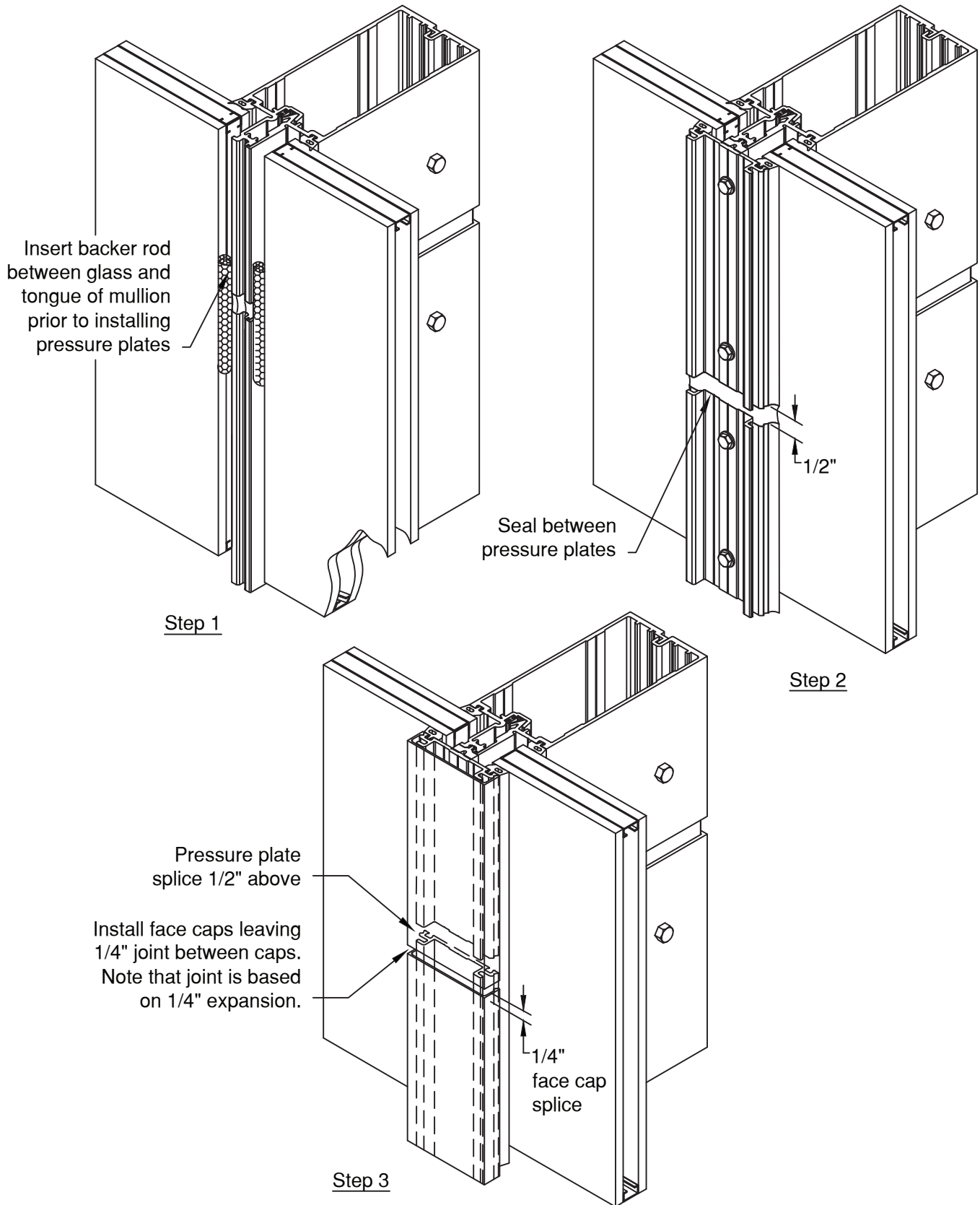


Figure 37

Splice Joint Sealing Instructions

ENTRANCES

All door framing components are shipped fabricated from the factory. The main curtain wall framing can be erected prior to installing the doors. Depending on the subframe used, lites adjacent to doors must be temporarily secured in place until door framing is installed. Refer to FIGURE 42, page 17 for door header fabrication and installation instructions.

C.1 Curtain wall verticals and door subframes run through to finished floor. Bed adjacent curtain wall verticals in sealant and anchor to floor per approved shop drawings.

C.2 SUBFRAME INSTALLATION:

C.2.1 Attach TH-44 threshold clip to bottom of each jamb subframe with two (2) FS-256 #8 x 1 1/2" Phillips Round Head screws.

C.2.2 Install PVC thermal isolator into curtain wall vertical glazing reglet. Hold in place with FS-7 #10 x 3/4" PFH screw if necessary. **SEE FIGURE 38.**

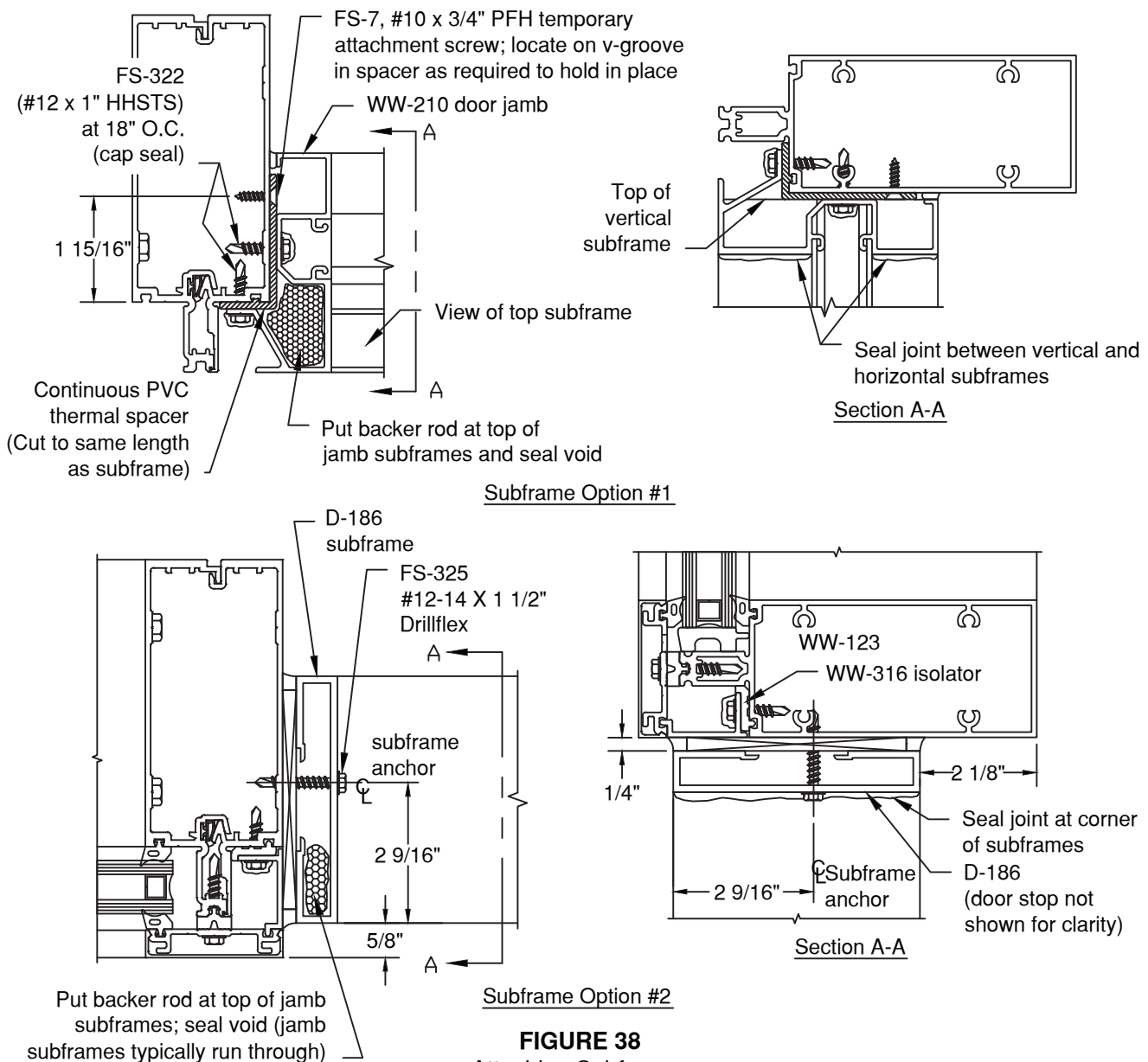


FIGURE 38
Attaching Subframes

ENTRANCES

C.2.3 Bed subframes in sealant. Anchor to curtain wall framing members with FS-322 #12 x 1" Hex Head screw at 18" O.C. Cap seal all fasteners and seal joint between jamb and header subframes. Seal tops of the jamb subframes. **SEE FIGURE 39.**

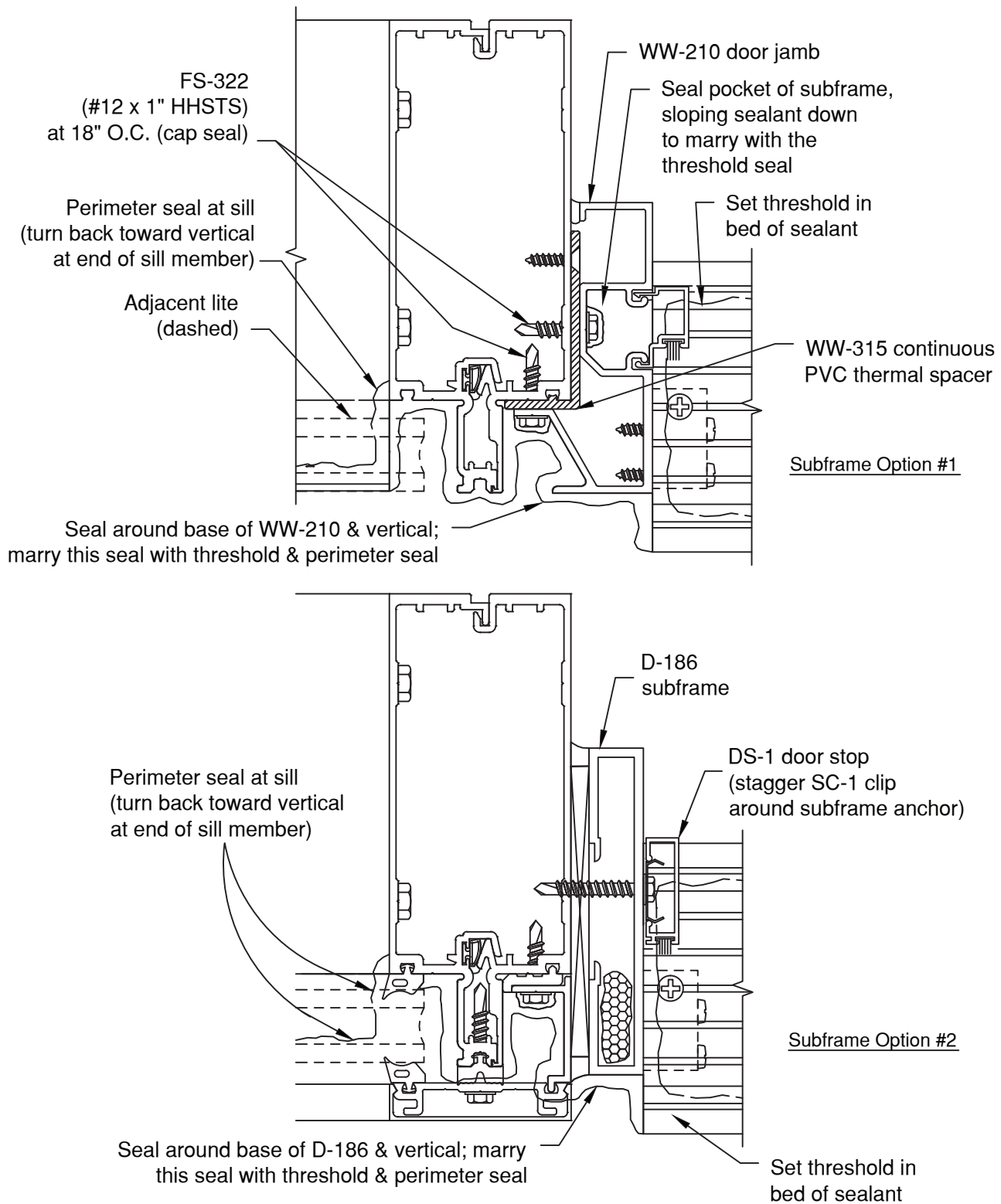


FIGURE 39

Sealing Verticals at Entrance Doors
(Temporary Glazing Retainer Not Shown for Clarity)

ENTRANCES

C.2.4 Bed threshold in sealant, attaching to TH-44 clips with FS-42 #12 x 1/2" Phillips Flat Head screws. Marry threshold seal with subframe and main system seal. **SEE FIGURE 39, page 16.**

C.2.5 Install door stops in subframe. The vertical stops run through.

C.2.6 Install pressure plates and face covers per standard installation instructions.

C.2.7 Install door per DOOR & FRAME INSTALLATION AND GLAZING MANUAL.

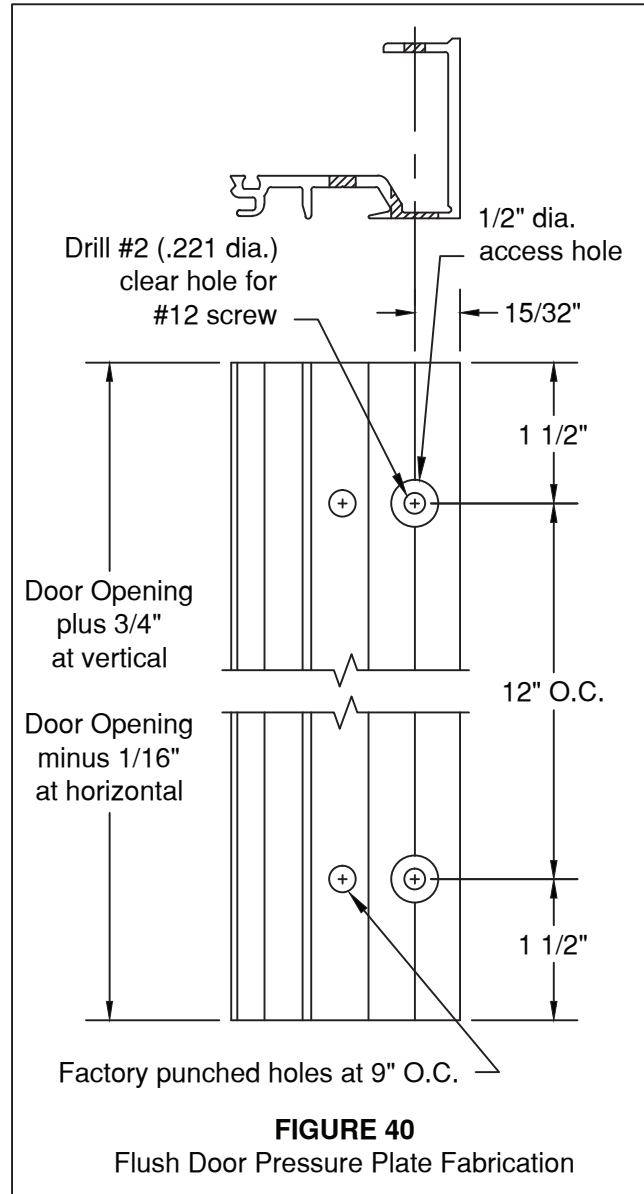
C.3 FLUSH DOOR INSTALLATION:

C.3.1 Drill 1/2" diameter access holes in flush door pressure plates 1 1/2" from ends and 12" O.C. **SEE FIGURE 40.**

C.3.2 Attach TH-44 threshold clip to bottom of each vertical pressure plate with two (2) FS-256 #8 x 1 1/2" Phillips Round Head screws.

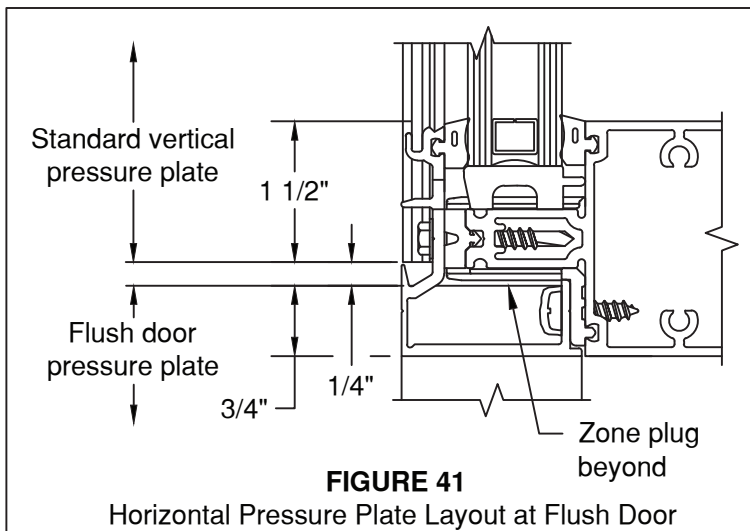
C.3.3 Complete the glazing adjacent to the door frame, installing the flush door pressure plates per standard procedures previously outlined. Bed vertical pressure plates in sealant at sill and attach through access holes to mullion with FS-43 #12 x 3/4" Phillips Pan Head screw 1 1/2" from each end & 12" O.C. **SEE FIGURE 41 & 43.**

C.3.4 Apply continuous seal to horizontal tongue before installing horizontal pressure plate. Seal ends of horizontal pressure plate to the vertical pressure plates. **SEE FIGURE 42.**



C.3.5 Bed threshold in sealant, attaching to TH-44 clips with FS-42 #12 x 1/2" Phillips Flat Head screws. Marry threshold seal with subframe and main system seal. **SEE FIGURE 43, page 35.**

C.3.6 Drill #11 (.191 dia.) holes in curtain wall mullions for FS-15 drive rivets. Install door stops onto mullion with SC-1 clips at 18" O.C. **SEE FIGURE 44, page 35.** Vertical stops run through.



ENTRANCES

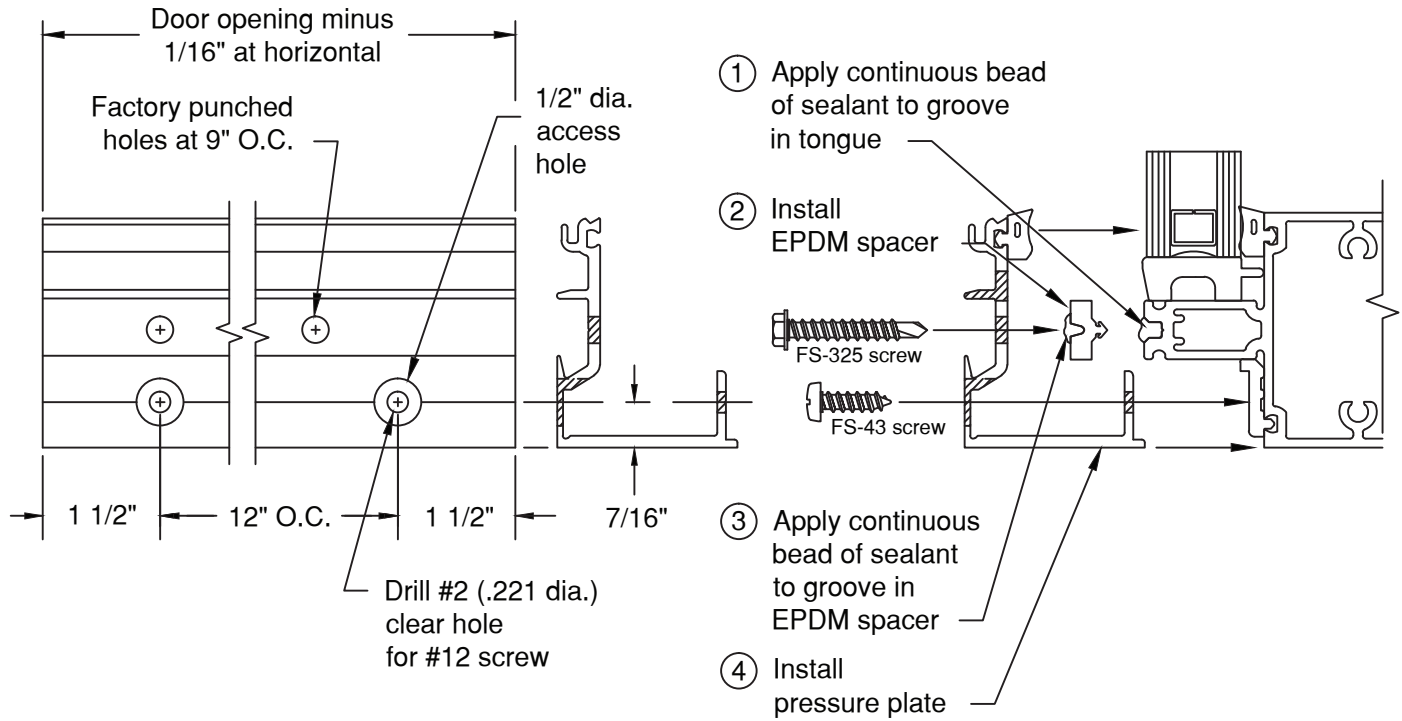


FIGURE 42

Door Header Pressure Plate Fabrication (left detail)
Flush Door Pressure Plate Seal (right detail)

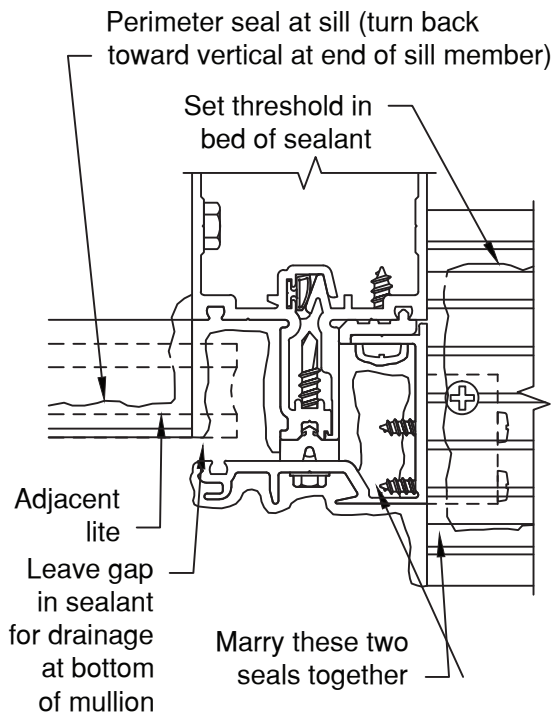


FIGURE 43

Flush Door Sealing

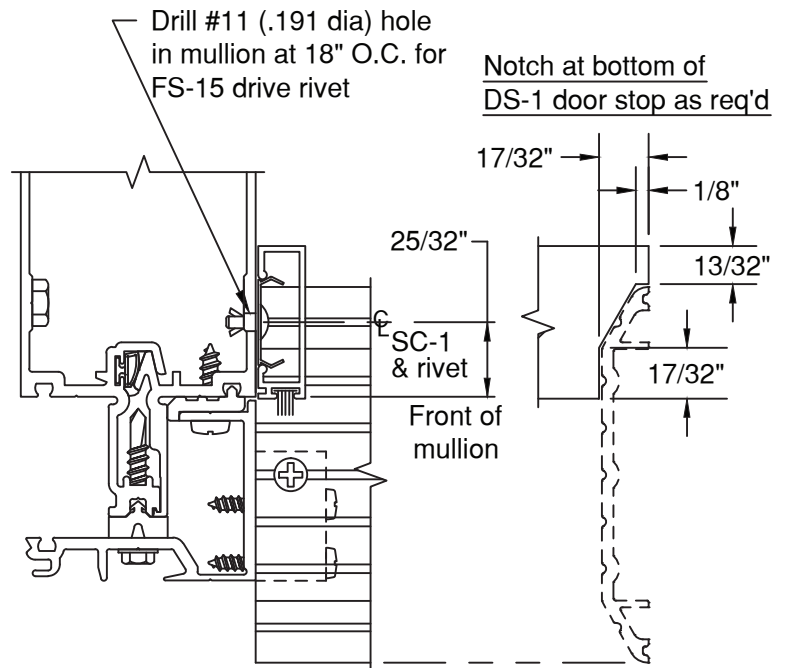


FIGURE 44

Door Stop Fabrication & Attachment
(Sealant & Adjacent Lite Not Shown for Clarity)

ENTRANCES

C.3.7 Install face covers onto pressure plates. **SEE FIGURE 45.**

C.3.8 Install door per **DOOR & FRAME INSTALLATION AND GLAZING MANUAL.**

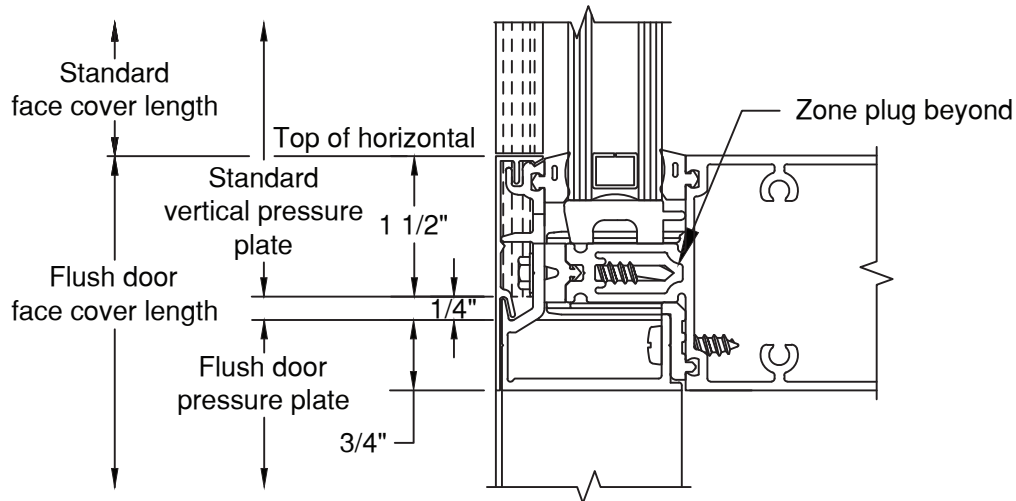


FIGURE 45

Vertical Face Cover Location at Door Header

REGLAZING PROCEDURES

- D.1 REGLAZING MUST BE DONE FROM THE EXTERIOR. Carefully remove face covers surrounding the lite of glass to be deglazed. **SEE FIGURE 46.**
- D.2 Remove vertical and horizontal pressure plates adjacent to the lite that must be replaced. Temp surrounding glass in place with WW-333-01 temporary glazing retainers. Torque to 60 in-lbs. Refer to step 4.6, page 12 for instructions on the location of glazing retainers.
- D.3 Remove lite of glass and existing gaskets from opening. Clean debris and sealant from aluminum framing members and pressure plates.
- D.4 Install new gaskets into framing and install new lite of glass. See GLAZING section of this manual for proper procedure.
- D.5 Reinstall pressure plates and seals per GLAZING section of this manual.

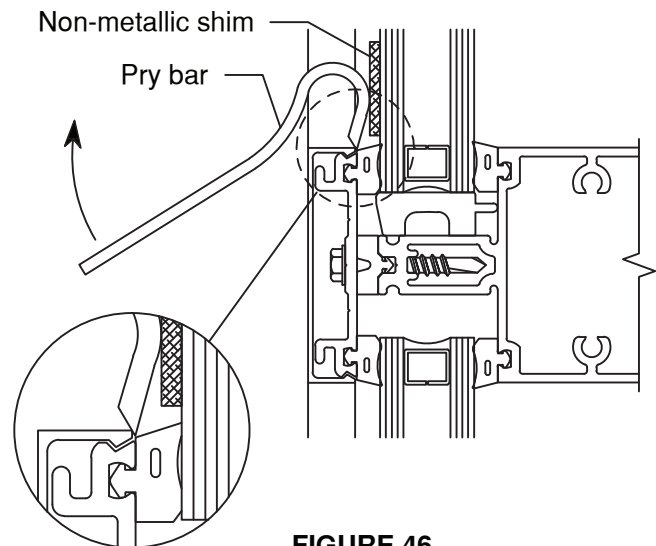


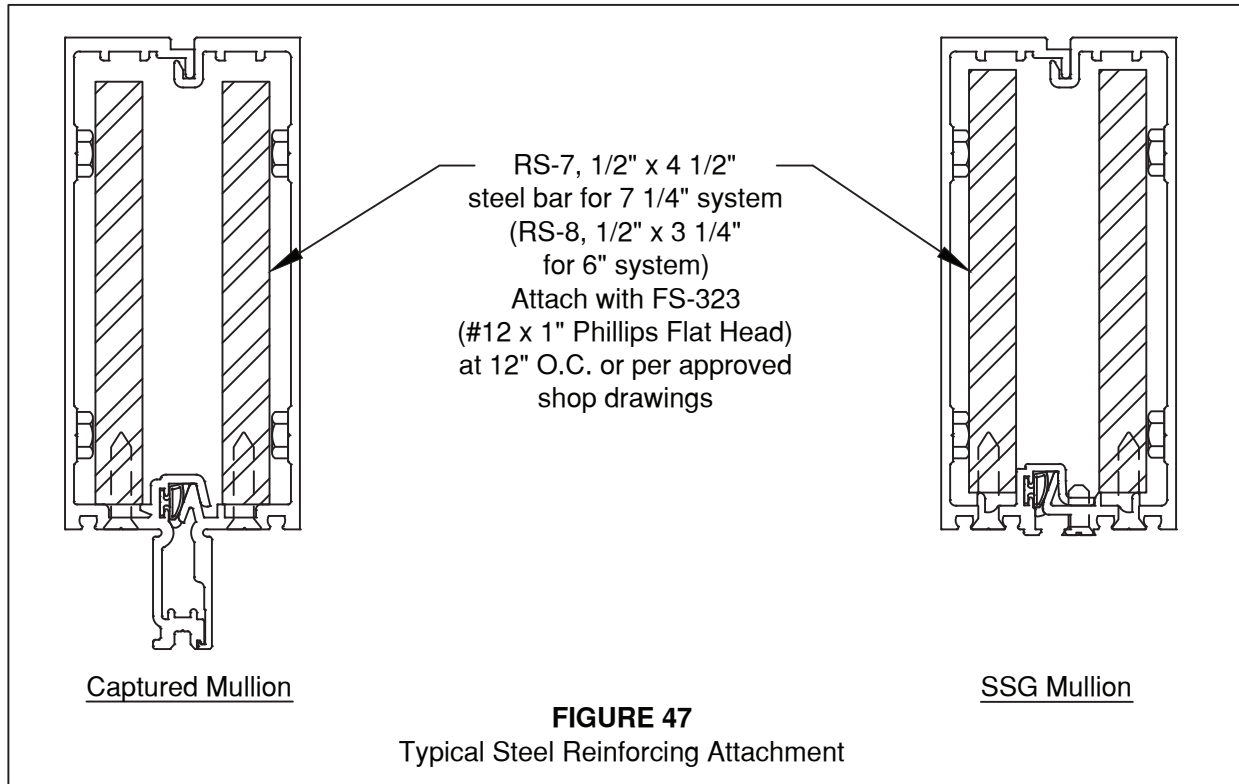
FIGURE 46

Reglazing

MULLION REINFORCING

FIGURE 47 shows the typical attachment method for reinforcing in the vertical mullion. Refer to approved shop drawings for placement, size and quantity of reinforcing required.

Refer to Wind Load Charts in the Detail Catalog for single span and equal twin span conditions (unbraced lengths less than 8.11 feet). 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.



CORNER MULLIONS

FIGURE 48 through **FIGURE 54** shows the basic layout of the standard one-piece corner mullion assemblies. These details are for general reference and do not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

Using a one-piece corner mullion in the Reliance-SS system requires the pre-assembly of corner sections. For the first bay on either side of the corner mullions, attach the standard screw spline horizontal members to a 90° corner mullion with the WW-280-01 shear block at intermediate horizontals and WW-281-01 and -02 at head/sill members. For 135° corners, use the WW-280-02 shear block at intermediate horizontals and WW-281-03 and -04 at head/sill members. The other end of the horizontal members can be attached to the intermediate mullion halves using the screw splines.

CORNER MULLIONS

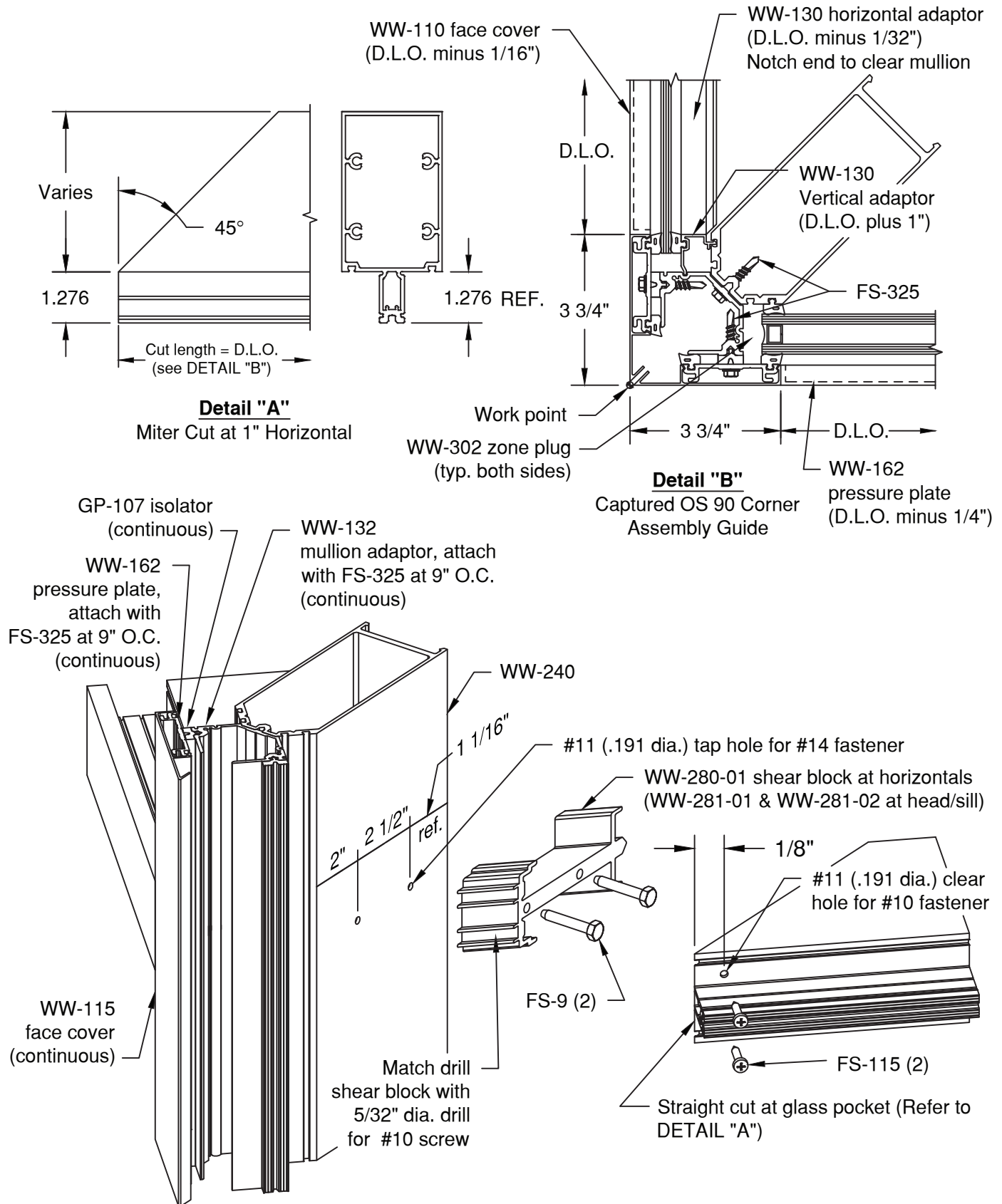


FIGURE 48
Captured OS 90 Corner Assembly
(Cut lengths in parentheses)

CORNER MULLIONS

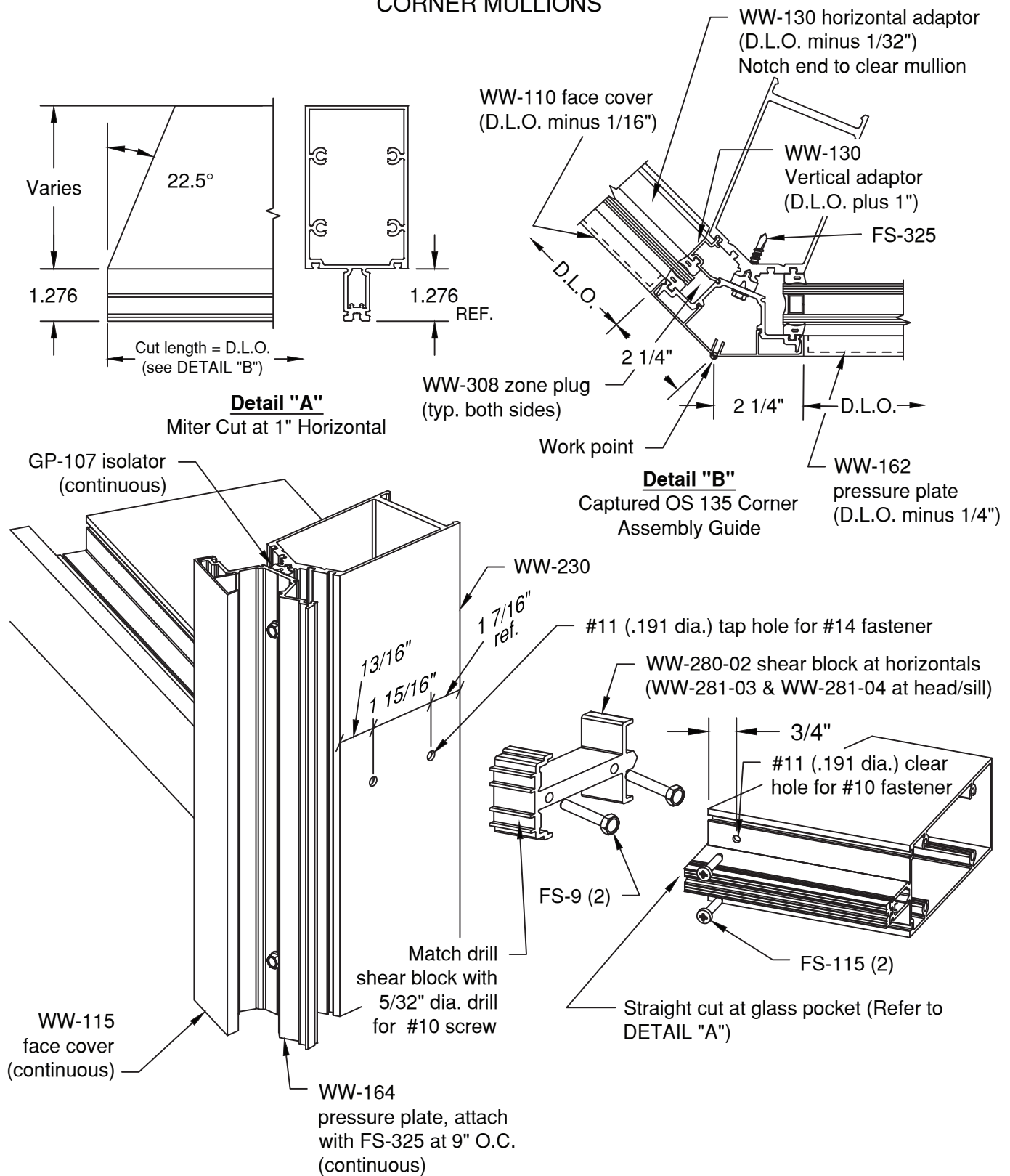
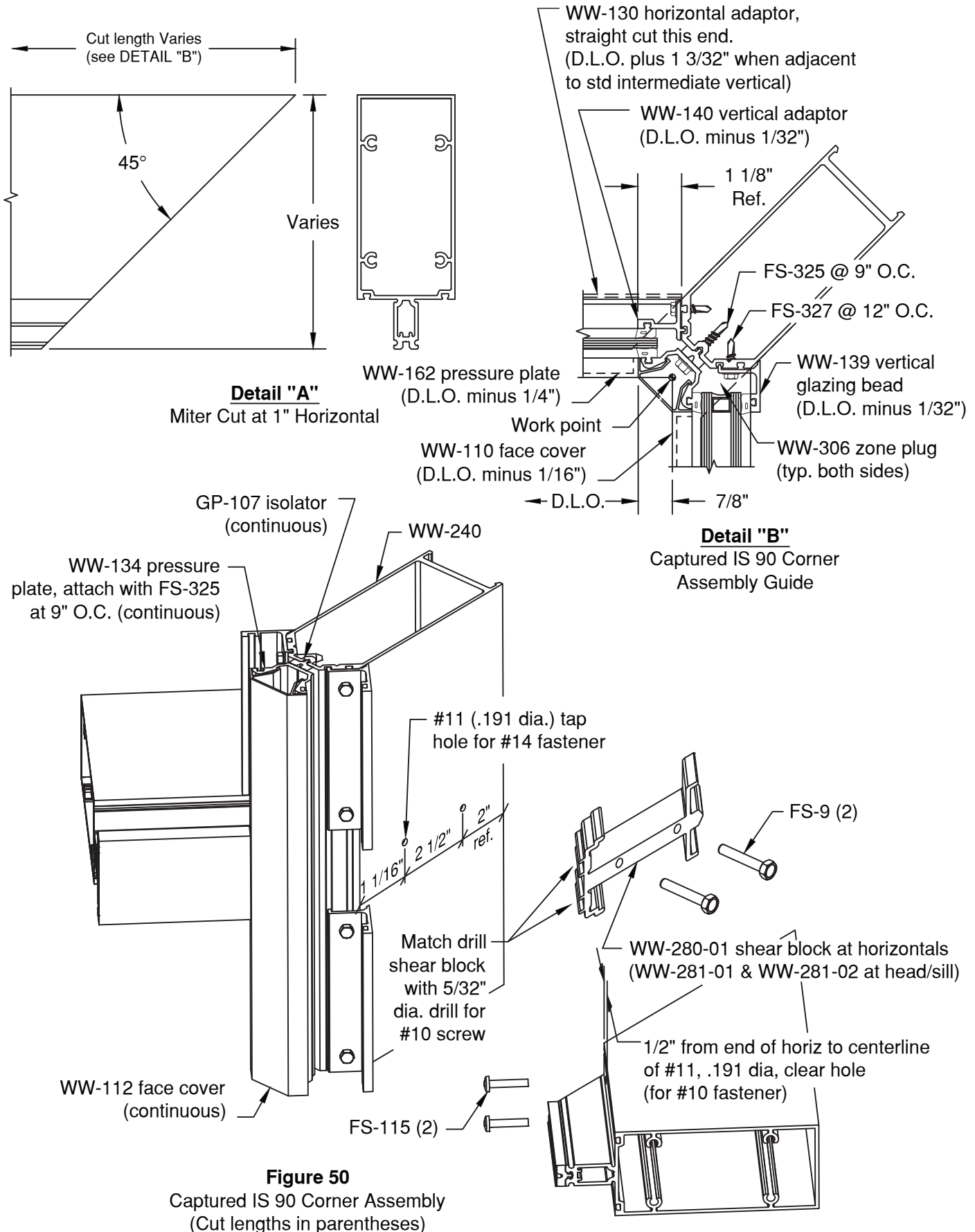


Figure 49
Captured OS 135 Corner Assembly
(Cut lengths in parentheses)

CORNER MULLIONS



CORNER MULLIONS

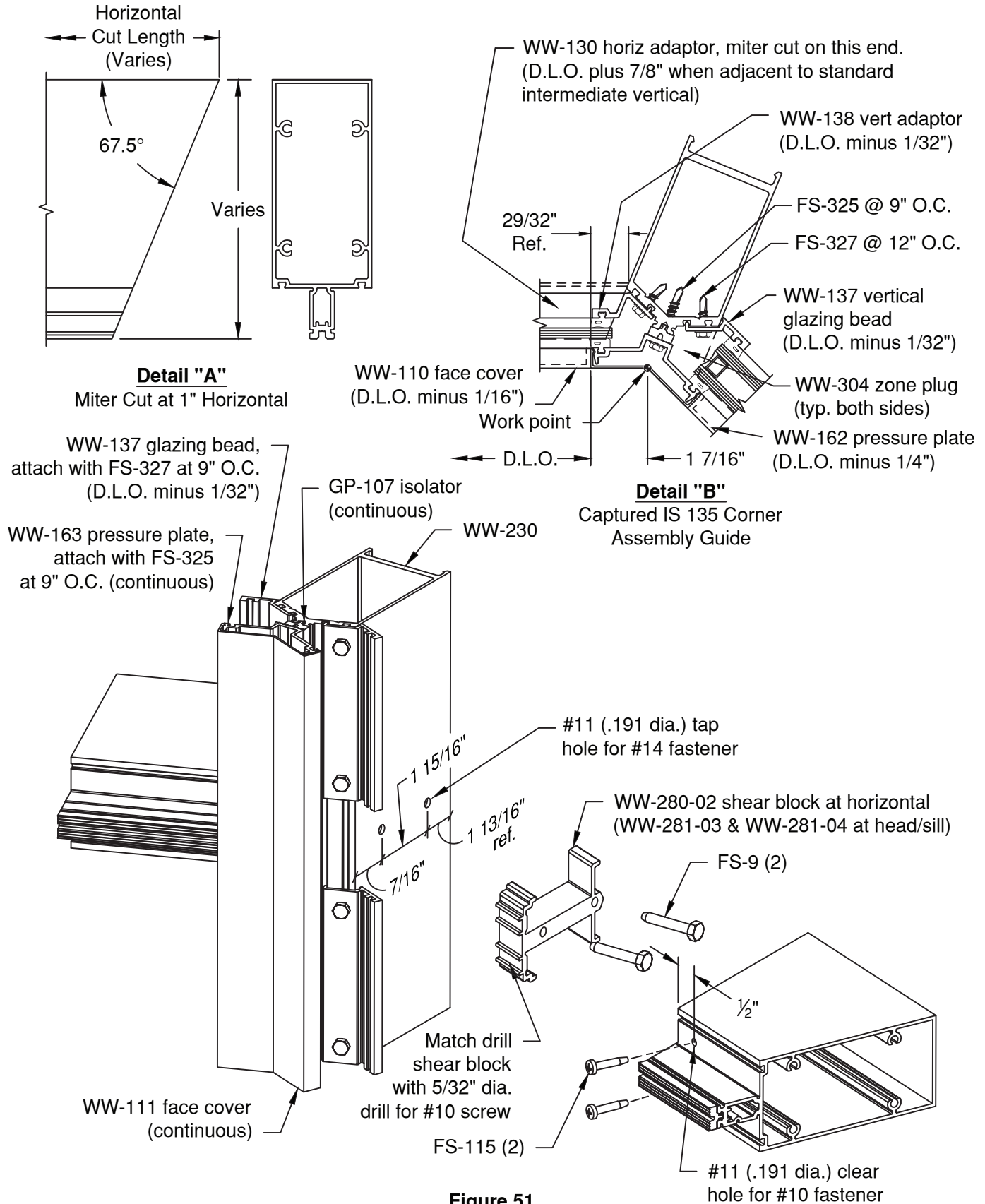


Figure 51
Captured IS 135 Corner Assembly
(Cut lengths in parentheses)

CORNER MULLIONS

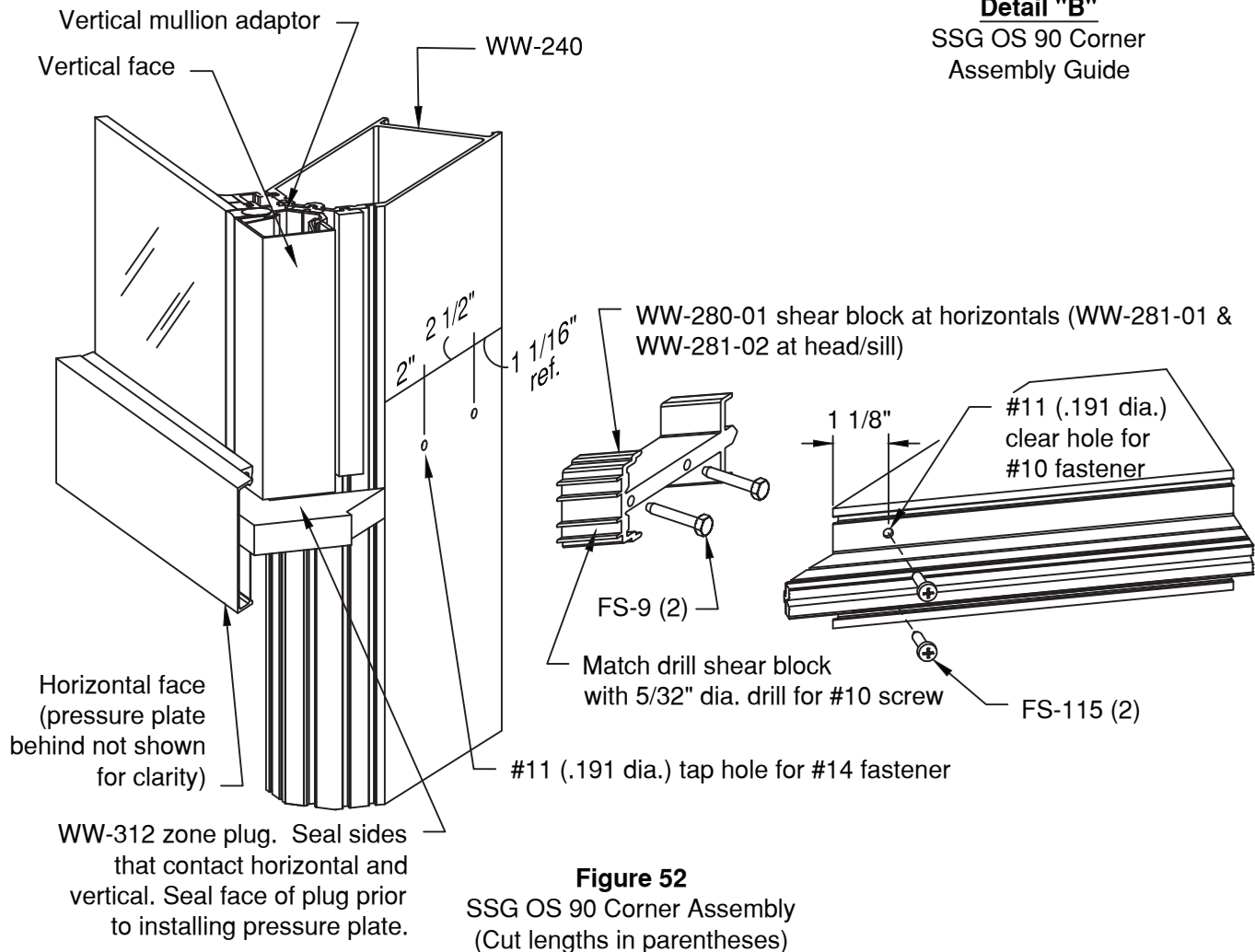
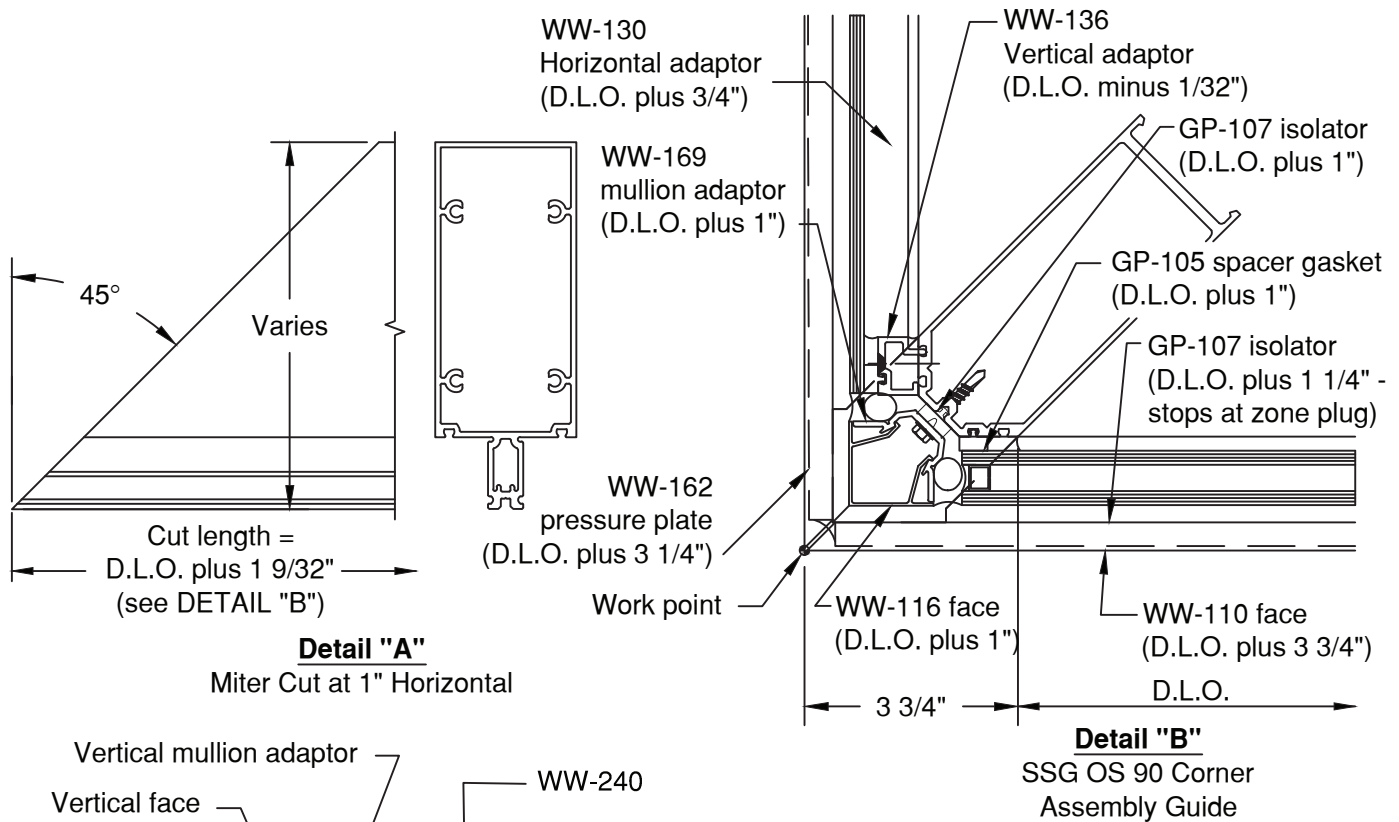


Figure 52
SSG OS 90 Corner Assembly
(Cut lengths in parentheses)

CORNER MULLIONS

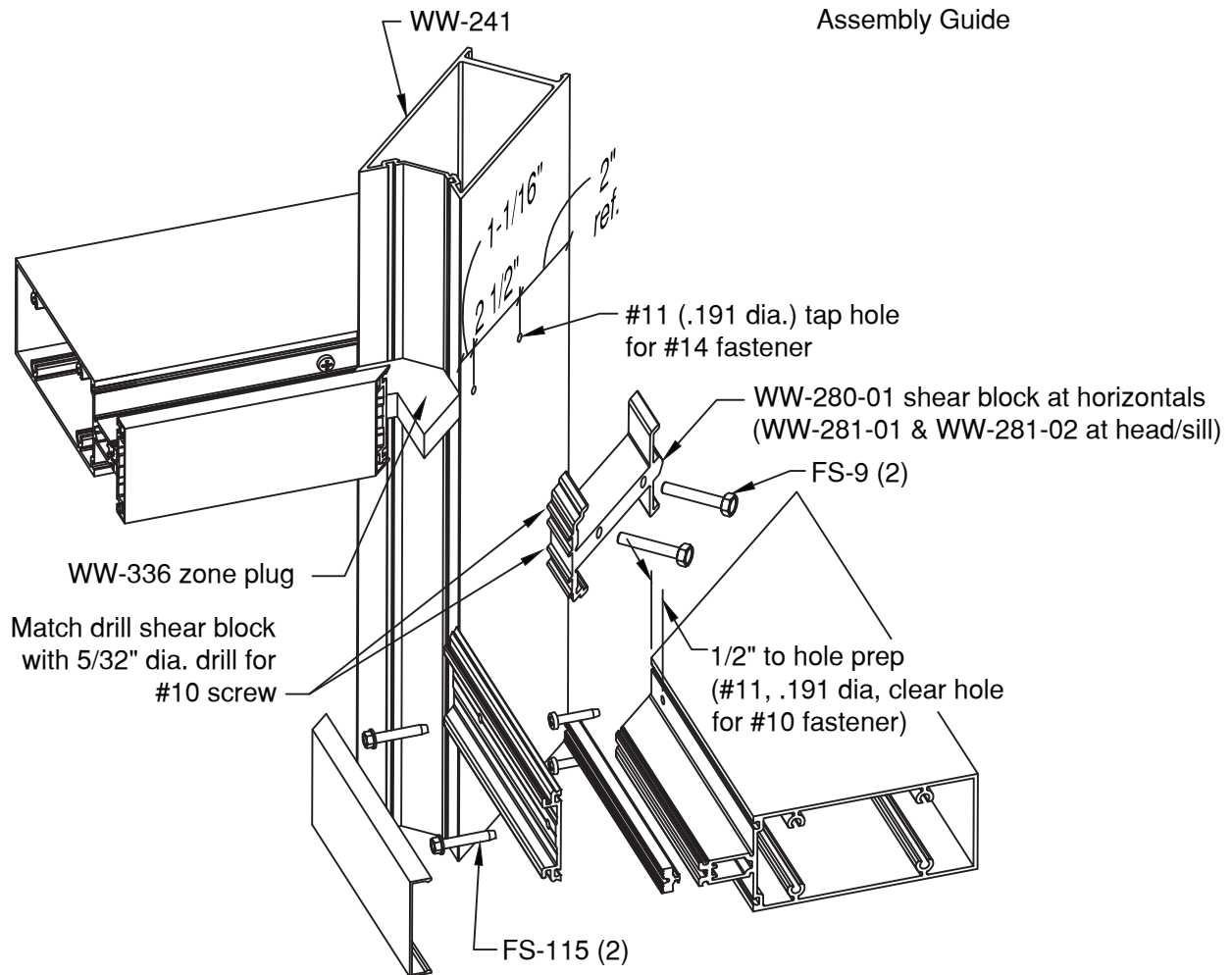
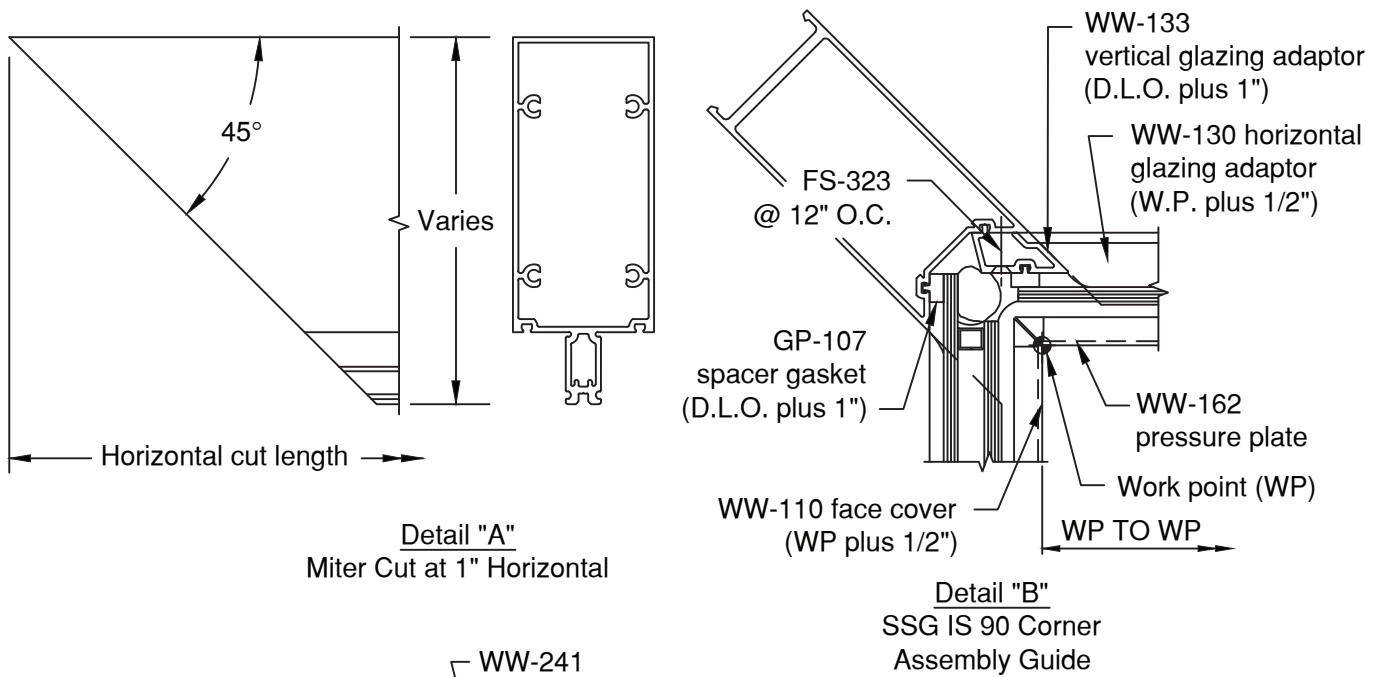


Figure 53
SSG IS 90 Corner Assembly
(Cut lengths in parentheses)

CORNER MULLIONS

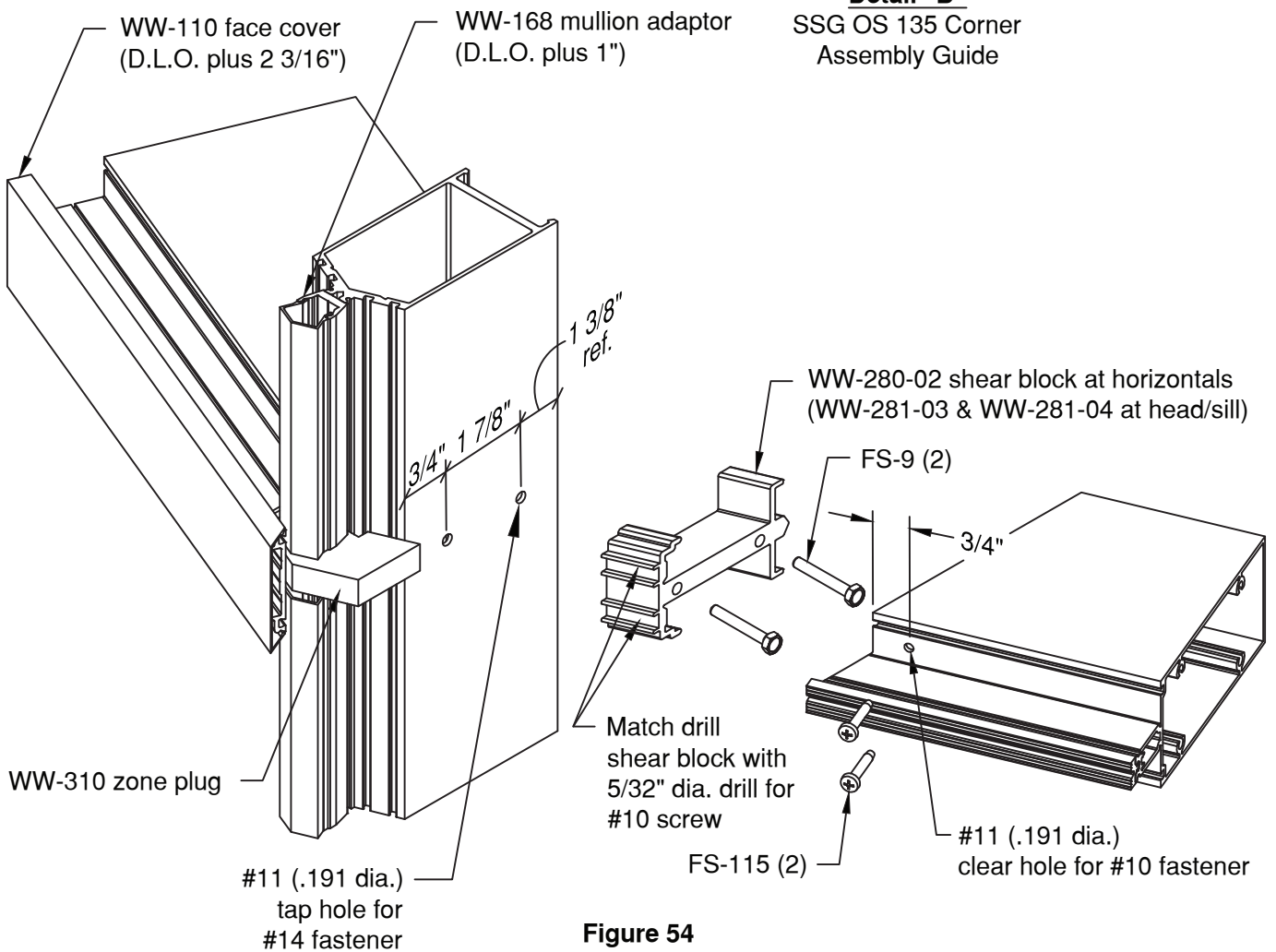
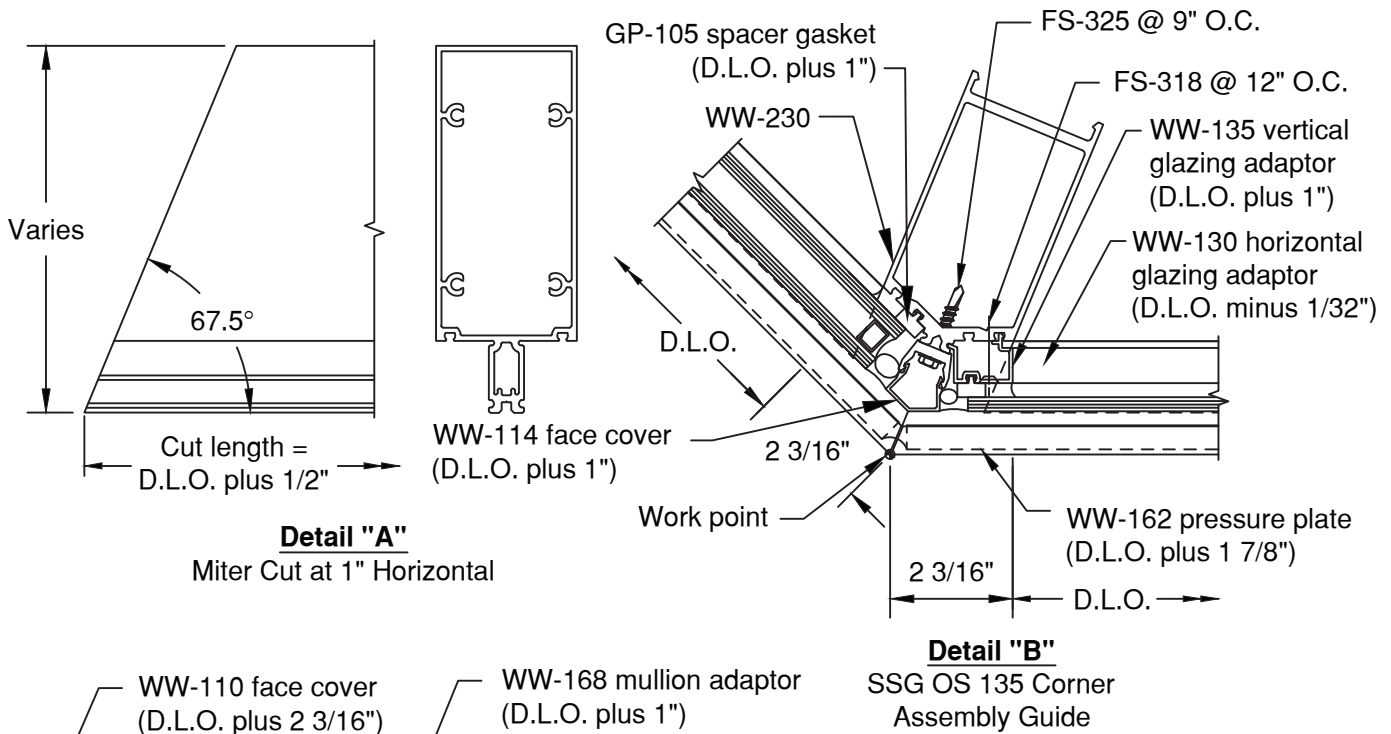

















Figure 54
SSG OS 135 Corner Assembly
(Cut lengths in parentheses)

PARTS LIST




4" BACKMEMBERS 6" SYSTEM DEPTH

 WW-446	Head
 WW-447	Sill
 WW-448	Head & Sill Cover
 WW-443	Jamb
 WW-440	Captured Vertical - Left
 WW-441	Captured Vertical - Right
 WW-444	SSG Vertical - Left
 WW-445	SSG Vertical - Right
 WW-442	Horizontal













5 1/4" BACKMEMBERS 7 1/4" SYSTEM DEPTH

 WW-546	Head
 WW-547	Sill
 WW-548	Head & Sill Cover
 WW-543	Jamb
 WW-540	Captured Vertical - Left
 WW-541	Captured Vertical - Right

















5 1/4" BACKMEMBERS - cont'd 7 1/4" SYSTEM DEPTH

 WW-544	SSG Vertical - Left
 WW-545	SSG Vertical - Right
 WW-542	Horizontal

CORNER MULLIONS & ACCESSORIES

















 WW-230	135° Corner Mullion Captured & SSG 7 1/4" & 6"
 WW-240	90° Corner Mullion OS-Captured & SSG IS-Captured 7 1/4" & 6"
 WW-241	90° Corner Mullion IS-SSG 7 1/4" & 6"
 WW-111	135° Inside Corner Face Cap 7 1/4" & 6"
 WW-112	90° Inside Corner Face Cap 7 1/4" & 6"
 WW-113	135° Outside Corner Face Cap 7 1/4" & 6" (2 Per Corner)
 WW-114	135° SSG Outside Corner Face Cap 7 1/4" & 6"
 WW-115	90° Outside Corner Face Cap 7 1/4" & 6" (2 Per Corner)
 WW-116	90° SSG Outside Corner Face Cap 7 1/4" & 6"
 WW-132	90° Outside Corner Mullion Adaptor 7 1/4" & 6"
 WW-133	90° Inside SSG Corner 1/4" Adaptor 7 1/4" & 6"
 WW-134	90° Inside Corner Pressure Plate 7 1/4" & 6"

CORNER MULLIONS & ACCESSORIES - cont'd









 WW-135	135° SSG Outside Corner 1/4" Adaptor 7 1/4" & 6"
 WW-136	90° SSG Outside Corner 1/4" Adaptor 7 1/4" & 6"
 WW-137	135° Inside Corner 1" Glazing Bead 7 1/4" & 6"
 WW-138	135° Inside Corner 1/4" Adaptor 7 1/4" & 6"
 WW-139	90° Inside Corner 1" Glazing Bead 7 1/4" & 6"
 WW-140	90° Inside Corner 1/4" Adaptor 7 1/4" & 6"
 WW-163	135° Inside Corner Pressure Plate 7 1/4" & 6"
 WW-164	135° Outside Corner Pressure Plate 7 1/4" & 6"
 WW-168	135° Outside SSG Corner Pressure Plate 7 1/4" & 6"
 WW-169	90° Outside SSG Corner Pressure Plate 7 1/4" & 6"
 CW-823	90° Corner Mullion Snap-In Back Trim 6"
 WW-220	90° Corner Mullion Snap-In Back Trim 7 1/4"
 WW-221	135° Corner Mullion Snap-In Back Trim 7 1/4"
 WW-223	I.S. 90° Corner Mullion Optional Snap-In Back Trim 7 1/4"
 WW-224	O.S. 90° Corner Mullion Optional Snap-In Back Trim 7 1/4"
 WW-225	I.S. 135° Corner Mullion Optional Snap-In Back Trim 7 1/4"

PARTS LIST








CORNER MULLIONS & ACCESSORIES - cont'd

 WW-226	O.S. 135° Corner Mullion Optional Snap-In Back Trim 7 1/4"
 WW-102-05	"T" Anchor for WW-240
 WW-102-06	"T" Anchor for WW-230
 WW-102-07	"T" Anchor for WW-241
 WW-280-01	90° Corner Shear Block (Horizontal)
 WW-280-02	135° Corner Shear Block (Horizontal)
 WW-281-01	90° Corner Head/Sill Shear Block (L)
 WW-281-02	90° Corner Head/Sill Shear Block (R)
 WW-281-03	135° Corner Head/Sill Shear Block (L)
 WW-281-04	135° Corner Head/Sill Shear Block (R)
 WW-190-01	Splice Sleeve for WW-230
 WW-191-01	Splice Sleeve for WW-240
 WW-202-01	Splice Sleeve for WW-241
 WW-317	135° Inside Mullion Cap
 WW-319	90° Inside Mullion Cap
 WW-321	135° Outside Mullion Cap








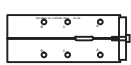








CORNER MULLIONS & ACCESSORIES - cont'd

 WW-323	90° Outside Mullion Cap
 WW-337	90° Inside SSG Mullion Cap
 WW-304	Zone Plug 135° Captured I.S.
 WW-306	Zone Plug 90° Captured I.S.
 WW-308	Zone Plug 135° Captured O.S.
 WW-310	Zone Plug 135° SSG O.S.
 WW-312	Zone Plug 90° SSG O.S.
 WW-336	Zone Plug 90° SSG I.S.

COMMON EXTRUSIONS All System Depths and Infills










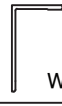






 WW-110	Typical Face Cap
 WW-117	Flush Door Frame Face Cap
 WW-122	Pocket Filler (Use with Exterior Gasket)
 WW-123	Pocket Filler (Full Pocket)
 WW-175	Glazing Adaptor 1/4" Infill - Captured Verticals
 WW-130	Glazing Adaptor 1/4" Infill - Captured Horizontals, 90° O.S.
 WW-144	Glazing Adaptor 1/4" Infill - SSG Verticals

STANDARD ACCESSORIES All System Depths and Infills














 WW-160	Flush Door Frame Pressure Plate
 WW-162	Typical Pressure Plate
 WW-210	Door Subframe (1" Sightline)
 D-186	Optional Door Subframe (3/4" Sightline)
 DS-1	Flush Door Frame & Optional D-186 Door Stop (Use with SC-1 Clip)
 FG-2145	Typical Snap-In Door Stop
 DS-117	Thermal Door Snap-In Door Stop
 DJ-105	Typical Drill Jig for Mullions (Non Corners)
 GP-103	Typical EPDM Dense Exterior & Interior Gasket 1/4" F.C.
 GP-104	Optional EPDM Interior Sponge Gasket 1/4" F.C.
 GP-117	Optional EPDM Gasket 3/16" F.C.
 GP-118	Optional EPDM Gasket 5/16" F.C.
 GP-105	SSG Spacer Gasket Corner Mullions 1/4" F.C.
 GP-106	SSG Spacer Gasket SSG Vertical & Pre-Glazed Captured Mullions 1/4" F.C.
 GP-107	Thermal Isolator
 GP-134	Vertical Mullion Air Seal Gasket

PARTS LIST











STANDARD ACCESSORIES All System Depths and Infills

	1" Setting Block (2 Per Lite)
	1/4" Setting Block (2 Per Lite)
	Side Block 1" Infill
	Side Block 1/4" Infill
	1/2" x 4 1/2" Steel Bar for WW-540, WW-541, WW-544 and WW-545 (20'-1")
	1/2" x 3 1/4" Steel Bar for WW-440, WW-441, WW-444 and WW-445 (20'-1")
	SSG Mull Bridge
	Zone Plug Typical Mullion & 90° O.S. Captured
	"T" Anchor for WW-543, WW-540 & WW-541
	"T" Anchor for WW-544 & WW-545
	"T" Anchor for WW-443, WW-440 & WW-441
	"T" Anchor for WW-444 & WW-445
	Vertical Mullion Splice for WW-540
	Vertical Mullion Splice for WW-541
	Jamb Mullion Splice for WW-543
	SSG Mullion Splice for WW-544

STANDARD ACCESSORIES All System Depths and Infills

	SSG Mullion Splice for WW-545
	Vertical Mullion Splice for WW-440
	Vertical Mullion Splice for WW-441
	Jamb Mullion Splice for WW-443
	SSG Mullion Splice for WW-444
	SSG Mullion Splice for WW-445
	Thermal Isolator for Standard Door Subframe 12' Long
	Thermal Isolator for Flush Door Subframe 12' Long
	Captured & SSG Mullion Cap (Intermediates Only)
	Captured Mullion Cap (Jamb)
	Spring Clip for DS-1 Door Stop
	Temporary Glazing Retainer for Captured Mullions
	Temporary Glazing Retainer for SSG Verticals

STANDARD FASTENERS

	#14 x 1" Phillips Hex Head Horizontals to Verticals & Splice Sleeves to Mullions
	3/16" x 7/16" Drive Rivet Fastens SC-1 Clip
	#10 x 1/2" Phillips Flat Head Attach SSG Mullion Halves
	#10 x 1 3/8" Phillips Flat Head SSG Mullion Adaptor
	#8 x 1/2" Phillips Pan Head Attach Mullion Caps
	#10 x 1/2" U-Drive Fastens Mull Caps (Jamb)
	#12-14 x 1" Hex Washer Head Drill Flex Attach Splices
	#12 x 1" Phillips Flat Head Fastens Steel Through Mullion Face
	#12-14 x 1 1/2" Hex Washer Head Drillflex Fastens Pressure Plate to Mullion
	#12-14 x 7/8" Hex Washer Head Drillflex Fastens Door Subframe & Corner Glazing Beads