Oldcastle BuildingEnvelope®

RELIANCE™ CURTAIN WALL

INSTALLATION AND GLAZING MANUAL

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 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 structural silicone sealant and weather seal silicone sealant.

Note: Customer / Project quality assurance procedures are separate documents and are to be followed in conjunction with this manual.

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RELIANCE™ CURTAIN WALL INSTALLATION MANUAL

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Quick Reference Guide:

1. Torque pressure plate screws to 90 in-lbs.

2. Glass sizing: Captured System: DLO plus 1" for width and height
SSG System: DLO plus 2" for width. DLO plus 1" for height.

3. Glass bite at SSG horizontal = Vertical DLO plus 1-7/8"

4. Locate pressure plate screws @ 9" o.c. (1-1/2" from ends)

GENERAL INFORMATION

PRODUCT USE

The **Reliance™** 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.

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

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.

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.

GLAZING PRACTICES

The air and water performance of the **Reliance™** 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 ¼" 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 it's 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.
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. See page 14&15 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 utilize Oldcastle BuildingEnvelope supplied 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.

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.

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 CW-10 “Care and Handling of Architectural Aluminum From Shop to Site.”

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 curtain wall system is designed to accommodate glass or panels measuring 1" and1/4" in thickness. (plus/- 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 used must be approved by the sealant manufacturer to ensure 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 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.

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 50º 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.

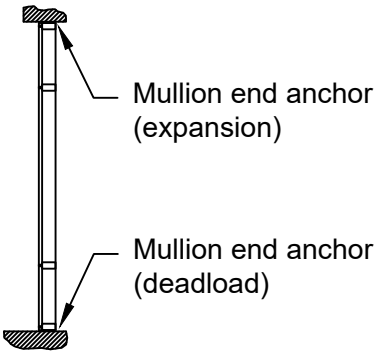
C. In extreme conditions the fan of the heating system should not cycle on and off but should run continuously.

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 temperature and reducing humidity will usually solve the problem.

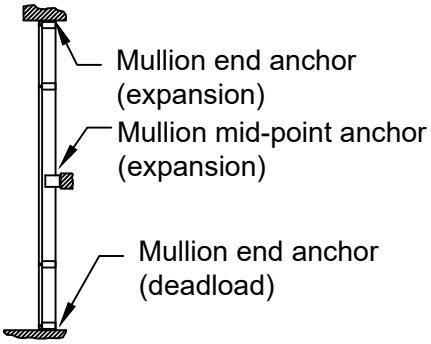
E. On rare occasions an extremely cold storm may cause frost to appear on the glass framing. A space heater and electric fan blowing along the plane of the window wall can reduce or eliminate this temporary condition.

INSTALLATION TYPES

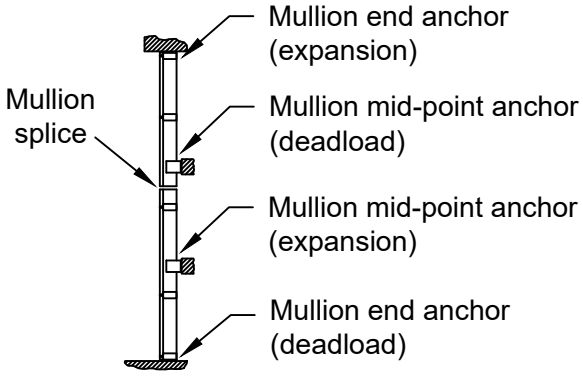
The following diagrams represent common types of installations for this product. Refer to approved shop drawings for specifics regarding splicing and anchoring of frame.



Single Span
Refer to steps 2.1.1 - 2.1.3



Twin Span
Refer to steps 2.1.4 - 2.1.8



Multi-Span
Refer to steps 2.1.9 - 2.1.16

MEASURING & CUTTING MATERIAL

Unless otherwise noted, the details shown in these instructions reflect the 7 1/4" system for 1" glazing. Instructions for 1/4" glazing in other backmember depths are similiar.

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 for guide.

Frame Members

Verticals	Frame Height (Rough Opening minus top & bottom joints)
Vertical pressure plates	Frame Height minus 1/4"
Vertical face covers	Frame Height (vertical covers run through)
Intermediate horizontals (tubular)	Daylight Opening (D.L.O.)
Intermediate horizontals (rollover)	D.L.O. minus 1/16"
Head and sill	D.L.O. minus 1/16"
Horizontal pressure plates	D.L.O. minus 1/4"
Horizontal face covers	D.L.O. minus 1/16"
Horizontal interior trim (for rollover)	D.L.O. minus 1/16"

Accessories

Glazing gaskets

Exterior	Pressure plate length plus allowance*
Interior at verticals	D.L.O. plus 1" plus allowance* (vertical gasket run through)
Interior at horizontals	D.L.O. plus allowance*
Silicone spacer gaskets	D.L.O. plus 1" plus allowance*

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

Other Members (as required)

Glazing adaptors

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

Door subframe

Jamb	Door Opening plus 7/8"
Header	Door Opening minus 1/32"

Flush door pressure plate

Jamb	Door Opening plus 3/4"
Header	Door Opening minus 1/16"

Flush door face cover

Jamb	Door Opening plus 2-1/2"
Header	Door Opening minus 1/16"

MATERIAL FABRICATION GUIDE

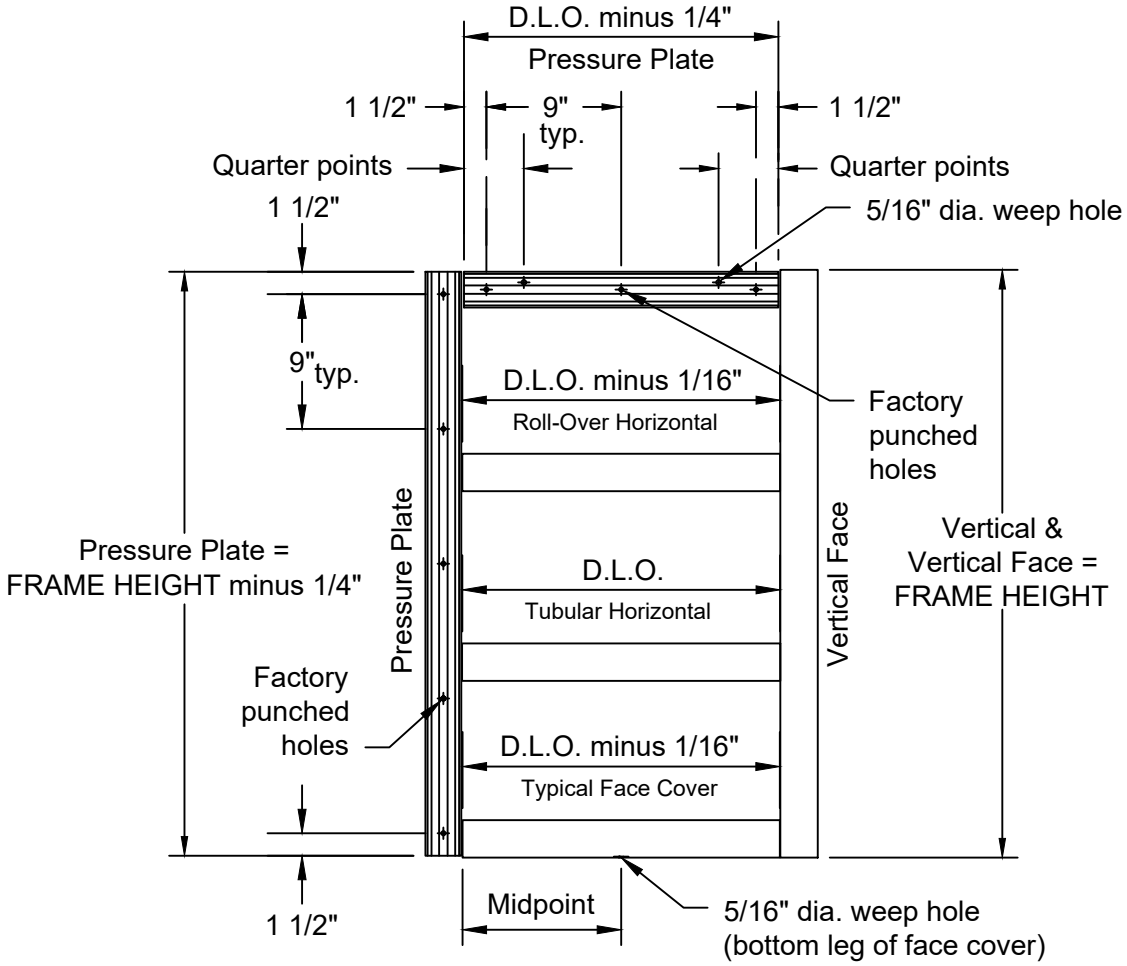


FIGURE 1
Material Fabrication Guide

1.3 Fabricate vertical mullions for horizontal members, using DJ-100 drill jig. Drill holes for shear block using holes marked “A” and “B”. SEE FIGURE 2. When working off horizontal centerlines, use the slot milled into the drill jig to align the jig with the centerline. NOTE: 10” deep system requires special shear block and fabrication.

FRAME FABRICATION

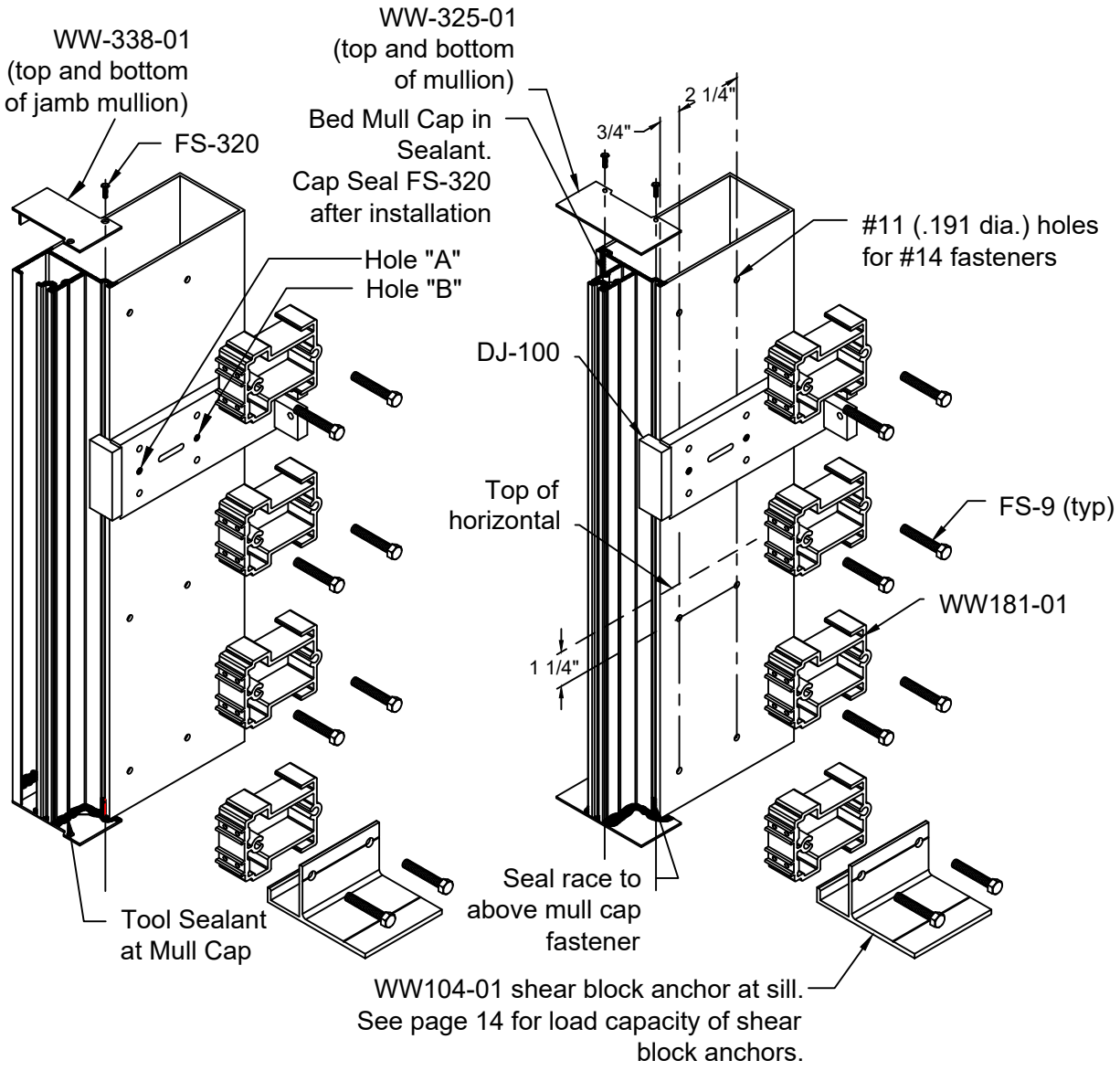


Figure 2
Vertical Fabrication

1.4 Install and seal end caps to top and bottom of all jamb and intermediate vertical mullions with (2) FS-320 #10 x ½" Drive screw (only (1) required at jambs). **SEE FIGURE 2**.

1.5 Fabricate ends of horizontal members for shear block screws, using DJ-100 drill jig. **SEE FIGURE 3**. **Note: When fabricating tubular (one-piece) horizontals, use the side of the drill jig stamped "Horizontal". When fabricating head, sill and roll-over horizontals, use the side stamped "Head/Sill/Rollover".**

HORIZONTAL FABRICATION

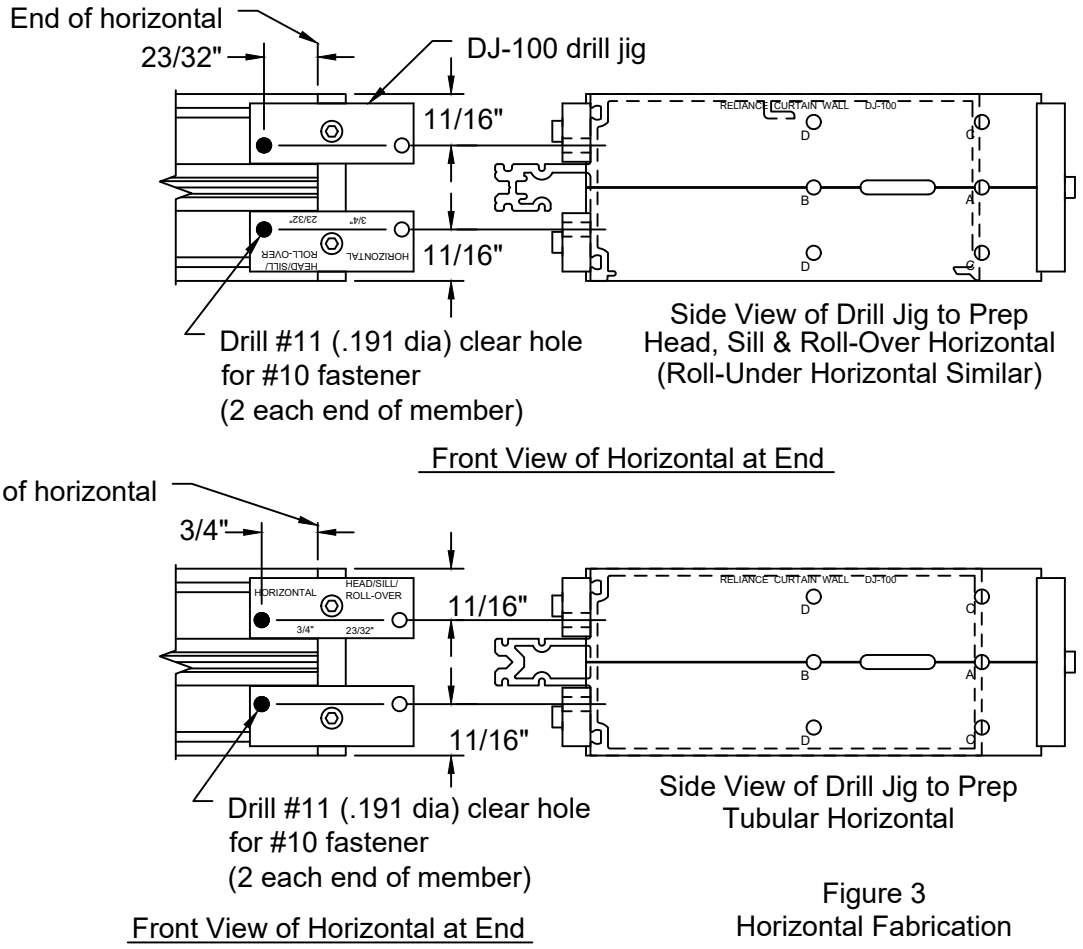


Figure 3
Horizontal Fabrication

1.6 Drill 5/16" diameter weep holes at 1/4 points in the horizontal pressure plate. See FIGURE 4. Horizontal pressure plates at SSG mullions will have weep holes located at 1/4 points of each DLO and will span multiple openings, but not to exceed 3 lites.

1.7 Drill 5/16" diameter weep hole at the center of each DLO in horizontal covers. See FIGURE 23, page 29. SSG installations will have multiple holes in face cap, located at centerline of each DLO. See 3.11 page 26 for additional cap installation information.

1.8 All pressure plates have factory-punched holes for screws at 9” O.C. To ensure proper pressure on the glazing, 7/32” diameter holes may need to be drilled at the ends of each horizontal pressure plate as required. Locate at 1 1/2” maximum from the ends. See FIGURE 4.

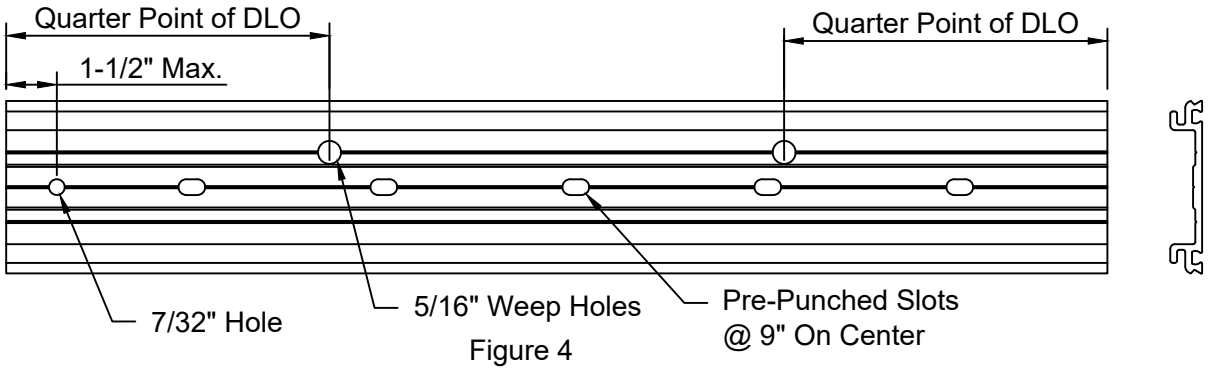


Figure 4
Pressure Plate Fabrication

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.

SINGLE SPAN INSTALLATION:

2.1.1 Attach shear blocks to all vertical members. The shear block anchors are designed for use with standard shear blocks. See FIGURE 5 & 6, page 13. for proper orientation and installation onto mullion. Tee anchors may also be used for single span installations. Refer to TWIN SPAN INSTALLATION.

2.1.2 Install verticals plumb and level. Place shims under vertical mullion at sill to evenly distribute deadload from wall. Install pipe sleeve anchor at head to allow for thermal movement of the vertical mullions. SEE FIGURE 5.

2.1.3 Check D.L.O. and diagonal dimensions every four bays to ensure correct spacing and frame squareness to prevent dimensional buildup.

PERIMETER ANCHOR INSTALLATION:

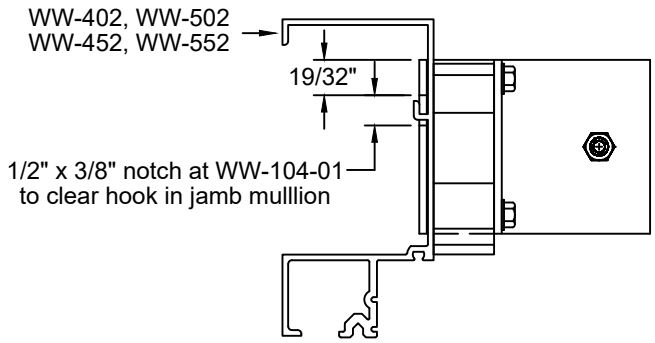
2.1.4 Install WW-100 (WW-101 1/4" system) perimeter anchors around perimeter of opening. Check to insure that anchors are plumb and level and horizontally are level so to form a square opening. Horizontal anchors should run through with verticals cut between.

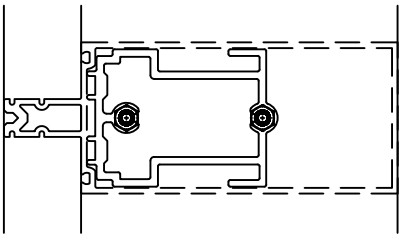
2.1.5 Assemble curtain wall framing making certain all joints are sealed per instructions on pages 18 of this manual. The tongue at top and bottom of each vertical must be notched back 15/16" to clear leg of perimeter anchor. See **FIGURE 7, page 14.**

2.1.6 Run continuous bead of sealant around frame filling gasket race and surface adjacent to race so entire perimeter is fully sealed once set against perimeter anchor. **SEE FIGURE 7, page 14.**

2.1.7 Secure frame to anchor at sill only to allow thermal expansion. Drill access hole in face of perimeter anchor and drill a 7/32" hole in back leg of anchor at 12" on center.

FRAME INSTALLATION





Shear Block orientation at Horizontal
(Head & Sill similar)

The WW104-01 shear block anchor at the sill has a maximum load of 375 lbs. per anchor, (750 lbs with anchor on both sides of mullion). These capacities are based on proper design for anchor fastener to surrounding conditions.

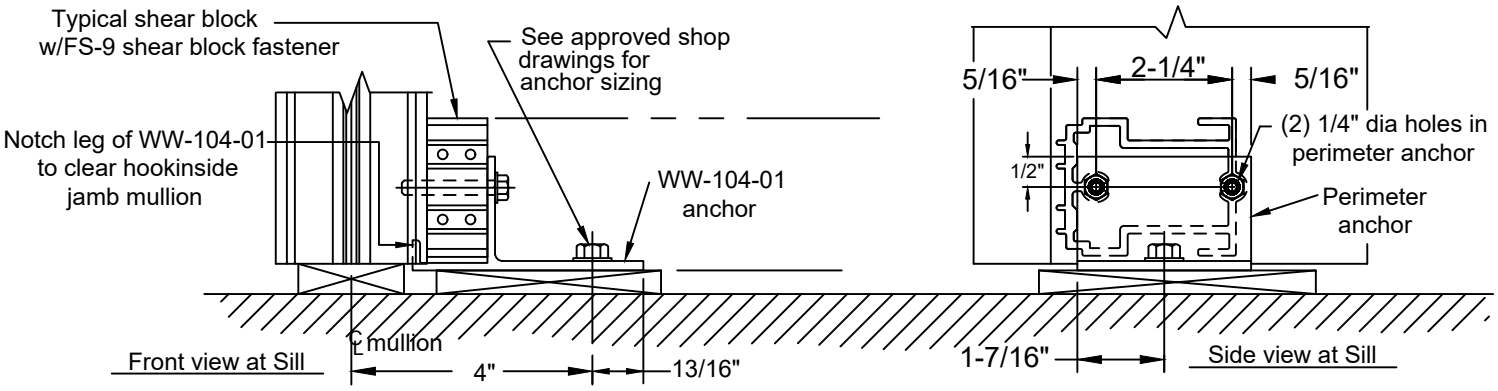


Figure 6
Shear Block Orientation
and Single Span Sill Anchorage
(Captured Mullion Shown; SSG Mullion Similar)

FRAME INSTALLATION

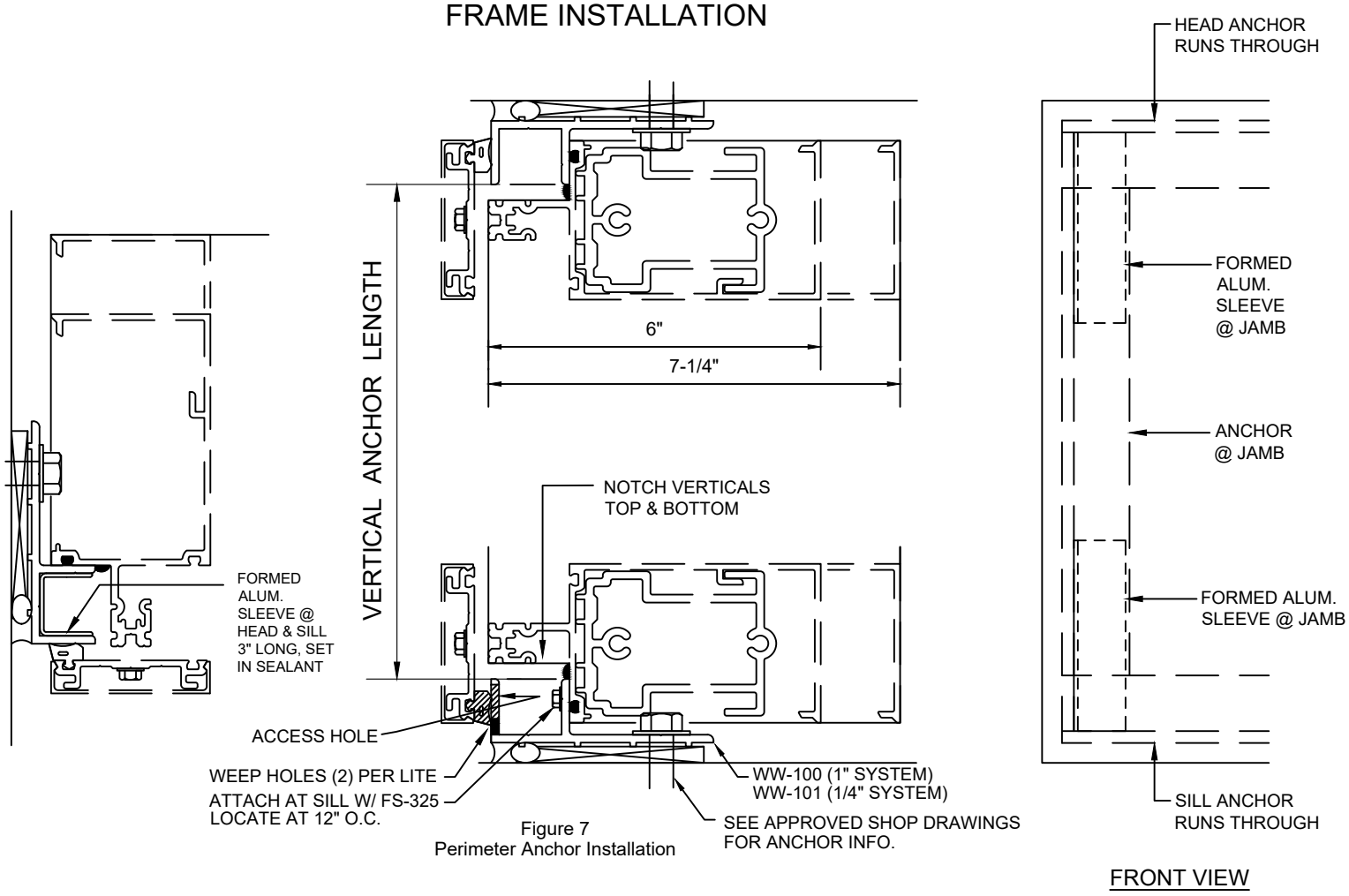


Figure 7
Perimeter Anchor Installation

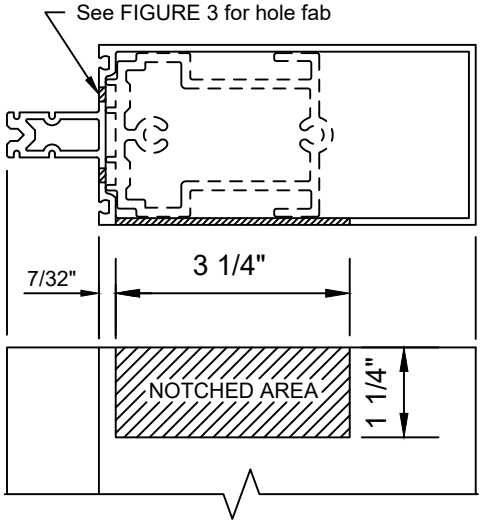


Figure 8
Last Bay Horizontal Notch

NOTE: If roll-over horizontals are used, all vertical mullions can be installed first. If tubular horizontals are used, the wall must be stick erected. Last bay tubular horizontals must be notched . See FIGURE 6. Option: Use roll over horizontals at last bay to avoid notch.

FRAME INSTALLATION

TWIN SPAN INSTALLATION:

2.1.4 Attach shear blocks to all vertical members. SEE FIGURE 6 for proper orientation on mullion. For installations using the shear block anchors, attach to head and sill shear block. NOTE: Depending on the end reactions, either the shear block anchor or tee anchors can be used to anchor the wall. See page 13 for shear block anchor load capacity.

2.1.5 When using tee anchors, slide tee anchors into top and bottom of vertical mullions. The tee anchors are designed to clear the shear block fasteners. Prior to installation, when using jamb "F" anchor, install (2) FS-55 (#10 x 1/2" PPH) fasteners at each end of mullion to center F anchor in vertical. SEE FIGURE 9 BELOW.

2.1.6 Install verticals plumb and level, ensuring proper spacing out from floor slab or beam.
Shear Block Anchor Method: Place shims under vertical mullion and anchor at sill to evenly distribute deadload from wall. Anchor top and bottom of mullions to structure.
Tee Anchor Method: Place shims under vertical mullion (tee anchor is set on building condition) and anchor at sill to evenly distribute deadload from wall. Anchor top and bottom of mullions to structure.

NOTE: If roll-over horizontals are used, all vertical mullions can be installed first. If tubular horizontals are used, the wall must be stick erected. Last bay tubular horizontals must be notched. SEE FIGURE 6. Option: Use roll-over horizontals at last bay to avoid notch.

2.1.7 Anchor the mullion to floor slab or beam. See page 17. Do not overtighten bolt(s). For expansion anchors, back off nut ¼ turn and stake bolt.

2.1.8 Check D.L.O. every four bays to ensure correct spacing and prevent dimensional buildup.

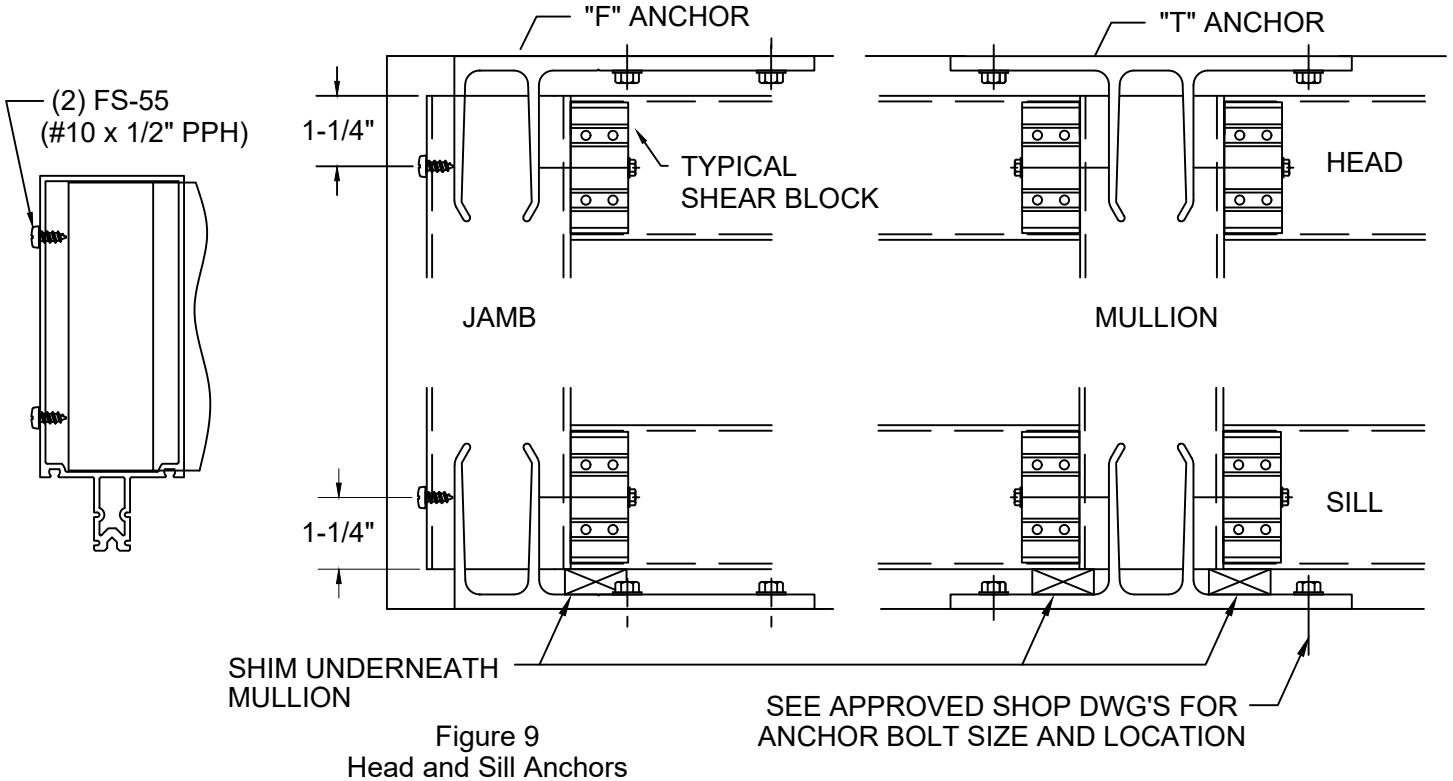


Figure 9
Head and Sill Anchors

FRAME INSTALLATION

MULTI-SPAN INSTALLATION:

2.1.9 Install tee anchors at the sill condition prior to setting mullions. Each tee anchor must be anchored with a minimum of two anchor bolts. See approved shop drawings for bolt size and location.

2.1.10 Attach shear blocks to all vertical members. SEE FIGURE 2 for proper orientation on mullion.

2.1.11 Install lower verticals plumb and level, ensuring proper spacing out from floor slab or beam. Place shims under vertical mullion at sill to evenly distribute deadload from wall. NOTE: If roll-over horizontals are used, all vertical mullions can be installed first. If tubular horizontals are used, the wall must be stick erected. Last bay tubular horizontals must be notched. SEE FIGURE 8, page 12. Option: Use roll-over horizontals at last bay to avoid notch.

2.1.12 Anchor the mullion to floor slab or beam. See FIGURE 10, page 17. Do not overtighten bolt(s).

2.1.13 Repeat steps 2.1.11 and 2.1.12 until all lower verticals are in place. Check the D.L.O. every four bays to ensure correct spacing and prevent dimensional buildup.

2.1.14 Install the next vertical above, temporarily shimming between verticals to maintain proper splice joints (refer to approved shop drawings). See FIGURE 11, page 18.

2.1.15 Slide tee anchors into top of upper-most mullions. The tee anchors are designed to clear the shear block fasteners. See FIGURE 9, page 14. Attach tee anchor to building condition.

2.1.16 When the wall is set, remove shims between vertical mullions at splices, back off nut 1/4 turn at expansion anchors and stake bolts.

Continue with step 2.2 for remaining installation after all verticals have been erected.

2.2 SEE FIGURE 12, page 18 as a guide for horizontal layout. Seal around shear blocks prior to installing each horizontal mullion. Install horizontal mullions as shown in FIGURE 12, PAGE 19. Prior to attaching screws, make sure sealant has been forced out of the holes in horizontal. If not, apply a liberal amount of sealant into each hole. Secure horizontals to shear block with two (2) FS-115 #10 x 1” Phillips Pan Head screw at each end of horizontal. Check head of screw to insure proper seal.

2.3 If applicable, install cover plates for roll-over horizontals.

2.4 Wipe excess sealant from exposed areas. Tool sealant into the joint between the horizontal and vertical at the glazing pocket. Avoid a buildup of sealant on the gasket surfaces or in the gasket reglets. TIP: Use a short piece of interior glazing gasket to clean out excess sealant in glazing reglets. Also wipe excess sealant away from the horizontal filler snap areas on roll-over horizontals.

2.5 Apply sealant to all contact surfaces on vertical and horizontal mullions where zone plugs will be installed. 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 spacer abuts the zone plug. Tool sealant in the glazing pockets to ensure a watertight fit. SEE FIGURE 14, page 21.

2.6 When all framing members are installed, apply the perimeter seal. SEE FIGURE 15, page 22. The interior perimeter seal is not required for system performance, but can be installed for cosmetic purposes. Perimeter sealing must be completed prior to glazing.

FLOOR SLAB ANCHOR

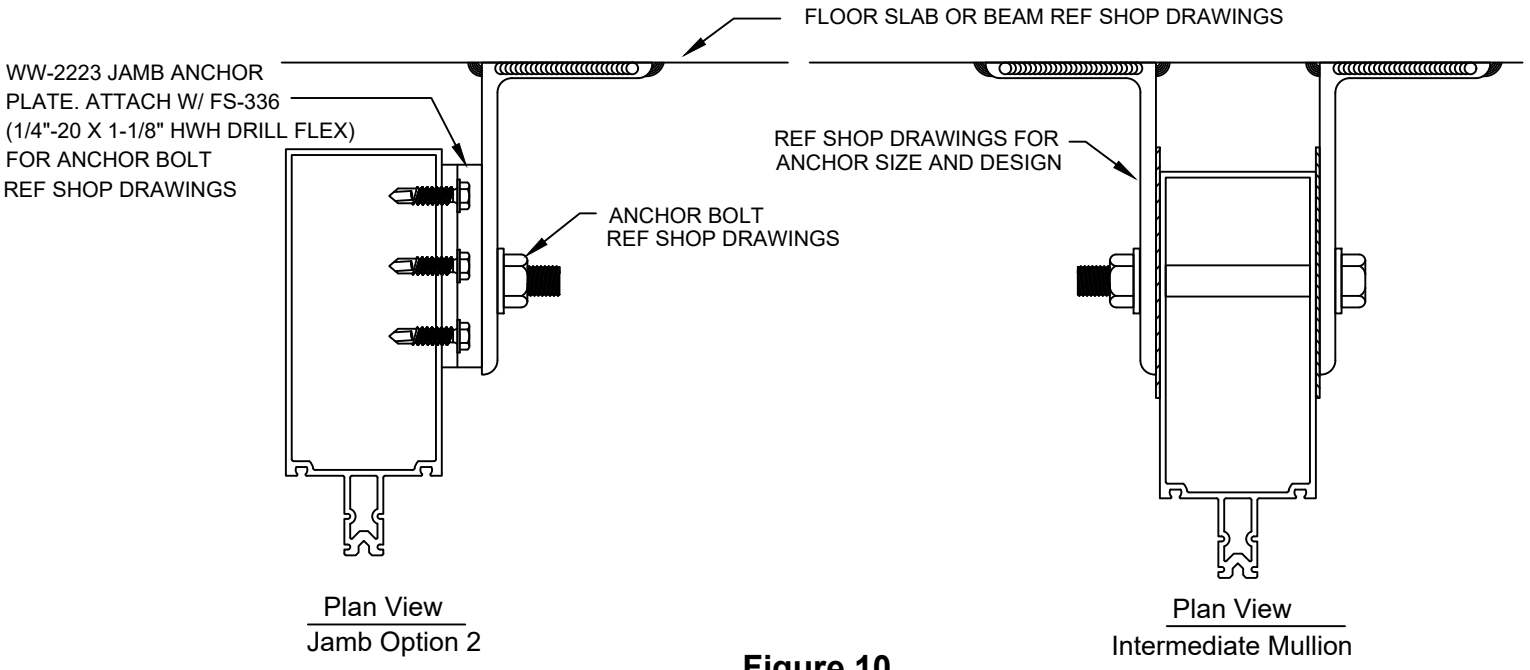
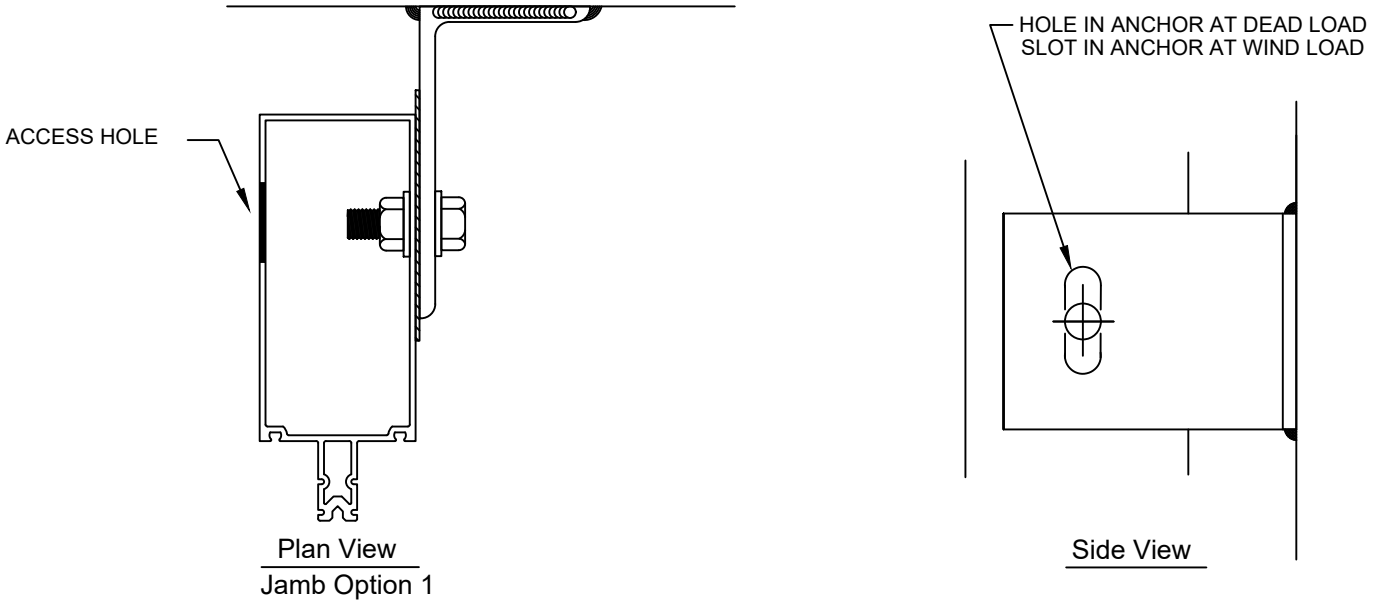


Figure 10
Floor Slab Anchor Details



VERTICAL SPLICE DETAIL

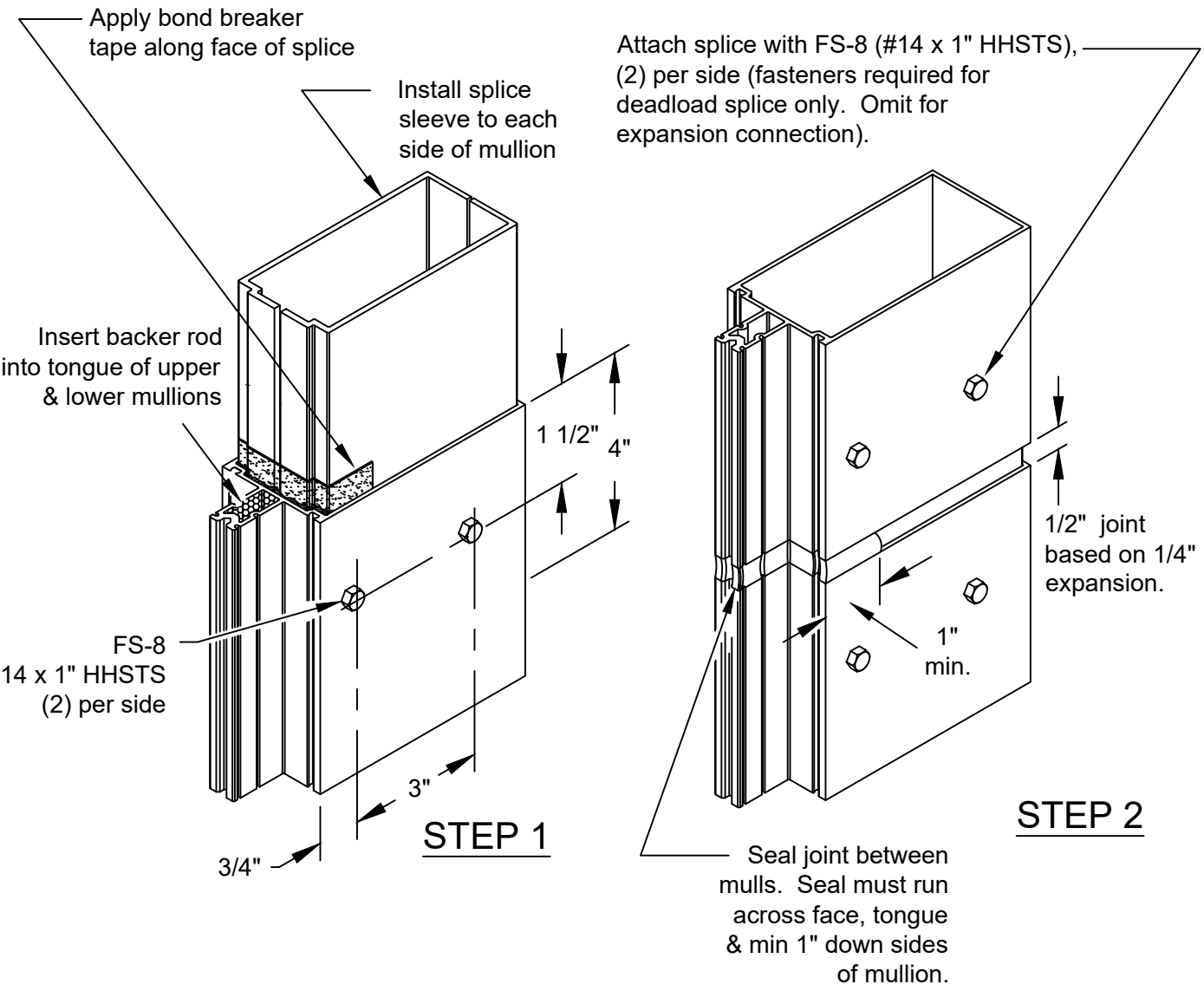
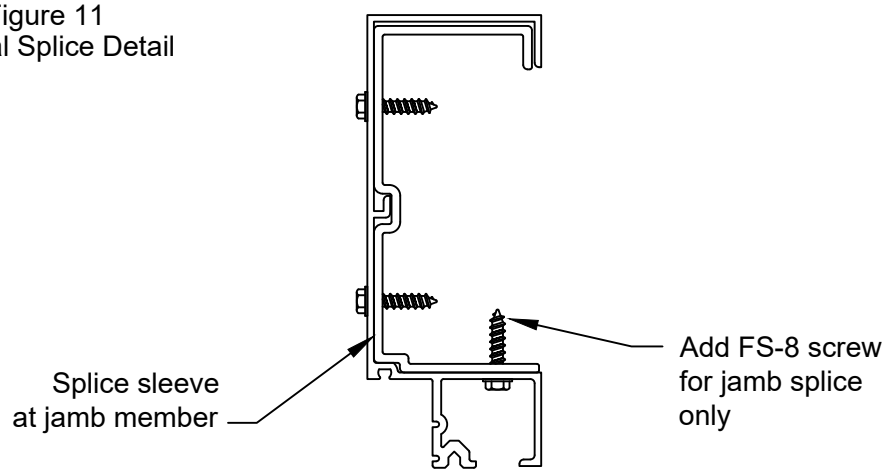
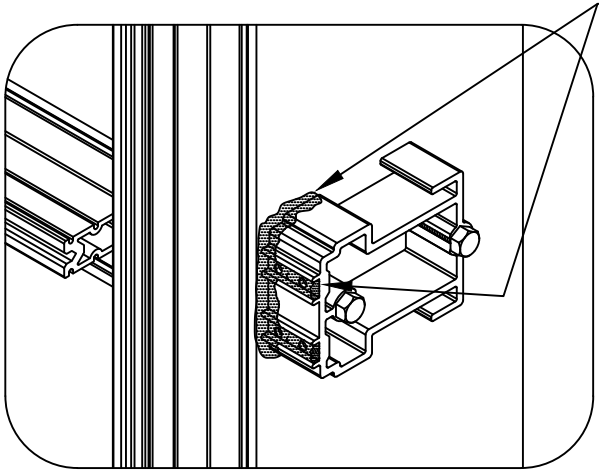


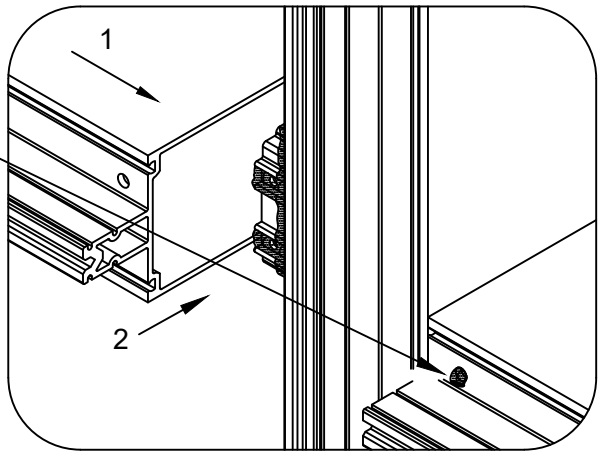
Figure 11
Vertical Splice Detail



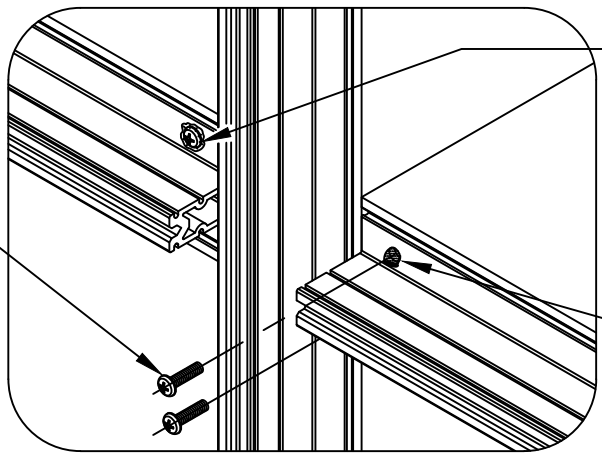
SHEAR BLOCK SEALING



Seal face, top, bottom, and screw tracks of shear blocks.



To install horizontals, slide in front of shear block (1), then push back into position (2). This will force sealant through attachment holes in horizontal.



FS-115 (2) per shear block

Sealant should form a seal around and beneath attachment fastener. If sealant does not form complete seal around screw head, the fastener should be cap sealed to insure a proper seal.

Adequate sealant should be applied in track of shear block to allow sealant to force through holes in horizontal.

Figure 12
Shear Block Sealing

HORIZONTAL LAYOUT

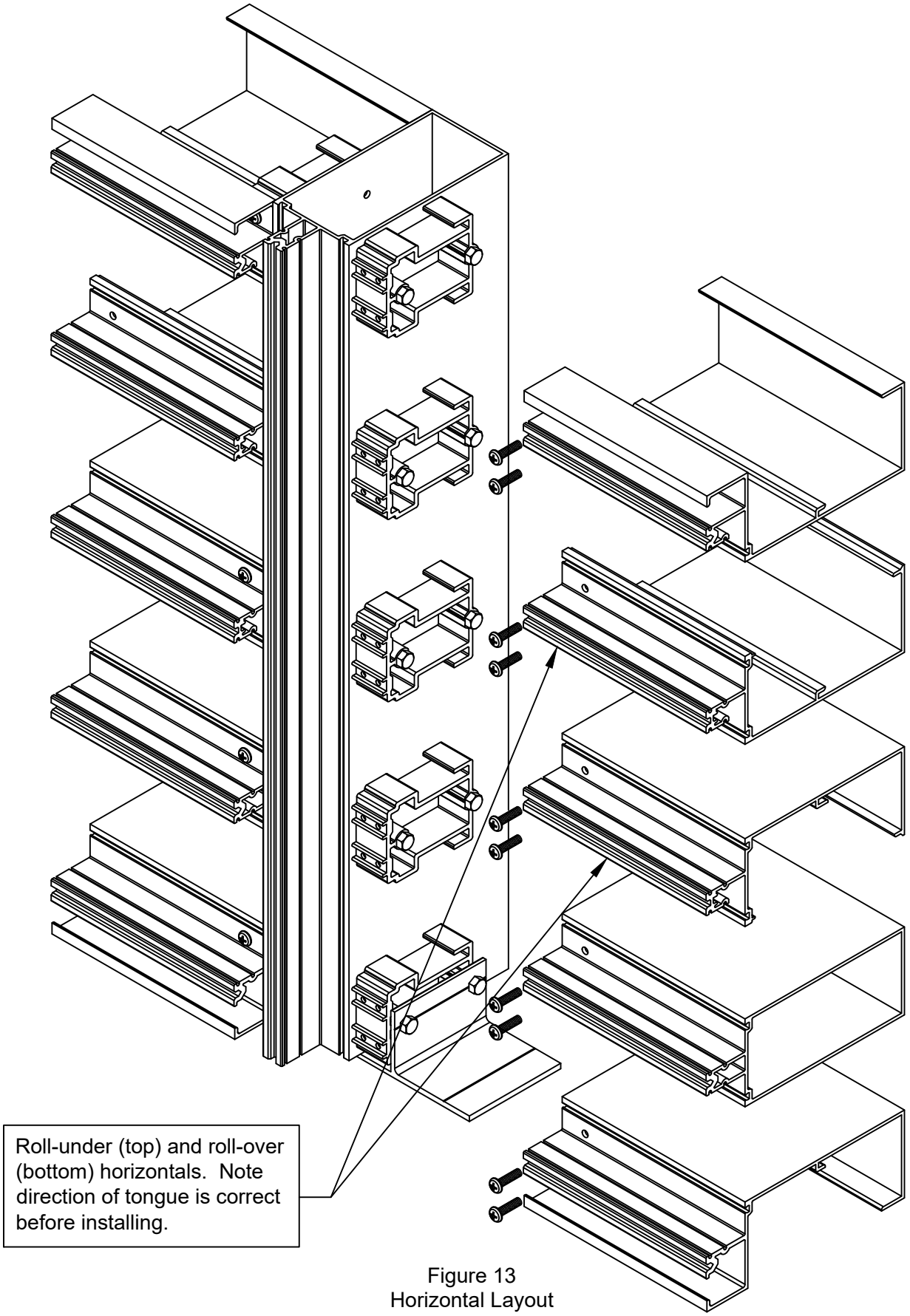


Figure 13
Horizontal Layout

ZONE PLUG INSTALLATION

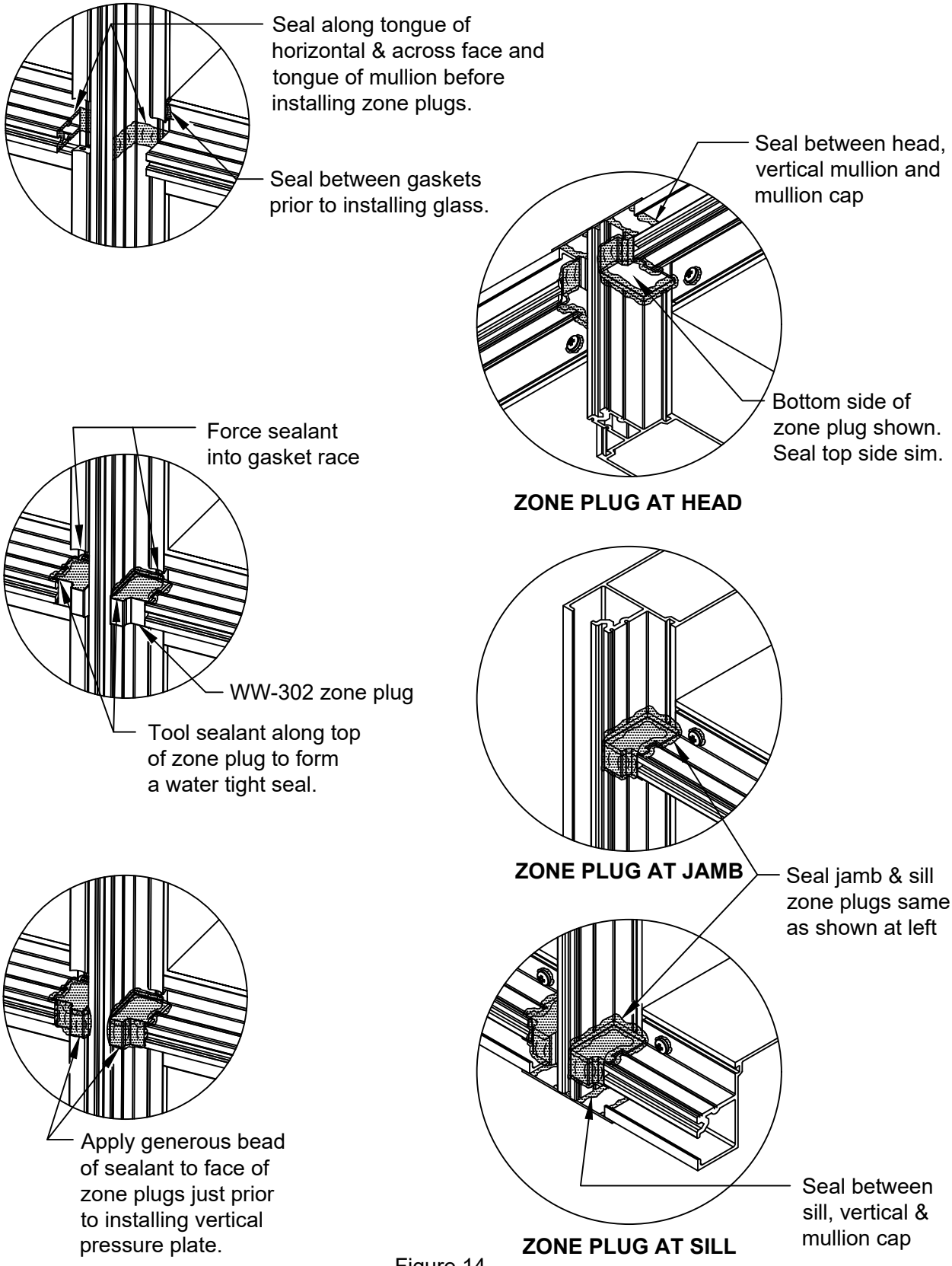


Figure 14
Zone Plug Installation

ZONE BRIDGE INSTALLATION / PERIMETER SEAL

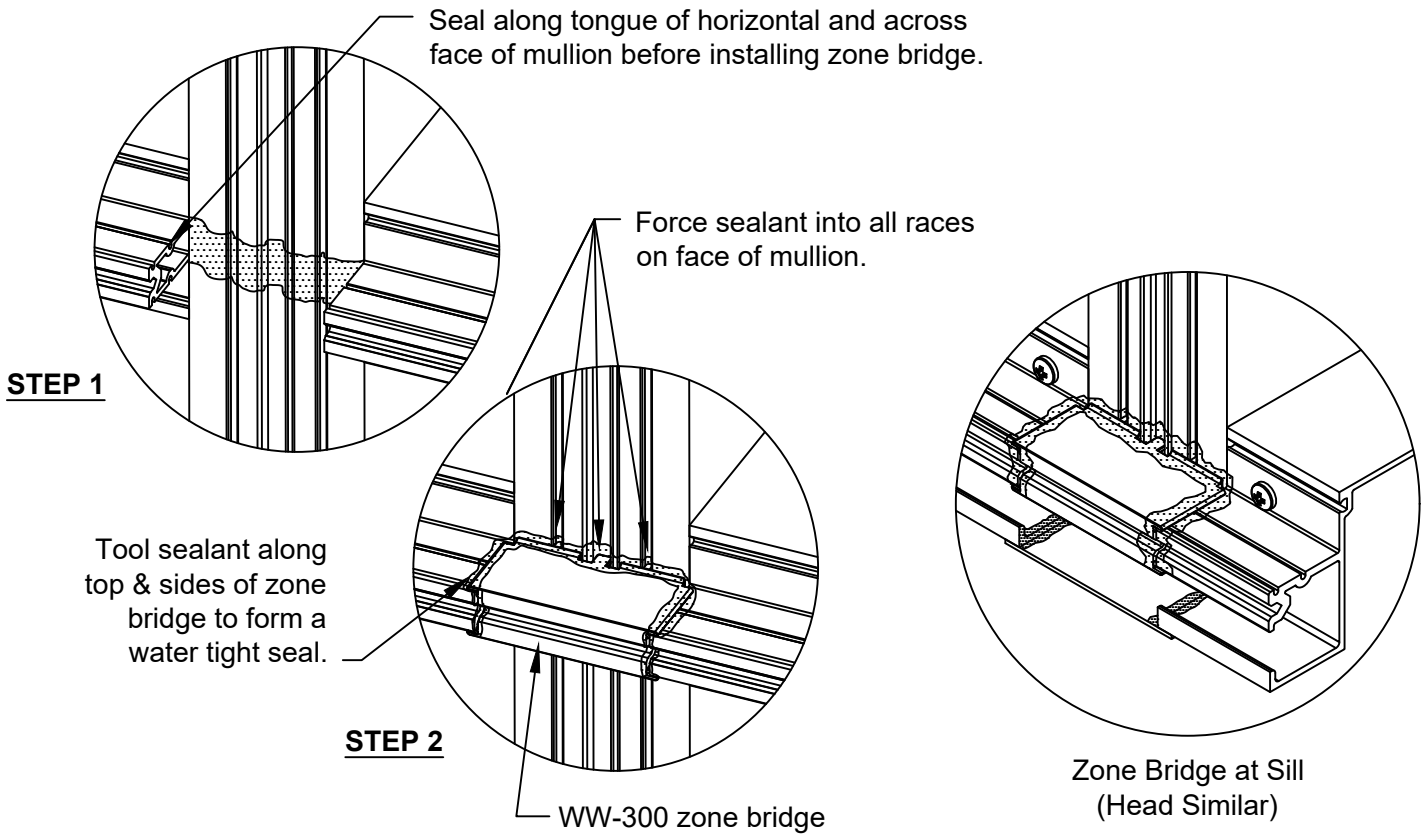


Figure 14 (continued)
Zone Bridge Installation

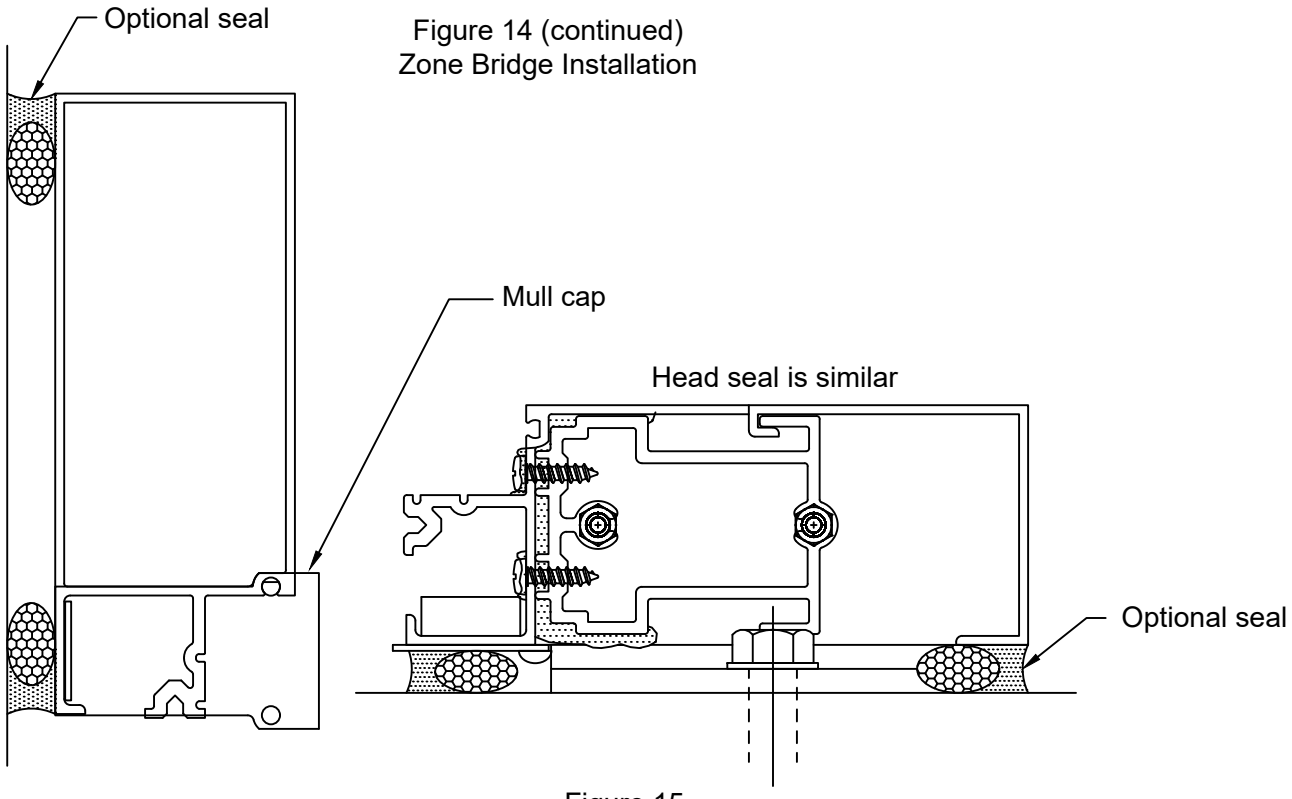
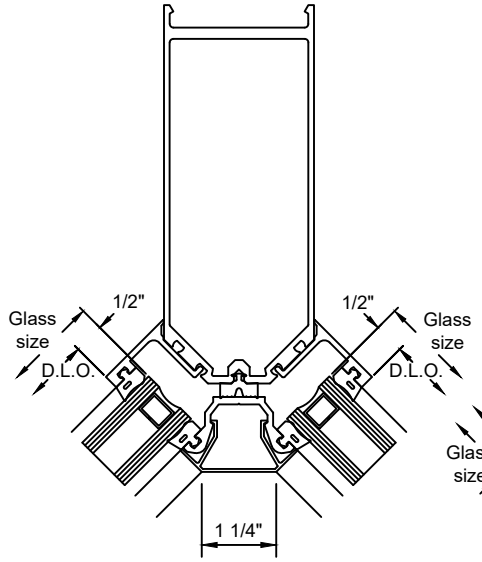


Figure 15
Perimeter Seal

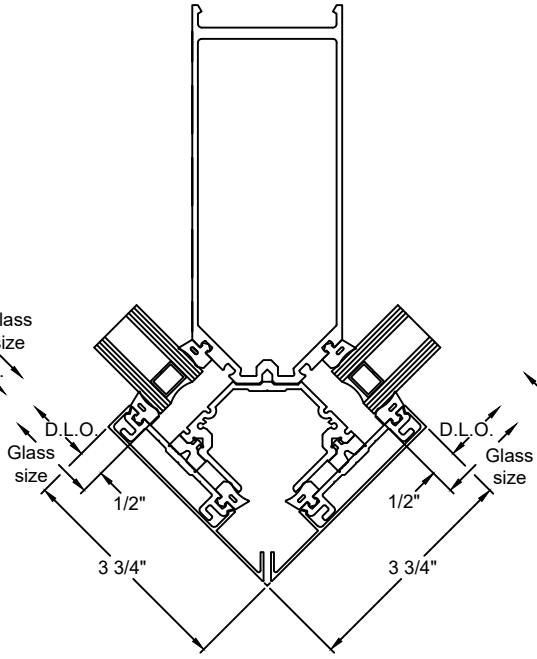
GLASS CALCULATIONS AT CORNERS

GLASS SIZE CALCULATION =
D.L.O. plus 1” for WIDTH & HEIGHT at Captured System
D.L.O. plus 2” for WIDTH at SSG System (Verticals Only)
SEE FIGURE 16 for calculation at corner mullions

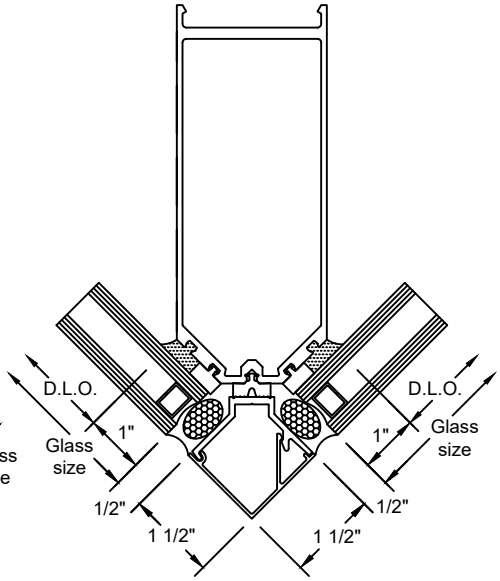
Note: Steps 3.1 through 3.16 refer to standard glazing of 1” infill. For openings requiring transition glazing with adaptors, refer to “TRANSITION GLAZING”, page 31-32.



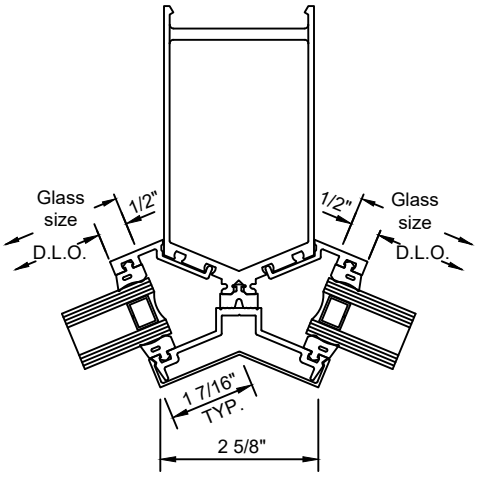
I.S. 90 - CAPTURED



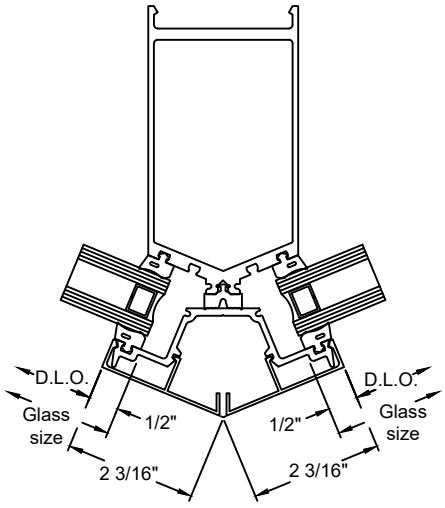
O.S. 90 - CAPTURED



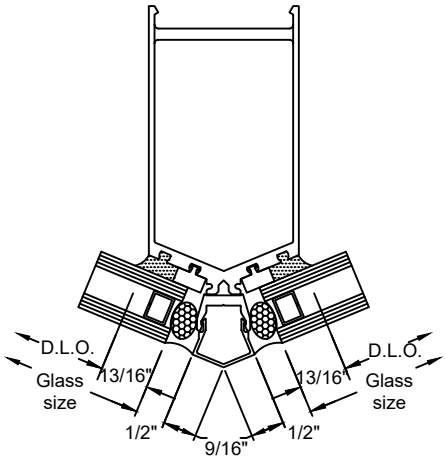
O.S. 90 - SSG



I.S. 135 - CAPTURED



O.S. 135 - CAPTURED



O.S. 135 - SSG

Figure 16
Glass Size Calculation at Corners
SOME PARTS NOT SHOWN FOR CLARITY

THERMAL ISOLATOR INSTALLATION

3.1 Install face gaskets into all pressure plates. Install silicone spacer gaskets into the SSG mullions. Crowd all gaskets into members to avoid gaps caused by relaxation of gasket material.

3.2 Install thermal spacer into groove on face of mullion tongues. Run through at vertical splice joints. Cut short 1/8” from each end of the mullion. SEE FIGURE 17.

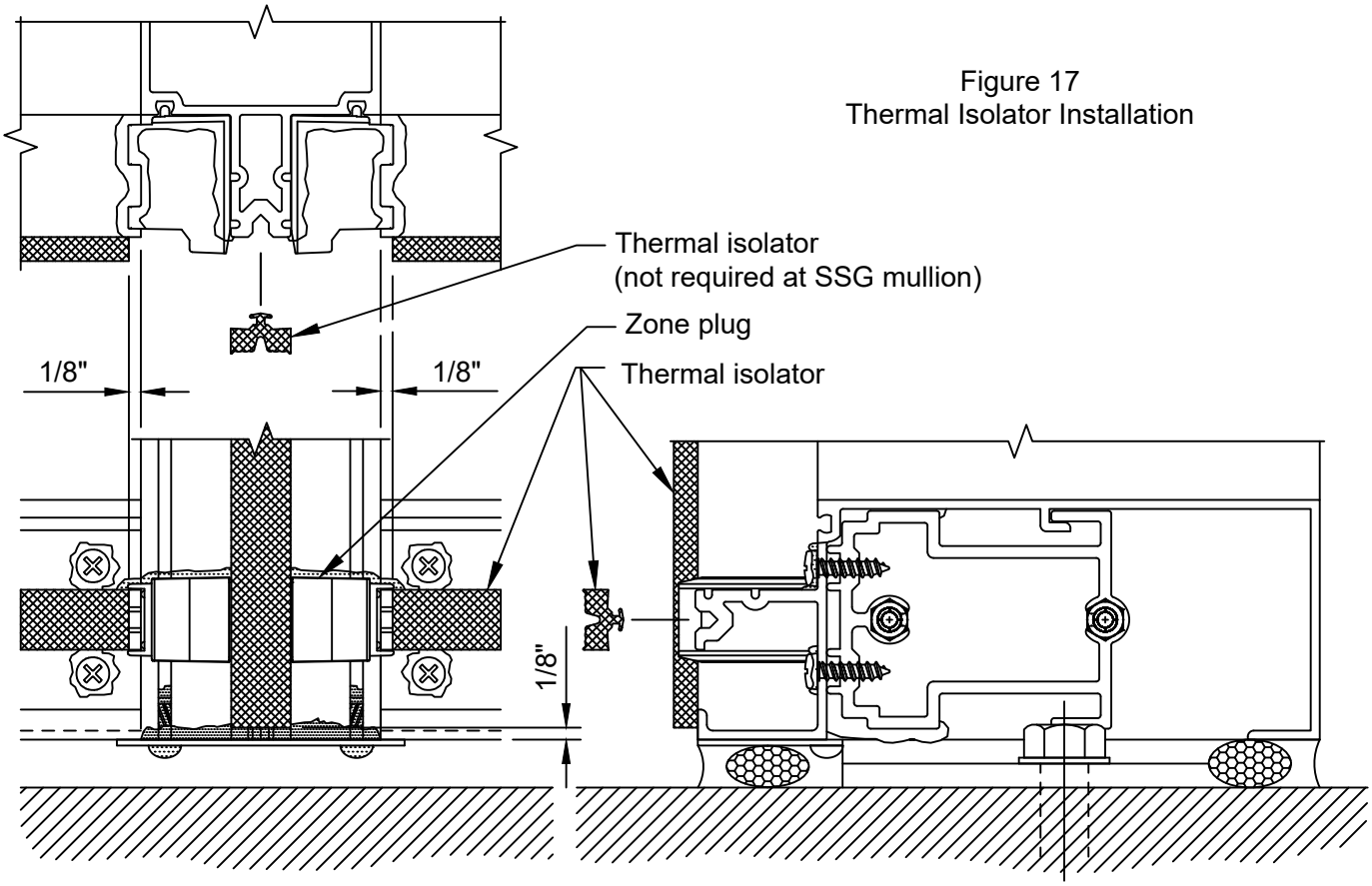


Figure 17
Thermal Isolator Installation

3.3 Note: To avoid silicone curing before glass is set in place and contamination from job-site debris, glazing prep 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.

- Install interior gaskets into back member (vertical gaskets first). If mullion is spliced, run gasket through the splice joint, setting in fresh silicone at the joint. Trim the gasket dart as required to form an air tight seal. (Glazing gaskets at verticals run through; horizontal gaskets butt into the vertical gaskets.
- 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 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 an SSG mullion. This gap will be sealed during application of structural silicone.

3.4 Position setting blocks at correct location (two per lite). Refer to approved shop drawings or deadload charts. Lubricating the top of setting blocks with glass cleaner or soapy water 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.

GLAZING INSTRUCTIONS

3.5 Set glass in opening. Ensure that correct glass bite is maintained on all sides. CAUTION
Be certain that glass is placed firmly against interior gasket to ensure a proper seal and to avoid binding of the glass on the setting block.
(Captured glass bite = 1/2", SSG mullion = 1", Reference shop drawings for custom conditions.)

3.6 Temporarily hold glass in the opening with WW-333 temporary glazing retainers & FS-325 screw (FS-322 for ¼" infill). Use SPW-PP-3 retainer for SSG verticals. Torque the FS-325 screw to 60 in-lbs.

- WW-333 temporary glazing retainers must be applied at each glass edge 3" from the corner (minimum of 8 per lite). 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 FIGURE 18 & 19.

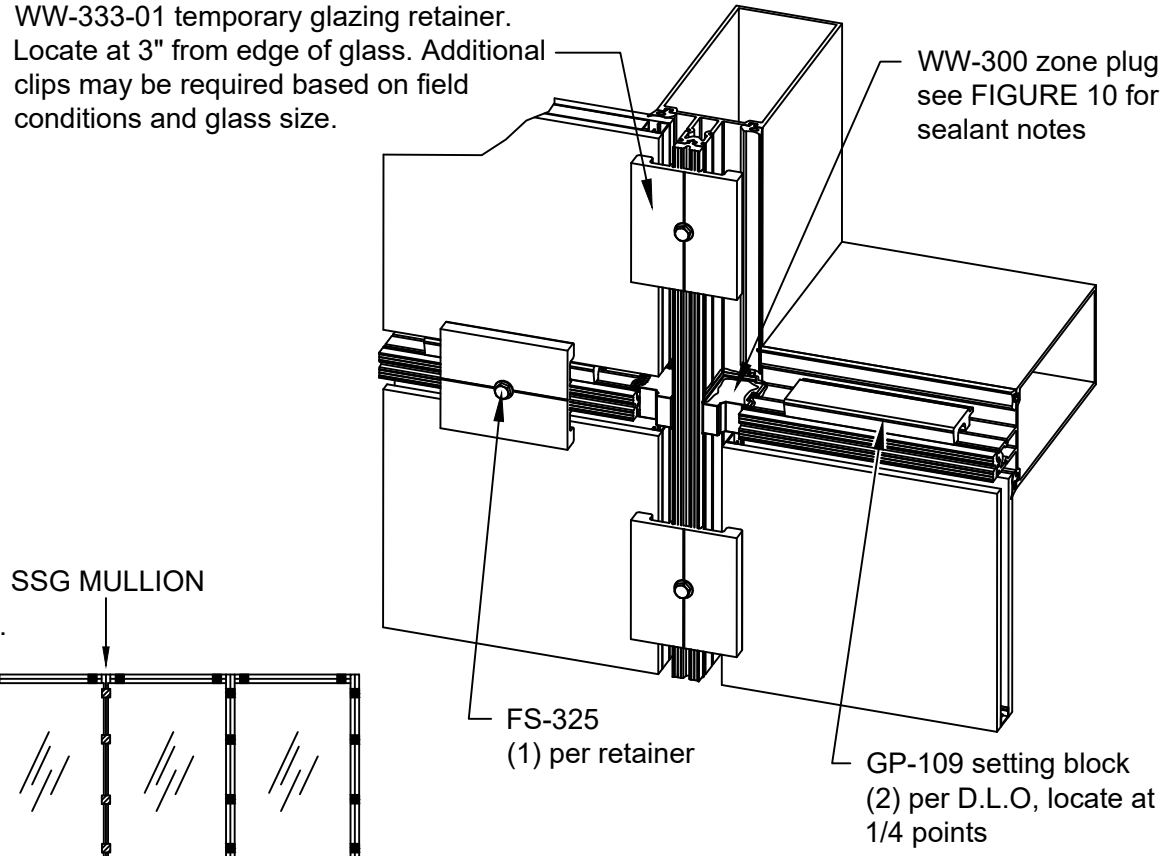


Figure 18
Glazing Instructions

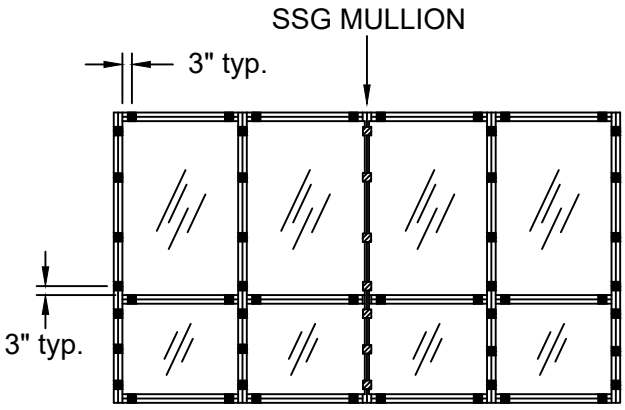


Figure 19
Typical Location of
Temporary Glazing Retainers

SEALING PRESSURE PLATES

3.7 If required, install GP-111 (1”) or GP-112 (1/4”) side blocks with silicone at centerline of each lite of glass, 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.

3.8 Repeat steps 3.3 through 3.7 until all glass is set, working row by row up the elevation.

For elevations requiring vertical mullion splices, refer to the VERTICAL SPLICING section, page 33-34, before continuing the installation.

3.9 Prior to installing vertical pressure plates, apply sealant to the face of each horizontal zone plug. SEE FIGURE 20. Vertical pressure plates must be installed before the horizontal pressure plates are applied.

FS-325 (1”) or FS-322 (1/4”) pressure plate fasteners must be located 1 1/2” from horizontal/vertical mullion intersections in order to maintain proper compression on the glass. Drill 7/32” holes in pressure plates as required.

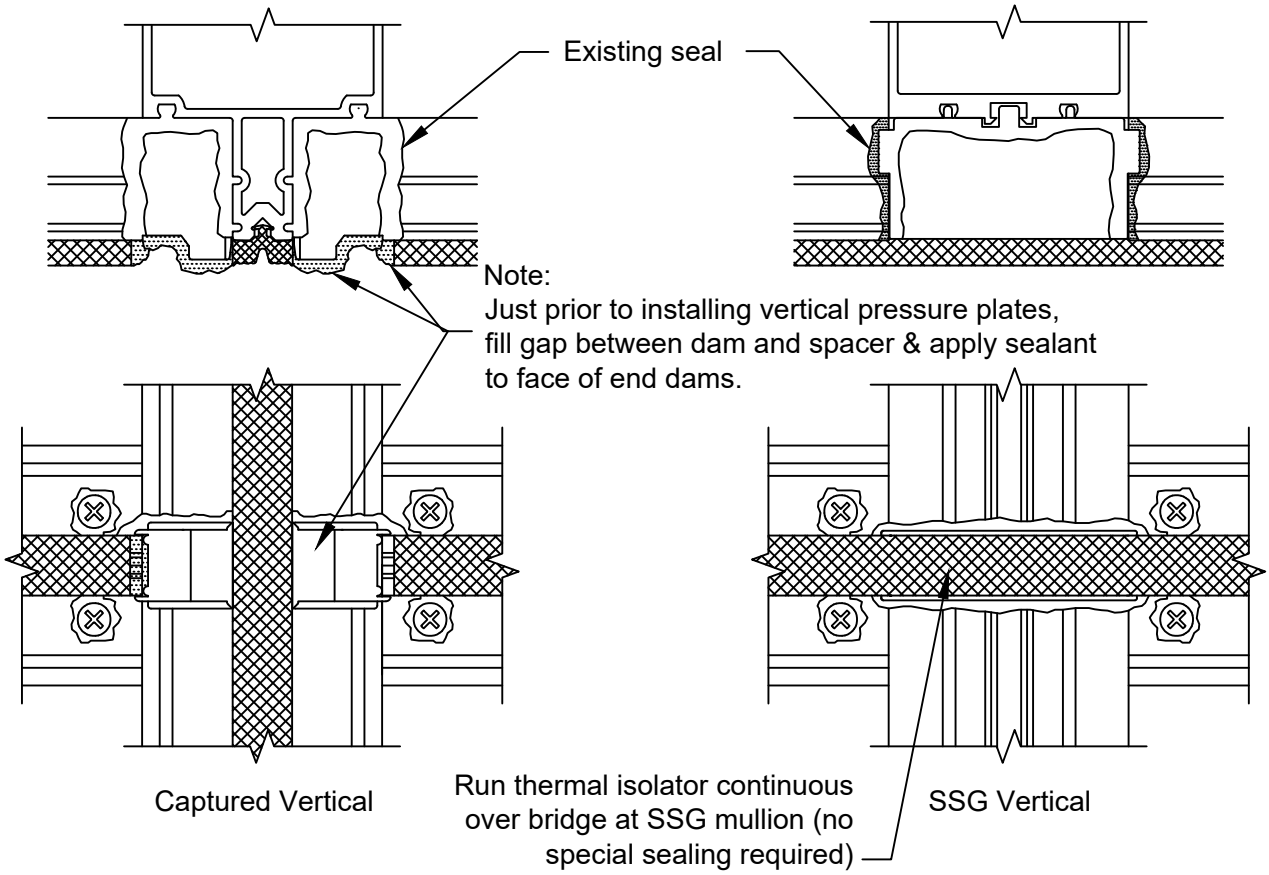


Figure 20
Sealing for Pressure Plates

3.10 After removing vertical temporary retainers, install vertical pressure plates with FS-325 (1”) or FS-322 (1/4”) screws, holding back 1/8” from the ends of the vertical mullion.

3.11 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. **NOTE: Horizontal pressure plates and face covers run continuous over SSG mullions, not to exceed 3 lites in length. Apply face cap to continuous pressure plates only. Do not span face cap over discontinuous/separate pressure plates. SEE FIGURE 21, page 27 for splicing and sealing instructions.**

PRESSURE PLATE & FACE CAP SPLICE

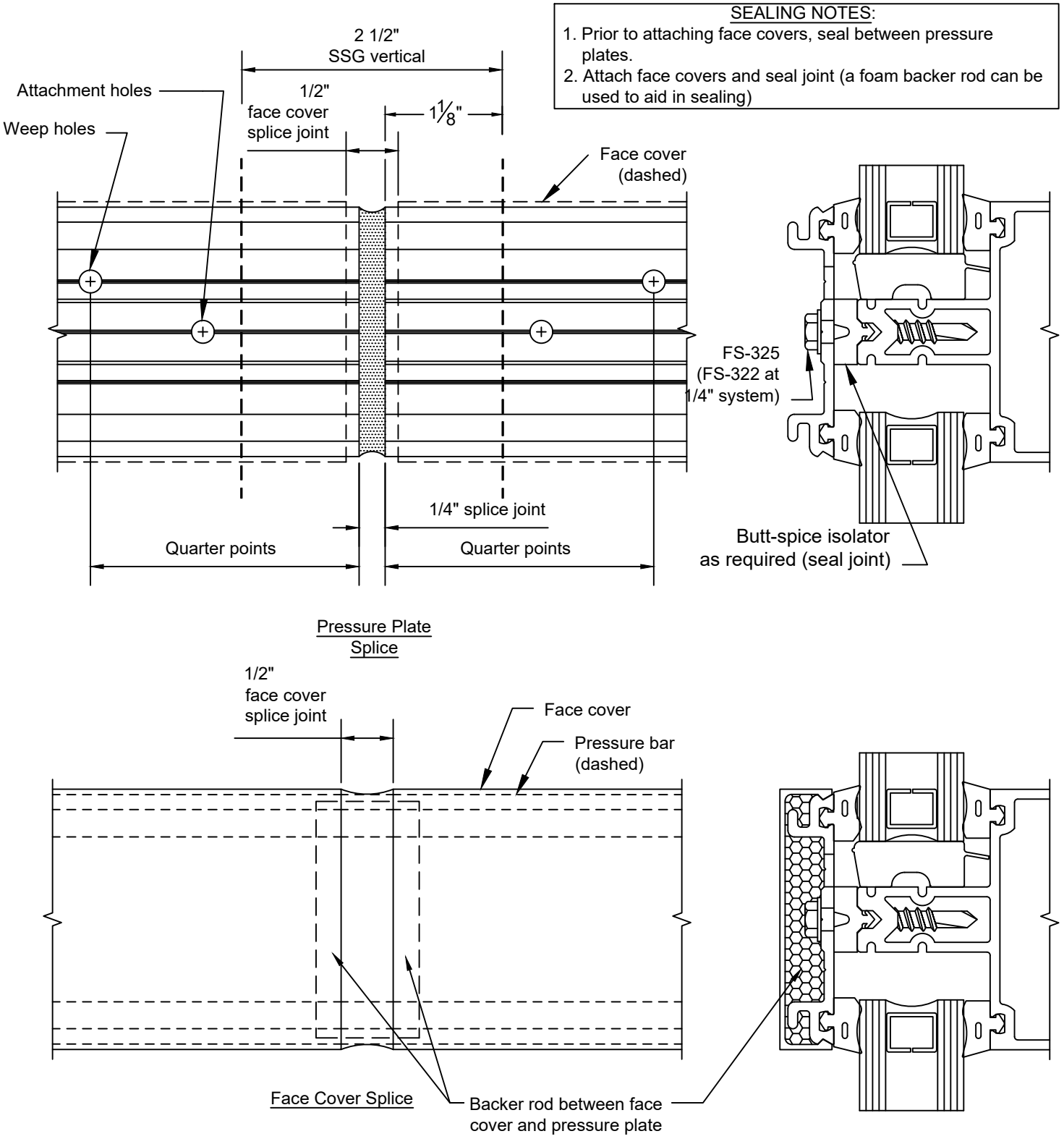


Figure 21
Pressure Plate/Face Cover Splicing & Sealing at SSG Mullions
(Intermediate Horizontal Shown; Head & Sill Similar)

SEALING TOP OF VERTICAL

3.12 After all pressure plates are installed on the frame, torque FS-325 (1”) or FS-322 (1/4”) 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 will affect the torque setting.

3.13 Install vertical face covers. Using a wood block to protect the cover, apply with dead blow soft face hammer. Pin the vertical face covers once per length as required, concealing pin at a horizontal location. (See page 29 for further information for fastening of covers.)

3.14 Insert backer rod into cavity at the top of each vertical mullion. Seal off end of vertical, sloping sealant back to marry with the perimeter seal. SEE FIGURE 22.

3.15 Seal horizontal pressure plates against the vertical face covers. Tool sealant into the joint. SEE FIGURE 23, page 28.

3.16 Install horizontal face covers, leaving an equal gap at each end. Make sure that the weep hole in the face cover is on the bottom.

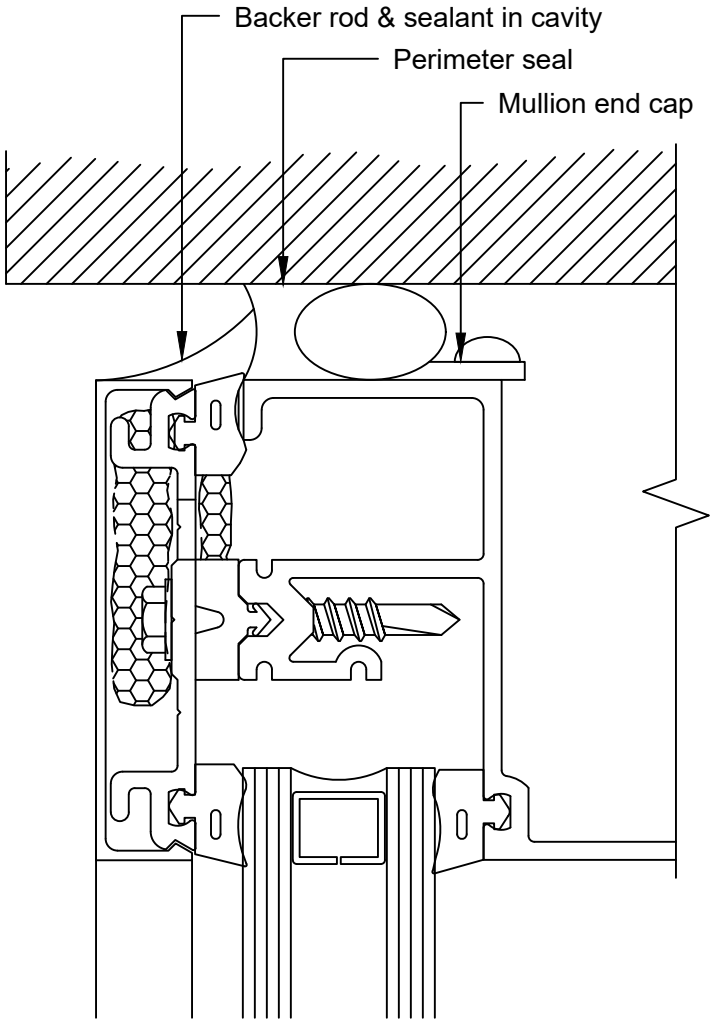
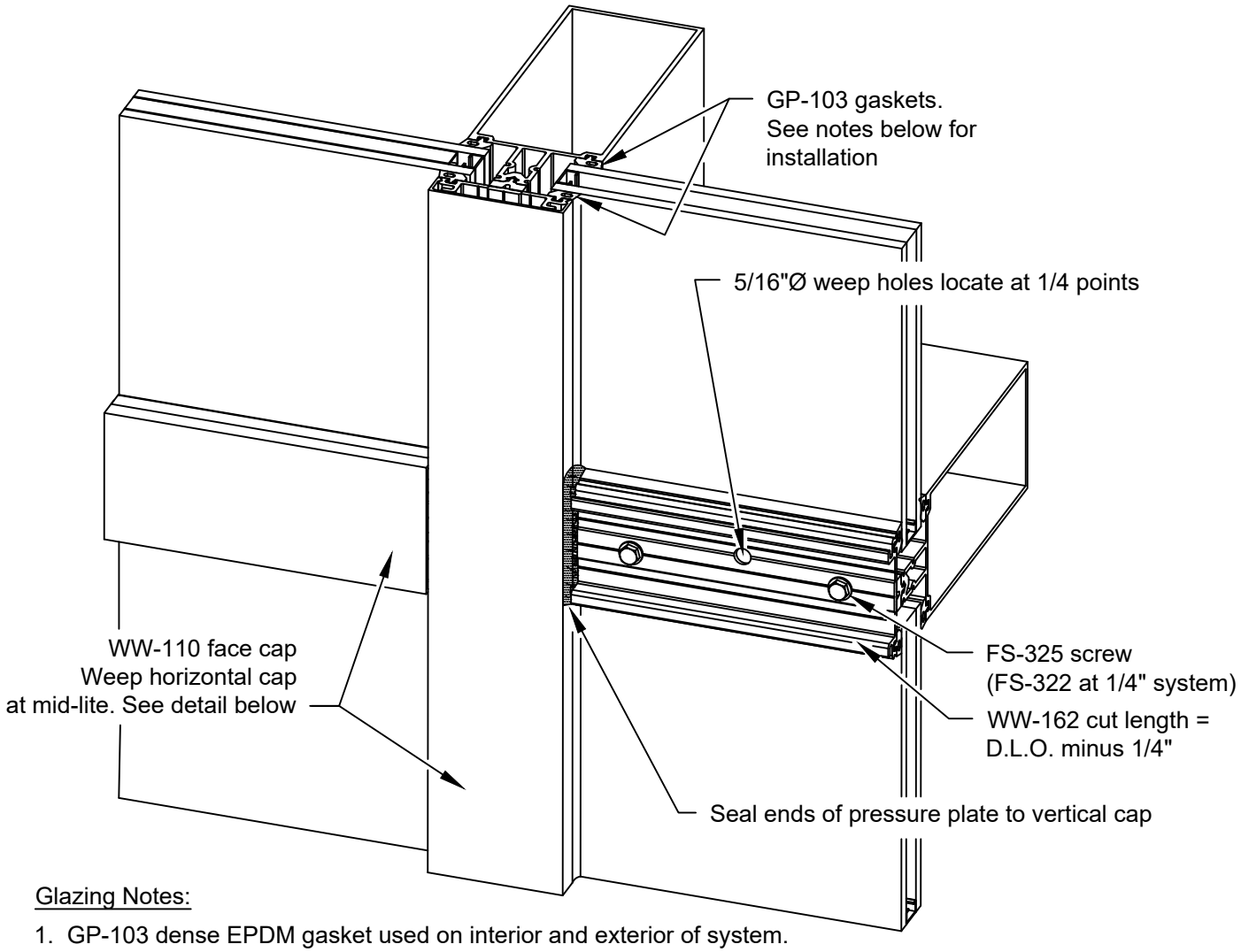


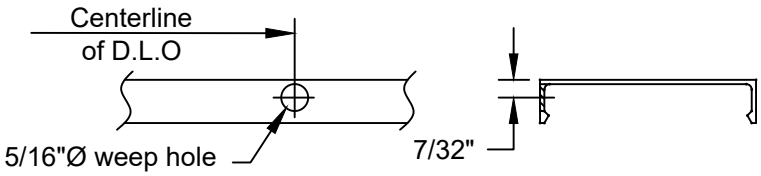
Figure 22
Sealing Top of Captured Verticals

GLAZING INSTRUCTIONS



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.
4. To ensure proper pressure on glazing, 7/32" diameter holes may be drilled at the ends of each horizontal pressure plate as required. Locate at 1 1/2" maximum from the ends.



Horizontal Face Cap Fabrication

Figure 23
Glazing Instructions

FACE CAP INSTALLATION

Vertical Face Covers:

The use of safety fasteners to mechanically fasten exterior face covers is required for all vertical covers which run through at the head and sill, and all covers, both vertical and horizontal with a depth greater than 3/4". Spacing of the safety fastener is dependent on cover depth, wind load, and snow and ice load conditions. For a standard depth vertical cover up to 14'-0" in length, a single fastener on one side of the cover should be sufficient. Location of the fastener in tthe center of the length is preferable, but not absolute. For aesthetics, it may be desirable to locate the fastener at a horizontal, so fastener is concealed underneath the horizontal face cover. For vertical covers which are 4" or greater in depth, two fasteners, one on each side of the cover, opposing each other, are required. Again, location of the fasteners in the center of the length is preferred but not absolute. For vertical covers which are 8" or greater in depth, multiple fasteners, placed on each side of the cover opposing each other, may be required. Harmonics caused by wind vibration must be considered, as well as lateral wind load on the cover itself, wind load deflection of the mullion and cover, and snow and ice load.

Horizontal Face Covers:

For a horizontal cover up to 8'-0" in length and up to 4" deep, a single fastener located at the center of the length on the top side of the cover should be sufficient. Location of the horizontal fasteners on the top side is the best practice. For horizontal covers greater than 8'-0" or deeper than 4", multiple fasteners may be required. Harmonics caused by wind vibration must be considered, as well as wind load deflection of the horizontal and cover, and snow and ice load.

See **FIGURE 24** below for three common pressure plate and face cap installations, other custom profiles may be used and attached following this method. Type 1 may be used up to 4" in depth. Type 2 and 3 are for caps 4" or greater, with type 3 being preferred for any cap or cap assembly greater than 8". All caps shown below will be attached using a (FS-317)1/8" x 3/4" S.S. Headed Roll Pin. Drill cap with a 1/8" (.125") clearance hole.

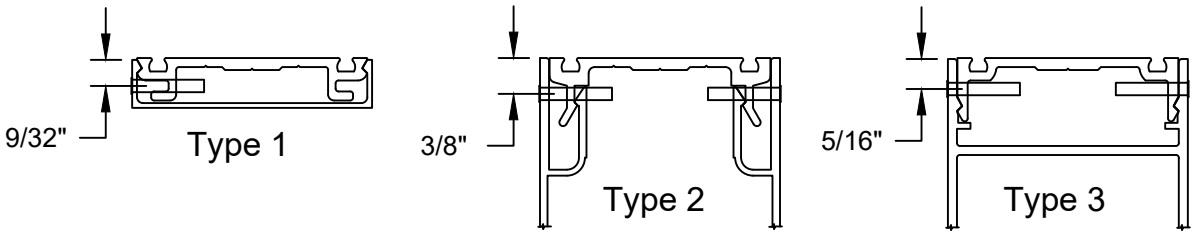


Figure 24
Face Cover Fabrication

INSTALLING GLAZING ADAPTORS

A.1 Install vertical adaptors first, leaving an equal overlap into each pocket. For captured verticals and all horizontals, insert the hook side into the glazing reglet, then insert leg into reveal on mullion. SEE FIGURE 25. Refer to VERTICAL SPLICING, page 34 & 3 5 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 locator leg into one of the glazing reglets. Secure to mullion with FS-318 #12 x 1 ¾" Phillips Flat Head screw 3" from the ends and 12" O.C. SEE FIGURE 25.

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 26. 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 opening and must marry with the seal at the horizontal to vertical adaptor joints. SEE FIGURE 27.

See page 32 for optional glazing thickness.

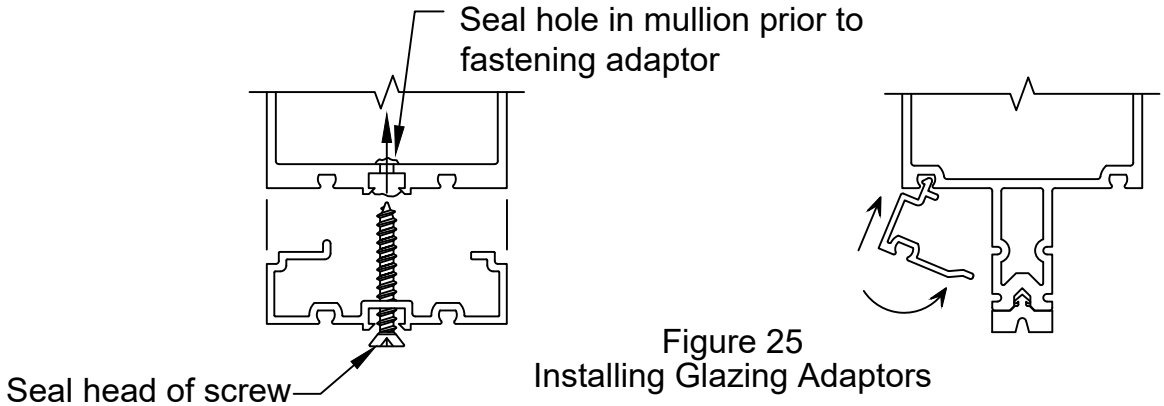


Figure 25
Installing Glazing Adaptors

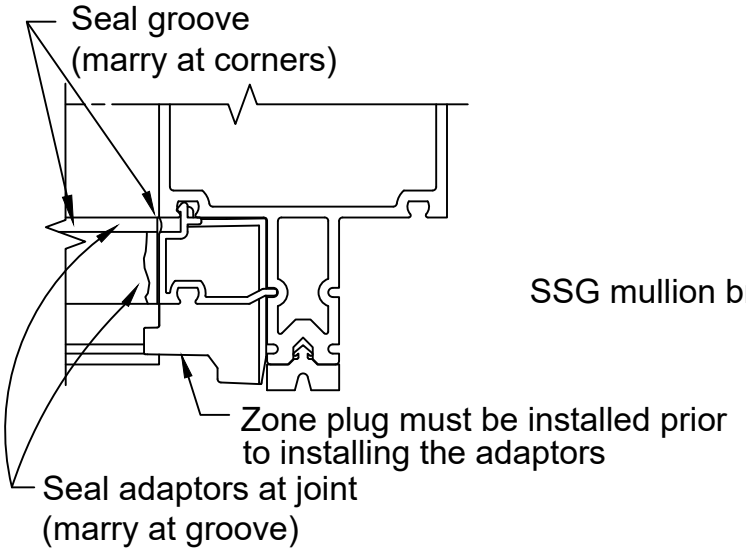


Figure 27
Sealing Glazing Adaptors
(Vertical Shown - Horizontal Similar)

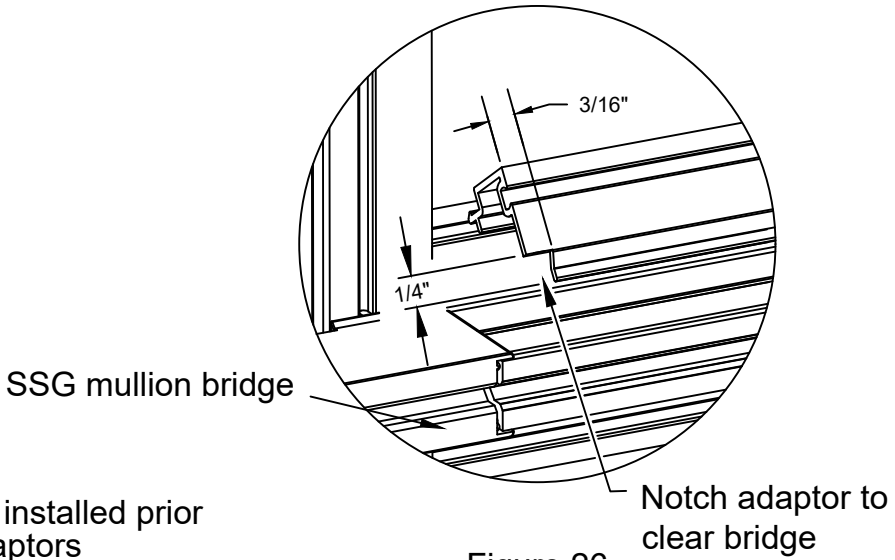
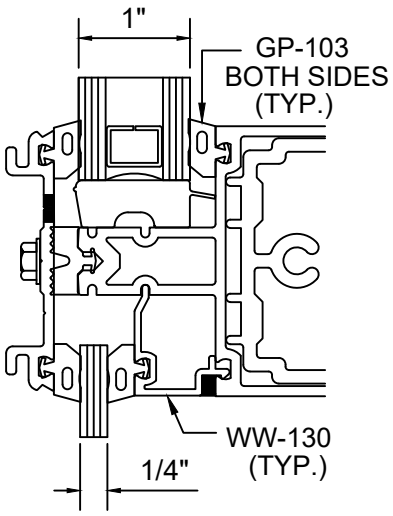
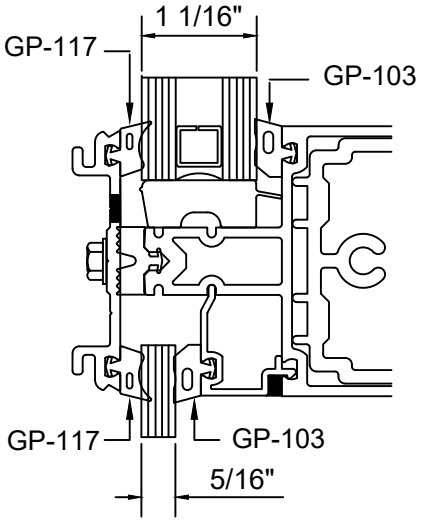
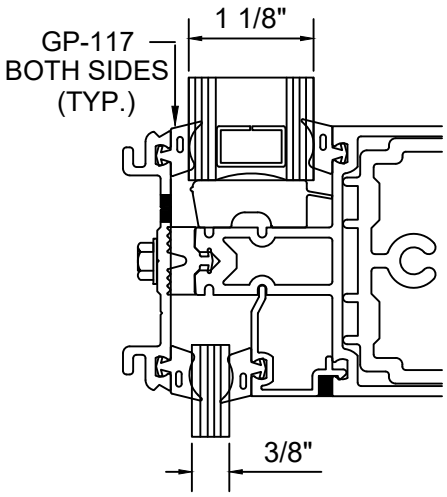


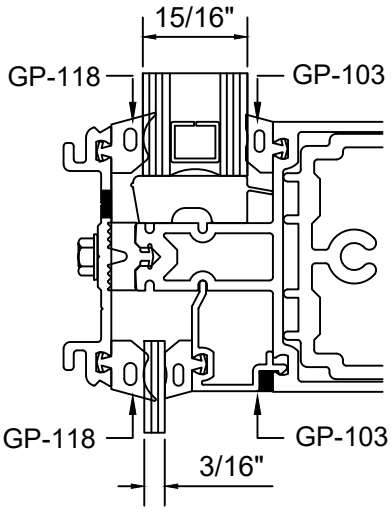
Figure 26
Notching Adaptor for
SSG Mullion Bridge

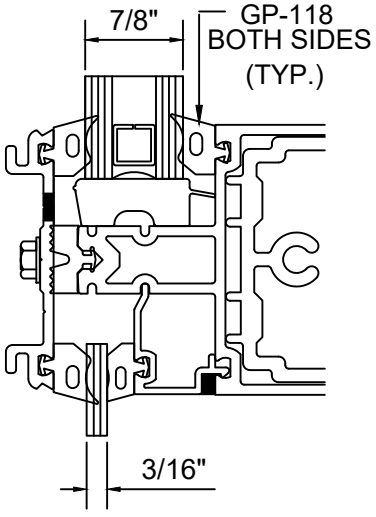
GLASS OPTIONS

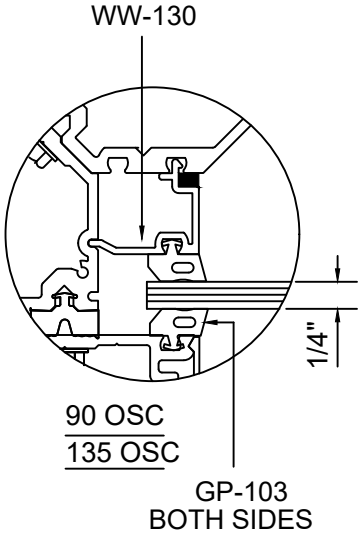




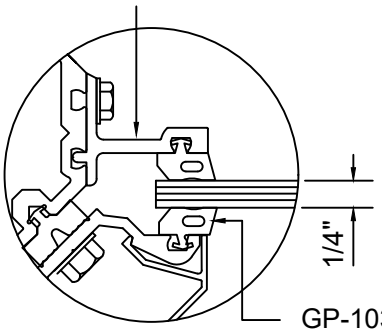






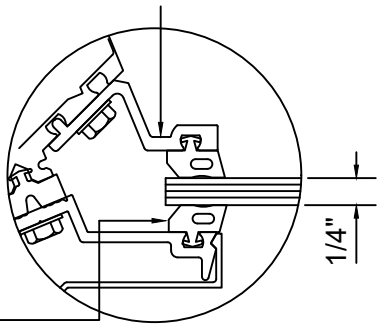


WW-140 GLAZING BEAD
W/FS-322 12" O.C.



90 ISC

WW-138 GLAZING BEAD
W/FS-322 12" O.C.



135 ISC

NOTE: 135° CORNER OPTIONS
NOT AVAILABLE AT 10" SYSTEM

1-1/2" GLASS POCKET

WW-162 PRESSURE PLATE w/ GP-107 ISOLATOR
(TYPICAL)

CAPTURED ADAPTOR AT SSG MULLION

A.4 When using WW-141 (WW-142 for 1/4" system) to create a captured opening using the SSG vertical mullion. The adaptor MUST be slid in place and fastened to mullion prior to erecting mullion.

A.5 The WW-141 (W-142) adaptor will be attached to mullion with a FS-318 (12 x 1-3/4" PFH). Location and spacing will be determined by Engineer's review.

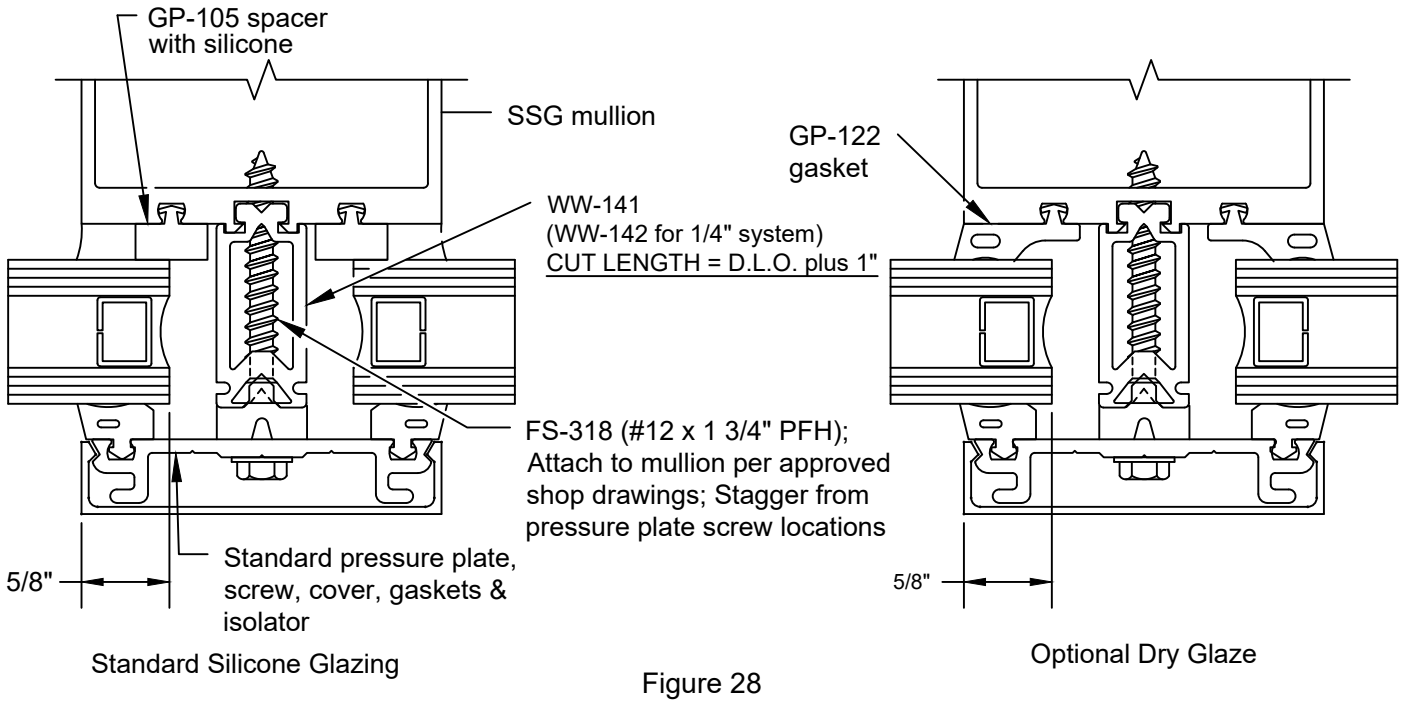


Figure 28
Captured Glazing Adaptor for SSG Mullion

Refer to **MULTI-SPAN INSTALLATION, page 6** for splice applications.

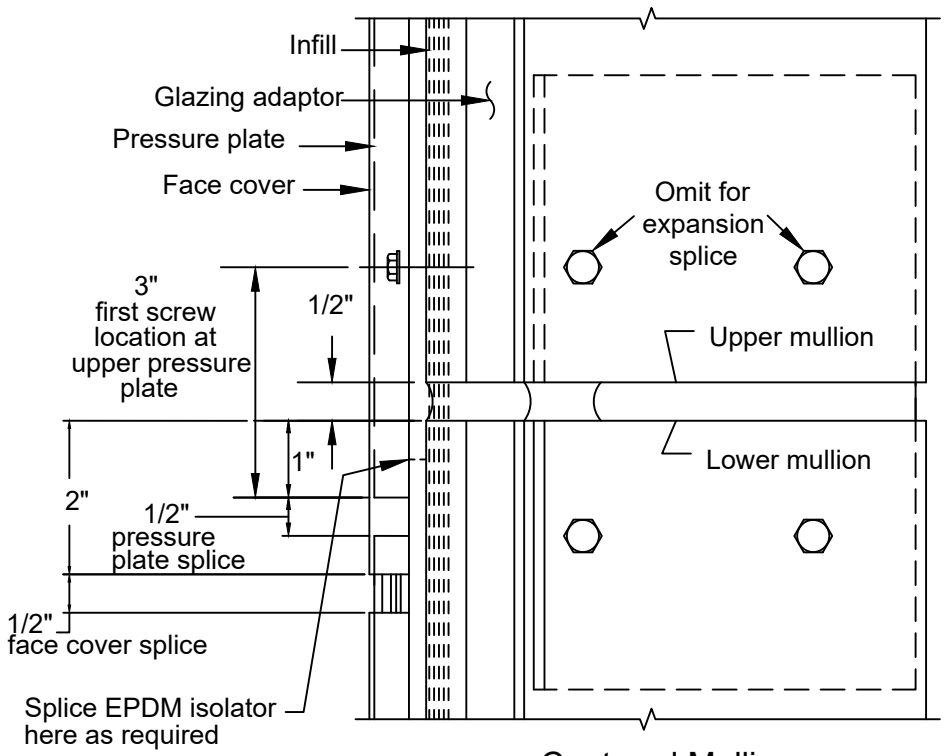
Follow sealant manufacturer's guidelines for proper joint width based on anticipated movement. A minimum ½" joint is recommended. **Note: Standard splice joints are engineered to accommodate thermal expansion only. They do not allow for movement in floor levels.** Refer to approved shop drawings for special circumstances, or contact your nearest Oldcastle BuildingEnvelope® facility.

B.1 Offset pressure plates and face covers per **FIGURE 29, page 34.** Seal the pressure plate and face cover joints as shown in **FIGURE 30, page 35.**

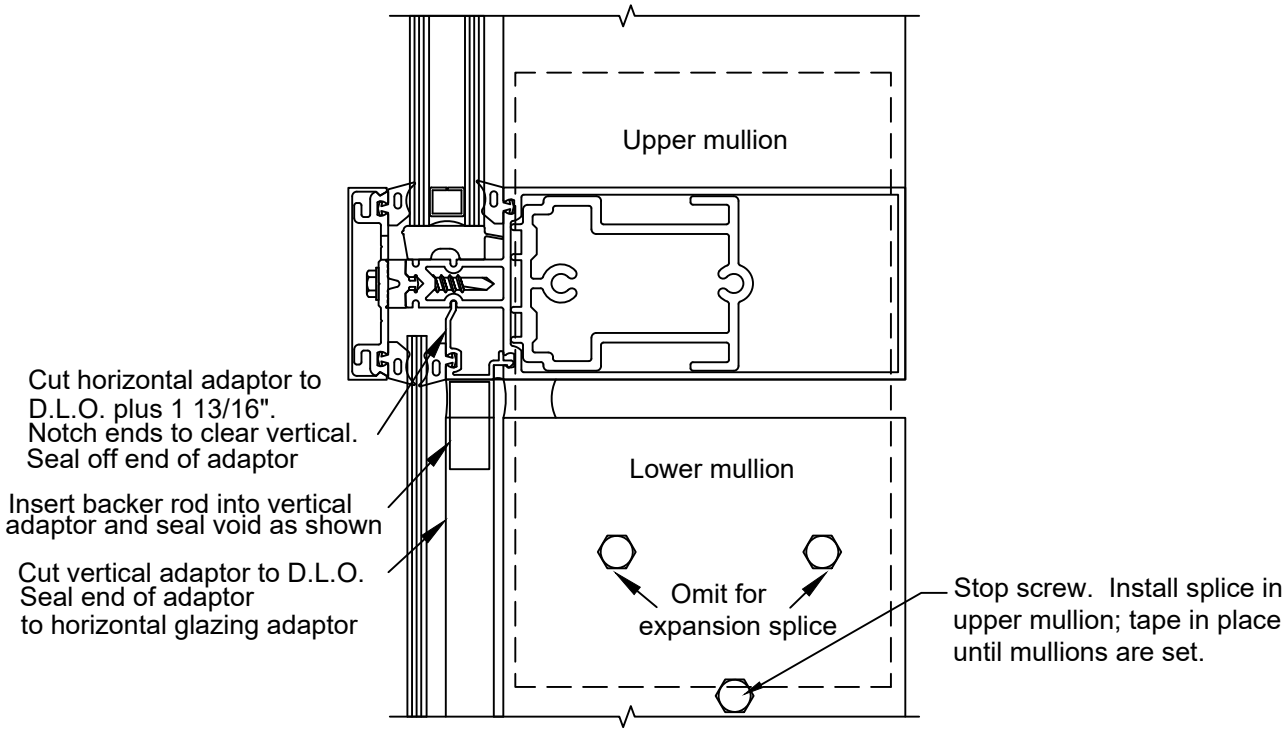
B.2 Apply bond breaker tape to the face of splice sleeves, returning back on the sides 1" minimum. Insert backer rod into the hollow of the vertical mullion, top and bottom. Seal between top and bottom mullion from the front of the tongue to 1" behind glass pocket. Follow the contour of the glazing reglets with the sealant to insure a good seal when gaskets are installed. **SEE FIGURE 30, page 35.**

B.3 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.

SPLICE LAYOUT



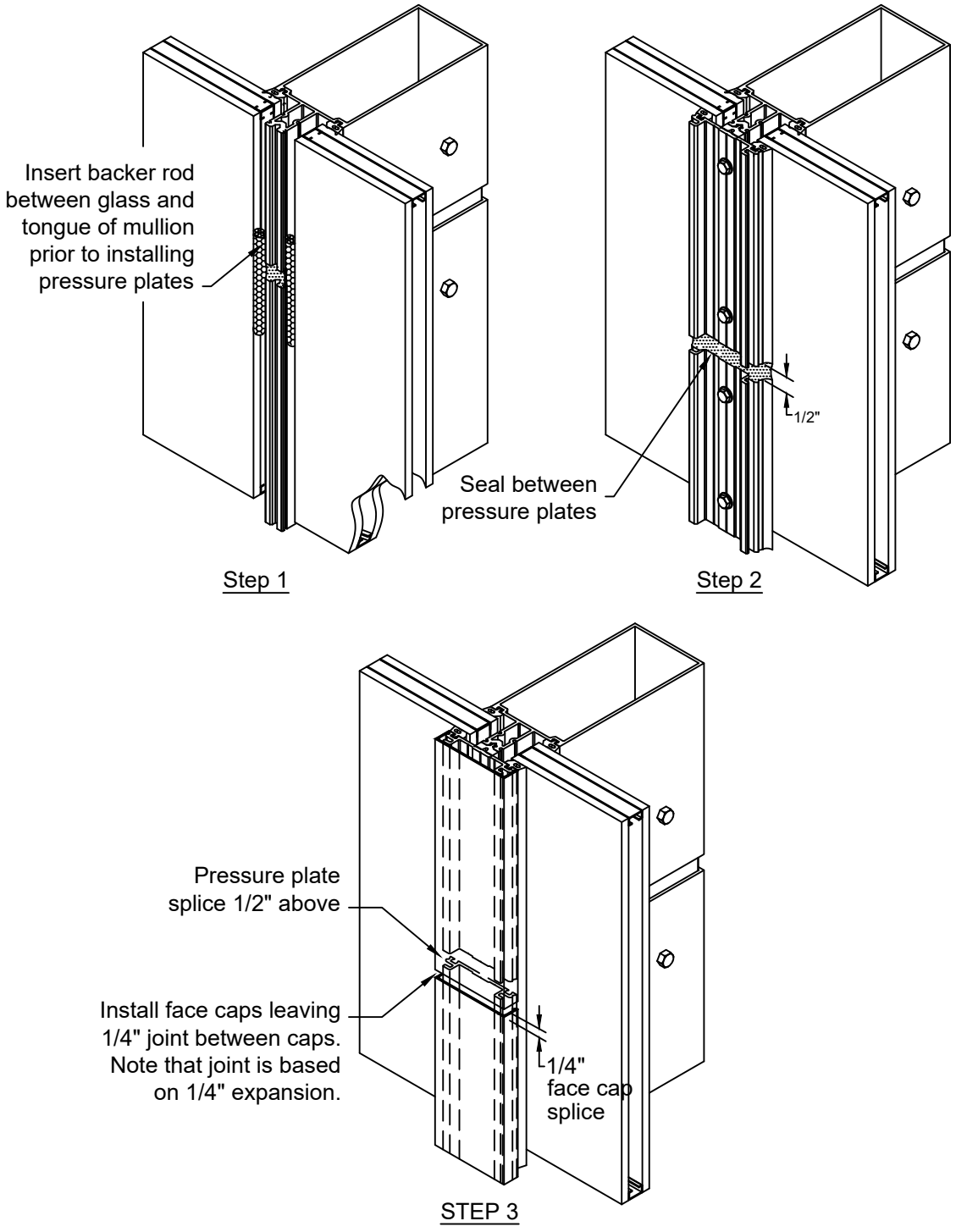
Captured Mullions



SSG Mullions

Figure 29
Vertical Mullion Splice

SPLICE JOINT SEALING



30
Splice Joint Sealing Instructions

ATTACHING DOOR SUBFRAMES

All door framing components are shipped fabricated from the factory. The main curtain wall framing can be erected prior to installing the doors. Lites adjacent to doors must be temporarily secured in place until after door framing is installed. Refer to pages 35 thru 39 for door 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. SEE FIGURE 42, page 40 for suggestions on anchoring door jamb mullion.

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 thermal spacer into curtain wall vertical glazing reglet. Hold in place with silicone if necessary. SEE FIGURE 31.

C.2.3 Bed subframes in sealant. Anchor to curtain wall framing members with FS-322 #12 x 1" HH STS at 18" O.C. Cap seal all fasteners and seal joint between jamb and header subframes. Seal tops of the jamb subframes. SEE FIGURE 32, page 37.

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 33, page 37.

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 & GLAZING MANUAL.

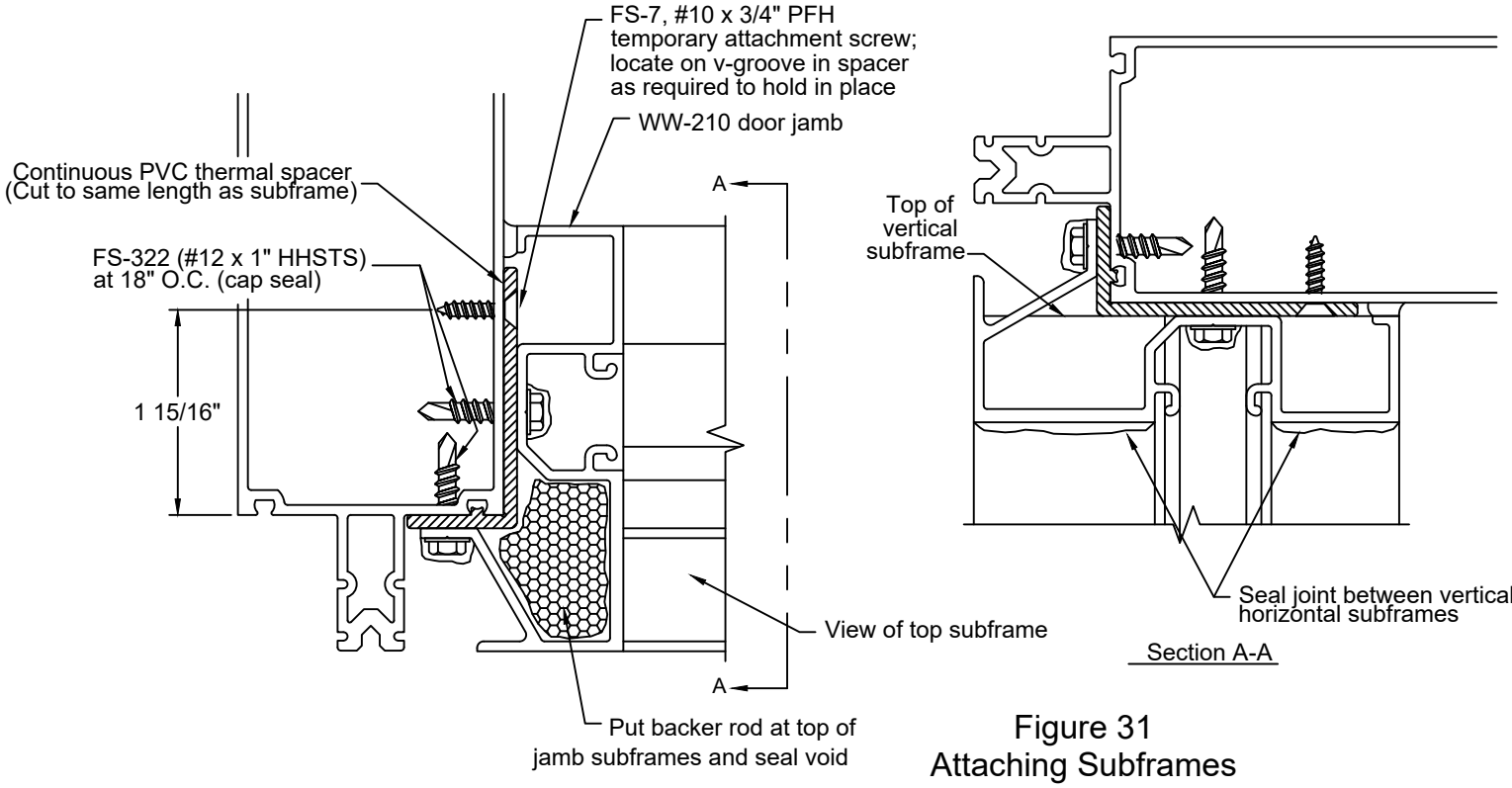


Figure 31
Attaching Subframes

ATTACHING DOOR SUBFRAMES

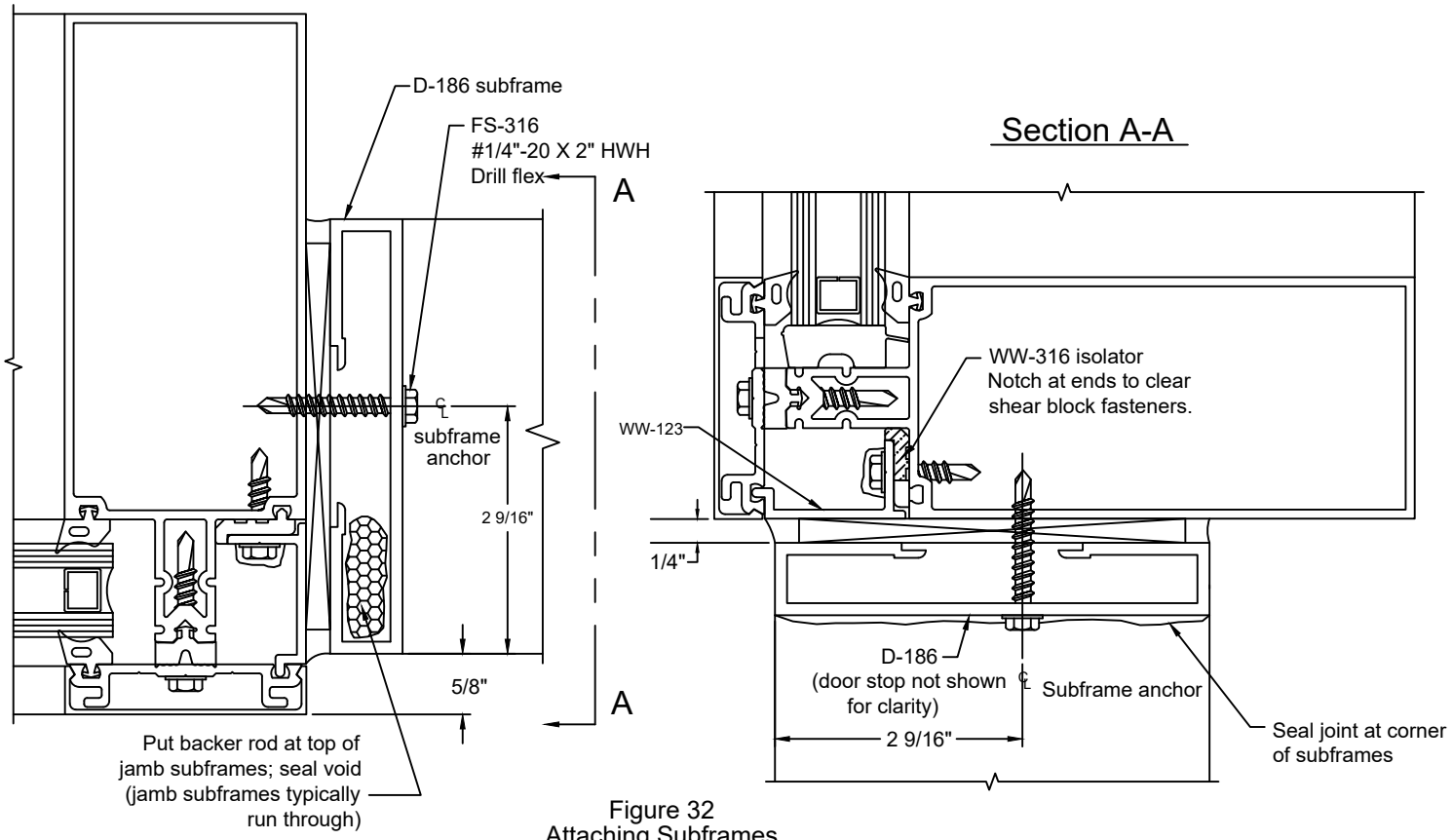


Figure 32
Attaching Subframes

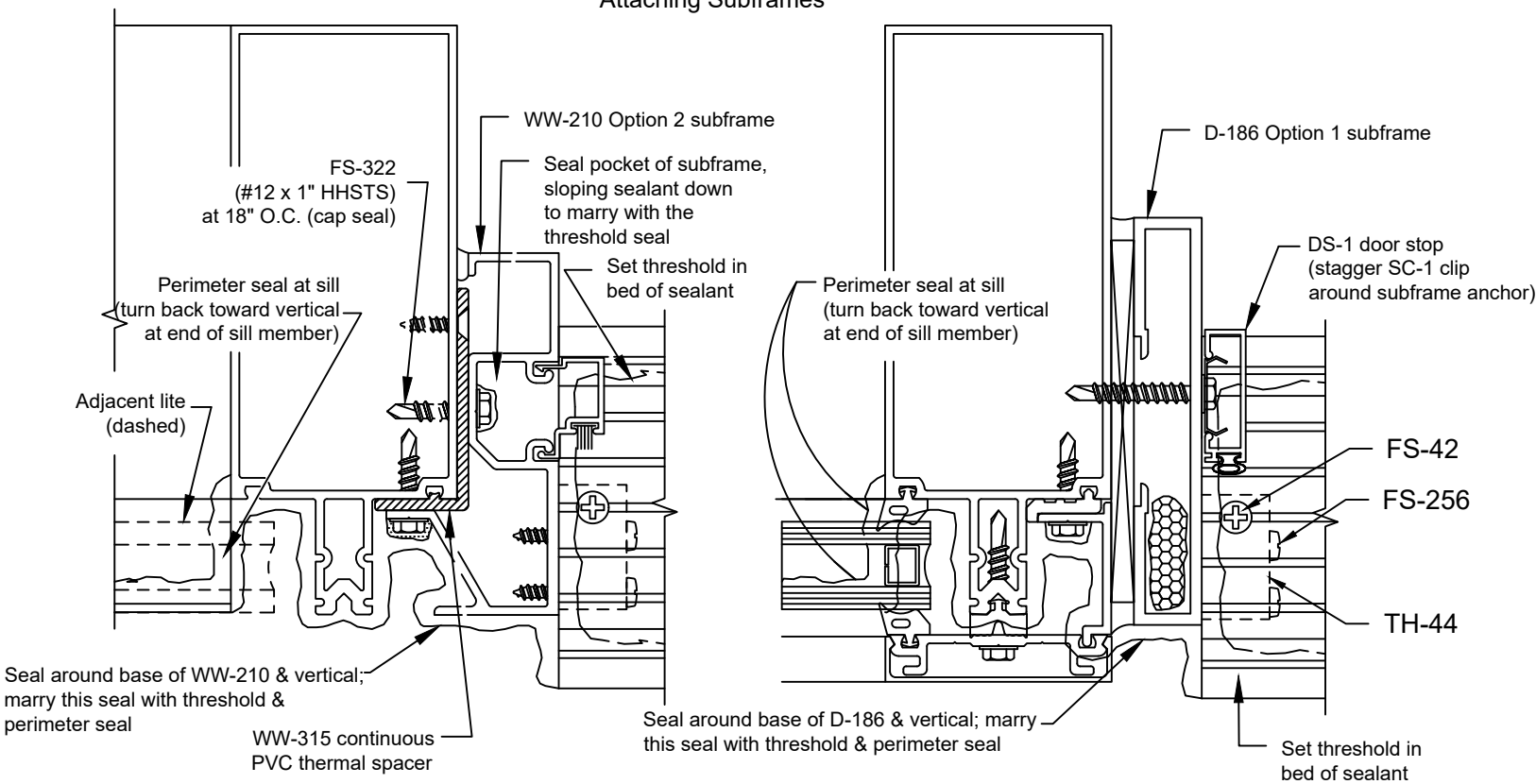


Figure 33
Sealing Verticals at Entrance Doors
(Temporary Glazing Retainer Not Shown for Clarity)

FLUSH DOOR INSTALLATION

C.3 FLUSH DOOR INSTALLATION:

C.3.1 Drill 1/2” diameter access holes in flush door pressure plates 1 ½” from ends and 12” O.C. SEE FIGURE 36.

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 and 12” O.C. SEE FIGURE 37 and FIGURE 39, page 39.

C.3.4 Apply continuous seal to horizontal tongue before installing horizontal pressure plate. Seal ends of horizontal pressure plate to vertical pressure plates. SEE FIGURE 38,page 39.

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 40, page 39.

C.3.6 Drill #11, .191 diameter holes in curtain wall mullions for FS-15 rivets. Install door stops onto mullion with SC-1 clips at 18” O.C. SEE FIGURE 40, page 38.Vertical stops run through.

C.3.7 Install face covers onto pressure plates. SEE FIGURE 41, page 40.

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

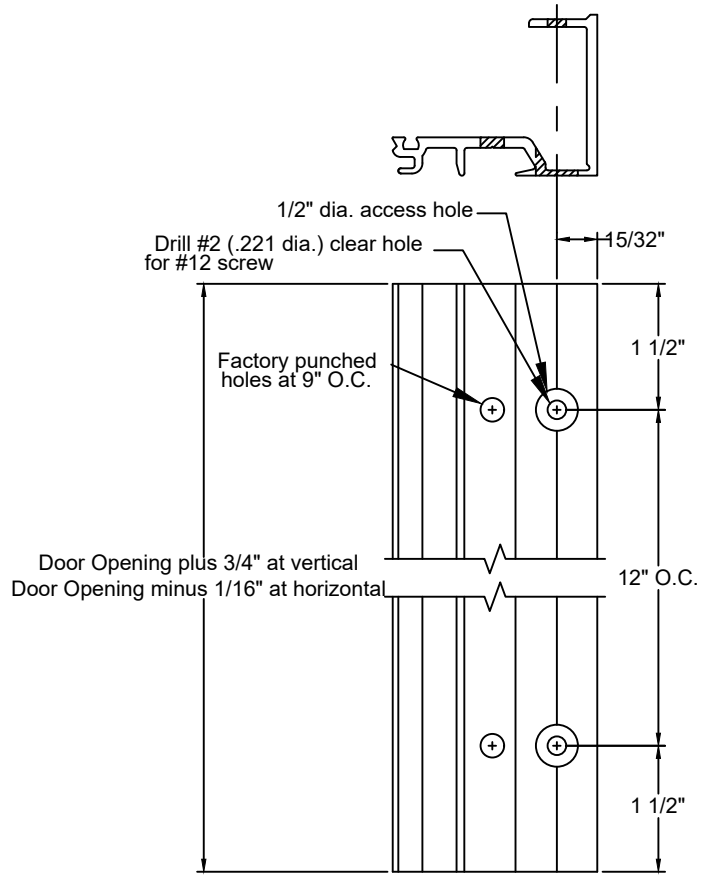


Figure 36
Flush Door Pressure Plate Fab

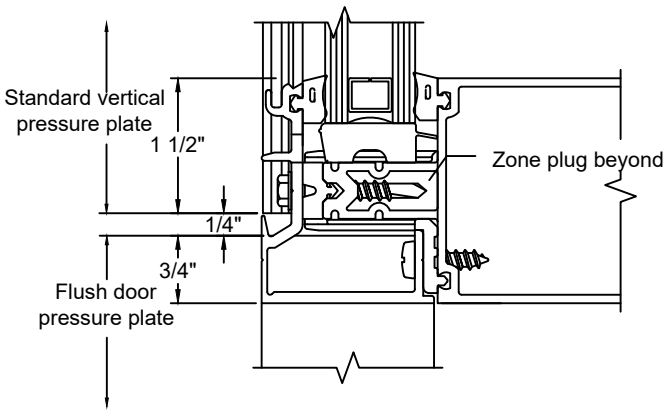


Figure 37
Horizontal Pressure
Layout at Flush Door

FLUSH DOOR INSTALLATION

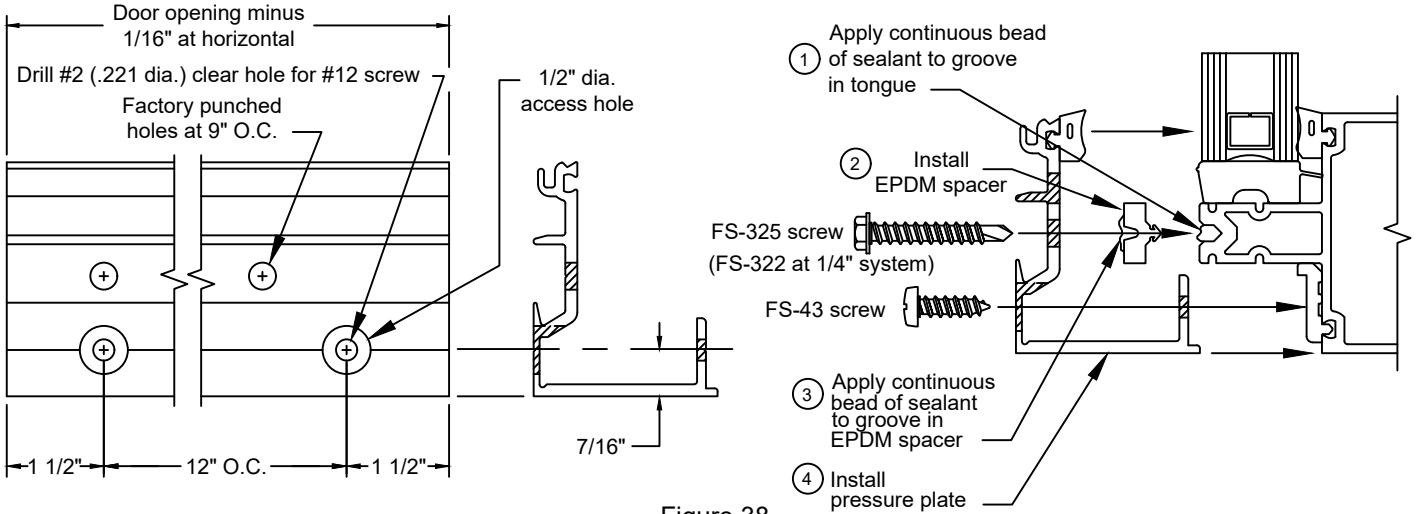


Figure 38
Door Header Pressure Plate Fabrication (left detail)
Flush Door Pressure Plate Seal (right detail)

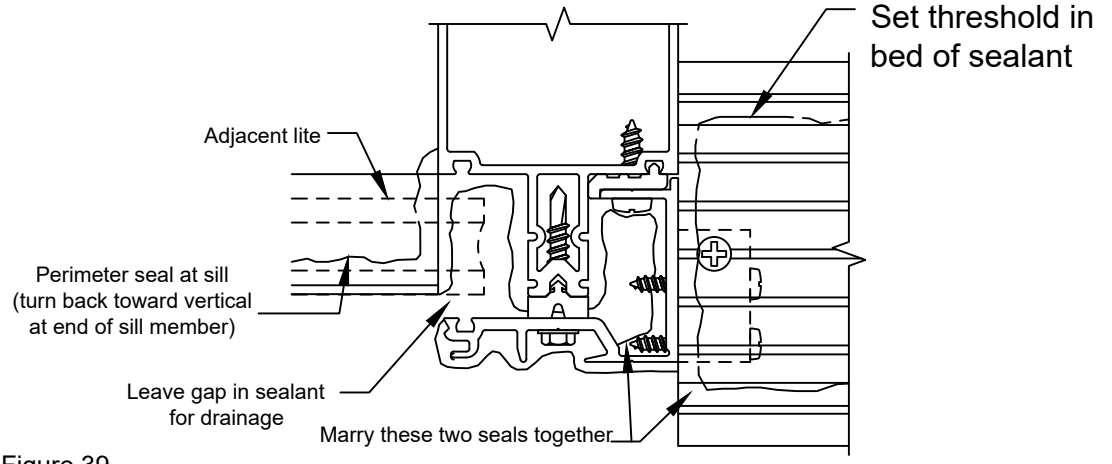


Figure 39
Flush Door Sealing

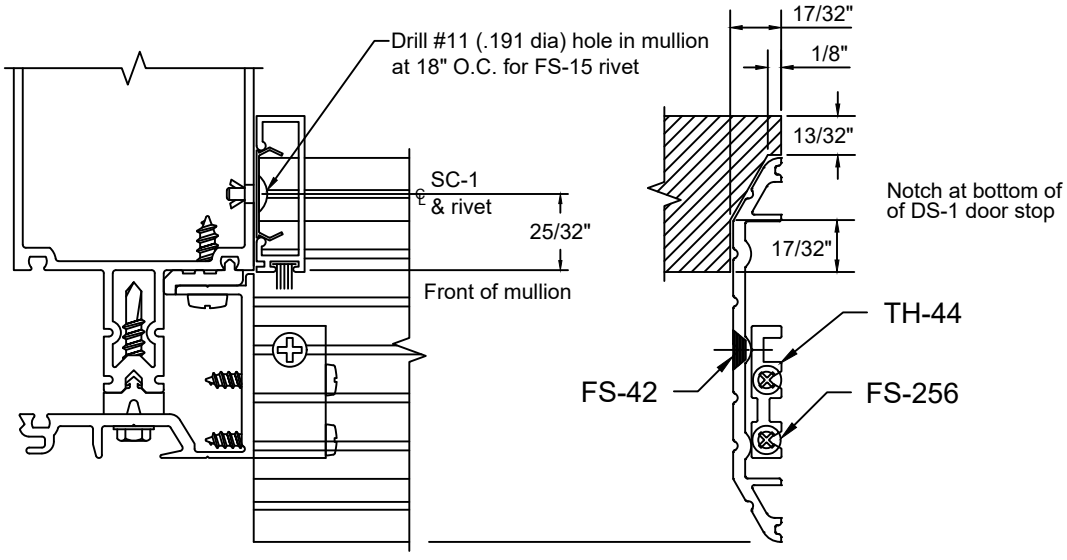
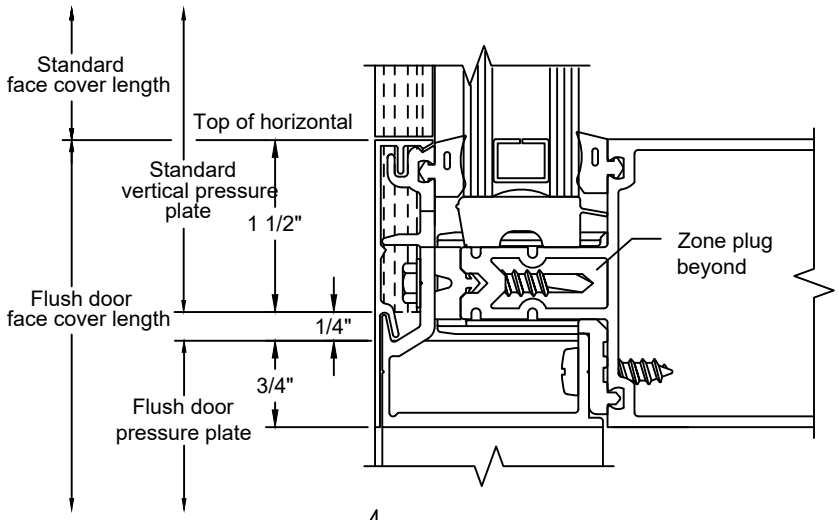
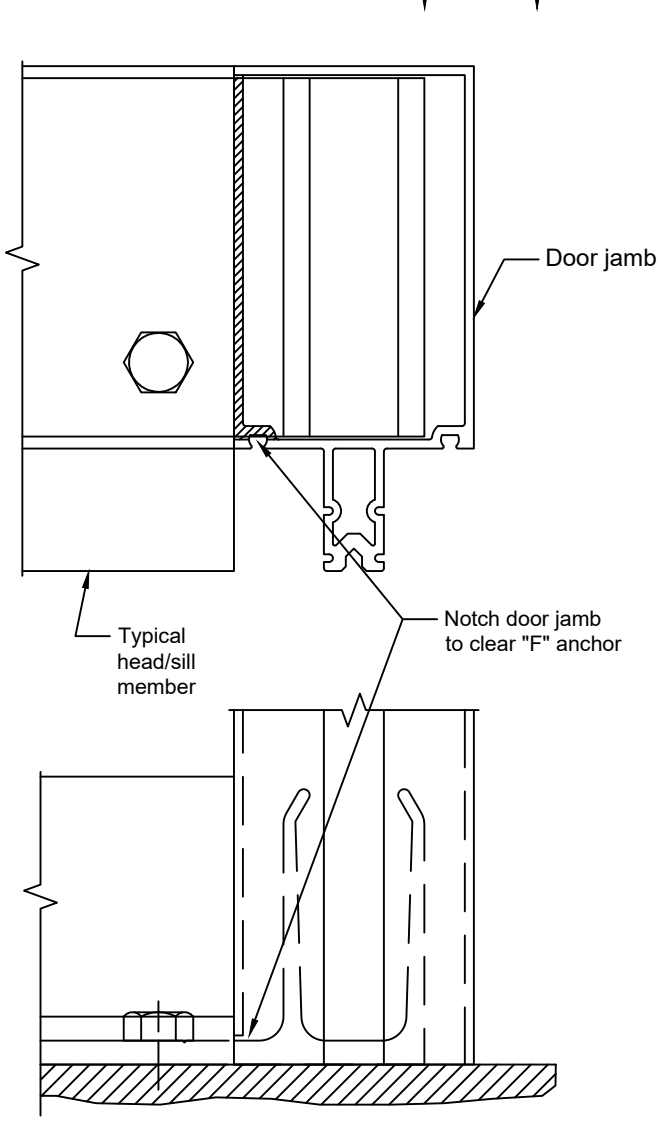


Figure 40
Door Stop Fab & Attachment
(Sealant & Adjacent Lite Not Shown for Clarity)

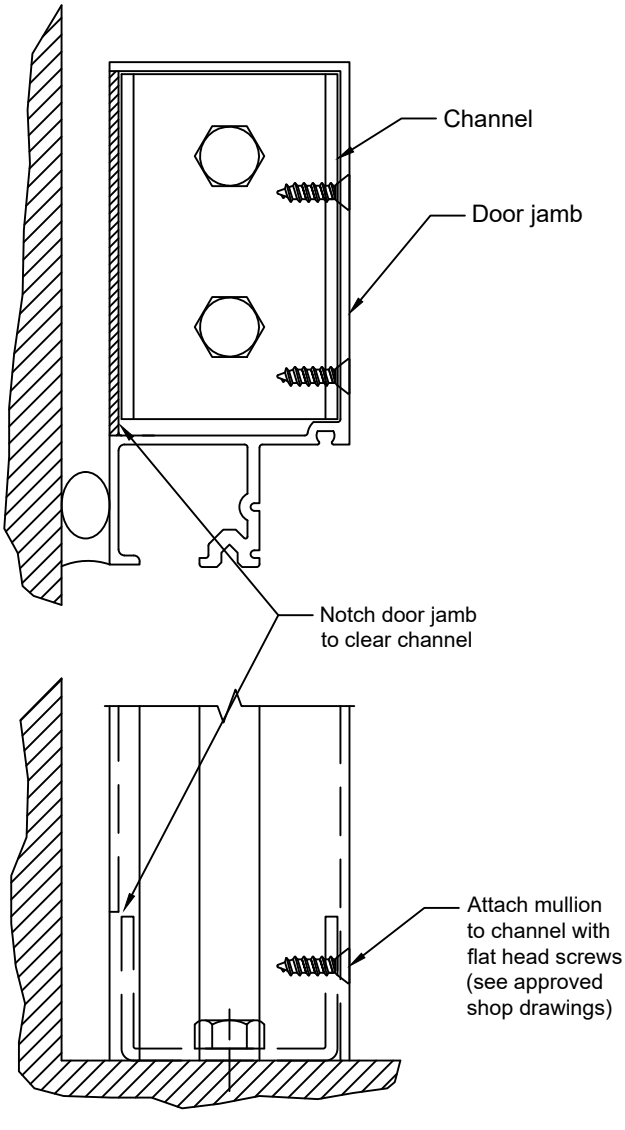
FLUSH DOOR INSTALLATION

Figure 41
Vertical Face Cover
Location at Door Header





Anchoring Door Jamb with Sidelite



Anchoring Door Jamb without Sidelite

Figure 42
Anchoring Door Jamb Mullions

REGLAZING PROCEDURE

E.1 Reglazing must be done from the exterior. Carefully remove face covers surrounding the lite of glass to be deglazed. SEE FIGURE 43.

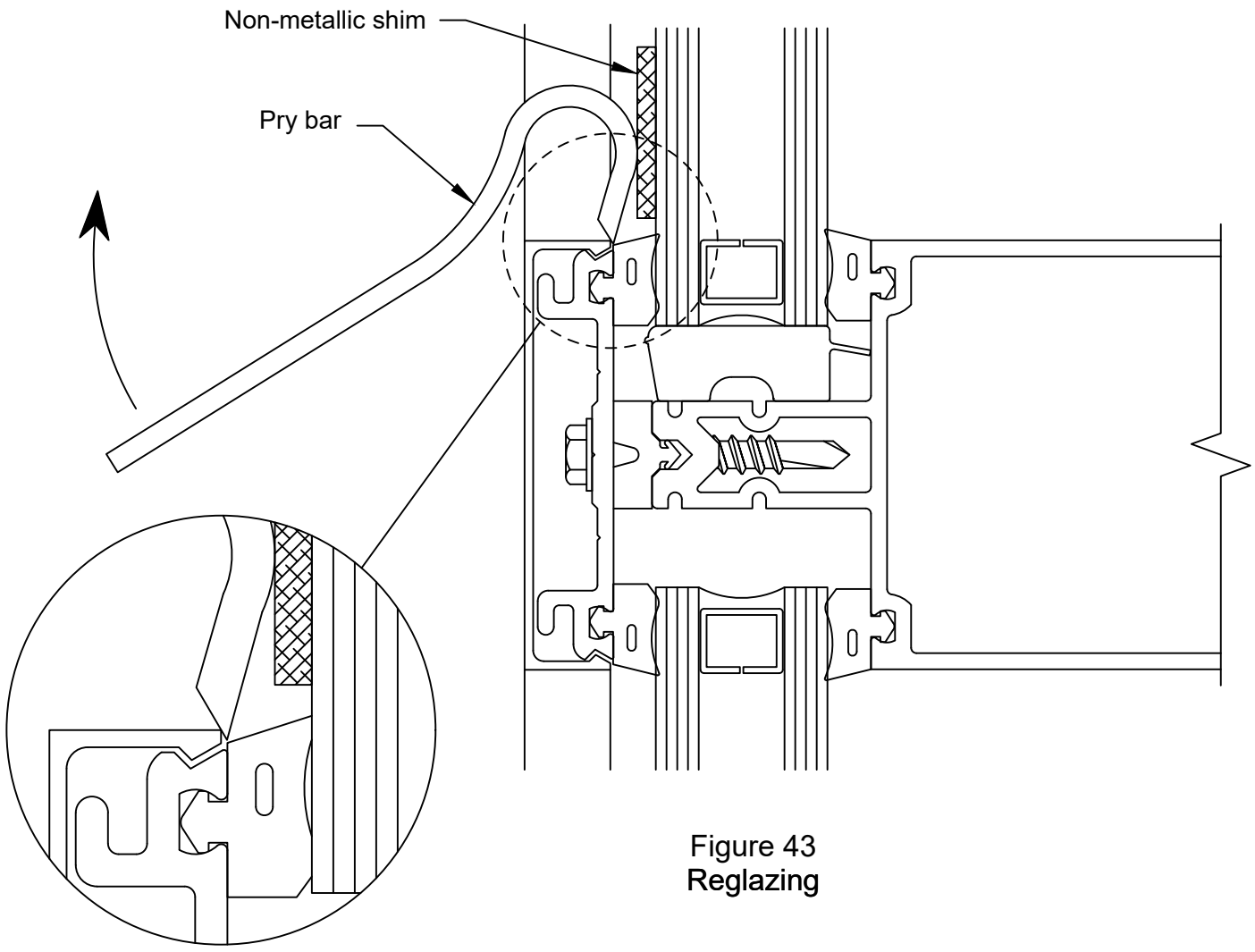


Figure 43
Reglazing

E.2 Remove vertical and horizontal pressure plates adjacent to lite that must be replaced. Temp surrounding glass in place with WW-333 temporary glazing retainers. Torque to 60 in-lbs. Refer to step 3.6, page 25 for instructions on locating the retainers.

E.3 Remove lite of glass and existing gaskets from opening. Clean debris and sealant from aluminum framing members and pressure plates.

E.4 Install new gaskets into framing and install new lite of glass. See glazing section of this manual for proper procedure.

E.5 Reinstall pressure plates and seals per glazing section of this manual.

MULLION REINFORCING

FIGURE 44 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, 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, a qualified professional engineer.

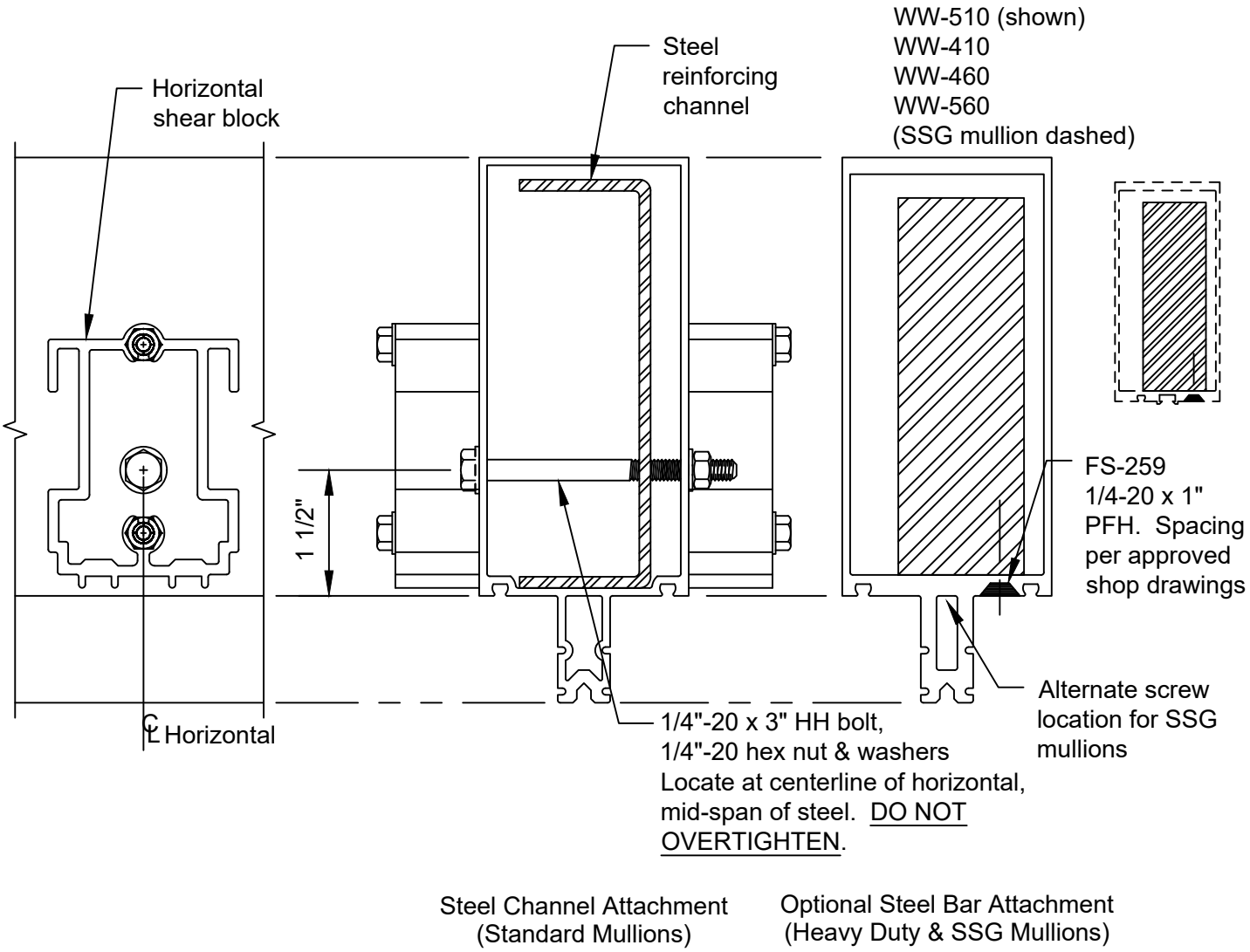


Figure 44
Typical Steel Reinforcing Attachment
(SSG Mullion Similar)

90 OUTSIDE CORNER

FIGURE 45 through FIGURE 51 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.

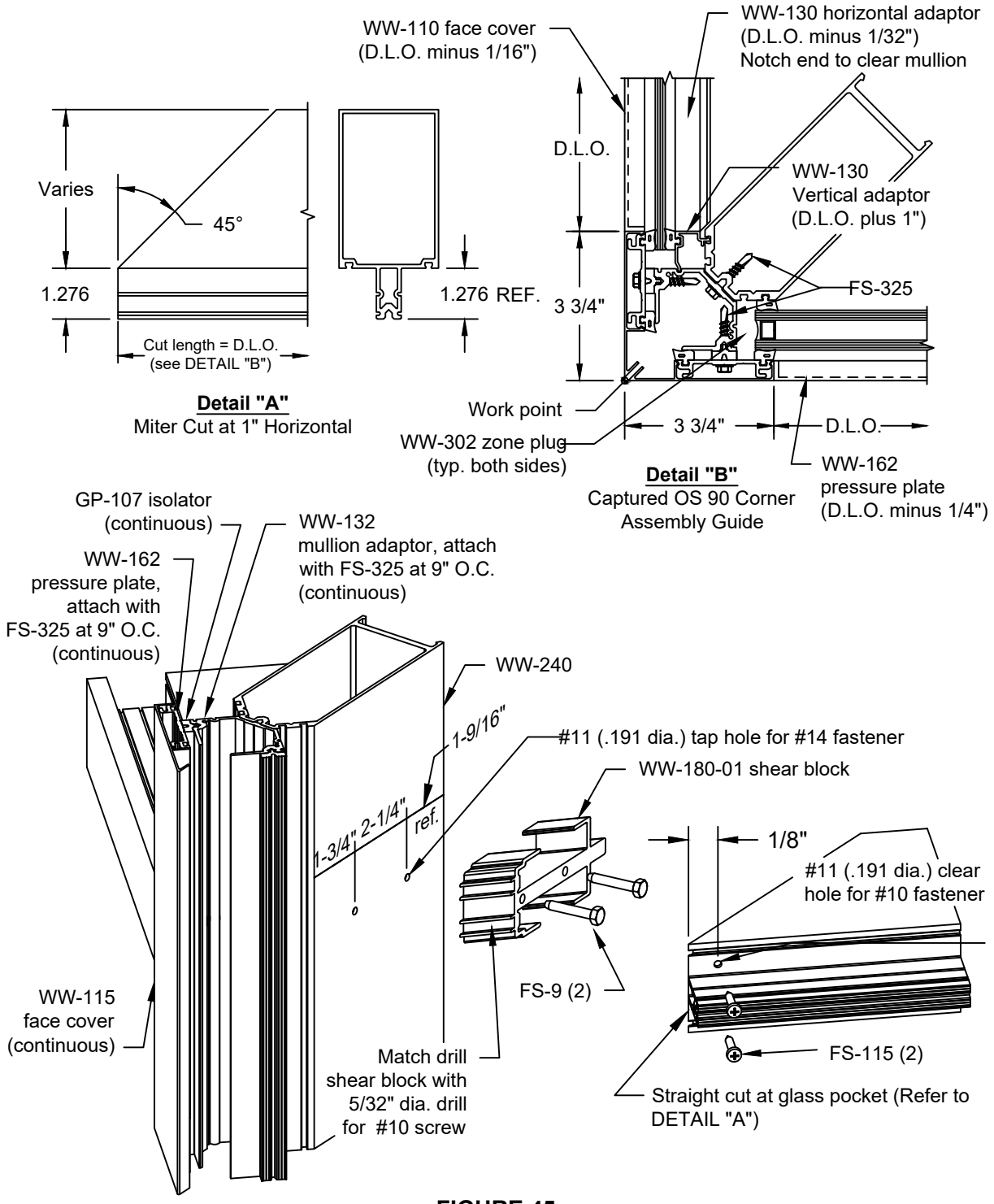


FIGURE 45
Captured OS 90 Corner Assembly
(Cut lengths in parentheses)

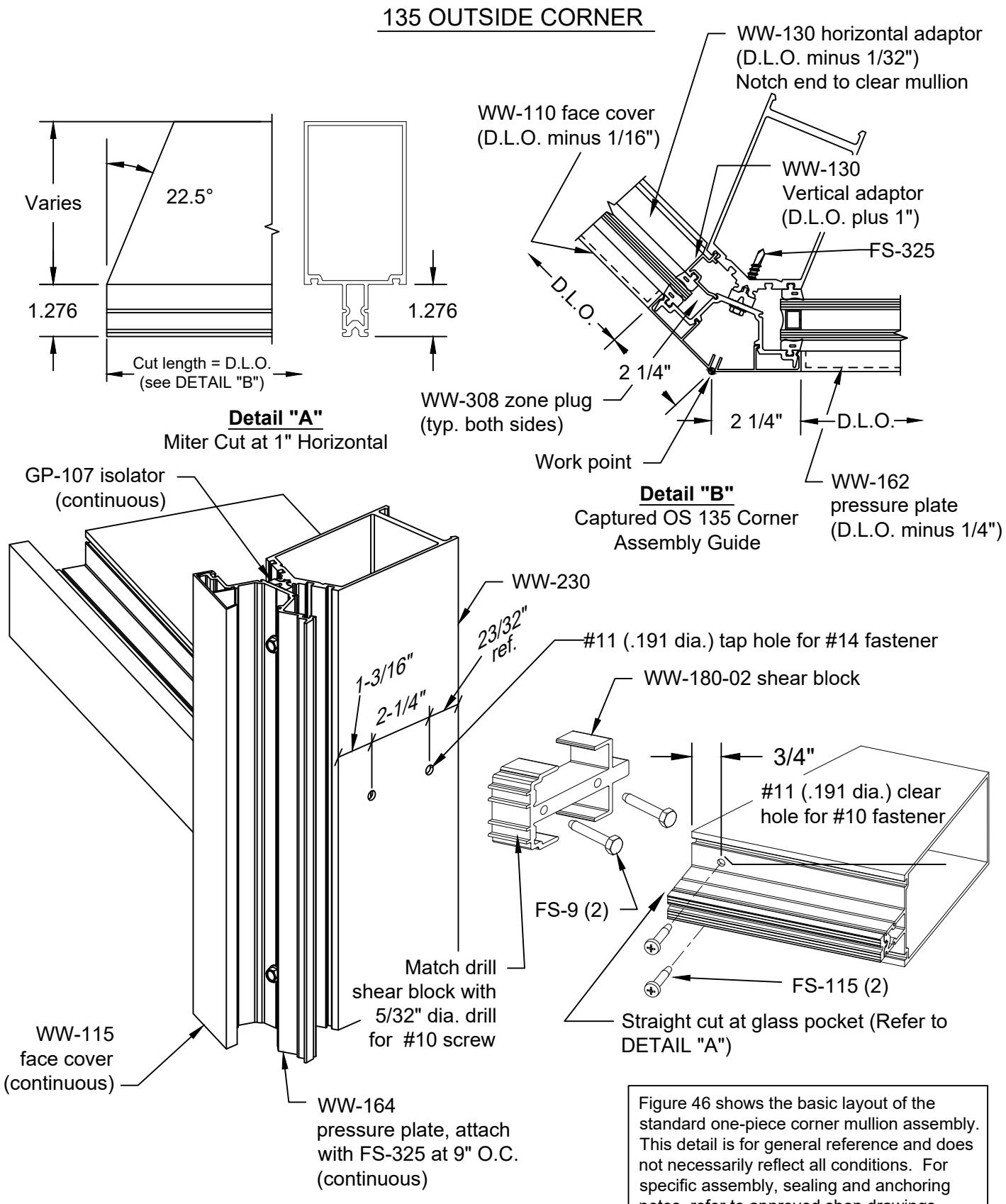
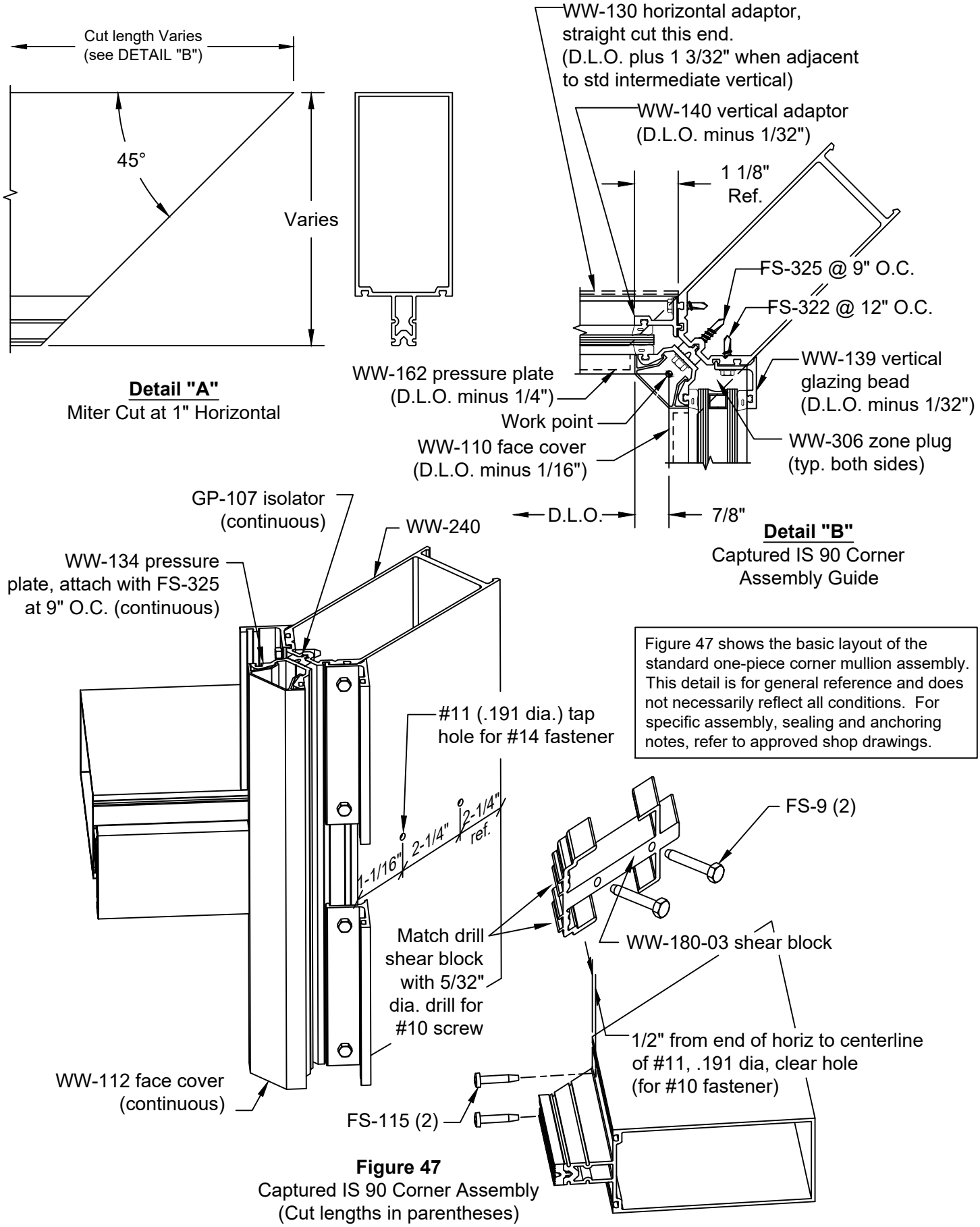


Figure 46 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

Figure 46
Captured OS 135 Corner Assembly
(Cut lengths in parentheses)

90 INSIDE CORNER



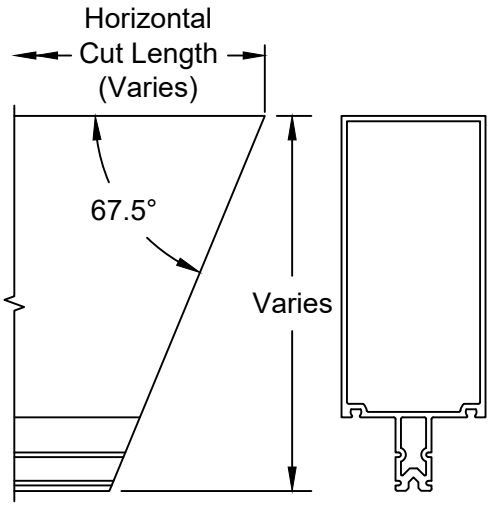
Detail "A"
Miter Cut at 1" Horizontal

Detail "B"
Captured IS 90 Corner
Assembly Guide

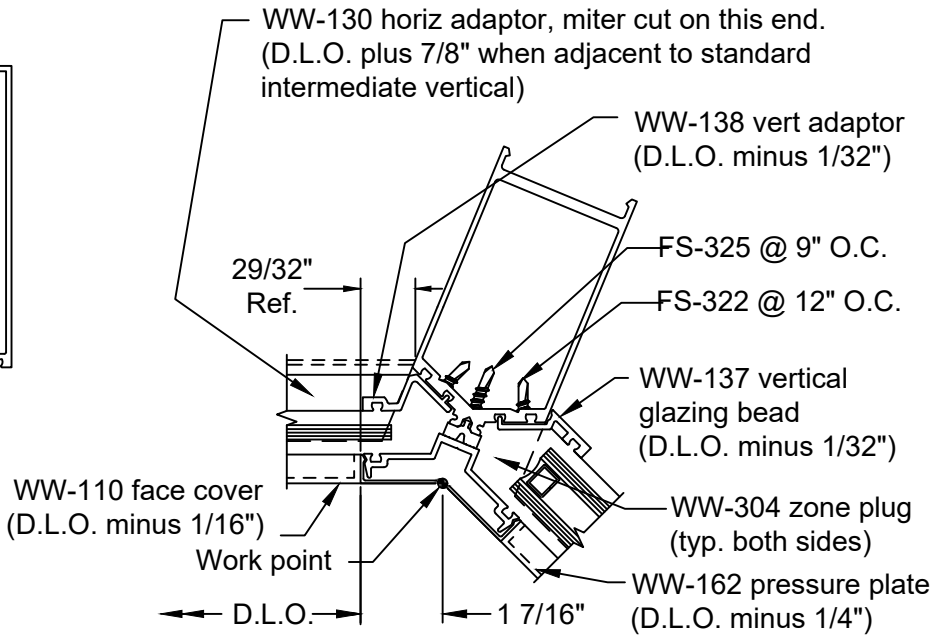
Figure 47 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

Figure 47
Captured IS 90 Corner Assembly
(Cut lengths in parentheses)

135 INSIDE CORNER



Detail "A"
Miter Cut at 1" Horizontal



Detail "B"
Captured IS 135 Corner
Assembly Guide

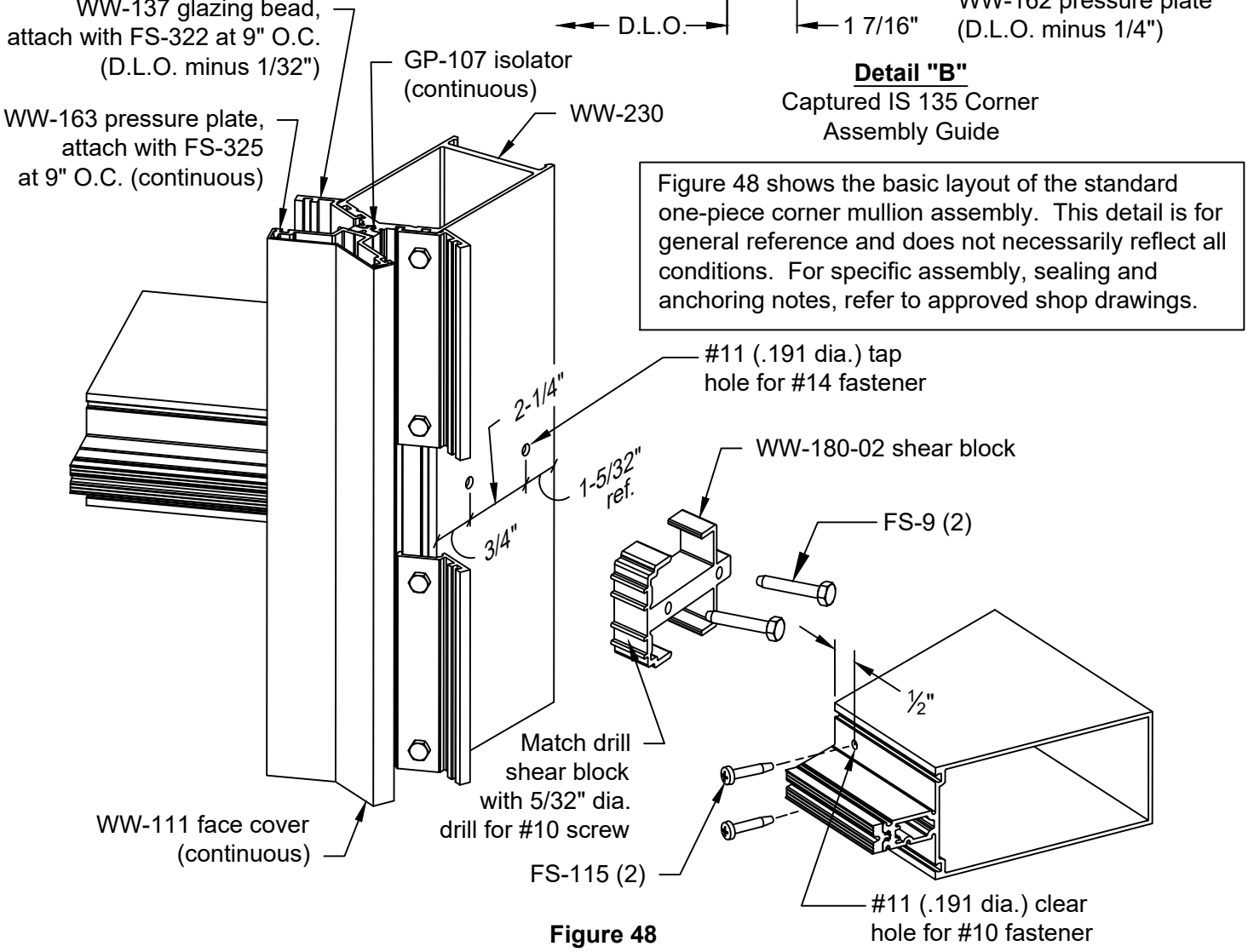
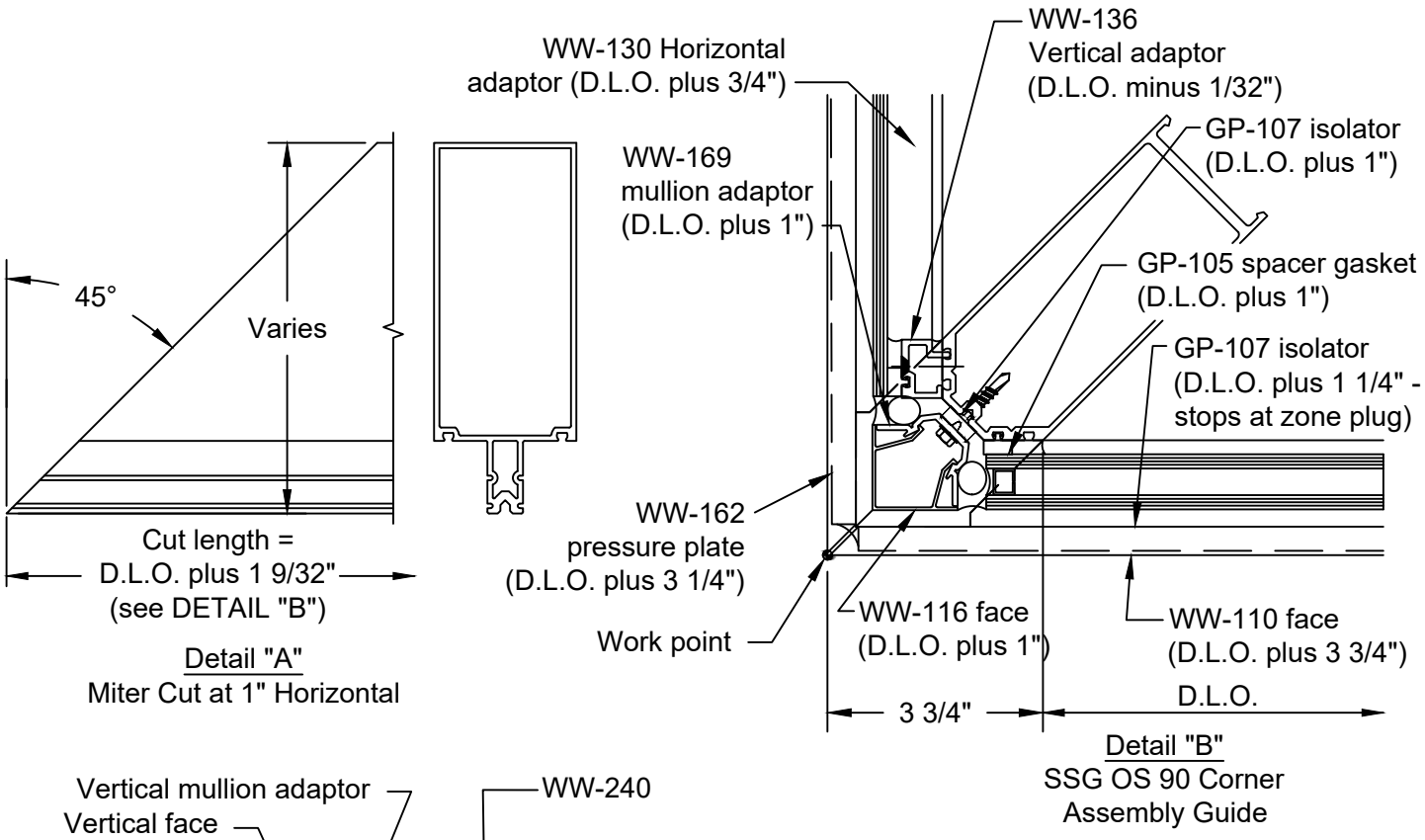


Figure 48 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

Figure 48
Captured IS 135 Corner Assembly
(Cut lengths in parentheses)

90 OUTSIDE CORNER SSG



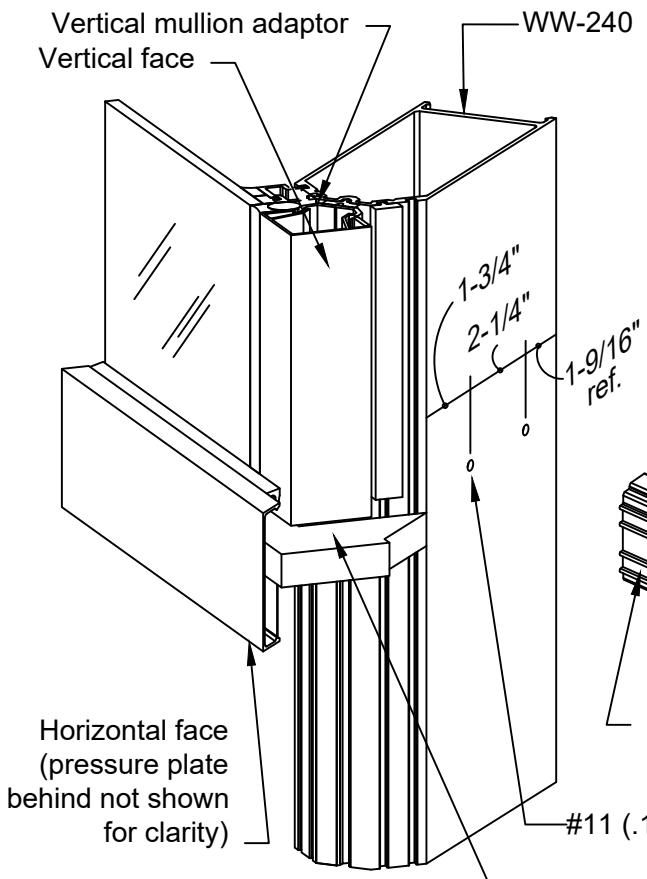


Figure 49 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

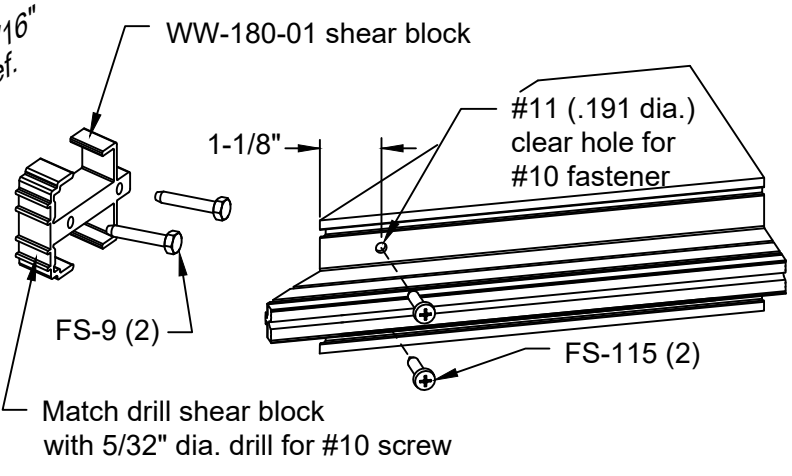


Figure 49
SSG OS 90 Corner Assembly
(Cut lengths in parentheses)

90 INSIDE CORNER SSG

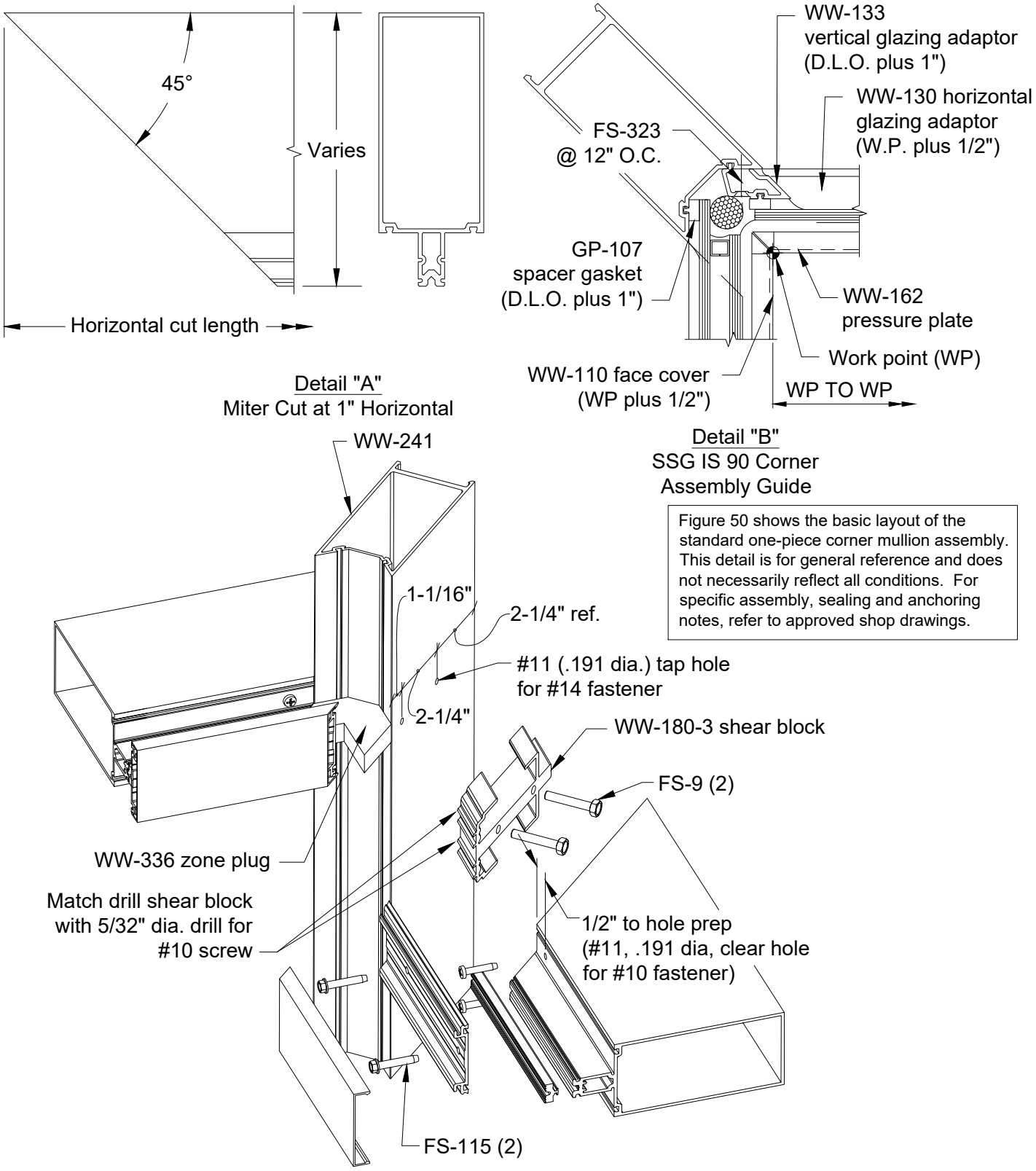
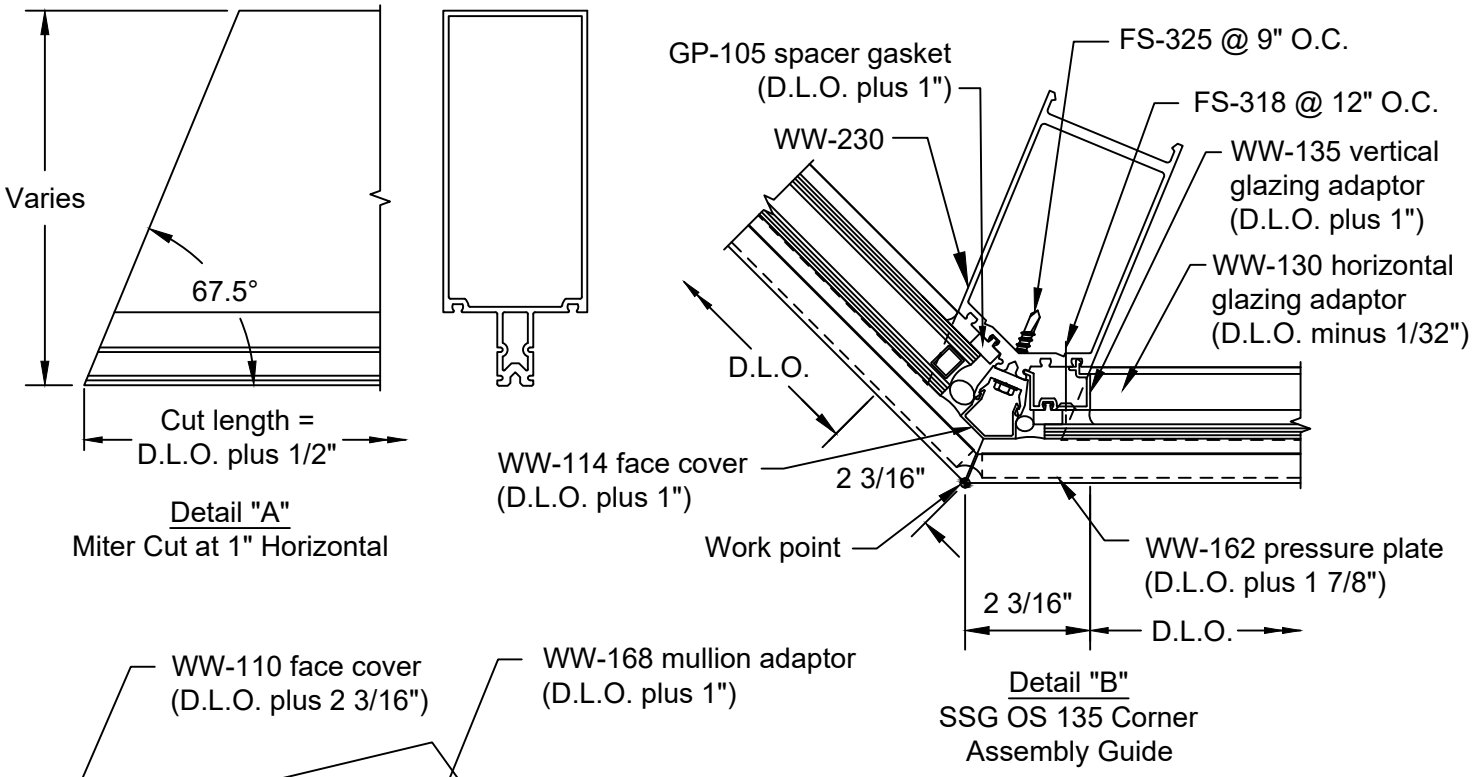


Figure 50 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

Figure 50
SSG IS 90 Corner Assembly
(Cut lengths in parentheses)

135 OUTSIDE CORNER SSG



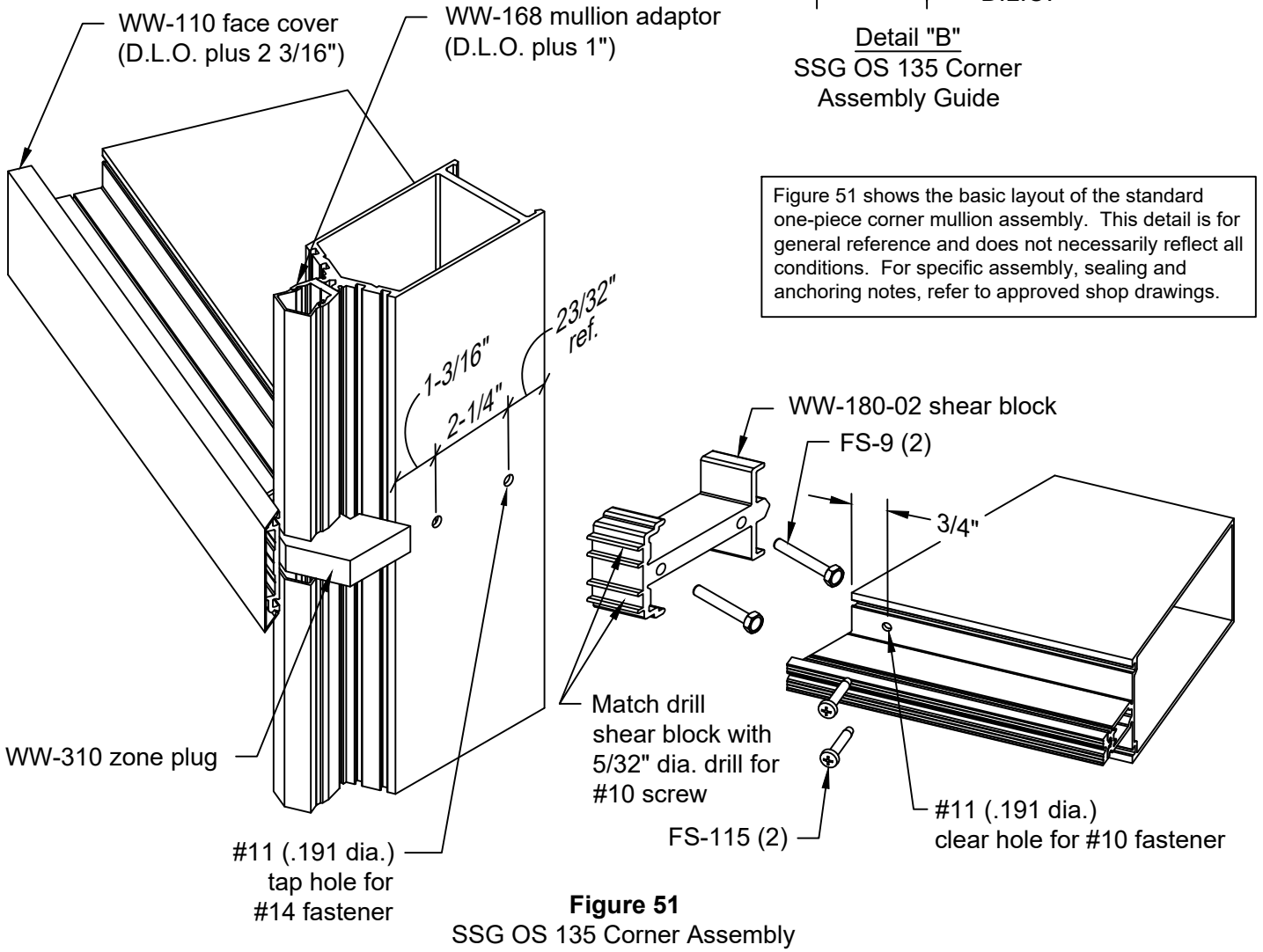


Figure 51 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

Figure 51
SSG OS 135 Corner Assembly
(Cut lengths in parentheses)

SSG HORIZONTAL INSTALLATION INSTRUCTIONS

Vertical pressure plate fabrication at SSG horizontal - drill a 5/16" diameter weep hole on the V-groove on each side as shown on FIGURE 52.

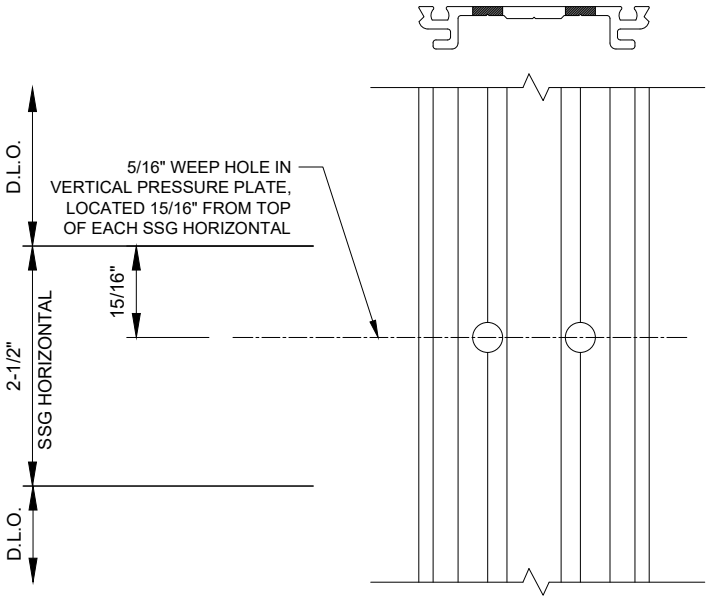


FIGURE 52

Fabrication at SSG horizontal - at each end of the SSG horizontal, drill #11 (.191 DIA.) clear hole for a #10 fastener and countersink (.375 DIA.) as shown on FIGURE 53. (2) at each end of member.

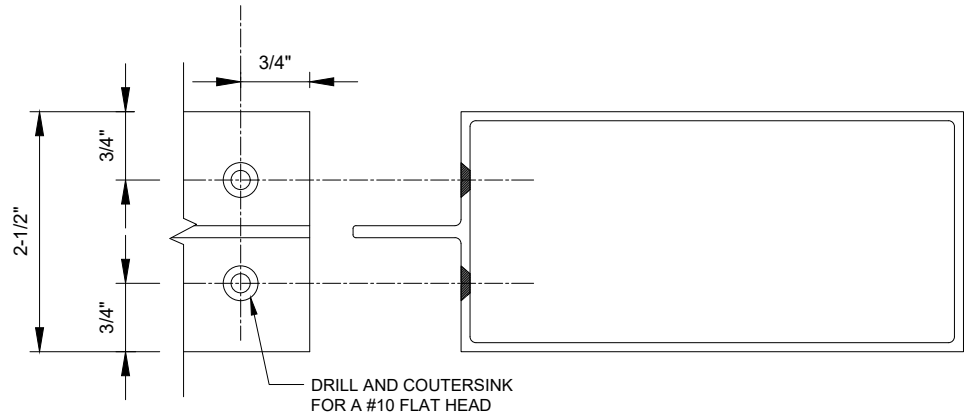


FIGURE 53

Seal shear block and attach horizontal to vertical as noted in FIGURE 12, page 19 with FS-7 fasteners. Place zone plug, set in sealant as shown on FIGURE 54 & 55. Apply V-2108 spacer tape on the top and bottom face of the horizontal as shown on FIGURE 54.

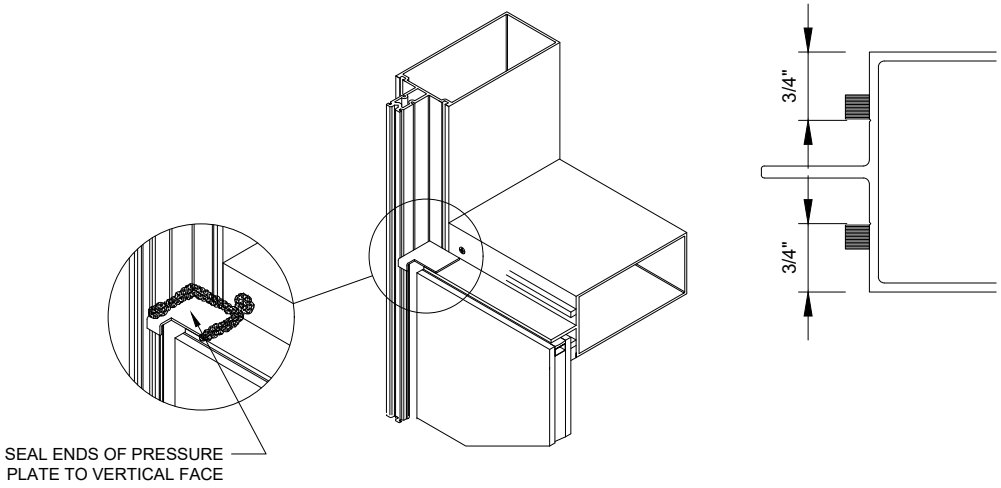


FIGURE 54

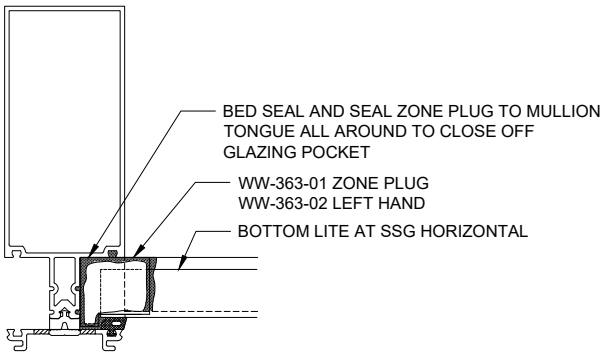


FIGURE 55

Drill #20 (.161) holes as shown on FIGURE 56 before the glass is installed. After the glass is set, attach temporary clips WW-333 using a FS-102 fastener.

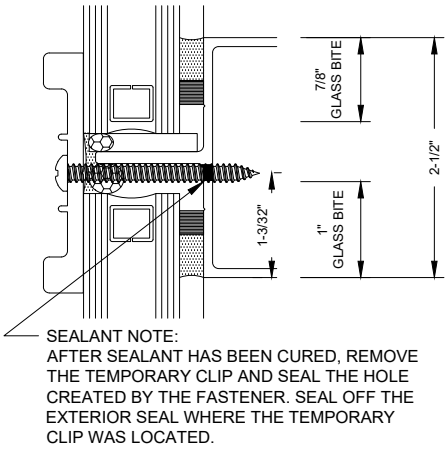


FIGURE 56

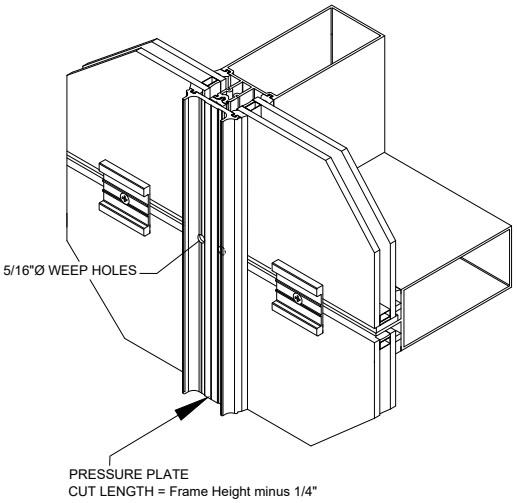
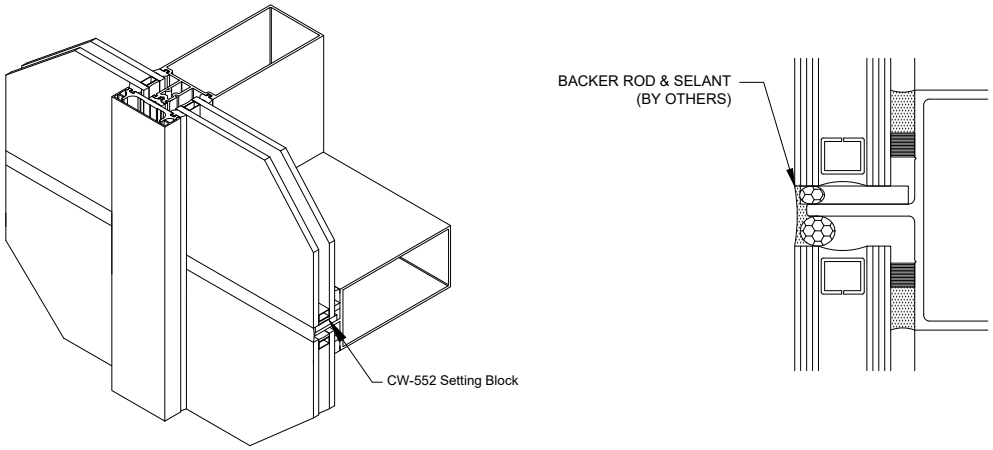


FIGURE 57

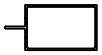
Thoroughly clean the affected areas and seal the exterior face with an approved silicone sealant, see FIGURE 58.

FIGURE 58
COVER AND SEALANT

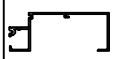
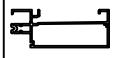
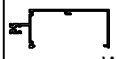
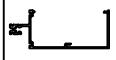


PARTS LIST

4" BACKMEMBERS
1" INFILL, 6" SYSTEM DEPTH

 WW-400	Typical Vertical & Intermediate Horizontal
 WW-401	Head
 WW-402	Sill & Open Back Jamb
 WW-403	Optional Tubular Jamb
 WW-404	Typical SSG Mullion
 WW-410	Heavy Vertical Mullion
 WW-411	Incidental Water Head
 WW-432	Roll Over Horizontal (Vision over Spandrel)
 WW-433	Roll Under Horizontal (Spandrel over Vision)
 WW-1183	SSG Horizontal

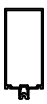
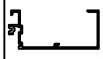
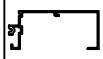
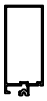
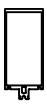
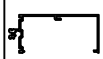
5 1/4" BACKMEMBERS
1" INFILL, 7 1/4" SYSTEM DEPTH

 WW-500	Typical Vertical & Intermediate Horizontal
 WW-501	Head
 WW-502	Sill & Open Back Jamb
 WW-503	Optional Tubular Jamb
 WW-504	Typical SSG Mullion
 WW-510	Heavy Vertical Mullion
 WW-511	Incidental Water Head
 WW-532	Roll Over Horizontal (Vision over Spandrel)
 WW-533	Roll Under Horizontal (Spandrel over Vision)
 WW-1040	SSG Horizontal

4" BACKMEMBERS
1/4" INFILL, 5 1/4" SYSTEM DEPTH

 WW-450	Typical Vertical & Intermediate Horizontal
 WW-451	Head
 WW-452	Sill & Open Back Jamb
 WW-453	Optional Tubular Jamb
 WW-404	Typical SSG Mullion
 WW-460	Heavy Vertical Mullion
 WW-482	Roll Over Horizontal

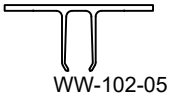
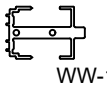
4" BACKMEMBERS
1/4" INFILL, 6 1/2" SYSTEM DEPTH

 WW-504	Typical SSG Mullion
 WW-550	Typical Vertical & Intermediate Horizontal
 WW-551	Head
 WW-552	Sill & Open Back Jamb
 WW-553	Optional Tubular Jamb
 WW-560	Heavy Vertical Mullion
 WW-582	Roll Over Horizontal

PARTS LIST

CORNER MULLIONS & ACCESSORIES

4" and 5 1/4" Backmembers

 WW-230	Corner Mullion 135° Inside & Outside Captured & SSG 1" & 1/4" Infill
 WW-240	Corner Mullion 90° Outside, Captured & SSG 90° Inside, Captured 1" & 1/4" Infill
 WW-241	Corner Mullion 90° Inside, SSG 1" & 1/4" Infill
 WW-111	Face Cover 135° Inside Corner 1" Infill, Captured
 WW-112	Face Cover 90° Inside Corner 1" Infill, Captured
 WW-113	Face Cover 135° Outside Corner 1" Infill, Captured
 WW-114	Face Cover 135° Outside SSG Corner 1" Infill
 WW-115	Face Cover 90° Outside Corner 1" Infill, Captured
 WW-116	Face Cover 90° Outside SSG Corner 1" Infill
WW-118	Face Cover 90° Inside Corner 1/4" Infill, Captured
 WW-119	Face Cover 90° Outside Corner 1/4" Infill, Captured
 WW-120	Face Cover 135° Inside Corner 1/4" Infill, Captured
 WW-121	Face Cover 135° Outside Corner 1" Infill, Captured
 WW-132	Mullion Adaptor 90° Outside Corner 1" Infill, Captured
 WW-133	Glazing Adaptor 90° Intside SSG Corner 1" to 1/4" Infill
 WW-134	Pressure Plate 90° Inside Corner 1" Infill, Captured
 WW-135	Glazing Adaptor 135° Outside SSG Corner 1" to 1/4" Infill
 WW-136	Glazing Adaptor 90° Outside SSG Corner 1" to 1/4" Infill
 WW-137	Glazing Bead 135° Inside Corner 1" Infill, Captured
 WW-138	Glazing Adaptor 135° Inside Corner 1" to 1/4" Infill, Captured
 WW-139	Glazing Bead 90° Inside Corner 1" Infill, Captured
 WW-140	Glazing Adaptor 90° Inside Corner 1" to 1/4" Infill, Captured
 WW-143	Pressure Plate 90° Inside Corner 1/4" Infill, Captured
 WW-163	Pressure Plate 135° Inside Corner 1" Infill, Captured
 WW-164	Pressure Plate 135° Outside Corner 1" Infill, Captured
 WW-165	Pressure Plate 90° Outside Corner 1" Infill, Captured
 WW-166	Pressure Plate 135° Inside Corner 1/4" Infill, Captured
 WW-167	Pressure Plate 135° Outside Corner 1/4" Infill, Captured
 WW-168	Pressure Plate 135° Outside SSG Corner 1" Infill
 WW-169	Pressure Plate 90° Outside SSG Corner 1" Infill
CW-823	Snap-In Back Trim Use with WW-230 Corner Mullion (5 1/4" & 6" System Depths)
 WW-220	Snap-In Back Trim Use with WW-240 & WW-241 Corner Mullions (6 1/2" & 7 1/4" System Depths)
 WW-221	Snap-In Back Trim Use with WW-230 Corner Mullions (6 1/2" & 7 1/4" System Depths)
 WW-223	I.S. 90 Snap-In Back Trim Use with WW-240 & WW-241 Corner Mullions (6 1/2" & 7 1/4" System Depths)
 WW-224	O.S. 90 Snap-In Back Trim Use with WW-240 & WW-241 Corner Mullions (6 1/2" & 7 1/4" System Depths)
 WW-225	I.S. 135 Snap-In Back Trim Use with WW-230 Corner Mullion (6 1/2" & 7 1/4" System Depths)
 WW-226	O.S. 135 Snap-In Back Trim Use with WW-230 Corner Mullion (6 1/2" & 7 1/4" System Depths)
 WW-102-05	"T" Anchor Use with WW-240 Corner Mullion
 WW-102-06	"T" Anchor Use with WW-230 Corner Mullion
 WW-102-07	"T" Anchor Use with WW-241 Corner Mullion
 WW-180-01	Shear Block Use with WW-240 & WW-241 90° Corner Mullions
 WW-180-02	Shear Block Use with WW-230 135° Corner Mullion
 WW-190-01	Splice Sleeve Use with WW-230 135° Corner Mullion
 WW-191-01	Splice Sleeve Use with WW-240 90° Corner Mullion
 WW-202-01	Splice Sleeve Use with WW-241 90° SSG Corner Mullion

PARTS LIST

CORNER MULLIONS & ACCESSORIES
4" and 5 1/4" Backmembers

 WW-317	Mullion Cap 135° Inside Corner 1" Infill, Captured & SSG
 WW-318	Mullion Cap 135° Inside Corner 1/4" Infill, Captured & SSG
 WW-319	Mullion Cap 90° Inside Corner 1" Infill, Captured
 WW-320	Mullion Cap 90° Inside Corner 1/4" Infill, Captured
 WW-321	Mullion Cap 135° Outside Corner 1" Infill, Captured & SSG
 WW-322	Mullion Cap 135° Outside Corner 1/4" Infill, Captured & SSG
 WW-323	Mullion Cap 90° Outside Corner 1" Infill, Captured & SSG
 WW-324	Mullion Cap 90° Outside Corner 1/4" Infill, Captured & SSG
 WW-337	Mullion Cap 90° Inside SSG Corner 1" Infill
 WW-339	Mullion Cap 90° Inside SSG Corner 1/4" Infill
 WW-304	Foam Zone Plug 135° Inside Corner 1" Infill, Captured
WW-305	Foam Zone Plug 135° Inside Corner 1/4" Infill, Captured
 WW-306	Foam Zone Plug 90° Inside Corner 1" Infill, Captured
 WW-307	Foam Zone Plug 90° Inside Corner 1/4" Infill, Captured
 WW-308	Foam Zone Plug 135° Outside Corner 1" Infill, Captured

 WW-309	Foam Zone Plug 135° Outside Corner 1/4" Infill, Captured
 WW-310	Foam SSG Bridge 135° Outside Corner 1" Infill, SSG
 WW-311	Foam SSG Bridge 135° Outside Corner 1/4" Infill, SSG
 WW-312	Foam SSG Bridge 90° Outside Corner 1" Infill, SSG
 WW-313	Foam SSG Bridge 90° Outside Corner 1/4" Infill, SSG
WW-314	Foam Zone Plug 90° Outside Corner 1/4" Infill, Captured (use WW-302 for 1" Infill)
 WW-336	Foam Zone Plug 90° Inside SSG Corner 1" Infill
 WW-340	Foam Zone Plug 90° Inside SSG Corner 1/4" Infill

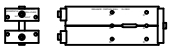
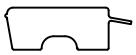
COMMON EXTRUSIONS
All System Depths and Infills

 WW-100	Perimeter Anchor Clip 1" Infill
 WW-101	Perimeter Anchor Clip 1/4" Infill
 WW-110	Standard Face Cover
 WW-117	Face Cover for Flush Door Adaptor
 WW-122	Pocket Filler 1" Infill (use with exterior gasket)
 WW-123	Pocket Filler 1" Infill (full pocket closure)

COMMON EXTRUSIONS - cont'd.
All System Depths and Infills

 WW-124	Pocket Filler 1/4" Infill (use with exterior gasket)
 WW-125	Pocket Filler 1/4" Infill (full pocket closure)
WW-236	Horizontal Filler for WW-432 & WW-482
WW-237	Horizontal Filler for WW-532 & WW-582
 WW-130	Transition Glazing Adaptor 1" to 1/4" Infill, Captured
 WW-131	Transition Glazing Adaptor 1" to 1/4" Infill, SSG
 WW-141	Transition Glazing Adaptor SSG to Captured 1" Infill
 WW-142	Transition Glazing Adaptor SSG to Captured 1/4" Infill
 WW-160	Flush Door Pressure Plate 1" Infill
 WW-161	Flush Door Pressure Plate 1/4" Infill
WW-162	Standard Pressure Plate
 WW-210	Standard 1" Door Subframe 1" Infill
 WW-211	Standard 1" Door Subframe 1/4" Infill
 D-186	Optional 3/4" Door Subframe 1" or 1/4" Infill
 DS-1	Optional Door Stop for D-186 Subframe Use with SC-1 Clip

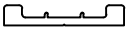
PARTS LIST
STANDARD ACCESSORIES
All System Depths and Infills

 FG-2145	Door Stop Standard Doors
 DS-117	Door Stop Thermal Doors
 DJ-100	Drill Jig Vertical Mullions 4" & 5 1/4" Backmembers
 GP-103	Standard Dense Gasket Interior & Exterior 1/4" Face Clearance
 GP-104	Optional Sponge Gasket Interior Only 1/4" Face Clearance
 GP-117	Optional Dense Gasket 3/16" Face Clearance
 GP-118	Optional Dense Gasket 5/16" Face Clearance
 GP-105	Standard Spacer Gasket SSG Vertical Mullions 3/8" Silicone Joint Width
 GP-106	Optional Spacer Gasket SSG Vertical Mullions 1/2" Silicone Joint Width
 GP-107	Thermal Isolator 1" Infill Systems
 GP-108	Thermal Isolator 1/4" Infill Systems
 GP-109	Setting Block 1" Infill
 GP-110	Setting Block 1/4" Infill
 GP-111	Side Block 1" Infill
 GP-112	Side Block 1/4" Infill

 PP-16	10 Ga. Steel Stiffener for WW-500, WW-504, WW-510, WW-550 & WW-560
 PP-17	10 Ga. Steel Stiffener for WW-500, WW-504, WW-510, WW-550 & WW-560
 RS-18	10 Ga. Steel Stiffener for WW-504, WW-510 & WW-560
 RS-19	10 Ga. Steel Stiffener for WW-500 & WW-550
 RS-21	10 Ga. Steel Stiffener for WW-400, WW-404, WW-412, WW-450 & WW-460
 RS-22	10 Ga. Steel Stiffener for WW-400 & WW-450
 RS-23	10 Ga. Steel Stiffener for WW-404, WW-410 & WW-460
 WW-300	SSG Mullion Bridge 1" Infill
 WW-301	SSG Mullion Bridge 1/4" Infill
 WW-302	Standard Zone Plug 1" Infill
 WW-303	Standard Zone Plug 1/4" Infill
 WW-102-01	Intermediate "T" Anchor Use with WW-500 & WW-550
 WW-102-02	Intermediate "T" Anchor Use with WW-504, WW-510 & WW-560
 WW-102-03	Intermediate "T" Anchor Use with WW-400 & WW-450
 WW-102-04	Intermediate "T" Anchor Use with WW-404, WW-410 & WW-460

 WW-103-01	Std. Jamb "F" Anchor WW-503 or WW-553 Jamb WW-500, WW-504 or WW-550 Intermediates
 WW-103-02	Optional Jamb "F" Anchor WW-504, WW-510 or WW-560 SSG & Heavy Mullions
 WW-103-03	Std. Jamb "F" Anchor WW-403 or WW-453 Jamb WW-400, WW-404 or WW-450 Intermediates
 WW-103-04	Optional Jamb "F" Anchor WW-404, WW-410 or WW-460 SSG & Heavy Mullions
 WW-181-01	Standard Shear Block 4" & 5 1/4" Backmembers
 WW-104-01	Shear Block Anchor 4" & 5 1/4" Backmembers (for Head & Sill)
WW-193-01	Vertical Mullion Splice Use with WW-400 & WW-403
WW-192-01	Vertical Mullion Splice Use with WW-404, WW-410 & WW-460
WW-194-01	Vertical Mullion Splice Use with WW-500 & WW-503
 CW-74	Vertical Mullion Splice Use with WW-504, WW-510 & WW-560
 WW-293	Jamb Mullion Splice Use with WW-402 & WW-452
 WW-294	Jamb Mullion Splice Use with WW-502 & WW-552
 WW-315	Thermal Isolator for WW-210 & WW-211 Standard Door Subframe
 WW-316	Thermal Isolator for WW-160 & WW-161 Flush Door Pressure Plate
 WW-325	Captured Mullion Cap at Intermediate Verticals 1" Infill

STANDARD ACCESSORIES - cont'd.
All System Depths and Infills

WW-229-01	Vertical Mullion Splice Use with WW-450 & WW-453
WW-235-01	Vertical Mullion Splice Use with WW-550 & WW-553
 WW-238-01	Vertical Mullion Splice Use with WW-452
WW-239-01	Vertical Mullion Splice Use with WW-552
 WW-326	Captured Mullion Cap at Intermediate Verticals 1/4" Infill
 WW-327	Captured Mullion Cap at SSG Verticals 1" Infill
 WW-328	Captured Mullion Cap at SSG Verticals 1/4" Infill
 WW-338-01	Captured Mullion Cap at Jamb Mullions 1" Infill
 WW-338-02	Captured Mullion Cap at Jamb Mullions 1/4" Infill
 WW-333-01	Temporary Glazing Retainer All Captured Verticals 1" & 1/4" Infill
 SPW-PP-3	Temporary Glazing Retainer All SSG Verticals 1" & 1/4" Infill
 HP-1004	Optional Weep Baffle
 CW-552S	Setting Block
 WW-333	Temporary Clip
 WW-363-01	SSG Horizontal Zone Plug (Right Hand)
 WW-363-02	SSG Horizontal Zone Plug (Left Hand)

STANDARD FASTENERS

 FS-7	#10 X 3/4" PFH
 FS-8	#14 x 1" Phillips Hex Head Splice Sleeve to Vertical
 FS-9	#14 x 1 1/2" Hex Head Shear Block to Vertical
 FS-15	3⁄16" x 7⁄16" Drive Rivet SC-1 Door Stop Clip to Mullion
 FS-43	#12 x 3/4" Phillips Pan Head Flush Door Pressure Plate to Mullion
 FS-115	#10 x 1" Phillips Pan Head Horizontal to Shear Block
FS-317	1⁄8" x 3⁄4" S.S. Headed Roll Pin Face Cap Pin
 FS-318	#12 x 1 3/4" Phillips Flat Head WW-141, WW-142 & WW-131
 FS-320	#10 x 1/2" U-Drive All Mullion Caps
 FS-323	#12 x 1" Phillips Flat Head Steel Stiffener (through face of mullion)
 FS-325	#12-24 x 1-13/32" Hex Washer Head Drillflex @ Press. Plate to Vertical, 1" Infill
 FS-322	#12-14 x 1" Hex Washer Head Drillflex @ Press. Plate at 1/4" Infill Door Subframe & Corner Glazing Beads
 FS-319	1/4-20 x 3" Hex Head Bolt Through Bolt at Steel Stiffeners
 FSN-37	1/4-20 Hex Nut Use at FS-319
 FSW-65	1/4" Lockwasher Use at FS-319
 FS-102	#10 X 2" PFH