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 dociments and are to be followed in conjunction with this manual.

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*Web: www.obe.com*

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

GENERAL INFORMATION

## PRODUCT USE

The Reliance™ 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™ curtain wall system is directly related to the completeness and integrity of the installation process both the seal installed at the shear blocks 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 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 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. 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&15 for details which permit 1/4" movement. For designs and applications that may requre 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 Sturctural Silicone Glazing applications, the stress on the silicone should not exceed 20 PSI Consult sealant manufacture 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.

# GENERAL INFORMATION

## 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.

## 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" and 1/4" 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 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 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 Architectural Finish Guide in the Detail Catalog.

## GENERAL INFORMATION

### EXPANSION JOINTS

Expansion joints and perimeter joints shown in these instructions and in the shop drawings are shown as 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 deg F. Any movement potential should be accounted for at the time of 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.

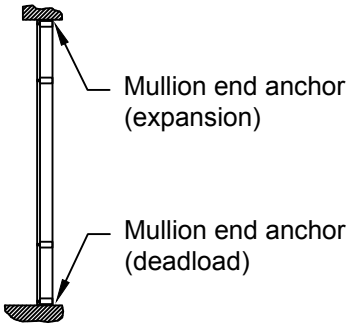
C. In extreme conditions the fan of the heating system should not cycle on and off, but should run continuously.

D. Some heating systems have a water injection feature that can raise humidity levels. the higher the humidity level the more likely condensation or frost will form. Raising the temperature and reducing humidity will usually solve the problem.

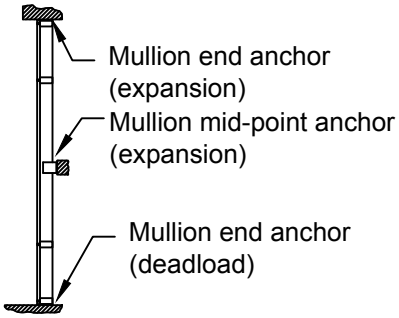
E. On rare occasions an extremely cold storm may cause frost to appear on the glass framing. A space heater and electric fan blowing along the plane of the window wall can reduce or eliminate this temporary condition.

## INSTALLATION TYPES

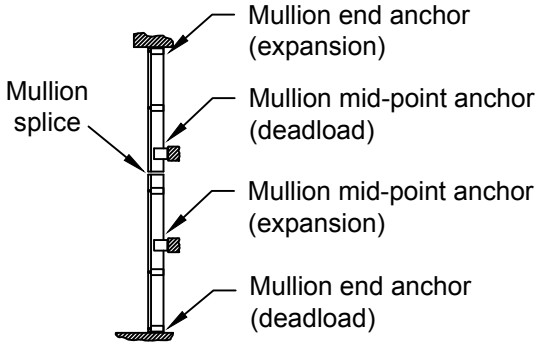
The following diagrams represent common types of installations for this product. Refer to approved shop drawings for specifics regarding splicing and anchoring of frame.




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

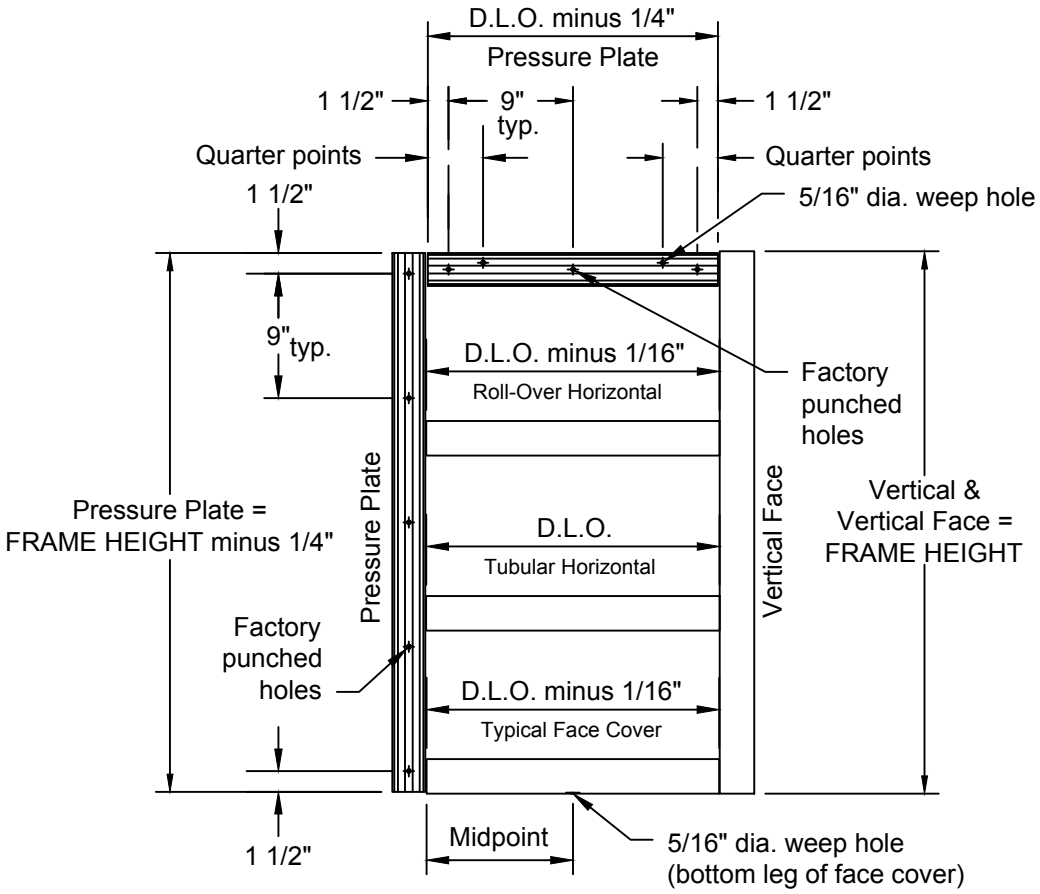



**FIGURE 1**
Material Fabrication Guide

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

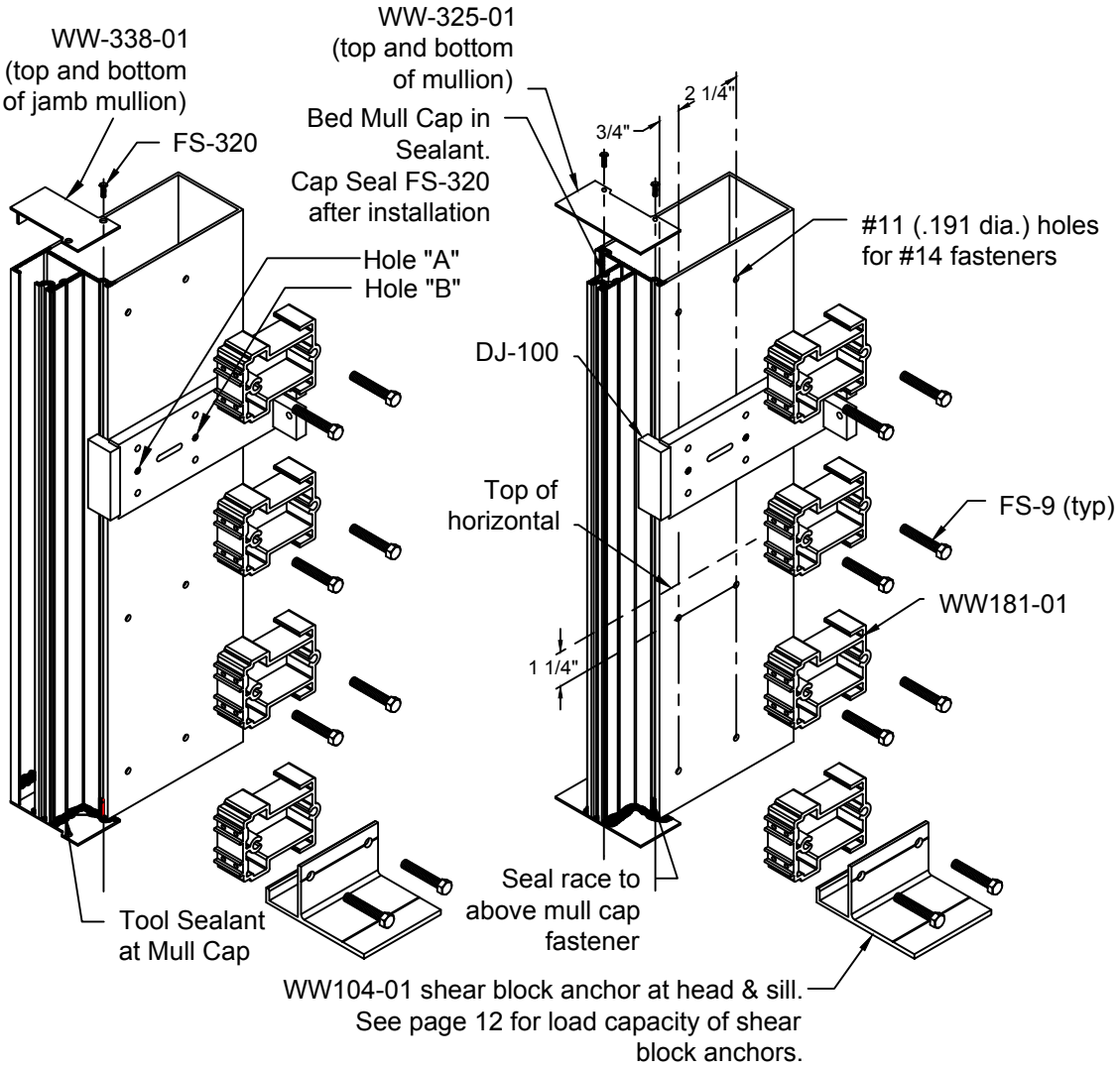



Figure 2
Vertical Fabrication

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

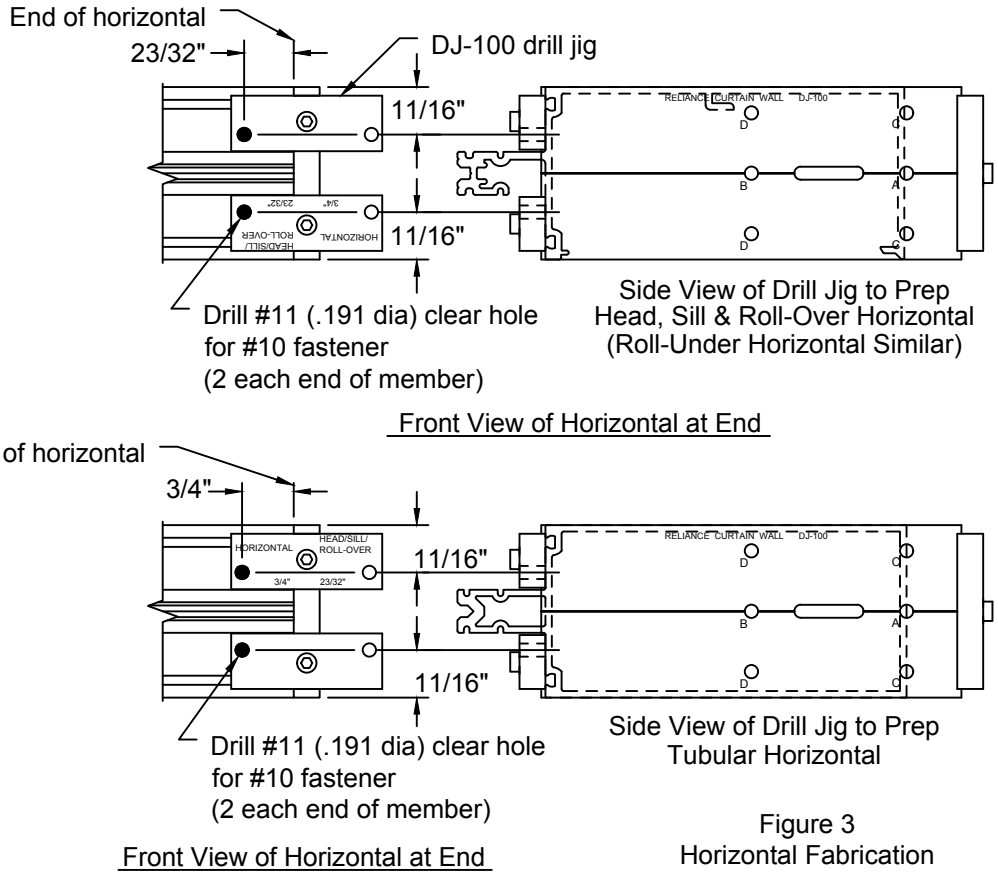



Figure 3
Horizontal Fabrication

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 28. SSG installations will have multiple holes in face cap, located at centerline of each DLO. See 3.11 page 25 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.

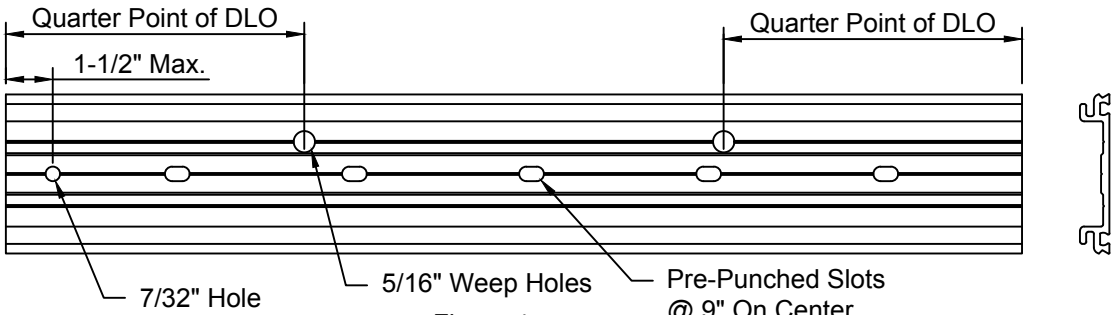



Figure 4
Pressure Plate Fabrication

## 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 12. 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 13.**

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 13.**

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

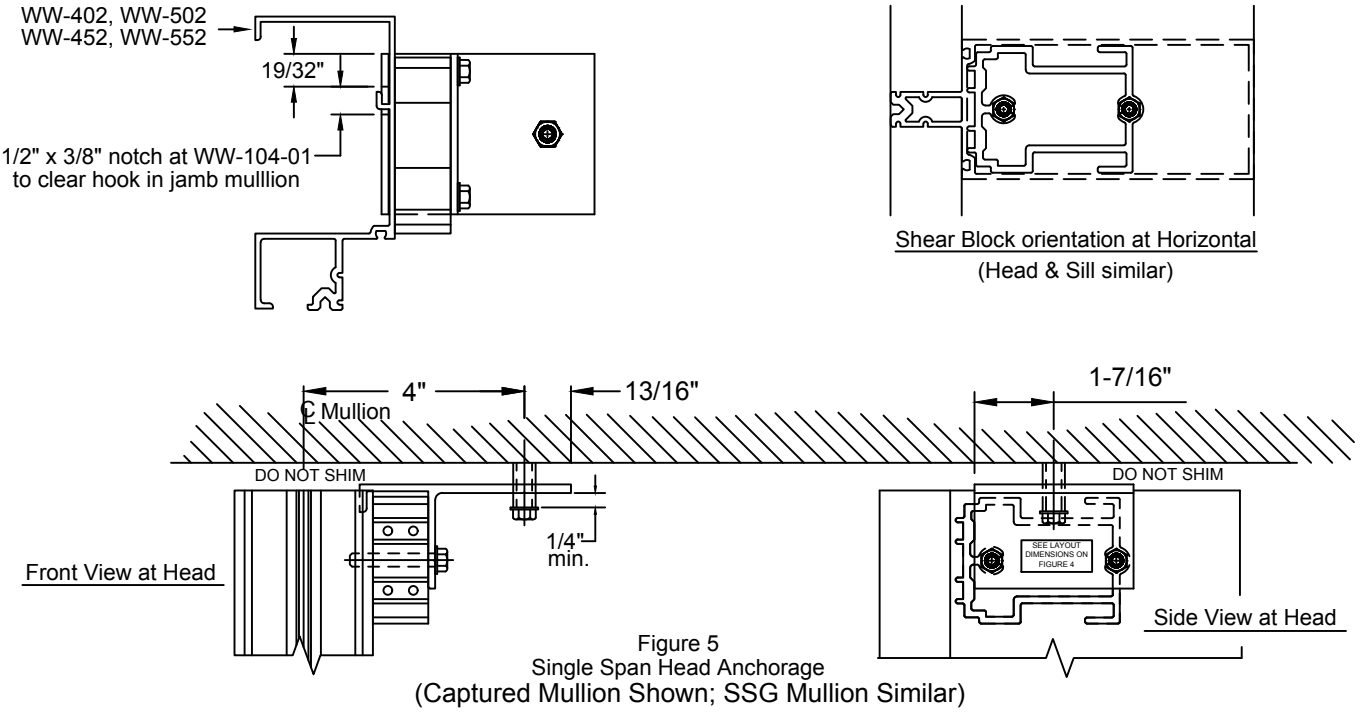



Figure 5
Single Span Head Anchorage
(Captured Mullion Shown; SSG Mullion Similar)

The WW104-01 shear block anchor at head & sill. Maximum load 375 lbs. per anchor, (750 lbs with anchor on both sides of mullion). These capacities are based on proper design fo anchor fastener to surrounding conditions.

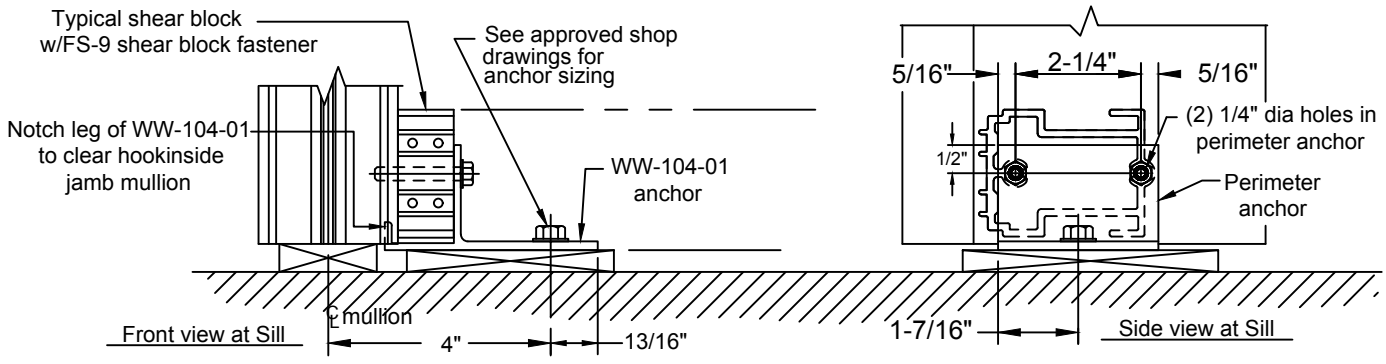



Figure 6
Shear Block Orientation
and Single Span Sill Anchorage
(Captured Mullion Shown; SSG Mullion Similar)

FRAME INSTALLATION

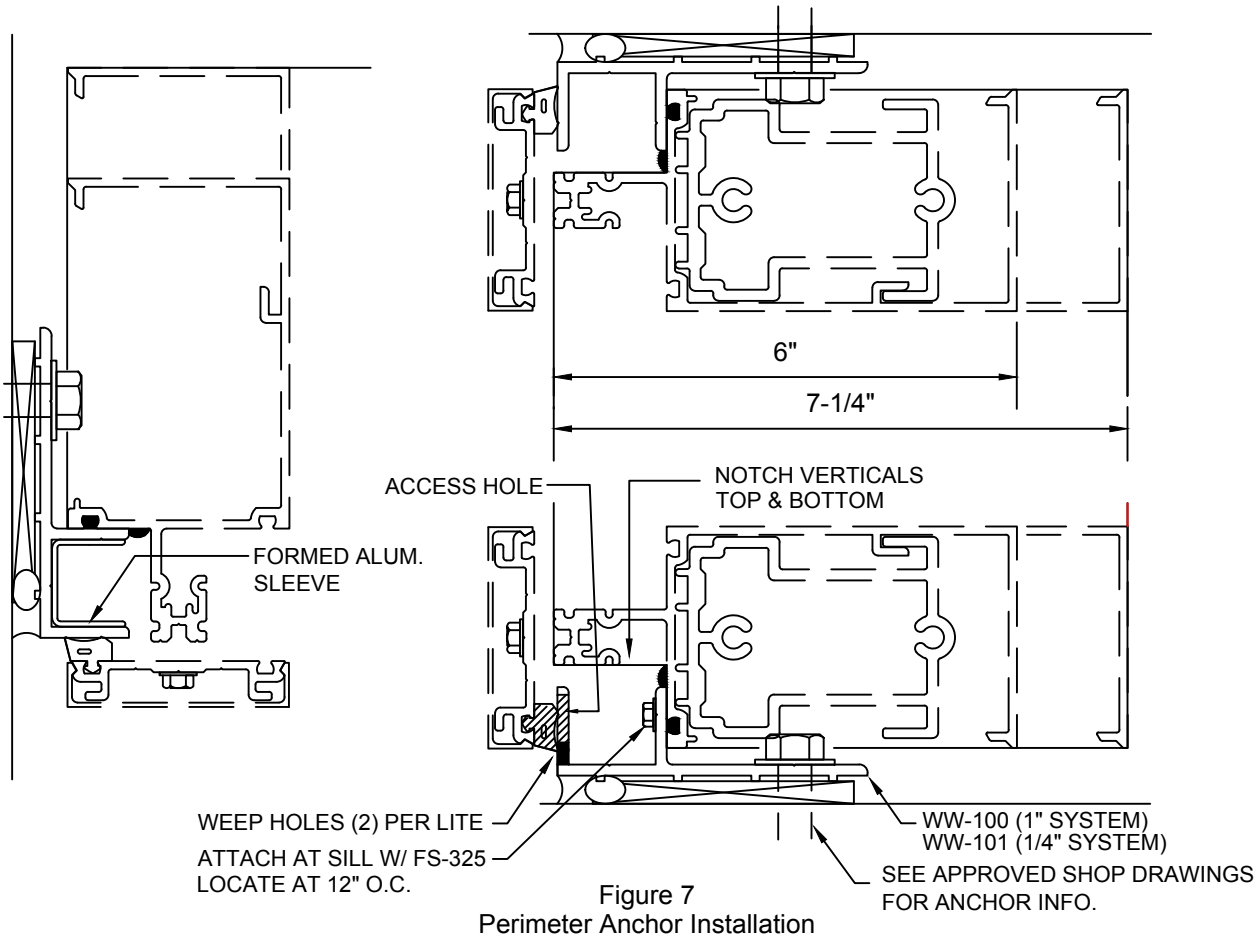



Figure 7
Perimeter Anchor Installation

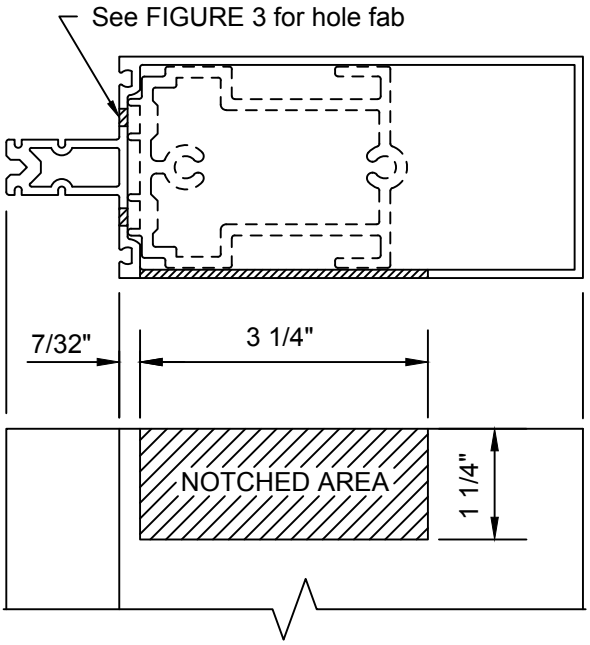



Figure 8
Last Bay Horizontal Notch

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 12 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 16. 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.

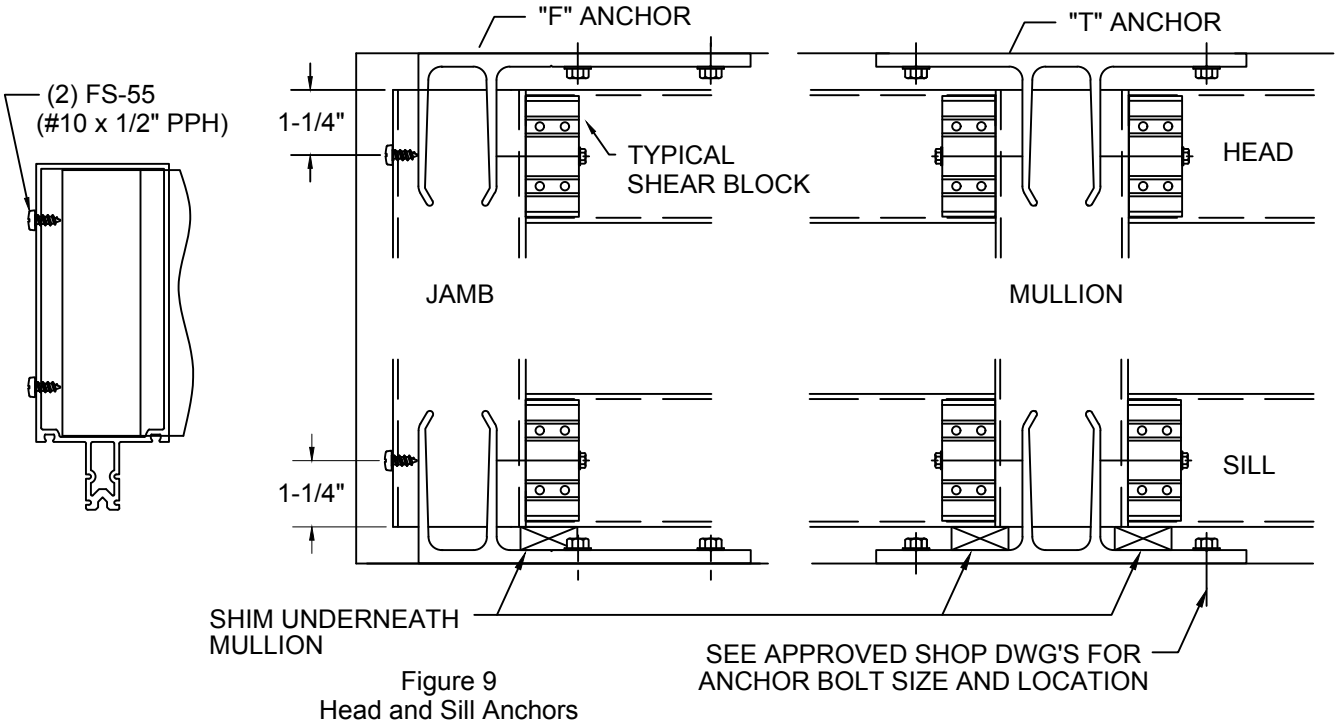



Figure 9
Head and Sill Anchors

## 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 13. 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 16. 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 17.

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 18. 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 20.

2.6 When all framing members are installed, apply the perimeter seal. SEE FIGURE 15, page 21. 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

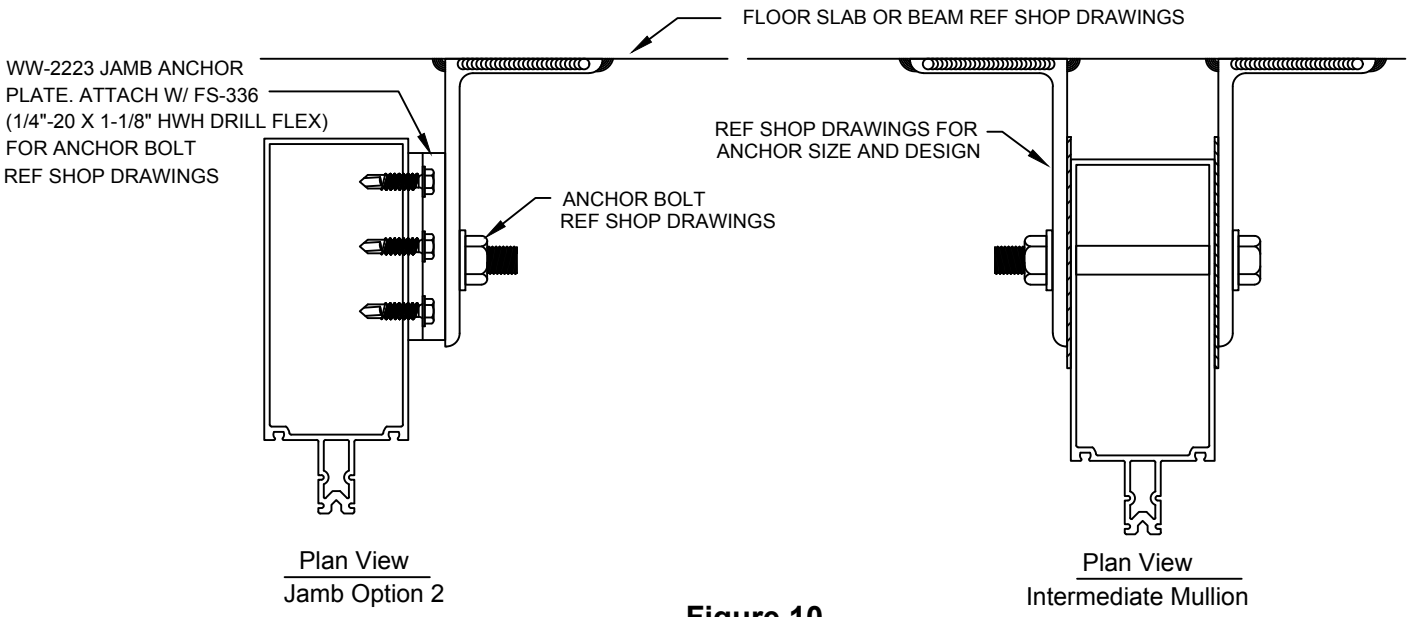
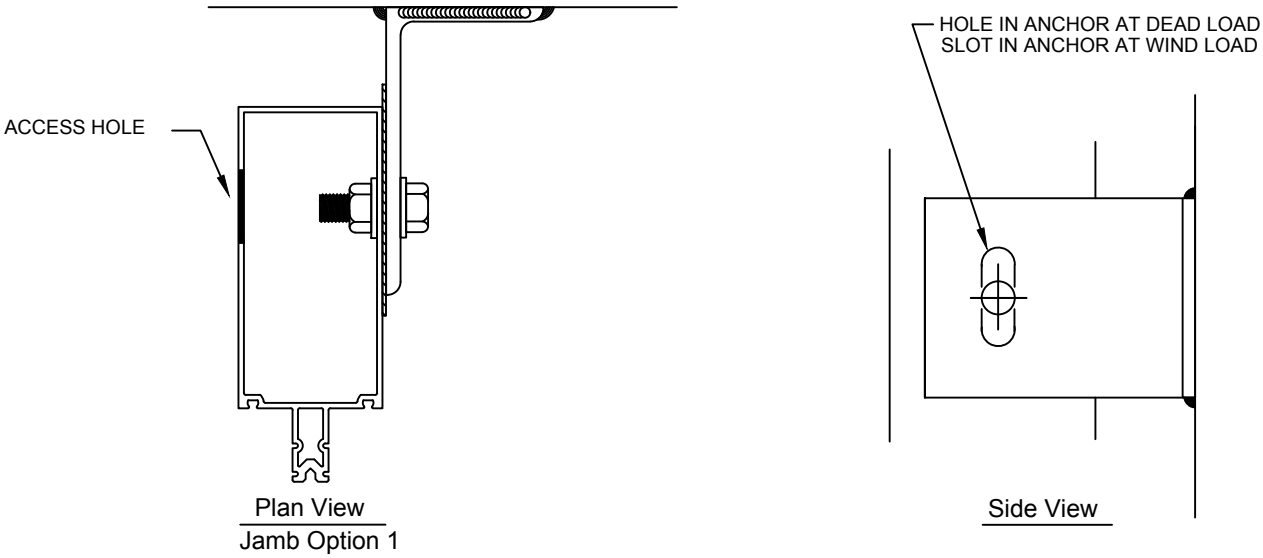



**Figure 10**
**Floor Slab Anchor Details**



VERTICAL SPLICE DETAIL

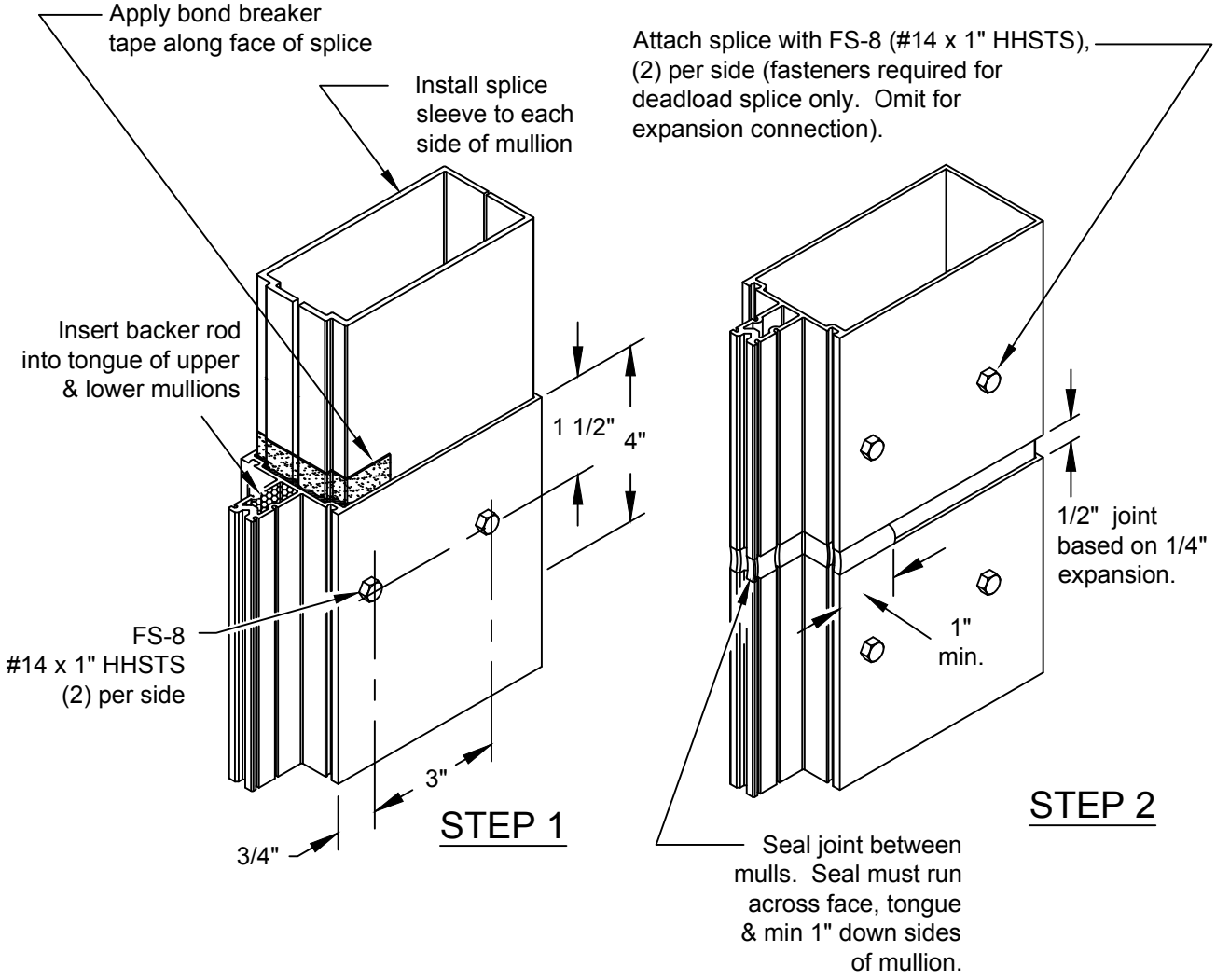
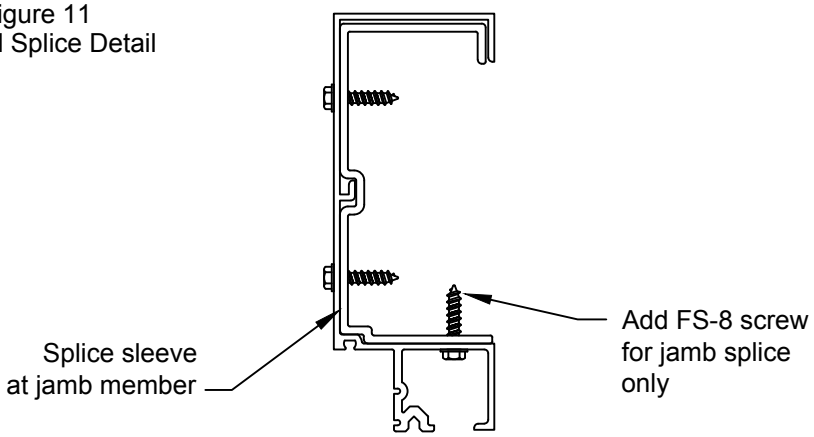



Figure 11
Vertical Splice Detail



SHEAR BLOCK SEALING

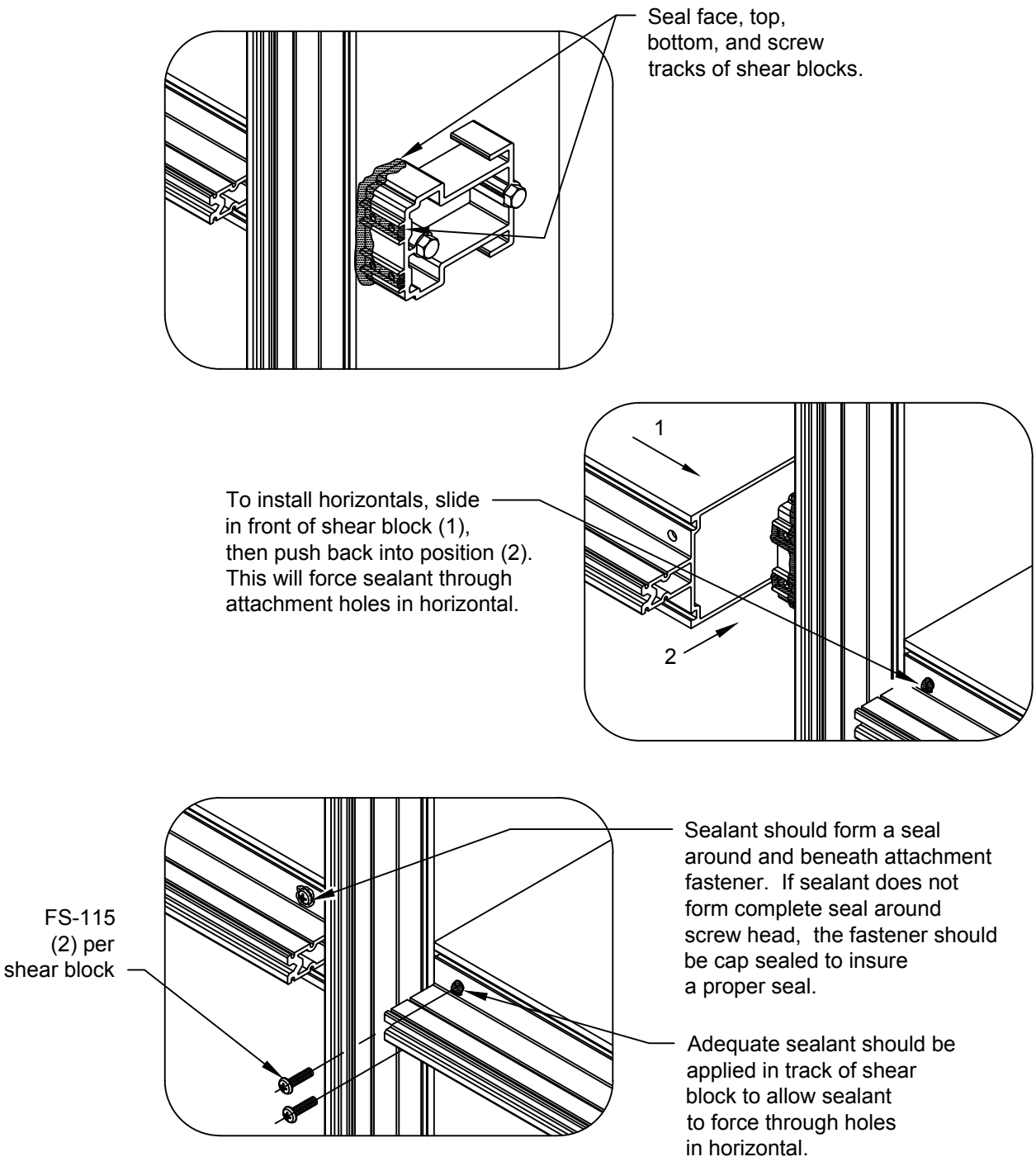



Figure 12
Shear Block Sealing

HORIZONTAL LAYOUT

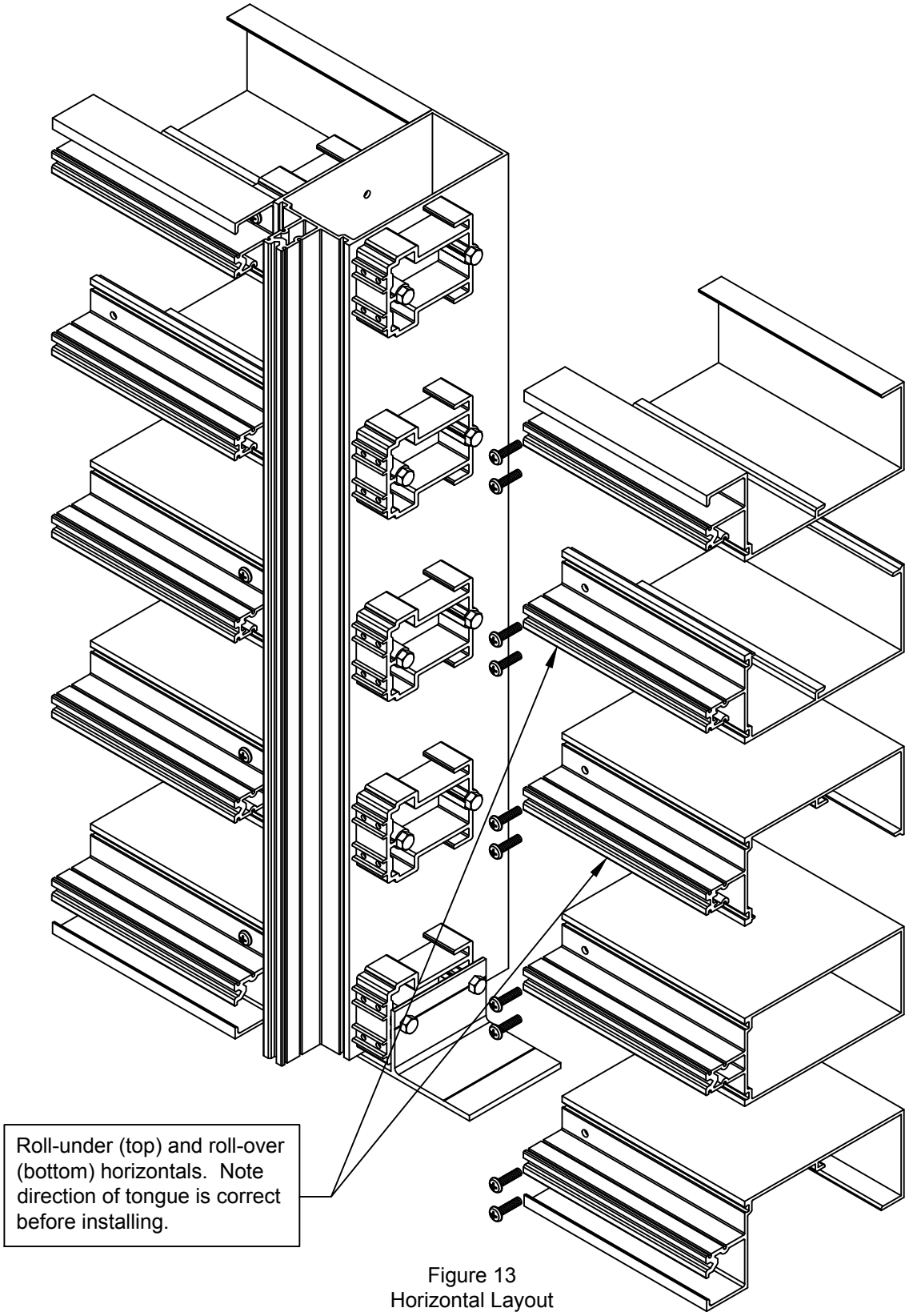



Figure 13
Horizontal Layout

ZONE PLUG INSTALLATION

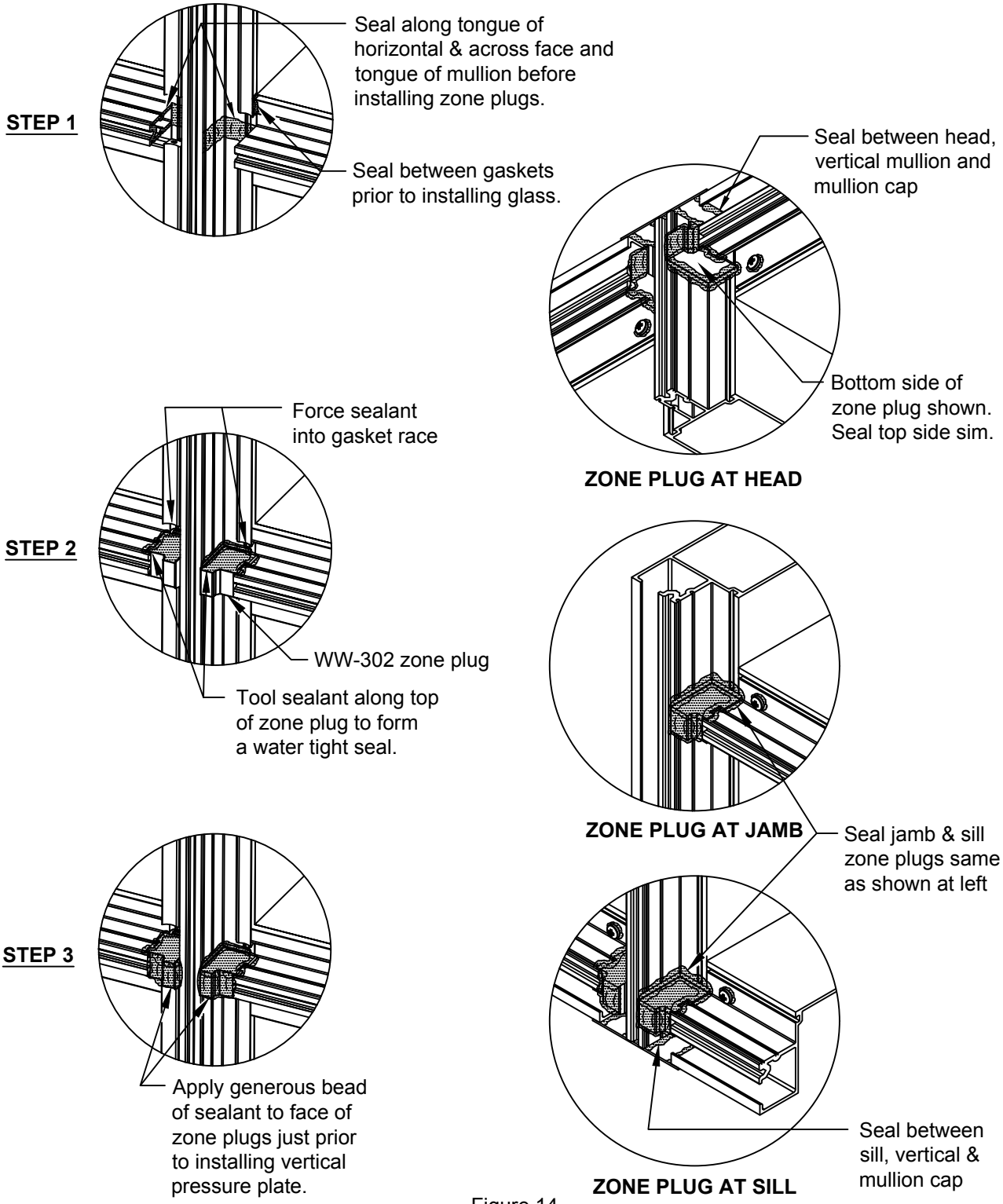



Figure 14
Zone Plug Installation

ZONE BRIDGE INSTALLATION / PERIMETER SEAL

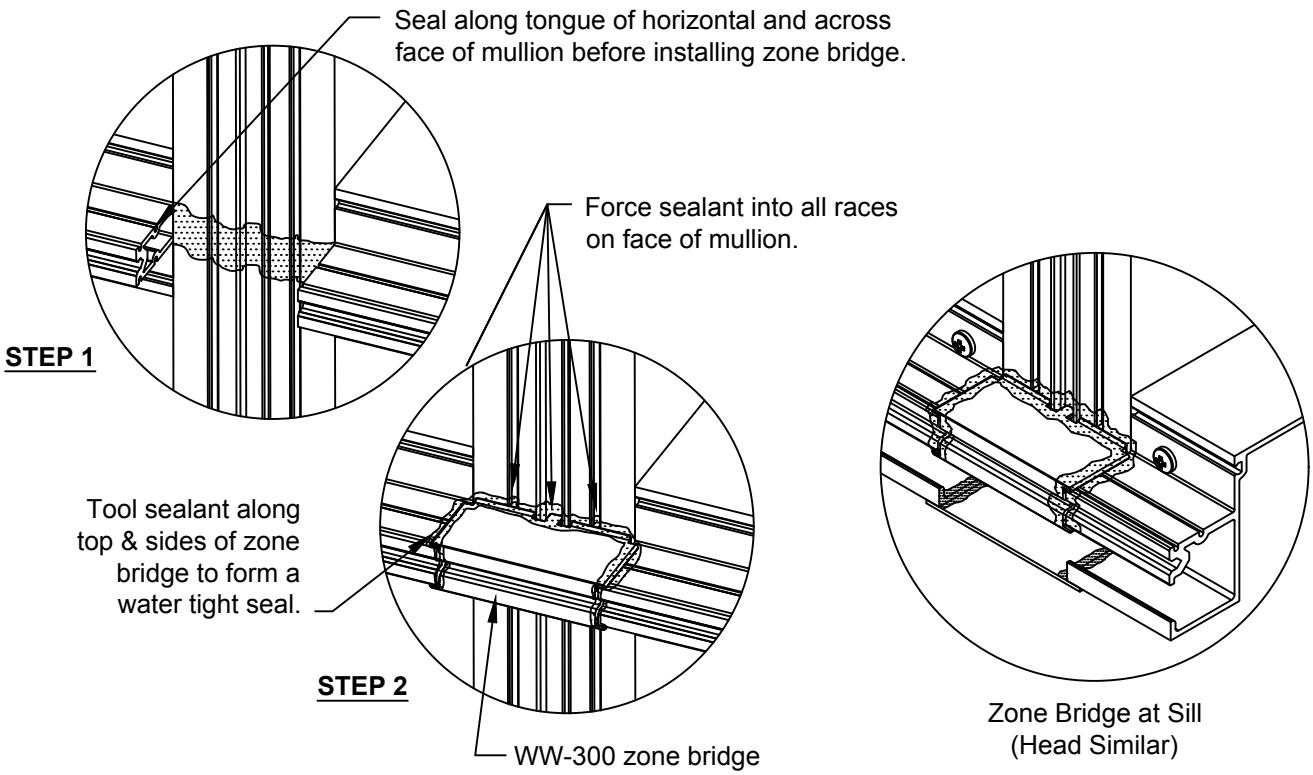



Figure 14 (continued)
Zone Bridge Installation

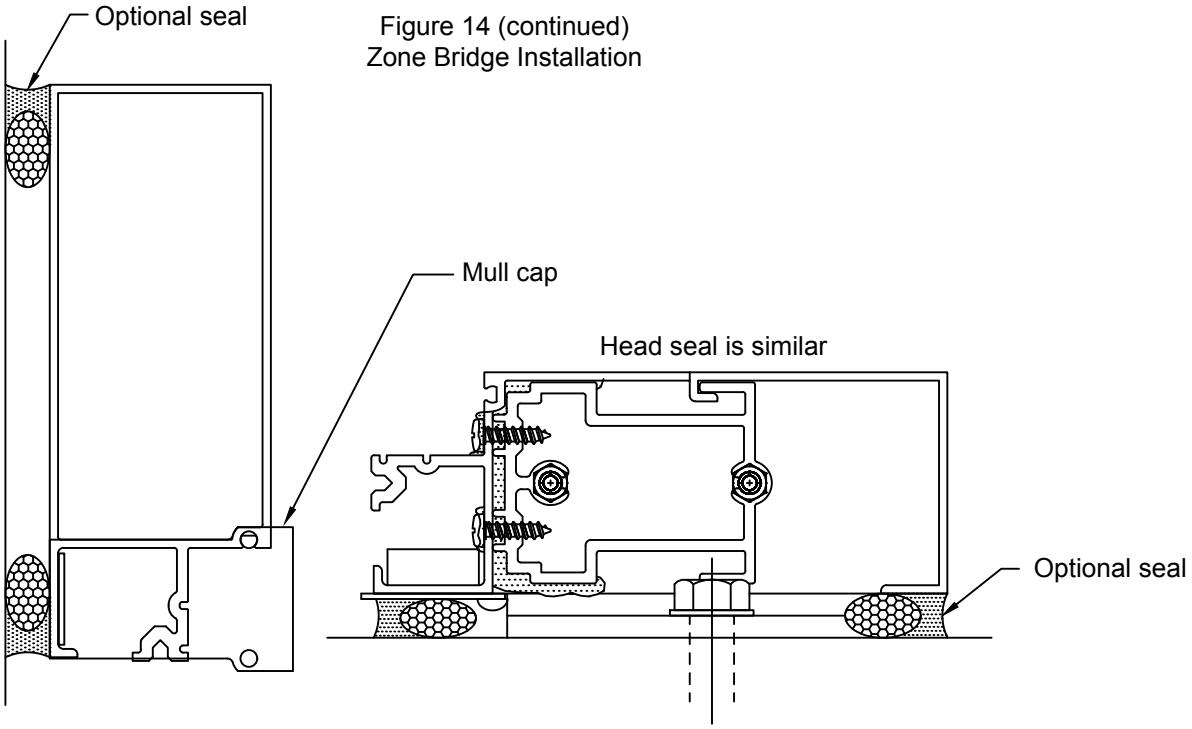
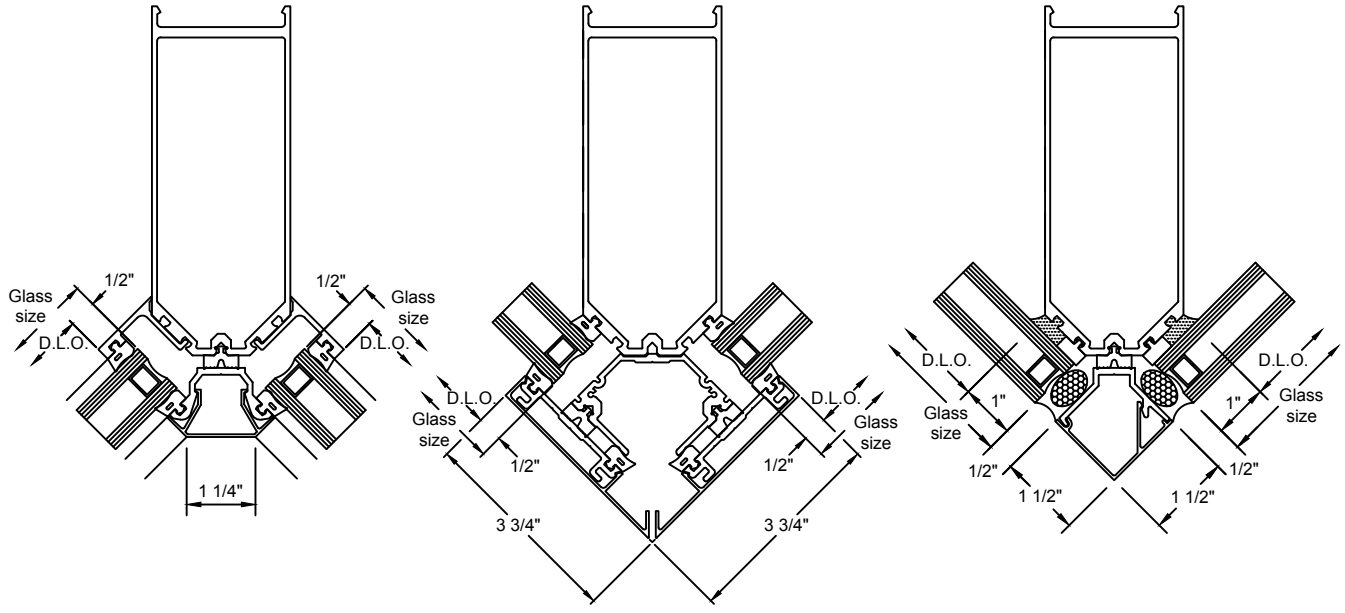



Figure 15
Perimeter Seal

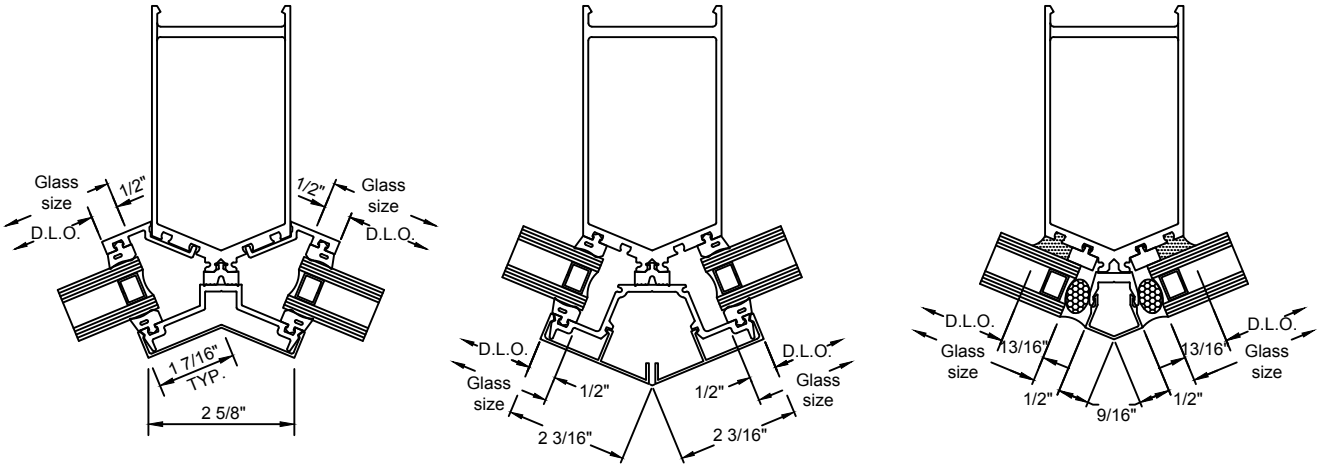
## GLASS CALCULATIONS AT CORNERS

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 30-31.




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.

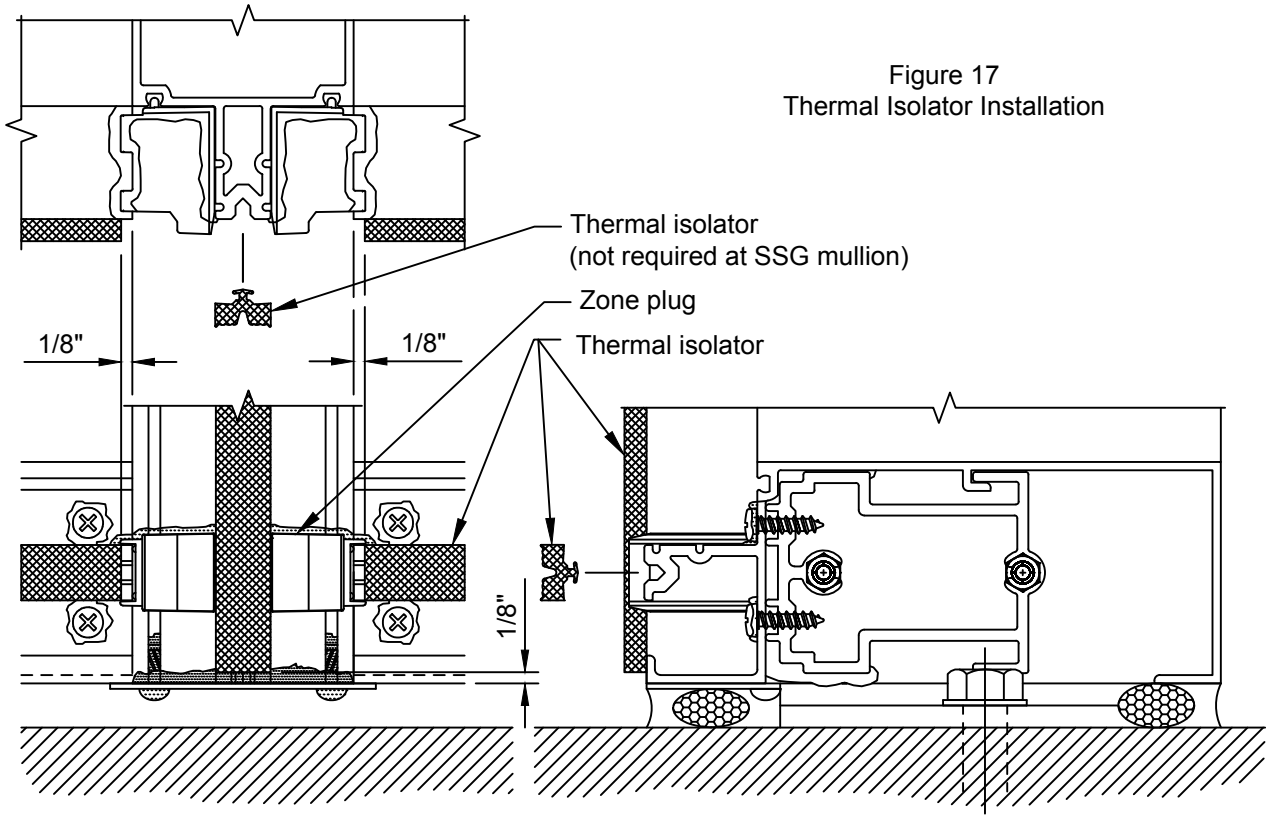



Figure 17
Thermal Isolator Installation

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.

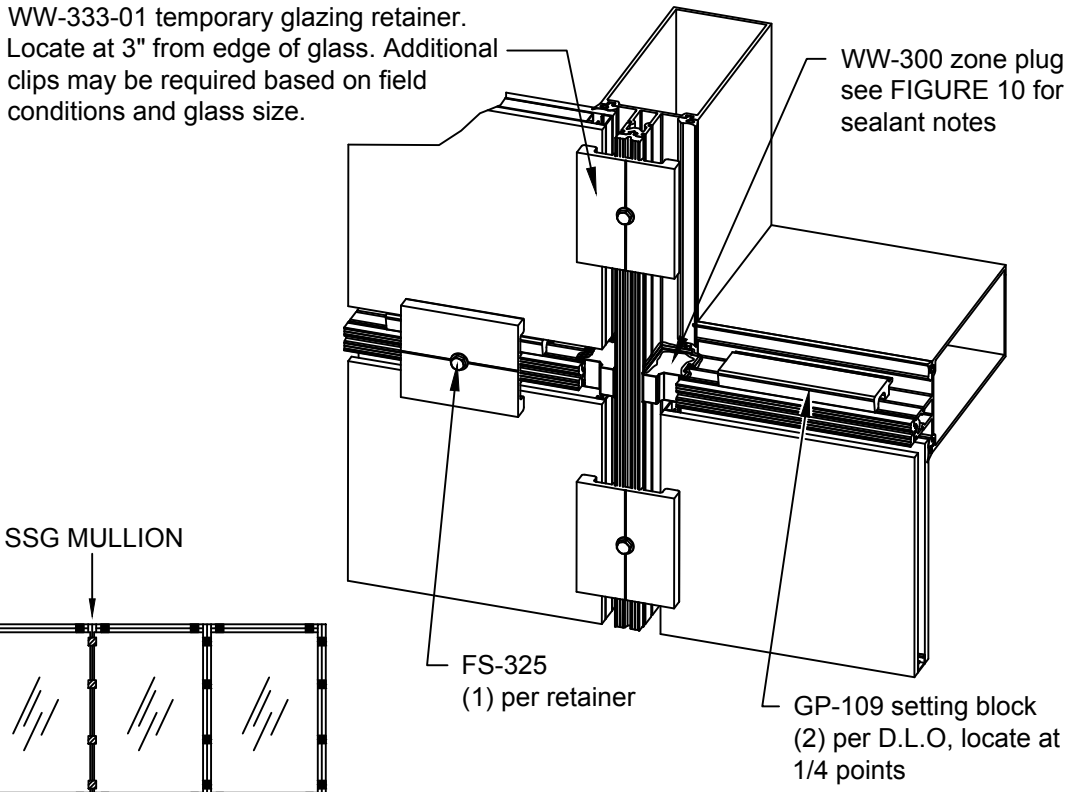



Figure 18
Glazing Instructions

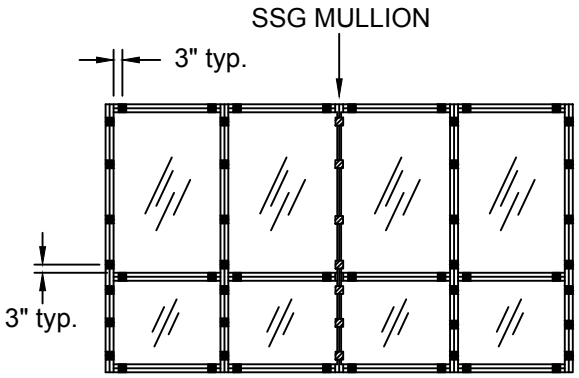



Figure 19
Typical Location of
Temporary Glazing Retainers

## 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.

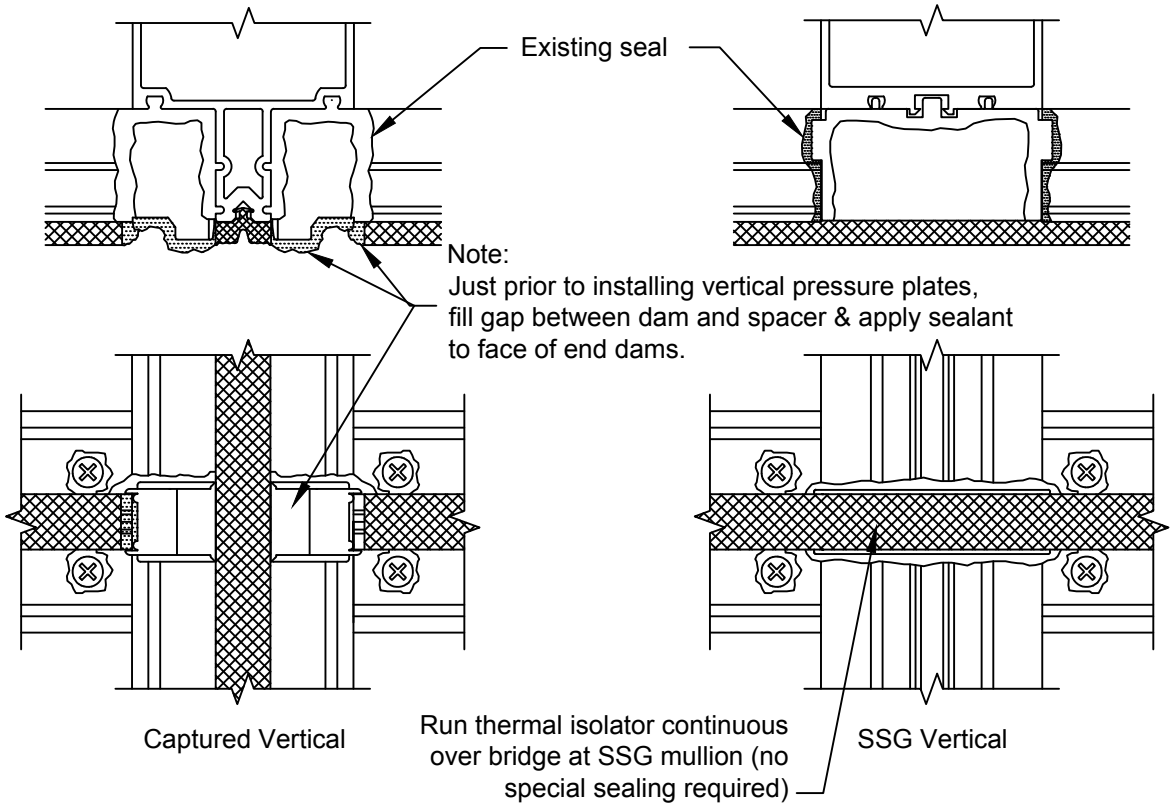



Figure 20
Sealing for Pressure Plates

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 26 for splicing and sealing instructions.**

PRESSURE PLATE & FACE CAP SPLICE

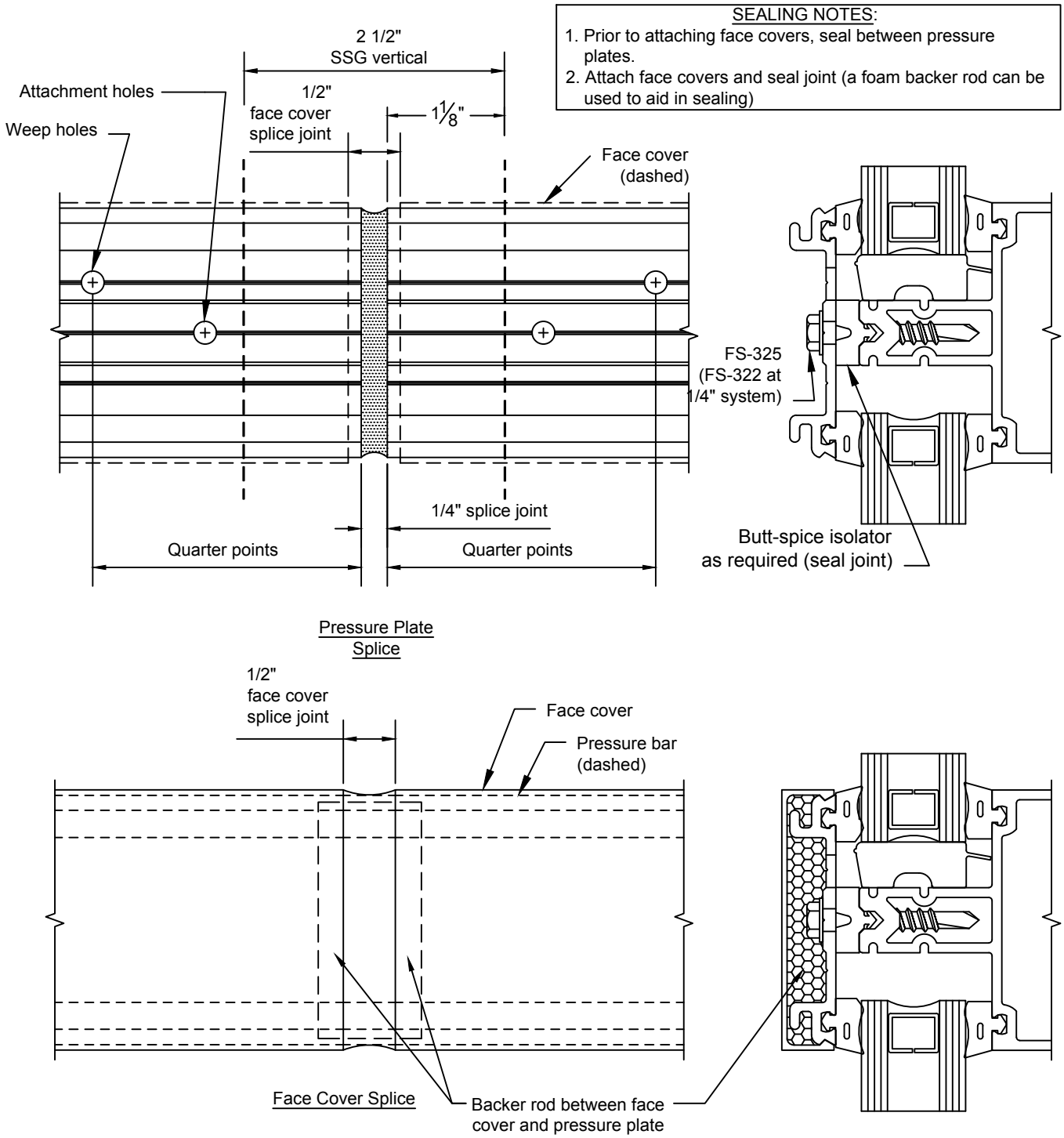



Figure 21
Pressure Plate/Face Cover Splicing & Sealing at SSG Mullions
(Intermediate Horizontal Shown; Head & Sill Similar)

## 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.

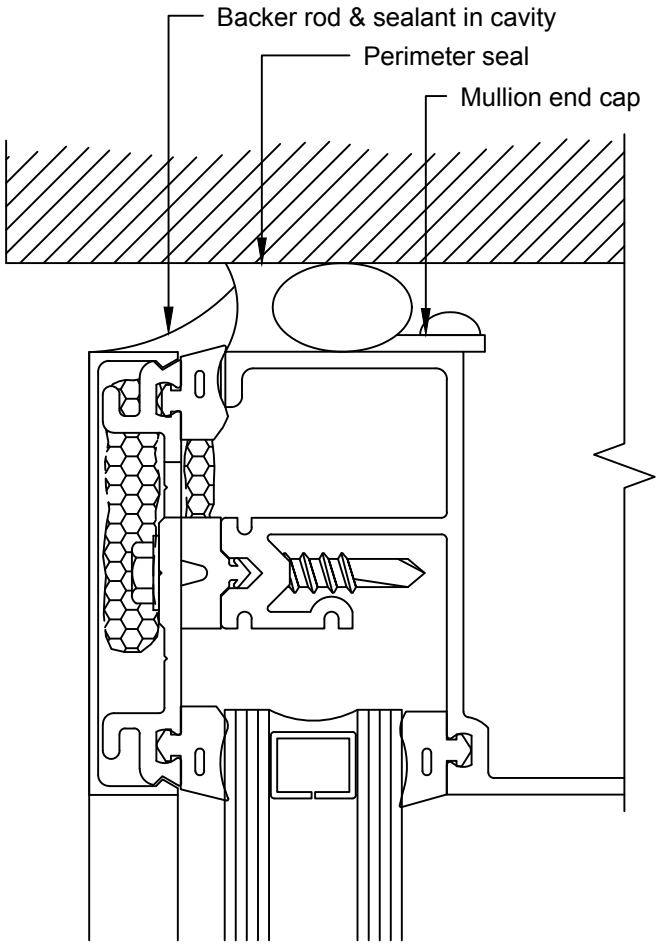
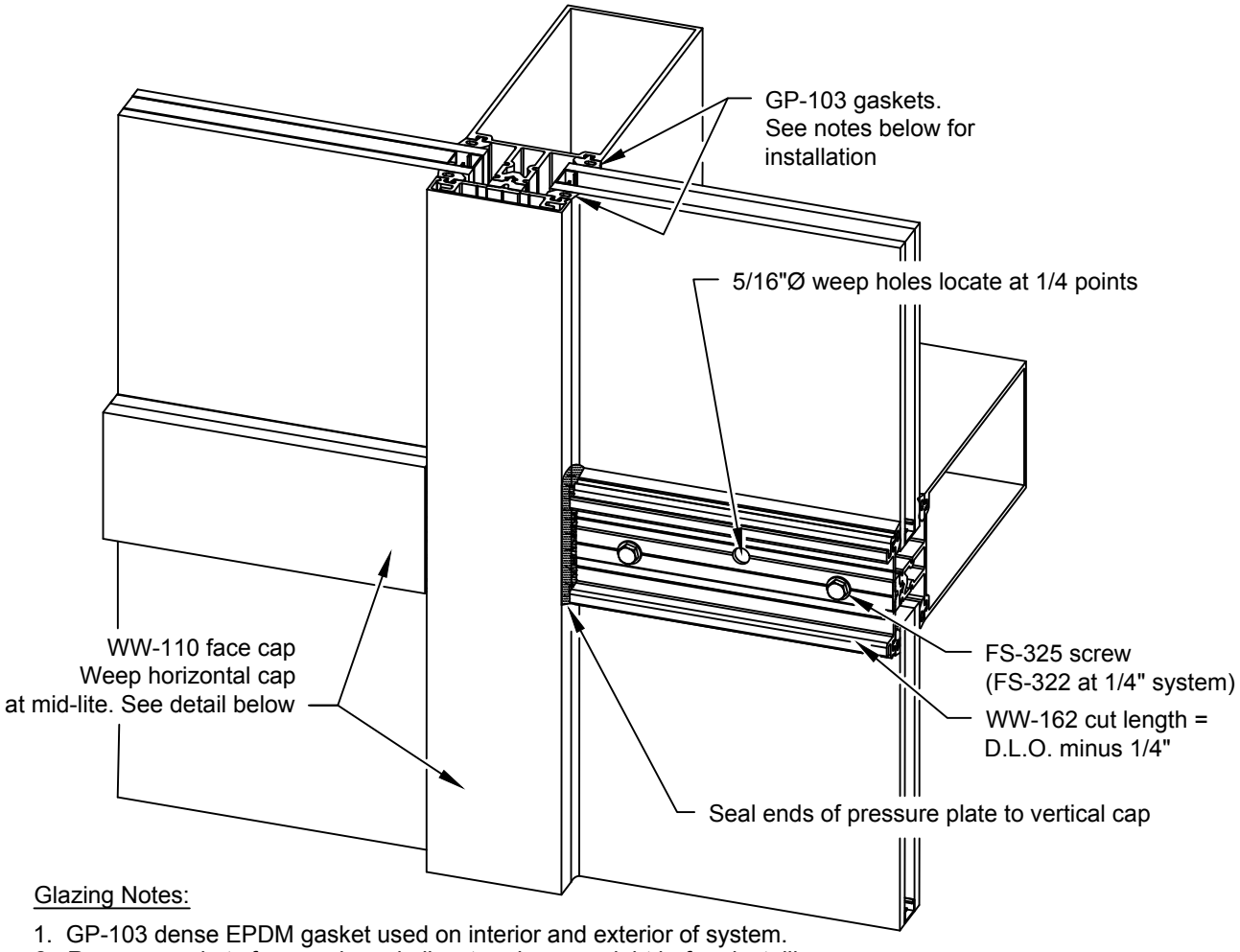


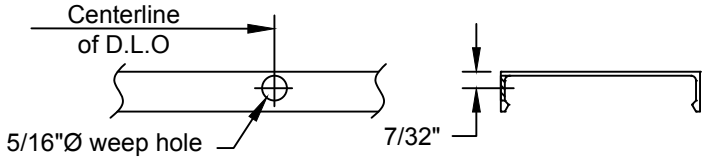

Figure 22
Sealing Top of Captured Verticals

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.

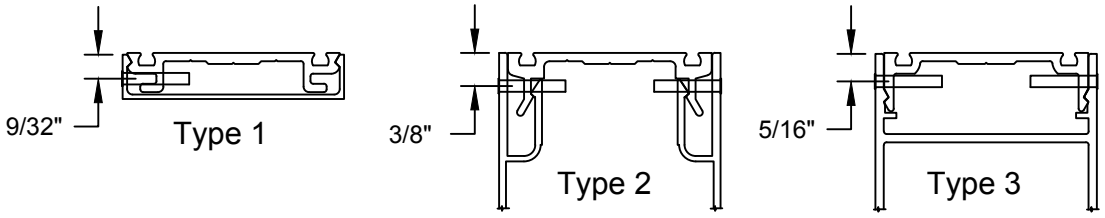



Figure 24
Face Cover Fabrication

## 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 33 & 34 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 31 for optional glazing thickness.

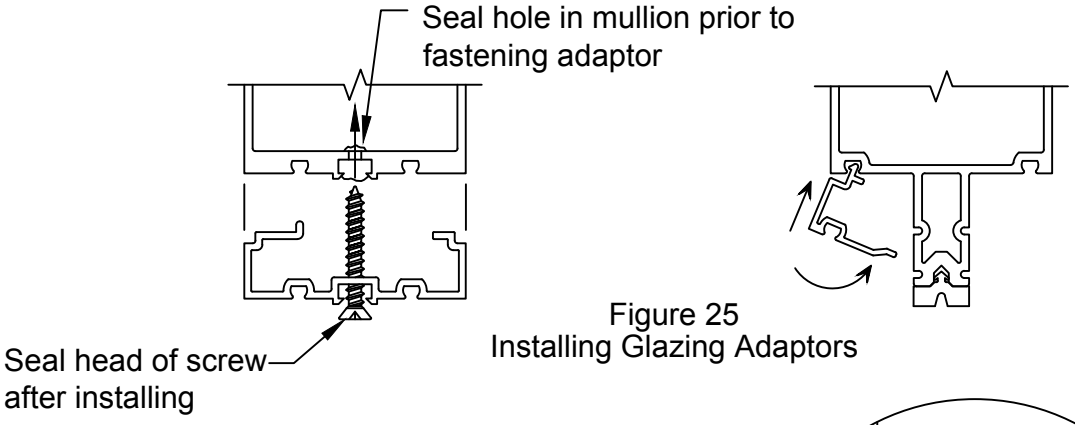



Figure 25
Installing Glazing Adaptors

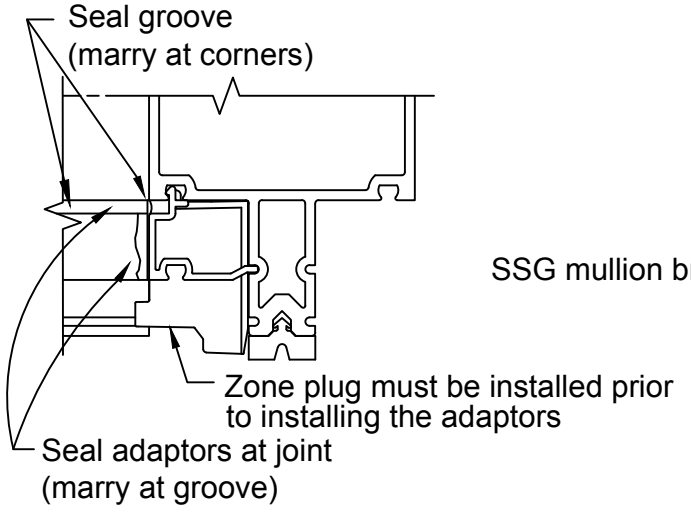



Figure 27
Sealing Glazing Adaptors
(Vertical Shown - Horizontal Similar)

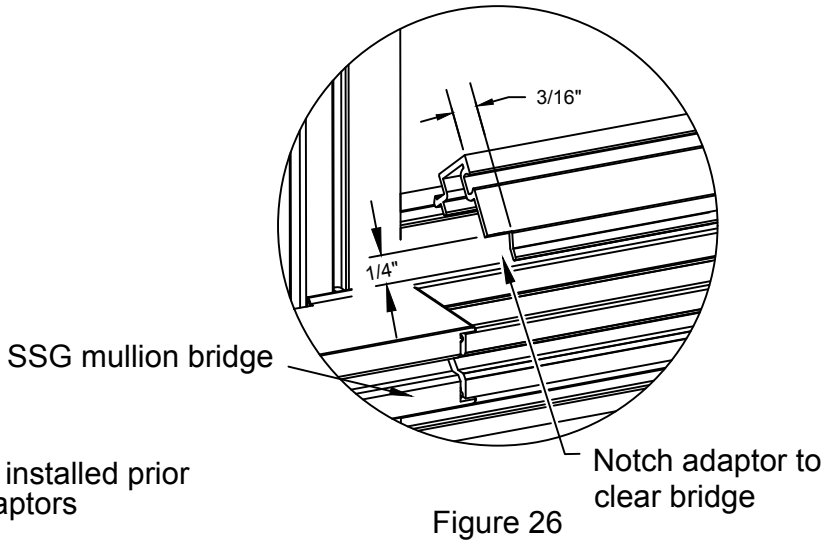
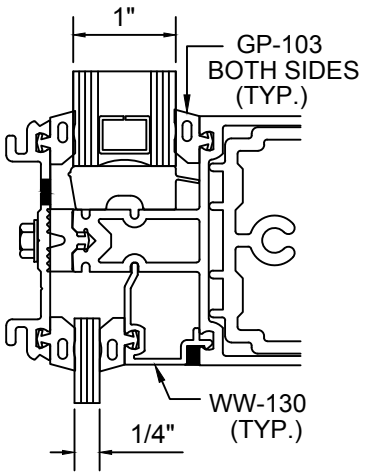
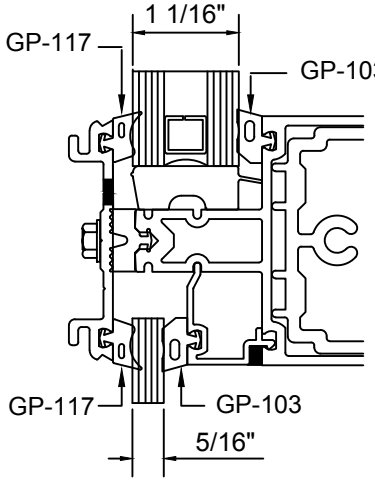
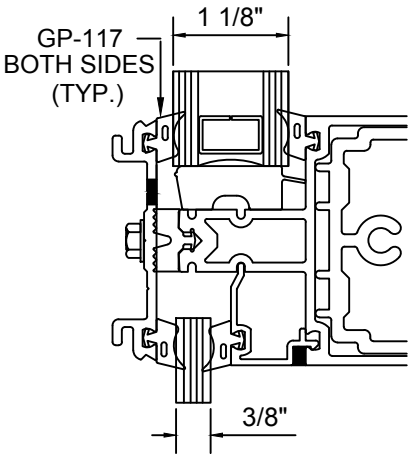


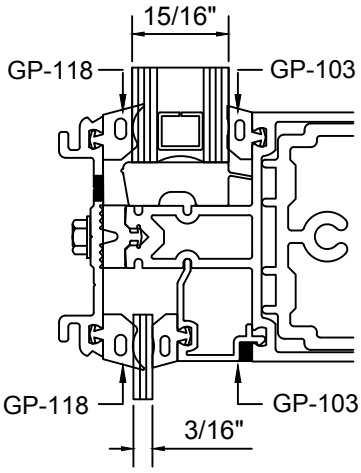

Figure 26
Notching Adaptor for
SSG Mullion Bridge

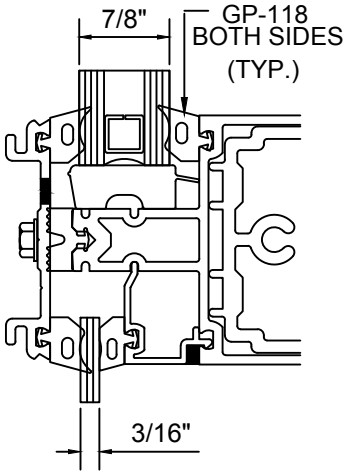
GLASS OPTIONS

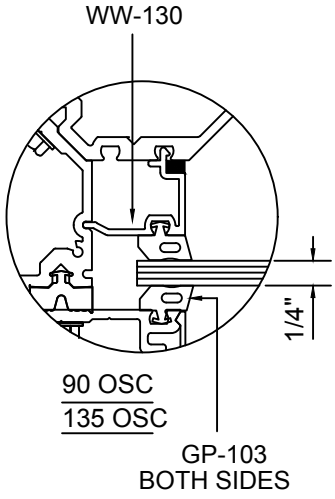


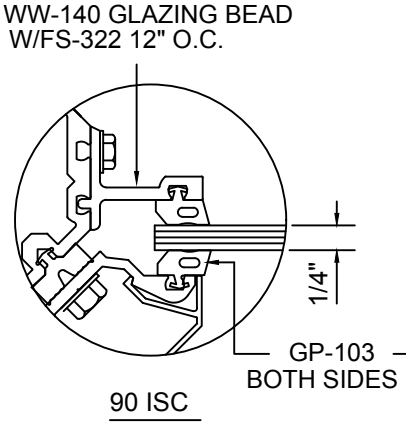



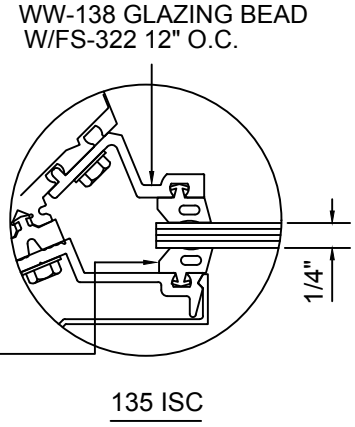




NOTE: 135° CORNER OPTIONS
NOT AVAILABLE AT 10" SYSTEM

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.

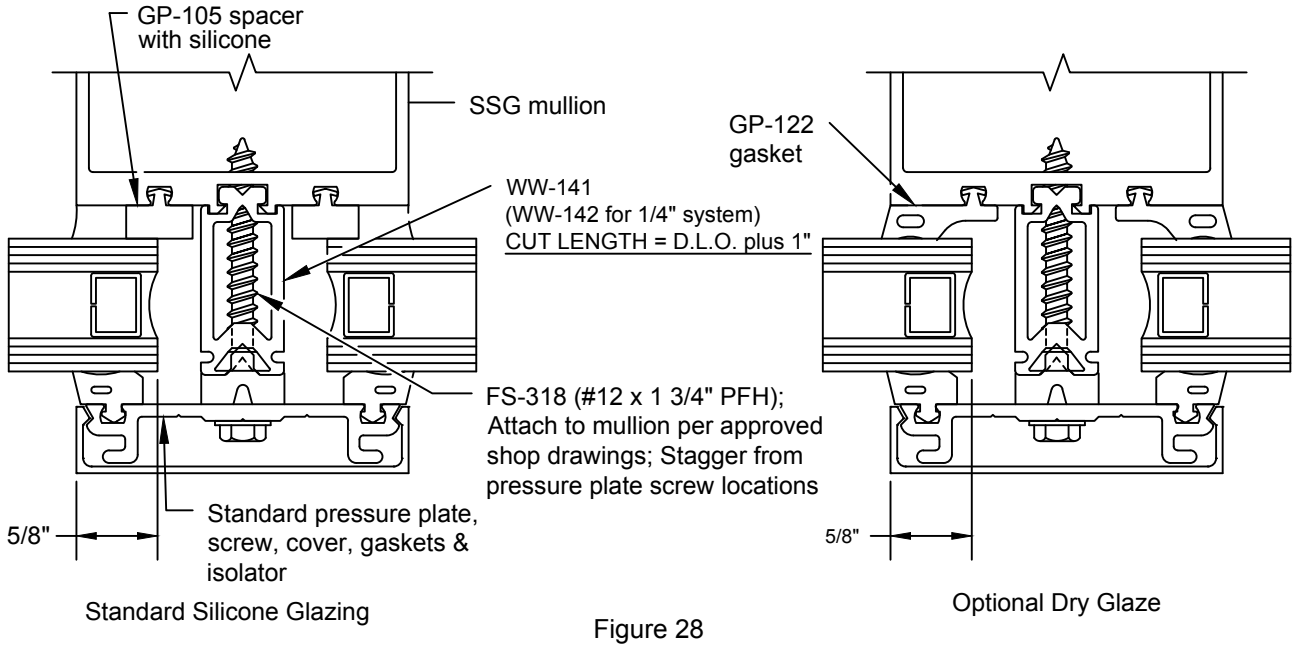



Figure 28
Captured Glazing Adaptor for SSG Mullion

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

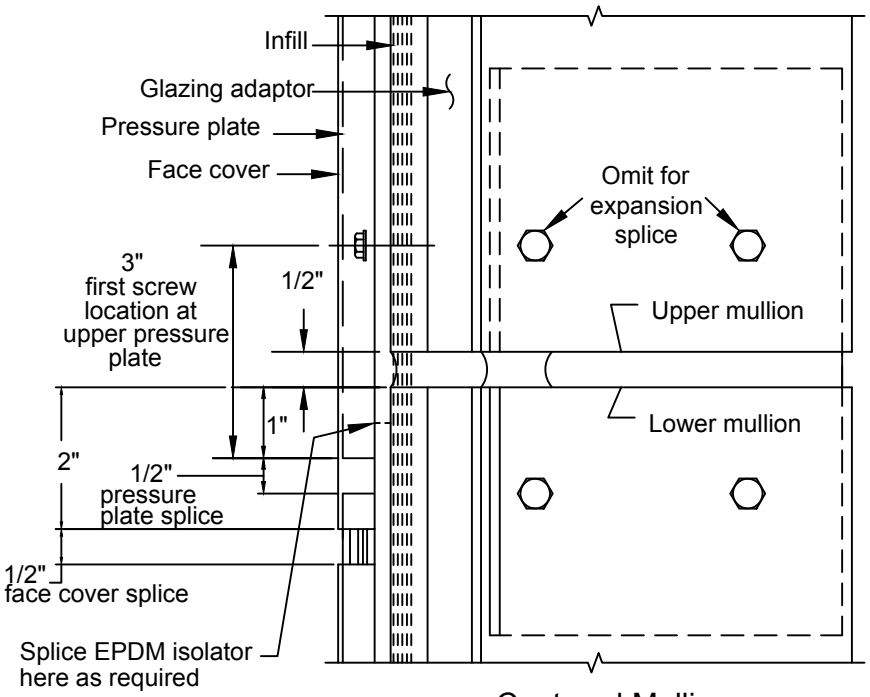
Follow sealant manufacturer's guidelines for proper joint width based on anticipated movement. A minimum ½" joint is recommended. **Note: Standard splice joints are engineered to accommodate thermal expansion only. They do not allow for movement in floor levels.** Refer to approved shop drawings for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

B.1 Offset pressure plates and face covers per **FIGURE 29, page 33.** Seal the pressure plate and face cover joints as shown in **FIGURE 30, page 34.**

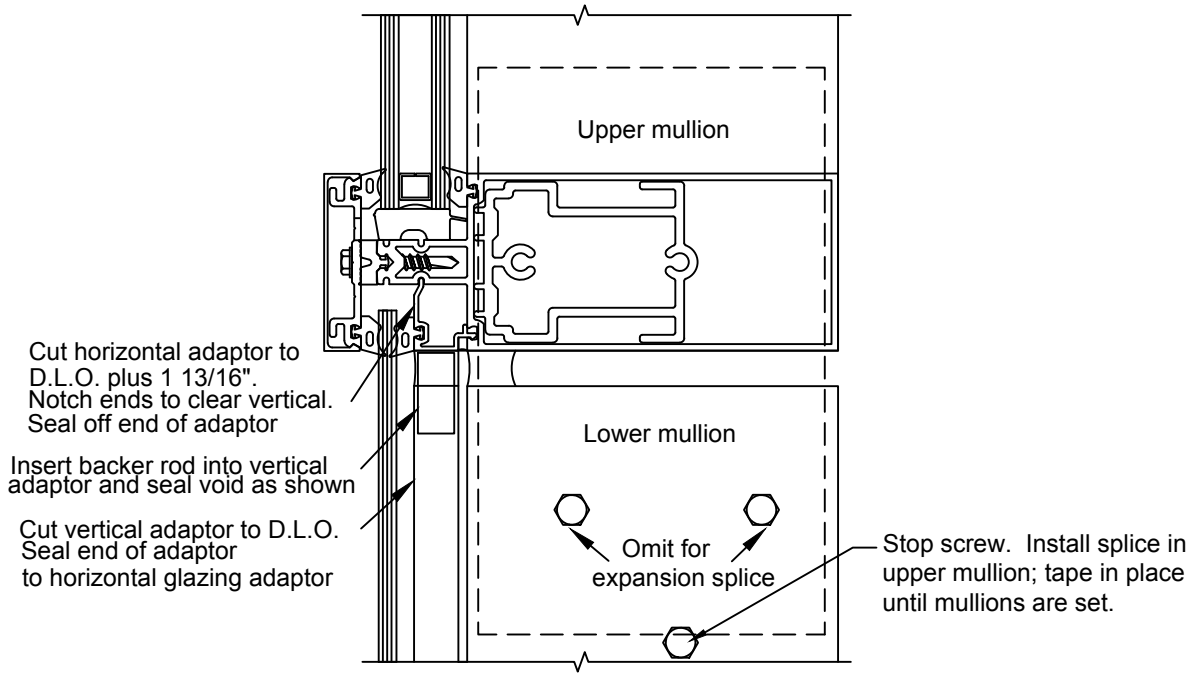
B.2 Apply bond breaker tape to the face of splice sleeves, returning back on the sides 1" minimum. Insert backer rod into the hollow of the vertical mullion, top and bottom. Seal between top and bottom mullion from the front of the tongue to 1" behind glass pocket. Follow the contour of the glazing reglets with the sealant to insure a good seal when gaskets are installed. **SEE FIGURE 30, page 34.**

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



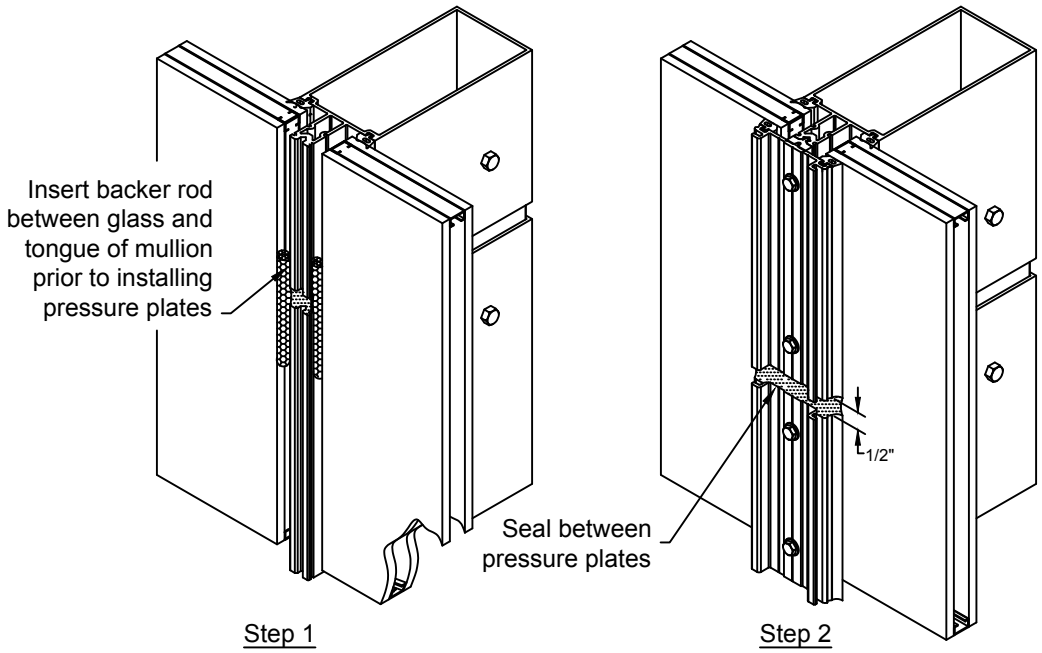

Captured Mullions

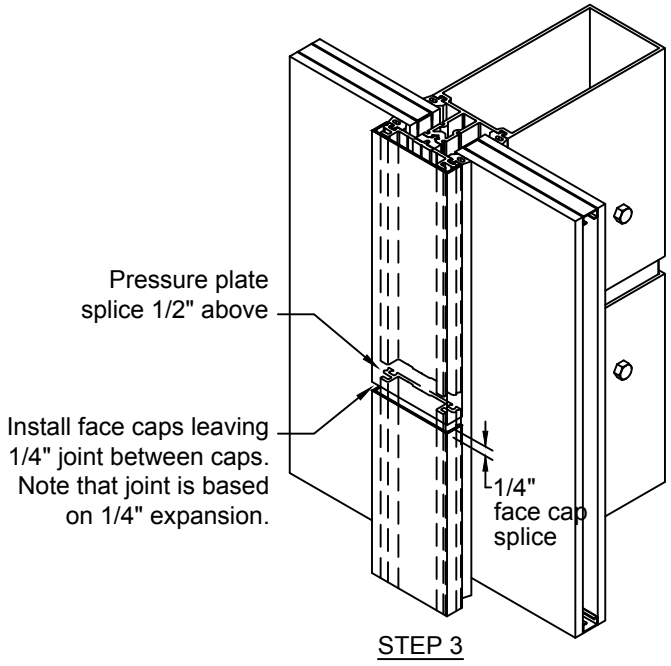



SSG Mullions

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 39 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 36.

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 36.

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.

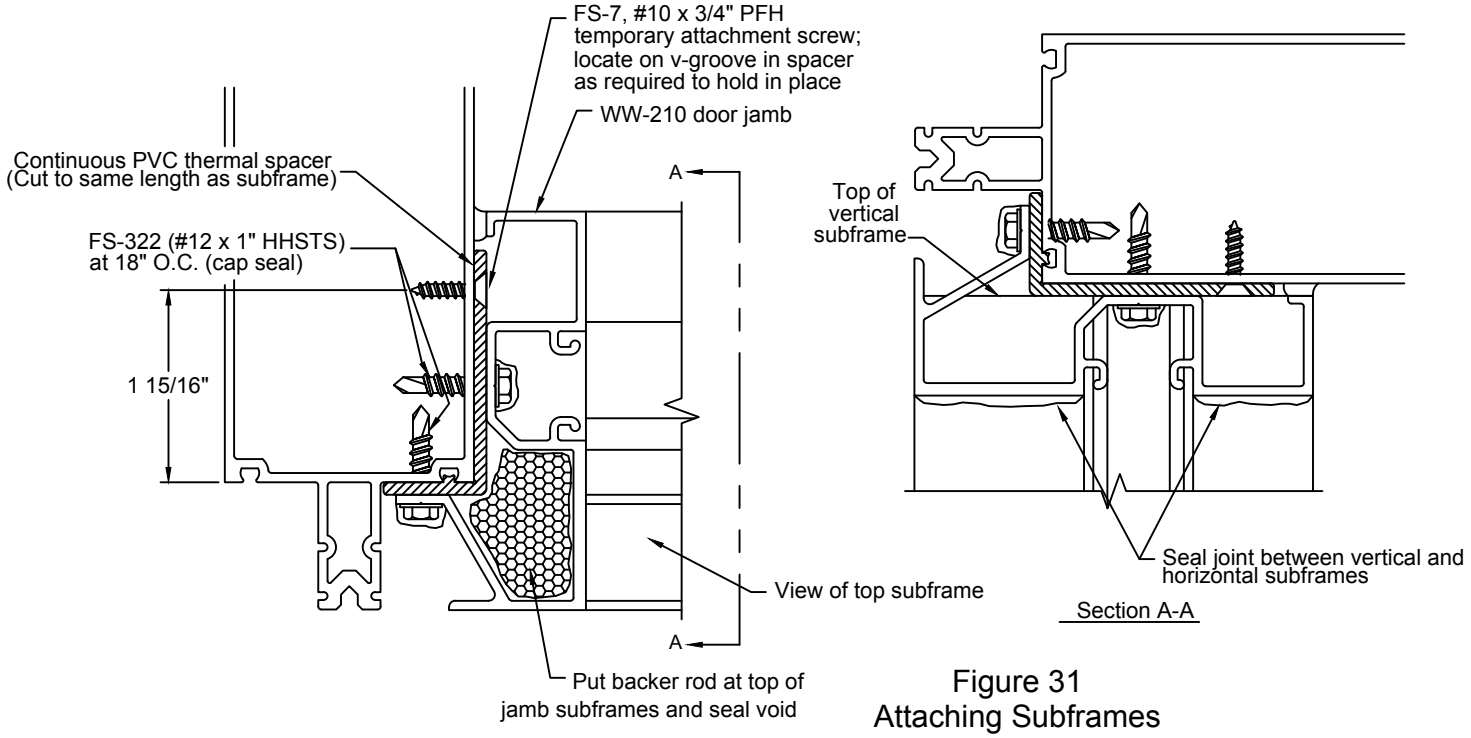



Figure 31
Attaching Subframes

## ATTACHING DOOR SUBFRAMES

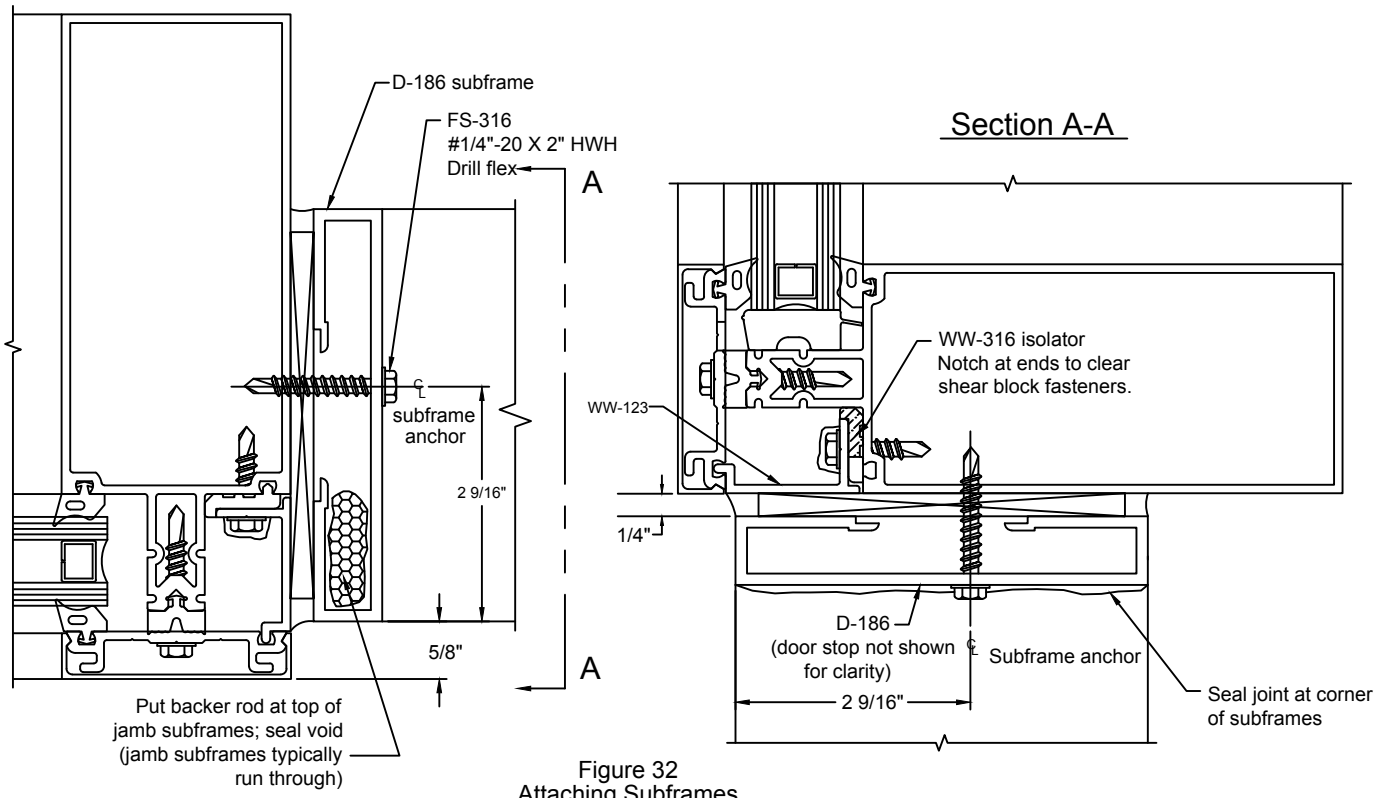



Figure 32
Attaching Subframes

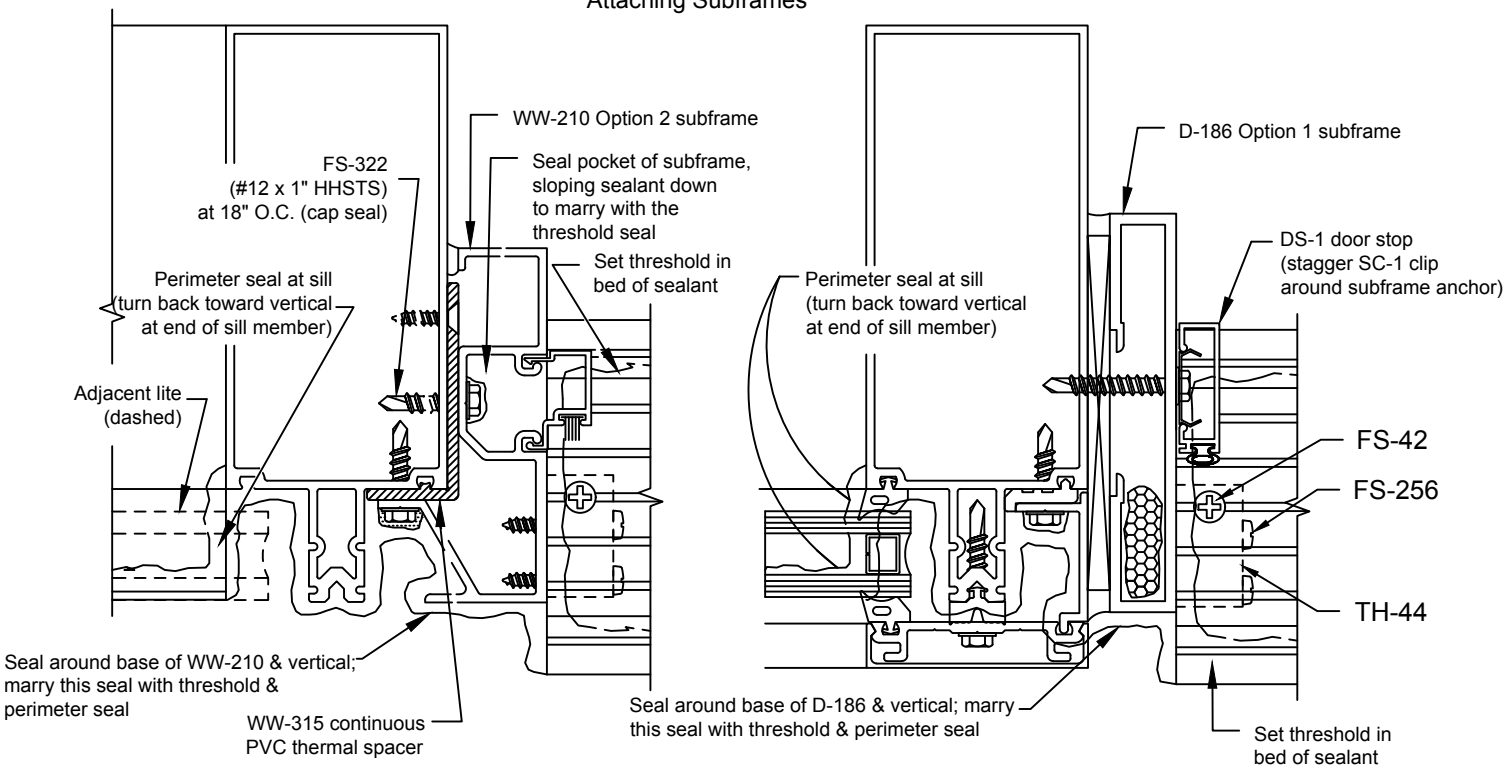



Figure 33
Sealing Verticals at Entrance Doors
(Temporary Glazing Retainer Not Shown for Clarity)

## 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 38.

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 38.

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 38.

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 39.

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

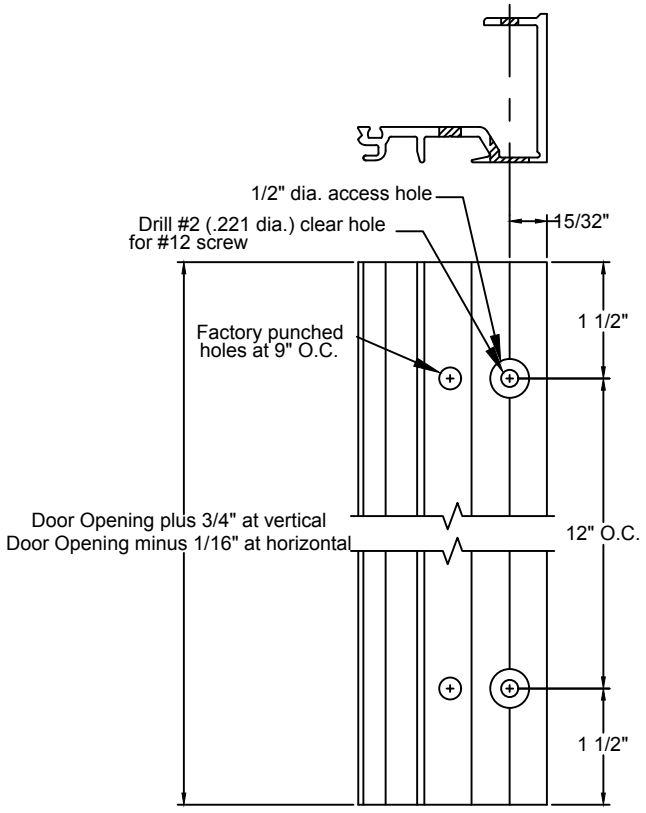



Figure 36
Flush Door Pressure Plate Fab

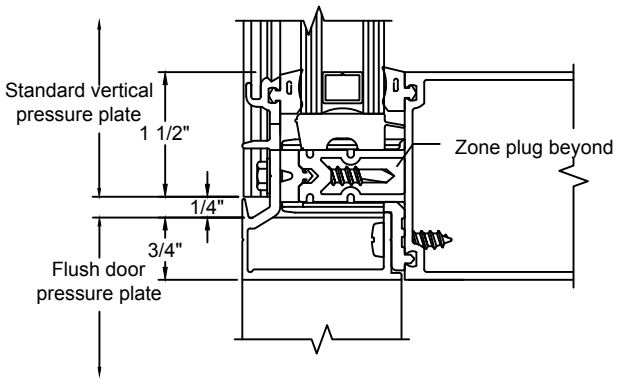



Figure 37
Horizontal Pressure
Layout at Flush Door

## FLUSH DOOR INSTALLATION

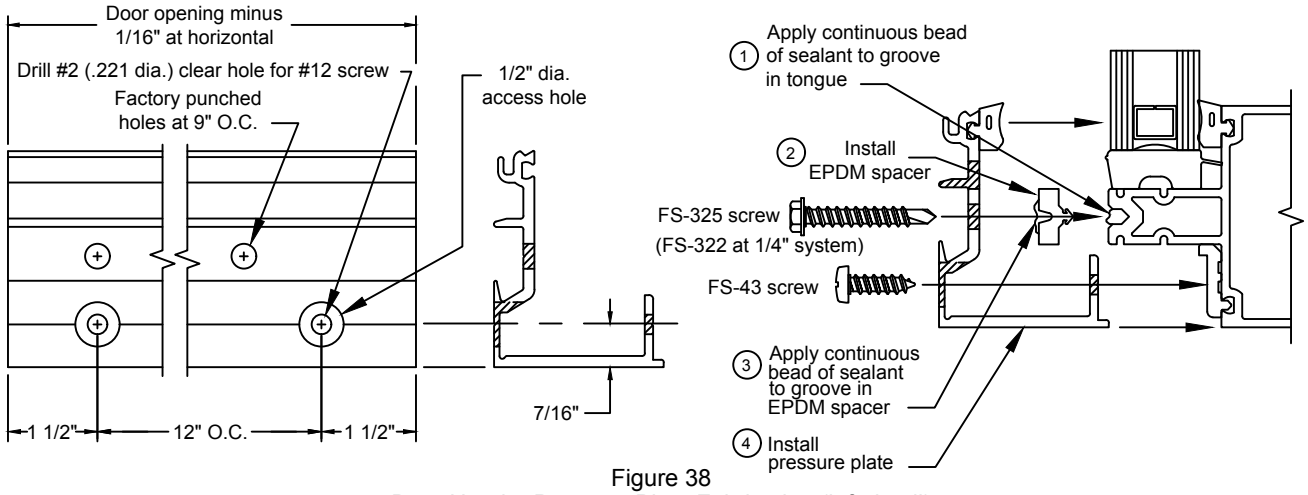



Figure 38
Door Header Pressure Plate Fabrication (left detail)
Flush Door Pressure Plate Seal (right detail)

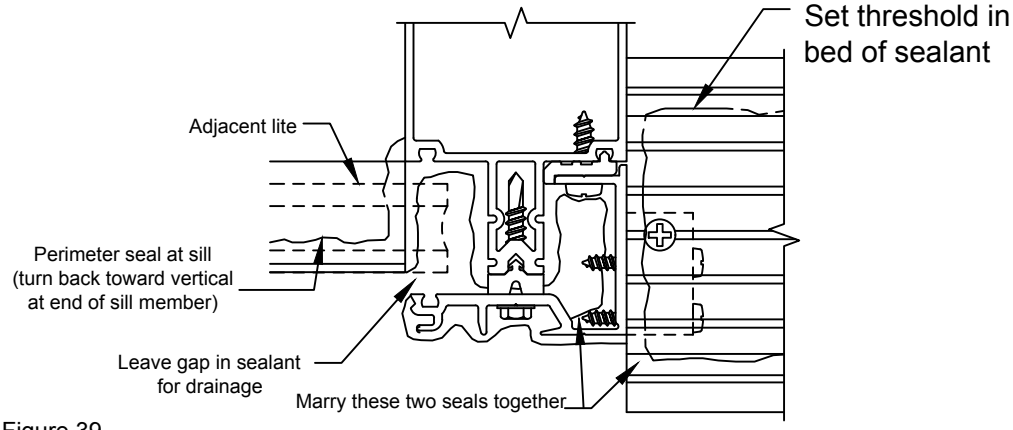



Figure 39
Flush Door Sealing

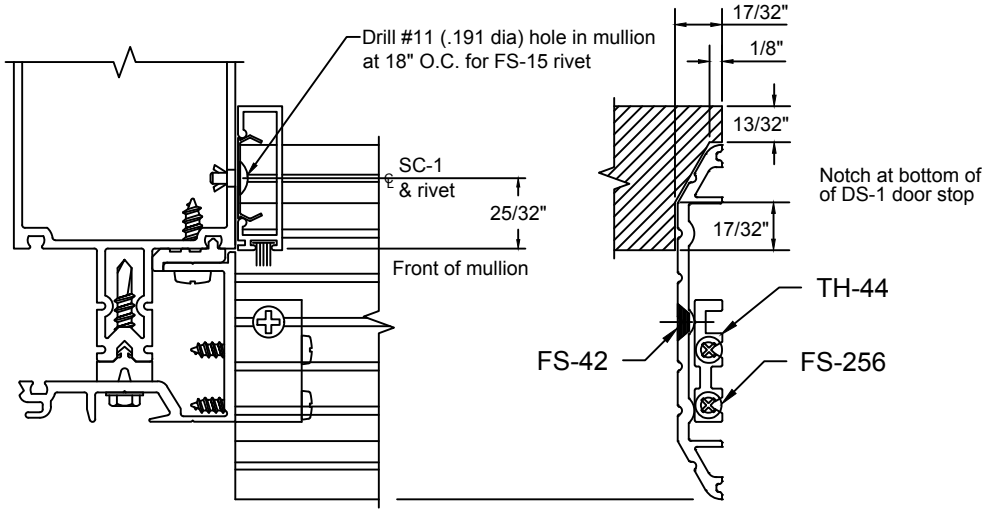
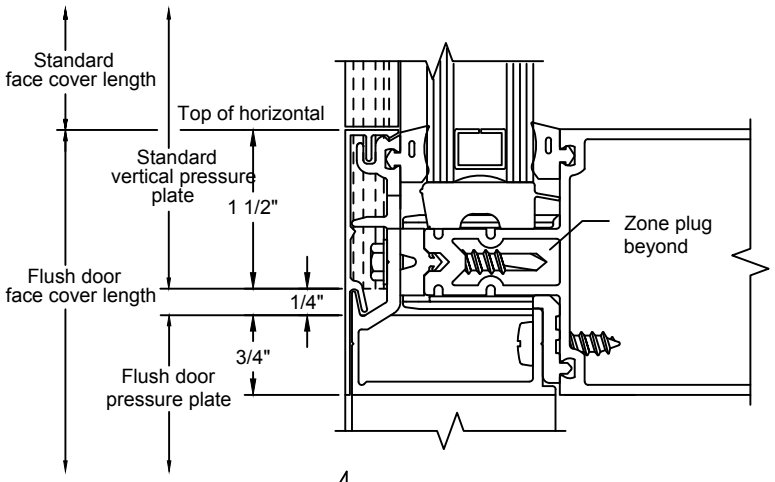



Figure 40
Door Stop Fab & Attachment
(Sealant & Adjacent Lite Not Shown for Clarity)

FLUSH DOOR INSTALLATION

Figure 41
Vertical Face Cover
Location at Door Header



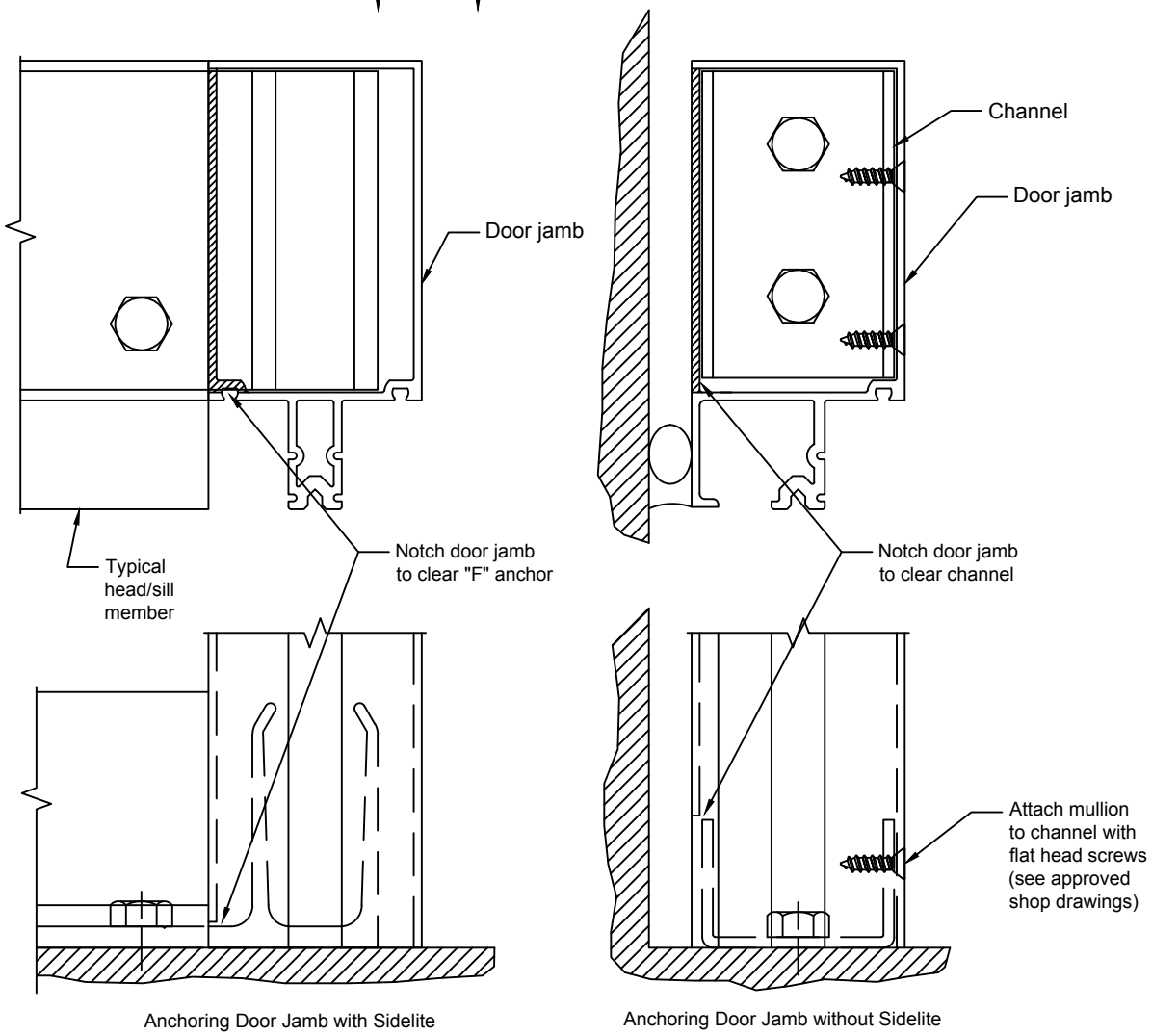




Figure 42
Anchoring Door Jamb Mullions

## 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.

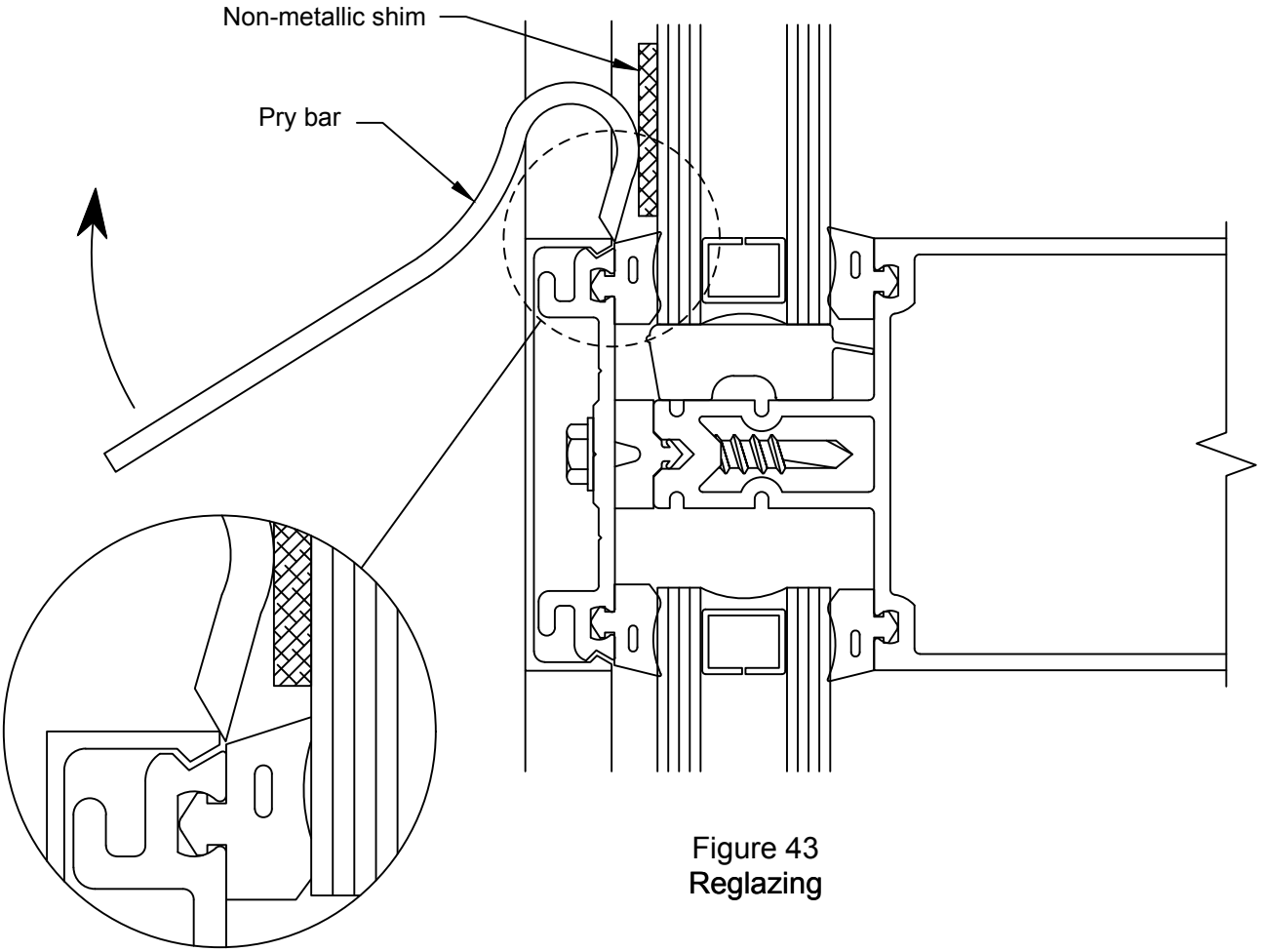



Figure 43
Reglazing

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 24 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.

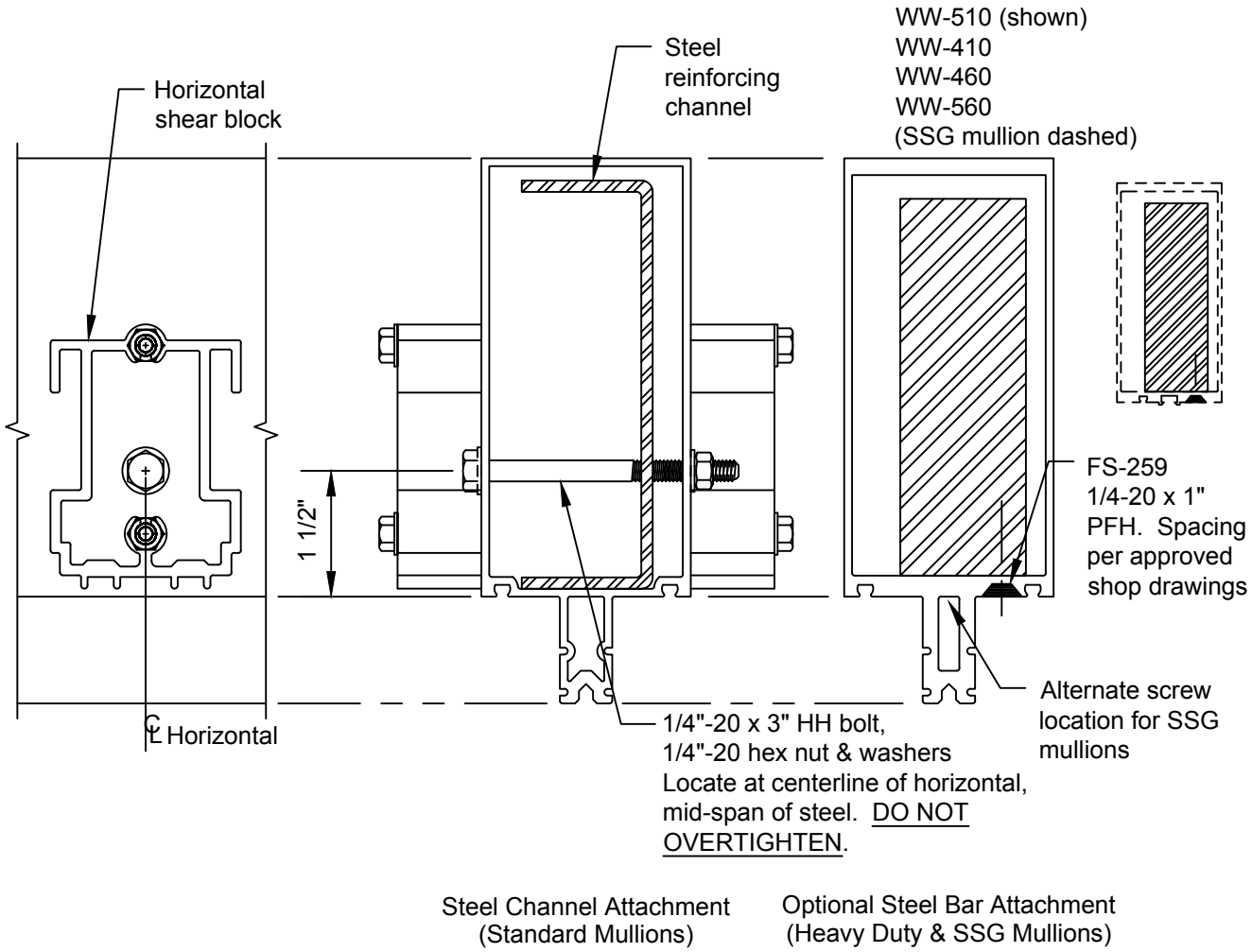



Figure 44
Typical Steel Reinforcing Attachment
(SSG Mullion Similar)

## 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.

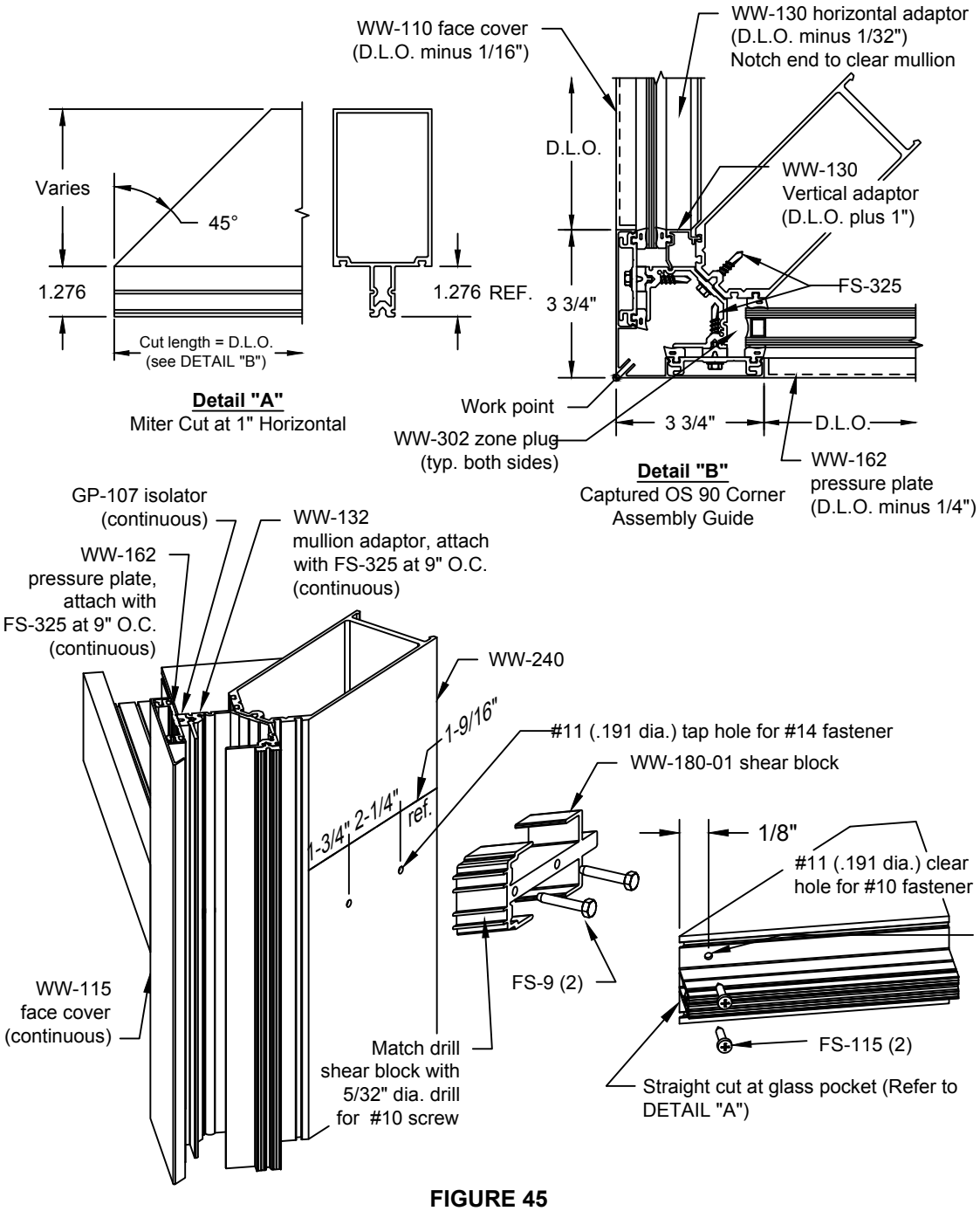



**FIGURE 45**
Captured OS 90 Corner Assembly
(Cut lengths in parentheses)

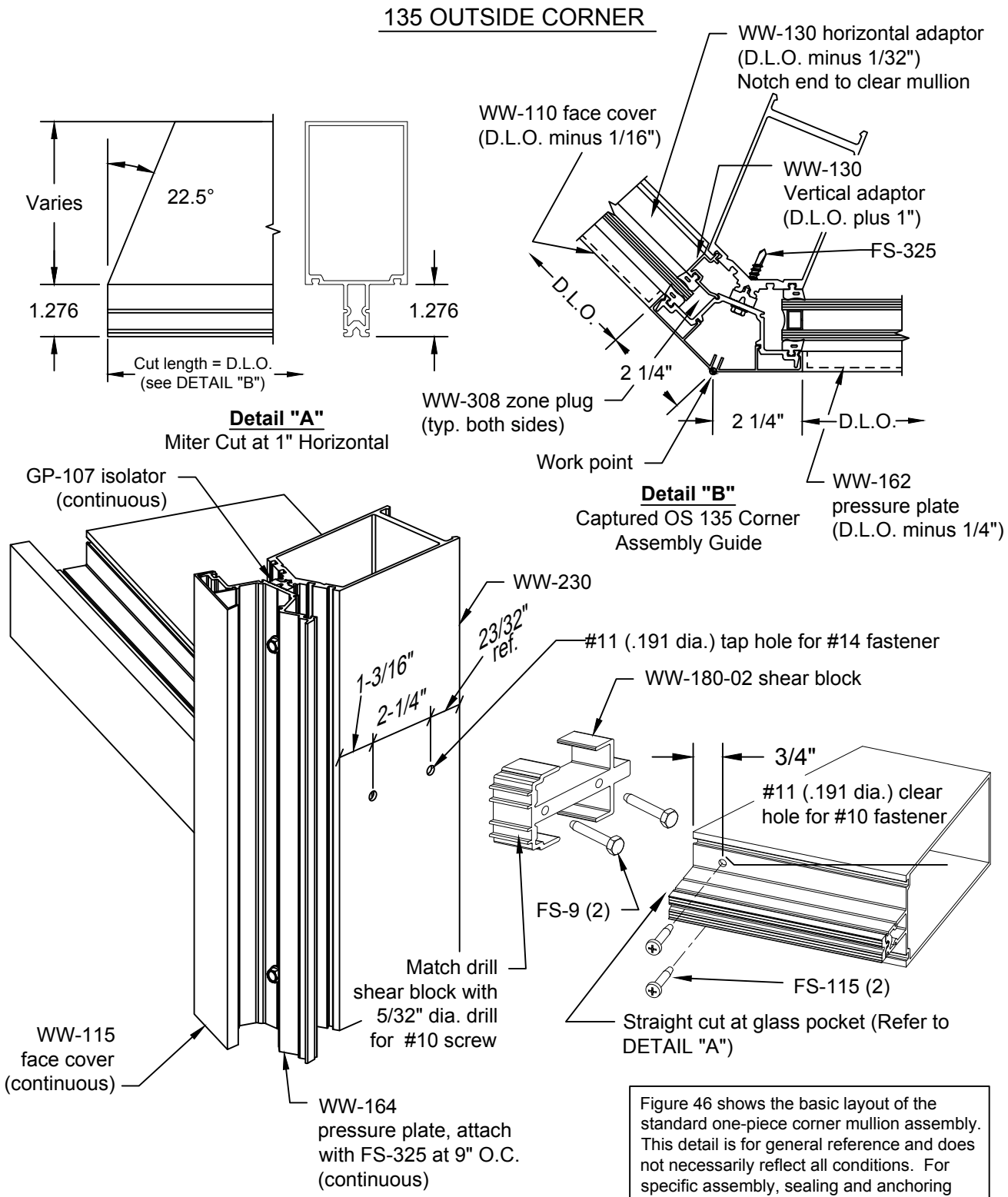



Figure 46 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

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

## 90 INSIDE CORNER

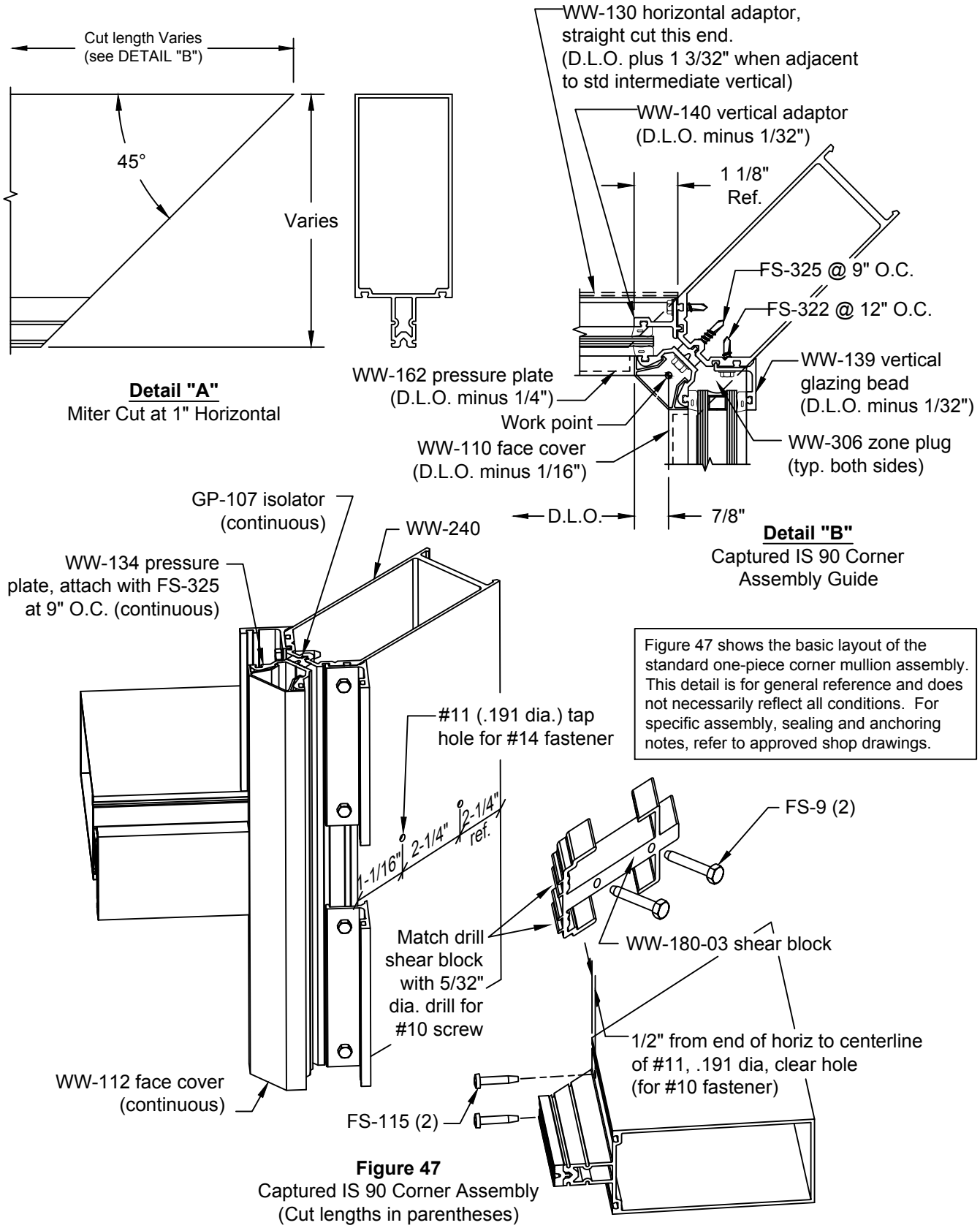



**Figure 47**
Captured IS 90 Corner Assembly
(Cut lengths in parentheses)

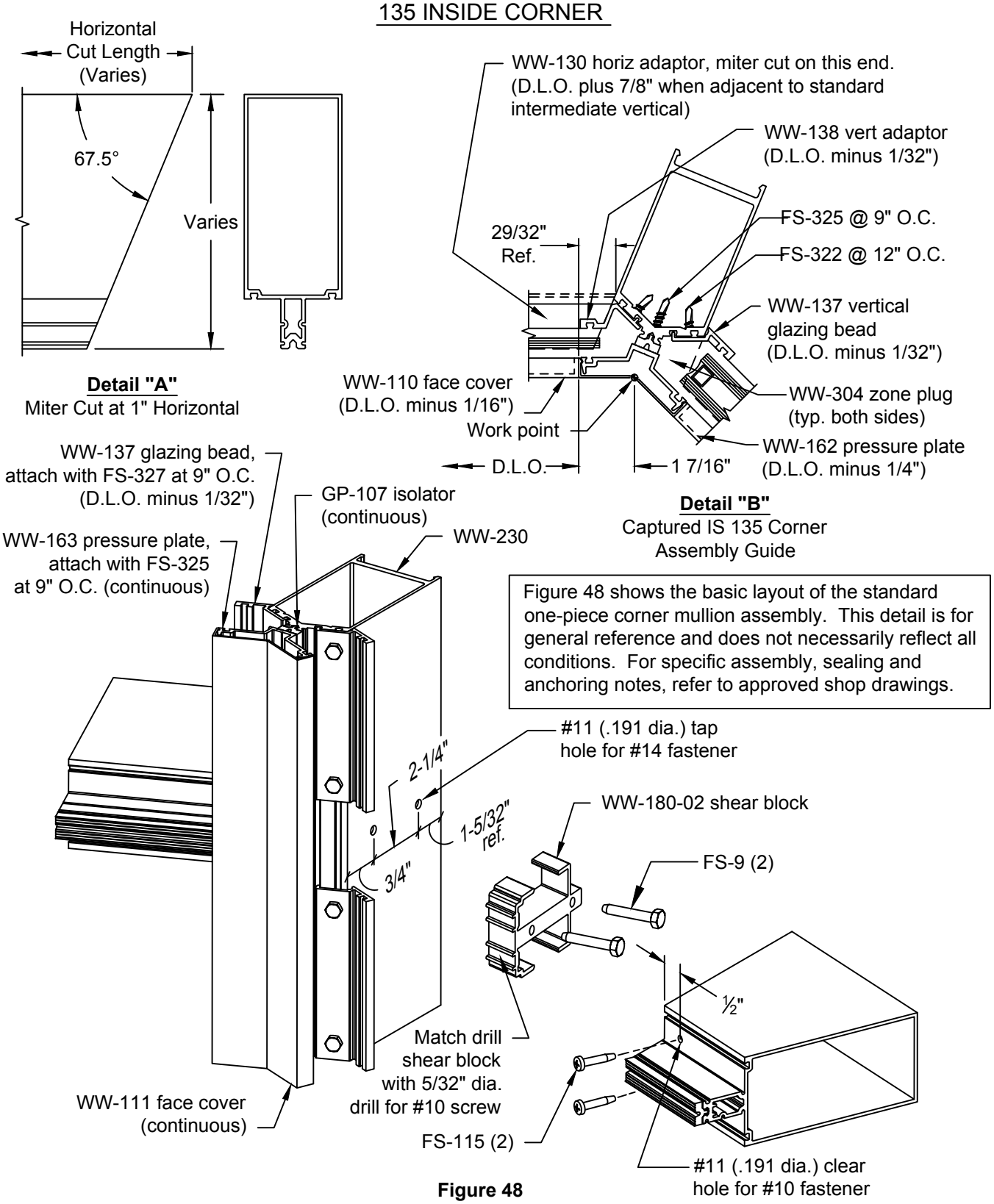



**Figure 48**
Captured IS 135 Corner Assembly
(Cut lengths in parentheses)

## 90 OUTSIDE CORNER SSG

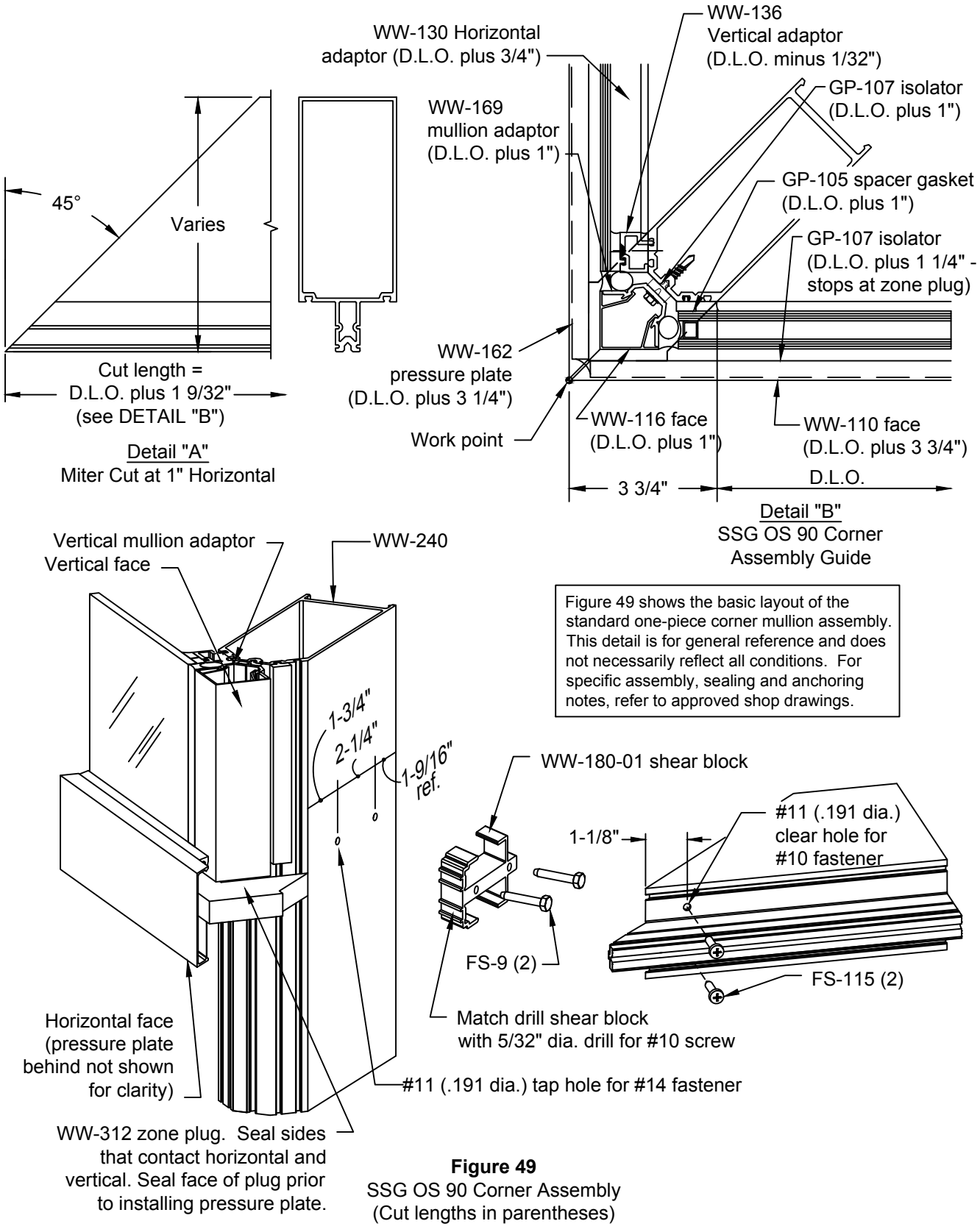



Figure 49 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

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

90 INSIDE CORNER SSG

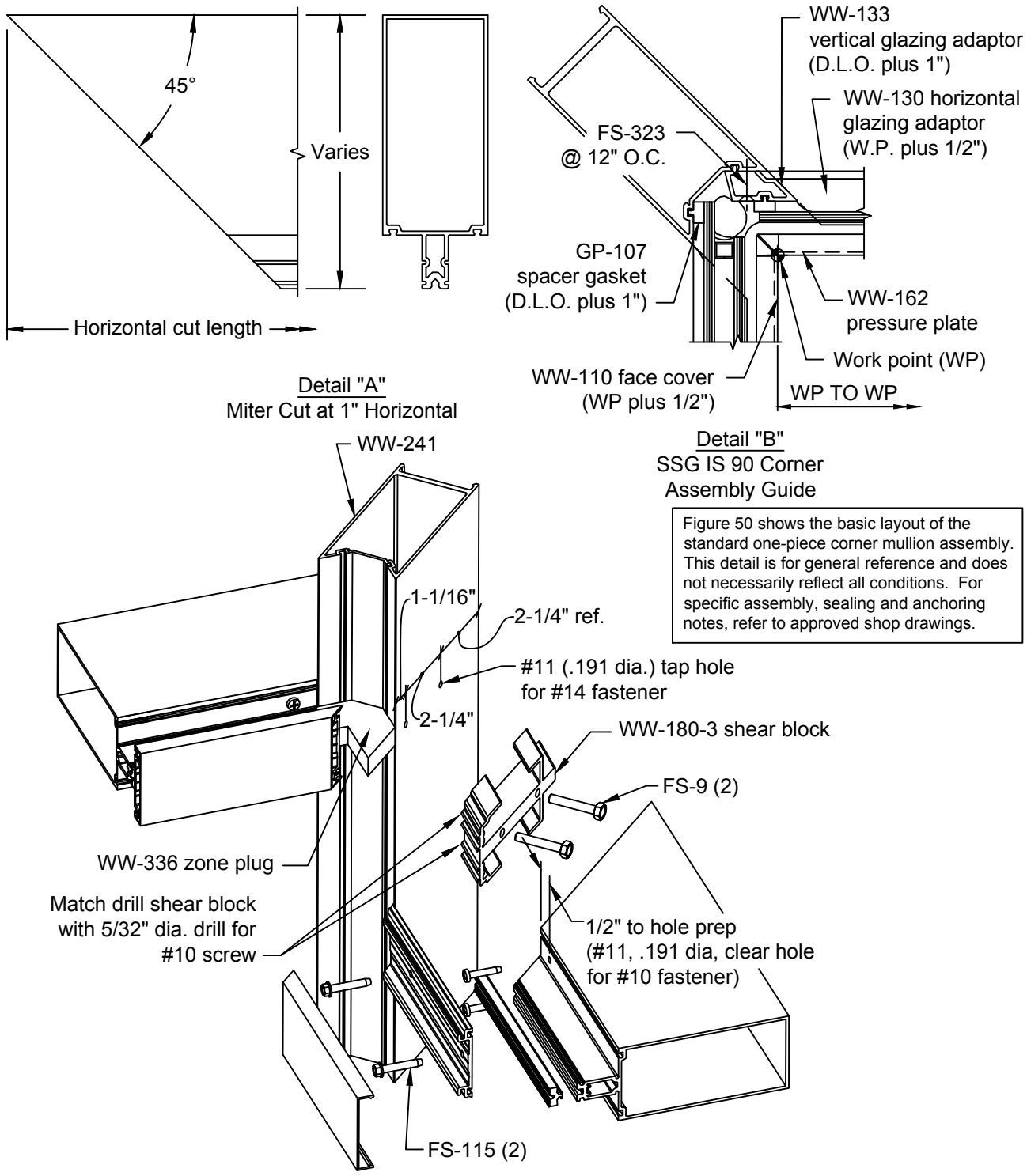



Figure 50 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

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

135 OUTSIDE CORNER SSG

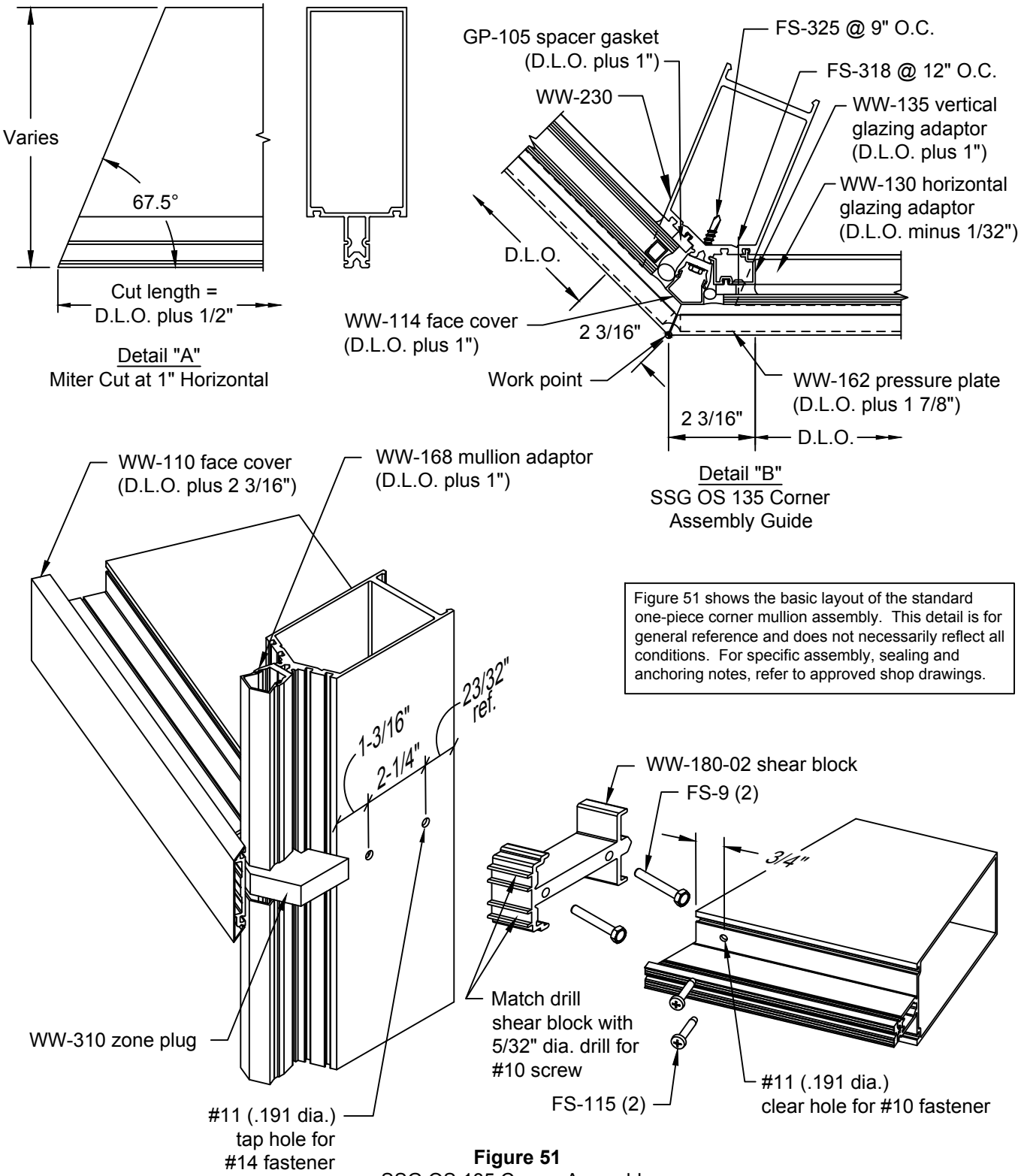



Figure 51 shows the basic layout of the standard one-piece corner mullion assembly. This detail is for general reference and does not necessarily reflect all conditions. For specific assembly, sealing and anchoring notes, refer to approved shop drawings.

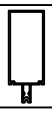
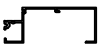
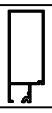
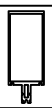
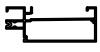
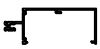
**Figure 51**
SSG OS 135 Corner Assembly
(Cut lengths in parentheses)

## 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) |

### 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) |

### 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 |

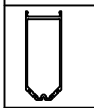
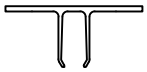
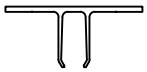
### 4" BACKMEMBERS
1/4" INFILL, 6 1/2" SYSTEM DEPTH

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

# PARTS LIST

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

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

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

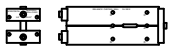
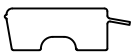
## COMMON EXTRUSIONS
All System Depths and Infills

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

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

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

# PARTS LIST
## STANDARD ACCESSORIES
## All System Depths and Infills

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

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

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

# PARTS LIST

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

| | |
|---|---|
|  WW-229-01 | Vertical Mullion Splice<br>Use with WW-450 & WW-453 |
|  WW-235-01 | Vertical Mullion Splice<br>Use with WW-550 & WW-553 |
|  WW-238-01 | Vertical Mullion Splice<br>Use with WW-452 |
|  WW-239-01 | Vertical Mullion Splice<br>Use with WW-552 |
|  WW-326 | Captured Mullion Cap<br>at Intermediate Verticals<br>1/4" Infill |
|  WW-327 | Captured Mullion Cap<br>at SSG Verticals<br>1" Infill |
|  WW-328 | Captured Mullion Cap<br>at SSG Verticals<br>1/4" Infill |
|  WW-338-01 | Captured Mullion Cap<br>at Jamb Mullions<br>1" Infill |
|  WW-338-02 | Captured Mullion Cap<br>at Jamb Mullions<br>1/4" Infill |
|  WW-333-01 | Temporary<br>Glazing Retainer<br>All Captured Verticals<br>1" & 1/4" Infill |
|  SPW-PP-3 | Temporary<br>Glazing Retainer<br>All SSG Verticals<br>1" & 1/4" Infill |
|  HP-1004 | Optional Weep Baffle |
|  FS-8 | #14 x 1" Phillips Hex Head<br>Splice Sleeve to Vertical |
|  FS-9 | #14 x 1 1/2" Hex Head<br>Shear Block to Vertical |

## STANDARD FASTENERS

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