



Oldcastle BuildingEnvelope®

Reliance - TC Curtain Wall

INSTALLATION AND GLAZING MANUAL

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

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GENERAL INFORMATION

PRODUCT USE

The Reliance -TC 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 -TC 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 13 for details which permit 1/4" movement. For designs and applications that may require greater movement or special considerations please contact your local Oldcastle BuildingEnvelope® facility.

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

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

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

PROTECTION AND STORAGE

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

GENERAL INFORMATION

CHECK MATERIAL

Check glass dimensions for overall size as well as thickness. Oldcastle BuildingEnvelope® cannot be held responsible for gaskets that are not water tight due to extreme glass tolerances. The Reliance-TC curtain wall system is designed to accommodate glass or panels measuring 1 3/4" and 2" in thickness. (+/- 1/32")

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

Using the contract documents, completely check the surrounding conditions that will receive your materials. Notify the general contractor by letter of any discrepancies before proceeding with the work. Failure to do so constitutes acceptance of work by other trades.

Check shop drawings, installation instructions, architectural drawings and shipping lists to become familiar with the project. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and cover the most common conditions. Due to varying job conditions all sealant 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 the Architectural Finish Guide in the detail catalog.

EXPANSION JOINTS

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

GENERAL INFORMATION

SUGGESTIONS FOR IMPROVING SYSTEM THERMAL PERFORMANCE

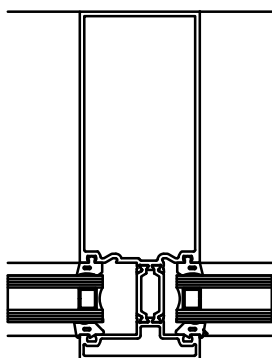
To maintain or improve your wall installation the following items should be considered.

- 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.

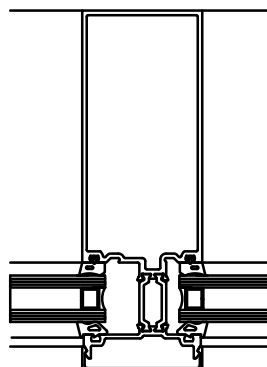
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SYSTEM CONFIGURATIONS

Reliance-TC is available in multiple configurations to provide a range of thermal performance capabilities and installation options. See details below for system details.

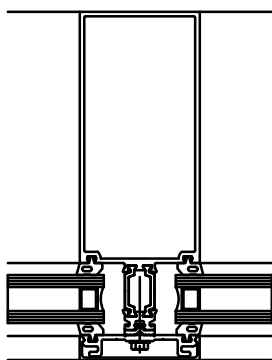


Reliance-TC Type I
(WW-520 vertical, std Reliance horizontals)

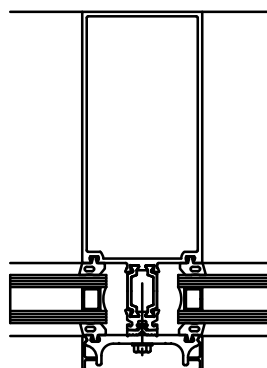


Reliance-TC Type I w/ FRP horiz. pressure plates
(WW-538 vertical, std Reliance horizontals with AW-162 FRP Pressure Plate)

Type I features a thermal composite vertical with integrated exterior face cover and the standard Reliance horizontals.



Reliance-TC Type II
(AW-520 vertical and composite horizontals)



Reliance-TC Type II w/ FRP pressure plate
(AW-520 vertical, composite horizontals & AW-162 FRP pressure plate)

Type II features thermal composite horizontals and verticals with a 27mm thermal strut and pressure plates on all verticals and horizontals.

Installation Note:

- 1) Type II composite horizontals may be used in the Type I system to improve thermal performance.
- 2) AW-162 FRP pressure plates* may be used with either system for improved thermal performance. Face cap depth for FRP pressure plates is 3/4" minimum.

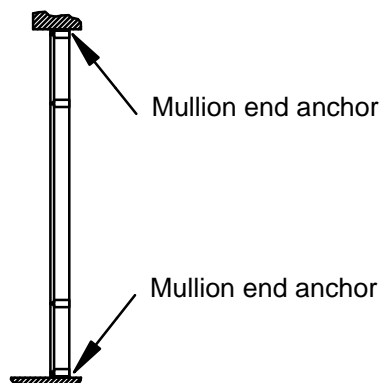
Details above show extrusion numbers for the 7-1/4" (7-1/2") systems. Alternate depths are also available. See our website: www.oldcastlebe.com/products/curtain-wall/pressure-wall/reliance-tc for additional information.

*Reference Oldcastle BuildingEnvelope® FRP Pressure Plate Installation Manual for information regarding installation and sealant of FRP Pressure Plates.

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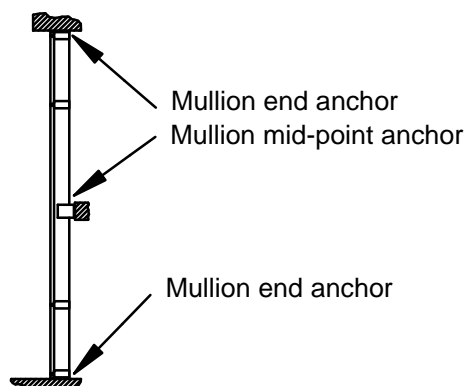
INSTALLATION TYPES

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



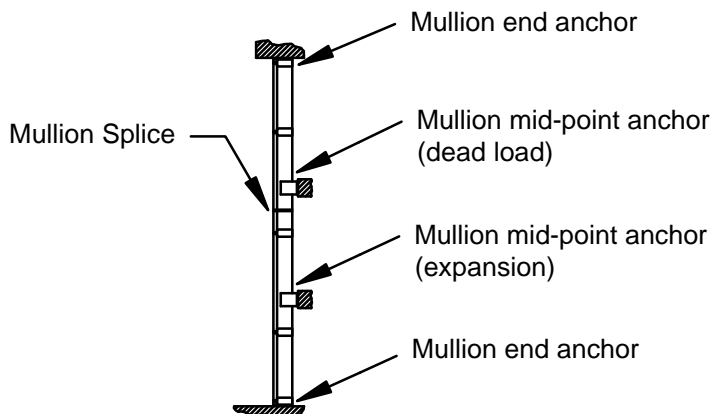
SINGLE SPAN

Refer to steps 2.1.1 through 2.1.3



TWIN SPAN

Refer to steps 2.1.4 through 2.1.8



MULTI-SPAN

Refer to steps 2.1.9 through 2.1.16

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FRAME FABRICATION

Unless otherwise noted, the details shown in these instructions reflect the 7 1/4" system for 1" glazing. Instructions for other back member depths are similar. Thermal composite and regular horizontals shown in details are interchangeable.

- 1.1 Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 1/2" minimum clearance for shimming and caulking around perimeter of frame.
- 1.2 Cut material to size. SEE FIGURE 1, page 9 for guide. NOTE: Layout vertical mullions so that two shallow pockets will not be adjacent to each other. SEE FIGURE 2, page 9 for MULLION LAYOUT.

Frame Members

Verticals	Frame Height (Rough Opening - top & bottom joints)
Vertical pressure plates	Frame Height
Intermediate horizontals (tubular)	Daylight Opening (D.L.O.)
Intermediate horizontals (rollover)	D.L.O. - 1/16"
Head and sill	D.L.O. - 1/16"
Horizontal pressure plates	D.L.O. - 1/4"
Horizontal face covers - System 1	D.L.O.
Horizontal face covers - System 2	D.L.O. - 1/16"
Horizontal interior trim (for rollover)	D.L.O. - 1/16"

Accessories

Vertical gaskets	D.L.O. + 1" + allowance*
Horizontal gaskets	D.L.O. + allowance*

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

Other Members (as required)

Horizontal glazing adaptors	D.L.O. - 1/32"
Vertical glazing adaptors	D.L.O. + 1"
Door jamb subframe	Door Opening + 3/4"
Door header subframe	Door Opening - 1/32"
Thermal jamb subframe	Door Opening + 1"
Thermal header subframe	Door Opening

Quick Reference Guide:

1. Torque aluminum pressure plates to 90 in/lbs.
2. Torque FRP pressure plates to 80 in/lbs.
3. Pressure plate fasteners to be located at 9" o.c. (max. 1 1/2" for ends)

Glass Sizing:

Captured system: DLO +1" for width and height

SSG system: DLO +2" for width and DLO +1" for height

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FRAME FABRICATION

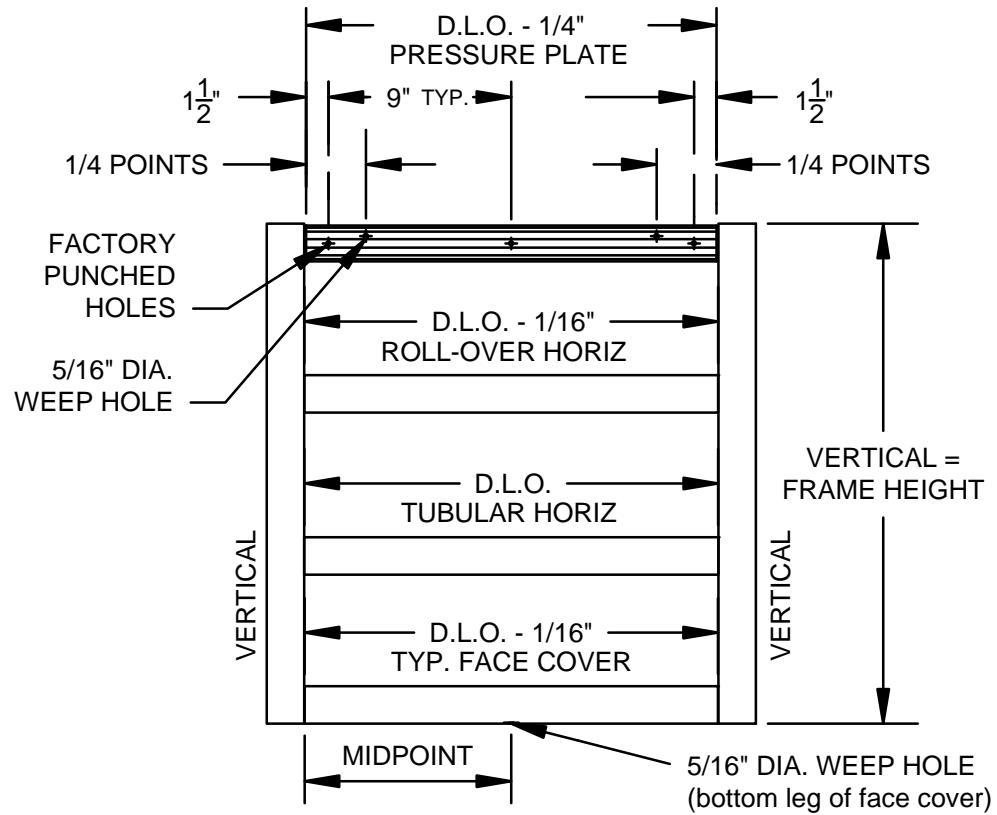


FIGURE 1
Material Fabrication Guide

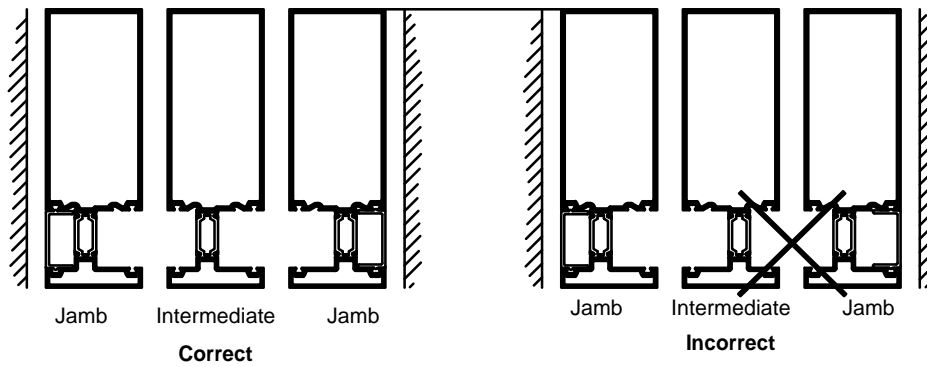


FIGURE 2
Mullion Layout

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FRAME FABRICATION

- 1.3 Fabricate vertical mullions for horizontal members using the DJ-100 drill jig. Drill holes for shear block using holes marked "A" and "B". SEE FIGURE 3. When working off horizontal centerlines, use the scored lines to align the jig with the centerline.

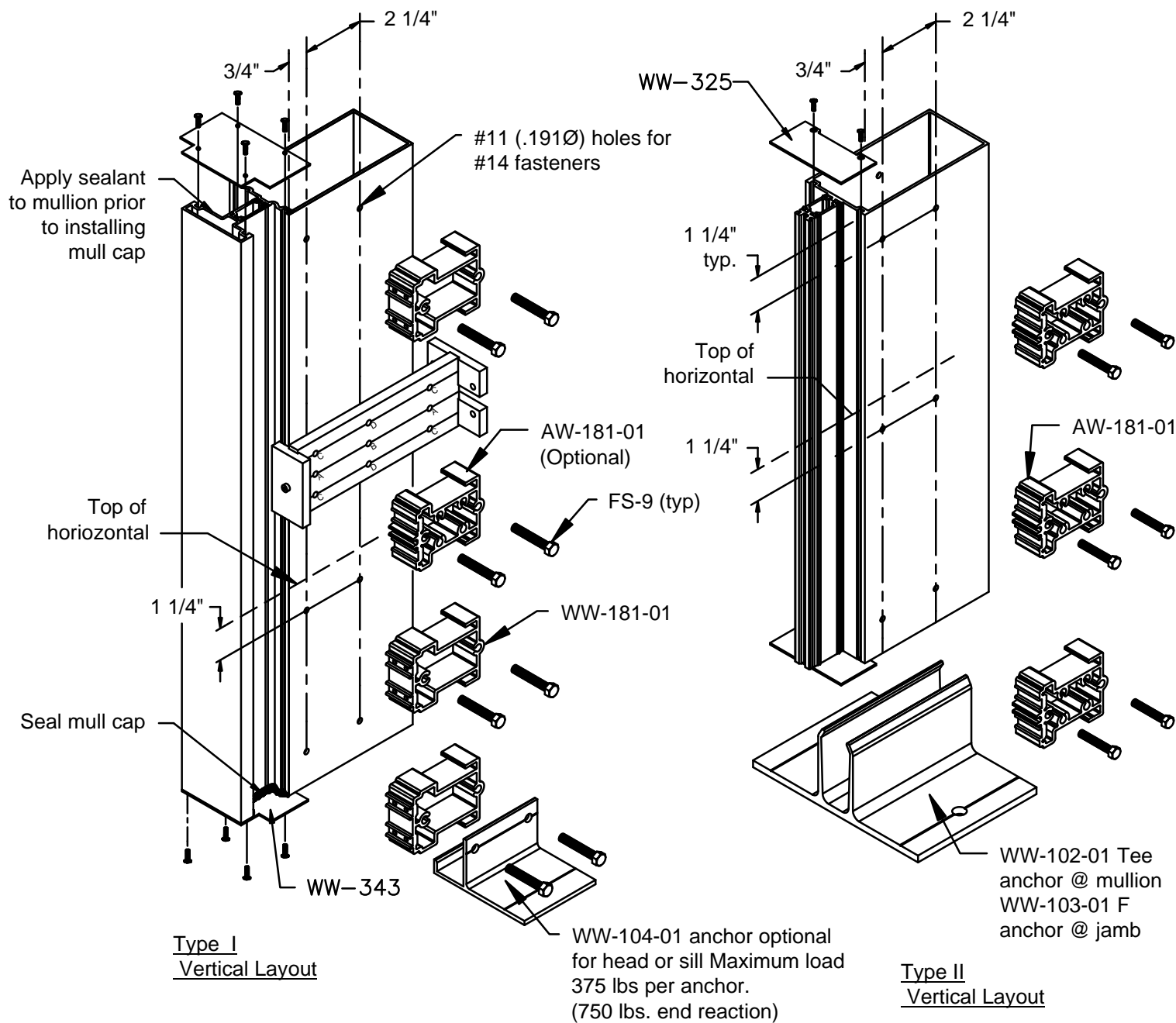


FIGURE 3
Vertical Fabrication

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FRAME FABRICATION

1.4 Install and seal end caps to top and bottom of all jamb and intermediate vertical mullions with FS-320 #10 x 1/2" drive screw. Cap seal FS-320. SEE FIGURE 3 page 10

1.5 Fabricate ends of horizontal members for shear block screws using DJ-100 drill jig. SEE FIGURE 4.

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".

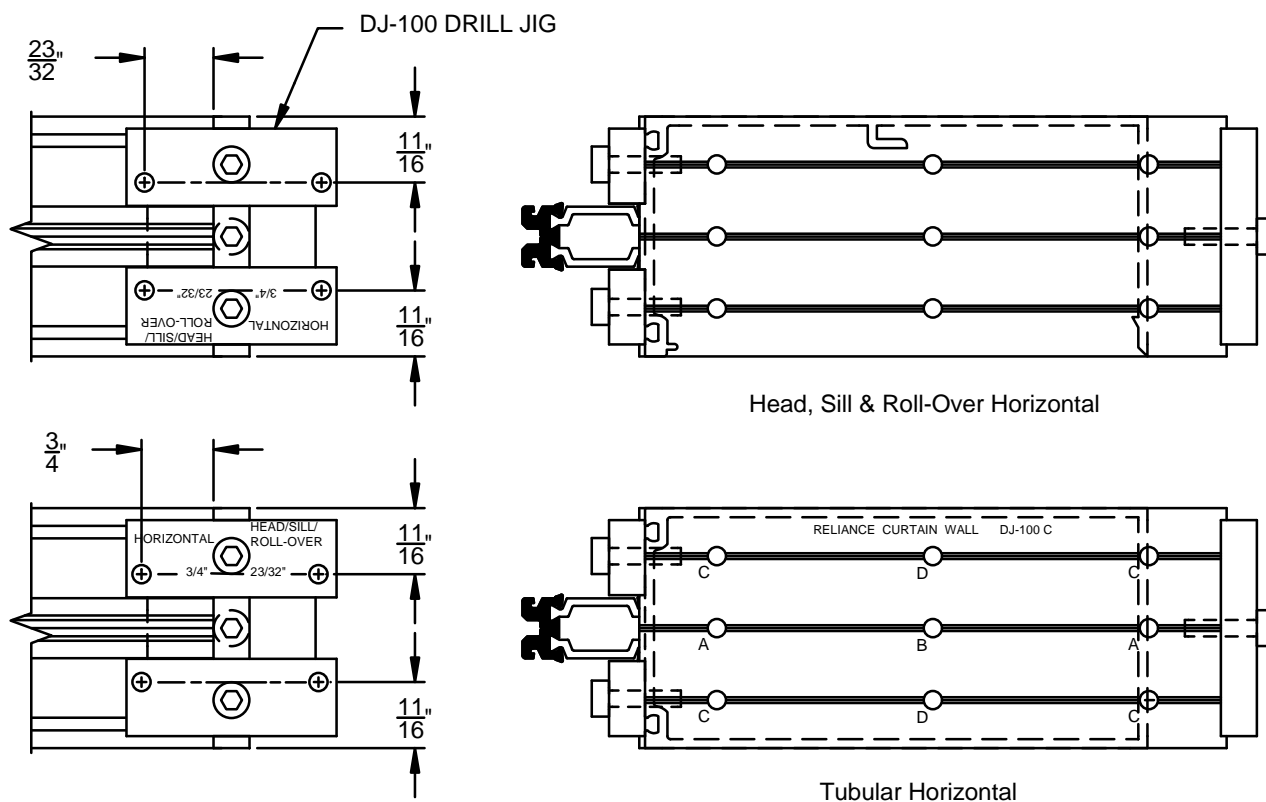


FIGURE 4
Type I & II Horizontal
Fabrication

- 1.6 Drill 5/16" diameter weep holes at 1/4 points in the horizontal pressure plate. Drill (1) 5/16" diameter weep hole at the bottom of each horizontal face cover at centerline of D.L.O. SEE FIGURE 5 NOTE: For SSG applications, face covers typically run across mullions, so there will be multiple holes in each horizontal face cover.
- 1.7 All pressure plates have factory-punched holes for screws at 9" O.C typical. 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.

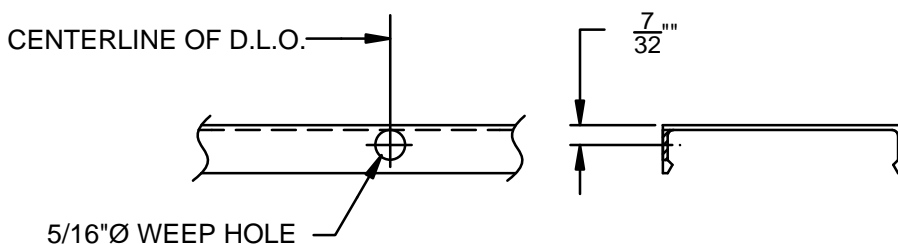


FIGURE 5
Horizontal Face Cover Fabrication

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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.

2.1 Vertical mullion installation:

SINGLE SPAN INSTALLATION:

2.1.1 Attach shear blocks to all vertical mullions. The integral perimeter anchors are designed for use with standard shear blocks. Note; the WW-104-01 anchor may not be used with Type II head or sill horizontals having an "AW" part number. SEE FIGURE 6 for proper orientation and installation on mullion. NOTE: Depending on the end reactions, either the integral perimeter anchor or tee anchors can be used to anchor the wall. For end reactions above 750 pounds, use "T" anchors.

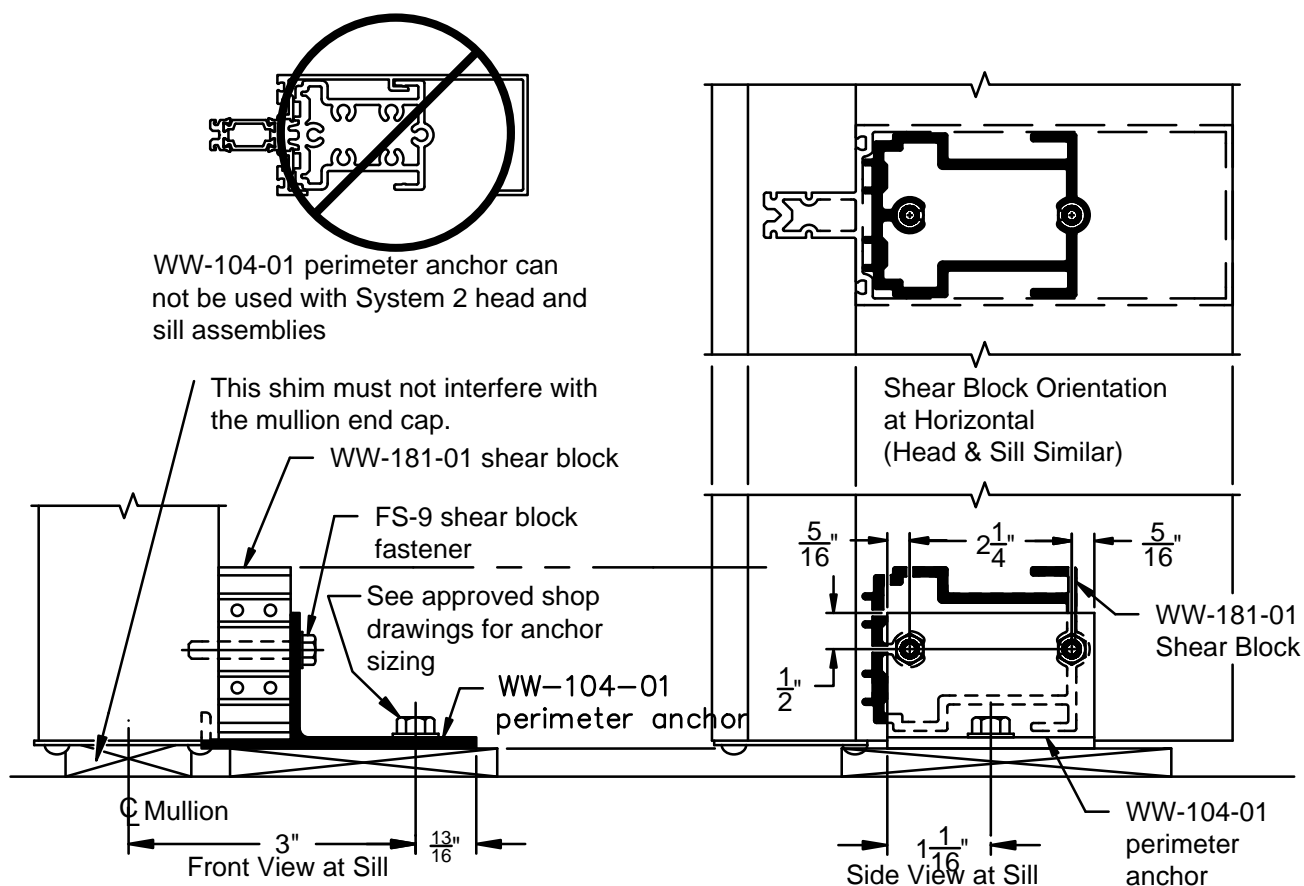


FIGURE 6
Type I Shear Block Orientation
and Single Span Perimeter Anchor

2.1.2 Install verticals plumb and level. Place shims under vertical mullion and anchor 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 7, page 13.

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FRAME INSTALLATION

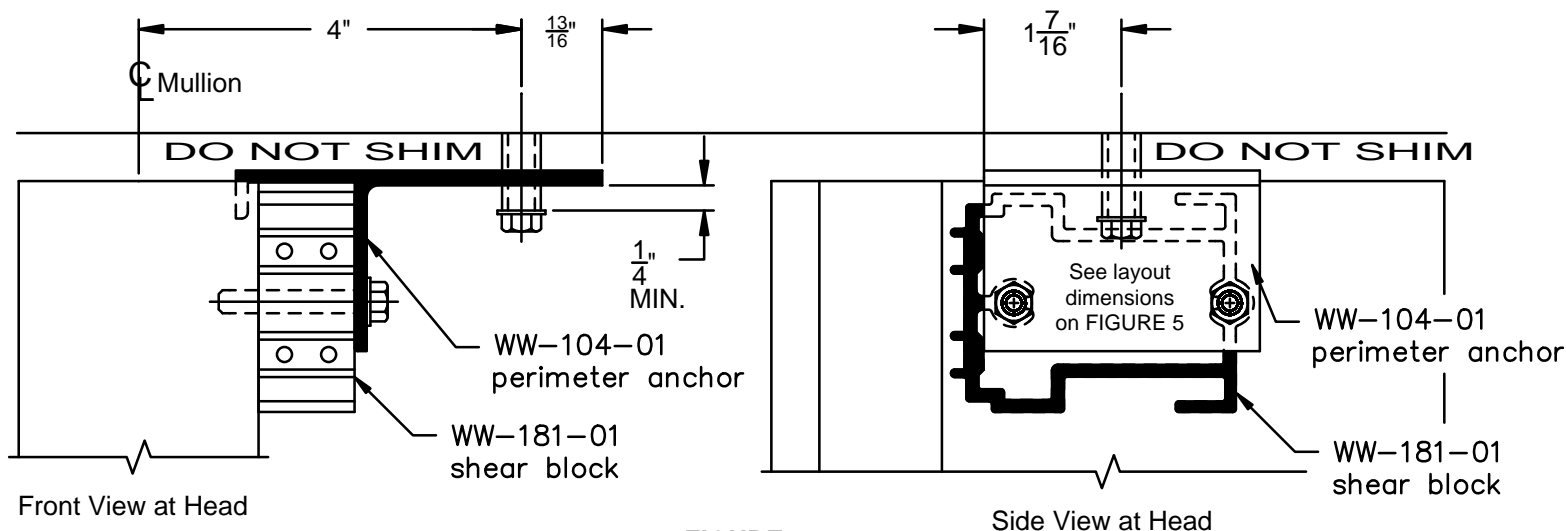


FIGURE 7
Type I Single Span Head
Anchorage

NOTE: If open back 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.

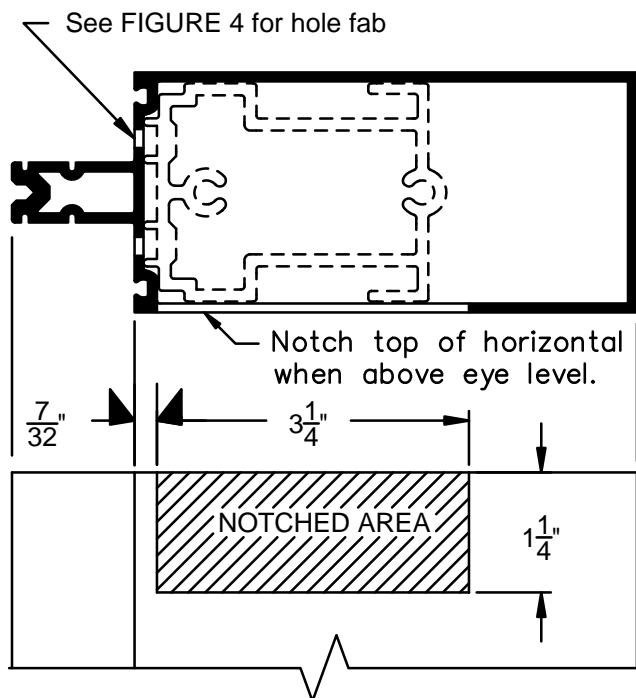


FIGURE 8
Last Bay Horizontal Notch

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

TWIN SPAN INSTALLATION:

2.1.4 Attach shear blocks to all vertical members. SEE FIGURE 6, page 12 for proper orientation on mullion. For installations using the integral perimeter anchors, attach to head and sill shear block. NOTE: Depending on the end reactions, either the integral perimeter anchor or "T" anchors can be used to anchor the wall. For end reactions above 750 pounds, use "T" anchors.

2.1.5 For installations using tee anchors, slide "T" anchors into top and bottom of vertical mullions. The "T" anchors are designed to clear the shear block fasteners.

2.1.6 Install verticals plumb and level, ensuring proper spacing out from floor slab or beam. Place shims under vertical mullion and anchor at sill to evenly distribute dead load from wall. Anchor top and bottom of mullions to the structure.

NOTE: If open back horizontals are used, all vertical mullions can be installed first. If tubular horizontals are used, the wall must be stick erected. Last bay horizontals must be notched. SEE FIGURE 8. Notch should be located so that is above or below eye level depending on horizontal location.

2.1.7 Anchor the mullion to floor slab or beam. Do not overtighten bolt(s). For expansion anchors, back off nut 1/4 turn and stake bolt.

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

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FRAME INSTALLATION

MULTI-SPAN INSTALLATION:

- 2.1.9 Install "T" anchors at the sill condition prior to setting mullions. Each "T" 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 3, page 10 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 dead load from wall.
NOTE: If open back 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.
- 2.1.12 Anchor the mullion to floor slab or beam. Do not over tighten bolt(s).
- 2.1.13 Repeat steps 2.1.11 and 2.1.12 until all lower verticals are in place. Check D.L.O. every five bays to ensure correct spacing to 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 9 & FIGURE 10, page 15

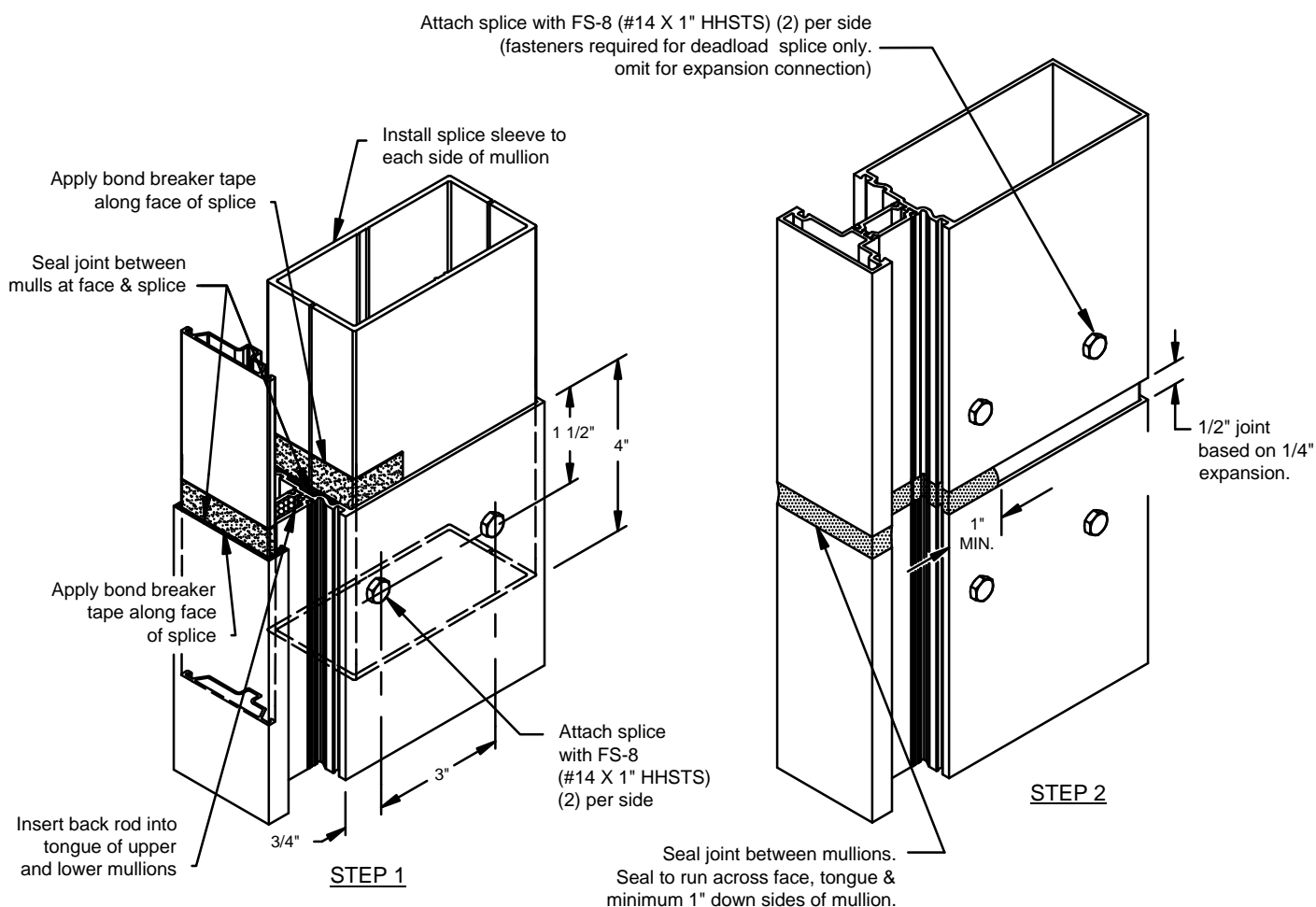


FIGURE 9
Vertical Splicing @
Type I Verticals

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FRAME INSTALLATION

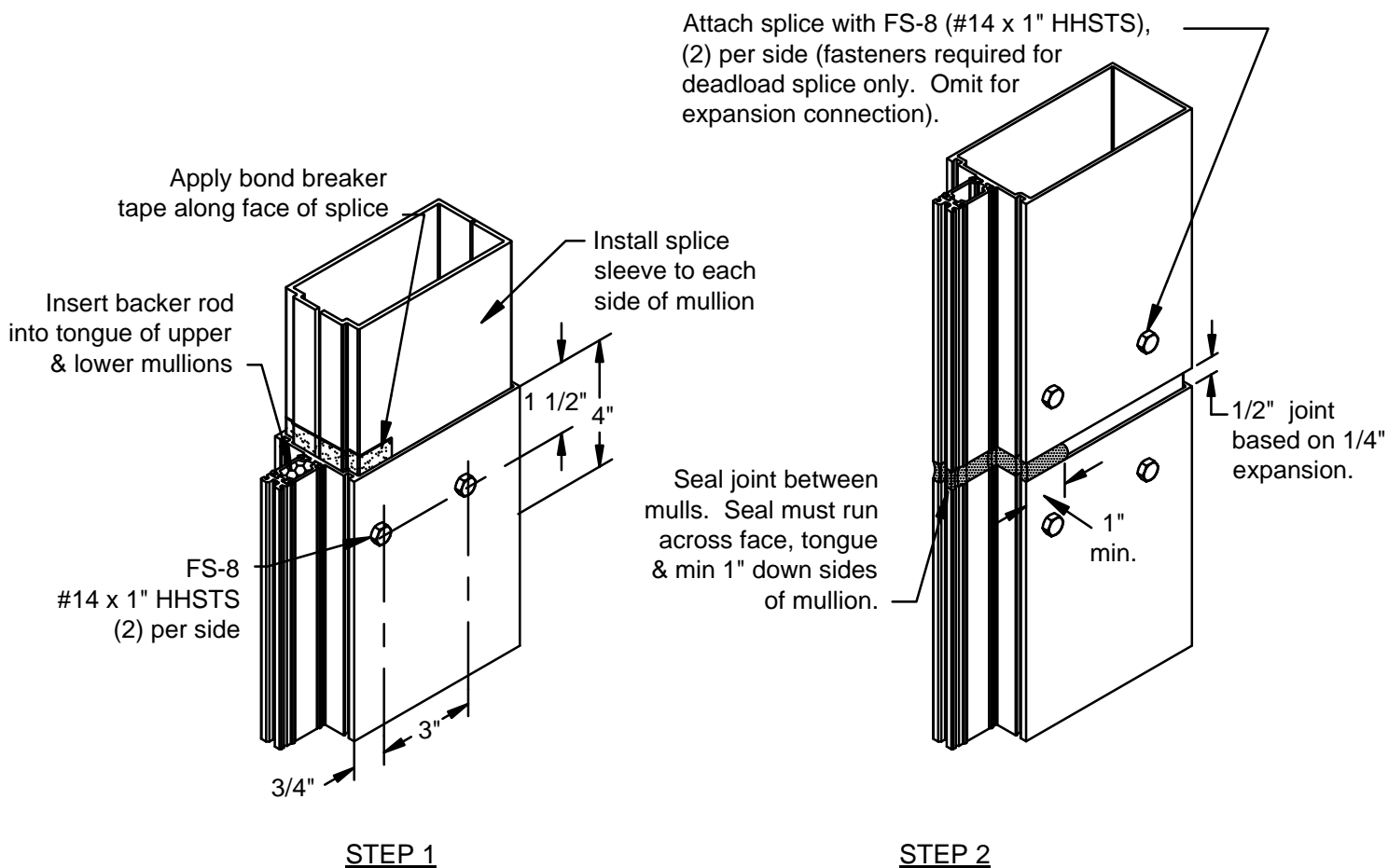


FIGURE 10
Vertical Splicing @
Type II Verticals

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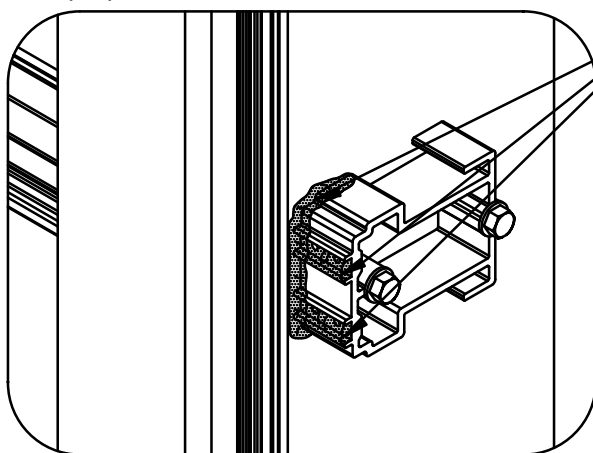
FRAME INSTALLATION

2.1.15 Slide tee anchors into top of upper-most mullions. The tee anchors are designed to clear the shear block fasteners. Attach "T" anchor to building condition.

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

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

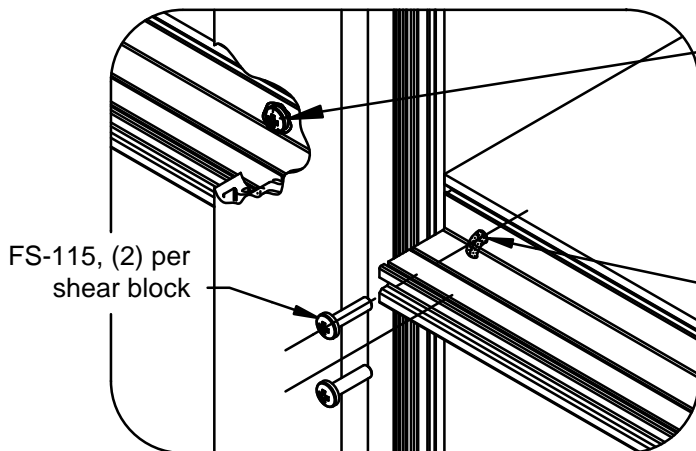
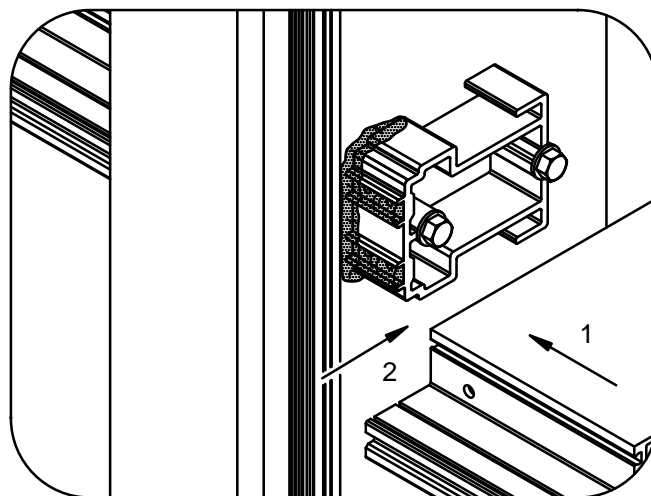
- 2.2 Seal around shear blocks prior to installing each horizontal mullion. SEE FIGURE 12. Install horizontal mullions as shown in FIGURE 13, page 17 and FIGURE 14, page 18. Prior to attaching screws, make sure sealant has been forced out of the holes in horizontal. If not, apply a liberal amount of 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.



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

Note: WW-181-01 shear blocks shown, AW-181-01 shear blocks similar.

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.



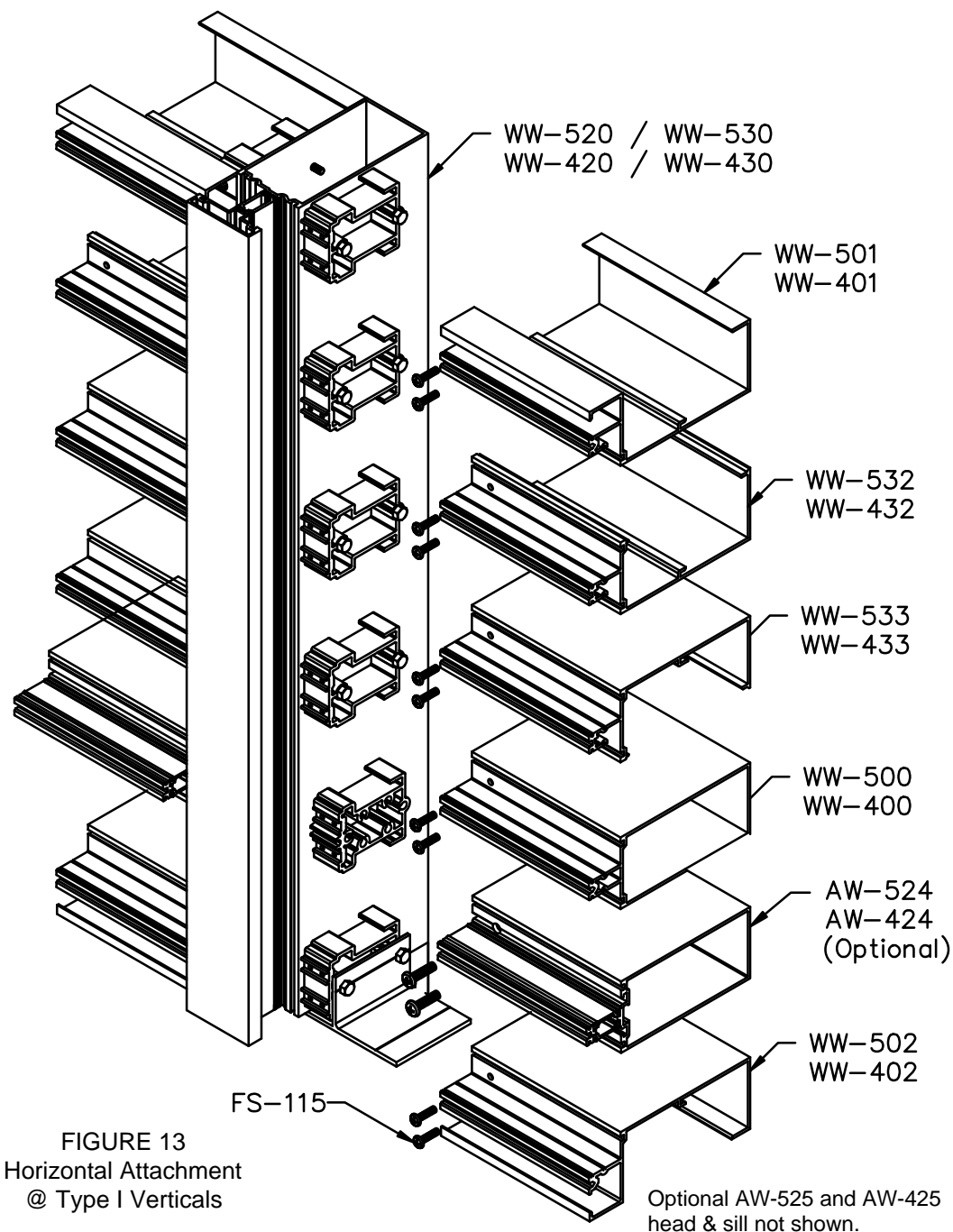
Sealant should form a seal around and beneath attachment fastener. If sealant does not form a complete seal around fastener, fastener should be cap sealed to insure proper seal.

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

FIGURE 12
Shear Block Sealing

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FRAME INSTALLATION



- 2.3 If applicable, install cover plates for open back 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 glazing gasket to clean out excess sealant in glazing reglets. Also wipe excess sealant away from the horizontal filler snap areas on rollover horizontals.

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FRAME INSTALLATION

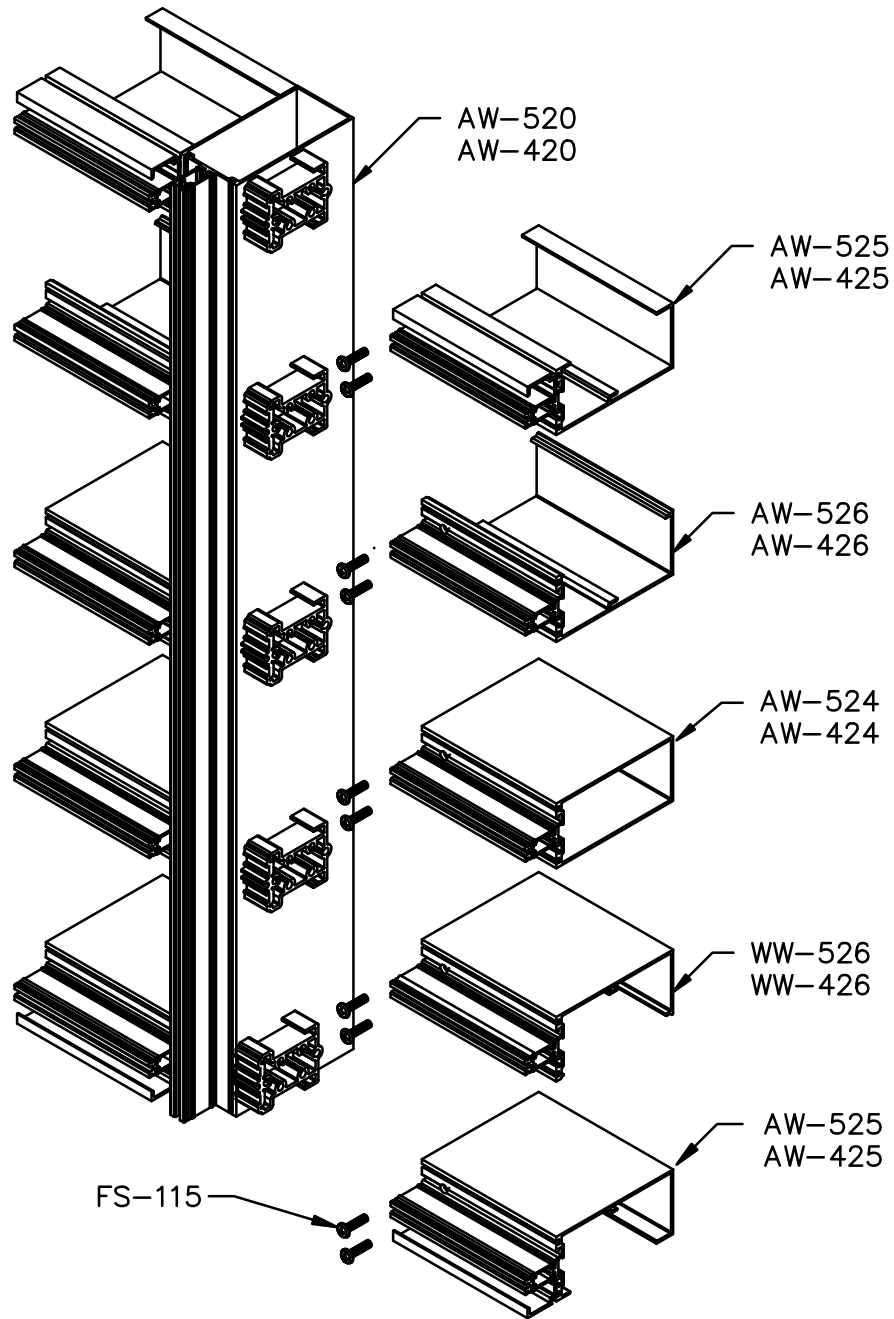


FIGURE 14
Horizontal Attachment
@ Type II Vertical

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FRAME INSTALLATION

- 2.5 Apply sealant to all contact surfaces on vertical and horizontal mullions where zone plugs will be installed. Install at the end of each horizontal mullion by sliding plug down into pocket from above. Tool sealant around all sides of the zone plug in the glazing pocket to ensure a watertight seal SEE FIGURE 15 below & page 20 for System 1, SEE FIGURE 16, page 21 for System 2 installation .

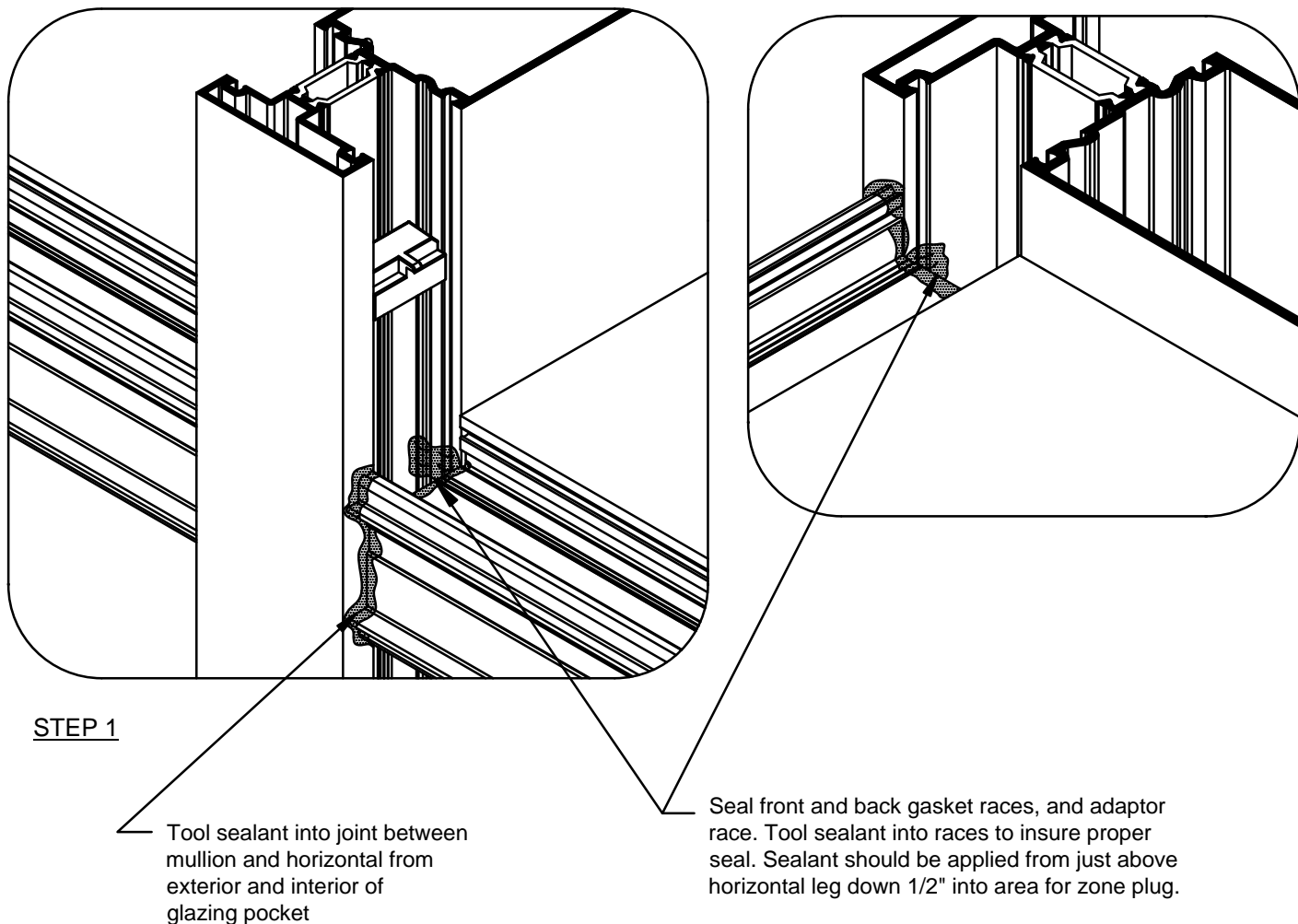


FIGURE 15
Type I Zone Plug Installation

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FRAME INSTALLATION

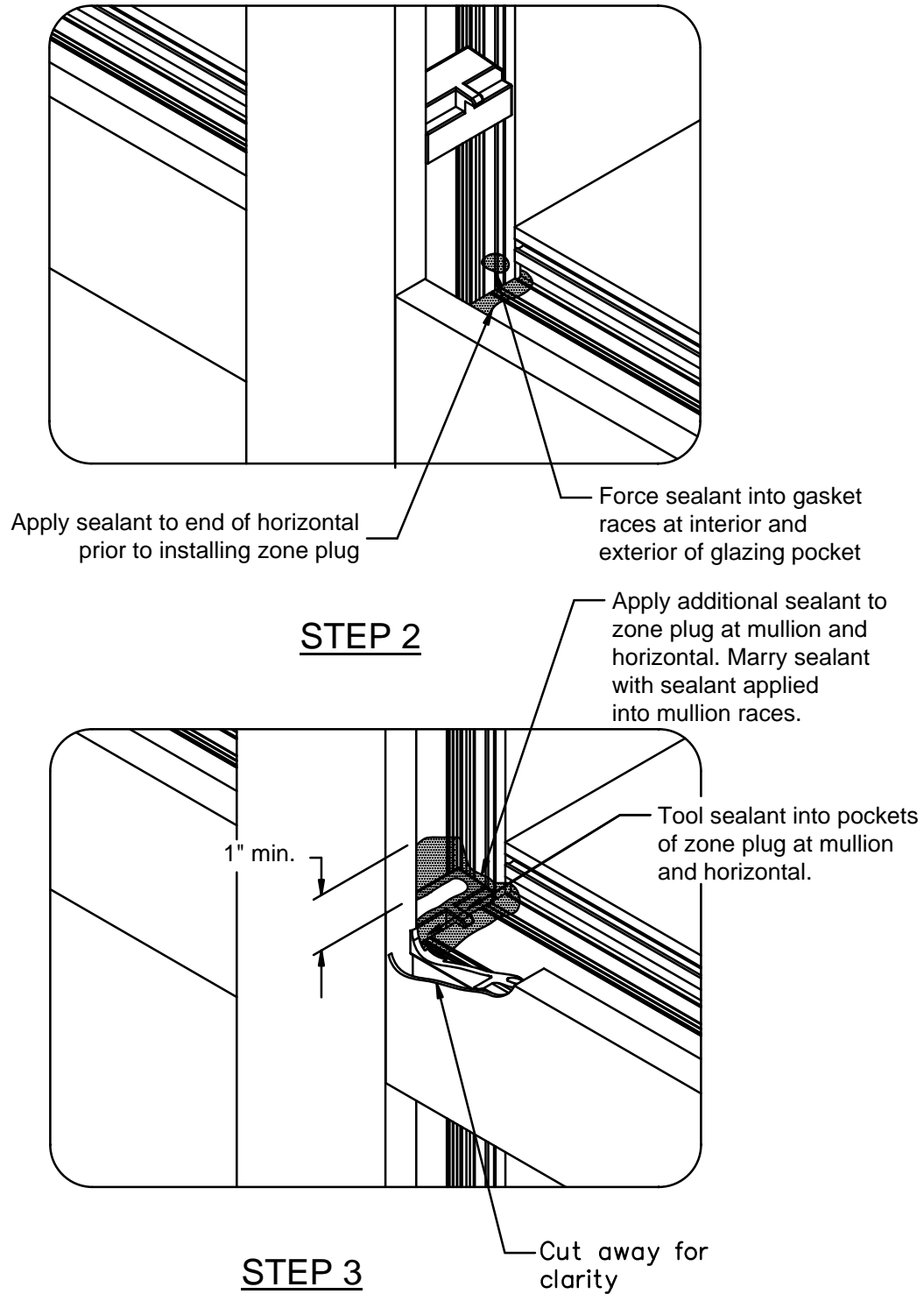
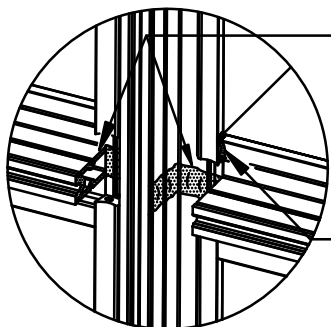


FIGURE 15 cont.
Type I Zone Plug Installation

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

FRAME INSTALLATION

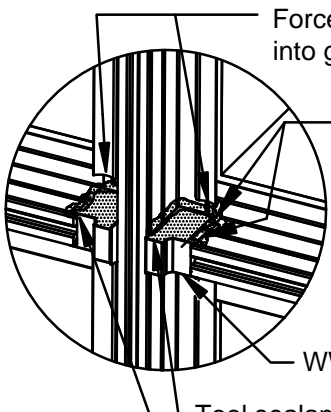
STEP 1



Seal along tongue of horizontal & across face and tongue of mullion before installing zone plugs.

Seal between gaskets prior to installing glass.

STEP 2



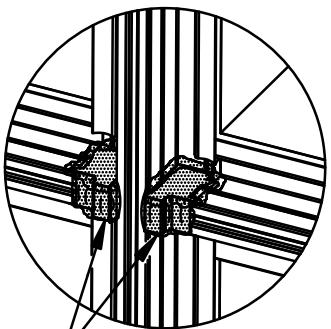
Force sealant into gasket race

Force sealant into pockets to seal ends of struts at head, sill and horizontals.

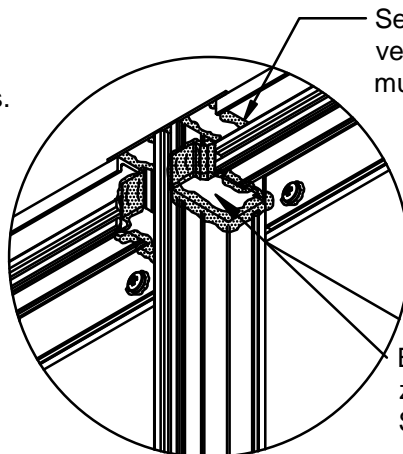
WW-370 zone plug

Tool sealant along top of zone plug to form a water tight seal.

STEP 3



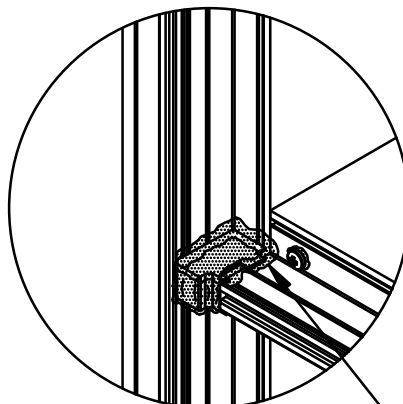
Apply generous bead of sealant to face of zone plugs just prior to installing vertical pressure plate.



Seal between head, vertical mullion and mullion cap

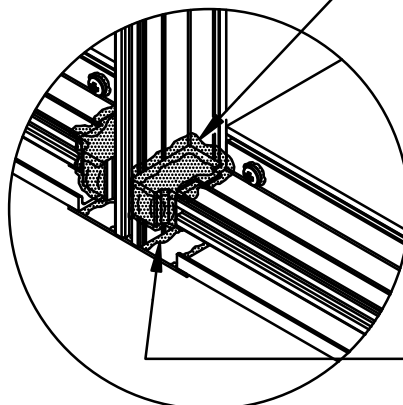
Bottom side of zone plug shown. Seal top side sim.

ZONE PLUG AT HEAD



ZONE PLUG AT JAMB

Seal jamb & sill zone plugs same as shown at left



ZONE PLUG AT SILL

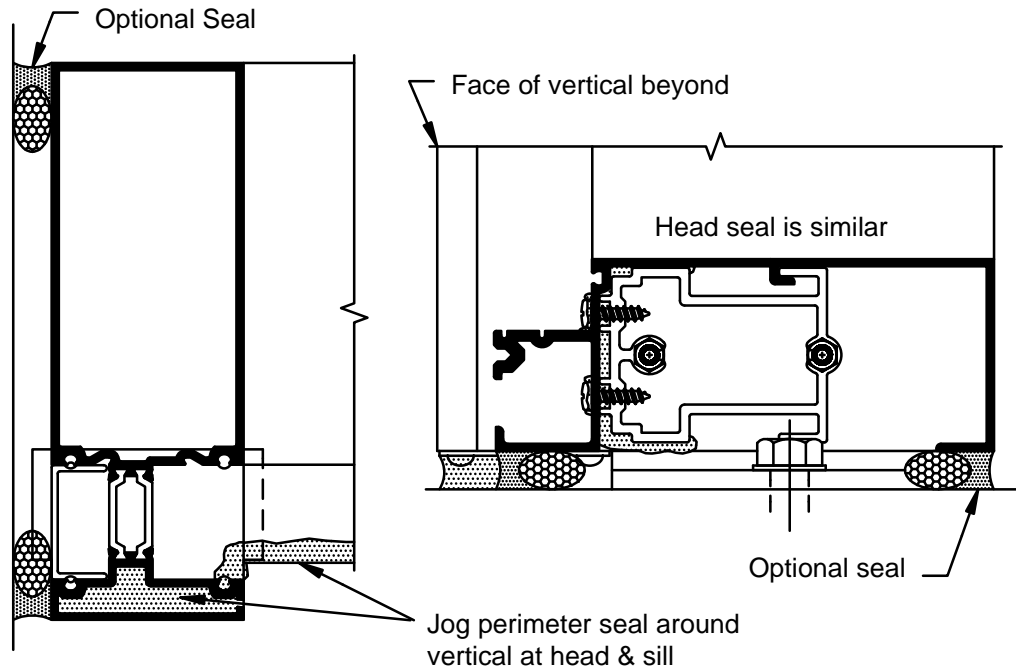
Seal between sill, vertical & mullion cap

FIGURE 16
Type II Zone Plug Installation

RELIANCE - TC™ CURTAIN WALL INSTALLATION MANUAL

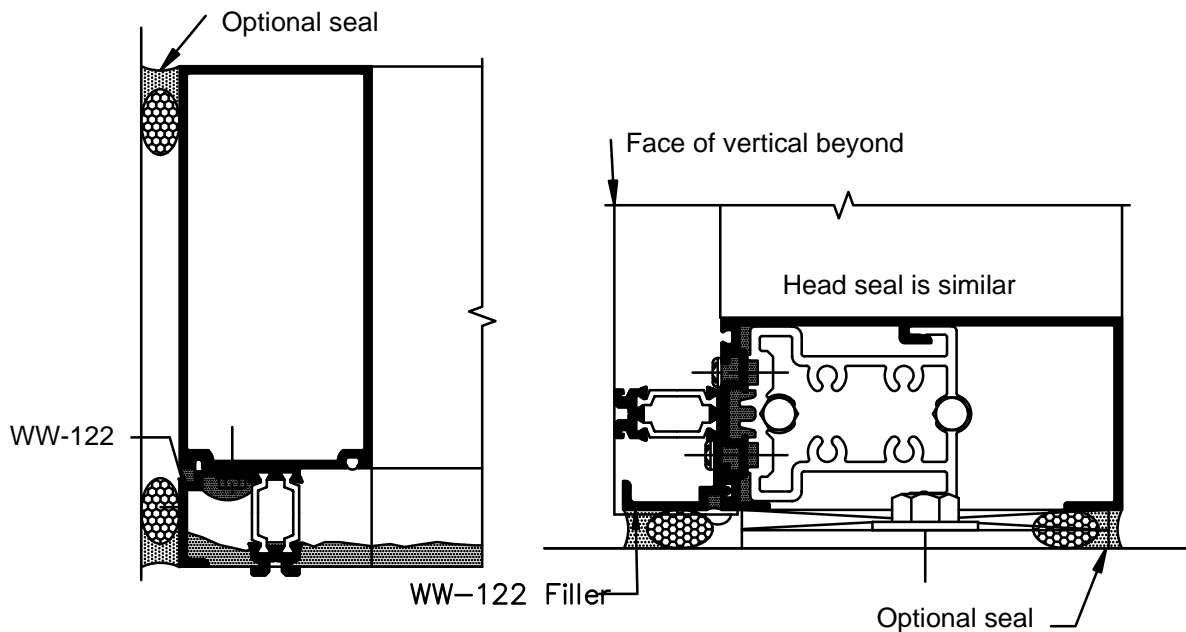
FRAME INSTALLATION

- 2.6 When all framing members are installed, apply the perimeter seal. SEE FIGURE 17. The interior perimeter seal is not required for system performance, but can be installed for cosmetic purposes. Perimeter seal must be applied prior to glazing



Type I

FIGURE 17
Perimeter Seal



Type II

GLAZING

- 3.1 Install face gaskets into all horizontal pressure plates. Crowd all gaskets into members to avoid relaxation of material. See page 8 for gasket cut length information.
- 3.2 Install thermal isolator into groove on face of horizontal and vertical mullion tongues. Vertical isolators are cut mull length. Horizontal isolators are cut D.L.O. minus 1/4". SEE FIGURE 17.

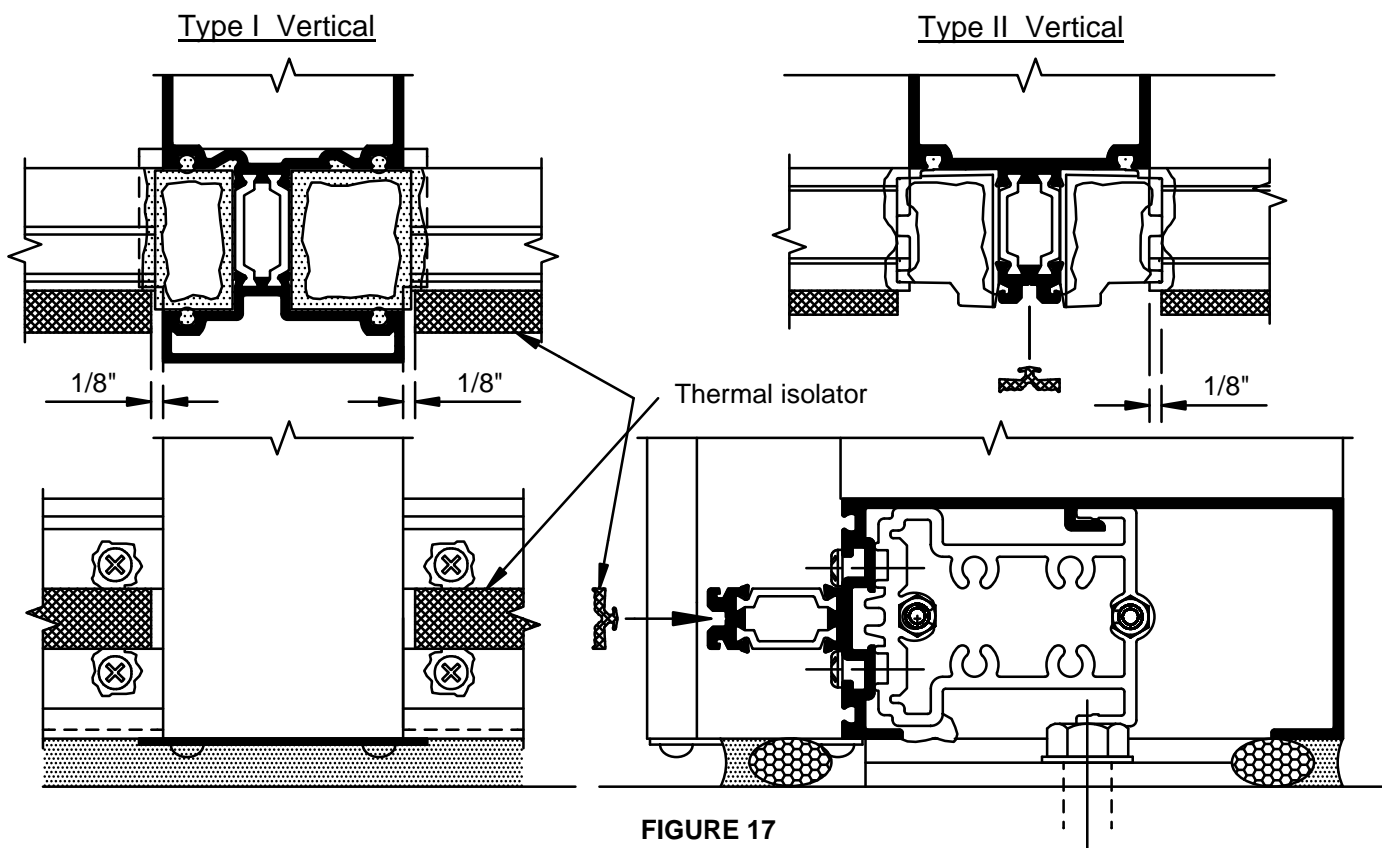


FIGURE 17
Thermal Isolator Installation

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; install and seal gaskets as you are ready to set glass in each opening. Install interior gaskets into backmembers, both horizontal and vertical, installing vertical gaskets first. If the vertical mullion is spliced, run gasket through the splice joint, setting gasket in fresh silicone at splice joint, trimming the gasket dart as necessary to form an airtight seal. Glazing gaskets at verticals run through; horizontal gaskets butt into vertical gaskets. Crowd the gaskets into corners, cutting the horizontal gaskets at an angle to match bevel on vertical gaskets. Pulling the horizontal gasket back, seal joint between the corners of the gaskets just prior to setting the glass. Release the gasket back to its original position, making sure sealant fills the entire joint. Tool corner joints after glass is set and temporary glazing retainers are installed.

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 dead load charts. Lubricating the bottom of setting block will assist in proper setting of glass. Consult glass manufacturer for correct setting block location and length for glass sizes in excess of 40 sq. ft, and recommended lubricants.

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

- 3.5 Set glass in opening from the exterior. When using Type I vertical mullions, place one edge of the glass into the deep pocket of the vertical. Swing the glass into the adjacent vertical pocket, ensuring that the glass bite is equal on all sides. See FIGURE 19
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.
- 3.6 When glazing Type I, temporarily hold glass in place at each corner and at every 24" on center with 4" long GP-113 exterior wedge gaskets. Locate at the corners for proper sealing of the gasket joint. Glazing retainers are also required at each end of the horizontals and at the center of each horizontal if the D.L.O. is greater than 4' in length. Use WW-333-01 temporary glazing retainers fastened with (1) FS-325 screw. Torque fasteners to 60 in-lbs. Temporary retainers are intended for short-term use only. Additional retainers may be required to withstand full design wind load pressures. If severe weather or high wind loads are anticipated, full length pressure plates must be installed. SEE FIGURE 20, below & FIGURE 21, page 25.
- 3.7 Prior to installation horizontal pressure plates, apply sealant to front edge of zone plugs. SEE FIGURE 22, page 25.

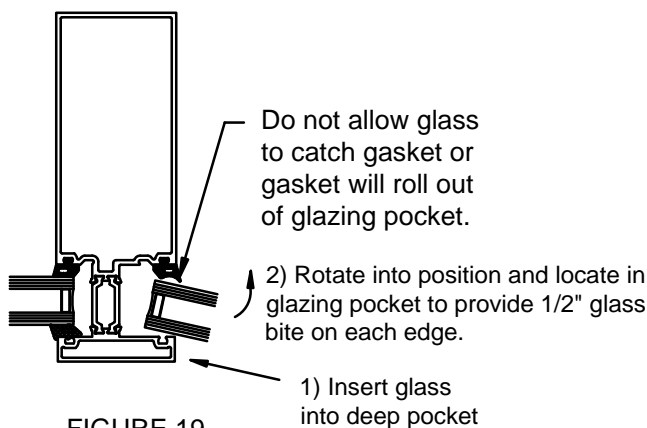


FIGURE 19
Glazing Type I
Vertical Mullion

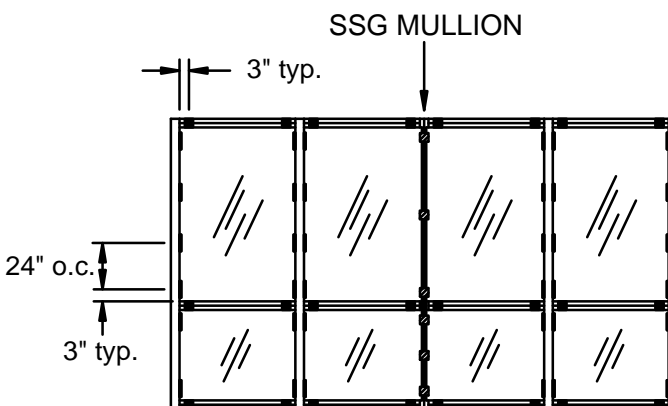


FIGURE 20
Location of Temporary
Glazing Retainers for Type I

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

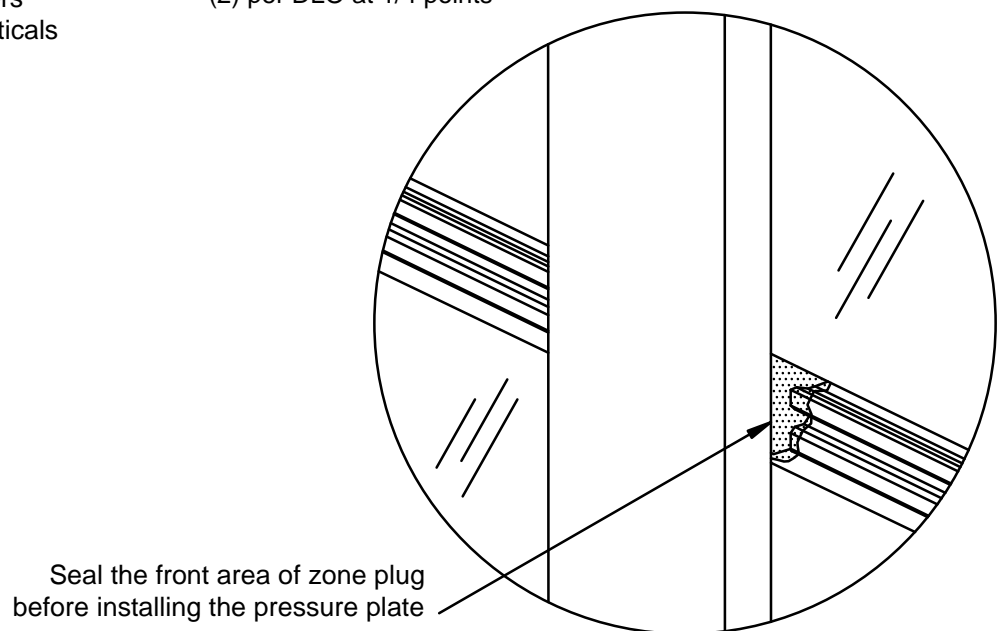
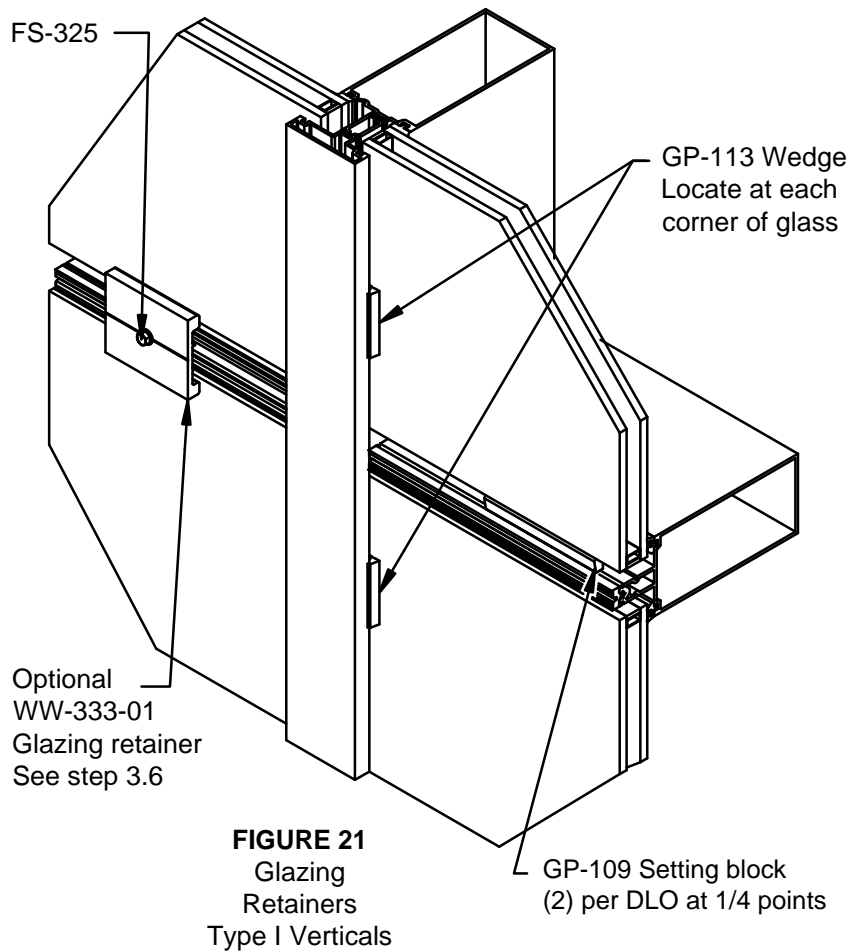


FIGURE 22
Sealing Zone Plugs
Prior to Installing Pressure Plates

RELIANCE™ - TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

- 3.8 When glazing Type II, set glass in opening, make sure that glass bite is equal on all sides. **CAUTION:** BE certain that glass is placed firmly against interior gasket to ensure a proper seal and to avoid binding of the glass on the setting block.
- 3.9 Temporarily hold glass in the opening with WW-333 temporary glazing retainers & FS-325 screw. 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 23 & 24.

WW-333-01 temporary glazing retainer. Locate at 3" from edge of glass. Additional clips may be required based on field conditions and glass size.

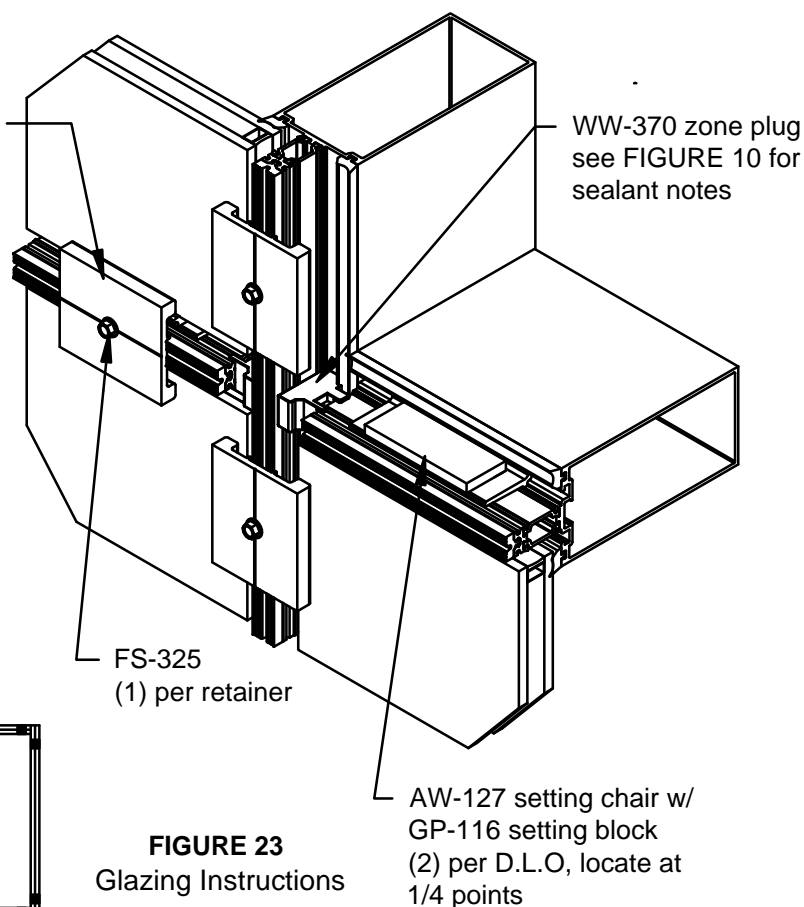


FIGURE 23
Glazing Instructions

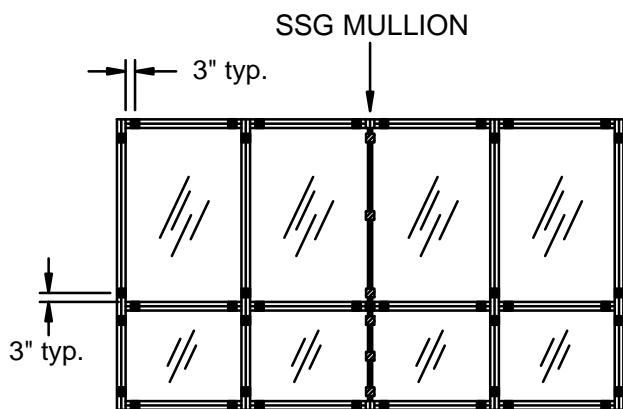


FIGURE 24
Location of Temporary
Glazing Retainers for Type II

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

- 3.10 Pressure plate fasteners must be located 1 1/2" from each end to maintain proper compression. Drill 7/32" diameter holes as required. See FIGURE 25
- 3.11 After removing any temporary retainers at the horizontals, center horizontal pressure plates in opening, leaving a 1/8" gap on each end. Make sure the weep holes are on the top side of pressure plate. NOTE: Horizontal pressure plates and face covers run continuous over SSG mullions, not to exceed 3 lites in length. SEE FIGURE 30, page 31 for splicing and sealing instructions.
- 3.12 Install horizontal pressure plates using FS-325 (#12-24 x 1-1/2" HWH Drill Flex) by attaching using holes approximately 12" from each end first. Torque fasteners to apx. 70 in/lbs. Then install all other fasteners, locate at 9" on center. SEE FIGURE 25
- 3.13 After all pressure plates are installed on the frame, torque the fasteners to 90 in-lbs. for aluminum pressure plates or if using the AW-162 FRP pressure plate, torque the fasteners to 80 in-lbs. The use of either a drill motor with a torque limiter or a torque wrench can be used. If using a cordless drill, check torque periodically since battery usage will affect the torque setting. (Note: Oldcastle BuildingEnvelope® does not recommend using an impact drill to install pressure plate fasteners due to reduced drill speed, increased installation time and increased chance that fasteners may be over torqued.).

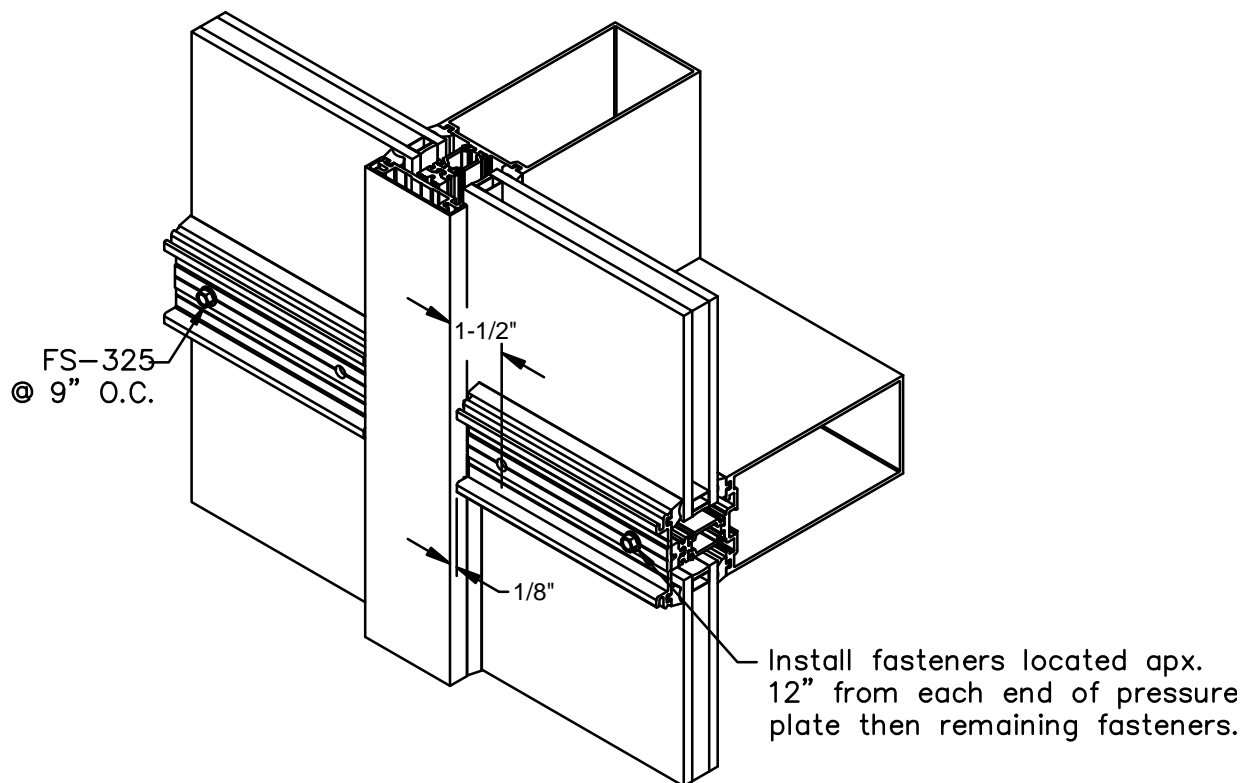


FIGURE 25
Pressure Plates Installation

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

3.14 Seal ends of horizontal pressure plates to the verticals. Tool sealant into the joint. SEE FIGURE 26.

3.15 Install horizontal face covers, leaving an equal gap at each end. Make sure the weep hole is on the bottom. Install covers using a wood block to protect the cover and a dead blow soft face hammer.

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

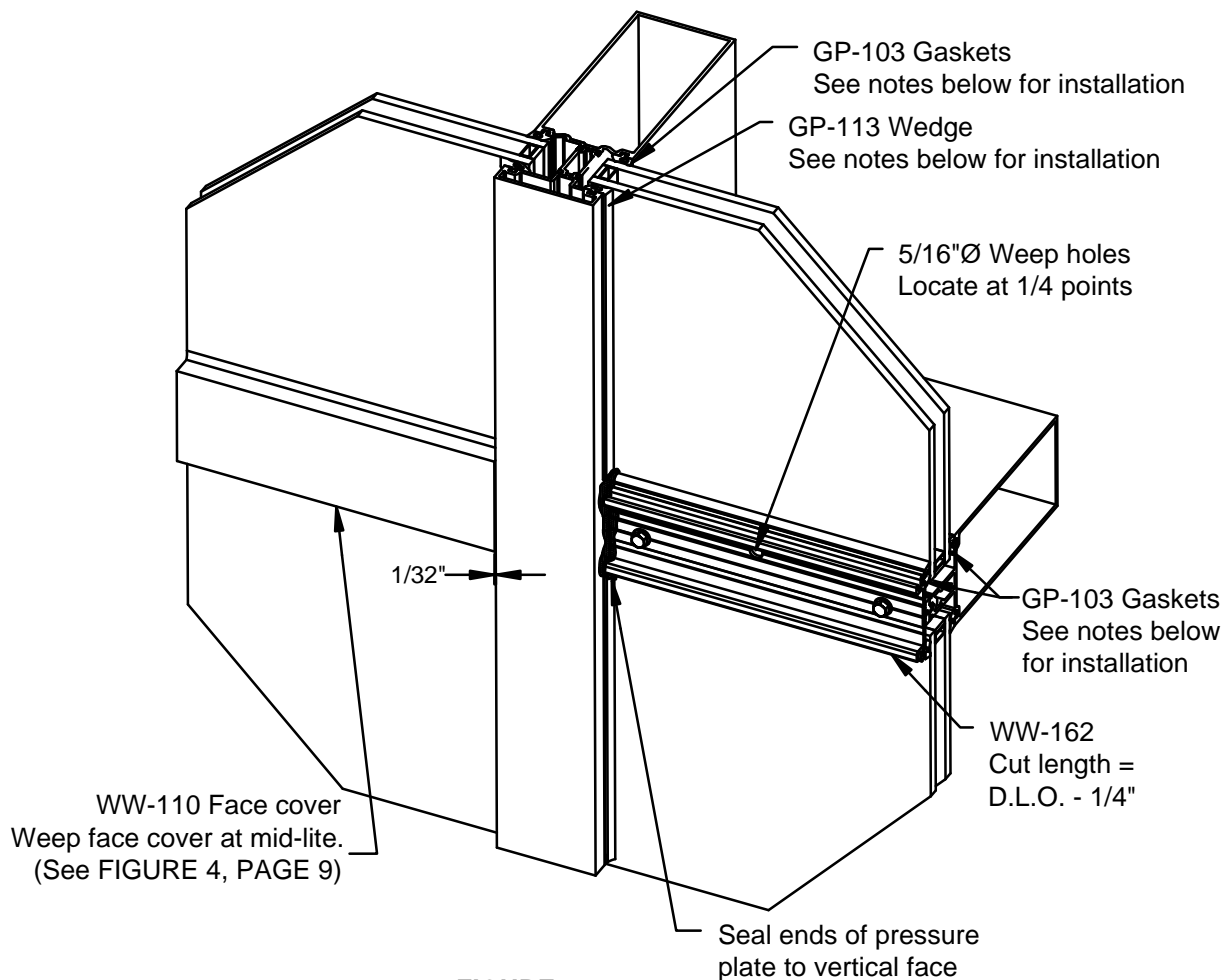


FIGURE 26
Sealing Pressure Plates

GLAZING NOTES:

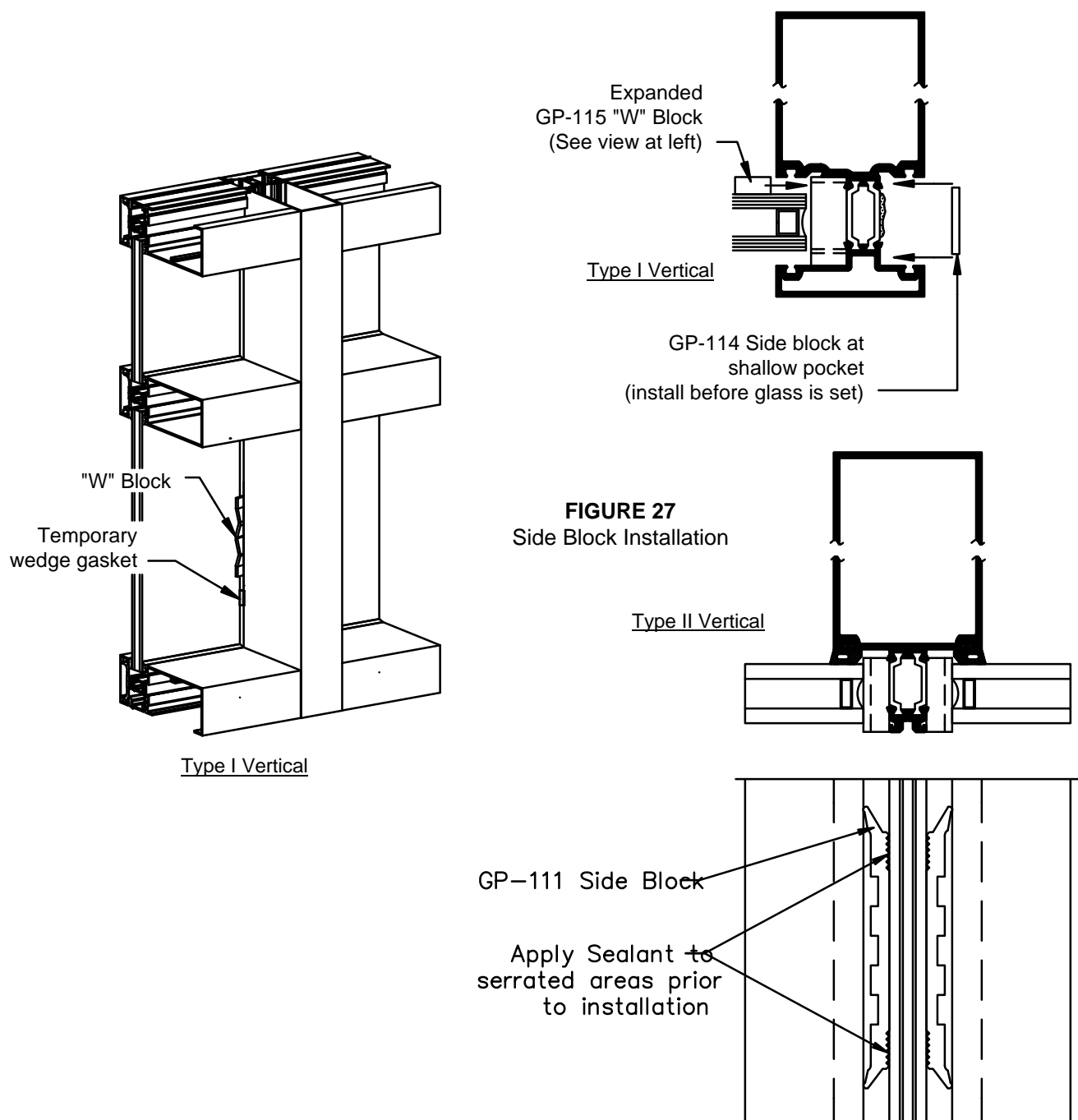
- 1) INTERIOR GASKETS: GP-103 dense EPDM gasket
EXTERIOR GASKETS: GP-103 at pressure plates,
GP-113 wedge gasket at WW-520 verticals.
- 2) Remove gasket from reels and allow to relax overnight
- 3) Cut gaskets 1/4" longer per foot to allow for relaxation.

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

3.16 If required, install GP-114 and GP-115 side blocks on Type I vertical mullions and GP-111 for Type II vertical mullions at centerline of each lite along vertical edges. Hold GP-111 and GP-114 in place with a dollop of silicone. For framing that may be subjected to seismic events, consult glass manufacturer for preferred location. See FIGURE 27. **NOTE:** Side blocks are not required at SSG mullions.

3.17 Repeat steps 3.3. through 3.16 until all glass is set, working row by row up the elevation.



RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

- 3.18 WW-380 bridge is required at SSG mullion to horizontal connections. Apply sealant along face of mullion as shown in step 1, slide bridge over horizontal tongue and apply additional sealant along horizontal and mullion. The WW-380 bridge has two sealant tracks along each side. Force sealant into these tracks to seal ends of thermal ~~SEE~~ **SEE** FIGURE 28.
- 3.19 Thermal isolator when using SSG mullions will run continuous. No additional sealant is required at these intersections ~~SEE~~ **SEE** FIGURE 29.
- 3.20 Install WW-327 mull caps at head and sill using (2) FS-320 drive screws. Reference FIGURE 3, pg 10.

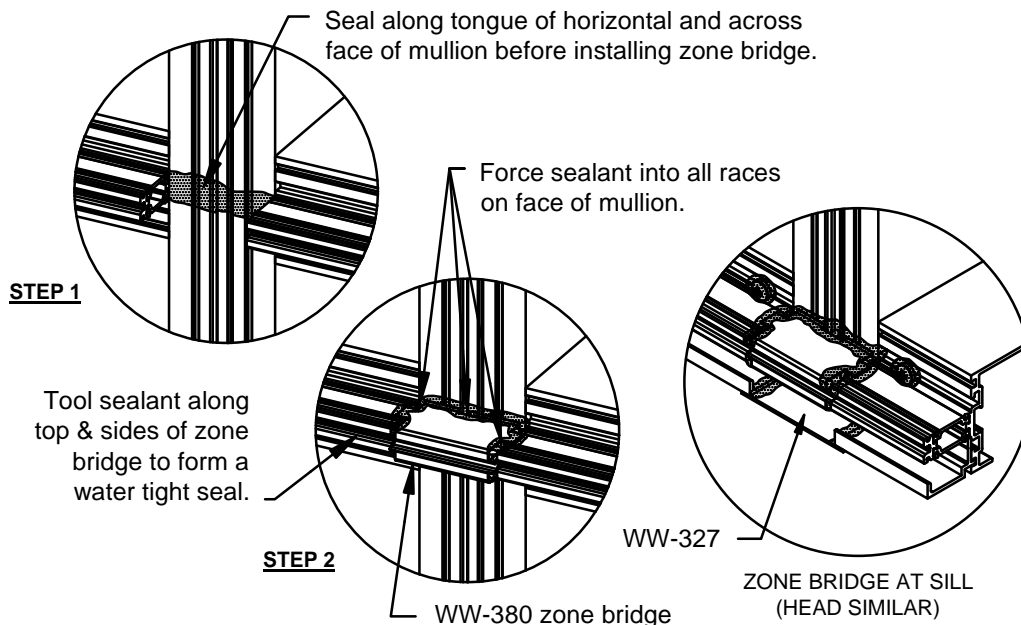


FIGURE 28
Zone Bridge Installation

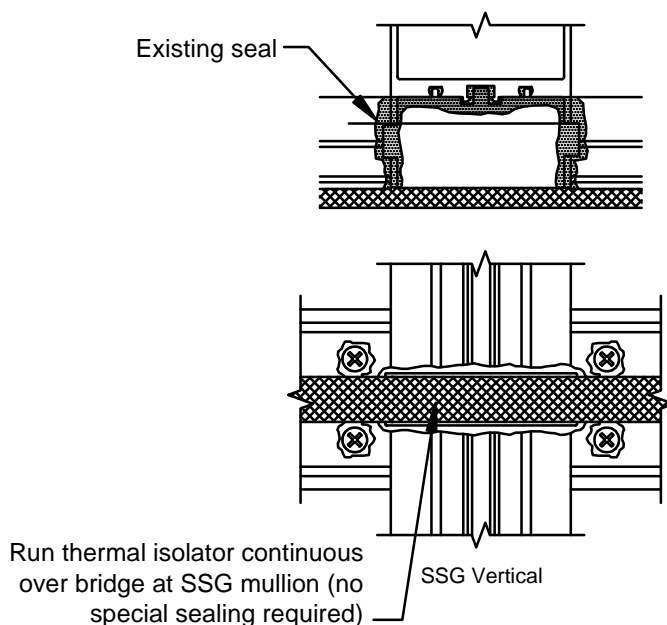
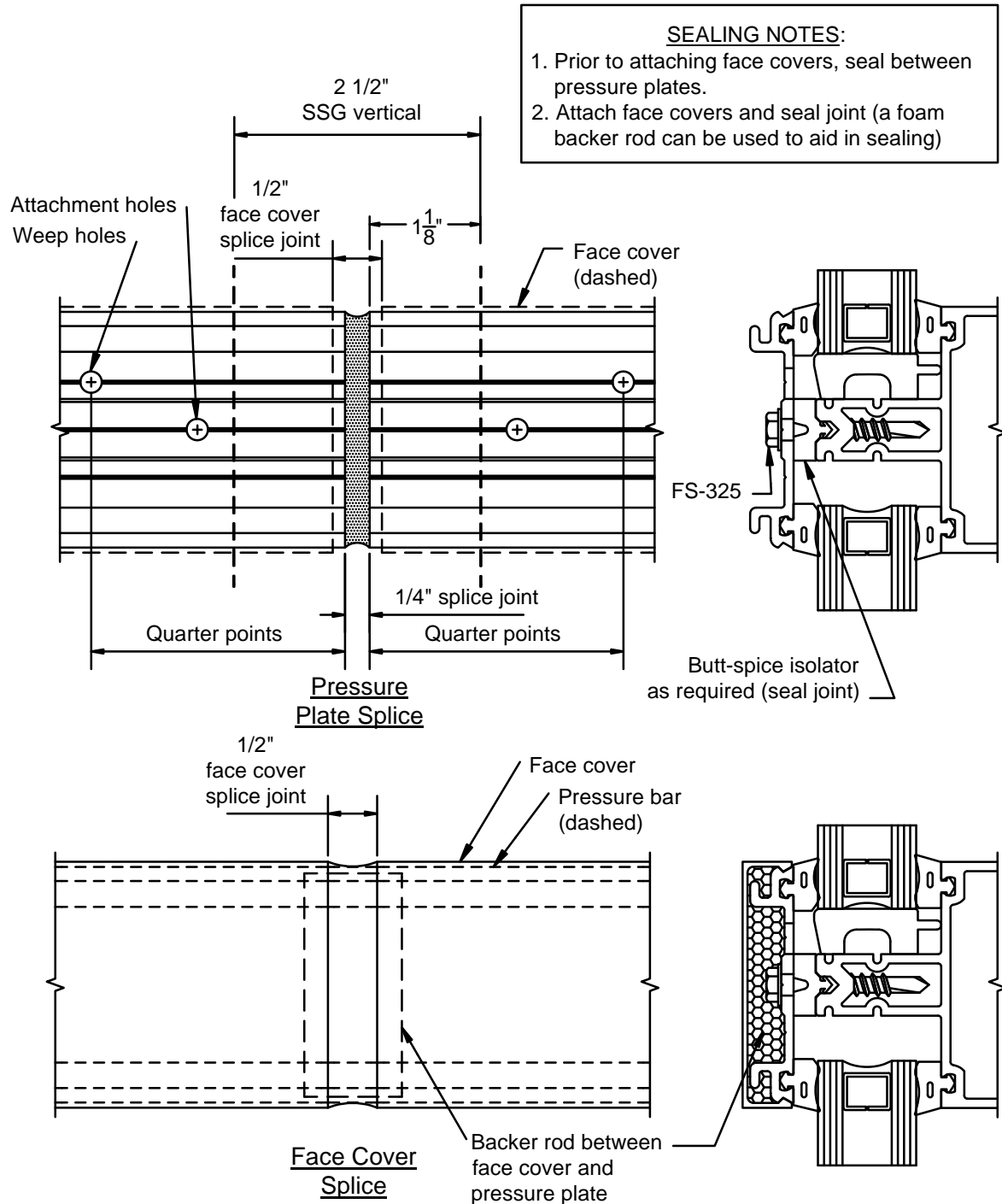


FIGURE 29
Isolator Installation

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

GLAZING

- 3.21 After removing horizontal temporary retainers, locate pressure plates and face covers to run continuous over SSG mullions. Pressure plate and face covers are not to exceed 3 lites in length. Splice pressure plate and face covers at SSG mullion center line.



RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

CORNER FABRICATION

- 4.1 Fabricate vertical mullions for horizontal members as shown in FIGURE 31. Drill tap holes using #11 (.191Ø) drill.
- 4.2 Install mull cap WW-323 at head and sill using FS-320 fasteners. Reference FIGURE 3, page 10. Bed mull cap in sealant and cap seal fasteners.

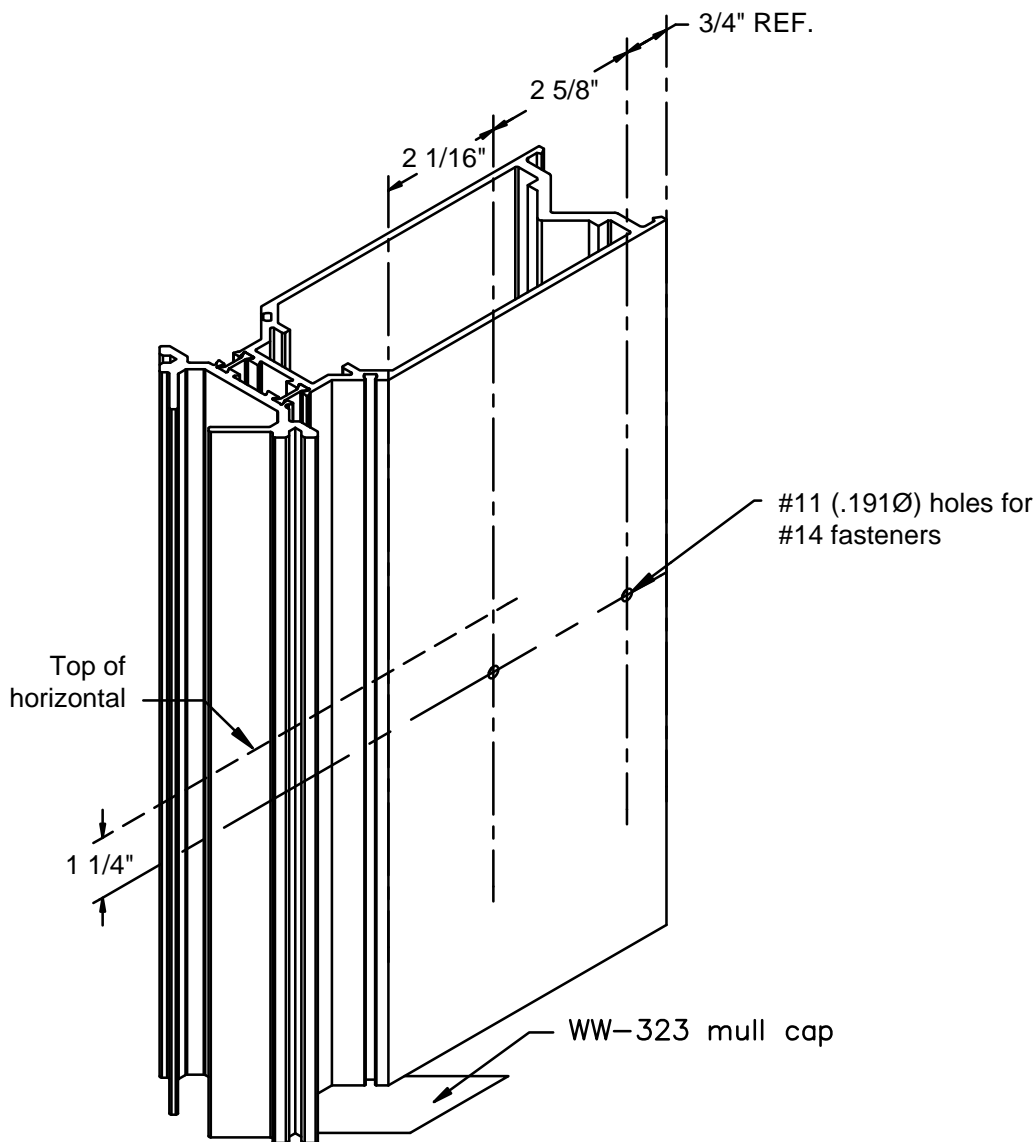


FIGURE 31
OS90 Corner Fabrication

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

CORNER ASSEMBLY

- 4.3 Attach AW-181-01/02 shear blocks to mullion using (2) FS-9 #14 x 1 1/2" HH STS. Horizontal to be mitered at 45 degrees from edge of vertical as shown in **FIGURE 32**.
- 4.4 Install AW-309 zone plug into pocket prior to installing pressure plate. Bed zone plug in sealant and run bead around zone plug and tool to form water tight seal. Just before installing pressure plate run bead along face of zone plug and press gasket and pressure plate into this seal.
- 4.5 In vision areas use either WW-220 or CW-823 interior trim to close off back of corner mullion.
- 4.6 If corner is being installed in multi-span application use AW-129-01 splice and follow splice instructions on pages 36-37.

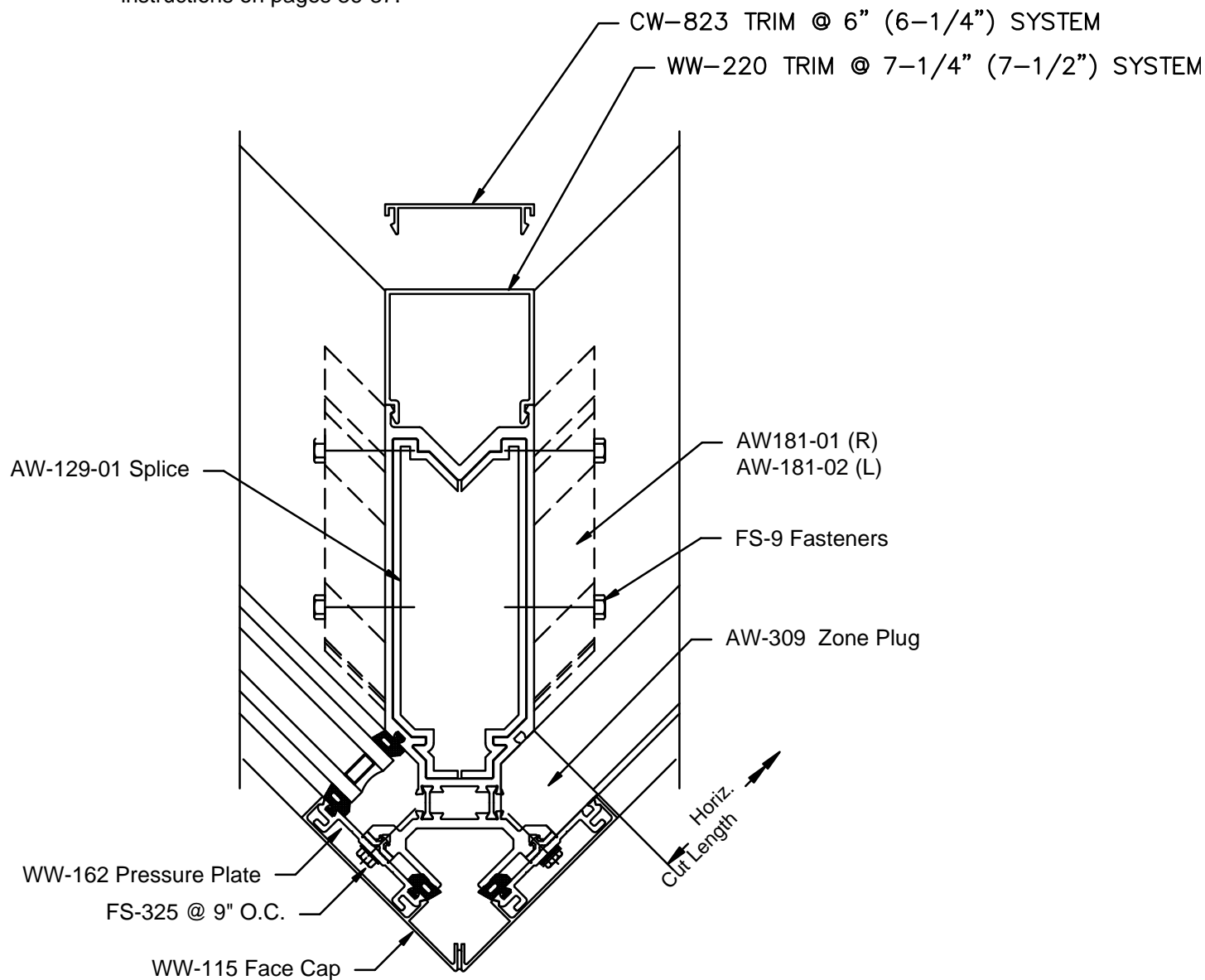


FIGURE 32
OS90 Corner Assembly

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

CORNER GLAZING

OS90 Corner fabrication and assembly shown on pages 32 & 33. For other corner configurations reference Reliance Curtain Wall Installation manual and project shop drawings.

GLASS SIZE CALCULATION = D.L.O. + 1" for Width and Height

SEE FIGURE 33 for calculation at corner mullions

Notes:

1) Steps 3.1 through 3.13 refer to standard glazing of 1" infill. For openings requiring transition glazing with adaptors, refer to "TRANSITION GLAZING", page 35.

2) FRP pressure plates may only be used with OS90 corners. All other options shown below may only be used with standard 6" and 7-1/4" systems.

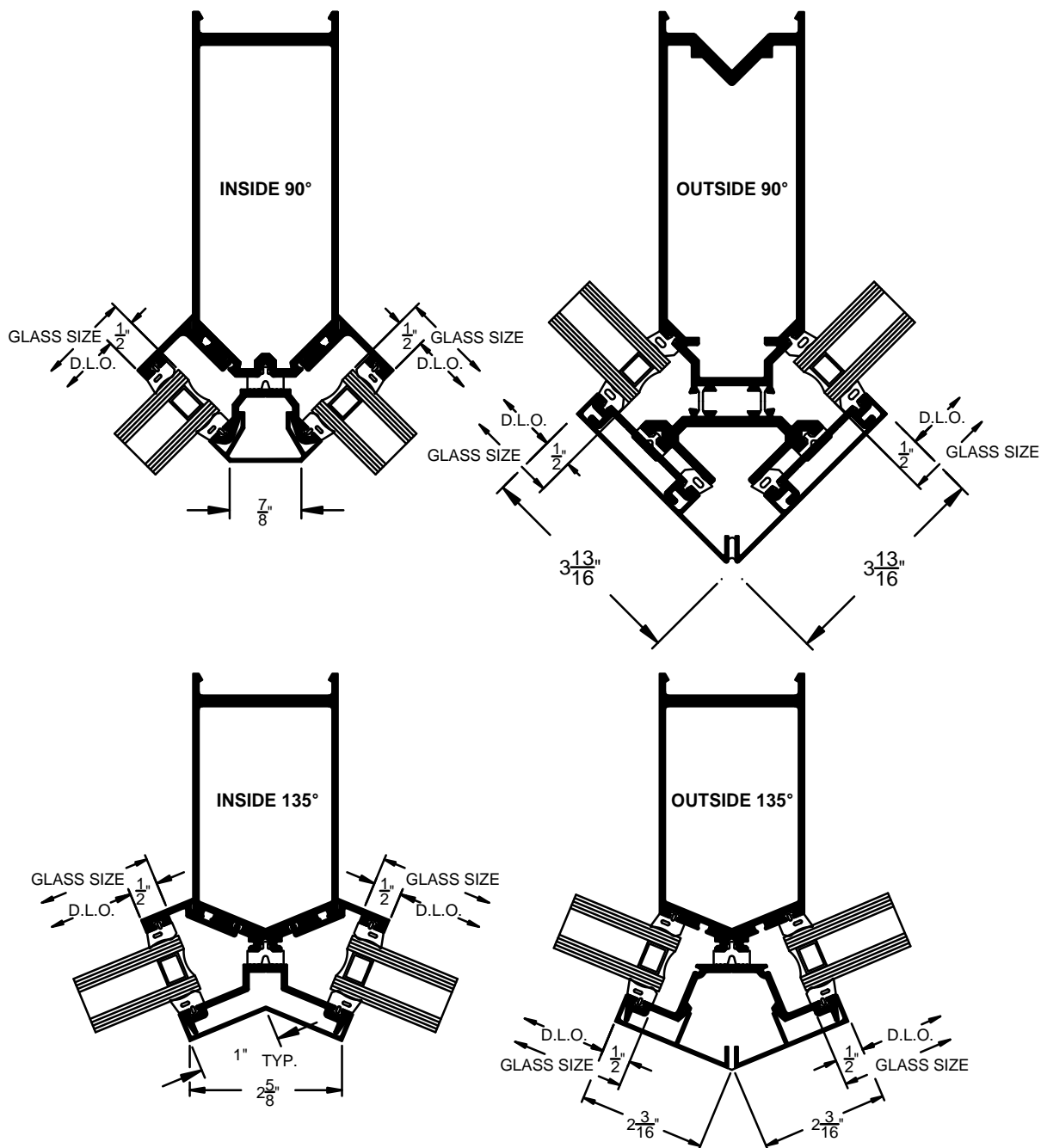


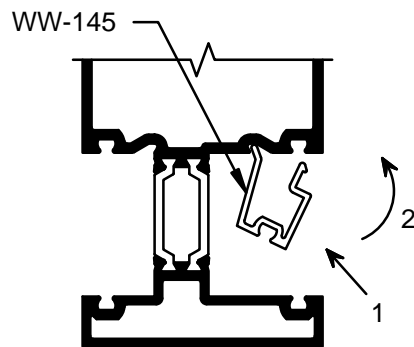
FIGURE 33
Glass Size Calculation at Corners
SOME PARTS NOT SHOWN FOR CLARITY

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

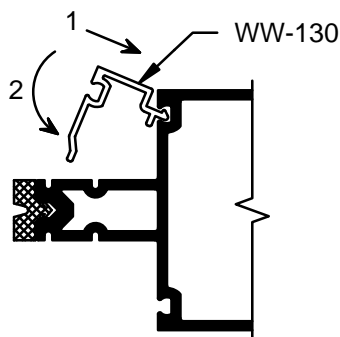
TRANSITION GLAZING

- A.1 Install vertical adaptors first, leaving an equal overlap into each pocket. SEE FIGURE 34. Refer to VERTICAL SPLICING, page 37 if vertical mullion is spliced within a spandrel lite. Transition adaptors must be installed after mullion splice is sealed.
- A.2 Install horizontal adaptors maintaining an equal gap at each end. Once all adaptors have been installed in the opening, seal all corner joints. Run a bead of sealant in the groove formed between the adaptor and mullions. This seal must be continuous around the opening and must marry with the seal at the corner joints. SEE FIGURE 35.

Note: Alternate glass thickness not available for the high performance Reliance-TC system. This product is designed for 1" glazing with optional triple glaze available.

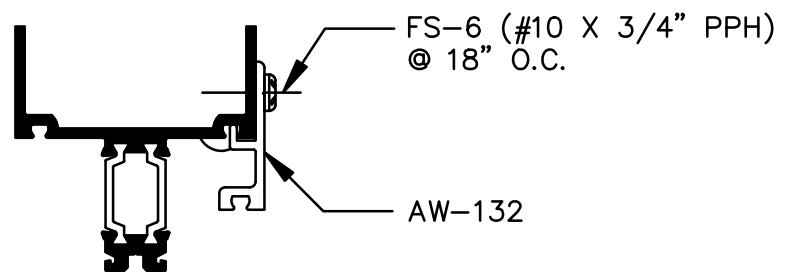


Vertical



Horizontal

FIGURE 34
Installing Glazing Adaptors



Adaptor installation at AW vertical mullions and horizontals.

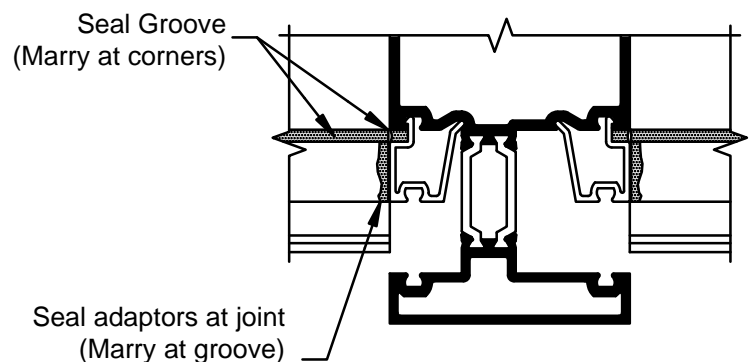


FIGURE 35
Sealing Glazing Adaptors

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

VERTICAL SPLICING

Refer to MULTI-SPAN INSTALLATION, page 14 for splice sleeve installation.

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

- B.1 Apply bond breaker tape to the face of splice sleeves, returning back on the sides 1" minimum. Insert backer rod into the hollow 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 9, page 14.
- B.2 Discontinue glazing adaptors at splice joints. Install backer rod into cavity and seal between adaptors. Marry adaptor seal with main mullion seal. Refer to step B.1 above for sealing notes at glazing reglets.
- B.3 Seal face of WW-520 and similar verticals by installing backer rod in joint and seal per FIGURE 36.
- B.4 Offset pressure plates and face covers per FIGURE 37 page 37, sealing pressure plate and face cover joints as shown in FIGURE 38, page 37.

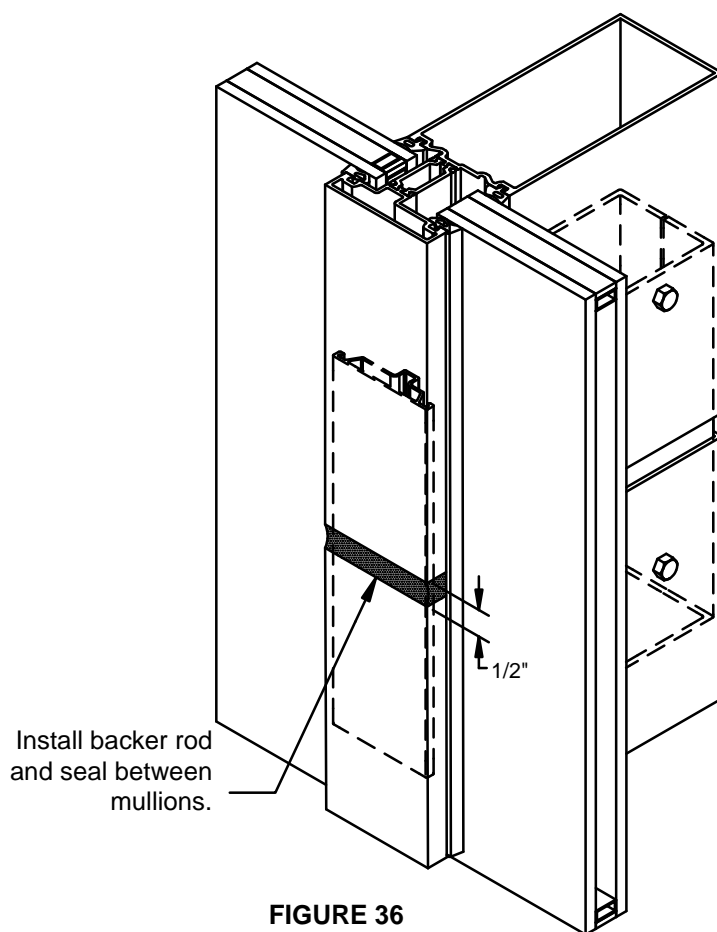


FIGURE 36
Sealing Splice Joint
Type I Verticals

VERTICAL SPLICING

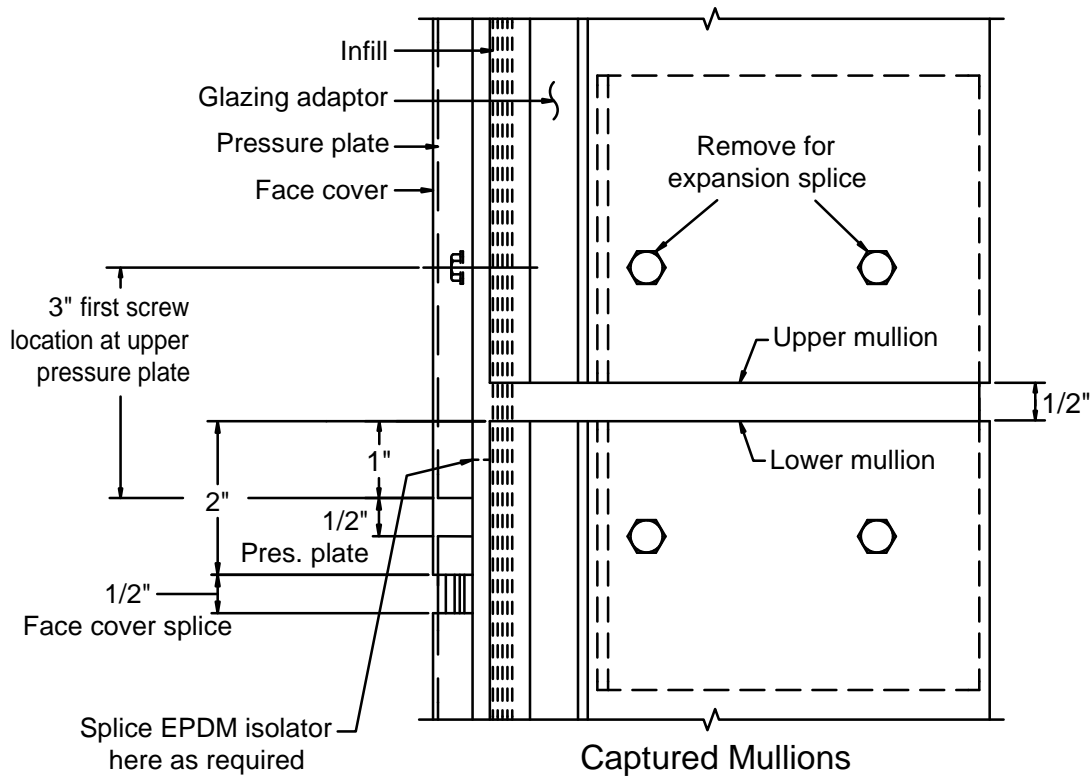


FIGURE 37
Splice Joint Locations
Type II Verticals

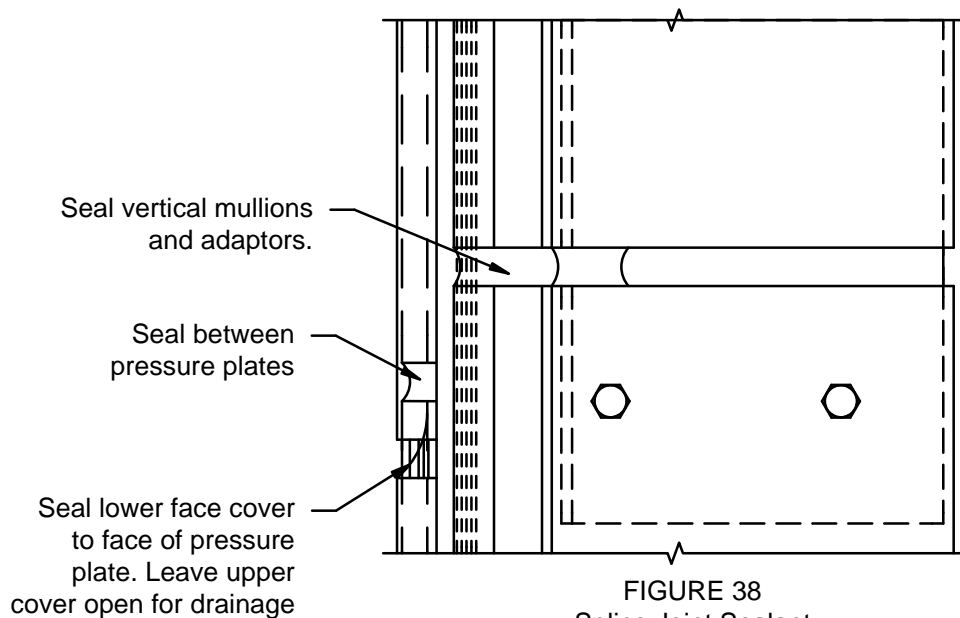


FIGURE 38
Splice Joint Sealant
Type II Verticals

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

ENTRANCE FRAMES

All door framing components are shipped fabricated from the factory. The main curtain wall framing can be erected prior to installing the doors.

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

C.2 SUBFRAME INSTALLATION:

- C.2.1 Attach TH-44 threshold clip to bottom of each subframe jamb with two (2) FS-256 #8 x 1 1/2" Phillips Round Head Screws
- C.2.2 Install WW-341 pocket filler in WW-520 vertical, WW-122 in AW-520 vertical and WW-123 pocket filler with WW-316 isolator or WW-122 filler into horizontal. Bed fillers in sealant and cap seal fasteners at all fillers.
- C.2.3 Bed subframes in sealant and anchor to curtain wall framing members with FS-325 #12-24 x 1 1/2" Drillflex at 18" on center. Seal joint between jamb and header subframes. Seal also tops of jamb subframe. SEE FIGURE 39
- C.2.4 Bed threshold in sealant, attaching 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.2.5 Drill #11, .191 diameter holes in D-186 subframe for FS-15 rivets. Install door stops onto subframe with SC-1 clips @ 18" O.C. Locate clips around the subframe anchor screws. SEE FIGURE 41, Page 39. Vertical stops run through.
- C.2.6 Install door per DOOR & FRAME INSTALLATION & GLAZING MANUAL

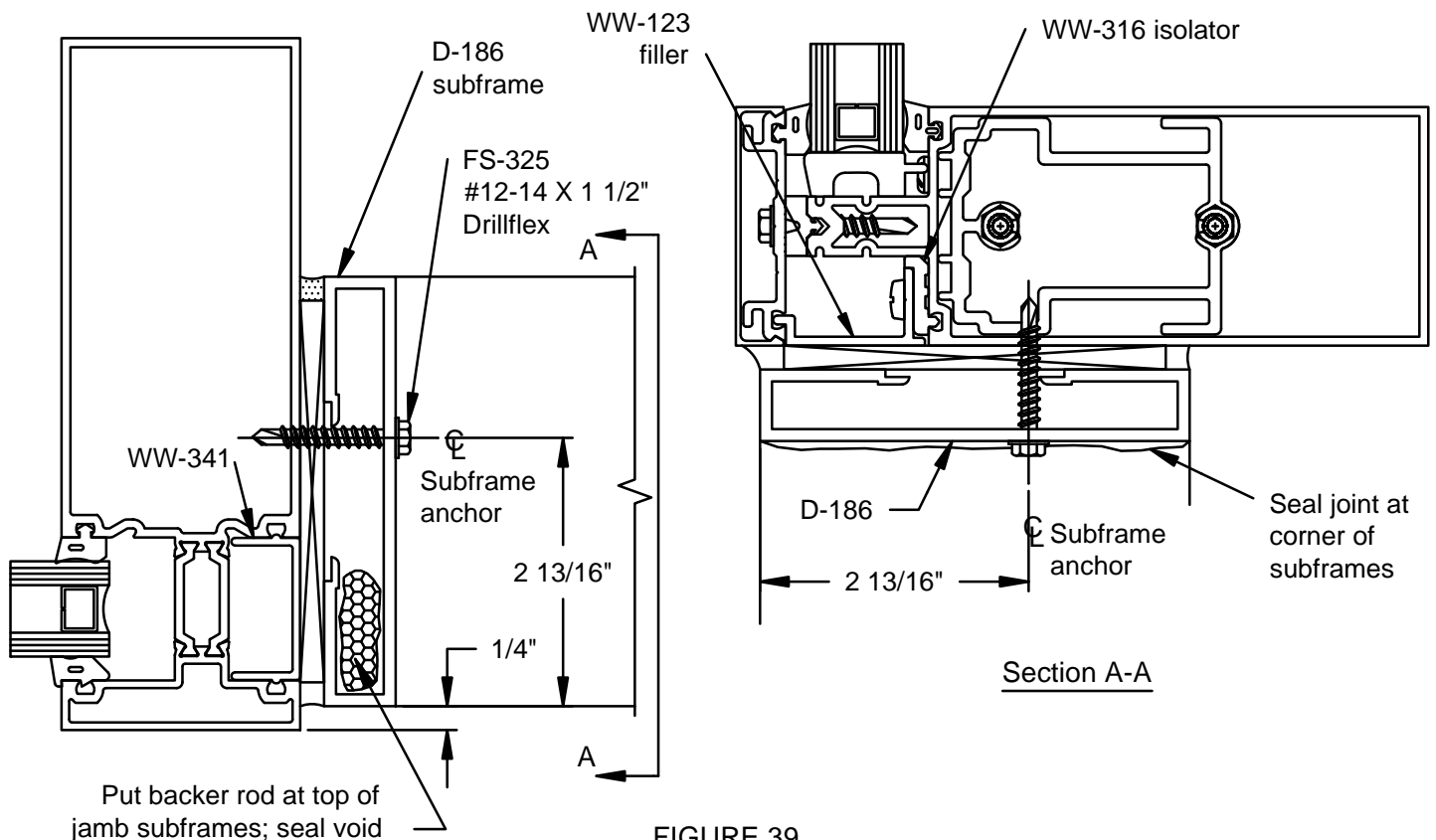


FIGURE 39
Attaching Subframes

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

ENTRANCE FRAMES

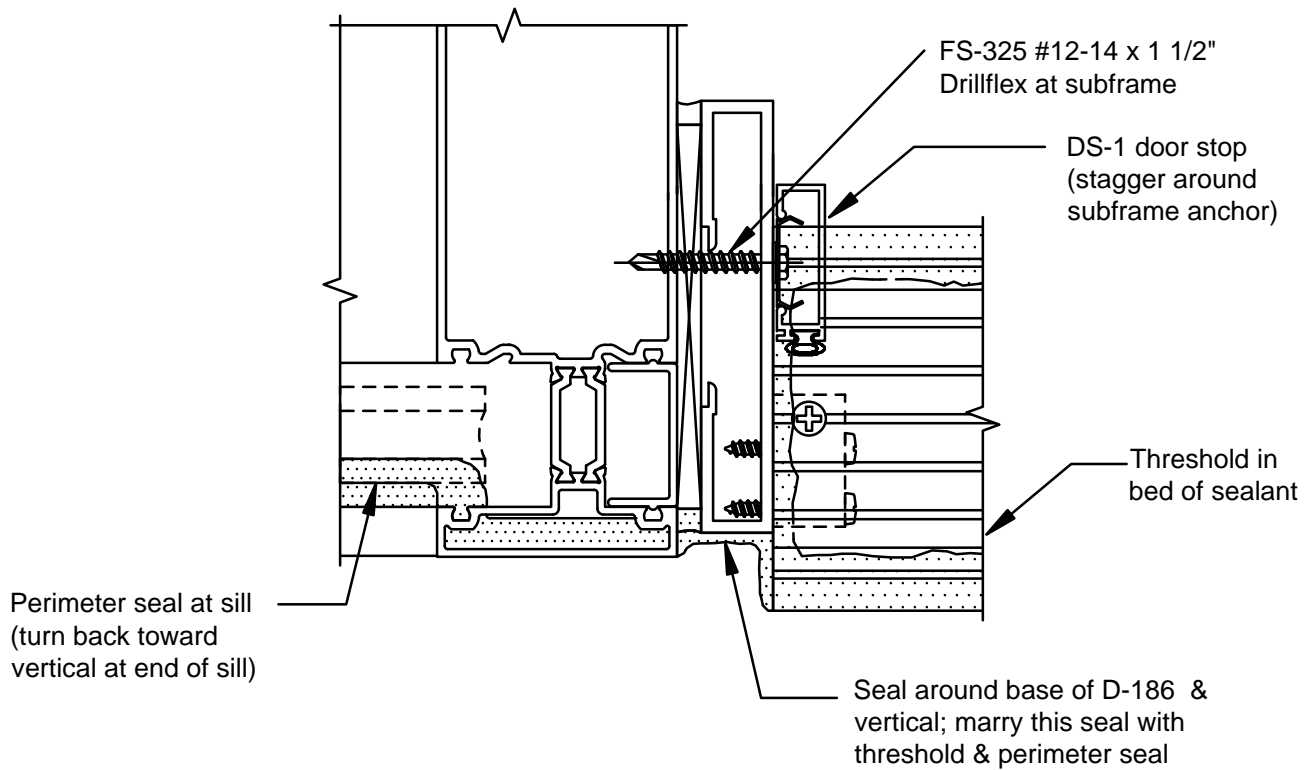


FIGURE 40
Sealing Verticals at Entrance Doors

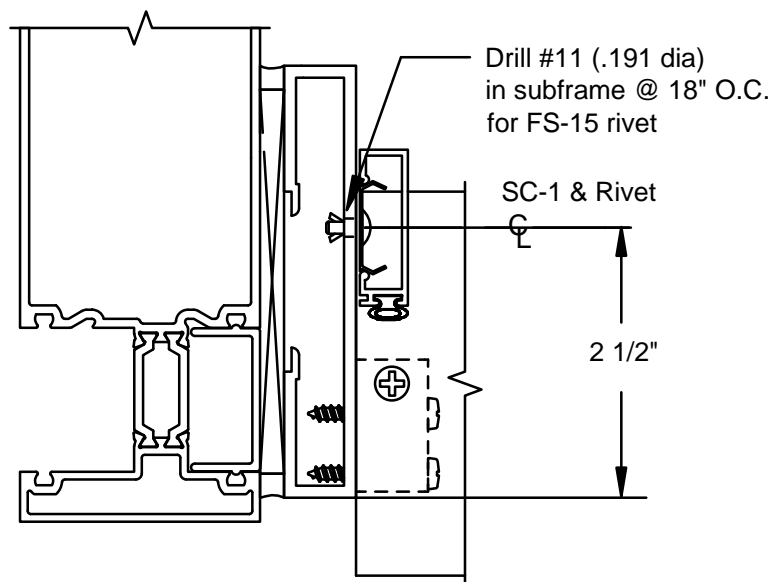


FIGURE 41
Door Stop Attachment

RELIANCE™ -TC CURTAIN WALL INSTALLATION MANUAL

THERMAL ENTRANCE FRAMES

C.3 THERMAL SUBFRAME INSTALLATION:

- C.3.1 Attach AD-204 threshold clip to bottom of each subframe jamb with two (2) FS-22 #10 x 1/2" Flat Head Screws
- C.3.2 Install WW-122 filler into verticals and horizontal, attach w/ FS-325 @ 18" o.c. Bed fillers in sealant and cap seal fasteners at all fillers.
- C.3.3 Bed subframes in sealant and anchor to curtain wall framing members with FS-325#12-24 x 1 1/2" Drillflex at 18" on center. Seal joint between jamb and header subframes. Seal also tops of jamb subframe. SEE FIGURE 42
- C.3.4 Bed threshold in sealant, attaching TH-44 clips with FS-42 #12 x 1/2" Phillips Flat Head screws. Marry threshold seal with subframe and main system seal.
- C.3.5 Install door stops onto subframe with SC-1 clips and FS-15 rivets @ 18" O.C. Locate clips around the subframe anchor screws. Vertical stops run through.
- C.3.6 Install door per DOOR & FRAME INSTALLATION & GLAZING MANUAL

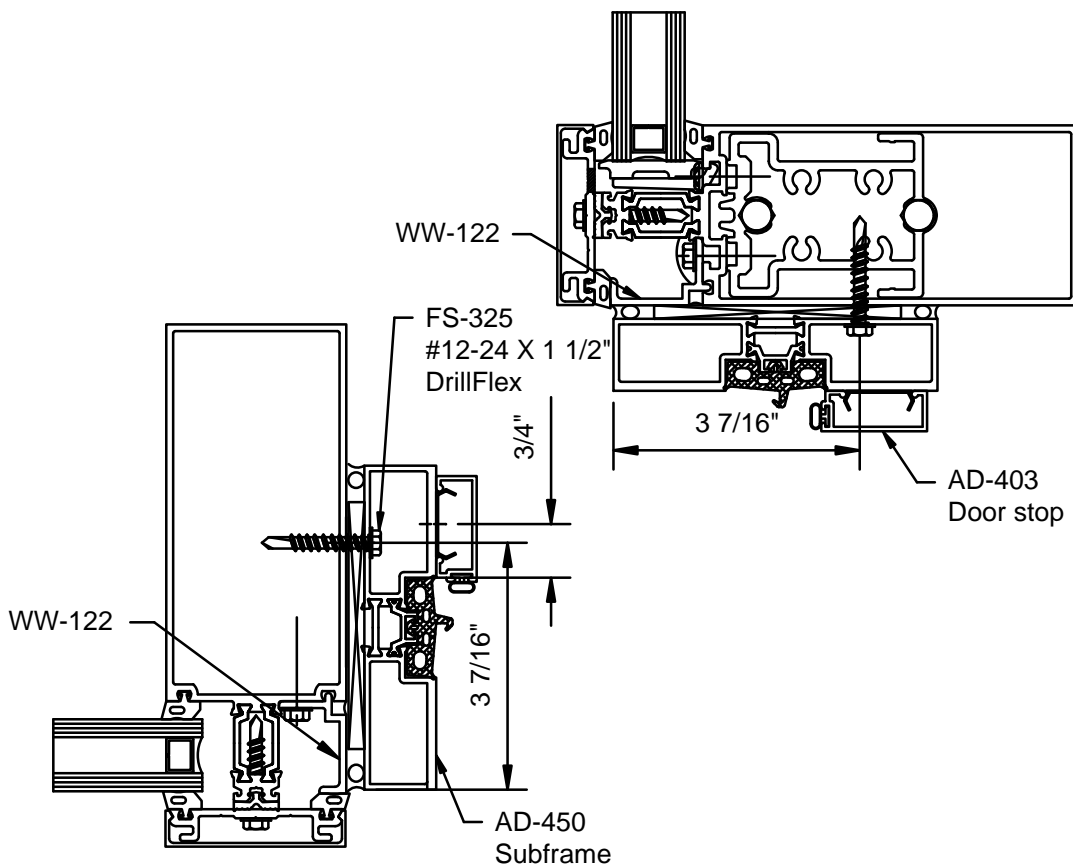


FIGURE 42
Attaching Thermal
Door Subframe

CORNER GLAZING REGLAZING PROCEDURES

- D.1 REGLAZING MUST BE DONE FROM EXTERIOR. Carefully remove face covers surrounding the lite of glass to be deglazed. If WW-520 / WW-420 mullions are used remove horizontal face covers only. SEE FIGURE 43.

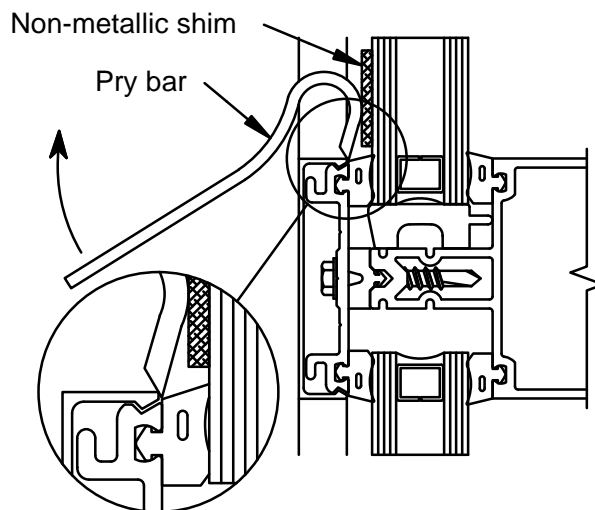


FIGURE 43
Reglazing











- D.2 Remove pressure plates at the lite to be replaced. Remove the exterior wedge gaskets at the vertical mullions for captured vertical applications.
- D.3 Remove lite of glass and existing interior gaskets from the opening. Clean debris and sealant from the framing members and pressure plates.
- D.4 Install new gaskets into framing. Set new lite of glass, centering in opening. Refer to the GLAZING section of this manual for proper procedure.
- D.5 Reinstall pressure plates and seals per GLAZING section of this manual.

RELIANCE™-TC™ CURTAIN WALL INSTALLATION MANUAL

TYPE I - PARTS LIST











4" BACKMEMBERS

6" system depth

	Typical Composite Mullion WW-420
	Heavy Composite Mullion WW-430
	Typical Composite Mullion with Removable Cover WW-438
	Heavy Composite Mullion with Removable Cover WW-431
	SSG Mullion WW-404
	Tubular Intermediate Horizontal WW-400
	Roll-Over Intermediate Horizontal WW-432
	Roll-Under Intermediate Horizontal WW-433
	Head WW-401
	Sill WW-402













5 1/4" BACKMEMBERS

7 1/4" system depth

	Typical Composite Mullion WW-520
	Heavy Composite Mullion WW-530
	Typical Composite Mullion with Removable Cover WW-538
	Heavy Composite Mullion with Removable Cover WW-531
	SSG Mullion WW-504
	Tubular Intermediate Horizontal WW-500
	Roll-Over Intermediate Horizontal WW-532
	Roll-Under Intermediate Horizontal WW-533
	Head WW-501
	Sill WW-502

COMMON EXTRUSIONS

All System Depths and Infills





	Standard Face Cover WW-110
	Face Cover @ FRP Pressure Plate WW-216
	Horizontal Pocket Filler (use with exterior gasket) WW-122
	Horizontal Pocket Filler (full pocket closure) WW-123
	Roll-Over Horizontal Filler for WW-432, WW-433 WW-236
	Roll-Over Horizontal Filler for WW-532, WW-533 WW-237
	Transition Glazing Adaptor 1" to 1/4" Infill Horizontals Only WW-130
	Transition Glazing Adaptor 1" to 1/4" Infill Verticals Only WW-145
	Transition Glazing Adaptor 1" to 1/4" Infill, SSG WW-131
	Transition Glazing Adaptor SSG to Captured 1" Infill WW-141
	Standard Pressure Plate WW-162
	FRP Pressure Plate AW-162

RELIANCE™-TC CURTAIN WALL INSTALLATION MANUAL

TYPE II - PARTS LIST





4" BACKMEMBERS

6" system depth

 AW-420	Mullion
 AW-424	Horizontal
 AW-425	Roll Over / Under Horizontal
 AW-426	Head / Sill












5 1/4" BACKMEMBERS

7 1/4" system depth

 AW-520	Mullion
 AW-524	Horizontal
 AW-525	Roll Over / Under Horizontal
 AW-526	Head / Sill

COMMON EXTRUSIONS

All System Depths and Infills












 WW-110	Standard Face Cover
 WW-216	Face Cover @ FRP Pressure Plate
 WW-122	Horizontal Pocket Filler (use with exterior gasket)
 WW-123	Horizontal Pocket Filler (full pocket closure)
 WW-236	Roll-Over Horizontal Filler for AW-425
 WW-237	Roll-Over Horizontal Filler for AW-525
 WW-131	Transition Glazing Adaptor 1" to 1/4" Infill, SSG
 AW-132	1" to 1/4" Glazing Adaptor (AW verticals & horizontal)
 WW-141	Transition Glazing Adaptor SSG to Captured 1" Infill
 WW-162	Standard Pressure Plate
 AW-162	FRP Pressure Plate

RELIANCE™ - TC CURTAIN WALL INSTALLATION MANUAL

TYPE I & II - PARTS LIST













CORNER MULLIONS & FACE COVERS

6" and 7 1/4" System Depth

	WW-230	Corner Mullion 135° Inside & Outside Captured & SSG
	WW-240	Corner Mullion 90° Outside SSG 90° Inside Captured
	WW-241	Corner Mullion 90° Inside, SSG
	AW-260	OS90 Captured Corner Mullion
	WW-111	Face Cover 135° Inside Corner
	WW-112	Face Cover 90° Inside Corner
	WW-113	Face Cover 135° Outside Corner
	WW-114	Face Cover 135° Outside SSG Corner
	WW-115	Face Cover 90° Outside Corner
	WW-116	Face Cover 90° Outside SSG Corner
	AW-118	Face Cover 90° Outside Corner w/ FRP Pressure Plate








CORNER PRESSURE PLATES & INTERIOR TRIM

6" and 7 1/4" System Depth





	WW-134	Pressure Plate 90° Inside Corner
	WW-163	Pressure Plate 135° Inside Corner
	WW-164	Pressure Plate 135° Outside Corner
	WW-168	Pressure Plate 135° Outside SSG Corner
	WW-169	Pressure Plate 90° Outside SSG Corner
	CW-823	Snap-In Back Trim Use with WW-230 Corner Mullion (6" System Depth)
	WW-220	Snap-In Back Trim Use with WW-240 Corner Mullion (7 1/4" System Depth)
	WW-221	Snap-In Back Trim Use with WW-230 Corner Mullions (7 1/4" System Depth)
	WW-223	I.S. 90 Snap-In Back Trim Use with WW-240 & WW-241 Corner Mullions (7 1/4" System Depth)
	WW-224	O.S. 90 Snap-In Back Trim Use with WW-240 & WW-241 Corner Mullions (7 1/4" System Depth)
	WW-225	I.S. 135 Snap-In Back Trim Use with WW-230 Corner Mullion (7 1/4" System Depth)
	WW-226	O.S. 135 Snap-In Back Trim Use with WW-230 Corner Mullion (7 1/4" System Depth)

CORNER MULLION GLAZING ADAPTORS

6" and 7 1/4" System Depth

	WW-133	Glazing Adaptor 90° Inside SSG Corner 1" to 1/4" infill
	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
	WW-138	Glazing Adaptor 135° Inside Corner 1" to 1/4" Infill
	WW-139	Glazing Bead 90° Inside Corner
	WW-140	Glazing Adaptor 90° Inside Corner 1" to 1/4" Infill

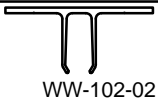
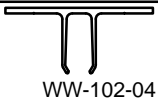

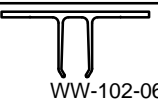
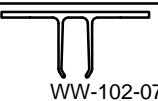
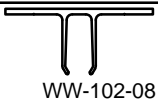
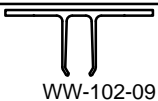
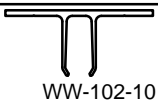
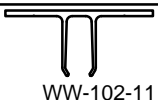
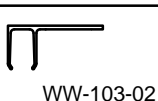
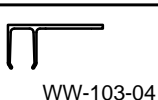
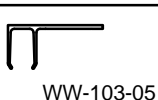
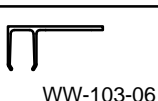
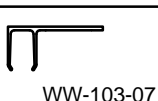
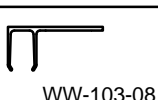
DOOR EXTRUSIONS

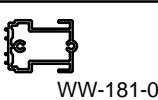

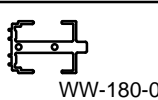
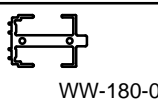
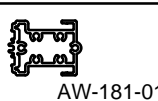



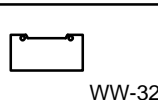
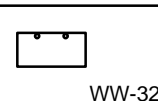
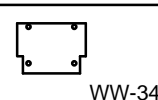




	DS-1	Door Stop Use with SC-1 Clip
	D-186	Door Subframe
	AD-403	Door Stop Use with SC-1 Clip
	AD-450	Thermal Door Subframe










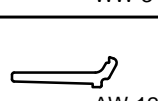
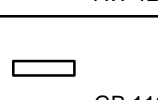
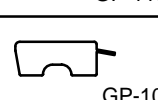

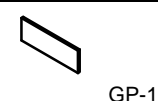

PARTS LIST

ACCESSORIES

6" and 7 1/4" System Depth
















	"T" Anchor Use with WW-504
	"T" Anchor Use with WW-404
	"T" Anchor Use with WW-240 Corner Mullion
	"T" Anchor Use with WW-230 Corner Mullion
	"T" Anchor Use with WW-241 Corner Mullion
	"T" Anchor Use with WW-520
	"T" Anchor Use with WW-420
	"T" Anchor Use with WW-530 & WW-538
	"T" Anchor Use with WW-430 & WW-438
	Jamb "F" Anchor Use with WW-504
	Jamb "F" Anchor Use with WW-404
	Jamb "F" Anchor Use with WW-520
	Jamb "F" Anchor Use with WW-420
	Jamb "F" Anchor Use with WW-530 & WW-538
	Jamb "F" Anchor Use with WW-430 & WW-438
















	Type I Shear Block WW-181-01
	Shear Block Anchor for Type I Head & Sill WW-104-01
	Shear Block Use with WW-240 90° Corner Mullion WW-180-01
	Shear Block Use with WW-230 135° Corner Mullion WW-180-02
	Type II Shear Block AW-181-01
	Splice Sleeve Use with WW-230 135° Corner Mullion WW-190-01
	Splice Sleeve Use with WW-240 90° Corner Mullion WW-191-01
	Splice Sleeve Use with WW-241 90° SSG Corner Mullion WW-202-01
	Mullion Cap Type II Verticals WW-325
	Mullion Cap SSG Verticals WW-327
	Mullion Cap Type I Verticals WW-343
	Mullion Cap 135° Inside Corner Captured & SSG WW-317
	Mullion Cap 90° Inside Corner Captured WW-319
	Mullion Cap 135° Outside Corner Captured & SSG WW-321
	Mullion Cap 90° Outside Corner Captured & SSG WW-323













	Mullion Cap 90° Inside SSG Corner WW-337
	Foam SSG Bridge 135° Outside SSG Corner WW-310
	Foam SSG Bridge 90° Outside SSG Corner WW-312
	Foam Zone Plug 90° Inside SSG Corner WW-336
	Foam Zone Plug 135° Inside Corner Captured WW-304
	Foam Zone Plug 90° Inside Corner Captured WW-306
	Foam Zone Plug 135° Outside Corner Captured WW-308
	Foam Zone Plug 90° Outside TC Corner Captured AW-309
	Zone Plug Head Members WW-342
	Setting Chair Type II Horizontals AW-127
	Setting Block 1" Infill Type II Horizontals GP-116
	Setting Block 1" Infill Type I horizontals GP-109
	Setting Block 1/4" Infill Type I horizontals GP-114
	Side Block Shallow Pocket Type I Verticals GP-110
	Side Block Deep Pocket Type 1 Verticals GP-115

Parts List

STANDARD ACCESSORIES All System Depths and Infills

	CW-66	Splice Sleeve Use with WW-520
	CW-74	Splice Sleeve Use with WW-504
	WW-192-01	Splice Sleeve Use with WW-404
	CW-90	Splice Sleeve Use with WW-420 (Backmember)
	CW-1496	Splice Sleeve Use with WW-530 & WW-538
	CW-542	Splice Sleeve Use with WW-430 & WW-438
	WW-203-01	Splice Sleeve Use with WW-520 & WW-420 at Face
	WW-128	Pocket Filler (Verticals Only)
	WW-341	Full Pocket Filler (Verticals Only)
	WW-333-01	Temporary Glazing Retainer All Horizontals
	SPW-PP-3	Temporary Glazing Retainer SSG Verticals
	WW-364	Zone Plug Deep Pocket Type I Vertical
	WW-365	Zone Plug Shallow Pocket Type I Vertical
	WW-370	SSG Mullion Bridge 1" Infill
	WW-380	1" Zone Plug Type II & 90° OS Captured Corner

	HP-1004	Optional Weep Baffle
	GP-103	Standard Dense Gasket Interior & Exterior (Interior Only at Vertical)
	GP-104	Optional Sponge Gasket Interior Only
	GP-117	Optional Dense Gasket 3/16" Face Clearance
	GP-118	Optional Dense Gasket 5/16" Face Clearance
	GP-113	Standard Wedge Gasket Exterior Only at Type I Vertical
	GP-163	Optional Wedge Gasket 1/4" Face Clearance Exterior Only at Type 1 Vertical
	GP-128	Optional Wedge Gasket 3/16" Face Clearance Exterior Only at Type I Vertical
	GP-133	Optional Wedge Gasket 5/16" Face Clearance Exterior Only at Type I Vertical
	GP-122	Optional Dry Glaze Gasket for SSG Vertical (Use with WW-141)
	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 Std Reliance Horizontals
	GP-108	Thermal Isolator Composite Horizontals & Verticals
	DJ-100	Drill Jig Vertical Mullions

	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	$\frac{3}{16}$ " x $\frac{7}{16}$ " Drive Rivet SC-1 Door Stop Clip to Mullion
	FS-115	#10 x 1" Phillips Pan Head Horizontal to Shear Block
	FS-318	#12 x 1 3/4" Phillips Flat Head WW-141 & WW-131
	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-320	#10 x 1/2" U-Drive All Mullion Caps
	FS-325	#12-24 x 1 3/8" HWH Drillflex at Pressure Plate
	FS-327	#12-24 x $\frac{7}{8}$ " HWH Drillflex at Corner Glazing Beads
	FS-2	#8 x 1/2" Phillips Flat Head Face Splice Sleeve at Vertical