BRW-500 BlastMax Ribbon Window

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 SUBMISSION DRAWINGS AND DETAILS ARE THE GOVERNING DOCUMENTS AND AS SUCH THIS PACKAGE IS TO BE USED ONLY AS A RESOURCE. FOLLOW SEALANT MANUFACTURERS' RECOMMENDATIONS FOR USE AND APPLICATION OF ALL STRUCTURAL SILICONE SEALANT AND WEATHER SEAL SILICONE SEALANT.

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

1-866-OLDCASTLE (653-2278)

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BRW-500 BlastMax Ribbon Window

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GENERAL INFORMATION

PRODUCT USE

The **BRW-500 BlastMax Ribbon Window** system is intended for fabrication, assembly, sealing, installation and glazing by professionals with appropriate knowledge and experience of the system(s) and their incorporation into various building conditions.

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

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

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

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

To ensure that nothing has changed in formulation or chemistry since the initial tests, subsequent testing during periodic time frames of the project is to be conducted to confirm continued acceptance of the material for use on the project.

To ensure the structural performance and integrity of the insulating glass unit (IGU), the glazing contractor must submit the project shop drawings to the glass fabricator to obtain approval for use of their product(s) in any 2, 3 or 4-sided SSG applications.

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

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

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

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GLAZING PRACTICES

The air and water performance of the **BRW-500 BlastMax Ribbon Window** system is directly related to the completeness and integrity of the installation process, including but not limited to the assembly seals of the framing joinery, the installed glazing gaskets, and the alignment of the framing joinery glazing plane. Before glazing, verify the glazing pocket width and glazing infill thickness, as both must be in tolerance to assure adequate edge pressure and to achieve the desired air and water performance levels. (In general, framing systems utilizing 1" insulating glass are designed to accommodate a thickness variance of +/- 1/32"). Note: Excessive pressure can cause glass breakage and/or IGU failure. Consult the glass manufacturer for their recommended edge pressure per lineal inch. To achieve the designed and tested air and water performance, best practices include:

1. Surfaces to be sealed should be cleaned with isopropyl alcohol or solvent and dried as recommended by sealant manufacturer to remove all dirt and cutting oils. Sealant at shear blocks should be a minimum 3/16" diameter nominal placed completely around the top, face and bottom of the shear block without gaps in the sealant. Exposed surfaces should be cleaned after installing the horizontal. Inspect joint for complete sealant contact, especially where the horizontal meets the face of the vertical member. Repair joint as required.
2. Glazing gaskets should be cut ¼" longer per foot, and lay flat, preferably for 24 hours.
3. Gaskets should be cut as single monolithic pieces and "crowded" during their installation to avoid corner gaps caused by post-installation relaxation.
4. The interior glazing gasket should be installed so as to avoid stretching, buckles, or tears.
5. Corners must be cut square, and at a slight angle when required to conform to the bevel on the intersecting gasket; sealed and butted together.
6. Gasket corner joinery must also be crowed, and sealant applied onto the gasket contact frame surface and into gasket reglet raceway where applicable.
7. Gasket corner seals are to be done just prior to installing glass, while the sealant is still wet and uncured, and ensure exterior gaskets are installed so as to place the glass into it's final in service condition and allow the sealant to conform to optimum configuration. Note: If the sealant cures prior to glazing, the cured sealant could create excessive edge pressure onto the glass and has the potential to cause glass breakage.
8. The glass must be checked for squareness, size dimension, and thickness along the edges paying attention to any variances from center edge to corner edge.
9. Check the placement of the installed glass and verify there is proper edge bite into the pocket, and proper edge clearance from framing elements.
10. After sealant has set and a representative amount of the wall has been installed and glazed (250 square feet or more) run a water hose test in accordance with AAMA 501.2 specifications to check installation. On large projects the hose test should be repeated during the glazing operation. Consult and follow NGA's GANA Manual and FGMA Glazing Manual for proper glazing technique and procedure.

Variations on the details shown are inevitable and are not the responsibility of Oldcastle BuildingEnvelope when drawn by others. Oldcastle BuildingEnvelope strongly encourages its customers to utilize Oldcastle BuildingEnvelope supplied calculations and shop drawings.

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

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

BUILDING CODES

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

PROTECTION AND STORAGE

Handle all material carefully. Do not drop from the truck. Stack with adequate separation so the material will not rub together. Store material off the ground, protecting against the elements and other construction hazards by using a well ventilated covering. Remove material from package if wet or located in a damp area. For further guidelines consult AAMA publication CW-10 *"Care and Handling of Architectural Aluminum From Shop to Site."*

CHECK MATERIAL

Check glass dimensions for overall size as well as thickness. Oldcastle BuildingEnvelope cannot be held responsible for gaskets that are not watertight due to extreme glass tolerances. Check all material upon arrival at job site for quality and to determine any shipping damage.

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

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

FIELD CONDITIONS

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

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.

THERMAL IMPROVEMENT SUGGESTIONS

To maintain or improve wall installation, the following items should be considered:

- Blinds or drapes prevent warm air from washing the window.
- Warm air ventilators too far from window will not adequately wash the window with air to prevent condensation.
- In extreme conditions, the fan of the heating systems should not cycle on and off but run continuously.
- 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 this problem.
- On rare occasions, an extremely cold storm may cause frost to appear on the glass or 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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FRAME FABRICATION

1.1 Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 3/8" minimum clearance for shimming.

1.2 Cut material to size. SEE FIGURE 1 for guide. NOTE: Layout vertical mullions so that male and female sections are properly located. See FIGURE 2 below.

Frame Members

Verticals	FRAME HEIGHT (ROUGH OPENING - top & bottom joints)
Intermediate horizontals	Daylight opening (D.L.O.)
False intermediate horizontal	D.L.O. - 1/16"
False horizontal face members	D.L.O. - 1/16"
Vertical face members	FRAME HEIGHT
Horizontal face members	D.L.O.

Accessories

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

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

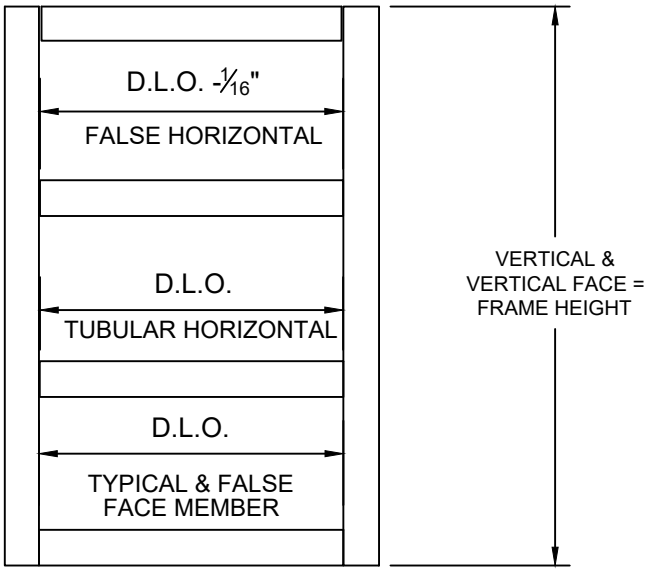

FIGURE 1
Material Fabrication Guide

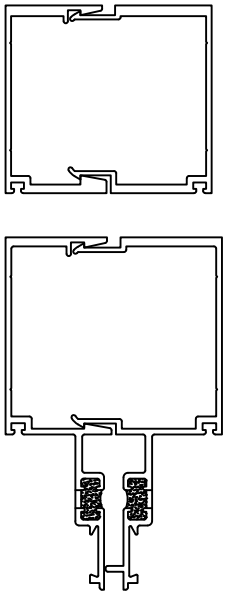

FIGURE 2
Vertical Mullion Orientation

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FRAME FABRICATION

1.3 Fabricate vertical mullions for horizontal members using layout shown in FIGURE 3. Drill holes using "F" (.265 dia.) locate on "V" grooves on inside of vertical members at dimensions shown.

1.4 Fabricate jamb and vertical mullions for end caps by drilling #17 (.173 dia.) holes at each end as shown in FIGURE 4, page 7.

1.5 Drill 5/16" diameter weep holes at 1/4 points along "V" groove in sill member as shown in FIGURE 5, page 7.

1.6 Notch each end of the head and sill. This notch will be required to allow installation of vertical face members. See FIGURE 5, page 7.

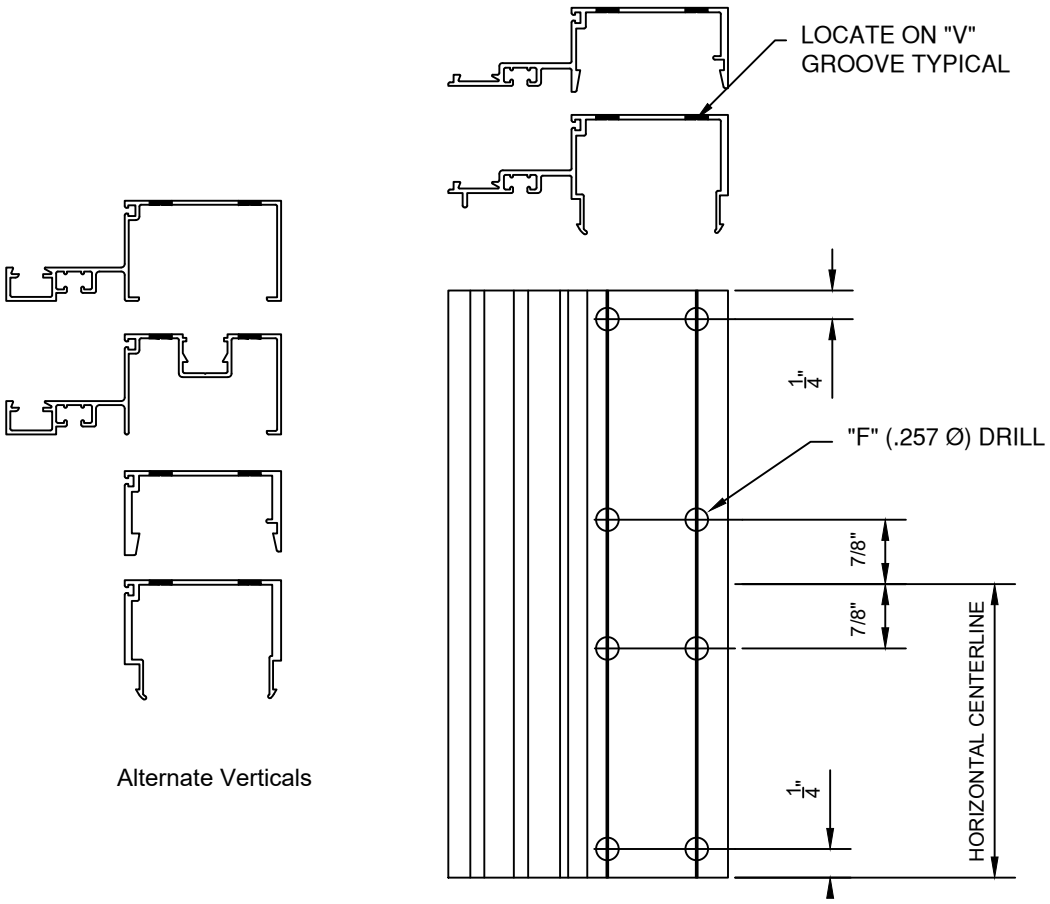

FIGURE 3
Mullion Fabrication

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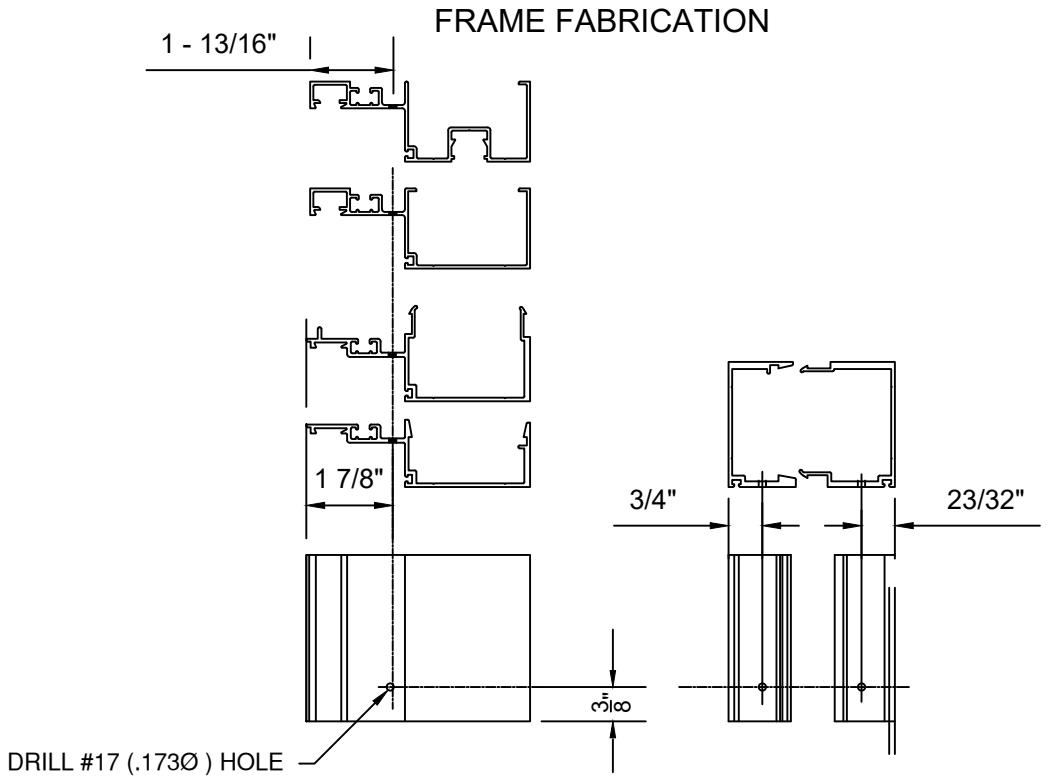

FIGURE 4
Mullion End Cap Fabrication

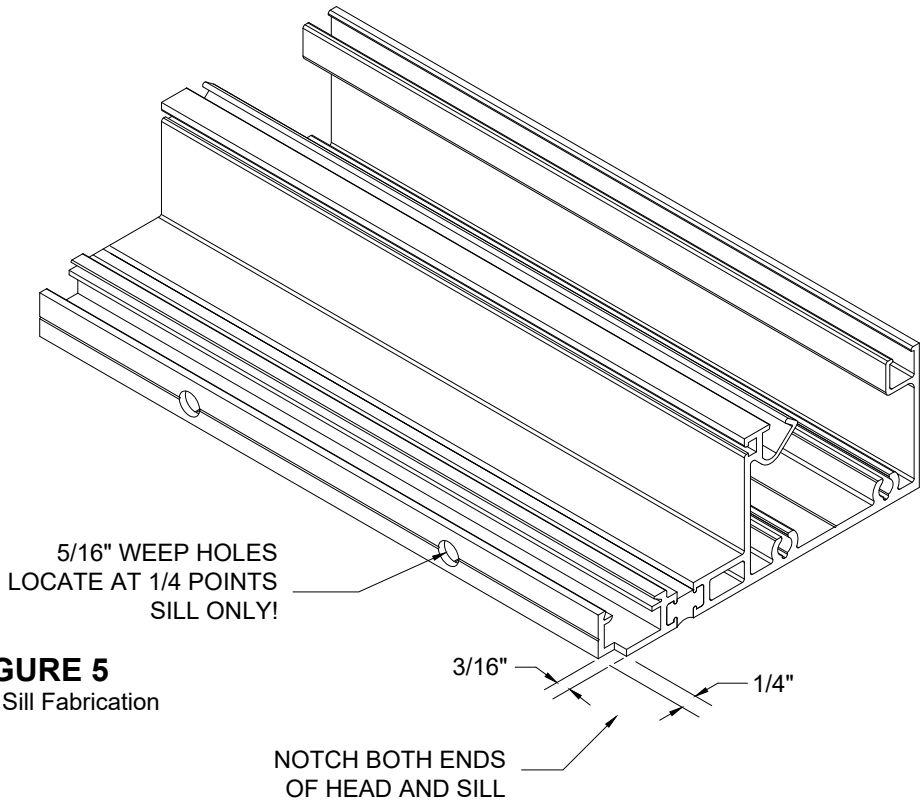

FIGURE 5
Head & Sill Fabrication

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FRAME ASSEMBLY

2.1 Apply sealant between vertical and horizontal at interior face of glazing pocket as shown in FIGURE 6.

2.2 Install and seal end caps to top and bottom of all jamb and vertical mullions with (1) FS-114 #8 x 3/8" pph screw. Sealant must be tooled into gasket race to insure proper seal. SEE FIGURE 7, page 9.

2.3 Apply sealant at end caps at top and bottom of vertical mullions prior to attaching head and sill members. Tool sealant around edges of cap marrying sealant with previously applied sealant at end caps and verticals. See FIGURE 8, page 10.

2.4 Attach horizontal members to vertical mullions using FS-8 #14 x 1" HHSTS. See FIGURE 9, page 10.

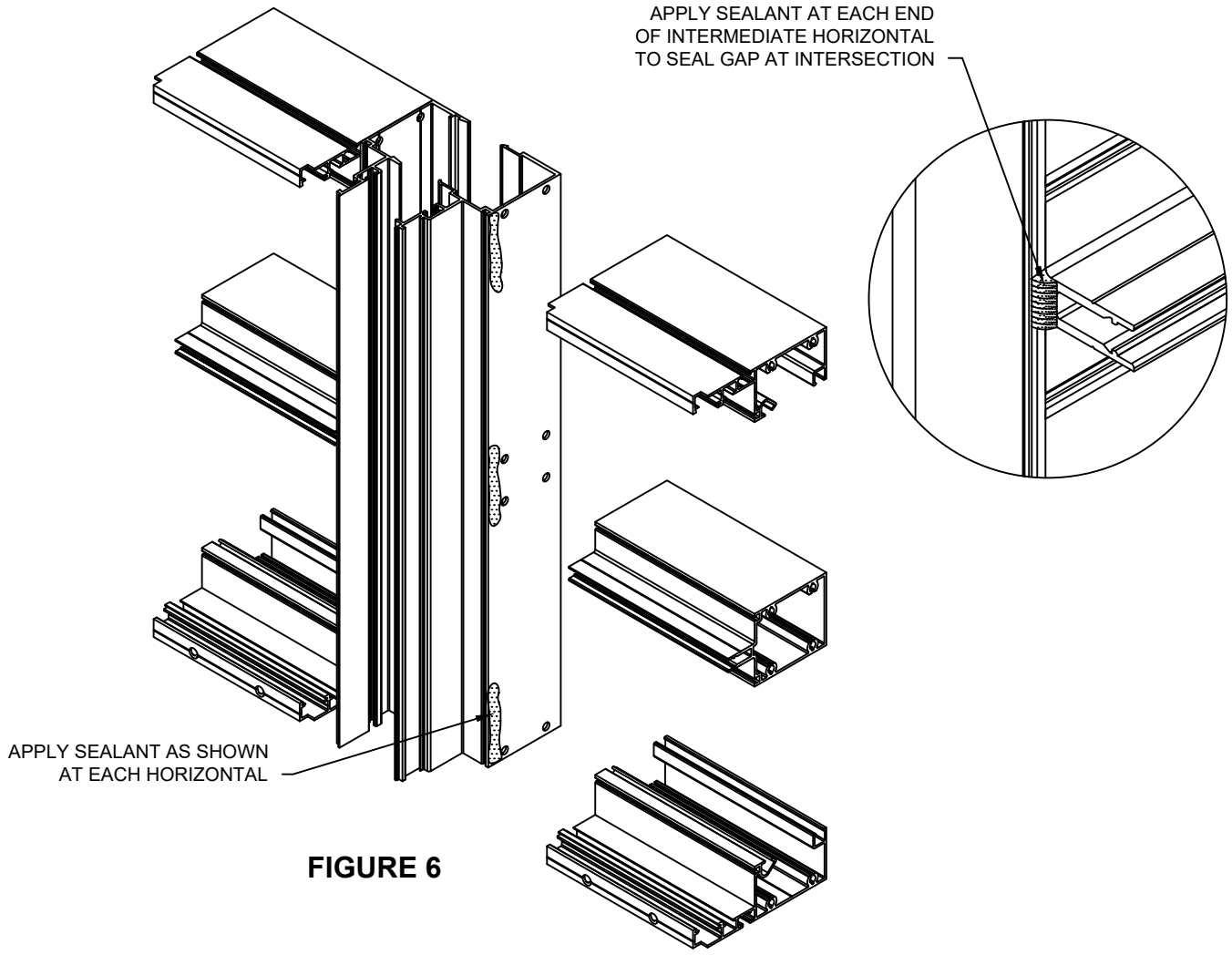

FIGURE 6

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FRAME ASSEMBLY

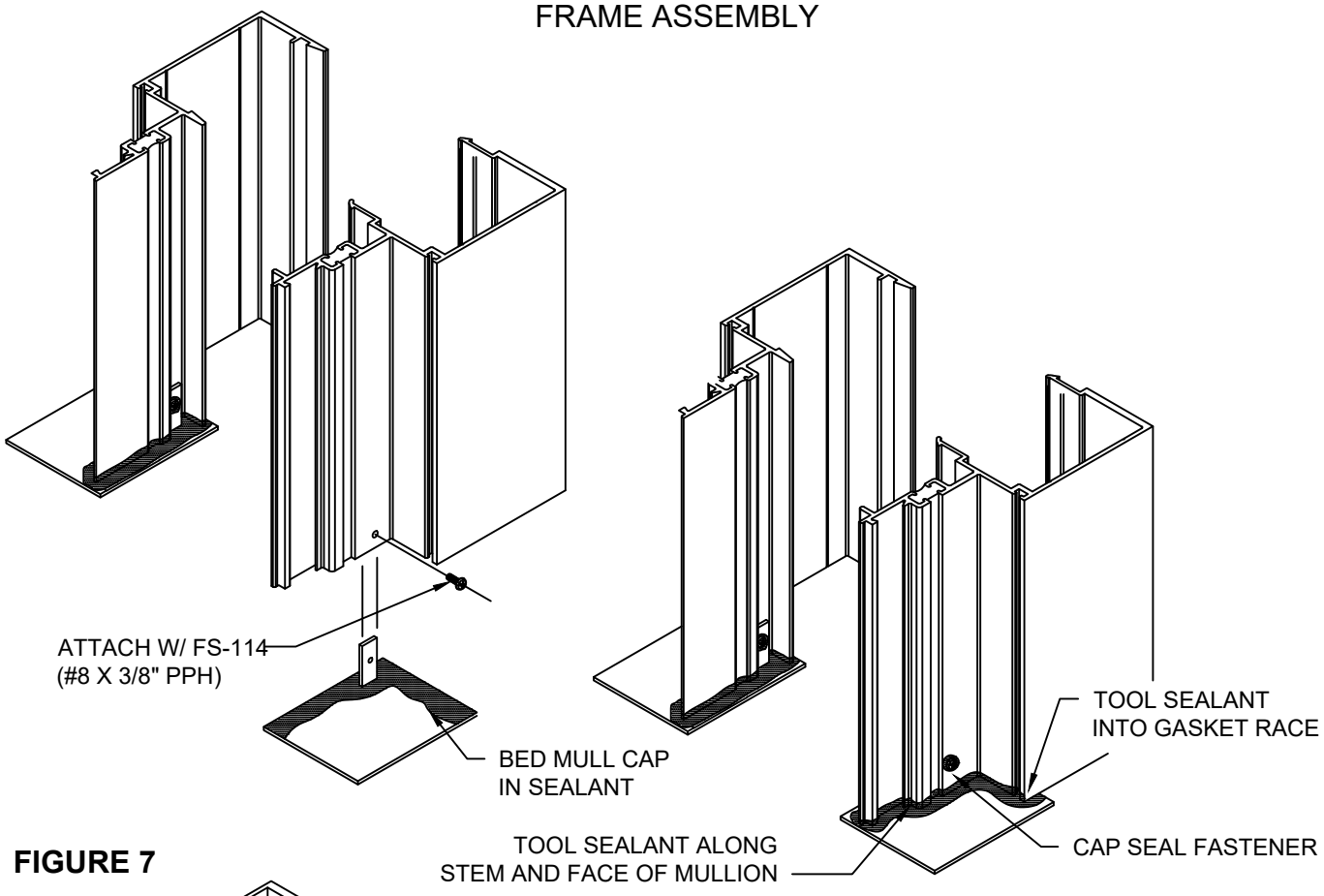
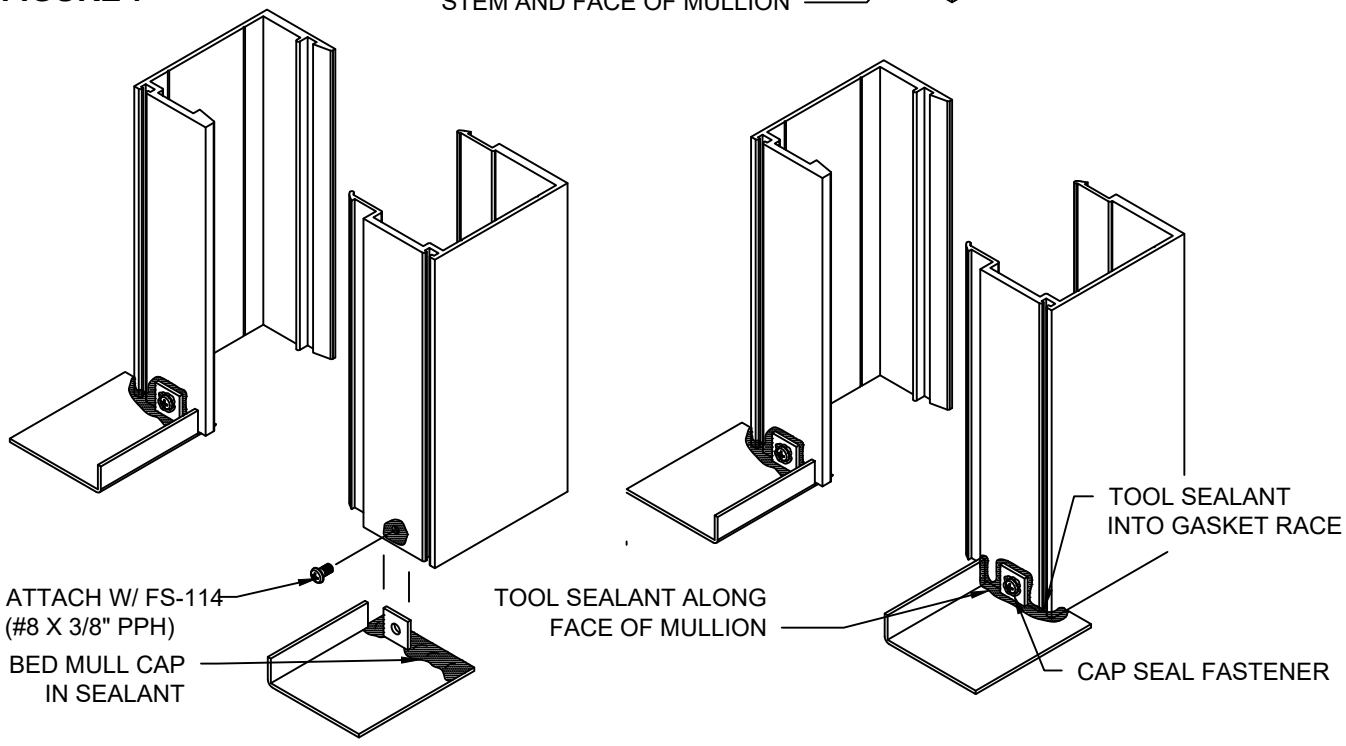


FIGURE 7



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FRAME ASSEMBLY

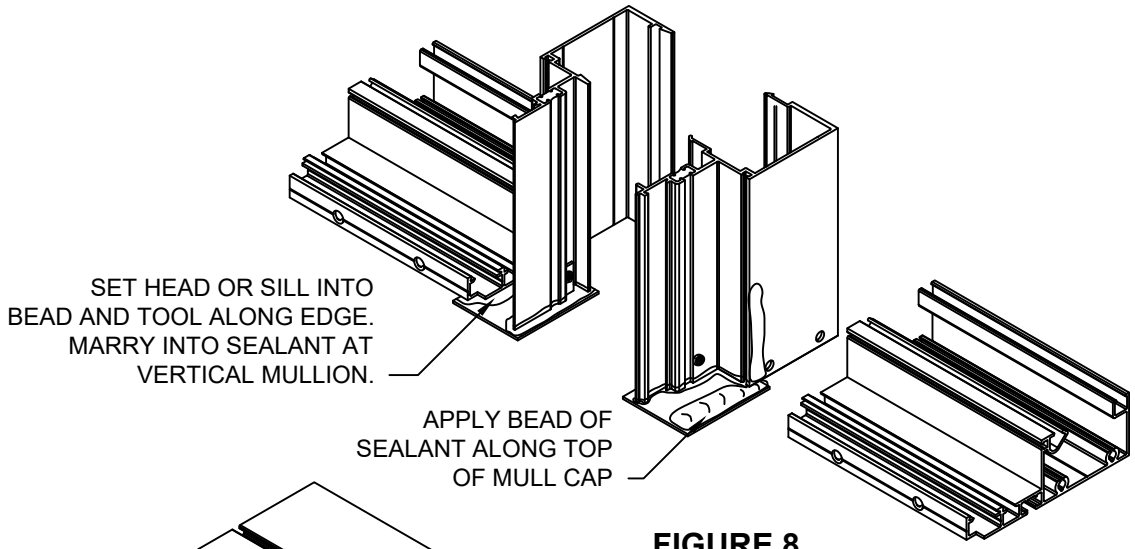

FIGURE 8

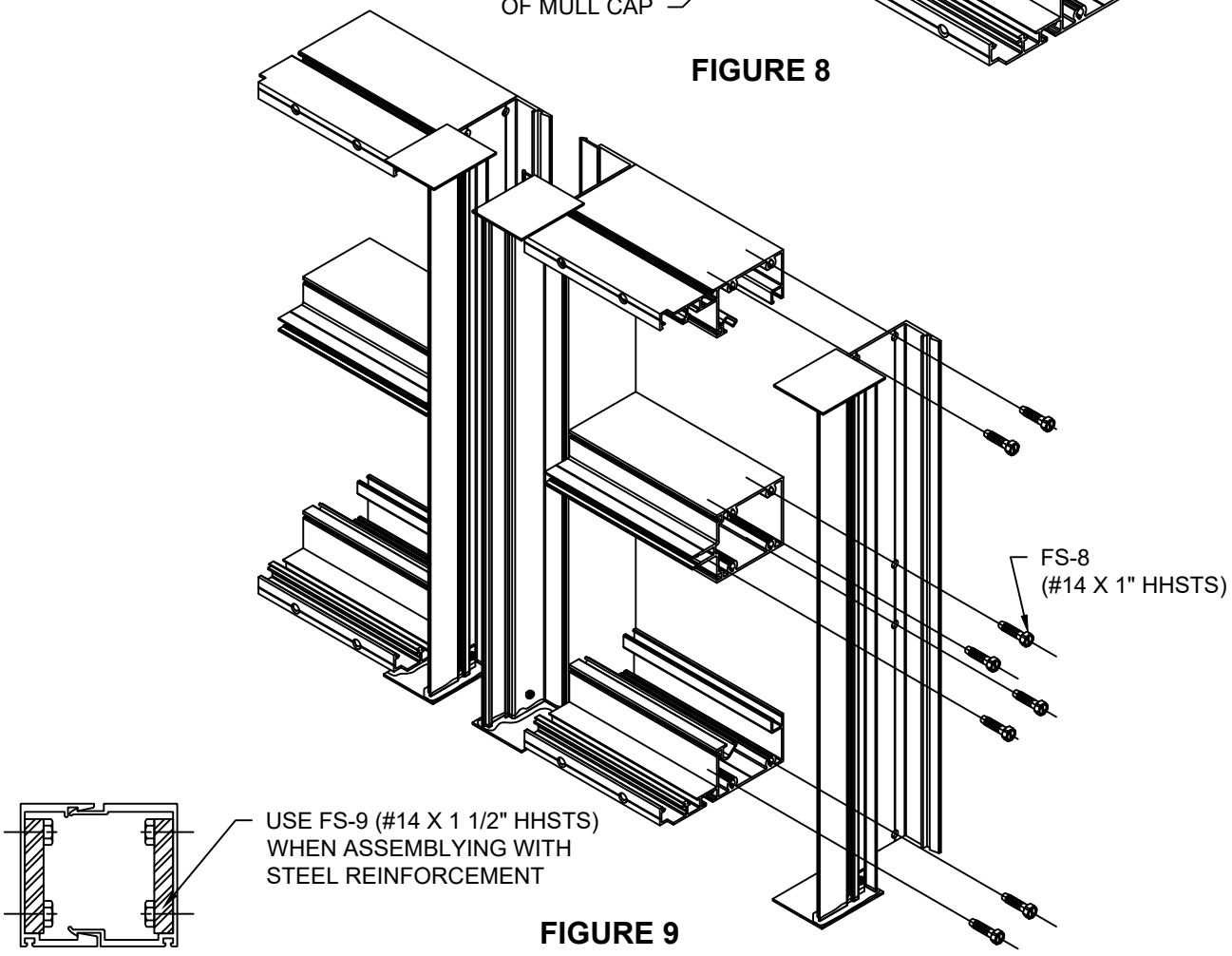

FIGURE 9

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GLAZING

3.1 Lay assembled units on flat surface. Units must be square and level before installing and sealing of units.

3.2 Install glazing gasket GP-132 onto all vertical and horizontal members.

3.3 Structural sealant may be applied either prior to installing glass (with back bead) or after glass has been set. Sealant must be applied from spacer gasket and up edge of glass as shown in FIGURE 10 and FIGURE 11, page 12. Units may be glazed using either Dowsil 795 or Dowsil 983 silicone.

3.4 Setting chair BRW-102-01 and Setting block GP-131 will be located at sill member at 1/4 points of glass. See FIGURE 11, page 12. Side blocks must also be used at jamb units and on at least one edge of intermediate units. HP-92S blocks will be used on jamb members and a HP-17S on edges of intermediate verticals.

3.5 A 3" section of the Face members BRW-502 and BRW-507 with FG-1133 gasket will then be installed at every 18" to 24" to hold glass in place until silicone cures.

3.6 Once the structural silicone is cured the face members may then be installed; verticals must be installed first, then horizontals.

3.7 Exterior gasket FG-1133 should then be installed around perimeter of unit. Gasket should be run before units are transported. See FIGURE 12, page 13.

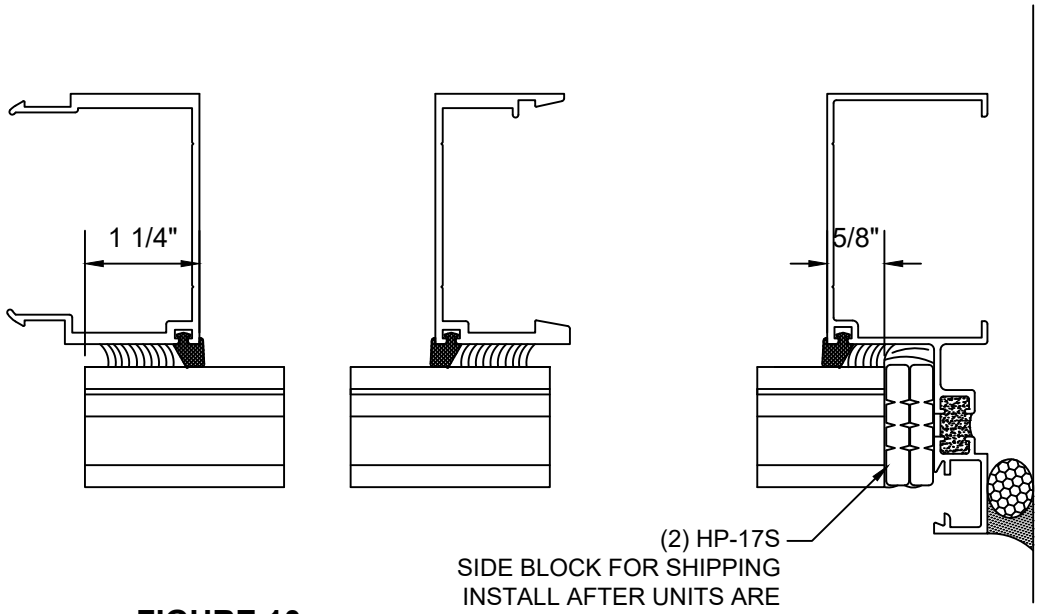


FIGURE 10

BRW-500 BlastMax Ribbon Window

GLAZING

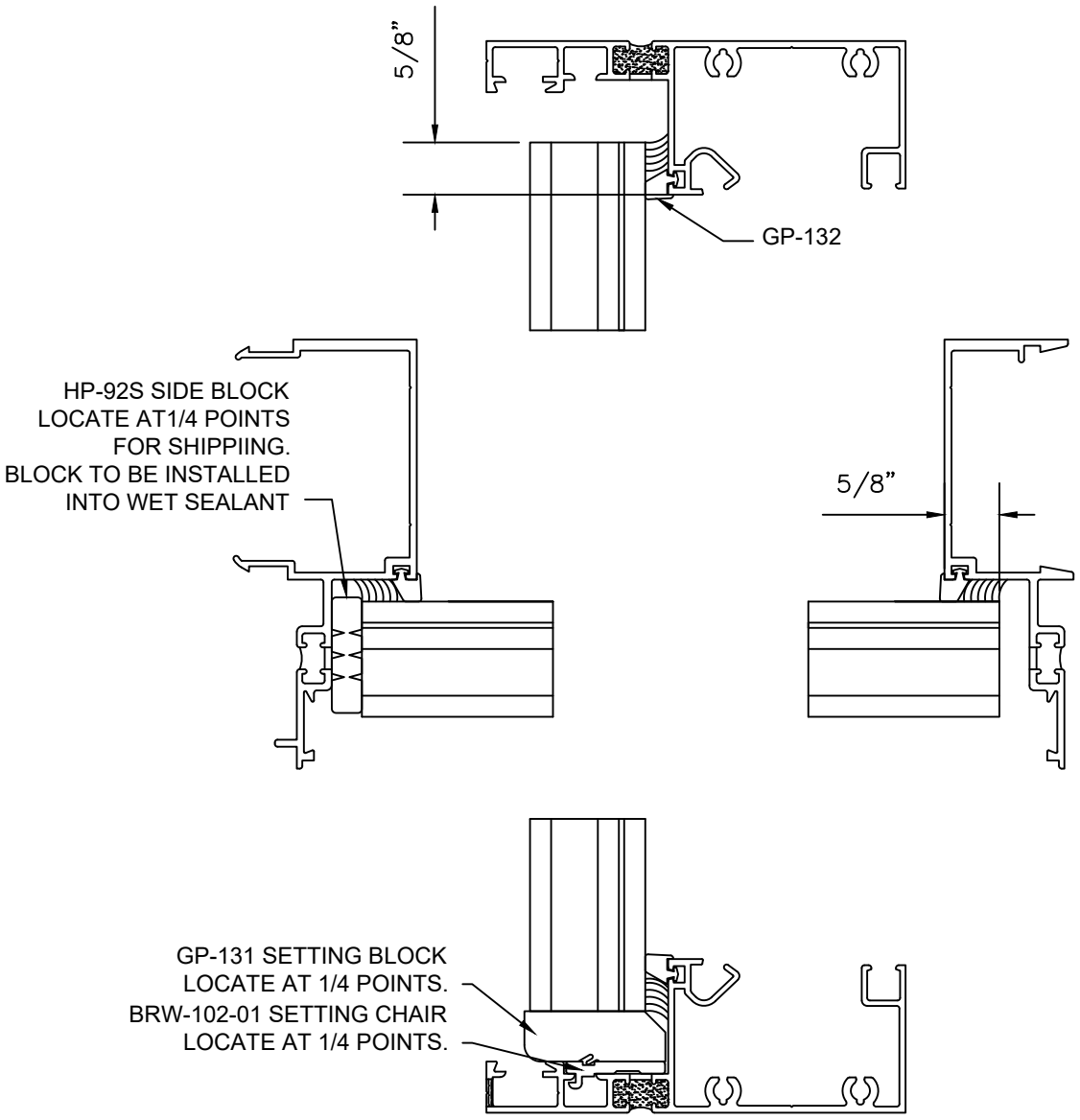


FIGURE 11

BRW-500 BlastMax Ribbon Window

GLAZING

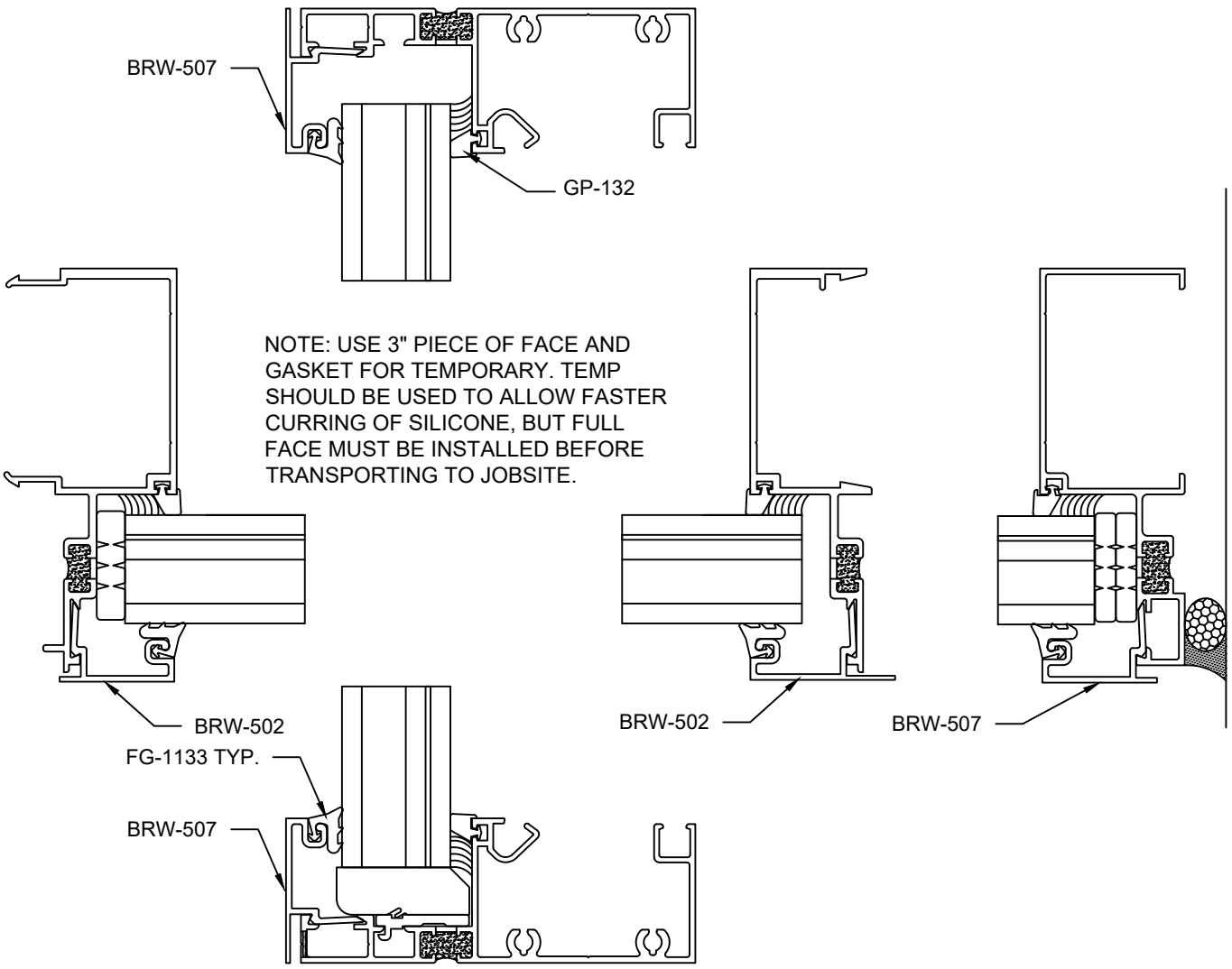


FIGURE 12

BRW-500 BlastMax Ribbon Window

FRAME INSTALLATION

4.1 Begin installation of frames at left jamb. Locate in opening positioning frame to be plumb and level. Attach frame to opening using anchor bolts as shown in FIGURE 13. Anchor size to be determined by project requirements. Position and install additional units as shown in FIGURE 14, page 15.

4.2 Once frame has been installed. Install BRW-508 sill and head fillers. PW-1940 isolator clips should be attached to filler at 9" on center, rotate filler into pocket at head or sill and then snap into position as shown. See FIGURE 13.

4.3 If optional jamb member BRW-513 is used, install the BRW-514 jamb filler. Filler must be set in continuous bead of silicone. See FIGURE 15, page 16.

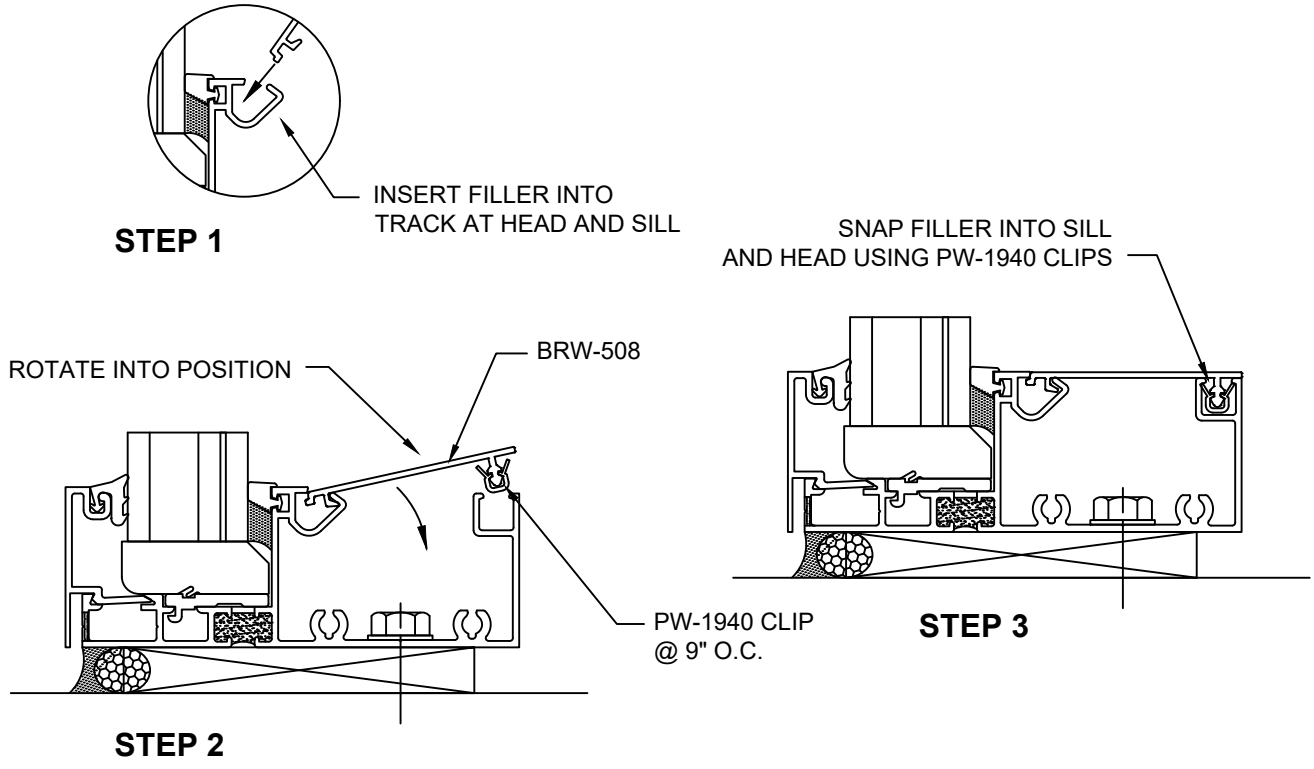


FIGURE 13

BRW-500 BlastMax Ribbon Window

FRAME INSTALLATION

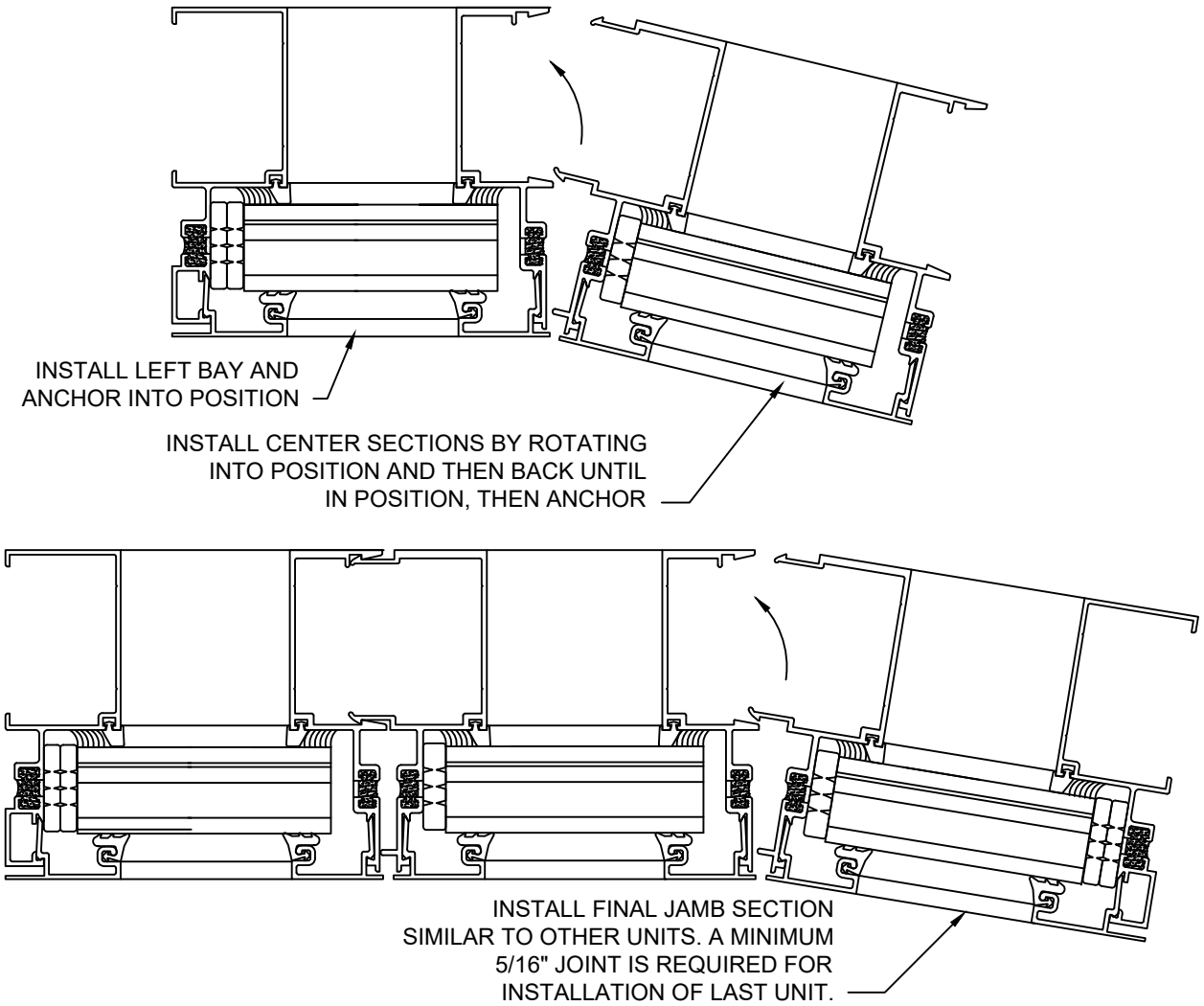


FIGURE 14

FRAME INSTALLATION

4.4 When using captured verticals (BRW-500 & BRW-501), prior to installing next unit run a bead of sealant along outer snap leg for 6". Then once units have been installed and anchored sealant will be ran between each unit along face of vertical mullions. This seal will be married into the perimeter seal and end cap seals. See FIGURE 16, page 17.

4.5 When using SSG verticals (BRW-503 & BRW-504), prior to installing next unit run a bead of sealant along outer snap leg for full height of mullion. Sealant will also be run along upturned leg of mull caps and married with the vertical seal. Once unit is installed the sealant along mull cap should be tooled and married into the perimeter seal. See FIGURE 17, page 18. Once units are installed install backer rod along vertical joint between lites of glass and along joint in horizontal face caps and seal as shown in FIGURE 18, page 19.

4.6 Install backer rod around perimeter of system. All vertical joints must be married into perimeter seal.

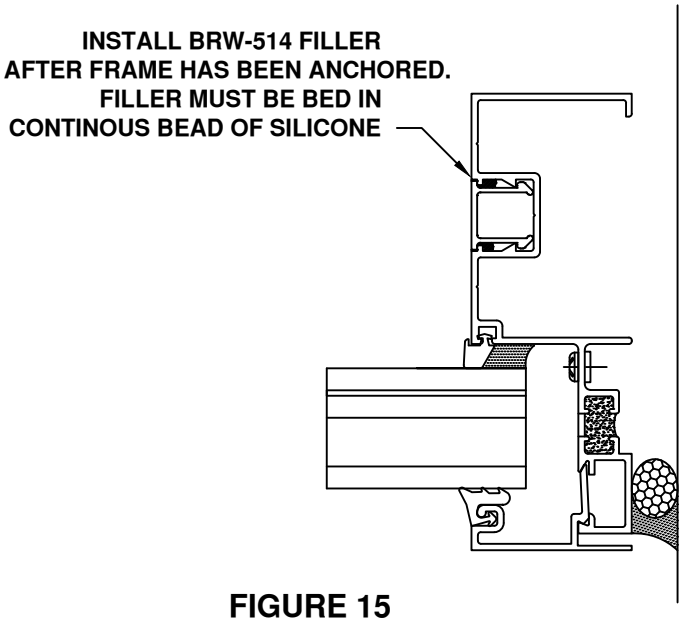


FIGURE 15

BRW-500 BlastMax Ribbon Window

FRAME INSTALLATION

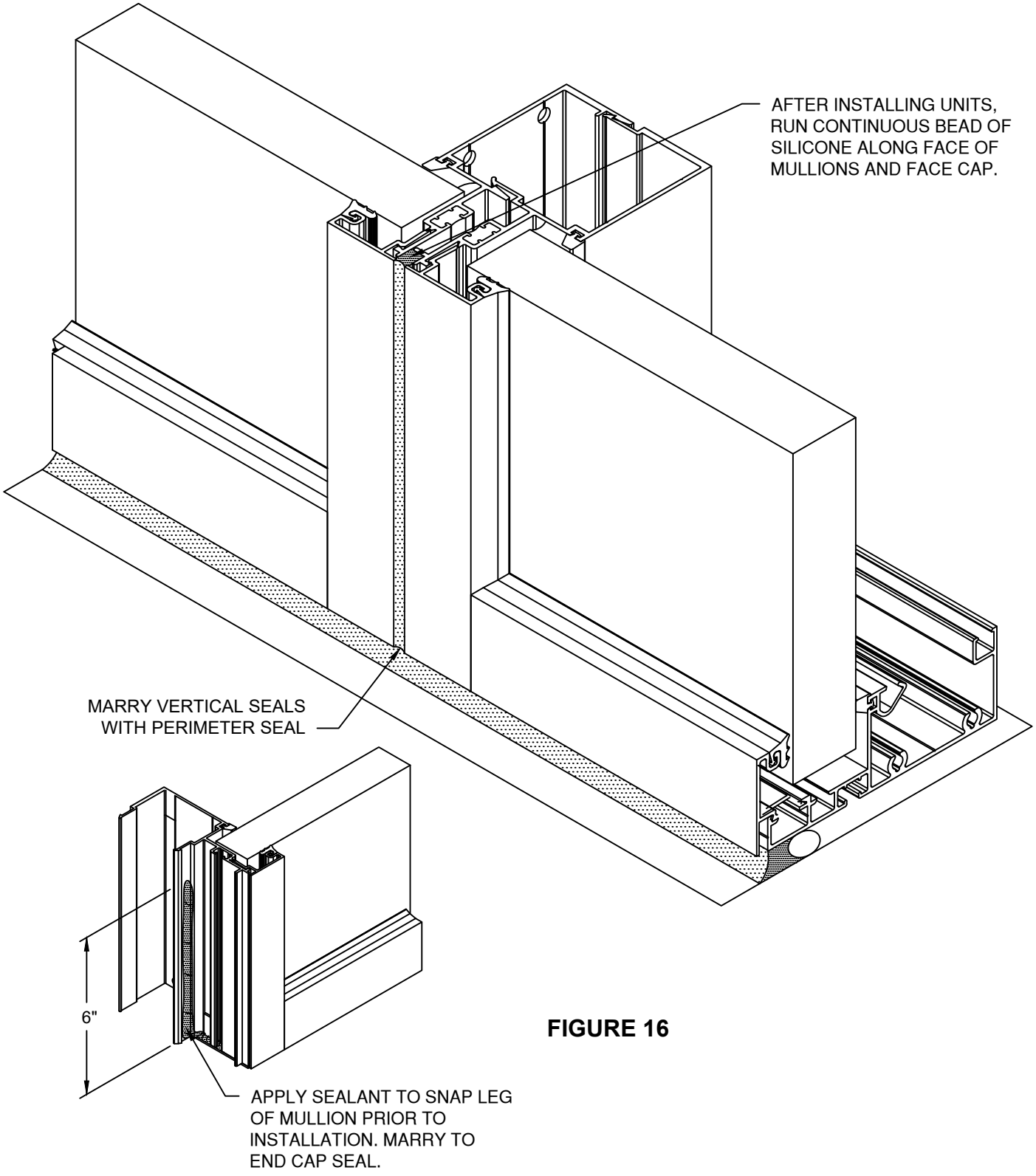


FIGURE 16

BRW-500 BlastMax Ribbon Window

FRAME INSTALLATION

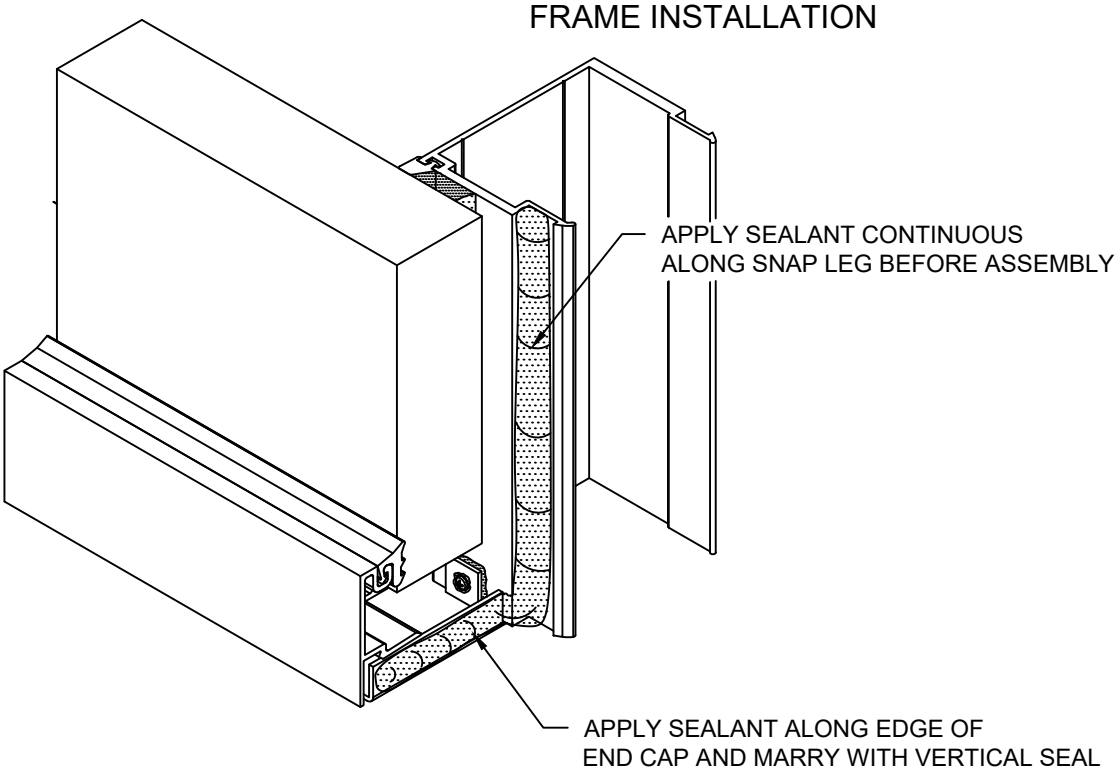
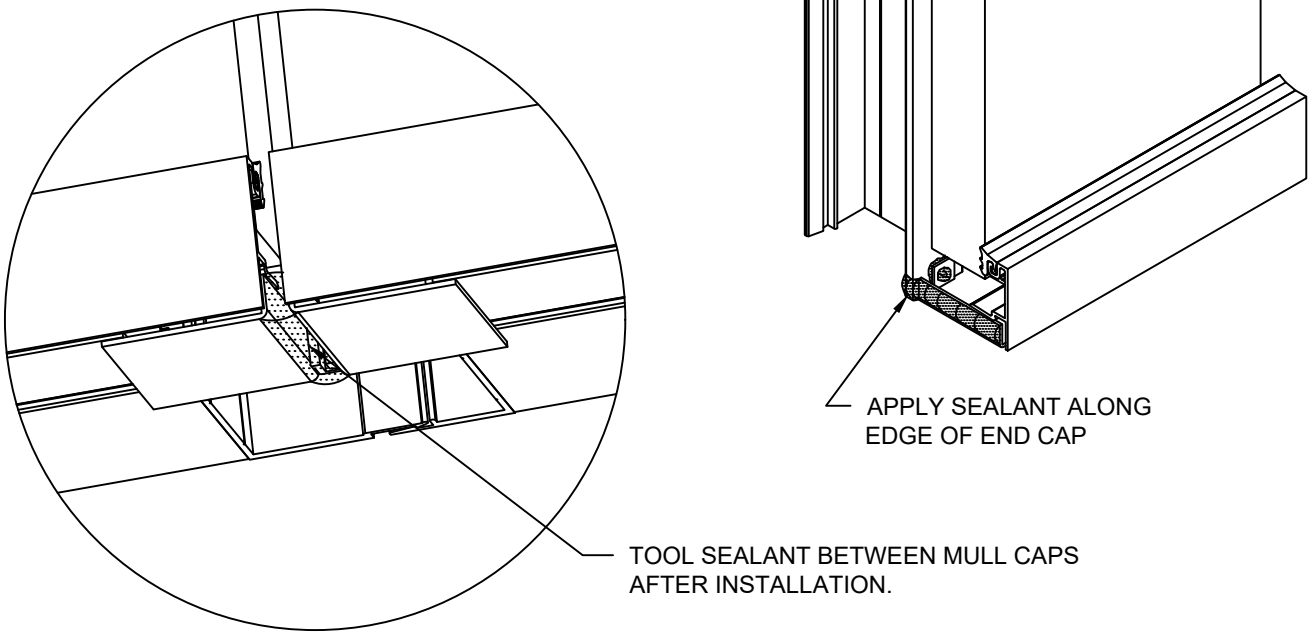


FIGURE 17



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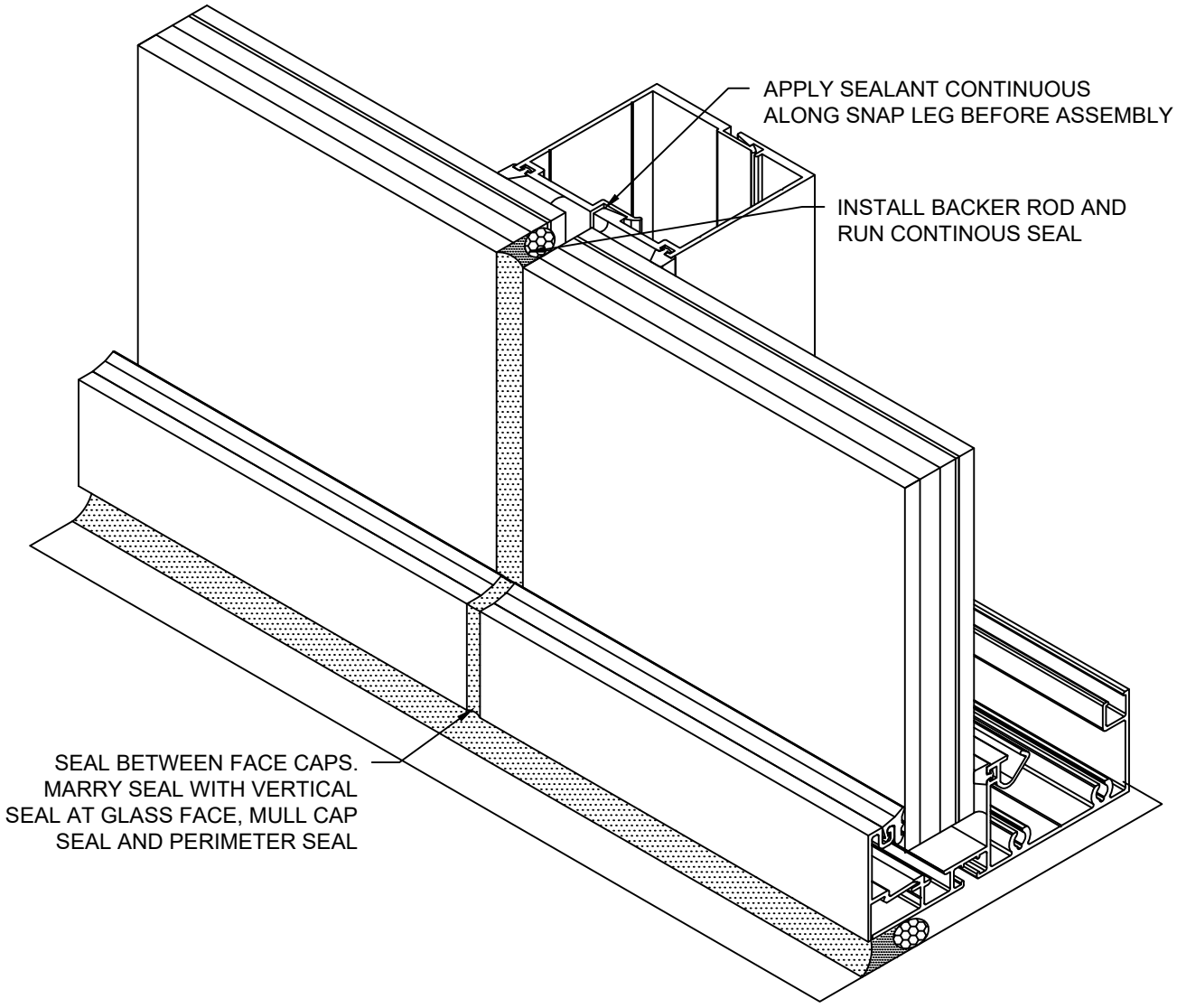
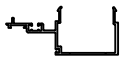


FIGURE 18

BRW-500 BlastMax Ribbon Window

PARTS LIST

Extrusions

ITEM	DESCRIPTION
 BRW-500	Mullion
 BRW-501	Mullion
 BRW-502	Mullion Face Cap
 BRW-503	SSG Mullion
 BRW-504	SSG Mullion
 BRW-505	Jamb Mullion
 BRW-506	Head / Sill
 BRW-507	Head, Jamb & Sill Face Cap
 BRW-508	Head & Sill Filler
 BRW-509	Horizontal Screw Spline

Extrusions

ITEM	DESCRIPTION
 BRW-510	Horizontal Face Cap
 BRW-511	2 7/8" Deep False Horizontal
 BRW-512	9/16" Deep False Horizontal
 BRW-513	Jamb Mull w/ Anchor Pocket
 BRW-514	Jamb Mull Snap Filler

Fasteners

ITEM	DESCRIPTION
 FS-8	#14 x 1" HHSTS Frame Assembly
 FS-9	#14 x 1 1/2" HHSTS SSG Mull Frame Assembly w/ Steel Reinforcement
 FS-114	#8 x 3/8" PPH A PT Mull Caps

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PARTS LIST

Gaskets

ITEM	DESCRIPTION
 GP-131	Setting Block
 GP-132	Spacer Gasket
 FG-1133	Exterior Gasket
HP-17S	Side Block
HP-92S	Setting Block For BRW-509
 BRW-102	Setting Chair for BRW-506
 BRW-103	Setting Chair for BRW-509

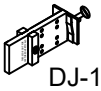
Steel Reinforcment

ITEM	DESCRIPTION
RS-2	1/4" x 2 1/4" Steel Bar

Accessories

ITEM	DESCRIPTION
 PW-1940	Clip for BRW-508
 HP-10	Glazing Clip for BRW-509
 BRW-100-01	Mull Cap for BRW-500 & BRW-501
 BRW-100-02	Mull Cap for BRW-500 & BRW-501
 BRW-101-01	SSG Mull Cap for BRW-503 & BRW-504
 BRW-101-02	SSG Mull Cap for BRW-503 & BRW-504
 BRW-104-01	Jamb Cap for BRW-505 & BRW-513
 BRW-104-02	Jamb Cap for BRW-505 & BRW-513

Drill Fixture

ITEM	DESCRIPTION
 DJ-106	Drill Fixture for Mull Fabrication