Oldcastle BuildingEnvelope®

RW-5100 StormMax Window Wall

INSTALLATION AND GLAZING MANUAL

NOTE

THE INSTALLATION DETAILS FOUND IN THIS PACKAGE ARE GENERIC AND ARE FOR REPRESENTATION ONLY WITH THE INTENT OF GIVING THE INSTALLATION TEAM A VISUAL REPRESENTATION AS TO HOW THE ASSEMBLIES TYPICALLY INSTALL. THE SHOP 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.

May 2024

Phone: 1-866-OLDCASTLE (653-2278)
Web Address: www.oldcastlebe.com

TABLE OF CONTENTS

GENERAL INFORMATION

PRODUCT USE

The **RW-5100 StormMax®** impact resistant window wall system is intended for fabrication, assembly, sealing, installation and glazing by professionals with appropriate knowledge and experience of the system(s) and their incorporation into various building conditions.

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

STRUCTURAL SEALANTS

Both Dow Corning 795 and 995® structural sealants were used on the RW-5100 StormMax® test specimen for glass to metal adhesion approved by Miami-Dade County. To comply with Miami-Dade County and Florida Building Code Protocols, Dow Corning® 795 and 995 sealant must be used for glass to metal adhesion with RW-5100 StormMax®.

PERIMETER SEALANTS

Due to varying job conditions, all perimeter sealants used should be approved by the sealant manufacturer to ensure the sealant will function for the conditions shown on these instructions and shop drawings. Sealants must be compatible with all surfaces in which adhesion is required, including other sealants surfaces. Use primers where directed by sealant manufacturer. Be sure to properly store sealants at recommended temperature and check container for remainder of shelf life before using. VULKEM 921 polyurethane was the perimeter sealant used on the RW-5100 StormMax® test specimen approved by Miami-Dade County.

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

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

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

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

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

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

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

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

GLAZING PRACTICES

The air and water performance of the **RW-5100 StormMax®** impact resistant window wall system is directly related to the completeness and integrity of the installation process, including but not limited to the assembly seals of the framing joinery, the installed glazing gaskets, and the alignment of the framing joinery glazing plane. Before glazing, verify the glazing pocket width and glazing infill thickness, as both must be in tolerance to assure adequate edge pressure and to achieve the desired air and water performance levels. (In general, framing systems utilizing 1” insulating glass are designed to accommodate a thickness variance of +/- 1/32”). Note: Excessive pressure can cause glass breakage and/or IGU failure. Consult the glass manufacturer for their recommended edge pressure per lineal inch. To achieve the designed and tested air and water performance, best practices include:

1. Surfaces to be sealed should be cleaned with isopropyl alcohol or solvent and dried as recommended by sealant manufacturer to remove all dirt and cutting oils. Sealant at shear blocks should be a minimum 3/16” diameter nominal placed completely around the top, face and bottom of the shear block without gaps in the sealant. Exposed surfaces should be cleaned after installing the horizontal. Inspect joint for complete sealant contact, especially where the horizontal meets the face of the vertical member. Repair joint as required.
2. Glazing gaskets should be cut ¼” longer per foot, and lay flat, preferably for 24 hours.
3. Gaskets should be cut as single monolithic pieces and “crowded” during their installation to avoid corner gaps caused by post-installation relaxation.
4. The interior glazing gasket should be installed so as to avoid stretching, buckles, or tears.
5. Corners must be cut square, and at a slight angle when required to conform to the bevel on the intersecting gasket; sealed and butted together.
6. Gasket corner joinery must also be 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.

MATERIAL HANDLING

SHOP

- Cardboard wrapped or paper interleaved material must be kept dry.
- Check arriving materials for quantity and keep record of where various materials are stored.

JOB SITE

- Material at job site must be stored in a safe place well removed from possible damage by other traders.
- Cardboard wrapped or paper interleaved materials must be kept dry.
- Keep record of where various materials are stored.
- Protect materials after erection. Cement, plaster, and other alkaline solutions are very harmful to the finish.

CLEANING

Aluminum shall be cleaned with plain water containing a mild detergent, or a petroleum product such as gasoline, kerosene, or distillate. No abrasive agent shall be used.

GENERAL CONSTRUCTION NOTES

A. Study these instructions, shop drawings, erection drawings and architectural drawings before starting any work.

B. All materials are to be installed plumb and level.

C. All work should start from an established benchmark and column centerlines established by the architect and the general contractor.

D. Completely check construction which will receive your materials against contract documents. Notify the general contractor by letter of any discrepancies before proceeding with your work since this constitutes acceptance of work by other trades.

E. Protect all aluminum to be placed directly in contact with uncured masonry or incompatible materials with a heavy coat of appropriate insulation product or bituminous paint.

F. Follow installation and glazing instructions.

FRAME FABRICATION

Establish Frame Size & Cut metal to Length

STEP 1

Measure width of rough opening.

A. Measure opening at bottom.
B. Measure opening at center.
C. Measure opening at top.

The frame width will be the smallest dimension less 1/2" allowing for a 1/4" caulk joint at each jamb.

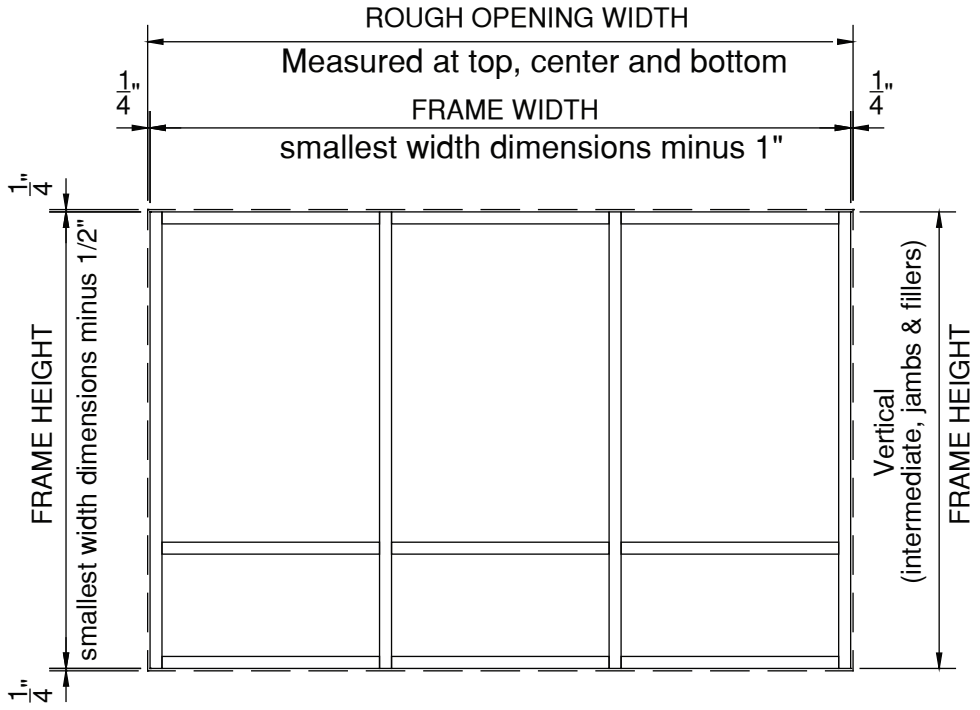
"

NOTE: Maximum caulk joint for Miami-Dade County, FL installation is 1/4".

Repeat above process to determine frame height.

A. Beginning on the left side of opening, measure dimension from top to bottom.
B. Repeat at center.
C. Repeat at right side of opening.

The frame height will be the smallest dimension less 1/2" allowing for 1/4" caulk joint at the head and sill.



Elevation Of Frame

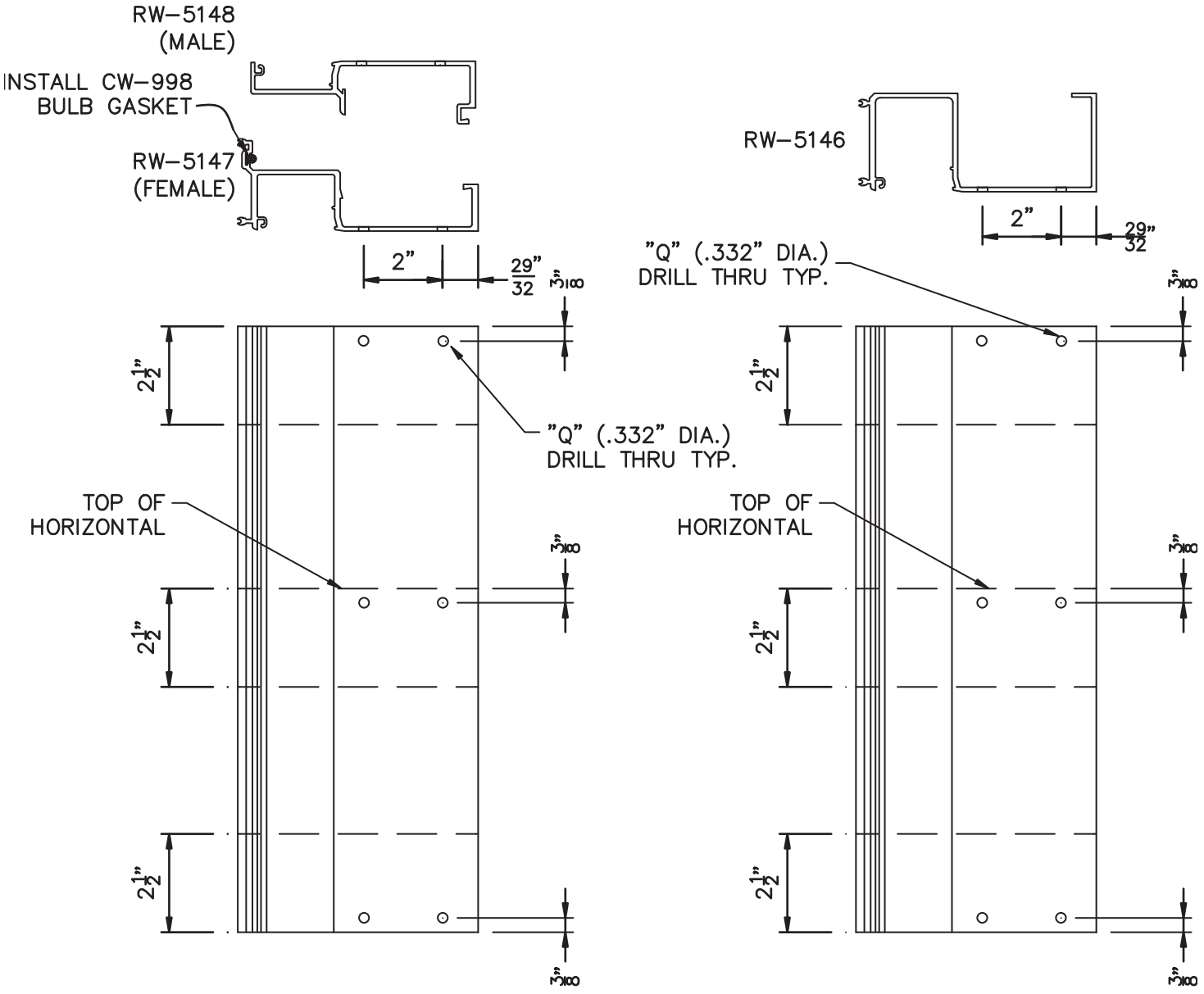
FRAME FABRICATION

STEP 2

Cut members to size.
Wall jambs and intermediate vertical mullions are cut to frame height.
Horizontal members are cut to D.L.O.
Snap-on trim is cut D.L.O. minus(-) 1/16"
Glazing bead RW-5134 is cut D.L.O. minus(-) 1/8"
Face covers: Vertical covers are cut to vertical mullion length.
Horizontal covers are cut D.L.O. minus(-) 1/16".

STEP 3

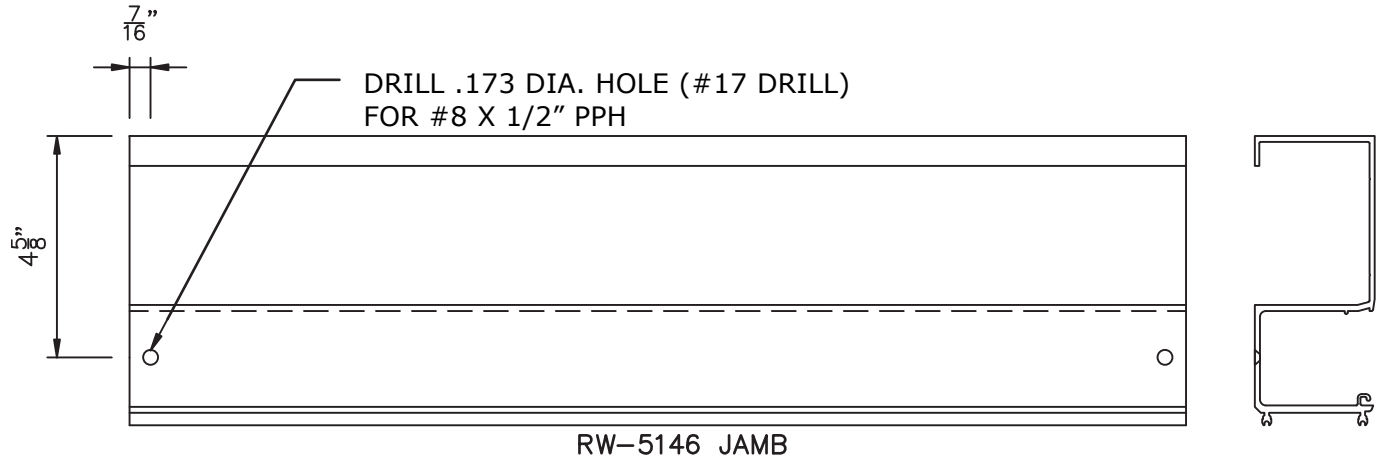
Drill or punch holes in split verticals and wall jambs for attaching horizontals.



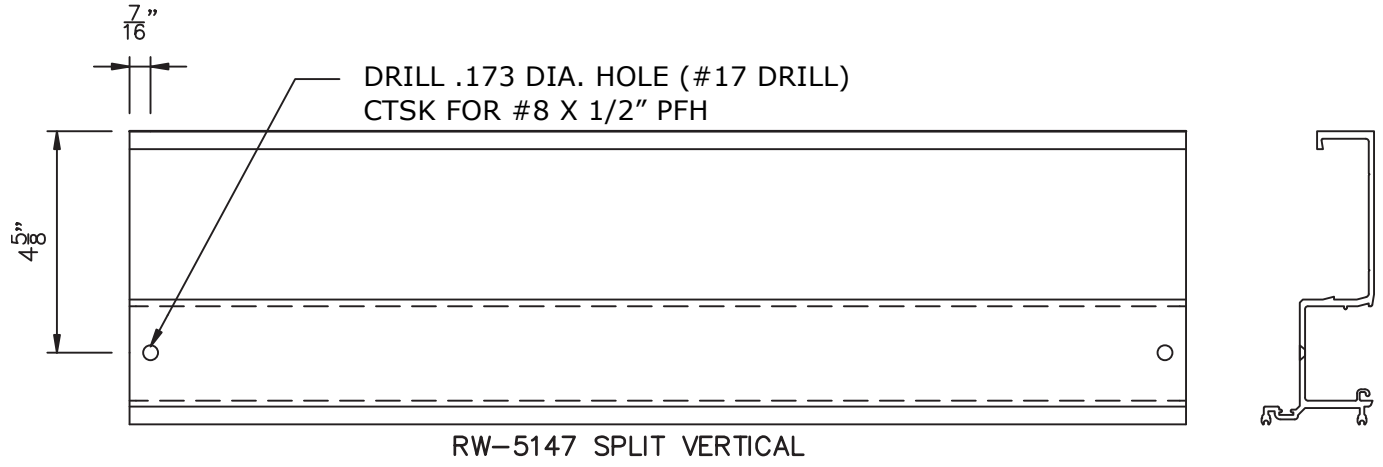
FRAME FABRICATION

STEP 4

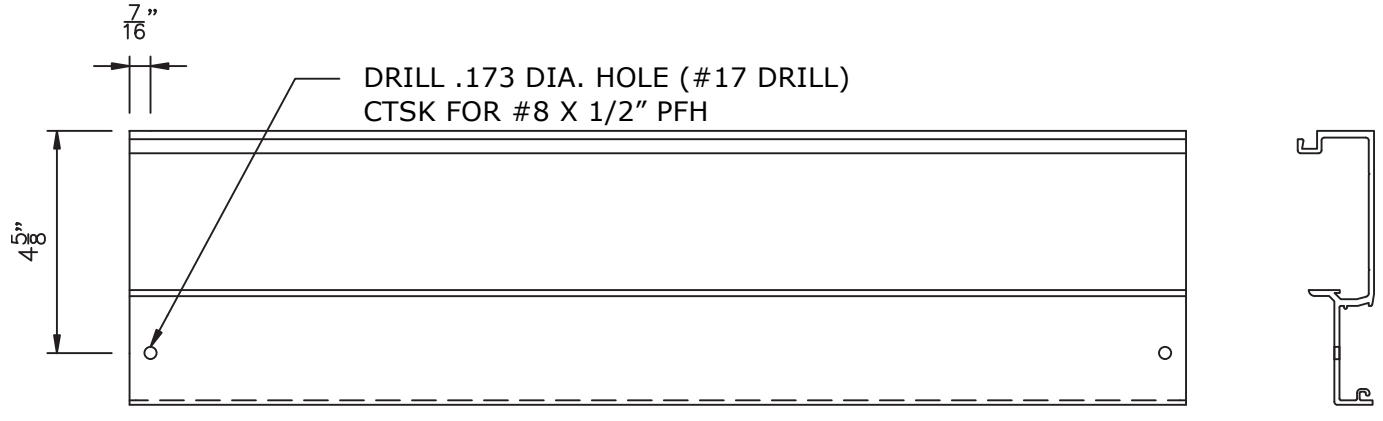
Mark hole locations in verticals for top and bottom **Mullion Caps**. Drill .173" Ø holes (#17 drill) as shown for a #8 x 1/2" screw.



RW–5146 JAMB



RW–5147 SPLIT VERTICAL



RW–5148 SPLIT VERTICAL

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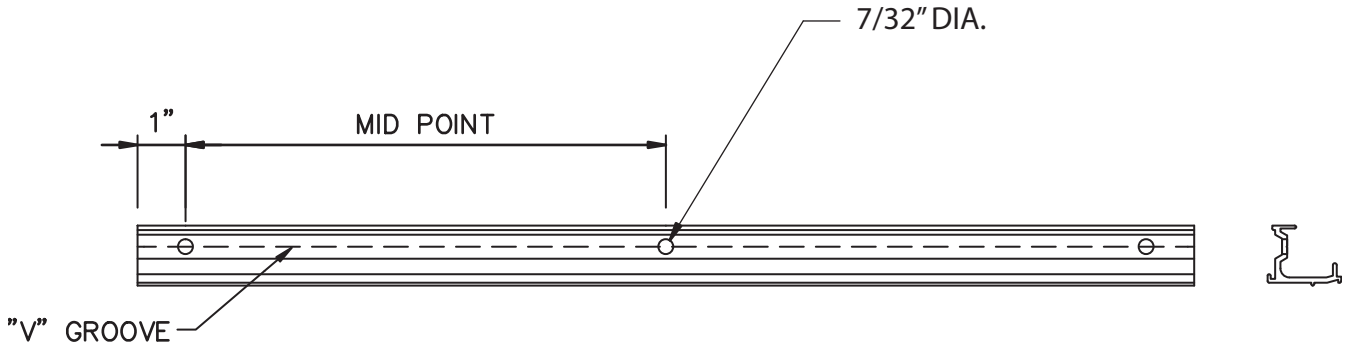
FRAME FABRICATION

STEP 5

Mark hole locations for RW-5134 Glazing Bead as shown. Attach with FS-327 self tapping screw (#12 x 7/8" HWHTCS)

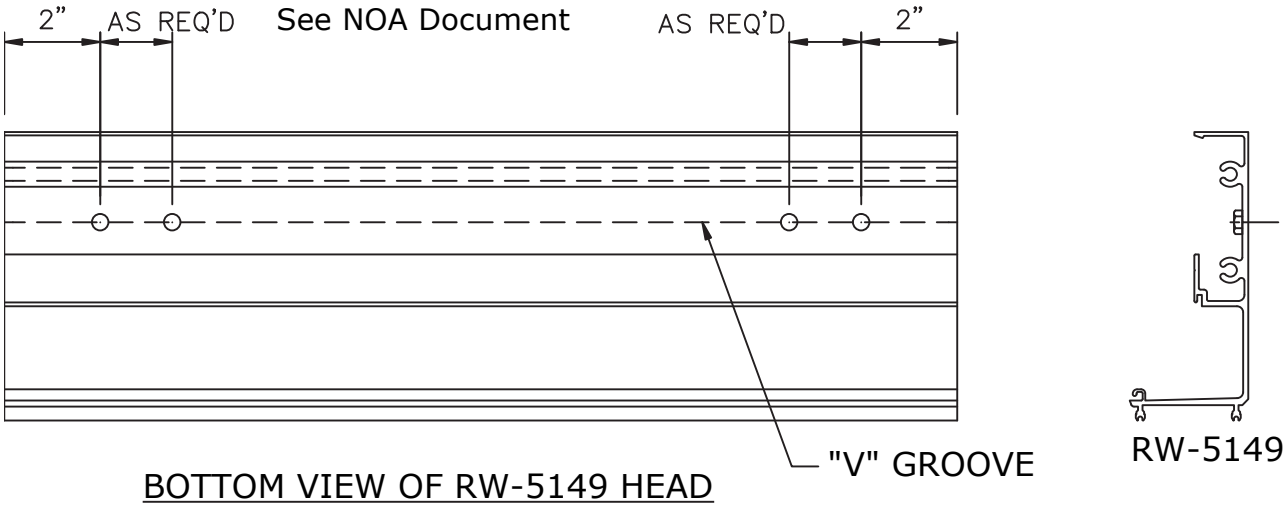


RW–5134 GLAZING BEAD

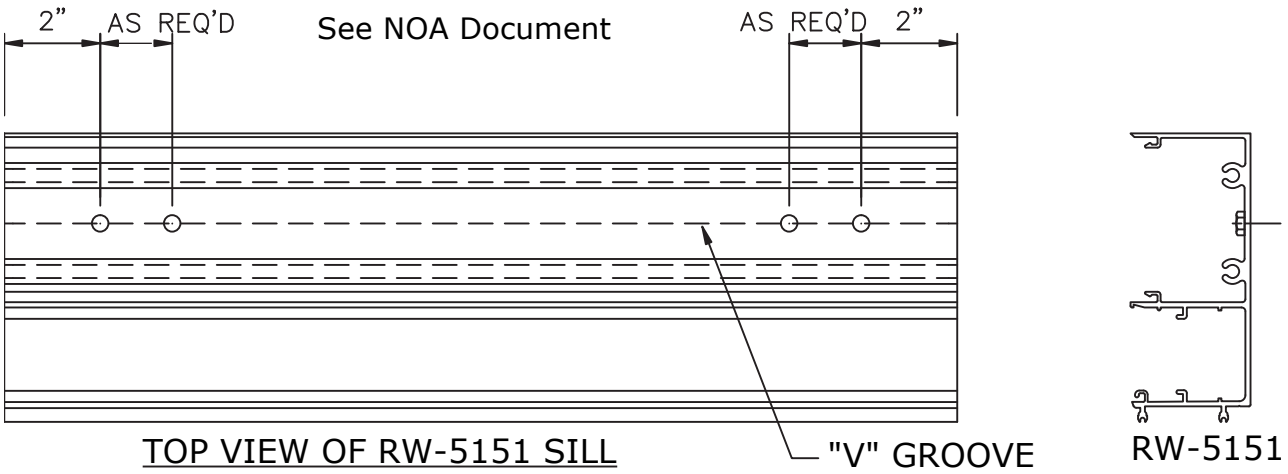
FRAME FABRICATION

STEP 6

Fabricate head and sill for anchor holes. Reference NOA documents for anchor locations and sizes. First hole is always 2" from end. Each additional fastener hole is at required minimum spacing between fasteners. (See NOA Document)



BOTTOM VIEW OF RW-5149 HEAD

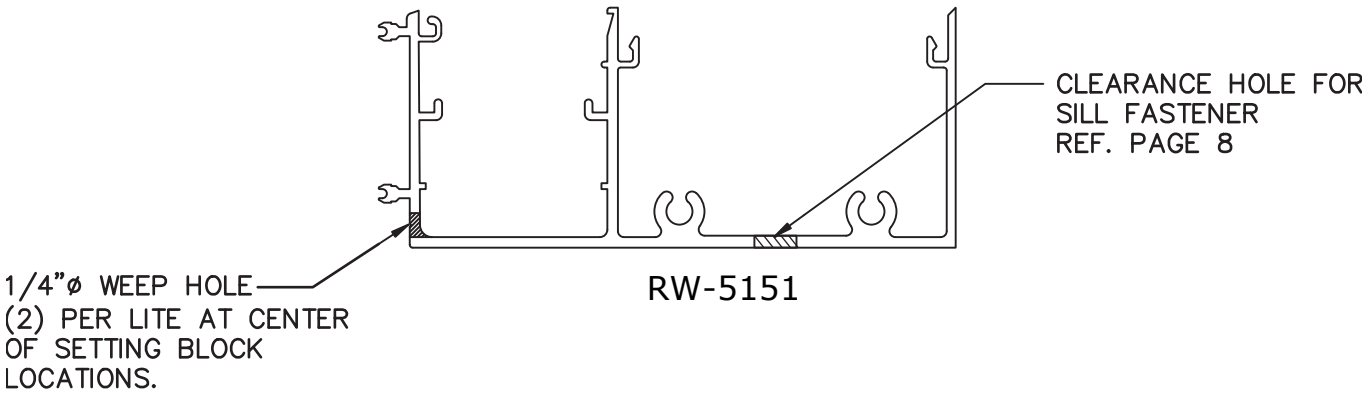


TOP VIEW OF RW-5151 SILL

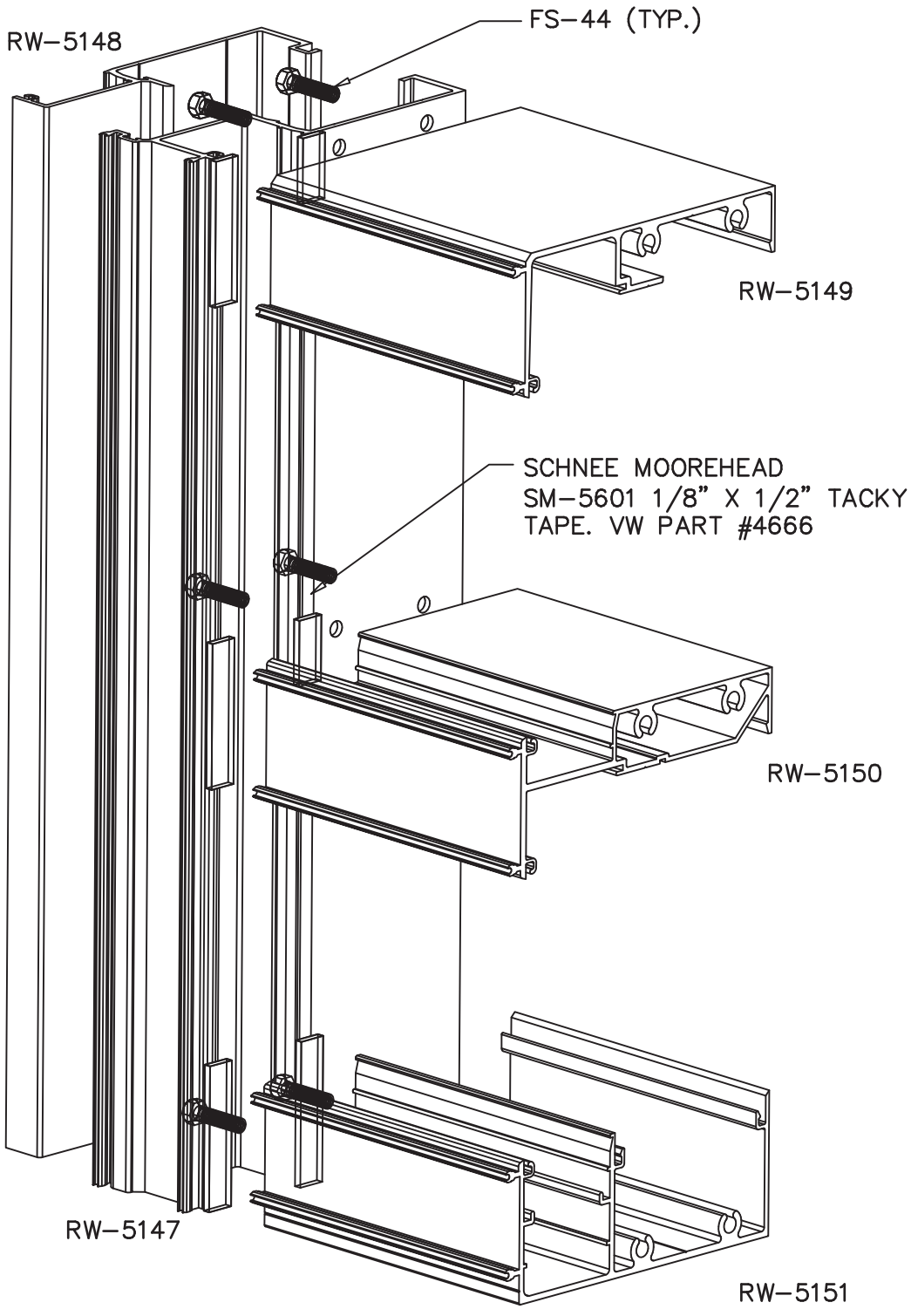
FRAME FABRICATION

STEP 7

Drill two 1/4"Ø weep holes at setting block locations. Setting blocks are located at 1/4 points of D.L.O.



FRAME ASSEMBLY

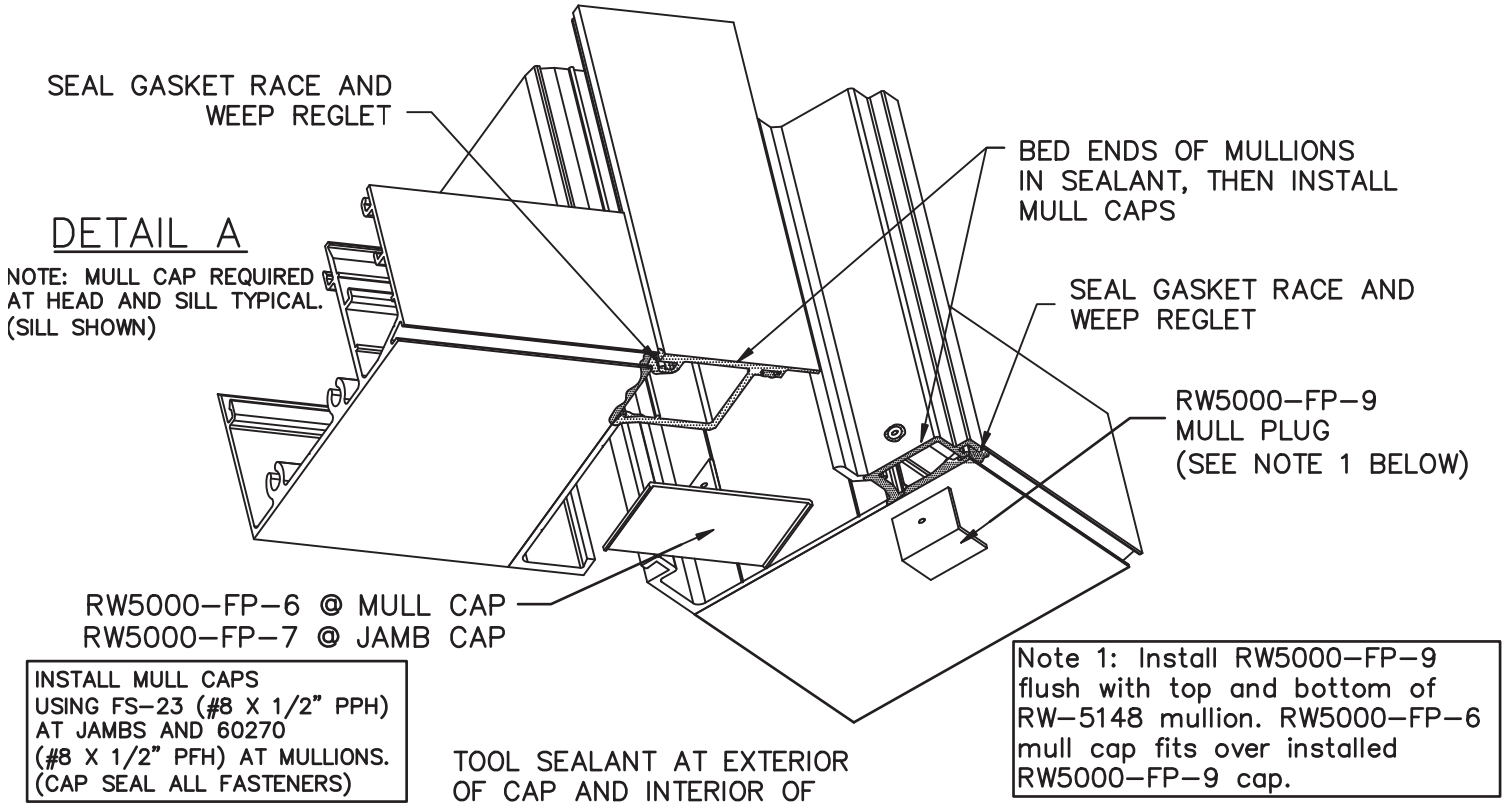


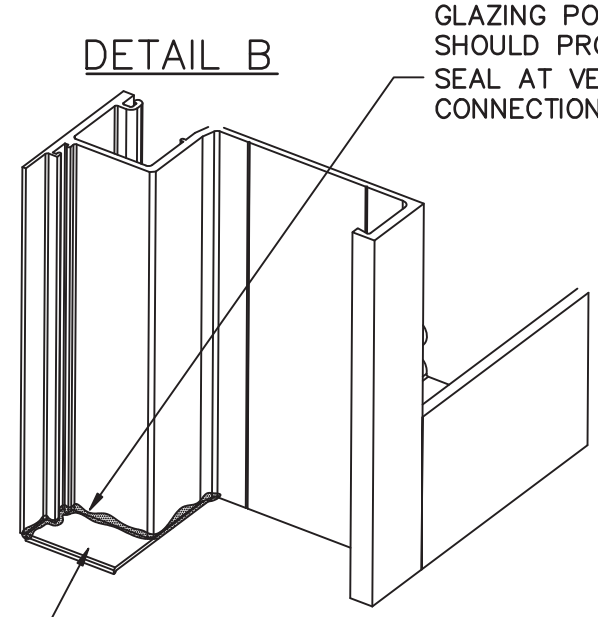
STEP 1
Attach horizontals to verticals using FS-44 (5/16" x 1" HHSTS) spline screws. Trim excess sealant tape at joints with razor knife. DO NOT PULL TAPE TO TRIM. See page 9 for hole prep locations.

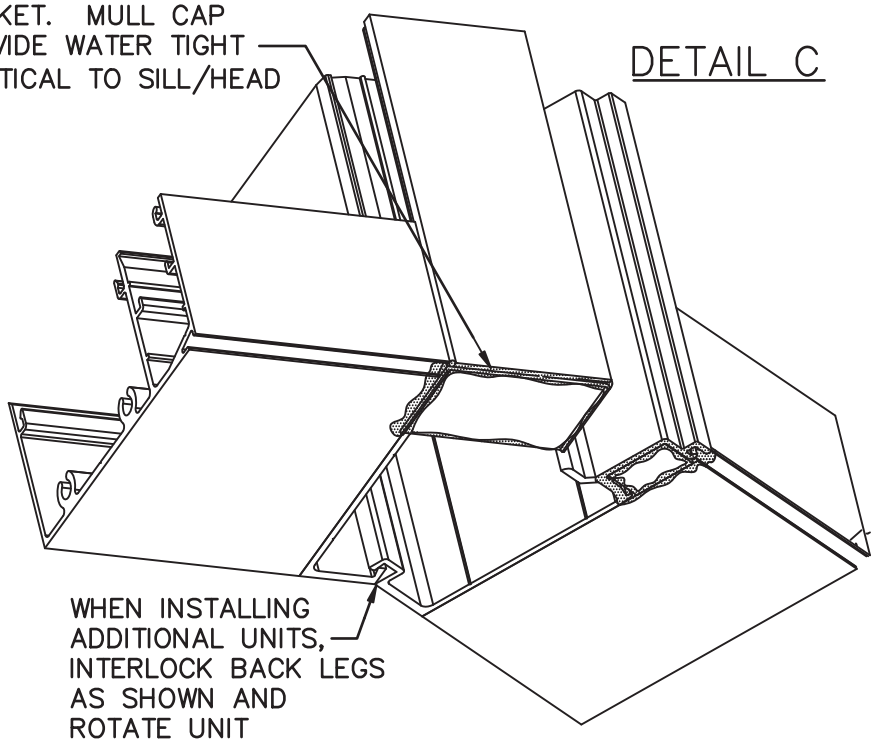
FRAME ASSEMBLY

STEP 2

Install and seal mullion caps at head and sill as shown in details A, B and C below (sill shown; head similar).







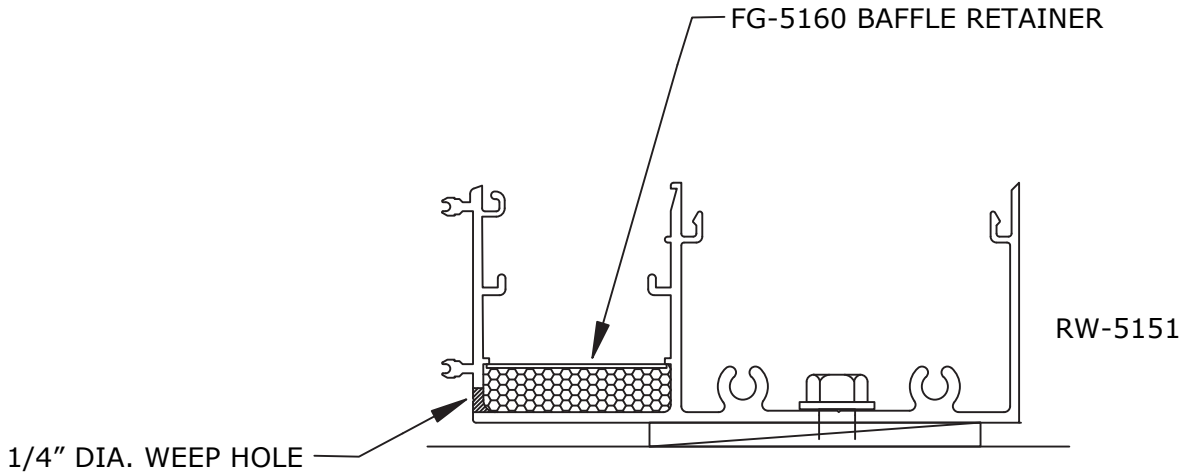
FRAME ASSEMBLY

STEP 3

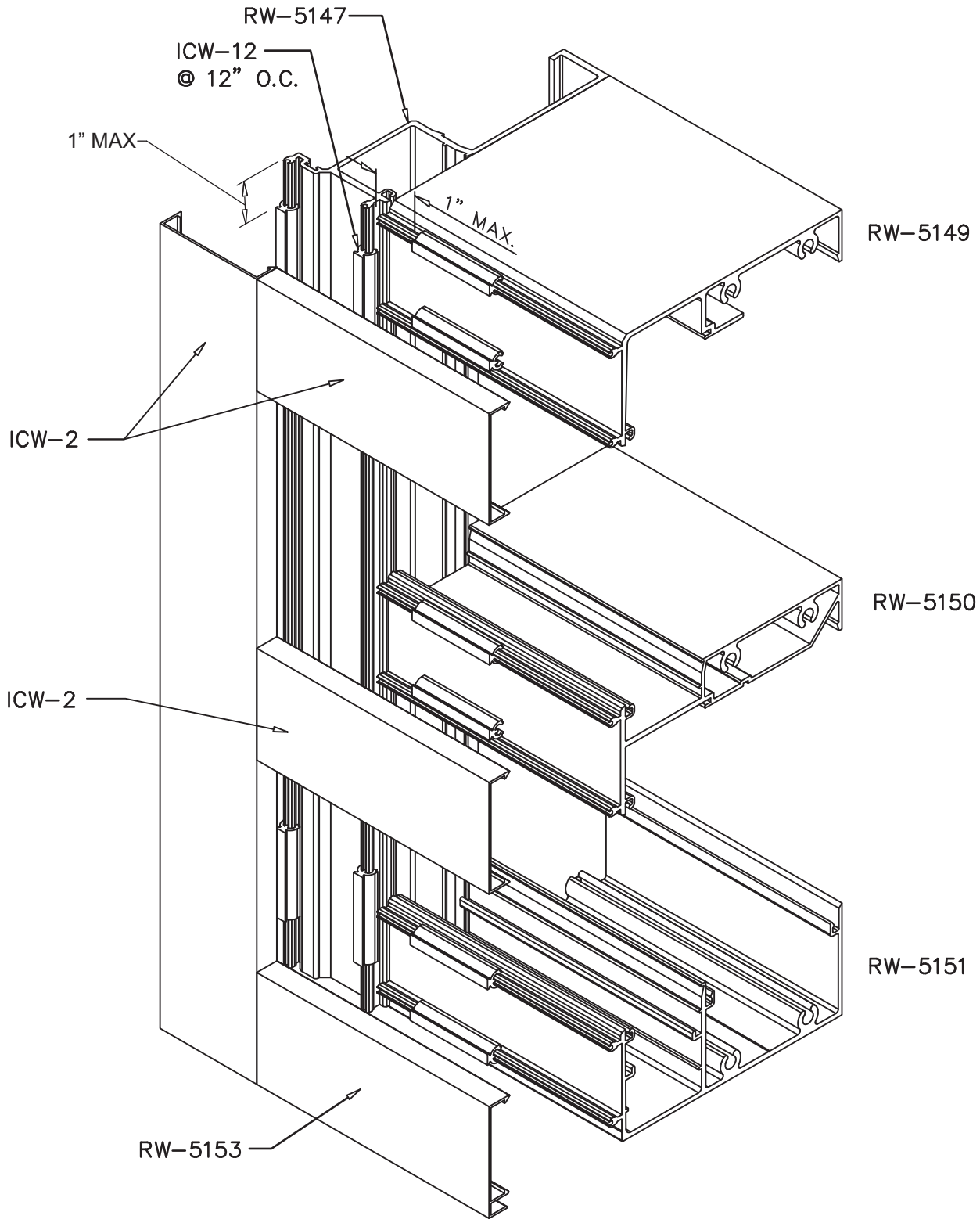
Mull caps should form a water tight seal. A test may be conducted to confirm this seal by blocking weep holes and filling seal cavity with water. After test, remove plugs from weep holes and drain water.

STEP 4

Install baffles and baffle retainer as shown below. Center baffles over each weep hole.



FRAME ASSEMBLY

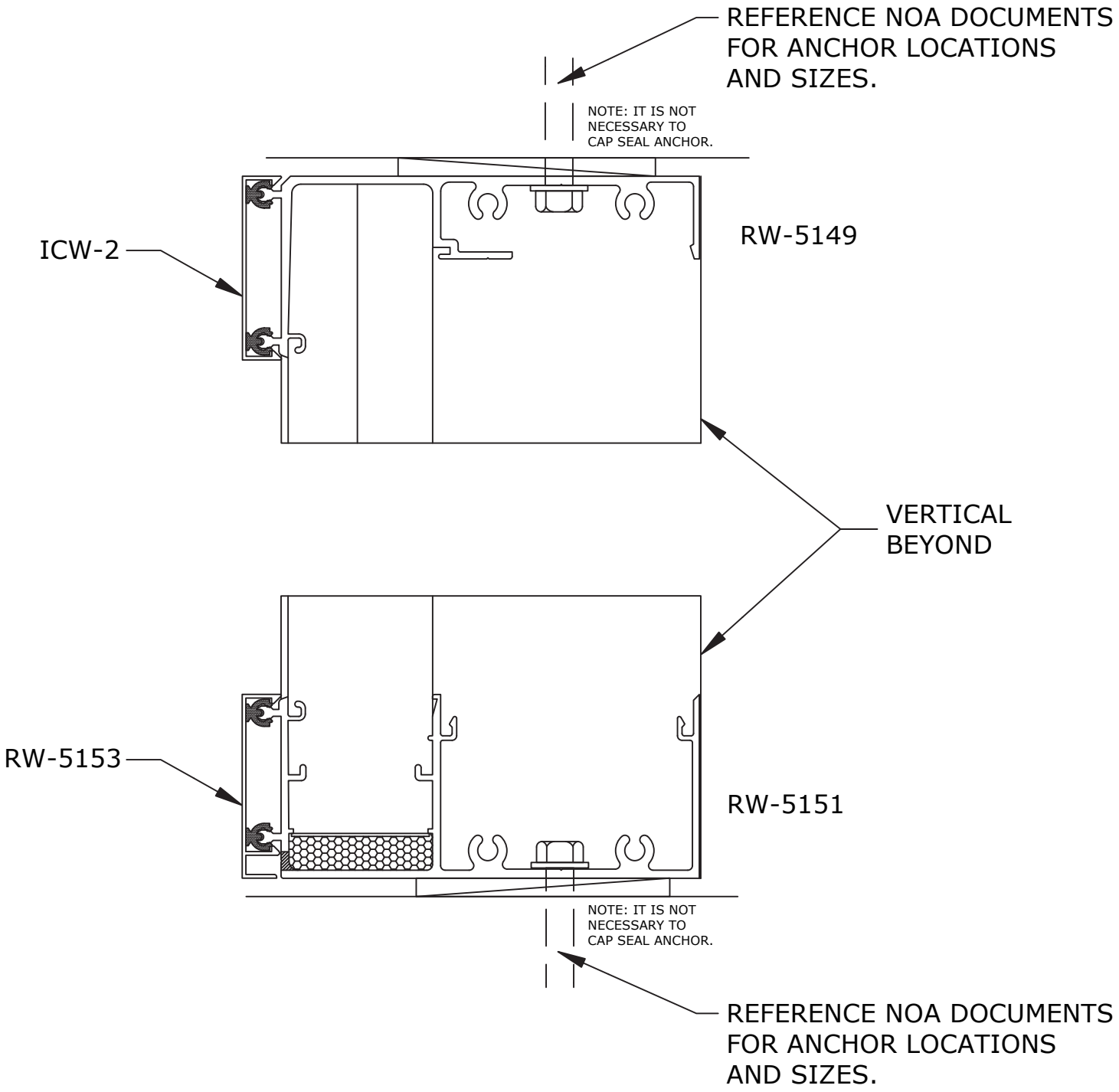


STEP 5
Install ICW-12 Isolator Clips for snap-on face covers to all back members as shown above.

FRAME INSTALLATION

STEP 6

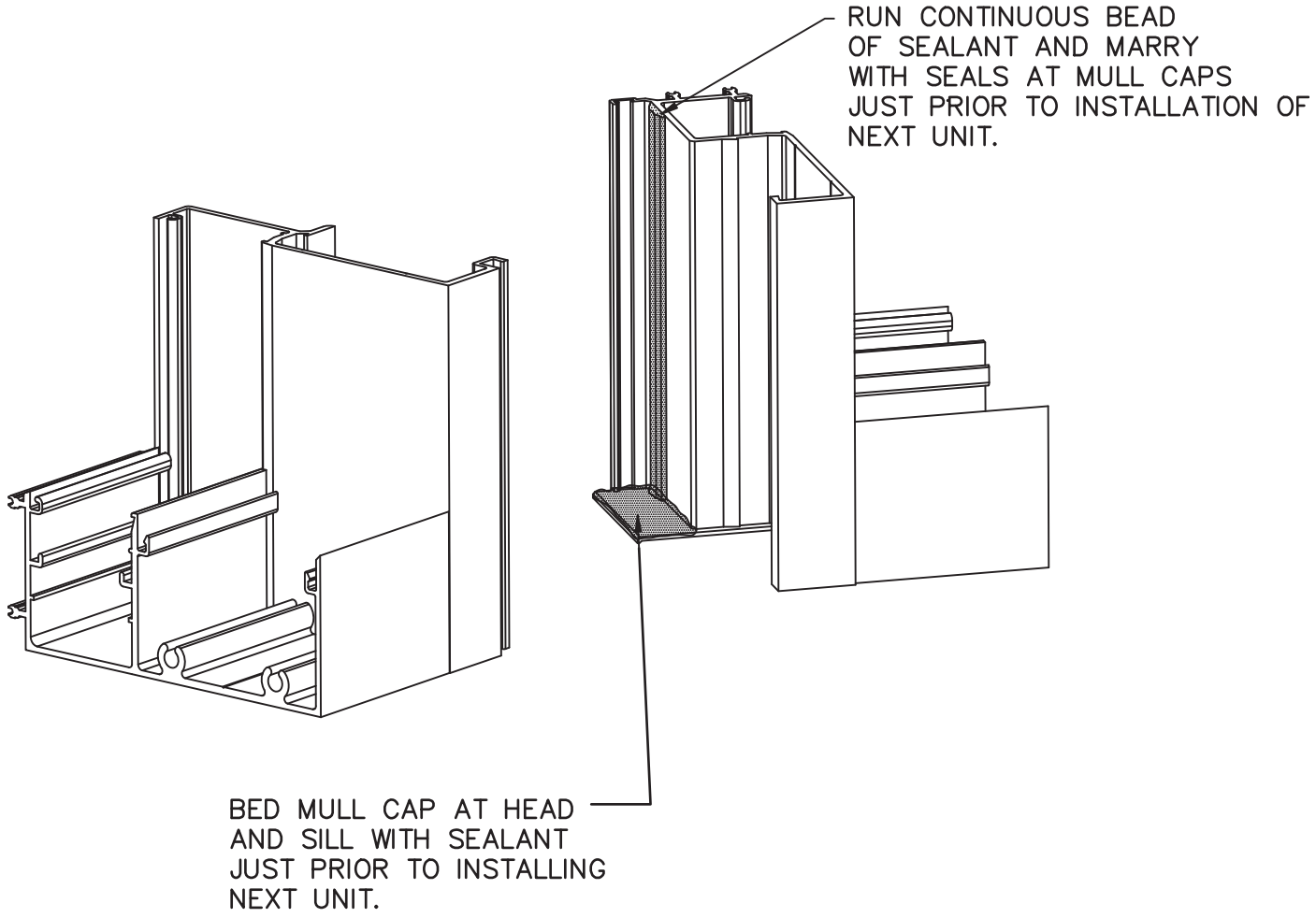
Install first unit into opening (units will install from left to right as viewed from exterior of building). Level, plumb, and anchor first unit. When shimming units, shim at anchor points under sill. Do not place shims beneath mull or mull cap.



FRAME INSTALLATION

STEP 7

Run a continuous bead of sealant for full height of mullion and bed mullion cap with sealant at head and sill as shown in Detail D.

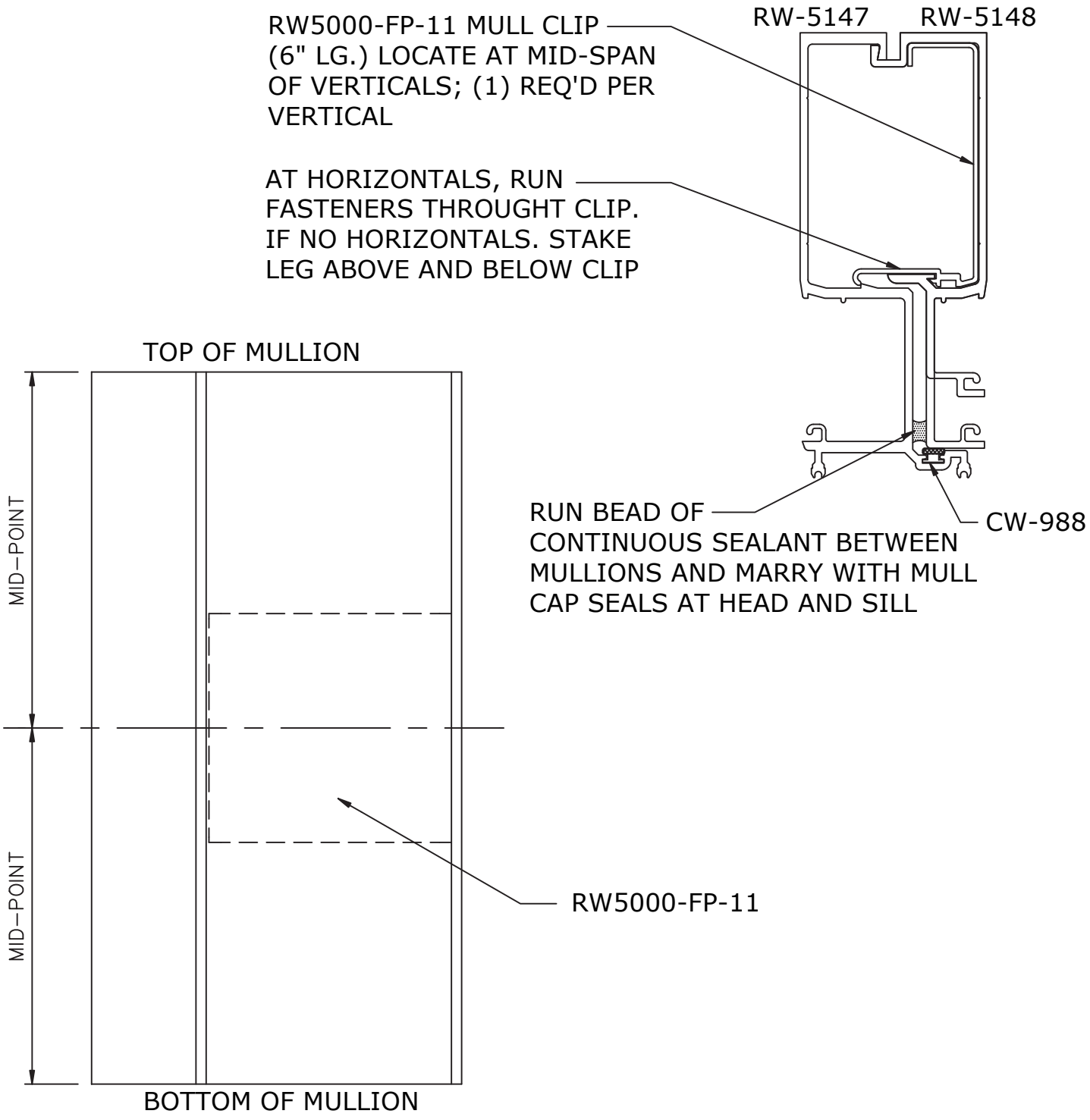


DETAIL D

FRAME INSTALLATION

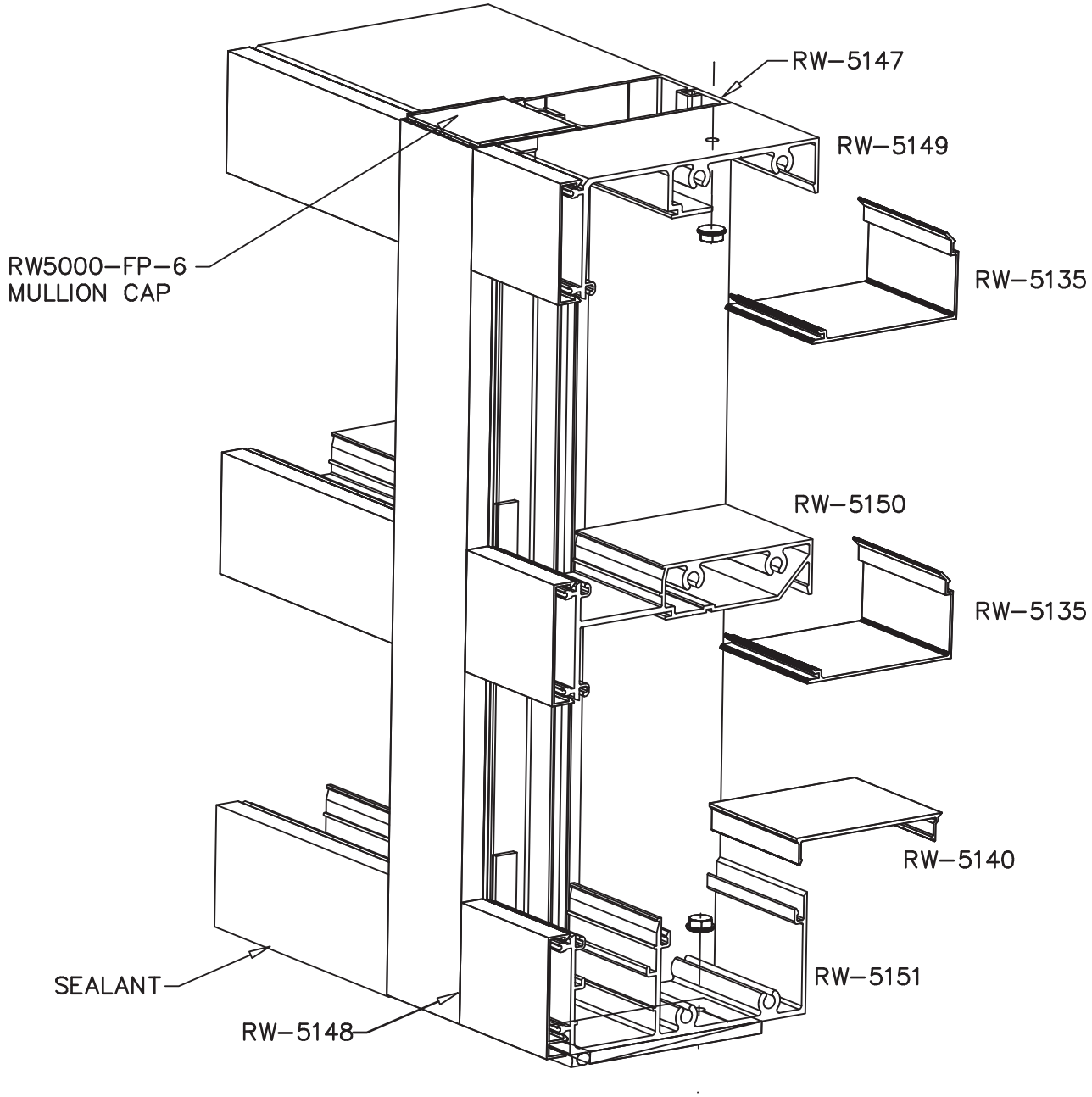
STEP 8

Locate RW5000-FP-11 mullion clip at mid-point of RW-5147 and RW-5148 vertical mullion and stake in place.



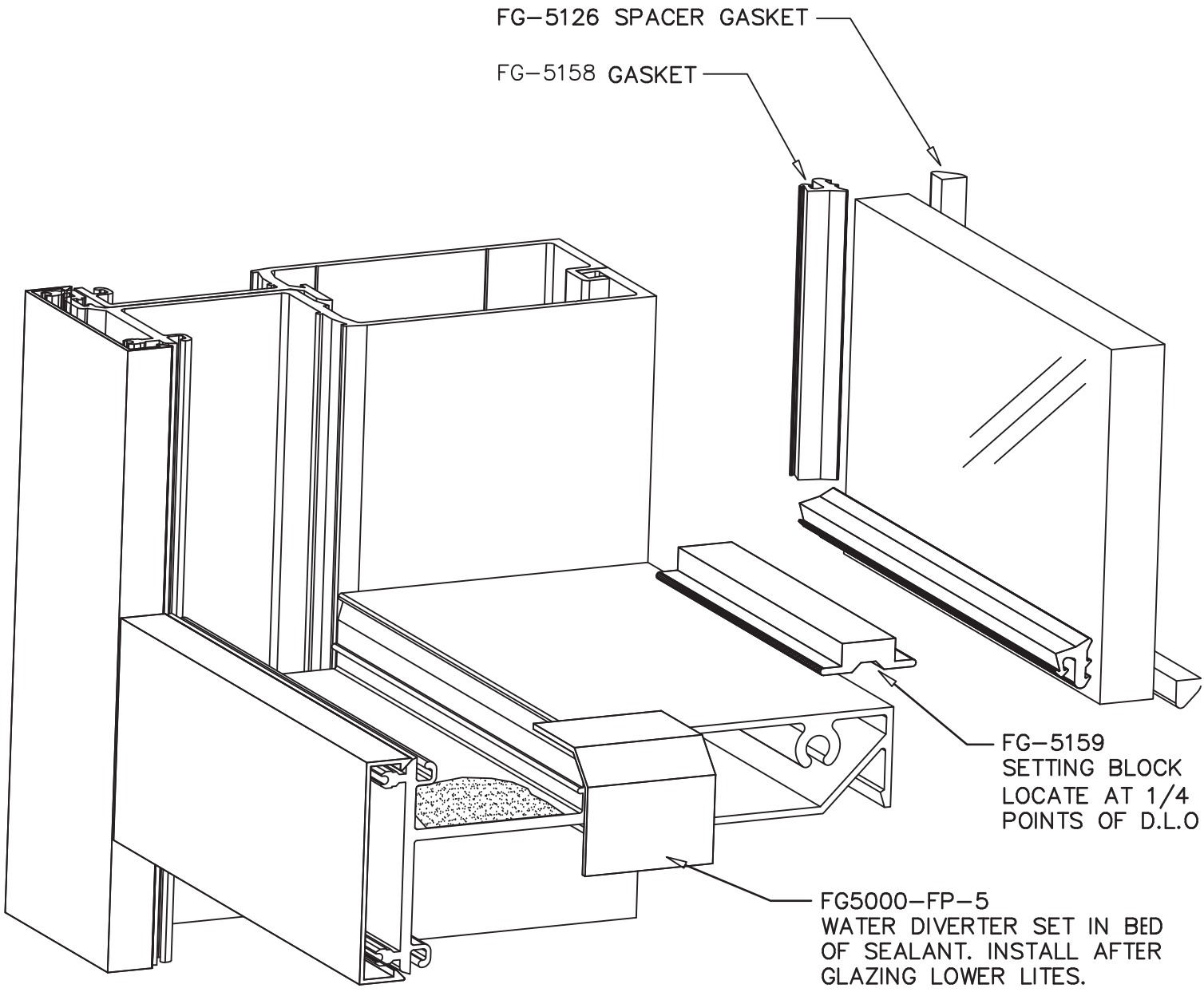
FRAME INSTALLATION

STEP 9
install second unit by bringing into position from inside of building and interlocking back legs of mullion (See Detail C, page 14).
Place appropriate shims beneath sill member to allow for better alignment, and rotate unit inot place. Plumb and anchor.



Repeate Step 6 for all additional units. Miniumn 1/4” calulk joint at jamb is required for installation of final unit.
Once all individual frames are secured to the opening, completely seal exterior perimeter with a continuous bead of Vulkem 921 polyurethane sealant or equal.

GLAZING



Remove all debris from glazing pockets to prevent blockage of weeps/drains.

GLAZING

Install exterior FG-5158 glazing gaskets as shown on page 21.
Cut gaskets a minimum of 1/8" per foot longer than daylight opening to provide for adequate compression. Pull gasket from pocket as shown in FIG.B below.
Clean gaskets 2" from each end with isopropyl alcohol. Apply Dow 995 or Tremco Spectrem 2 sealant (FIG. B) as shown. Push gaskets into reglet.
Glaze from bottom to top. Install water diverters as shown on page 21 after lower lite is in position.
Before installing interior wedge, place an 1/8" shim at mid-height of mullion and clamp back of mullion at the shim to help ensure proper alignment of mullions at face of system.
Install interior glazing bead at head and horizontals. (FIG. C)
Mask off glass and aluminum with 2" wide low adhesion masking tape. Fill cavity with Dow 995 or Tremco Spectrem 2 sealant as shown below (FIG. A) and immediately tool.
Remove masking tape immediately after installation of silicone taking care not to damage or pull silicone from the cavity.

Note: If preglazing frames, make sure that units are square and that day light openings are held to proper dimensions before running structural silicone.

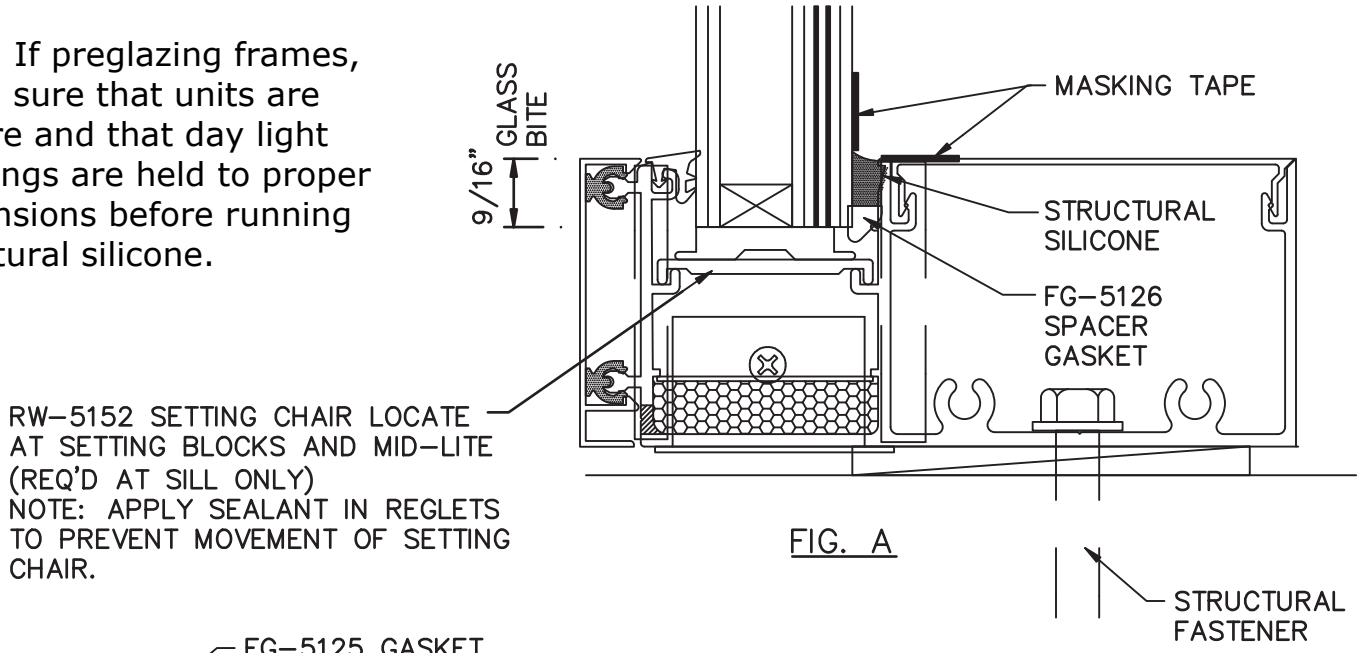
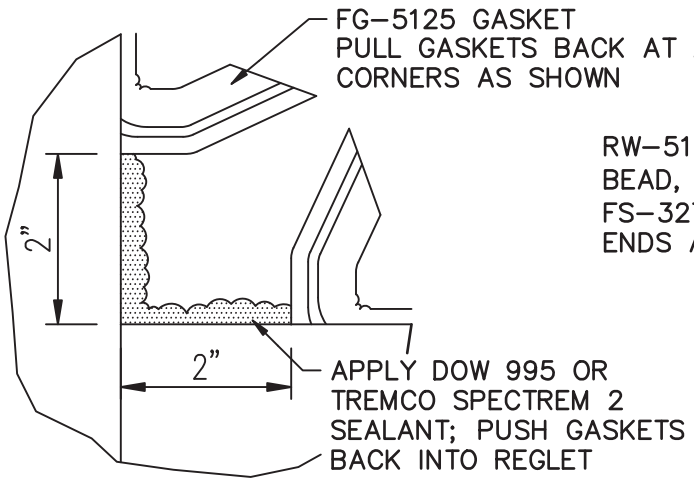


FIG. A



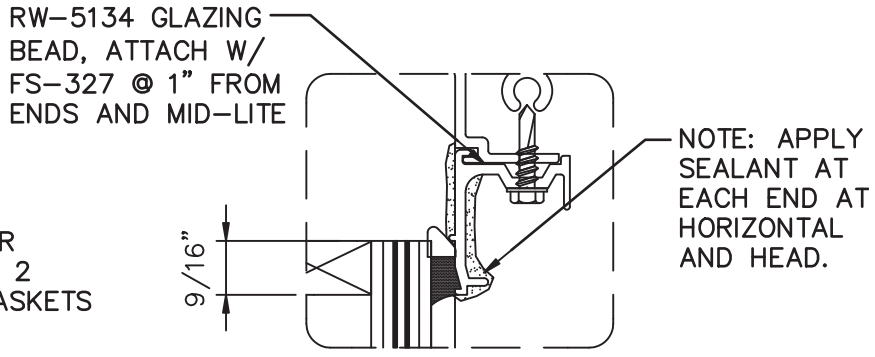
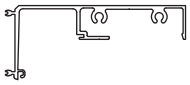
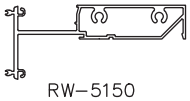
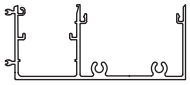
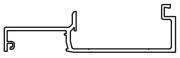
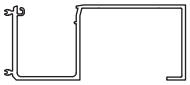
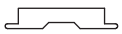
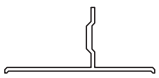
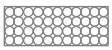


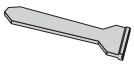
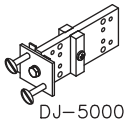
FIG. C

PARTS LIST

ITEM	DESCRIPTION
 RW–5149	Head
 RW–5134	Head/Horizontal Glazing Bead
 RW–5135	Head/Horizontal Trim
 RW–5150	Horizontal
 RW–5151	Sill
 RW–5140	Sill Filler
 RW–5147	Split Vertical Mullion Requires CW–998 Weather Seal
 RW–5148	Split Vertical Mullion
 RW–5146	Jamb
 ICW–2	Head/Intermediate Horizontal/Jamb/ Vertical Face Cap
 RW–5153	Sill Face Cap

ITEM	DESCRIPTION
 FG–5158	Exterior Glazing Gasket
 FG–5126	Interior Spacer Gasket
 SM–5601	Joint Sealant Tape 1/8" x 1/2"
 CW–998	Spacer/Seal for Split Mullion
RW–5152	Setting Chair for RW–5151 3 per lite
 FG–5159	4" Long Setting Block 2 per lite
 RW5000–FP–5	Horizontal Water Diverter
 RW5000–FP–6	Vertical Mullion Cap 2 per mullion
 RW5000–FP–7	Jamb Cap 2 per jamb
 RW5000–FP–9	End Dam for RW–5148 2 per mullion
 RW5000–PP–10	Weep Hole Foam Baffle
FG–5160	Baffle Retainer

PARTS LIST

ITEM	DESCRIPTION
 FS–44	5/16" x 1" HHSTS Joint Assembly Screw
 FS–327	Glazing Bead Fastener **12-14 X 7/8 HWH ELCO DRILLFLEX**
 FS–202	#8 x 1/2" PPH Attach FP–7 Jamb Cap
 FS–45	#8 x 1/2" PFH Attach FP–6 Mull Cap & FP–9 End Dam
 ICW–12	Isolator Clip for Snap–on Face Caps
	ICW–12 Installation Tool
 RW5000–FP–11	Mullion Clip Used at midpoint of RW–5147 1 per mullion
 DJ–5000	Drill Fixture for Screw Splines