

# **EFCO 645X Series Thermal Unitized "Can System" Window Wall**

## **INSTALLATION INSTRUCTIONS**



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**INSTALLATION**

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### References

In addition to the guidelines provided in this manual, EfcO recommends that Installers and General Contractors familiarize themselves with the latest editions of the following industry guidelines:

- ASTM C1193 Standard Guide for Use of Joint Sealants
- ASTM C1472 Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width.
- AAMA 609 & 610 Cleaning and Maintenance Guide for Architecturally Finished Aluminum
- AAMA 800 Voluntary Spec. & Test Method for Sealants
- AAMA 851 Fenestration Sealants Guide for Windows, Window Walls and Curtain Walls
- AAMA JS Joint Sealants

### Compatibility Issues

Sealants may not adhere or maintain long-term adhesion to substrates if the surface is not prepared and cleaned properly before sealant application. Using proper materials and following prescribed surface preparation and cleaning procedures is vital for sealant adhesion. Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. In all cases it is important to confirm the acceptability of each sealant-substrate combination with a lab or site adhesion test prior to proceeding with project installation. Sealant manufacturers can provide lab and field adhesion testing information and suggestions.

The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

### Surface Preparation

#### Non-Porous Materials (Glass, Metals, Plastics, etc.)

- Clean by using a two-rag wipe technique - wet one rag with "approved" solvent and wipe the surface with it, then use the second rag to wipe the wet solvent from the surface before it evaporates (allowing the solvent to dry on the surface without immediately wiping with a second cloth can negate the cleaning procedure because the contaminants may simply be re-deposited as the solvent dries). In all cases where used, solvents should be wiped dry with a clean, white cloth or other lint-free wiping materials.
- Isopropyl Alcohol (IPA) is a common-used solvent and has been proven useful for most non-porous substrates encountered in architectural construction applications. When handling solvents, refer to the manufacturers MSDS for information on handling, safety and personal protective equipment.
- Difficult or nearly impossible to see on a joint substrate, condensation or frost is likely to develop on substrates when temperatures drop. Since moisture and frost will interfere with proper sealant adhesion, it is important to confirm that substrates are dry prior to application of the sealant.



**Porous Materials (Concrete, Masonry, Brick, Stone, etc.)**

- Joints must be clean, dry and sound prior to application of sealant. All contaminants, impurities, or other adhesion inhibitors (such as moisture/frost, oils, concrete form release agents, old sealants, asphalt and other surface treatments, etc.) must be removed from the surfaces to which the sealant is intended to adhere.
- Clean where necessary by wire brush or mechanical abrading to provide a stable, clean surface for sealant application.
- Remove dust and other remaining loose particles with a soft bristle brush or by using oil-free compressed air.
- Polished stone surfaces and smooth sawn edges can be cleaned using a solvent dampened rag (allow sufficient time for solvent to evaporate prior to application of the sealant). When handling solvents, refer to the manufacturers MSDS for information on handling, safety and personal protective equipment.
- Since porous material can absorb and retain moisture, it is important to confirm that substrates are dry prior to application of the sealant.

**Joint Movement**

- All moving joints should be designed so as not to allow three-sided adhesion of the sealant to occur. Three-sided adhesion hinders the ability of the sealant to extend and compress freely as desired and can lead to early joint failure.

**Joint Width**

- The recommended sealant profile is an hourglass shape with the depth of the sealant over the crown of the backer to be no thinner than  $\frac{1}{4}$ " and no thicker than  $\frac{1}{2}$ "
- A minimum of  $\frac{1}{4}$ " of adhesive bonding contact must be made to all surfaces to which the sealant is intended to adhere.

**Joint Backer Materials**

Backer materials, typically backer rod, provide the following benefits to aide in the correct application of sealants.

- Control and provide the desired sealant depth.
- Create a formed joint cavity that allows for the desired sealant shape.
- Provide a firm backup which helps attain full wetting of the substrates when the sealant is tooled.
- Act as a bond breaker to eliminate adhesion on the backside of a joint (three-sided adhesion)

**Tooling**

- Tool or strike the sealant with a concave tool applying light pressure to spread the material against the back-up material and the joint surfaces to ensure a void-free application.
- On sill applications, tool the sealant to shed water and to eliminate ponding.
- Tooling agents such as water, soap, or detergent solutions are not recommended.

**Masking**

Masking tape is recommended where appropriate to ensure a neat job and to protect adjoining surface from over-application of sealant. Masking tape should be removed immediately after tooling the sealant and before the sealant begins to skin over (tooling time).



SUBJECT **Frame Inspection, Cleaning, and Preparation**

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**Pre-Glaze Inspection of Frames:**

- Glazing finalizes a series of fabrication, assembly, and installation steps. In many cases, the glazing process will conceal defects that are critical to quality. Examples of defects include poor part fit and flaws in sealant or sealant application. Defects in these areas can cause customer dissatisfaction and significant call back cost. Pre-glazing inspection is the Glazier's last chance for quality verification.

**Cleaning and Preparation:**

- Glazing surfaces must be free of dirt, oil, existing glazing materials or other contaminants. Glazing tape and sealants will not adhere to contaminated surfaces. Cleaning of new or existing glazing surfaces is a critical step to ensure the quality of the glazing.

**Inspection:**

- Perform a visual inspection of frame sealant at each corner and inside open lites prior to glazing.
  - o Look for missed seals, gaps in the sealant, or defects in the surface of the sealant.
  - o Are all the joints sealed?
  - o Was the correct sealant used?
  - o Was the sealant applied properly?
- Pay special attention to hidden or shadowed areas. Use a flashlight if direct light is required.
- This inspection is the last chance to detect joinery sealing issues prior to glazing.

**Cleaning of Frame Surfaces:**

- Spray isopropyl alcohol onto clean cloth.
- Wipe glazing area until clean (Use two-cloth alcohol wipe method)
- Surface must be clean of oil and other residue.
- Repeat steps until glazing area is clean.
- Dispose of contaminated cloth immediately.
- After final wipe; immediately dry with a clean cloth.
- Do not use compressed air.
- Do not allow the isopropyl alcohol to pool and/or evaporate from the surface.



SUBJECT **Disclaimers**

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1. Field verification and/or field measurements will not be the responsibility of Efco unless specifically included in our quotation. The general contractor is responsible for verifying all dimensions. The G.C. is to take note of all dimensions, as Efco assumes no responsibility beyond manufacturing in accordance to dimensions shown on the approved drawings and/or order entry documents. Make certain that the building construction which will receive your materials is in accordance with the contract documents. Returned approved submission prints will indicate to Efco that all dimensions have been verified and approved. These drawings embrace only the work in the Efco contract. Efco does not assume responsibility for measurements affecting other contractors' work. Issuance of shop drawings for approval does not constitute acceptance of customer's order by Efco. The order entry documents may take precedence over shop drawings which in turn take precedence over other contract documents or product information and include specific details for the project. The Assembly and Installation manual are of general nature and cover most common conditions.
2. The General Contractor shall provide the installing subcontractor with a building perimeter offset line on each floor, plumb with lines on the floors below, and located at a point from the edge of the floor slab as designated. The General Contractor shall also provide clearly scribed benchmarks on each floor on a column as designated. The General Contractor shall be responsible for the accuracy of the location of the perimeter offset lines and the elevations of the benchmarks.
3. Efco does not supply installation fasteners, unless previously arranged with the Sales/Estimating department. Masonry expansion plugs and screws occurring at the sill are to be set in sealant by the installer. The installer is to shim and securely anchor the frames square and plumb. Dead load shims are required at the sill directly under the mullion and jambs (typical).
4. Window and wall systems must be stored in an area free from weather and construction hazards. Aluminum finish must be protected from staining of wet cardboard or paper and from the action of harsh alkalis and sand in concrete, stucco, mortar or plaster. The setting of the material prior to the setting of the other materials requires the G.C. to closely supervise other trades so as to protect marring or discoloration from any cause. All glass and aluminum must be protected during any and all welding operations.
5. The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of +/- 50 movement. Please consult the sealant manufacturer for proper surface preparation and bond breakers. All sealant, backer rods, required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.
6. Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. Efco recommends that the caulker consult their sealant manufacturer to ensure proper compatibility. Efco is not responsible for perimeter sealant compatibility testing.
7. Request for a revision after Efco has been released for fabrication will result in an engineering and handling charge plus the cost of the fabricated materials. This must be approved in writing prior to the revisions being made.
8. Upon delivery of Efco material to the project site, it is the responsibility of the customer to ensure that all shipping damages and/or material shortages are acknowledged and reported to Efco within (2) two weeks [(10) ten working days]. Damages or shortages reported after that time period may result in additional costs to the customer. Any common carrier materials received damaged should be reported to Efco and the shipping company immediately upon receipt.
9. Installer/Contractor accepts responsibility for the performance of all door/window/curtainwall systems if not installed per Efco's product information. Any and all cleaning of components is not by Efco. Final hardware adjustment is not the responsibility of Efco.
10. Efco's standard limited warranty applies, including all provisions therein. Refer to the project specific Efco proposal for general terms and conditions of sale.

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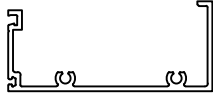


SUBJECT **Frame Extrusions**

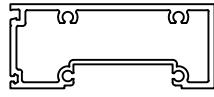
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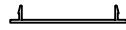
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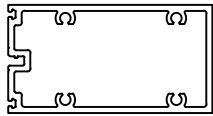
**40Z3**  
Head Frame  
(Use with head starter)



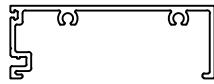
**40Y9**  
Head Frame (Use  
with no head starter)



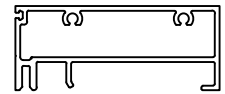
**40Z0**  
Head Frame Interior Closure  
(Use with head frame 40Y9)



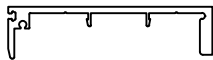
**40V7**  
Horizontal Mullion



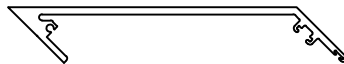
**40U9**  
Sill Frame - Use with sill  
typical starters



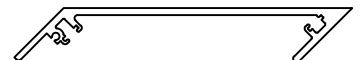
**40V0**  
Sill Frame - Use with chicken  
head sill starters 5J60,  
5J61 & 5J59



**40V4**  
Vertical Mullion - Female  
Mates with 40V5



**40Z2**  
Inside Corner Vertical Mullion -  
Female Mates with 40X1



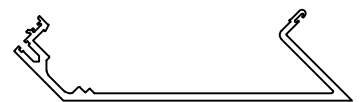
**40X0**  
Outside Corner Vertical Mullion -  
Female Mates with 40Y5



**40V5**  
Vertical Mullion - Male  
Mates with 40V4



**40X1**  
Inside Corner Vertical Mullion -  
Male Mates with 40Z2



**40Y5**  
Outside Corner Vertical Mullion -  
Male Mates with 40X0

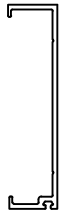


SUBJECT **Frame Extrusions**

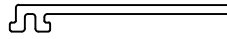
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**40T8**  
Jamb Frame



**40Z6**  
Strap Anchor

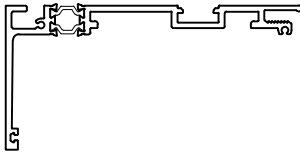


SUBJECT **Starter Extrusions**

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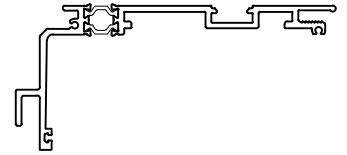
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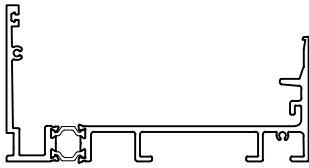
**5J51**  
Head Starter - Typical  
(no slab edge cover)



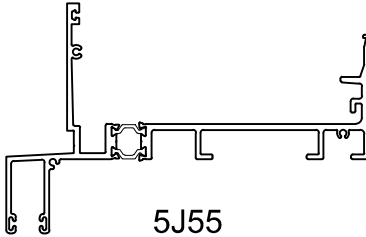
**5J52**  
Head Starter - Panel  
Slab Edge Cover



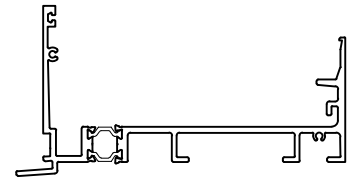
**5J50**  
Head Starter - Brake Metal  
Slab Edge Cover



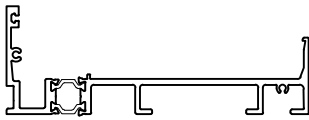
**5J54**  
Sill Starter (tall profile) - Typical  
(no slab edge cover)



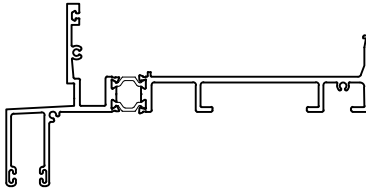
**5J55**  
Sill Starter (tall profile) - Panel  
Slab Edge Cover



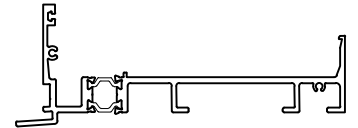
**5J53**  
Sill Starter (tall profile) - Brake  
Metal Slab Edge Cover



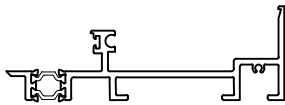
**5J57**  
Sill Starter (low profile) - Typical  
(no slab edge cover)



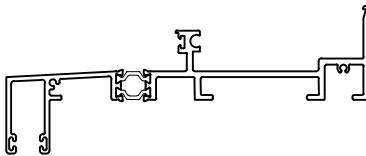
**5J58**  
Sill Starter (low profile) - Panel  
Slab Edge Cover



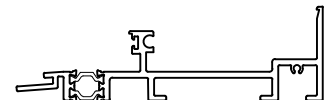
**5J56**  
Sill Starter (low profile) - Brake  
Metal Slab Edge Cover



**5J60**  
Sill Starter / Chicken Head -  
Typical (no slab edge cover)



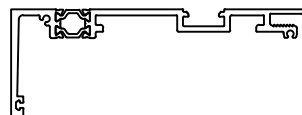
**5J61**  
Sill Starter / Chicken Head - Panel  
Slab Edge Cover



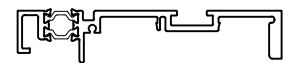
**5J59**  
Sill Starter / Chicken Head - Brake  
Metal Slab Edge Cover



**40Z5**  
Head Starter Interior Drive-on



**5J72**  
Jamb Starter - Typical



**5J63**  
Jamb Starter - Use with 40V5

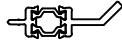


SUBJECT **Trim and Accessories**

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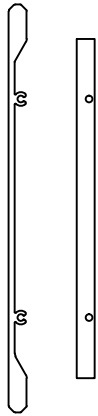
**5J65**  
Outside Corner Cover Receiver -  
Use with 40Y5



**40Y6**  
Inside Corner Closure - Use  
with 40X1



**40X6**  
Outside Corner Cover - Use  
with 5J65



**40U7**  
FQ81 end cap  
Slab Edge Cover - 8"



**40U3**  
Perimeter closure trim at door,  
vent detail - female



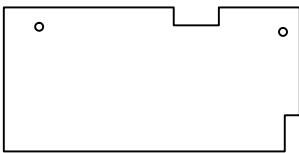
**40U6**  
Perimeter closure trim at door,  
vent detail - male



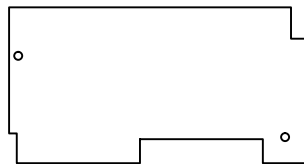
**FQ69**  
Glass Setting Block Chair  
(use with 40U9 & 40V7)



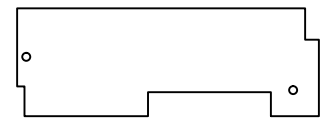
**FQ73**  
Sill Dead Load Clip  
(use with tall profile starters)



**FQ70**  
Head Starter End Cap



**FQ71**  
Sill Starter (tall profile)  
End Cap



**FQ72**  
Sill Starter (low profile)  
End Cap

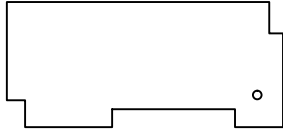


SUBJECT **Trim and Accessories**

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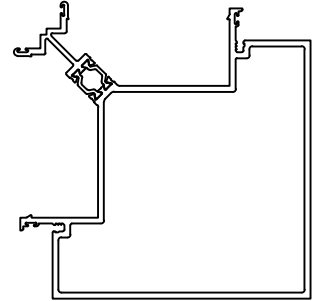
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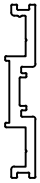
**QF37**  
Sill Starter (SSG)  
End Cap



**FQ82**  
Inside / Outside Corner  
Anti-Buckling Clips



**5J64**  
Corner Mullion



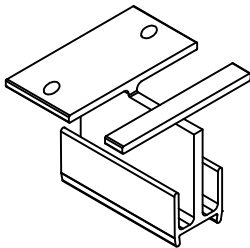
**FQ77**  
Sun Shade Bracket Anchor



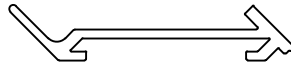
**FQ78**  
Sun Shade Bracket



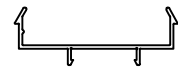
**5J62**  
Glass Setting Block Chair -  
Continuous (use with sill frame  
40V0)



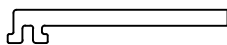
**FQ67**  
Head Wind Load Clip



**40U4**  
Inside / Outside Corner Wind  
Load Anchor Receiver



**FQ66**  
Anti-buckling Clip  
Use with 40V4 & FQ67



**FQ68**  
Head Starter Strap Anchor  
Jamb Starter Strap Anchor



**FQ76**  
Sill Starter Strap Anchor



**QF36**  
Sill Starter  
(Extruded Tall)  
End Cap



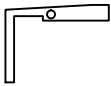


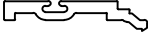

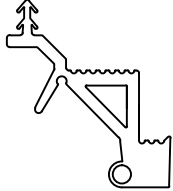









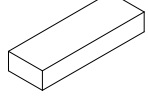



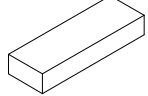


SUBJECT **Gaskets and Miscellaneous**

DRAWN BY: CAP  
 ISSUE DATE: 3/1/22

SCALE: Varies

REVISION By :  
 REVISION DATE:

 <p><b>QF38</b>        Sill Starter        (Extruded - SSG)        End Cap</p>	 <p><b>W214</b>        Vertical Stack Mullion        Fin Gasket - use with        40V5</p>	 <p><b>W228</b>        Air Seal Gasket Vertical        Mullions - Black Silicone</p>	 <p><b>WAD3</b>        Polyamide Glass Edge        Protector - use with        5J62</p>
 <p><b>WT02</b>        Vertical Stack Mullion        Exterior Silicone Diverter        use with 40V5</p>	 <p><b>W224</b>        Outside Corner Vertical        Mullion Diverter Gasket        use with 40Y5</p>	 <p><b>W399</b>        Outside Corner Vertical        Mullion Closure Bulb        Gasket - use with 40X6</p>	 <p><b>W304</b>        Inside Corner Vertical        Mullion Closure Bulb        Gasket - use with 40Y6</p>
 <p><b>W302</b>        Exterior Starter Bulb        Gasket</p>	 <p><b>W301</b>        Exterior Sill Starter Bulb        Gasket - use with        5J62</p>	 <p><b>W226</b>        Sweep Gasket for Sill        Starter / Chicken Head</p>	 <p><b>L200</b>        1/4" Diameter PVC        Spacer Rod for Sill        Starter / Chicken Head</p>
 <p><b>W227</b>        Wiper Gasket for Slab        Edge Cover Receiver</p>	 <p><b>W229</b>        Bulb Gasket Head        Starter Interior Drive-on</p>	 <p><b>W225</b>        3/16" Dense Wedge        use at Interior Sill Starter</p>	 <p><b>HCW6</b>        Open Cell Weep Baffle,        45 PPI, 0.5" x 0.5" x 1.0"</p>
 <p><b>W303</b>        1/4" x 1/4" Glazing        Spacer Gasket</p>	 <p><b>WM40</b>        1/4" x 1/4" Tremco        Glazing Spacer Tape</p>	 <p><b>WA11</b>        Vertical Stack Mullion        Bulb Gasket - use with        40V5</p>	 <p><b>HCW7</b>        Open Cell Weep Baffle,        45 PPI,        0.375" x 0.375" x 1.0"</p>

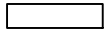


SUBJECT **Fasteners and Miscellaneous**

DRAWN BY: CAP  
ISSUE DATE: 3/1/22

SCALE: Varies

REVISION By :  
REVISION DATE:



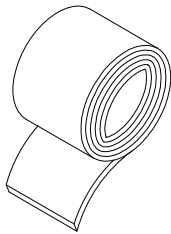
**HC66**  
Glass Setting Block  
85 Durometer, 0.25" x 1.0" x  
4.0", Black Silicone



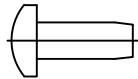
**H105**  
Glass Setting Block  
90 Durometer, 0.25" x 0.875"  
x 4.0", Black Silicone



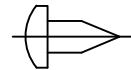
**H159**  
Setting Block for Slab Edge Covers  
85+/-5 Durometer, 0.375" x 0.375"  
x 4.0", Black Silicone



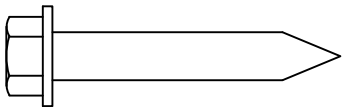
**S180**  
0.062" x 4" Translucent Silicone  
Sheet



**TS01**  
#10-24 x 1/2", PH, Pan  
Head, SS - 5J62 Setting  
Block Chair



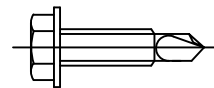
**TS03**  
#8 x 3/8", SMS, PH,  
Pan Head, SS 18-8, Type A  
End Cap Fastener



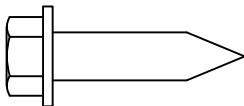
**TS08**  
#1/4-20 x 1-1/2", SMS,  
Zinc, Hex Head, Type F  
Assembly Fastener (corner)



**TS09**  
0.094" x 0.375", Spring Pin,  
SS - OS Corner  
5J65 Attachment



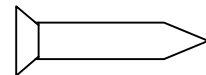
**TS10**  
#10-16 x 3/4", HWH, #3, Dril-Flex  
W/Stalguard - Head Wind Load  
Clip Fastener



**TS06**  
#1/4-20 x 1", SMS,  
Zinc, Hex Head, Type 23  
Assembly Fastener (typical)



**FQ83**  
Corner Washer W/.254"  
Hole - .594" Long



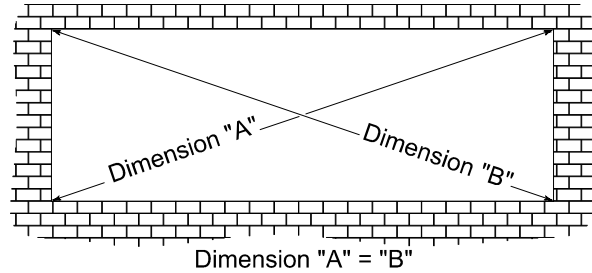
**SFP1**  
#10-12 X 1", SMS,  
SQ-FH-SMS 18-8 A  
Corner Windload Clip Receiver



### Step 1: Determine Frame Size

#### Determine Frame Width

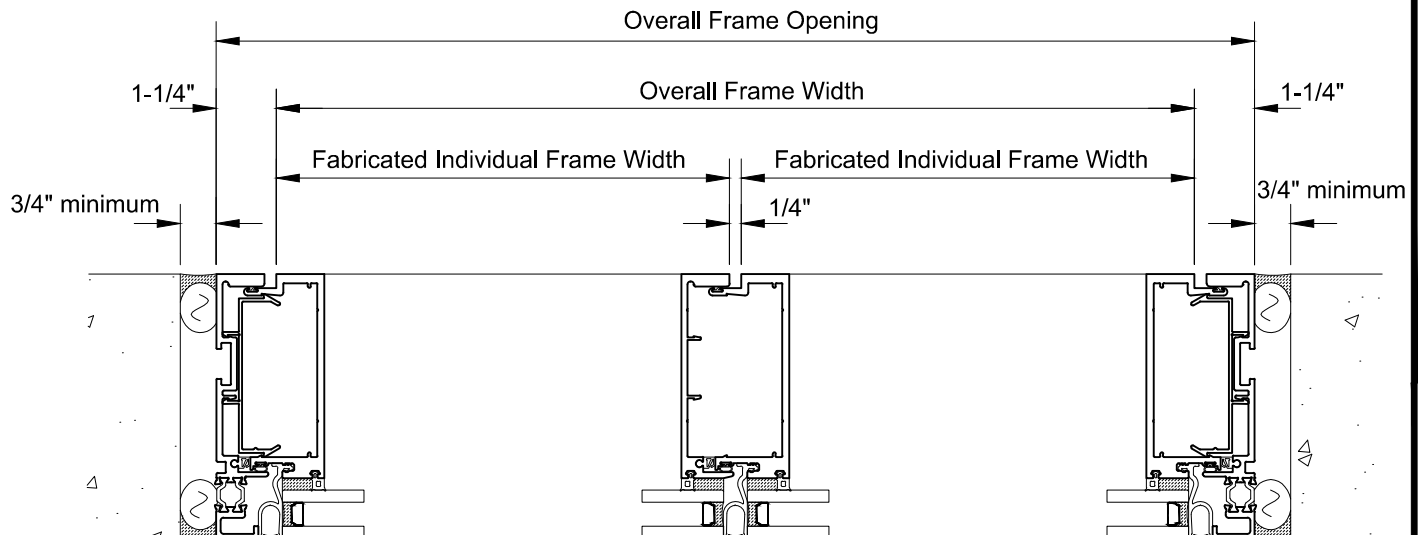
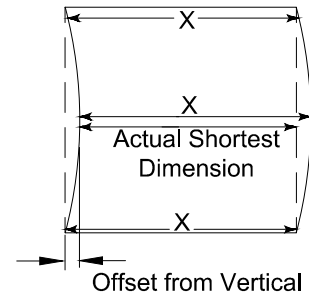
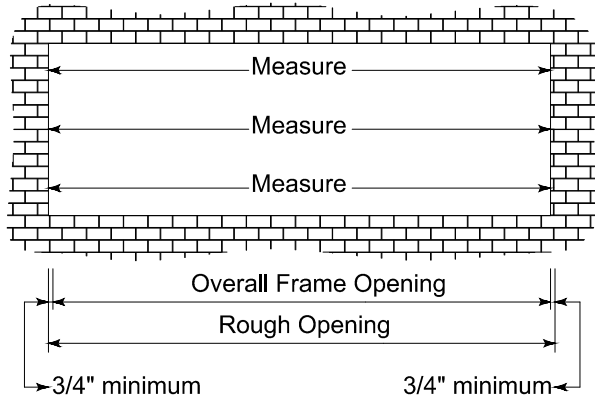
A. Check that the opening is square and plumb at both ends. Units must be installed in a true rectangle.



B. Measure the width of the masonry opening at the top, middle, and bottom.

C. Select the smallest dimension measured. To determine the frame width to be used, subtract a minimum of 1 1/2" from the smallest measured width. This is to allow a minimum of 3/4" at each jamb for shimming and caulking. Allow a larger clearance if necessary to accommodate building tolerances, an out-of-square opening, and/or anticipated thermal expansion within the unit.

D. This measuring does not catch situations where the sides of the opening are curved the same way.





SUBJECT **Sizing**

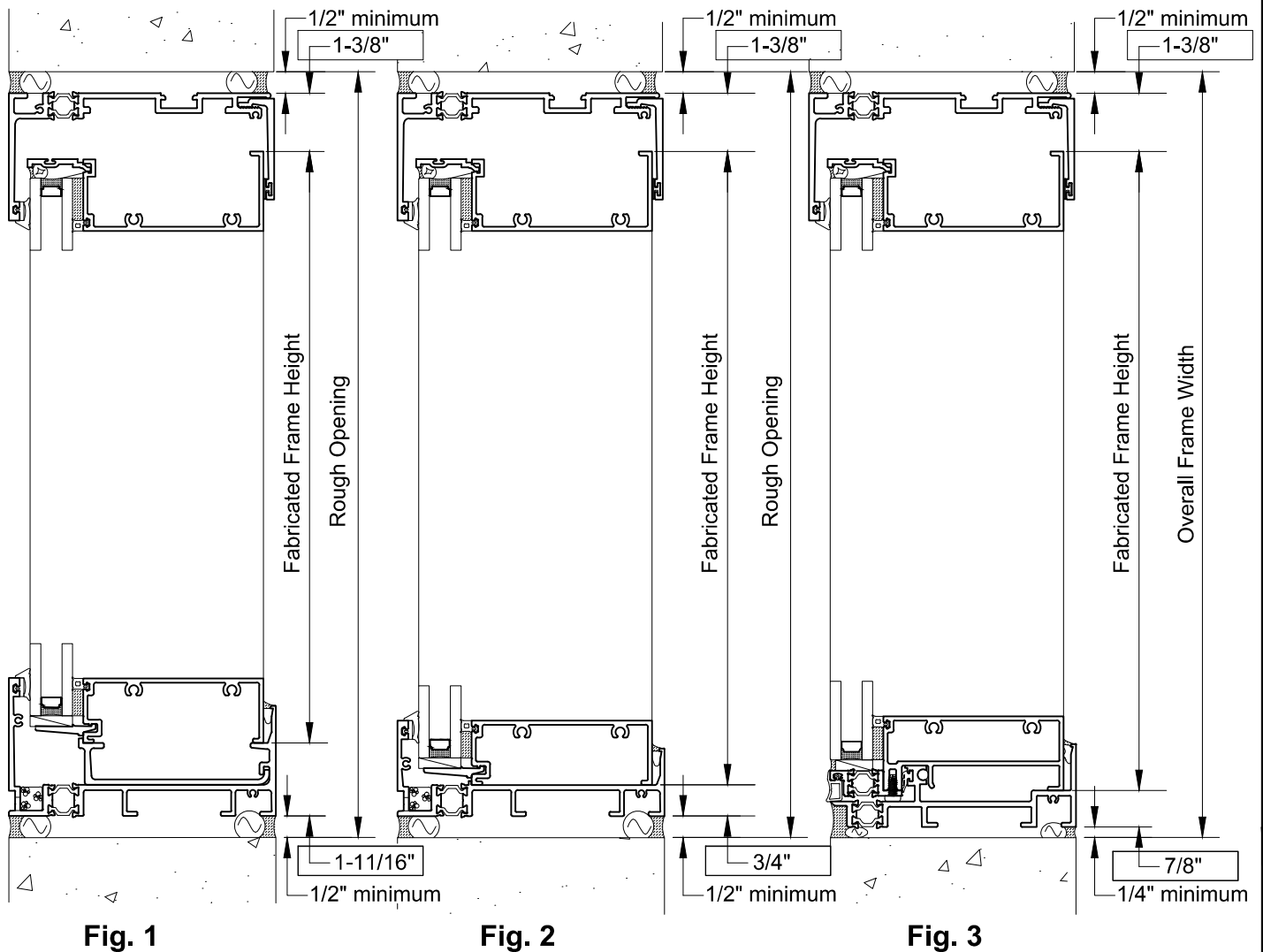
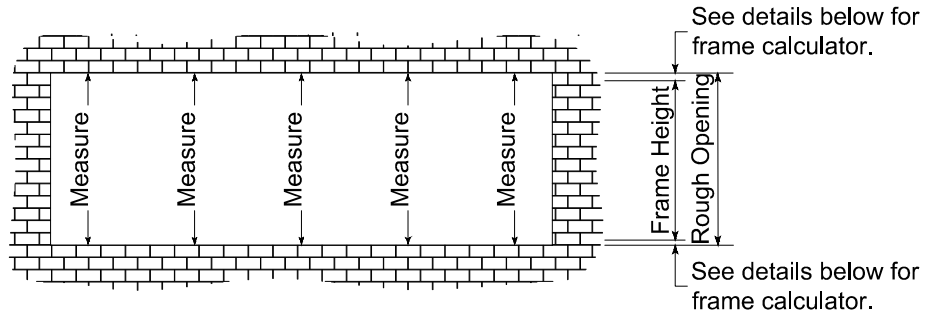
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ISSUE DATE: 3/1/22

SCALE: 3" = 1'-0"

REVISION By :  
REVISION DATE:

**Determine Frame Height**

- D. Measure the height of the rough opening in several places along the entire length of the opening.
- E. To determine the frame height to be used, select the smallest dimension measured.
  1. Subtract a minimum of 1/2" head and seal to accommodate shimming, caulking, building tolerances, an out of square opening, and/or anticipated thermal expansion within the unit.
  2. Subtract 1-3/8" for head starter clearance and refer to sill installation details at Fig. 1, Fig. 2, & Fig. 3 for sill starter clearances.





SUBJECT **Glass Sizing**

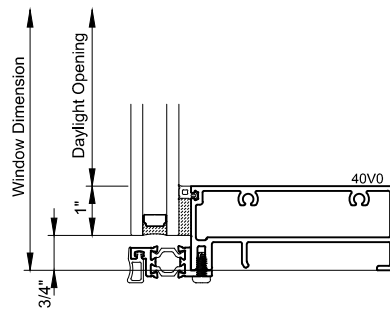
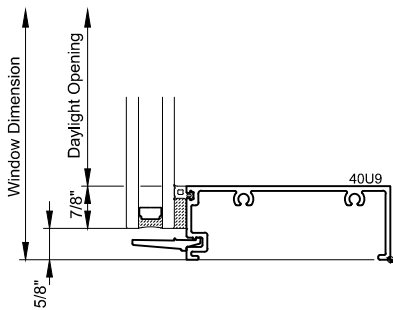
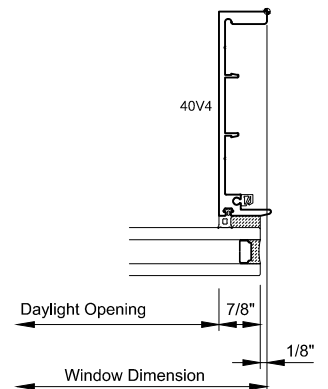
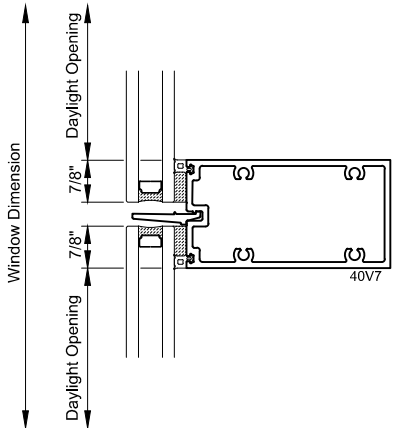
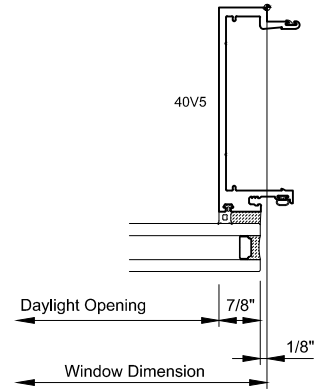
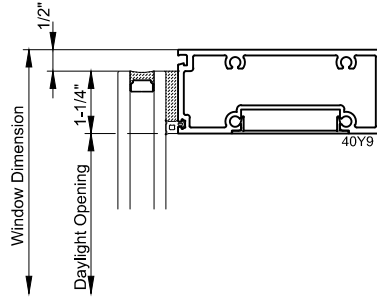
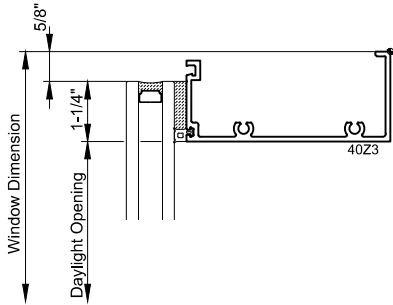
DRAWN BY: CAP  
ISSUE DATE: 3/1/22

SCALE: 3" = 1'-0"

REVISION By :  
REVISION DATE:

**Step 2: Glass Sizing**

Refer to the details shown below for glass size calculations:





SUBJECT **Glass Sizing**

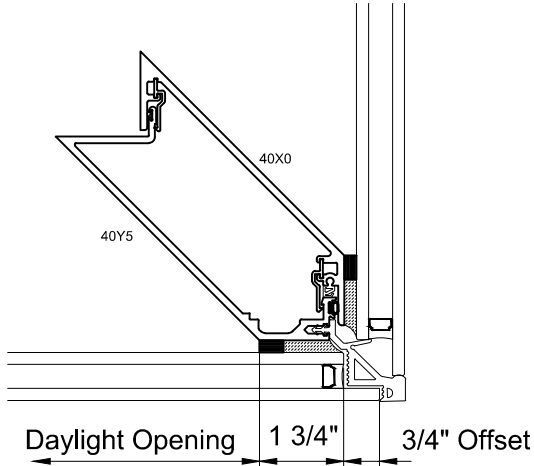
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ISSUE DATE: 3/1/22

SCALE: 3" = 1'-0"

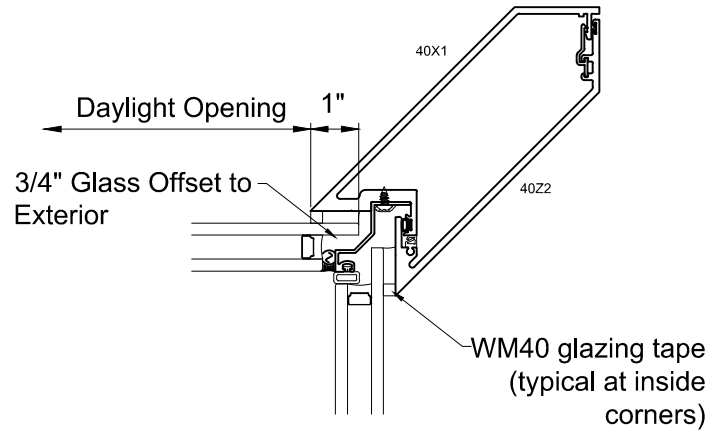
REVISION By :  
REVISION DATE:

**Step 2: Glass Sizing - Corner Frames**

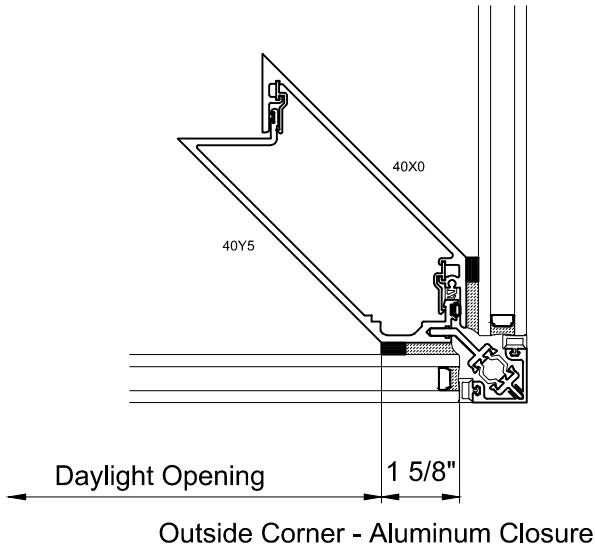
Refer to the details shown below for glass size calculations:



Outside Corner - Gasket Closure  
/ Continuous Silicone Cap



Inside Corner - Gasket / Aluminum Closure



Outside Corner - Aluminum Closure



**Step 1: Starter System:**

- A. Cut all head or sill starters to the horizontal overall frame opening width plus 1".
- B. Starters longer than 24' in length must be spliced using part number S180 silicone splice sheet cut to fit. Allow for a 1/4" minimum sealant joint between starters.
- C. Corners in the starter system should be treated as splice joints and cut to include a minimum of a 1/4" joint for sealant and a silicone patch. See Fig. 2.
- D. The interior drive-on should be cut to the same length as the interior dimension of the head starter.
- E. The slab edge covers should be cut to the desired length. Typically the ends of the slab edge cover line up with the ends of the starter. The standard extrusion length is 290".

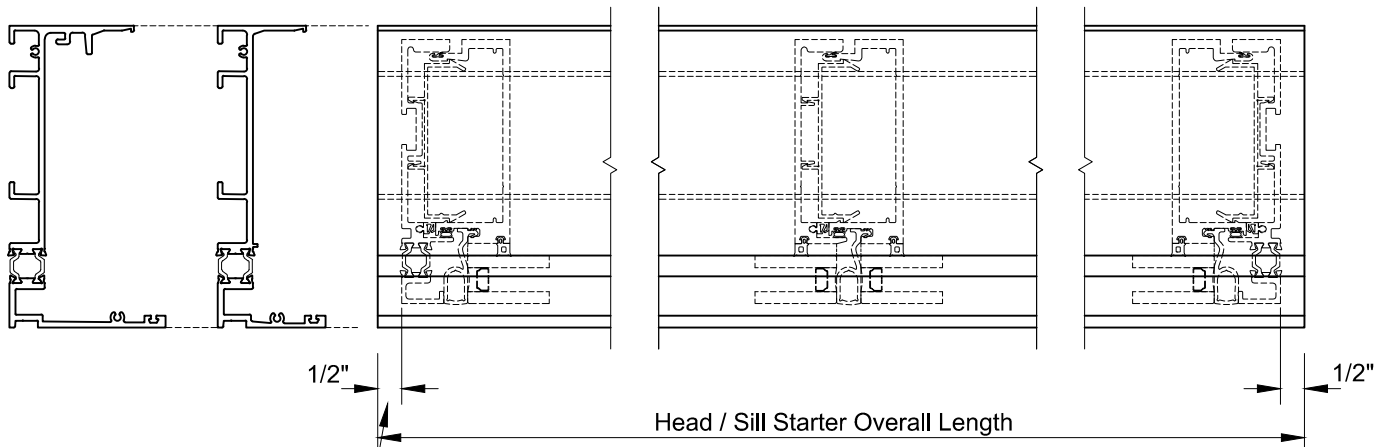


Fig. 1

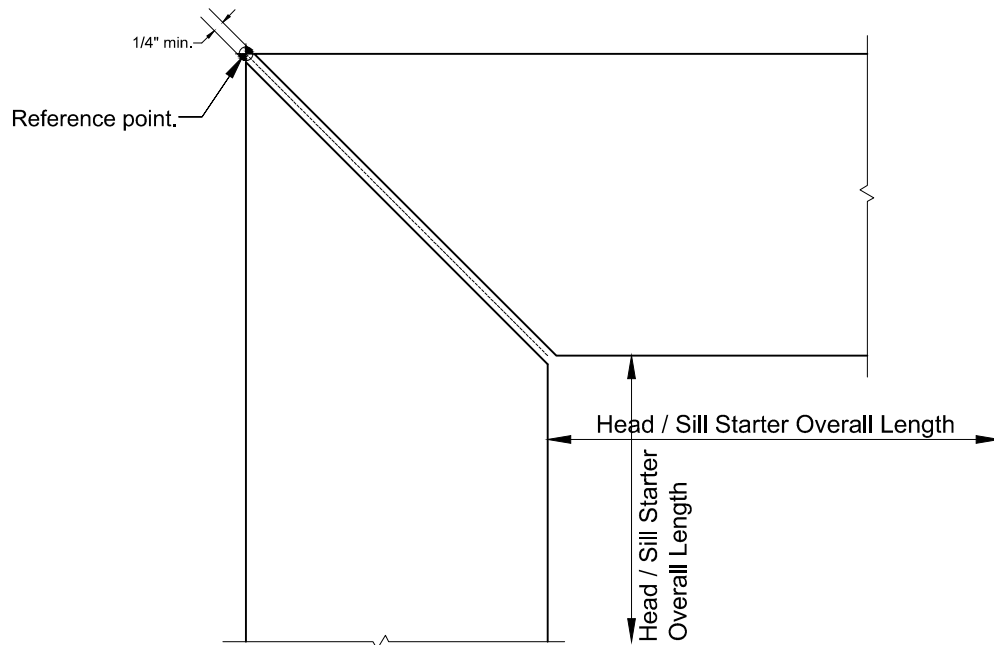
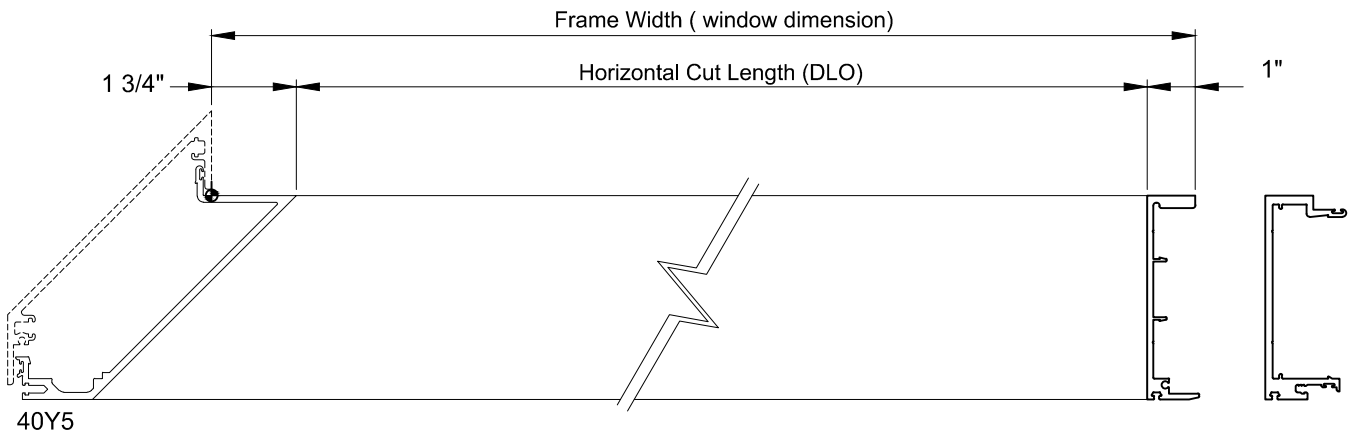
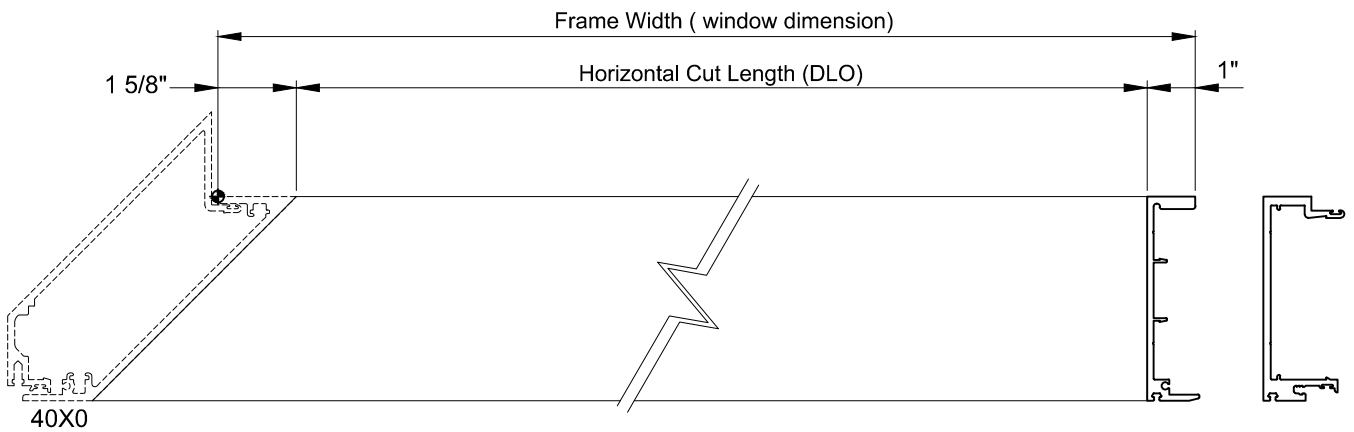
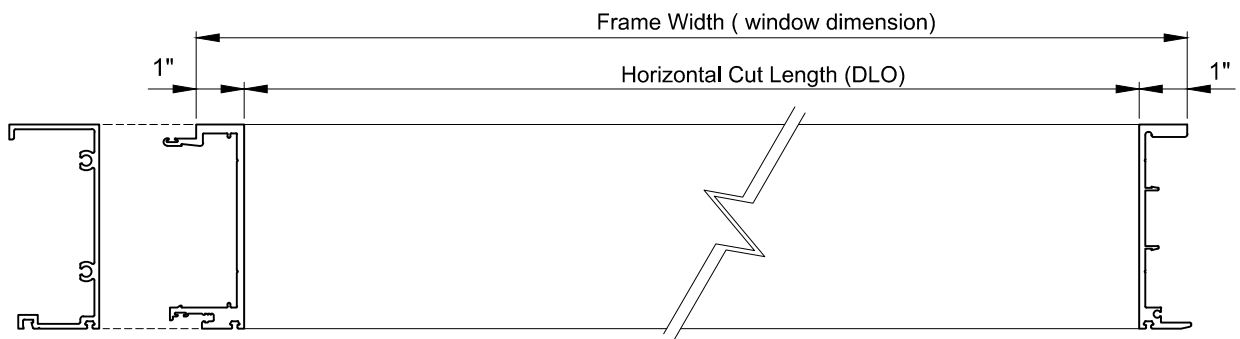


Fig. 2



**Step 2: Frame Members**

- A. All vertical frame members and accessories are cut to the fabricated frame height and run through.
  - B. All horizontal frame members (40Z3,40Y9,FQ78,40U9, and 40V0) are cut based on the figures below.
  - C. The 5J62 setting block chair (used with the 40V0 sill) is cut to the window dimension.
- NOTE: Corner units will require the setting block chair to extend to the vertical edge of the glass.







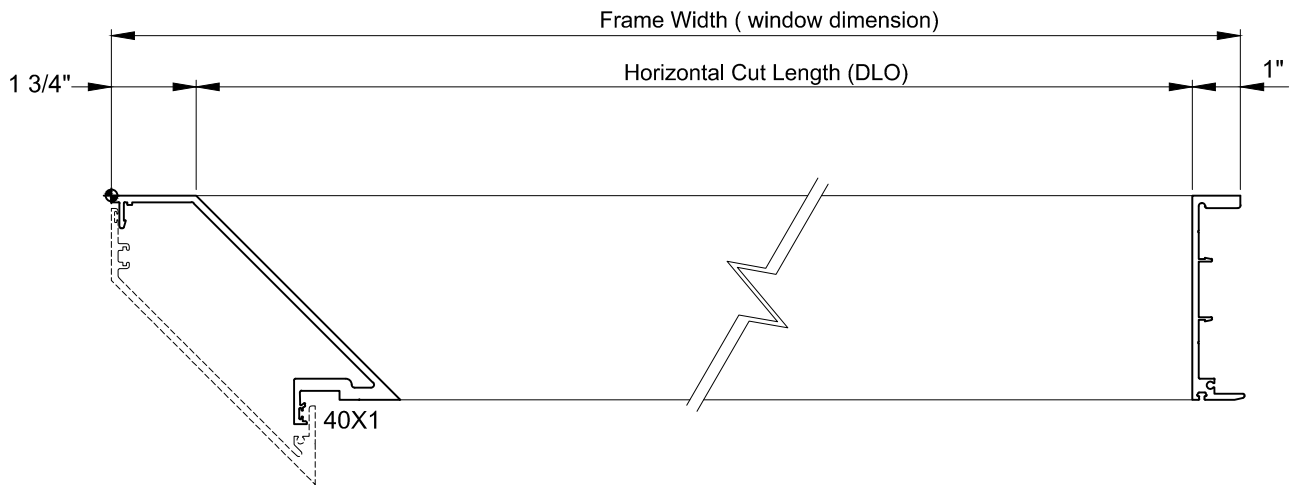
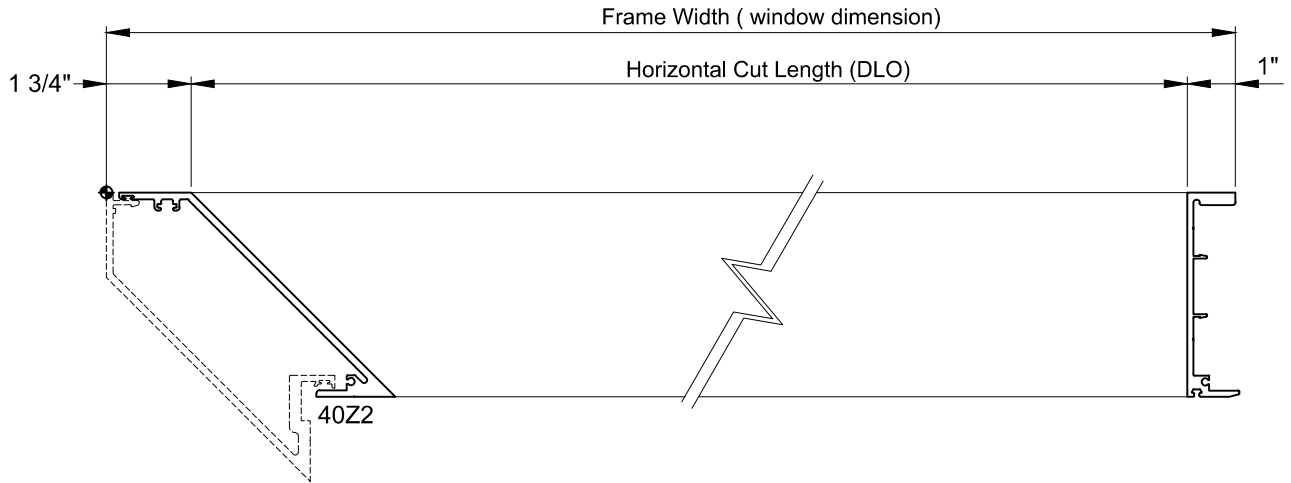
SUBJECT **Fabrication - Cutting**

DRAWN BY: CAP  
ISSUE DATE: 3/1/22

SCALE: 3" = 1'-0"

REVISION By :  
REVISION DATE:

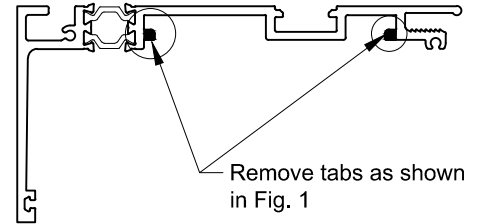
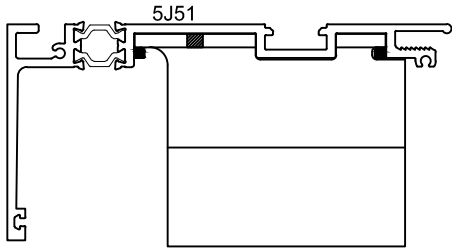
**Step 2: Frame Members (Continued)**  
**Inside Corner Horizontals**



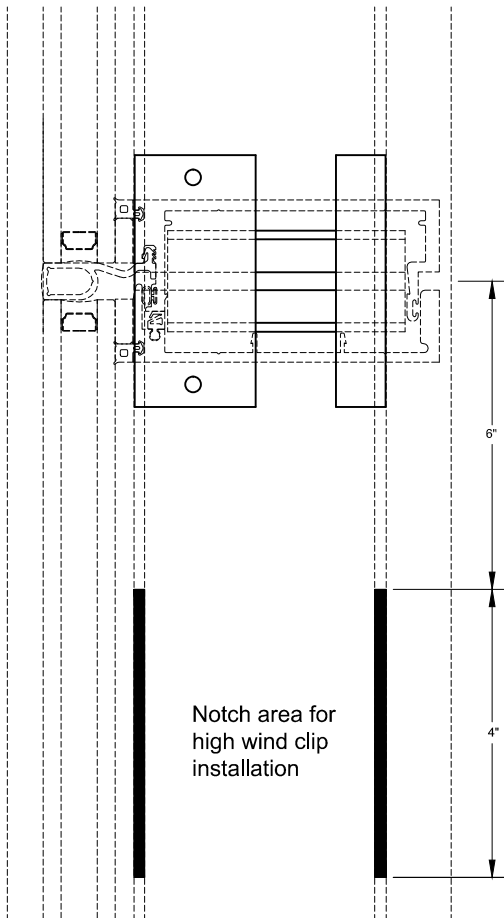


**Step 1: Starter System - Head Starter Prep for FQ67 Wind Load Clip**

- A. FQ67 wind load clip will be required at every intermediate vertical mullion stack.
- B. Fabricator can chose to mill slots 4" from center of each vertical mullion or mill series of slots intermittently and slide wind load clips to position prior to installation of adjacent vertical mullions. See Fig. 1 for slot lengths & Fig. 2 for tabs to be machined.

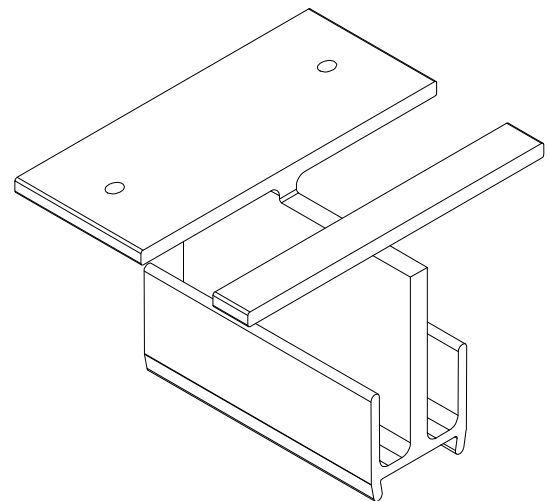
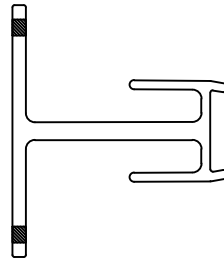


**Fig. 2**



Notch area for high wind clip installation

**Fig. 1**



Profile of wind load clip FQ67

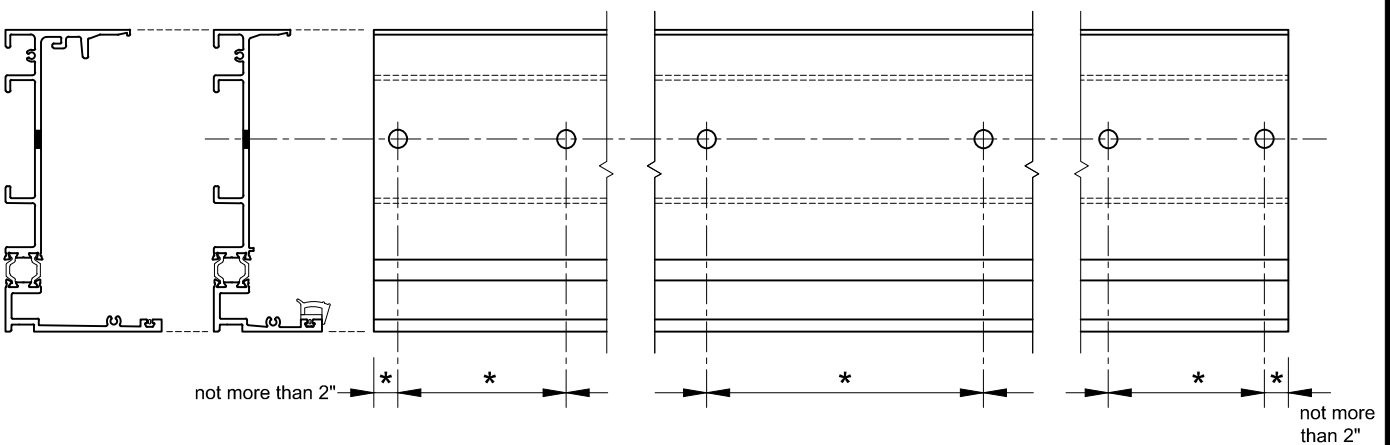


**Step 1: Starter System - Starter Anchor Hole Installation: Head & Sill Starter**

For use with all head/sill starters.

(Through starter anchorage - no strap anchor used)

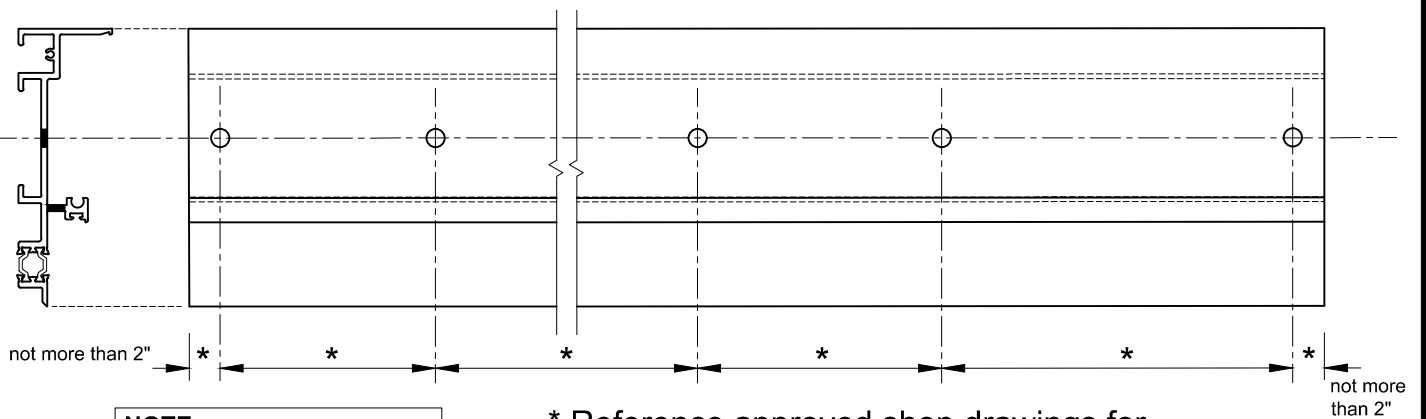
- A. Review the project approved shop drawings / structural engineering requirements for anchor hole size and spacing. The maximum anchor distance from each jamb is 2".
- B. The hole diameter is the anchor diameter plus 1/16".



**NOTE:**  
Additional fasteners may be required on either side of mullion.

\* Reference approved shop drawings for anchor hole sizes, locations and quantity.

**Fig. 1**



**NOTE:**  
Additional fasteners may be required on either side of mullion.

\* Reference approved shop drawings for anchor hole sizes, locations and quantity.

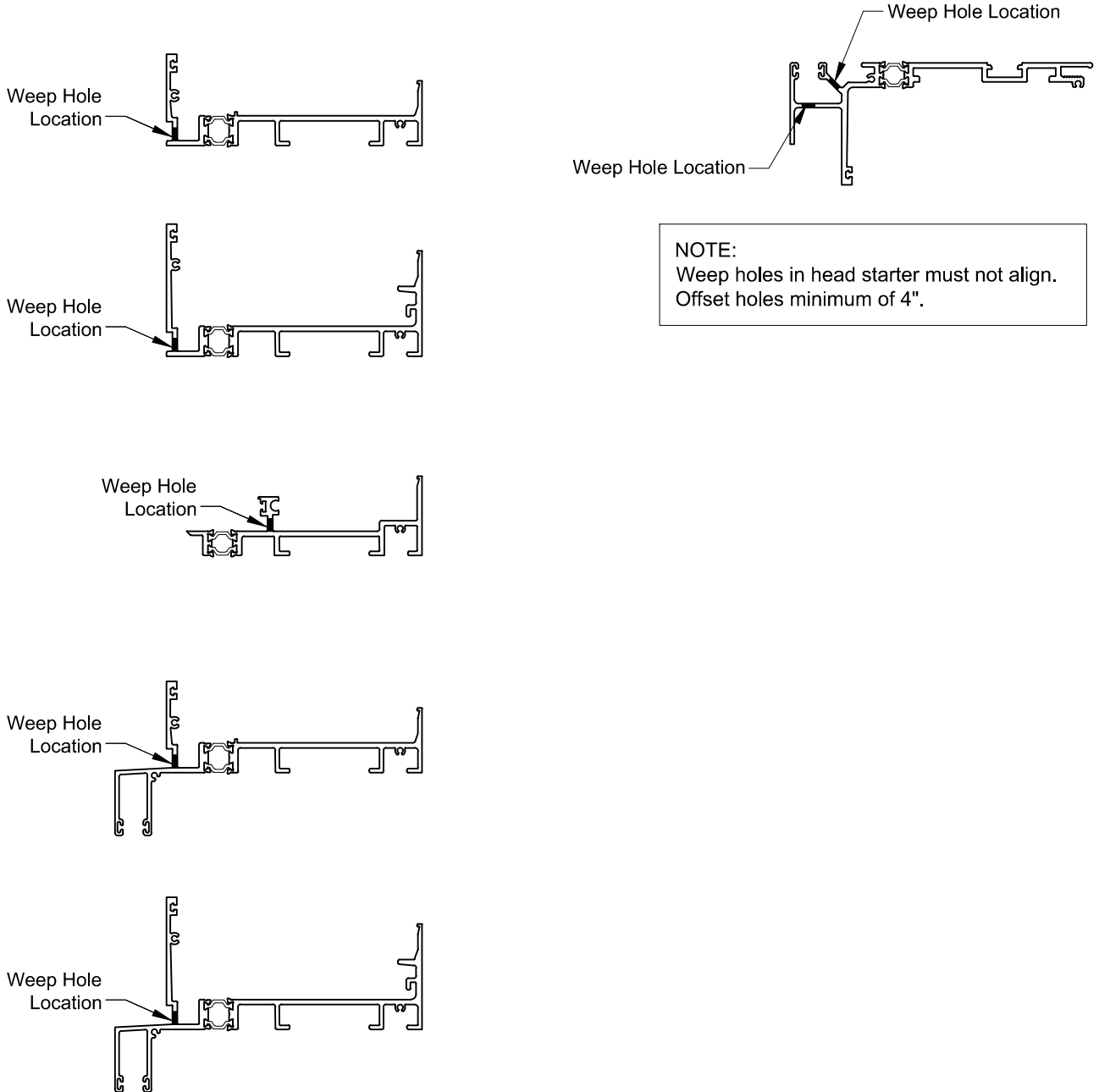
**Fig. 2**



**Step 1: Starter System - Drill Weep Holes into Sill Starter:**

- A. Drill 5/16" diameter weep holes a maximum of 60" o/c along length of head / sill starters with the last weep within 6" of end of each jamb. See Fig. 1 & Fig. 2 for weep hole locations in all head/sill starters.

(Typical location is 3" off of the centerline of vertical stacks)



**NOTE:**  
Weep holes in head starter must not align.  
Offset holes minimum of 4".



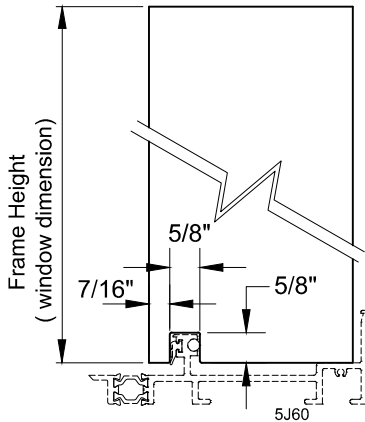
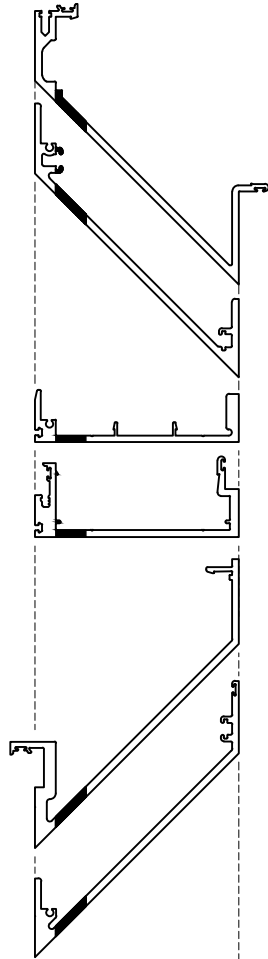
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ISSUE DATE: 3/1/22

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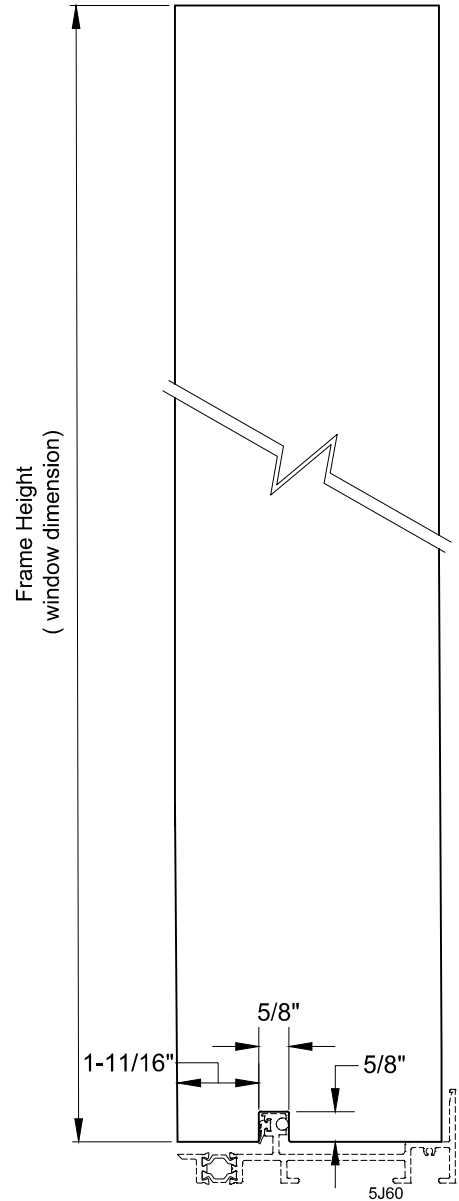
REVISION By :  
REVISION DATE:

**Step 2: Frame Members - Vertical Frame Sill Cope - Required with Sill Starters: 5J60, 5J61 & 5J59.**

Vertical Mullion/Corner



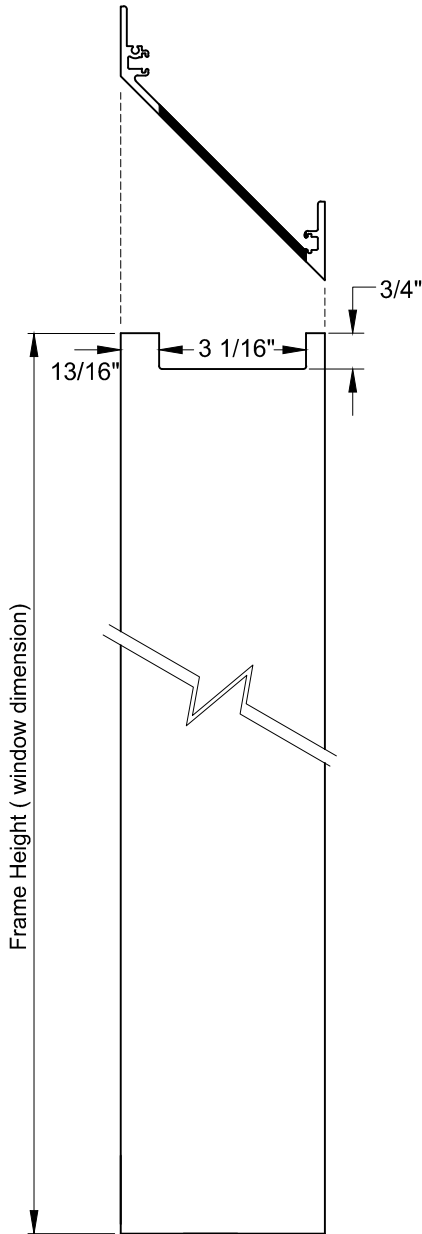
5J63  
Jamb Starter  
(use with 40V5)



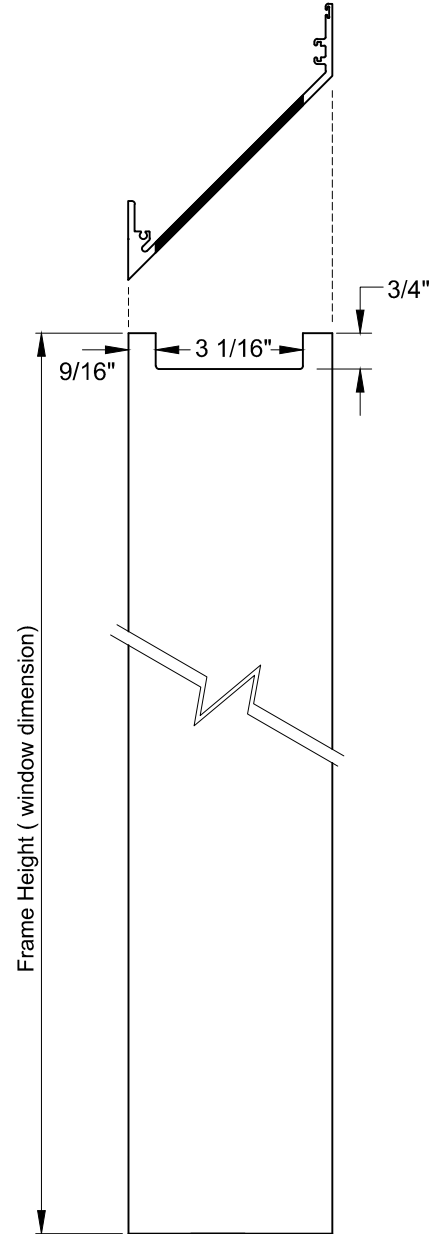


**Step 2: Frame Members - Vertical Frame Corner Head Copes (Only if Needed for Vertical Movements)**

40X0  
Vertical Outside  
Corner Mullion  
(female)



40Z2  
Vertical Inside  
Corner Mullion  
(female)





### Step 2: Frame Members - Assembly and Weep Holes in Vertical Framing Members

In screw-spline assembly, screws are driven through holes in the vertical members directly into screw spline on the horizontal members. These screws are what support the horizontal members and the glass. The drawings in this section show where to drill the holes in the vertical members so that they line up with the screw spline on the horizontals.

- A. The fastener used for screw-spline assembly is EfcO's part number TS08. To accommodate this type of fastener, the fastener holes in the vertical framing members must be 0.281" in diameter.
  - 1) Weep holes should be 0.281" in diameter
- B. The corner mullions require 0.281" x 0.526" slots to be milled 15 degrees from perpendicular for the assembly fasteners as shown in Fig. 2 and 3 on the next page.
- C. Hole/slot locations and patterns can be found in Fig. 1 thru Fig. 3 on the following pages.

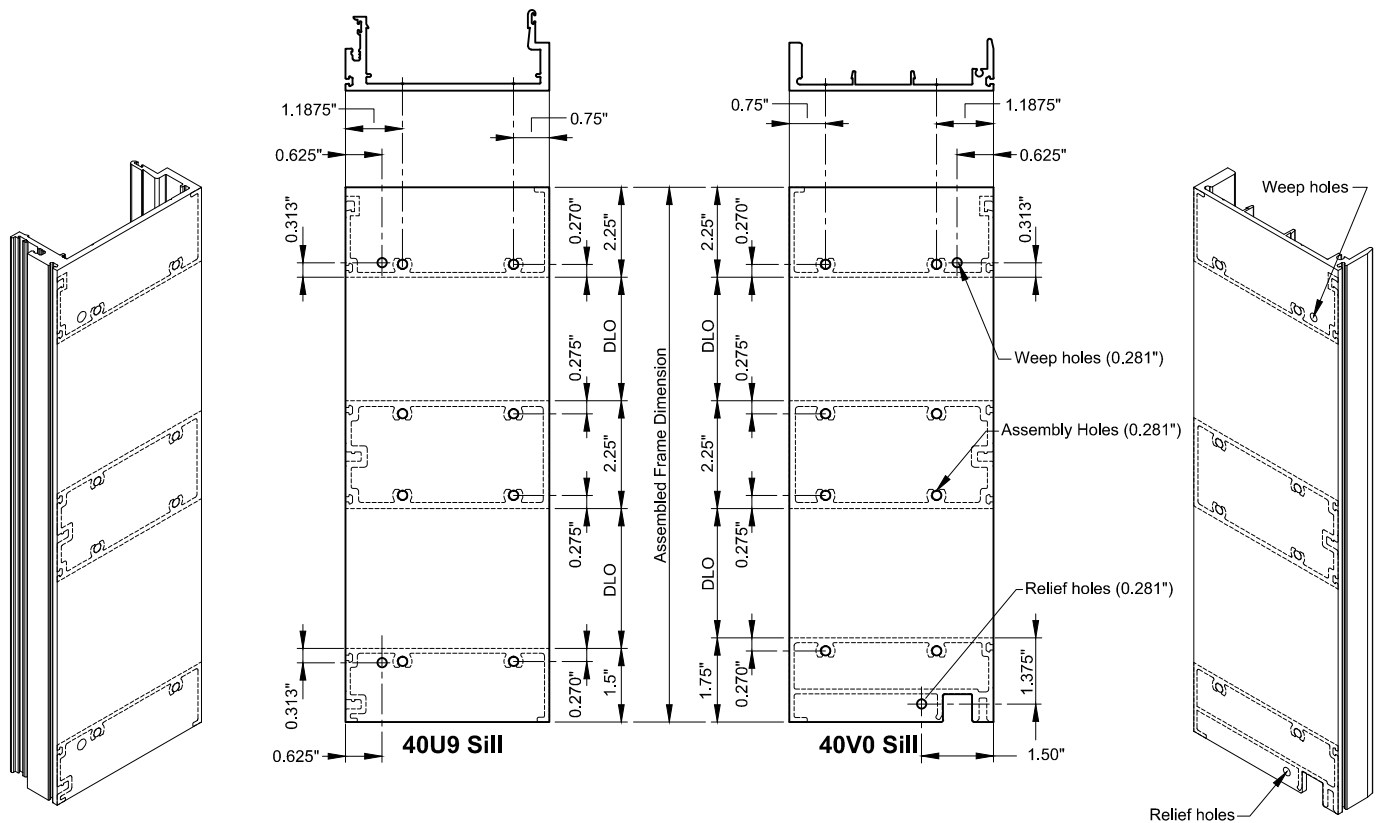
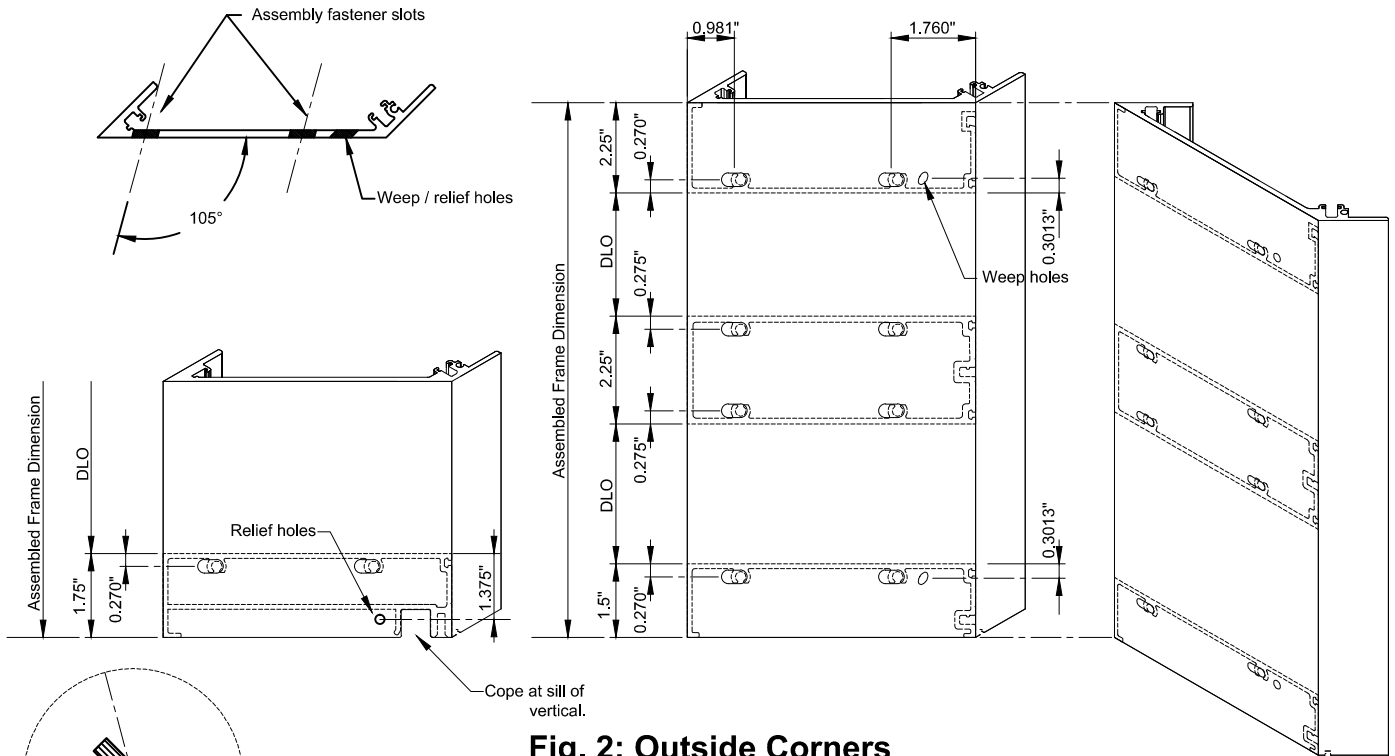


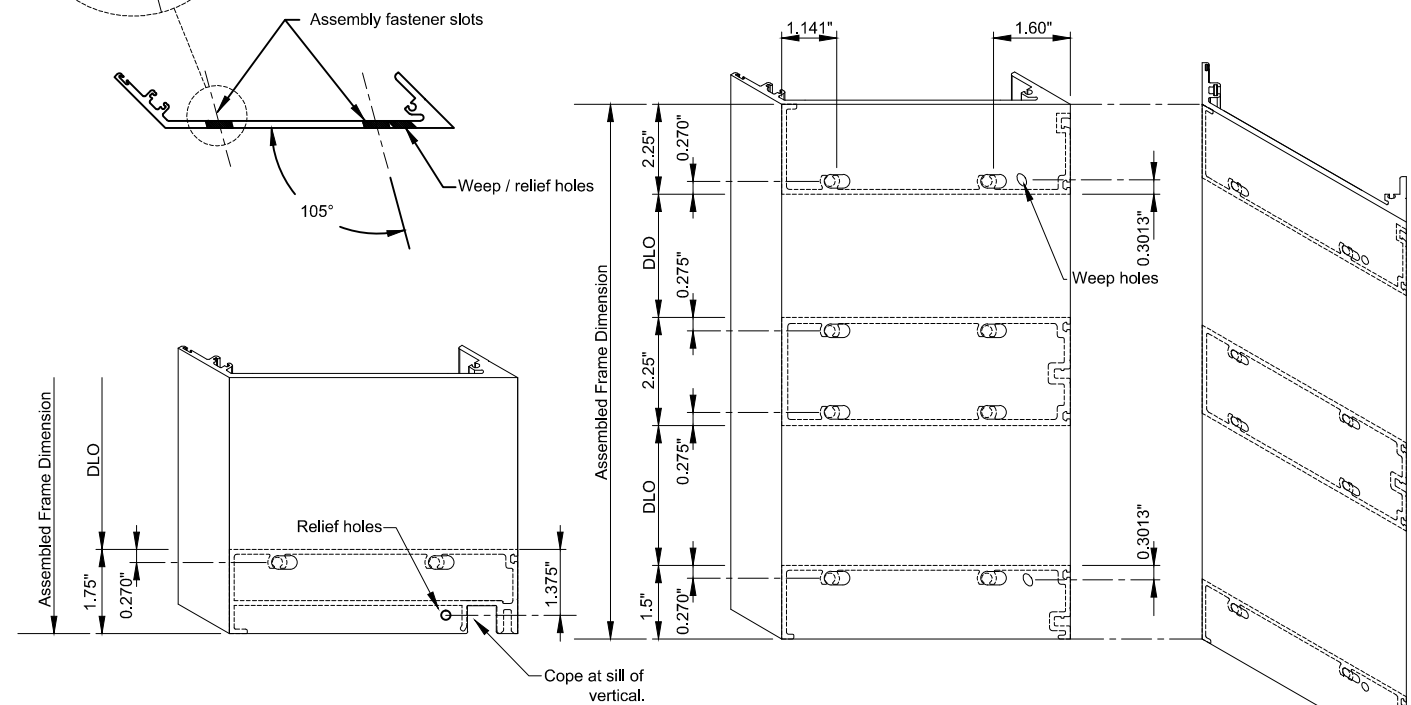
Fig. 1: Typical Mullions



**Step 2: Frame Members - Assembly and Weep Holes in Vertical Framing Members - Continued**



**Fig. 2: Outside Corners**



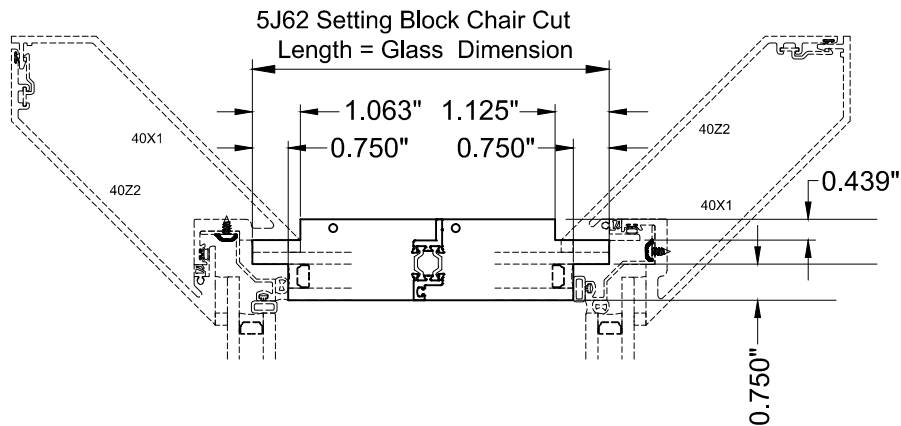
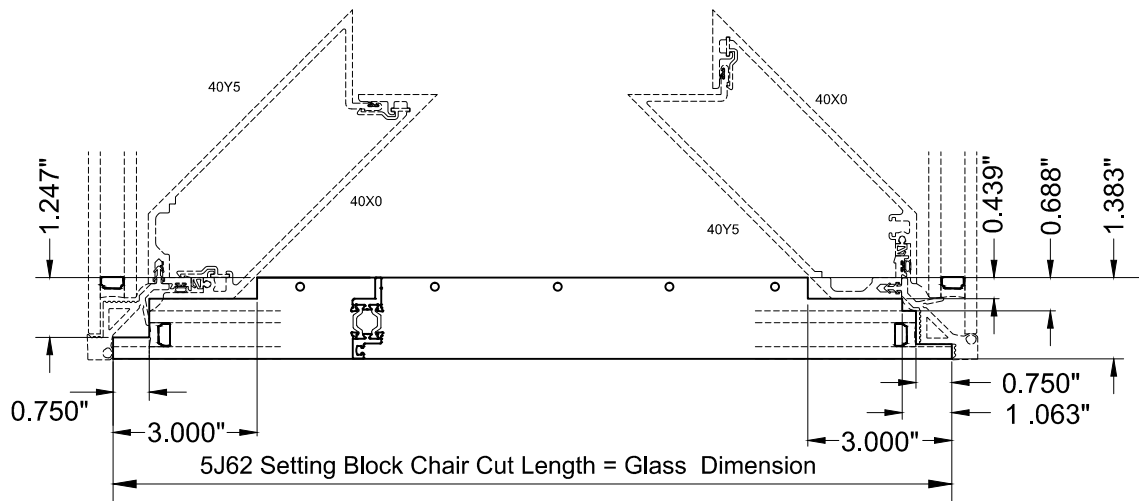
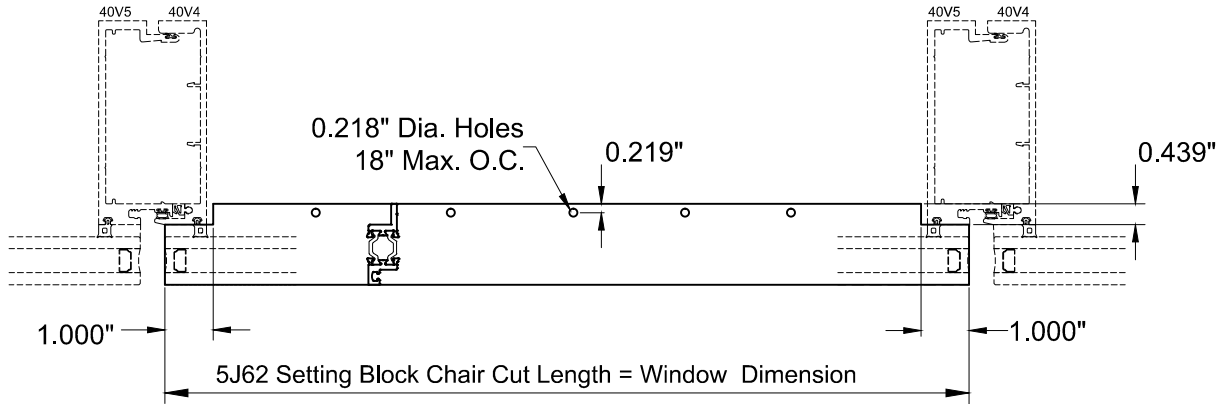
**Fig. 3: Inside Corners**





**Step 2: Frame Members - 5J62 Setting Block Chair**

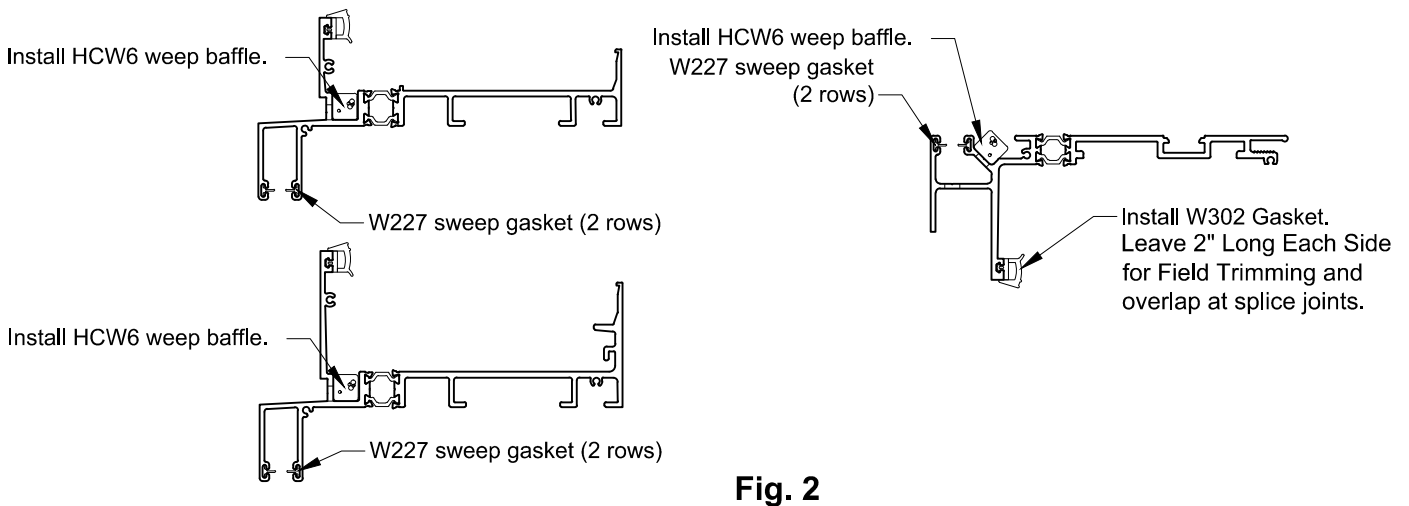
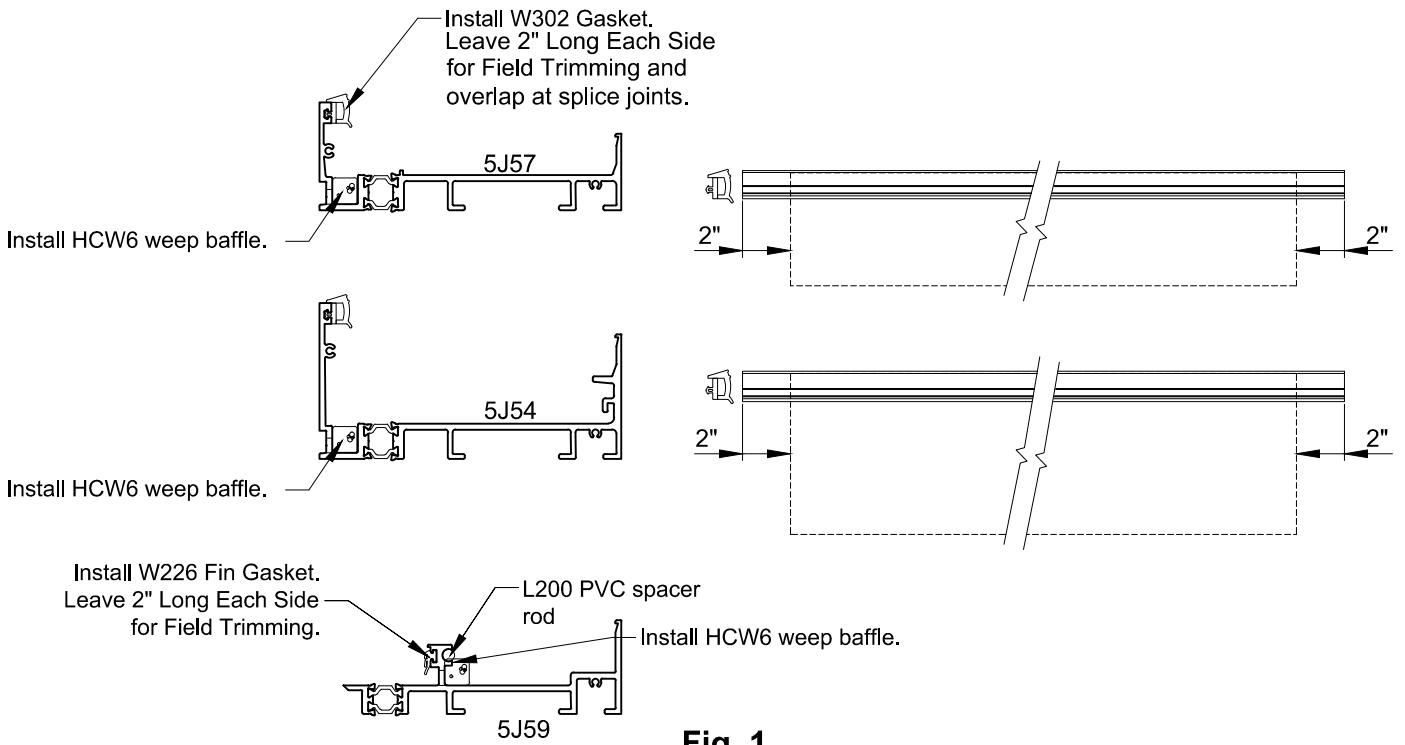
- A. The 5J62 setting block chair is used when using the 40U9 sill.
- B. Notch as shown below for the different vertical framing members.
- C. 0.218" holes should be drilled 18" maximum on center for attachment to the sill as shown.





**Step 1: Starter System - Gasket/Weep Installation:**

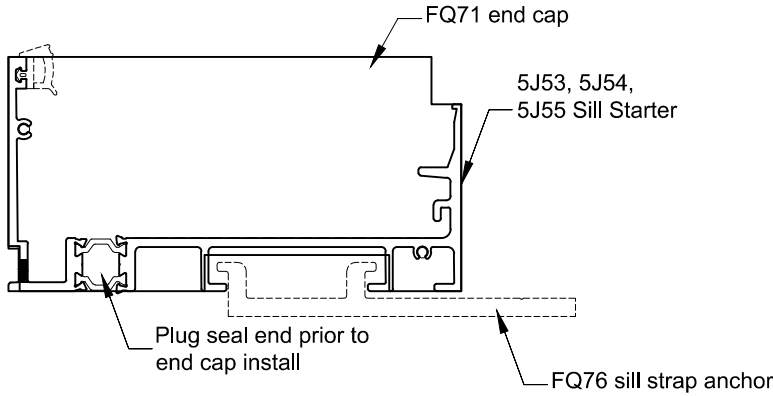
- A. Install co-extruded bulb gasket (W302) in the starters as shown in Fig. 1 & Fig. 2 leaving a minimum of 2" long on each end for field trimming and overlap at splice joints.
- B. Install sweep gasket (W227) in the slab edge head/sill starters where required. See Fig. 2.
- C. Install PVC rod (L200) and fin gasket (W226) in the sill starters 5J60, 5J61, 5J59. Leave the W226 gasket a minimum of 2" long on each end for field trimming.
- D. Remove all debris from in and around each weep hole, clean the area, dab apply silicone and install the HCW6 weep baffle making sure sealant does not block weep hole. See Fig. 1 & Fig. 2.



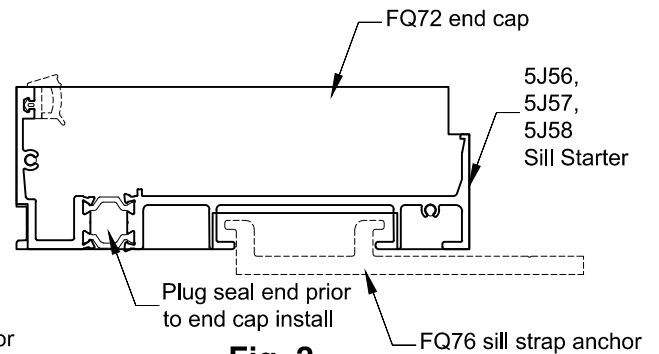


**Step 2: Starter System - Sill Starter End Cap Installation**

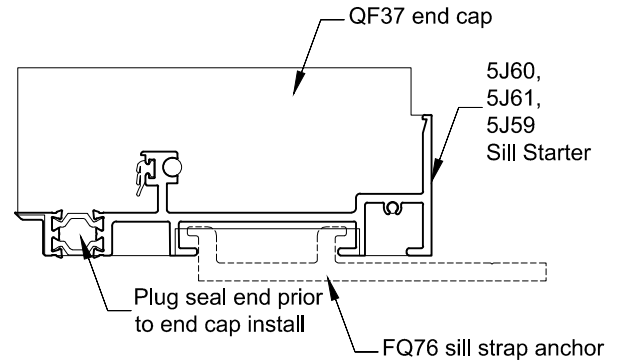
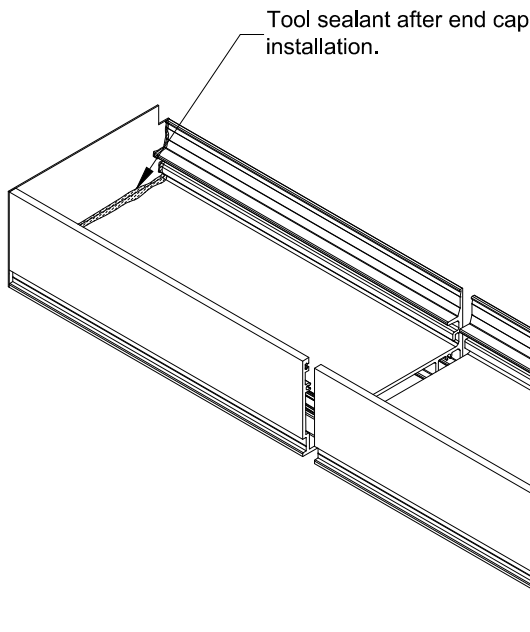
- A. Clean all surfaces that will come in contact with sealant using an alcohol two cloth wipe method.
- B. Plug seal the ends of the thermal breaks in the starters.
- B. Butter sealant on the ends of the starters that will receive the end caps.
- C. Install the end caps on the sill starter. Secure with TS03 fasteners and tool sealant on the inside of the end caps. See Fig. 4.
- E. End caps can also be installed after the head/sill starter. Clean surfaces with an alcohol two cloth wipe, apply silicone and press the end cap into place. Tool silicone after installing the end cap. See Fig. 4.



**Fig. 1**

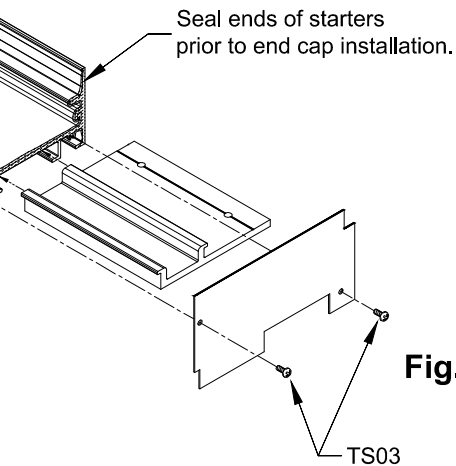


**Fig. 2**



**Fig. 3**

Note: If using FQ76 strap anchor make sure strap anchor can be installed with end caps in place, or install prior to end cap installation.



**Fig. 4**

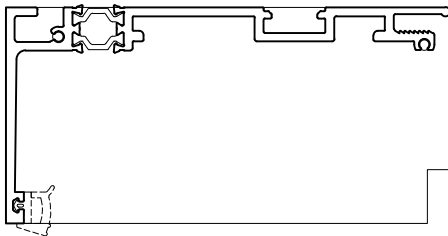


**Step 2: Starter System - Head Starter End Cap Installation**

- A. Clean all surfaces that will come in contact with sealant using an alcohol two cloth wipe method.
- B. Plug seal the ends of the thermal break in the starters.
- C. Butter sealant on the ends of the starters that will receive the end caps.
- D. Install end cap FQ71 on the head starter. Secure with TS03 fasteners and tool sealant on the inside of the end caps. See Fig. 1.
- E. Head starter end caps can also be installed after starter installation. Clean the end cap with an alcohol two cloth wipe, apply silicone and press it into place. Tool silicone after installation. See Fig. 2.

\* Reference approved shop drawings for anchor hole sizes and anchor locations.

Note: If using FQ68 strap anchor make sure strap anchor can be installed with end caps in place, or install prior to end cap installation.



FQ71

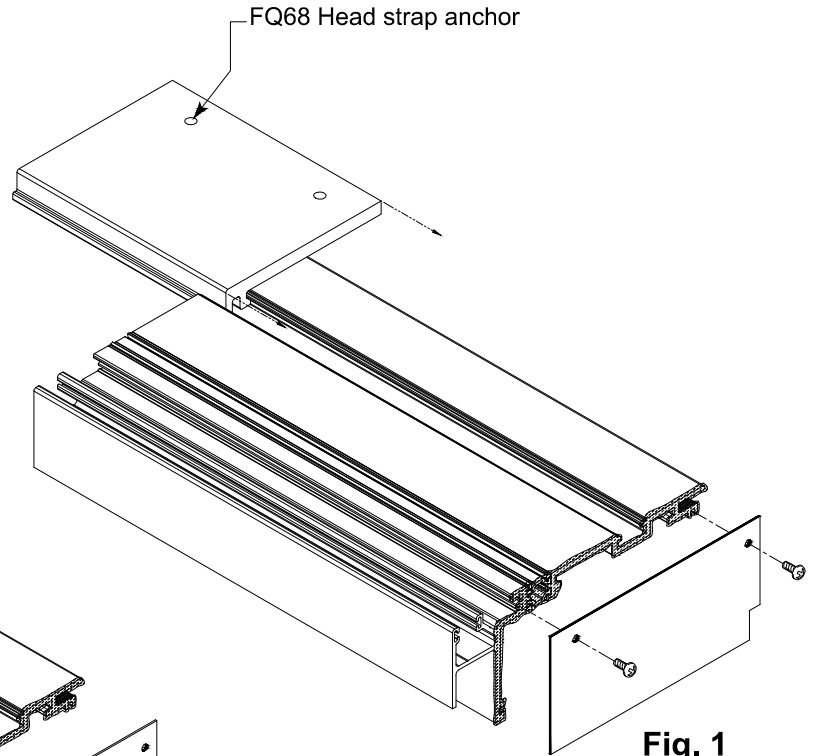


Fig. 1

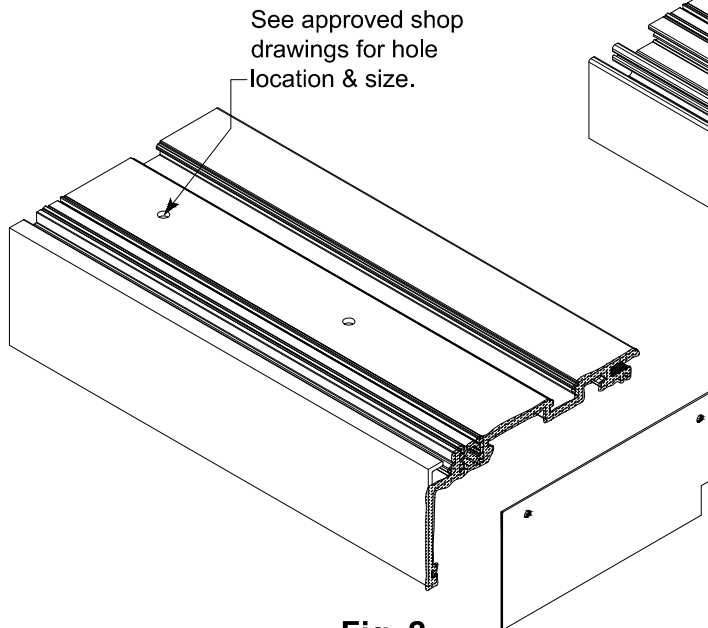
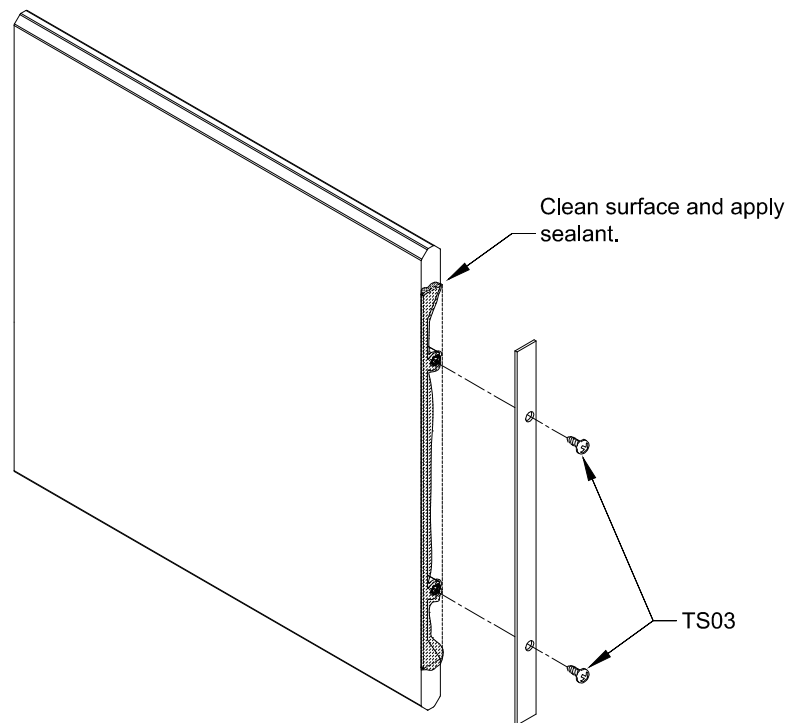


Fig. 2



**Step 2: Starter System - Slab Edge End Cap Installation**

- A. Clean all surfaces to will come in contact with sealant using an alcohol two cloth wipe.
- B. Place sealant on the ends of the slab edge covers that will receive the end caps.
- C. Attach the slab edge cover end caps using TS03 fastener. See Fig. 1.
- D. Tool the silicone on the inside of the end cap after installation.

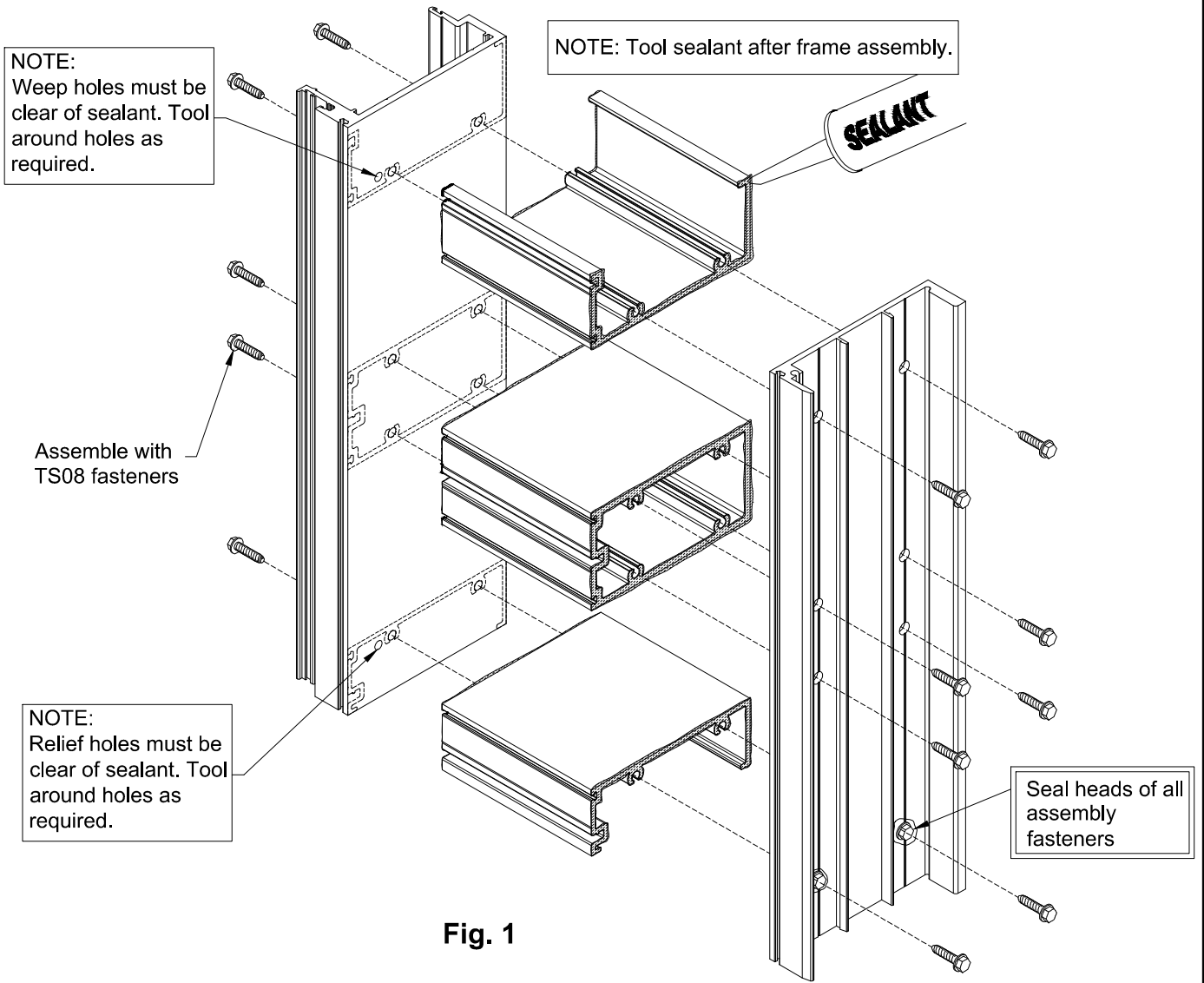


**Fig. 1**



### Step 3: Unit Frame - Assembly

- A. Lay out the verticals and horizontals for the correct assembly of the bay.
- B. Clean the mating surfaces on the horizontals and verticals using an alcohol two cloth wipe.
  - 1) If sealant comes in contact with polyamide material, use primer "C".
- C. Apply sealant to the ends of the horizontals prior to attaching to the verticals.
- D. Assemble the horizontals to the verticals using EfcO part number TS08.
- E. Tool the sealant making sure the weep holes and relief holes are clear of sealant.
- F. When using Anti-Buckling Clips, insert at intervals recommended by EfcO in the approved shop drawings.
- G. Clean all fastener heads and the area around the fastener. Seal the heads of all assembly fasteners.



**Fig. 1**

The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.



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ISSUE DATE: 3/1/22

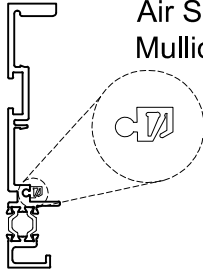
SCALE: 3" = 1'-0"

REVISION By :  
REVISION DATE:

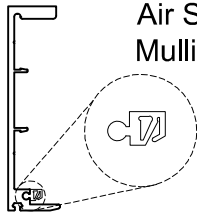
**Step 4: Unit Frame - Gasket Installation - Vertical Framing Members**

**Note: Leave a minimum of 1" of gasket overhanging on each side of the unit. This is to allow for shrinkage. Cut to length before unit installation.**

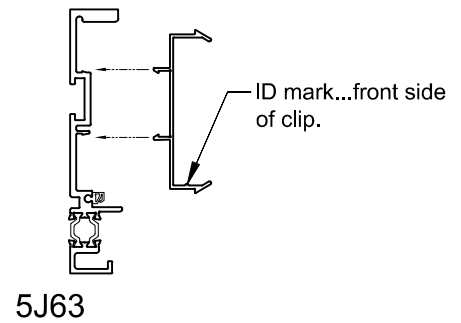
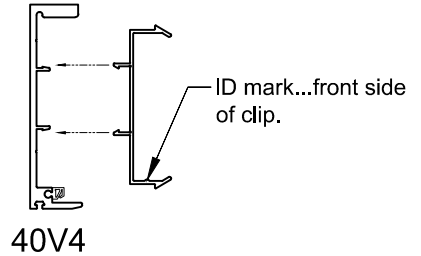
5J63  
W228  
Air Seal Gasket Vertical  
Mullions - Black Silicone



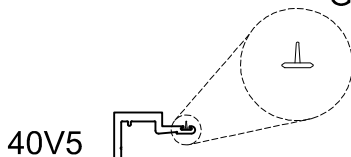
40V4  
W228  
Air Seal Gasket Vertical  
Mullions - Black Silicone



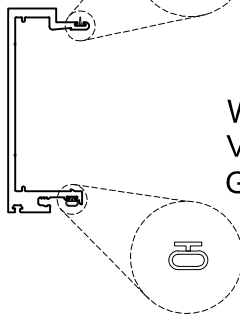
Anti-buckling Clip FQ66  
See approved shop drawings  
for locations.



W214  
Vertical Stack Mullion Fin  
Gasket - use with 40V5

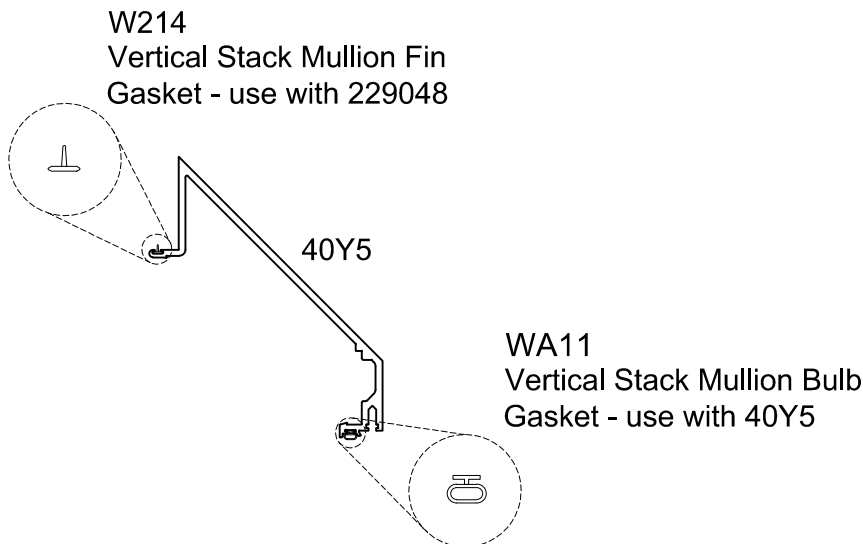
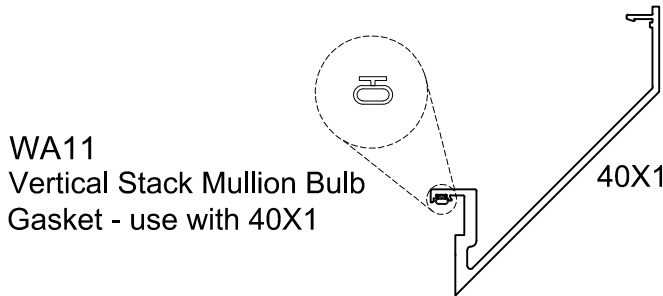
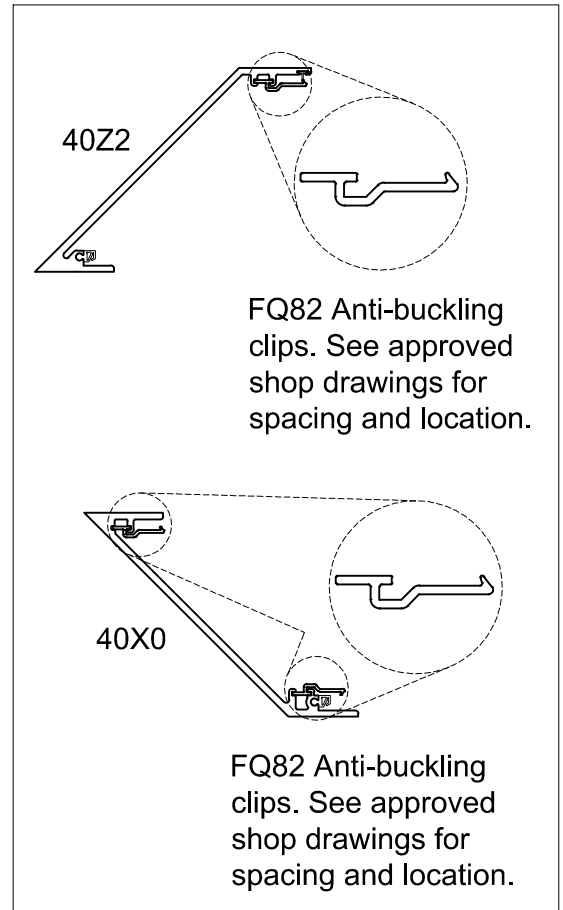
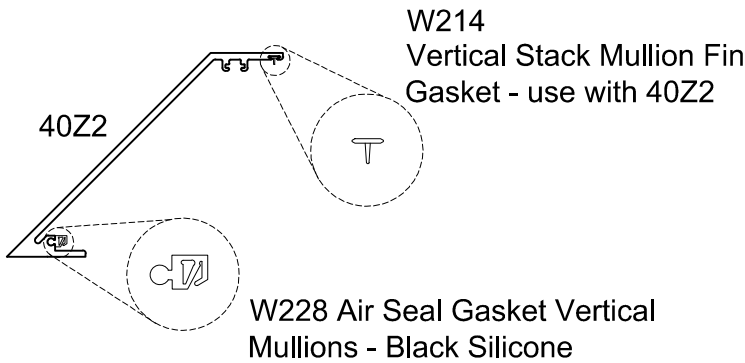


WA11  
Vertical Stack Mullion Bulb  
Gasket - use with 40V5





**Step 4: Unit Frame - Gasket Installation - Vertical Framing Members - Corners**



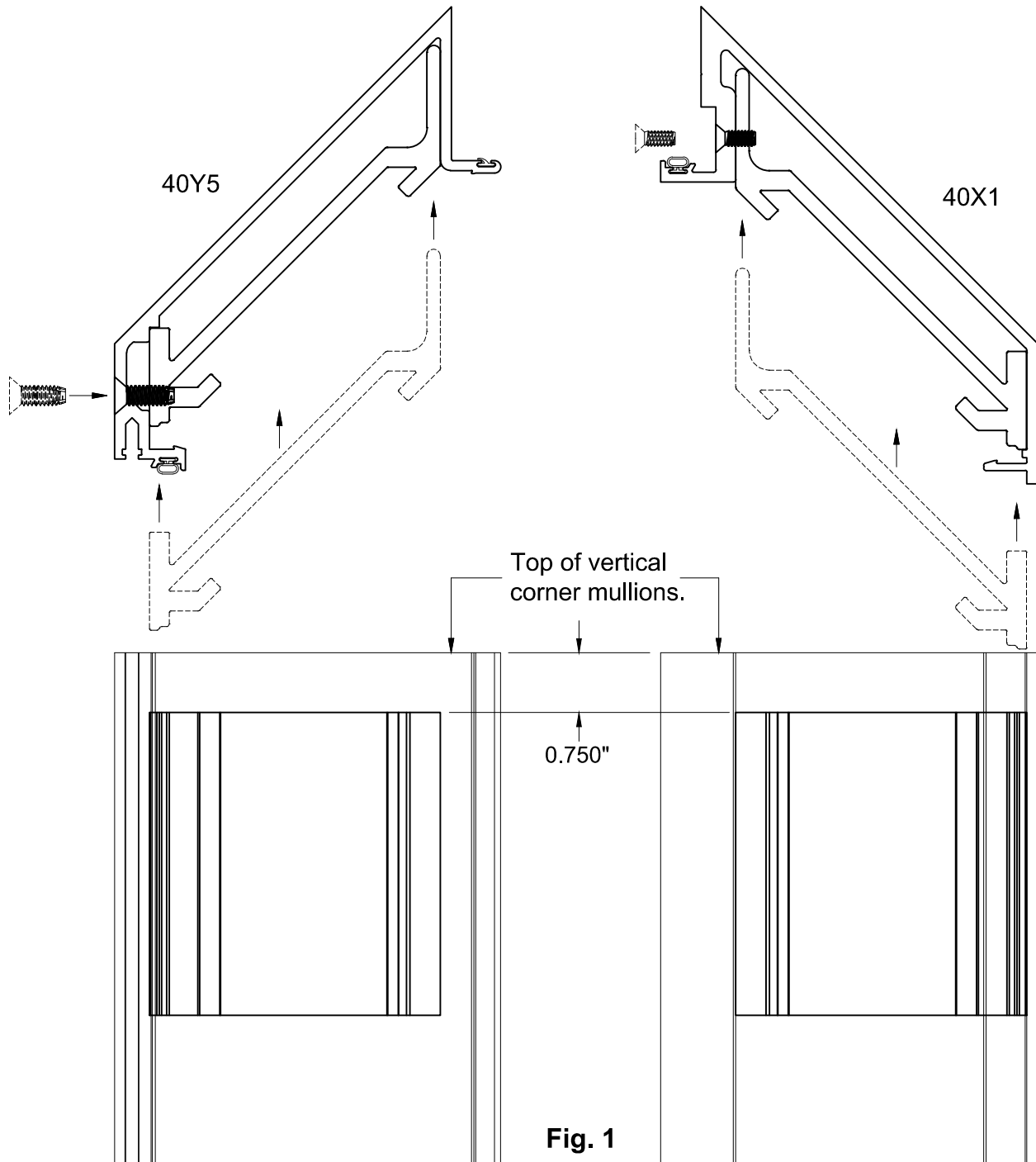




**Step 5: Unit Frame - Outside / Inside Corner Wind Load Anchor Receiver**

**NOTE: The wind load anchor receiver is to be installed prior to glass installation.**

- A. Locate and cut the wind load anchor receiver extrusion 40U4 to length. (refer to approved shop drawings for 40U4 cut length)
- B. Install 40U4 (orientated as shown) into the vertical mullion frame (40X1 and /or 40Y5).
- C. Install the anchor receiver  $\frac{3}{4}$ " below the top of the vertical mullion as shown in Fig. 1.
- D. Secure 40U4 with fasteners through face of glazing surface. NOTE: Use a flat head fastener.

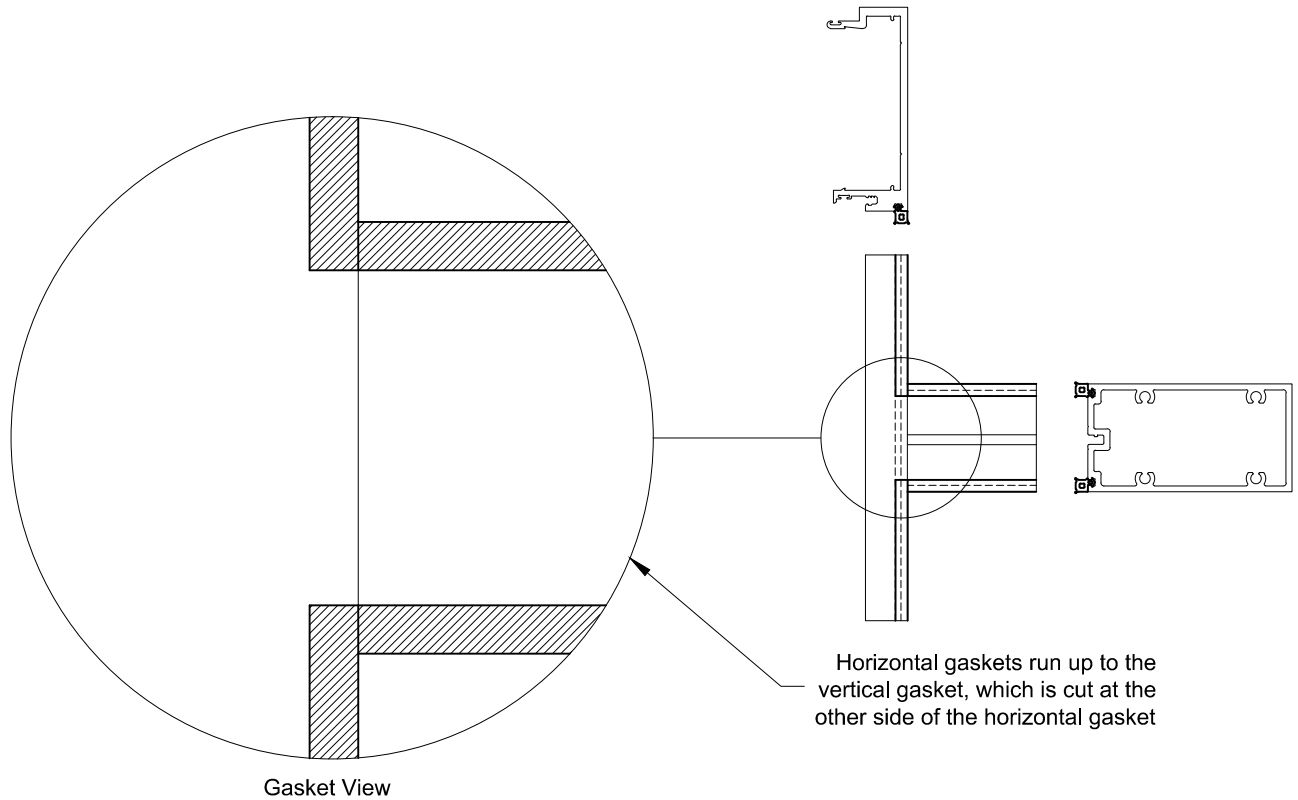
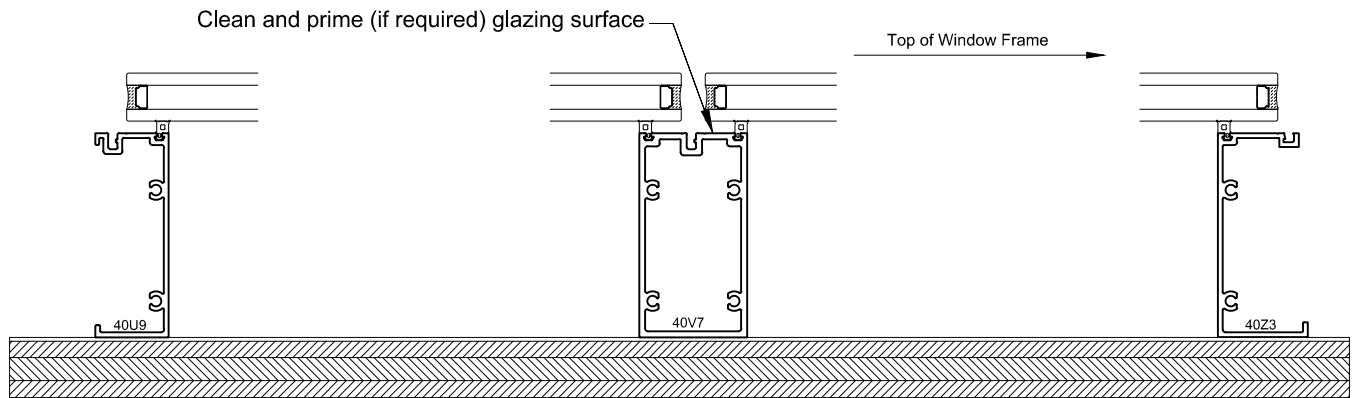




### Step 1: Glazing Preparation

- A. Lay the assembled frame on glazing table, square frame as needed.
- B. Using an alcohol two cloth wipe process, clean all surfaces that will come into contact with glazing materials.  
NOTE: Prime surfaces per sealant manufacturers' recommendations.
- C. Install the glazing spacer gasket (W303) extending the vertical gasket past the horizontal gasket.
- D. Using an alcohol two cloth wipe process clean all glass surfaces that will come into contact with the spacer gasket and structural silicone.
- E. Set the glass in the correct position on the frame.

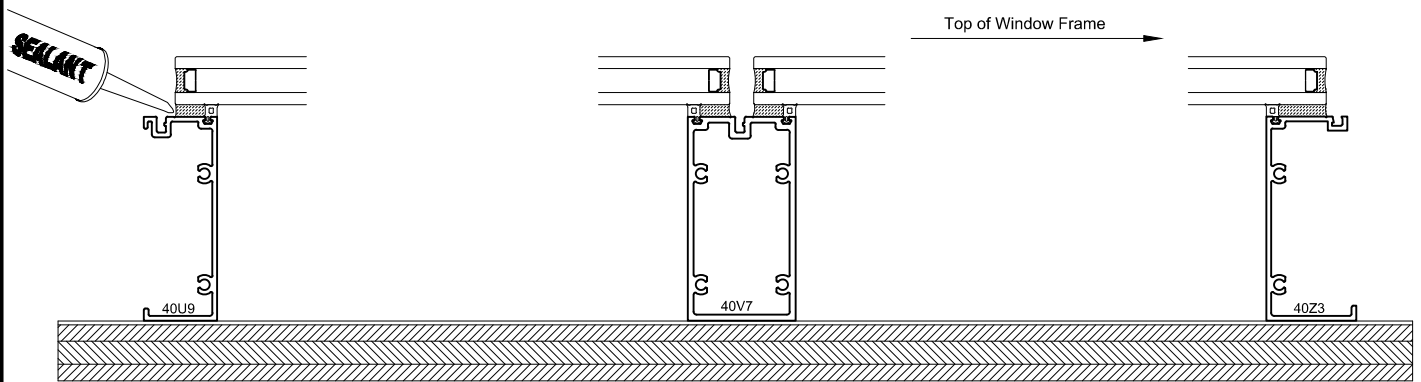
**IT IS CRITICAL FRAMES ARE HELD SQUARE PRIOR TO GLASS INSTALLATION**



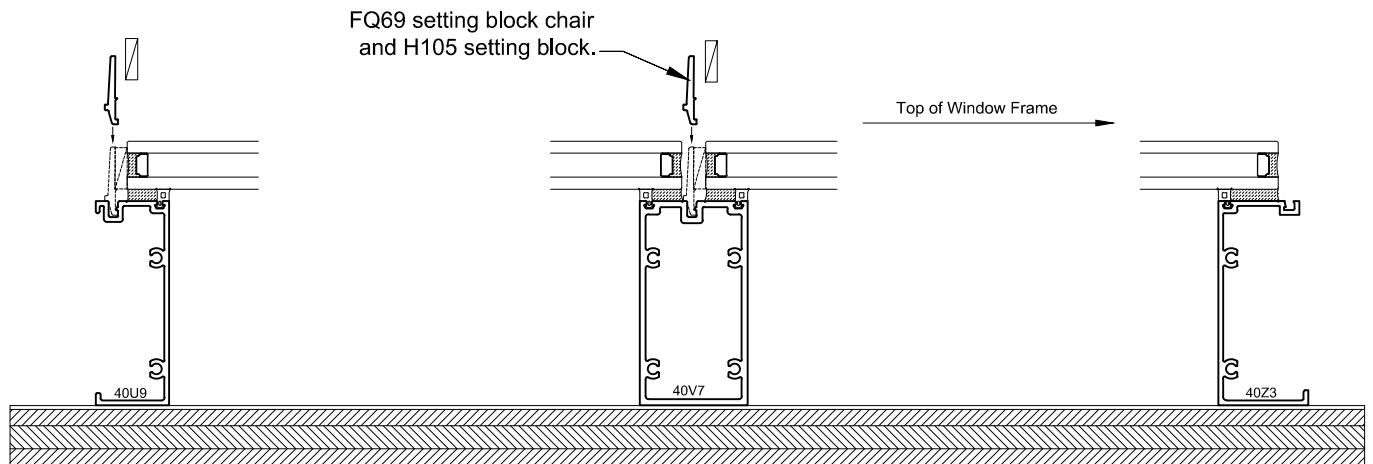


**Step 2: Glazing**

- F. Fill the cavity at the perimeter of the glass with a high grade structural silicone. See Fig. 1.
- G. Tool the silicone at the perimeter of the glass, eliminating all air pockets and assuring the glazing pocket is completely filled.
- H. Install the FQ69 setting chair and the H105 setting block at quarter points under glass sill.



**Fig. 1**



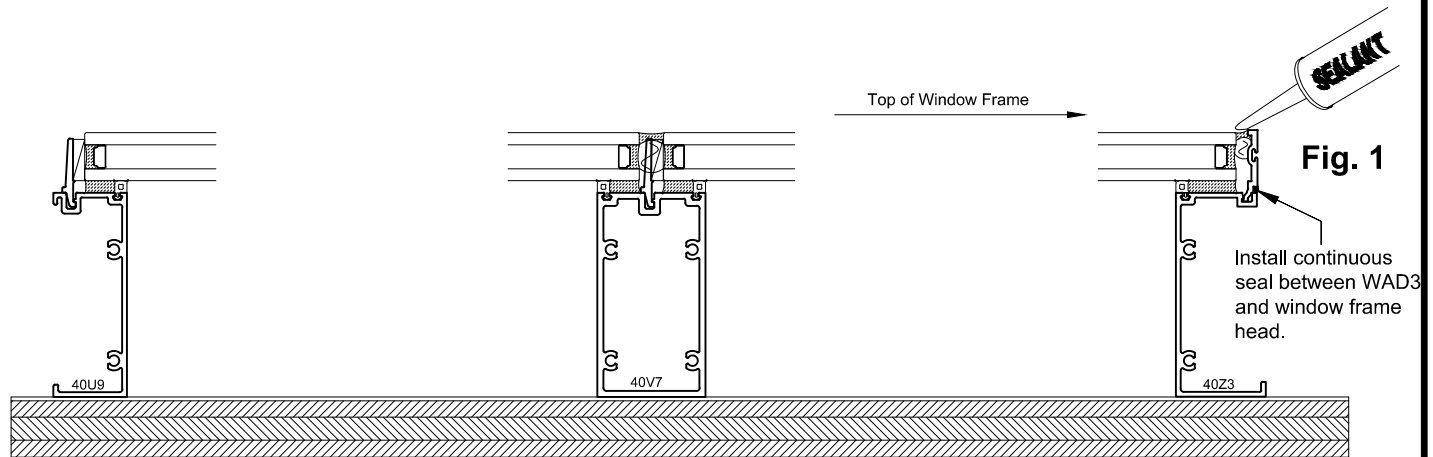
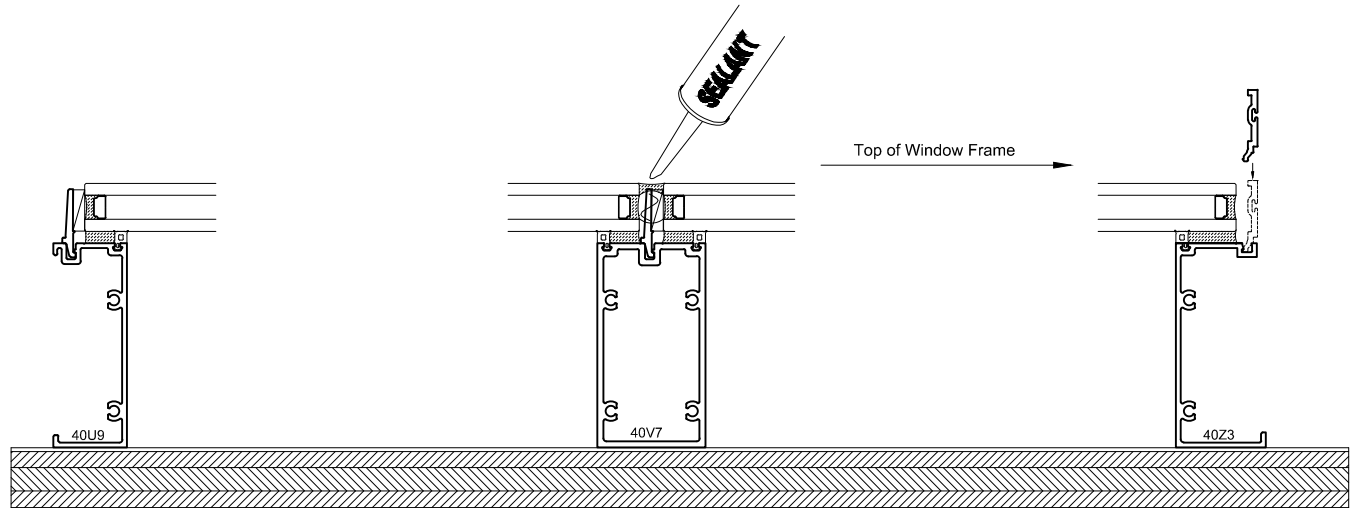
**Fig. 2**

Note: Glazing contractor is responsible for selection and proper installation of silicone for glass to frame attachment / glazing. Follow manufacturer's recommendations for application...environmental conditions, curing time and handling.



### Step 3: Glazing - Weather Seals

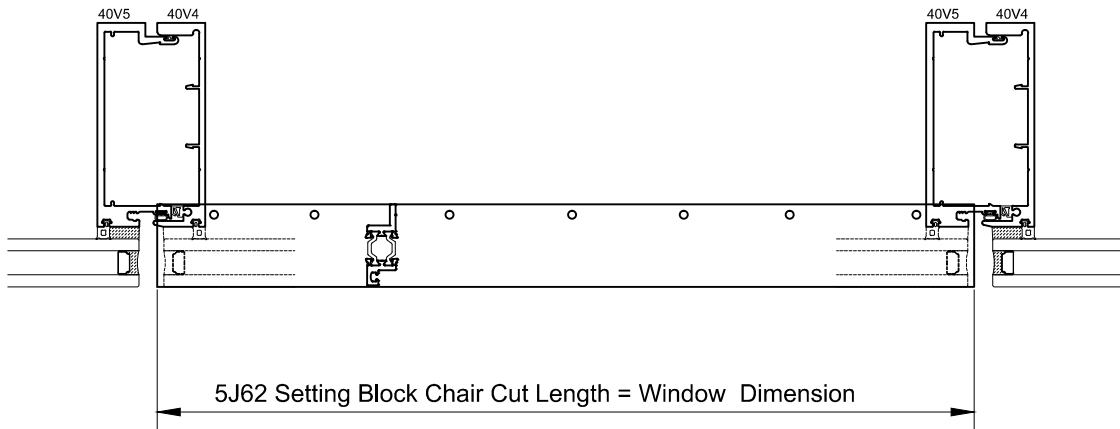
- I. Install backer rod and sealant at all of the intermediate horizontal "glass to glass" joints.
- J. Continue the horizontal seals, sealing the ends of the "glass to glass" joints.
- K. Install the WAD3 glass edge protector, install backer rod and seal in between the glass and WAD3.
  - 1) Using primer "C", prime any polyamide material (WAD3) that will come in contact with sealant.
- L. Do not move the unit until the sealant has at least cured to a green strength. Follow the sealant manufacturer's recommendations.
- M. Seal the joint between the WAD3 and the unit frame head. See Fig. 1.





**Step 4: Assembly after Glazing - Instructions for 40V0 Sill**

- A. Install the gasket W301 to 5J62 leaving it long 1" on each end for field trimming at installation. See Fig. 2.
- C. Install the 5J62 setting block chair using TS01 fasteners 18" on center. See Fig. 3.
- D. Install the H105 setting block at quarter points of the glass lite.
- E. Install backer rod and a continuous seal across the void between the glass and 5J62. Return the seal around the ends of the glass lite. See Fig. 4.

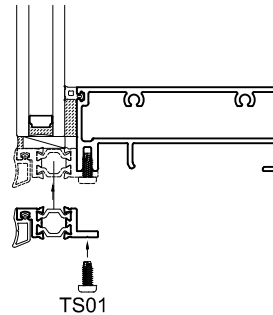


**Fig. 1**

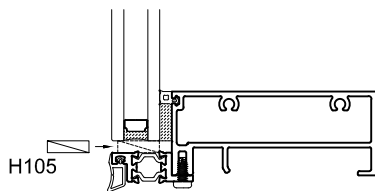


5J62 setting block chair  
W301

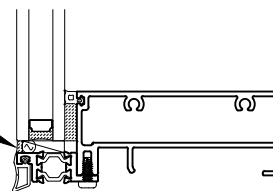
**Fig. 2**



**Fig. 3**



Install continuous seal and tie to vertical silicone joint.

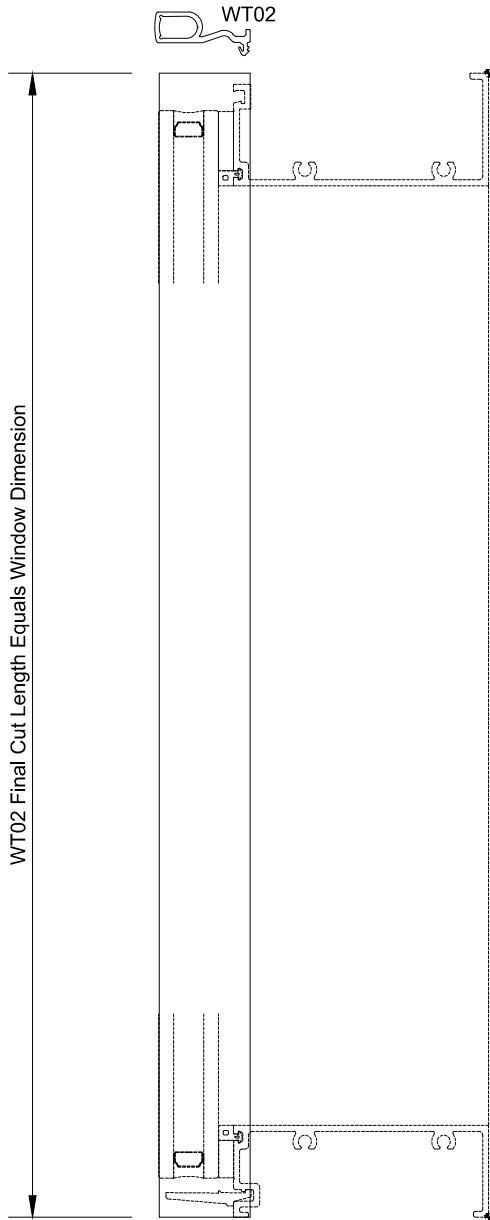


**Fig. 4**

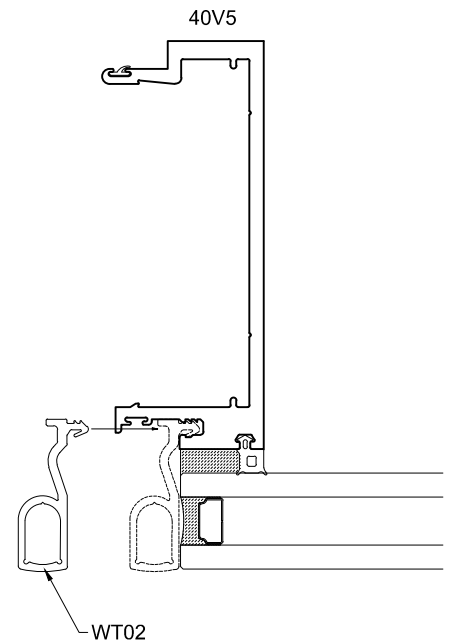


**Step 4: Assembly after Glazing - Instructions for WT02 Vertical Diverter Installation**

- A. The cut length for the WT02 vertical diverter is equal to the unit frame vertical dimension plus 2".
- B. After glass installation and structural silicone installation around the perimeter of the glass, install the WT02 vertical diverter into the 40V5 male unit frame member. See Fig. 2. Leave 1" overhang on each end for field trimming at installation.



**Fig. 1**

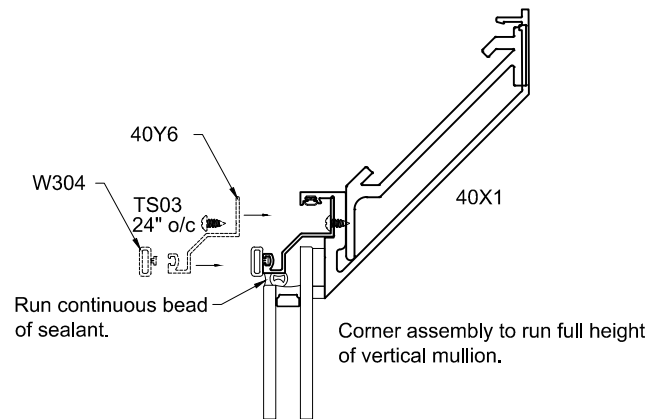
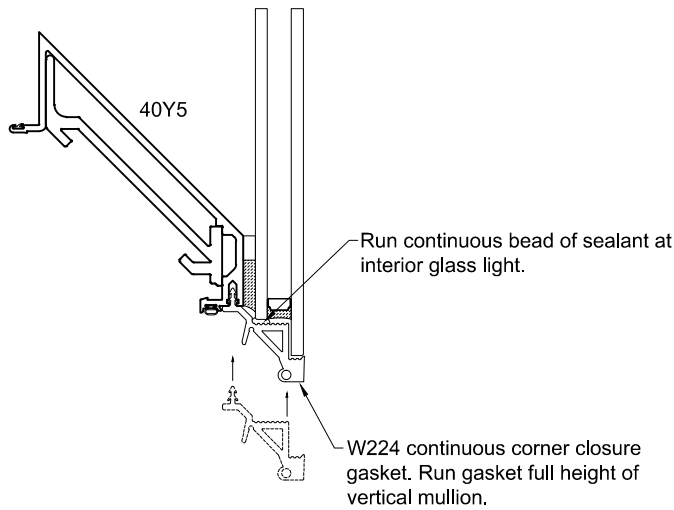


**Fig. 2**

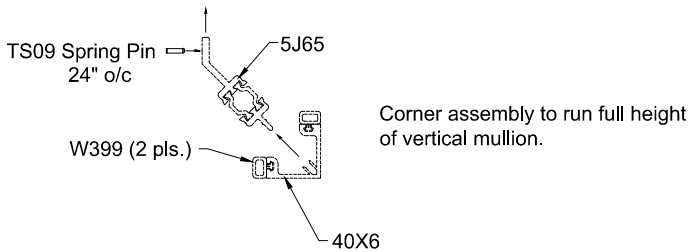


**Step 4: Assembly after Glazing - Corner Frame Closure Installation:**

- A. Select the outside and/or inside corner closure type.
- B. Install the corner closures using the items listed below for each corner type.



**Inside Corner Option**



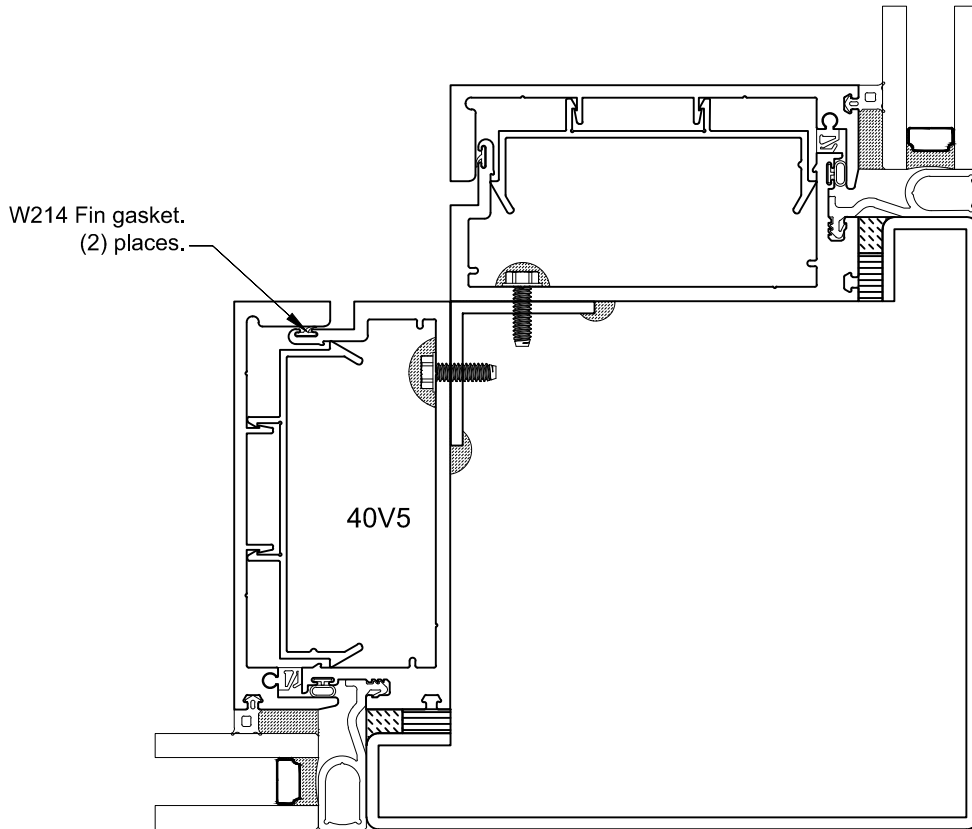
**Outside Corner Options**



**Step 4: Assembly after Glazing - Brake Metal Outside Corner Closure**

- A. Full vertical stack members are required for each side of the corner mullion.
- B. Install the WT02 vertical diverter and W214 fin gasket on the 40V5 mullion.

Note: Corner assembly must be designed to create a closure that will perform per Wausau Window & Wall Systems tested systems (refer to test reports).



**Fig. 1**

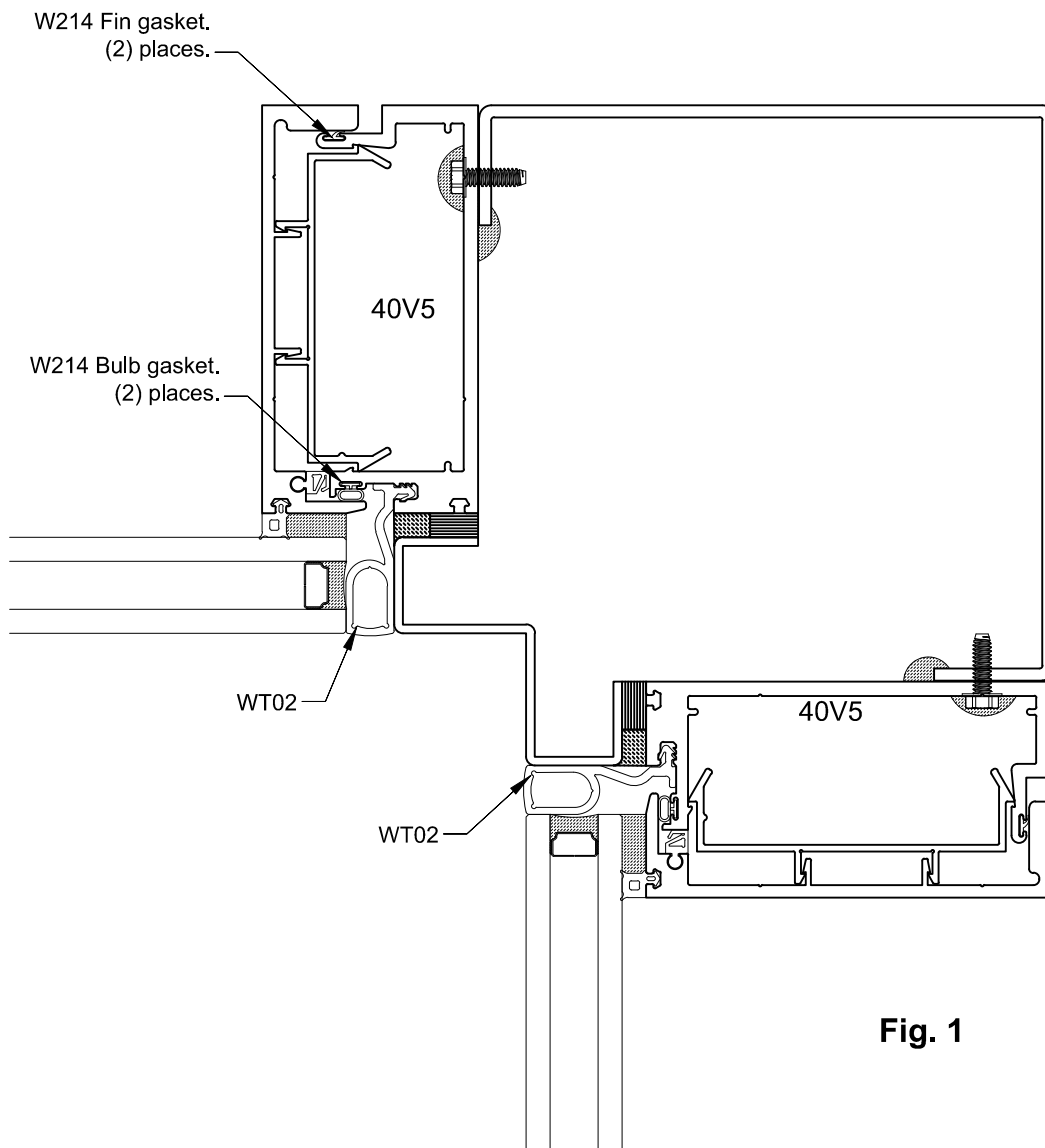




**Step 4: Assembly after Glazing - Brake Metal Inside Corner Closure**

- A. Full vertical stack members are required for each side of the corner mullion.
- B. Install the WT02 vertical diverter and W214 fin gasket on the 40V5 mullion.

Note: Corner assembly must be designed to create a closure that will perform per EfcO's tested systems (refer to test reports).

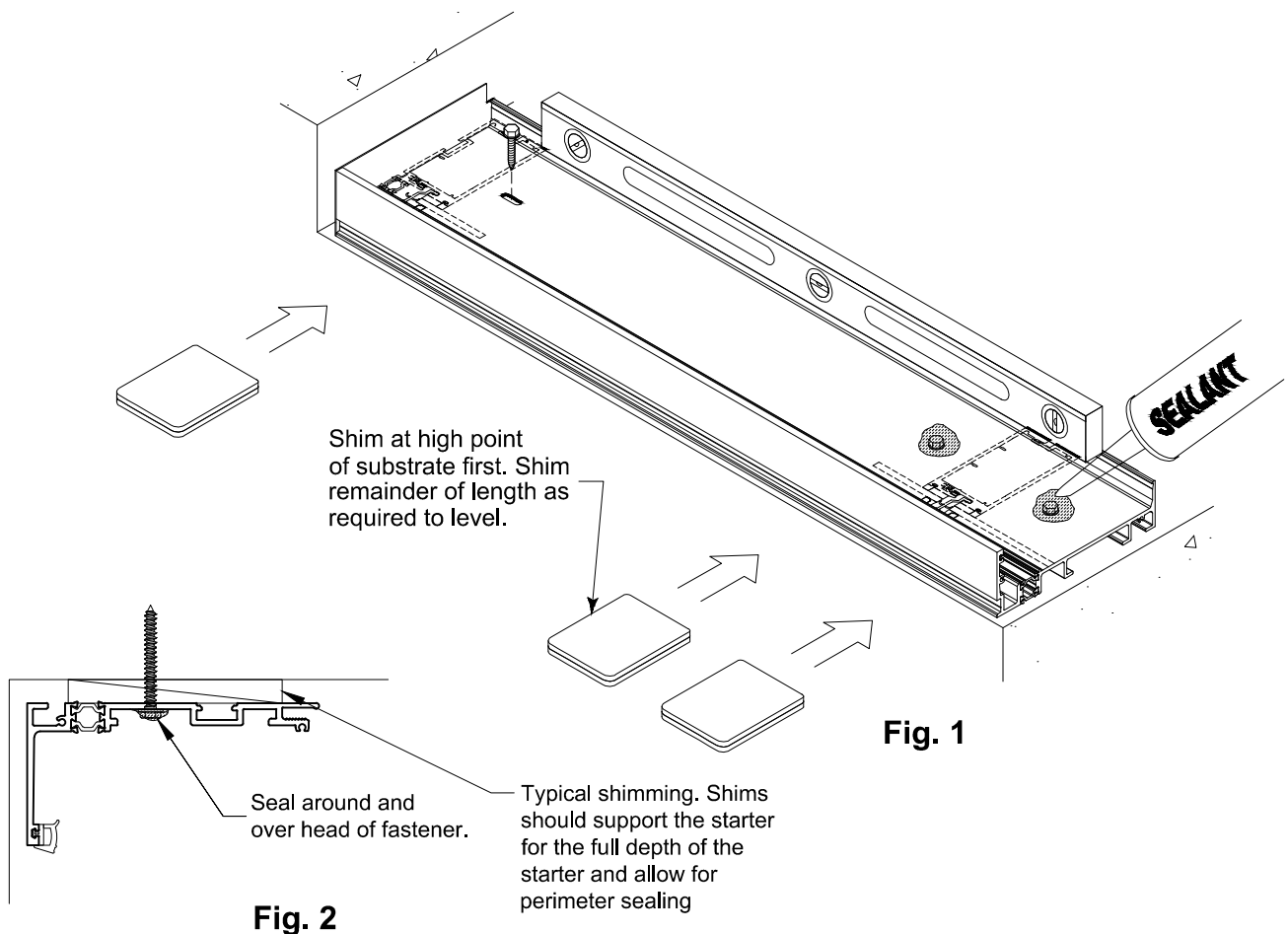




**Step 1: Head/Sill Starter Installation - Through Starter Anchorage**

- A. Locate and position the head/sill starter to be installed.
- B. Mark the hole locations on the substrate, remove the head/sill starter and drill holes into the substrate for anchorage.
- C. Clean all surfaces that will come in contact with sealant using an alcohol two cloth wipe.
- D. Return the head/sill starter to correct position.
- E. Shim the head/sill starter appropriately to a level and correct height position. See Fig. 1. & Fig. 2.
- F. Secure the head/sill starter by installing the anchor bolts.  
(Note: See the approved shop drawings for anchor fastener size, hole sizes, quantity, and locations.)
- G. Clean the area around the fastener.
- H. Thoroughly and completely seal over the anchor bolts. Any flaws in this seal will cause the system to leak.
- I. The W302 bulb gasket (or W226 fin gasket) should be extended past any splice joints and sealed to the piece of gasket in the next starter.

NOTE: All shims should be solid, non-compressive shims.



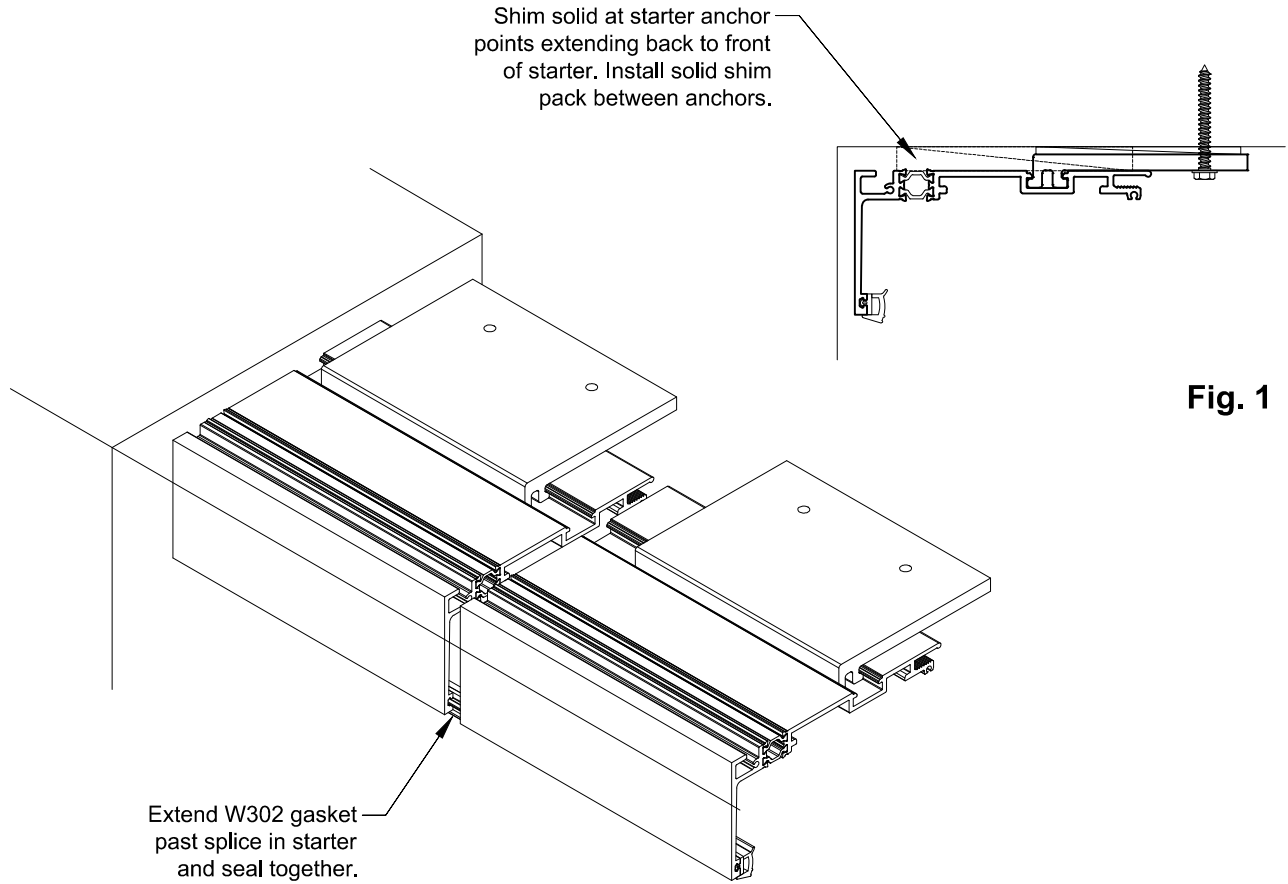
The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.



**Step 1a: Head/Sill Starter Installation - Slide-in Strap Anchor**

- A. Locate the head/sill starter to be installed, install the head/sill anchors and position in opening.
  - 1) Use FQ68 for the head starter
  - 2) Use FQ76 for the sill starter
- B. Mark the hole locations on the substrate, remove the head/sill starter and drill holes in the substrate for anchorage.
- C. Return the head/sill starter to the correct position.
- D. Shim the head/sill starter and the strap anchors appropriately to a level and correct height position. See Fig 1.
  - 1) Shims should be solid, non-compressive shims.
- E. Secure the head/sill starter.  
(Note: See the approved shop drawings for fastener size and anchor locations.)
- H. Extend gasket W302 past splice and seal to the adjacent gasket. See Fig. 2.



**Fig. 1**

**Fig. 2**

\* Reference approved shop drawings for anchor hole sizes and anchor locations.

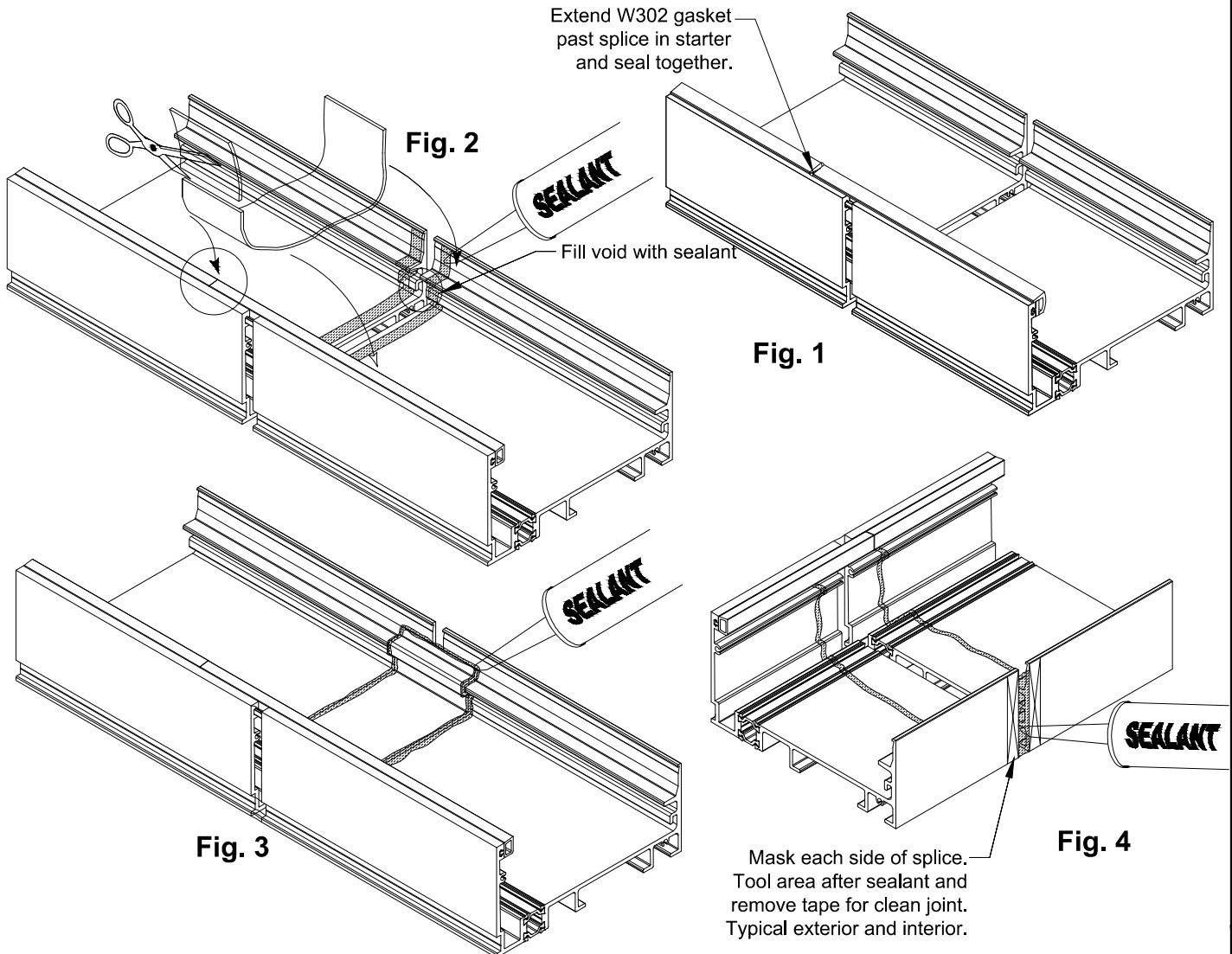
The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of ± 50 % movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.



### Step 2: Head/Sill Starter Splice Installation

- A. All splice joints should be sealed using this method.
- B. Extend the W302 gasket past the splice and seal to the adjacent gasket. See Fig. 1.
- C. Check to make sure the ends of the thermal break are plug sealed, if they are not, seal them.
- D. Clean surfaces that will receive sealant with an alcohol two cloth wipe.
- E. Apply sealant to each side of the starter in areas that will receive a silicone splice patch.  
See Fig. 2.
- D. Measure and trim the silicone splice patch to fit the area. See Fig. 2.
- E. Press the silicone patch in place assuring that the silicone patch and starter have contact in all areas.
- F. Apply sealant around the perimeter of the silicone patch and tool. See Fig. 3.
- G. Apply sealant to the exterior and interior face of the starter. See Fig. 4.
  - 1) Use bond breaker tape as needed to support the face joint.



The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

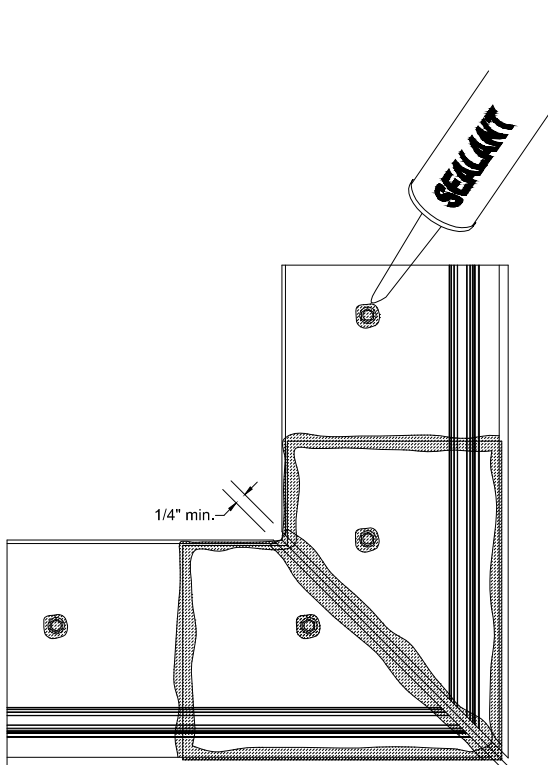
Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.



### Step 2: Head/Sill Starter Installation - Outside/Inside Corners

The installation and anchorage procedure is the same for the starter anchorage type illustrated and outlined in Step 1.

- A. Outside corner (AND inside corner) starters are installed with a 1/4" minimum splice joint.
- B. Clean the cut edges and surface of the miters with an alcohol two cloth wipe.
- C. Apply sealant to the edges and surface of the miter covering the gap between the starters.
- D. Install a silicone splice patch cut to fit as shown and seal the perimeter of the silicone patch using the same methods as a typical splice joint.



Inside corner similar

Fig. 1

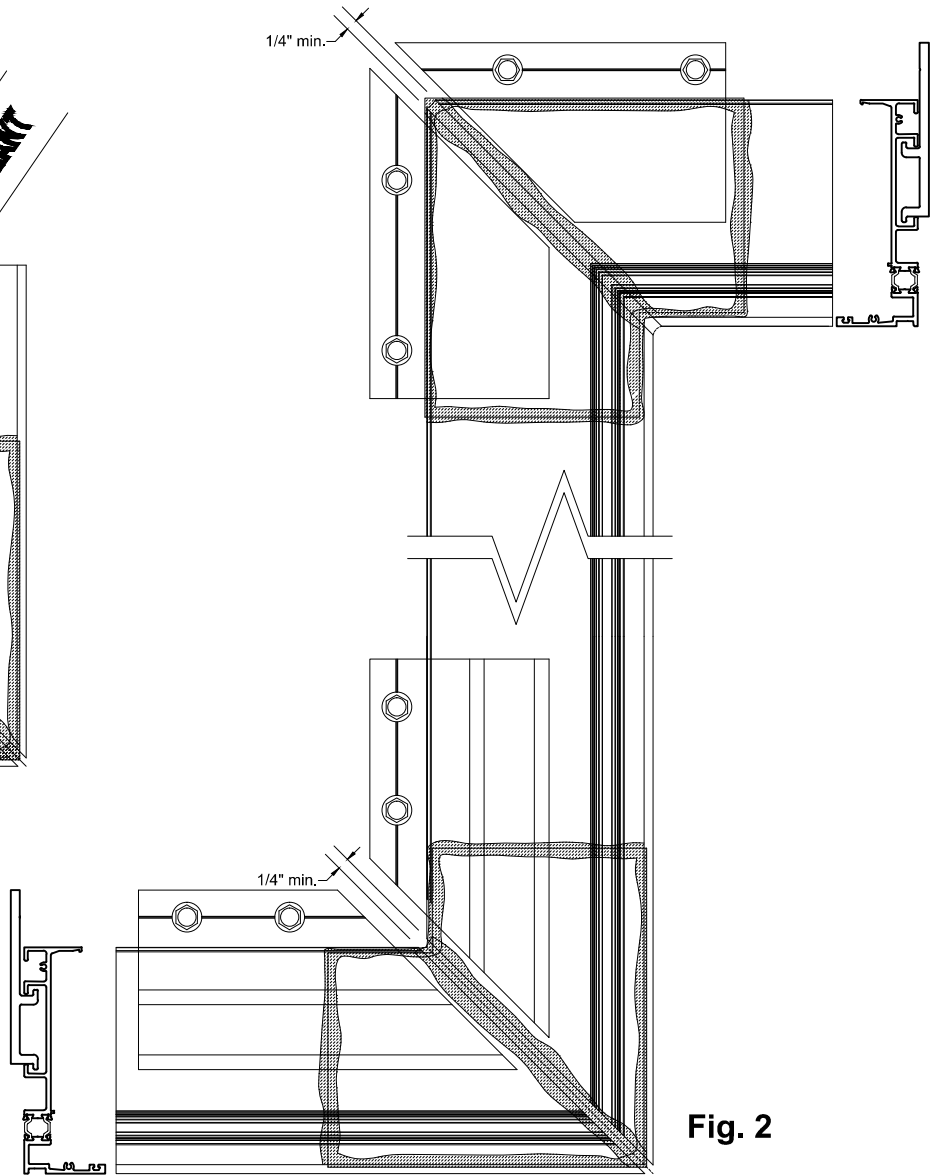


Fig. 2

The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.



### Step 3: Jamb Starter (Optional) Installation

NOTE: If the jamb pieces are not used as starters, sealing from the exterior after unit installation will be required.

- A. Install the jamb starter 5J63 by first installing anchoring holes (for through anchoring) or strap anchors (FQ68). Set 5J63 in place maintaining a 1/2" gap between the jamb starter and the head/sill end caps. Shim tight front to back at the anchor points and secure.
- B. If through anchoring, take care to thoroughly seal the fastener heads.

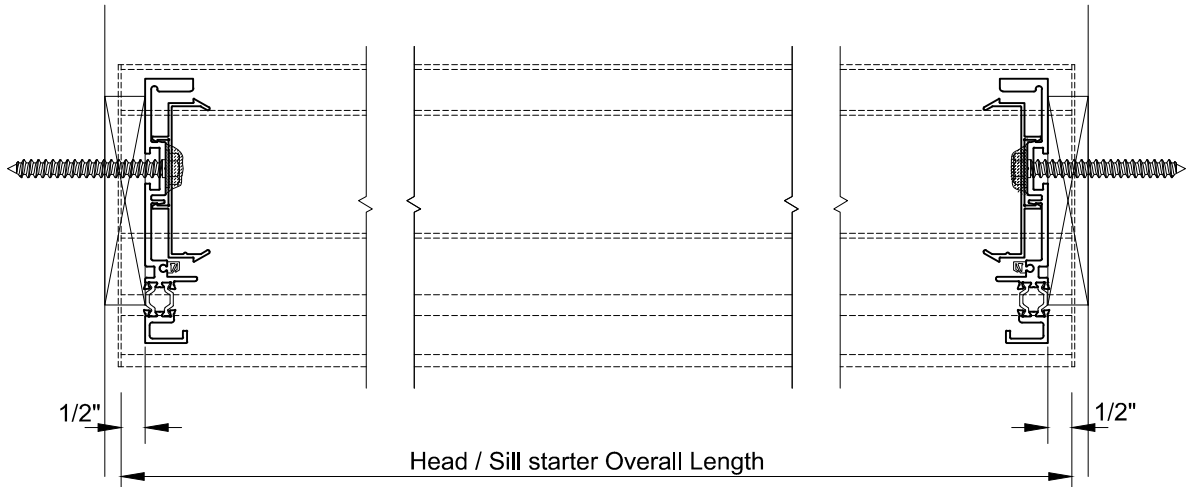


Fig. 1

Start window frame installation on this side of starter opening.

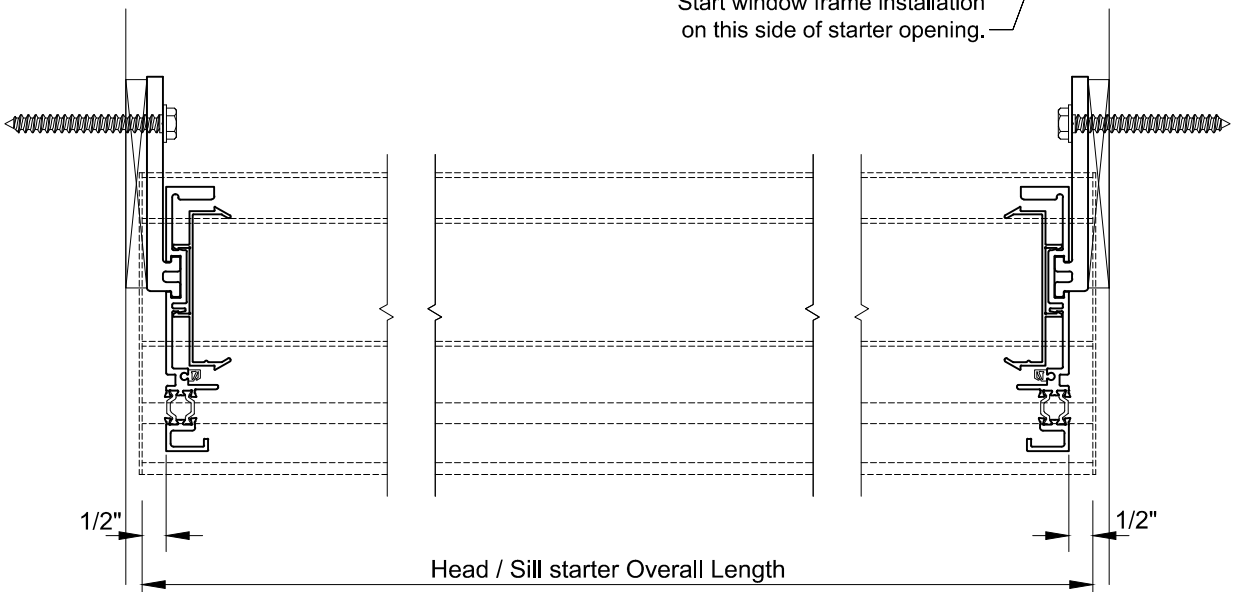


Fig. 2

Start window frame installation on this side of starter opening.

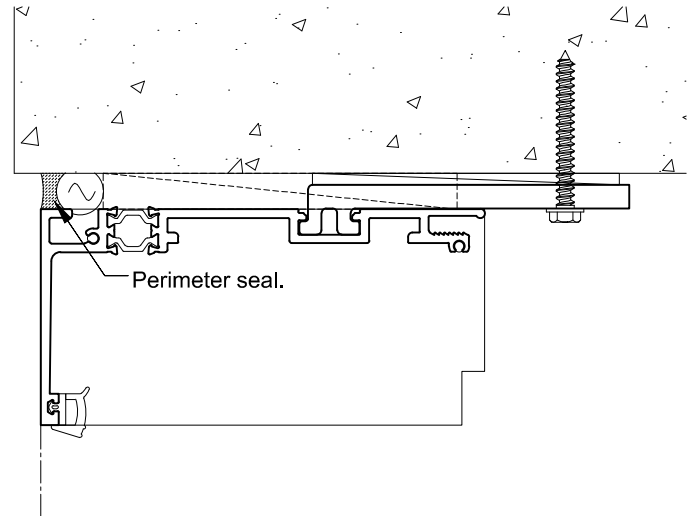
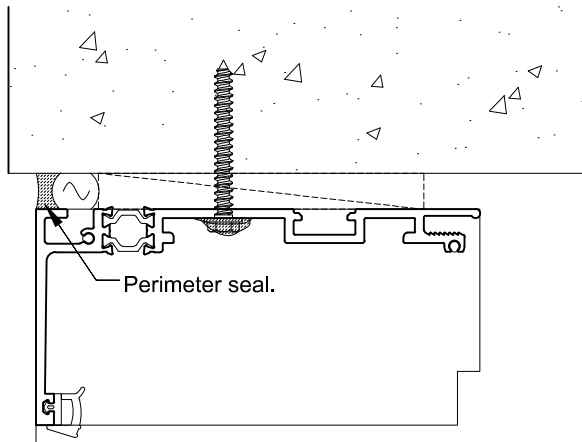
The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.

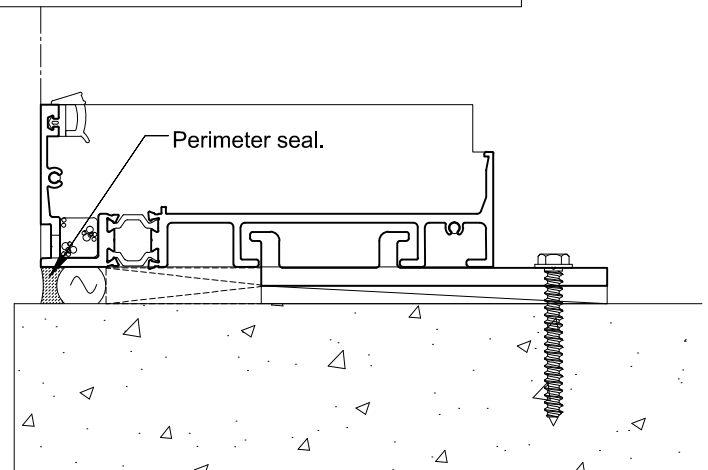
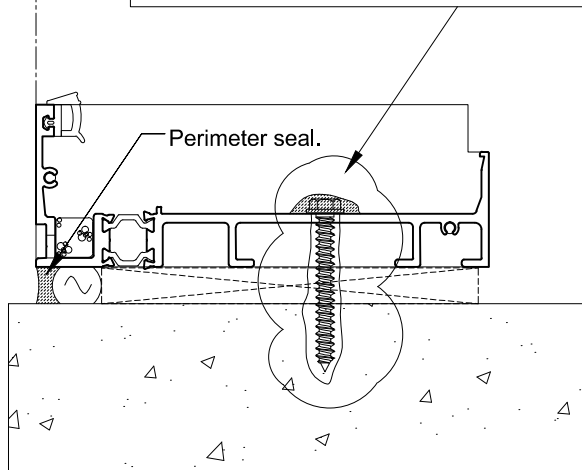


### Step 4: Exterior Perimeter Seal Installation

- A. Clean the areas that are to come into contact with sealant with an alcohol two cloth wipe.
- B. Install sealant between the exterior of the starter and the perimeter substrate in accordance with the sealant manufacturers' recommendations for height / depth ratio.
- C. Tool the sealant to finish the joint.
- D. Exterior seals on sills above any slab edge covers are optional. In this case the interior seal will act as the primary seal.
- E. No interior seals should be installed at this time. If the interior head seals are installed before the interior drive on it will be difficult to install the interior drive-on.



**Note:** If anchoring through sill starter fill anchor hole and hole in perimeter condition with sealant prior to anchor installation. Set anchor washer in sealant prior to installing anchor. Failure to install sealant may result in water / air penetration at sill.



The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

Perimeter sealant can and will come in contact with many different parts of the window. This can include painted, anodized, and mill finished aluminum as well as PVC, various gasket materials, and different types of joinery sealant. EfcO recommends that the caulker consult their sealant manufacturer to insure proper compatibility. EfcO is not responsible for perimeter sealant compatibility testing.



### Step 5: Slab Edge Cover Installation

- A. Clean all areas that are to come into contact with sealant with an alcohol two cloth wipe.
- B. Install the slab edge cover setting blocks (H159) at quarters points. See Fig. 1.
- C. Install the slab edge covers following the steps below.
  - 1) Tip the top of the slab edge cover into the sill starter above.
  - 2) Slide it up as far as it will go.
  - 3) There should be now be room to return the cover to vertical and drop it into the head starter.
  - 4) Adjust from side to side as needed making sure that the cover is sitting all the way down on the setting blocks.
- D. Seal any joints between the covers and at the jamb conditions.

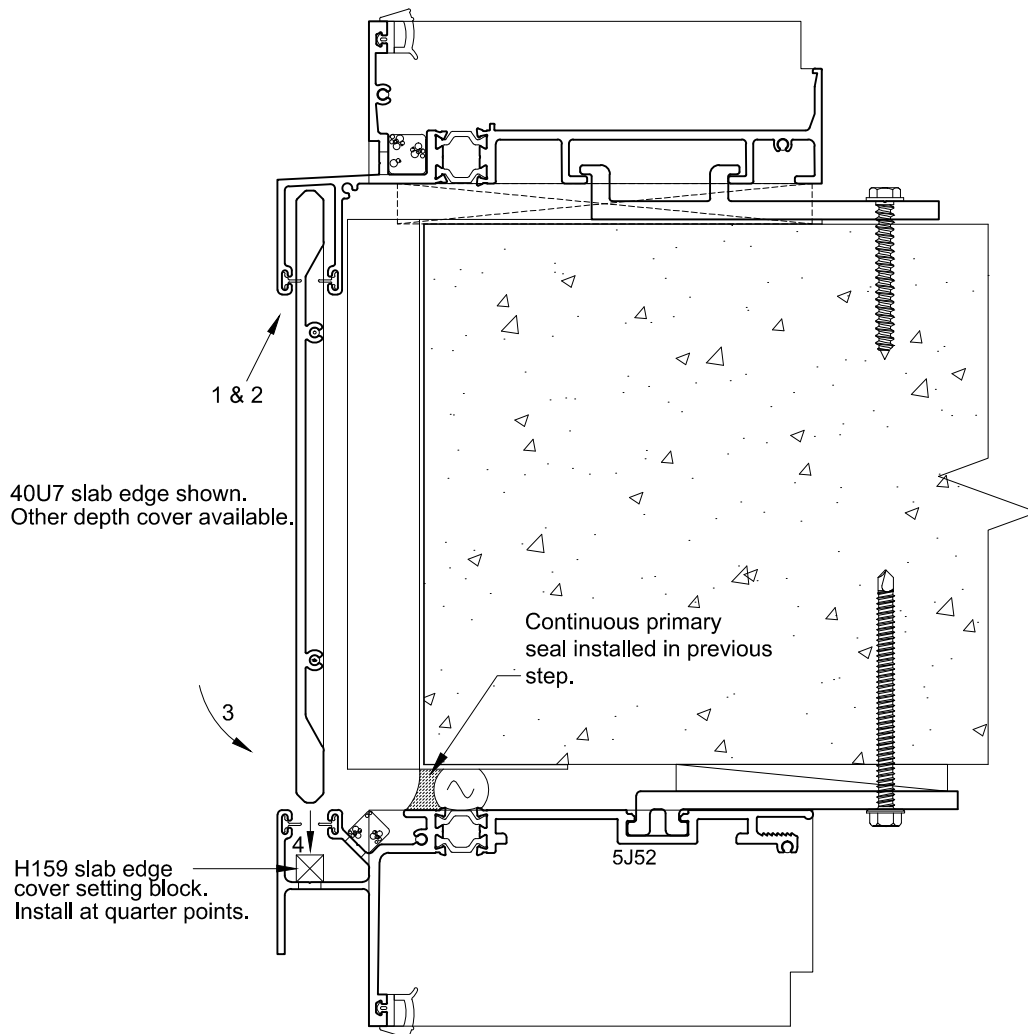


Fig. 1

The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

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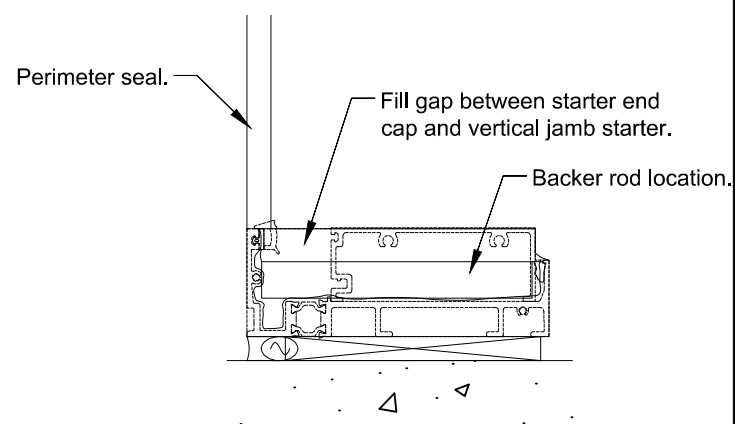
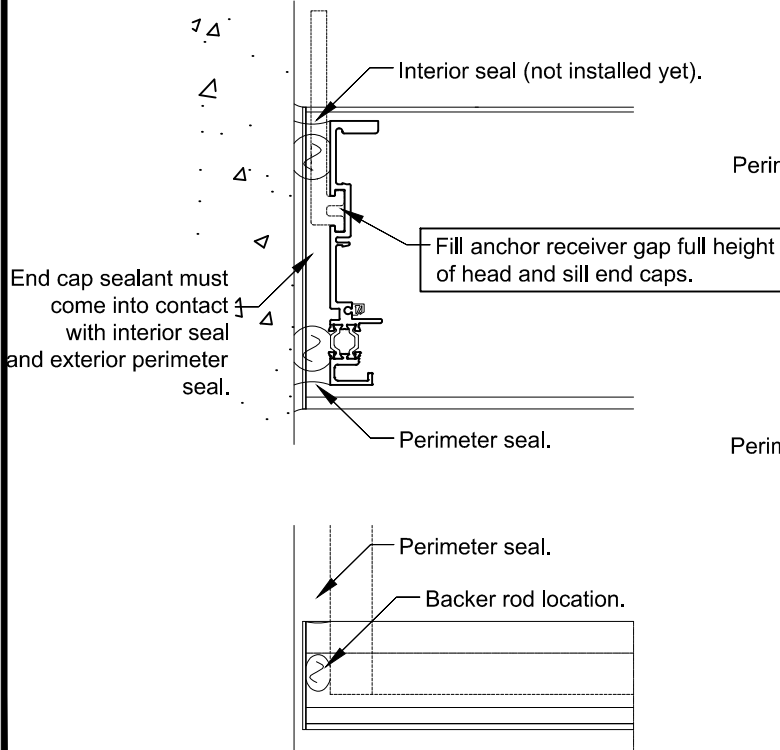
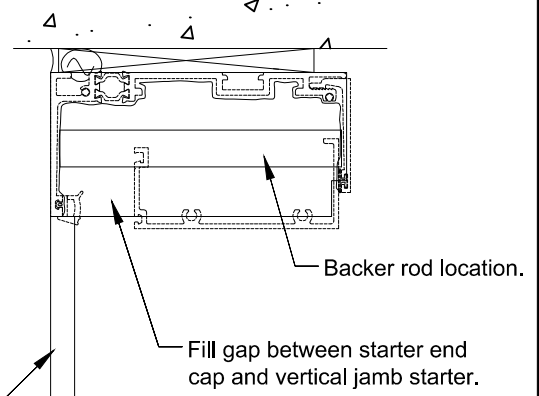
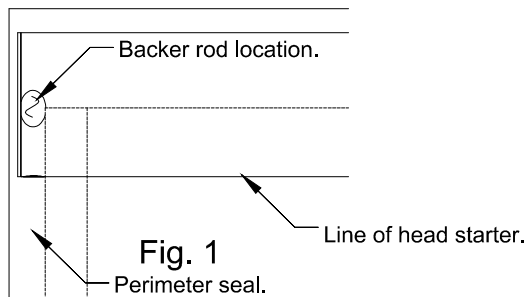




**Step 6: Proper Installation of End Dam Sealant.**

- A. Clean all surfaces with which sealant will come into contact with using an alcohol two cloth wipe.
- B. Install backer rod between the head/sill starter end cap and the jamb starter frame. See Fig. 1.
- C. Fill the gap with silicone from the exterior to the interior with no gaps and create contact between the silicone and the end cap silicone. See Fig. 2.
- D. Installed sealant must tie into the exterior perimeter seal.
- E. After the interior drive on is installed, seal the ends of the drive on to the end dam seals and tie into the interior perimeter seal.

NOTE: If no jamb starters are used, this step will be completed after unit installation.



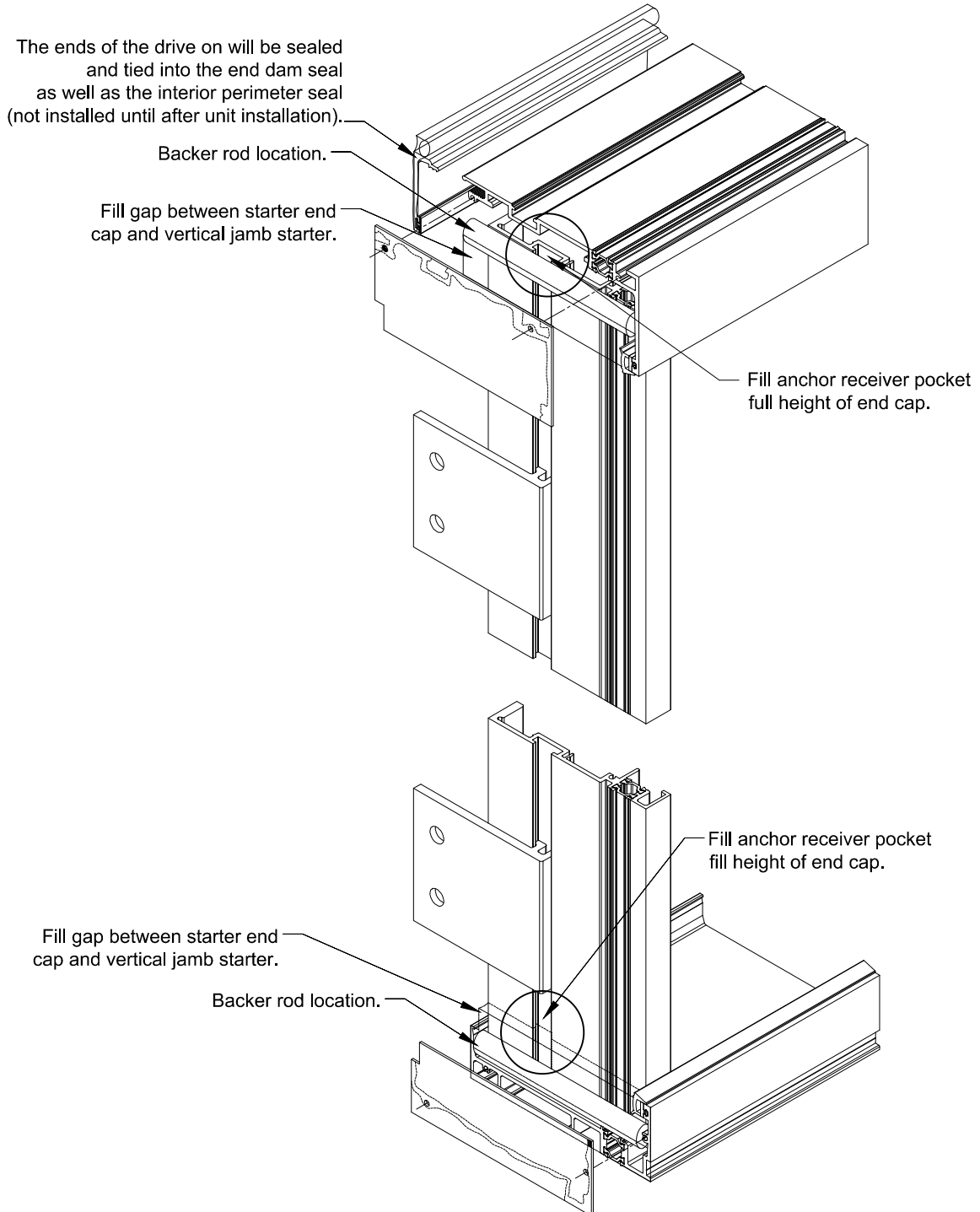
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### Step 6 Continued: Proper Installation of End Dam Sealant.

\*\* See previous page for installation instructions...



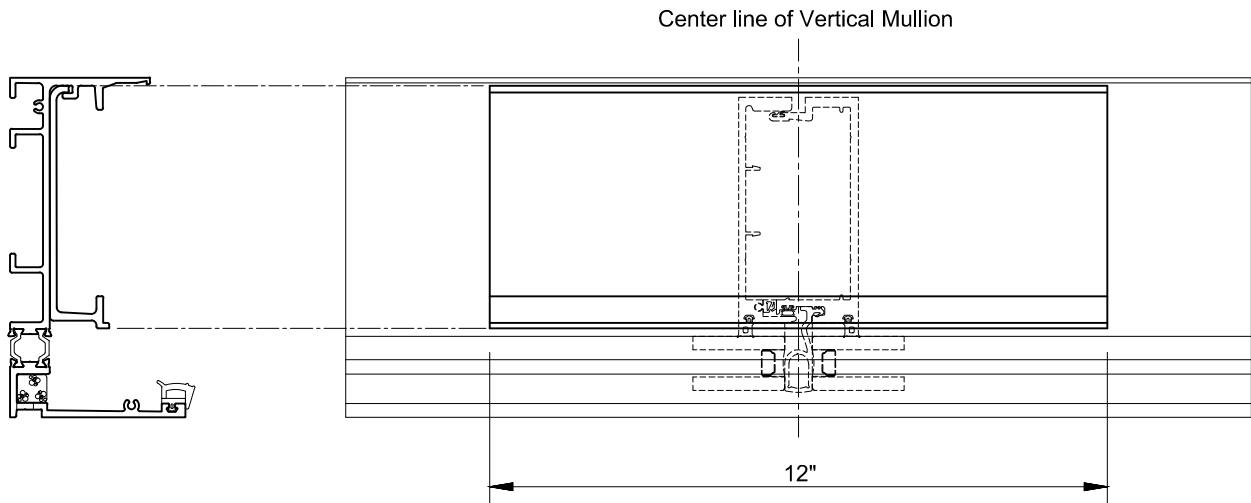
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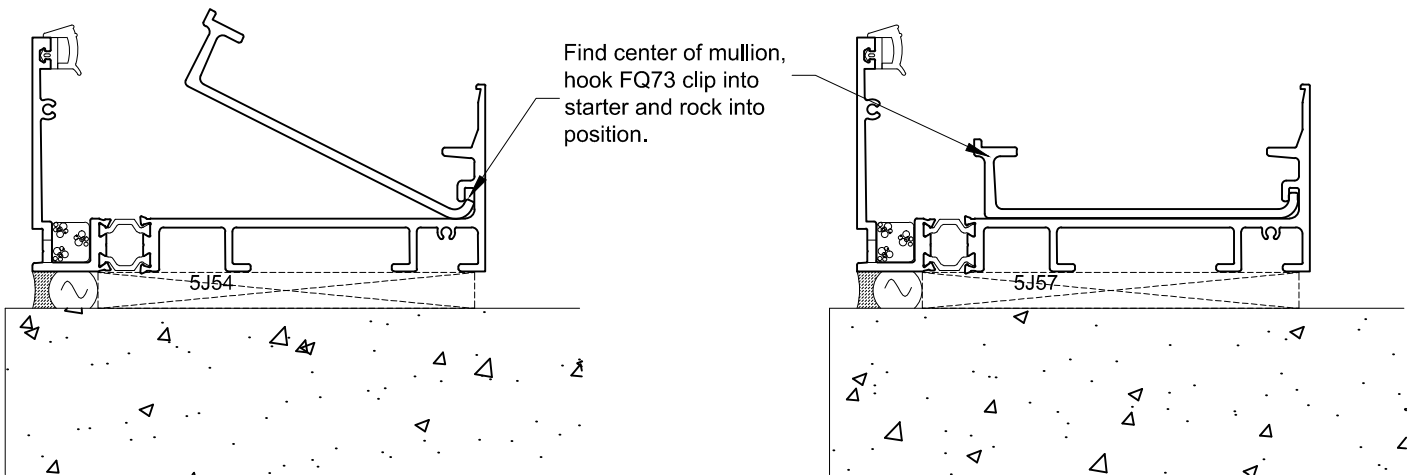


**Step 7: Dead Load Clip Installation - FQ73**  
**Use with sill starters: 5J53, 5J54 & 5J55**

- A. Locate the center lines of the vertical mullions.
- B. Center the FQ73 dead load clip, hook it into back side of the sill starter and roll it into place.



**Fig. 1**

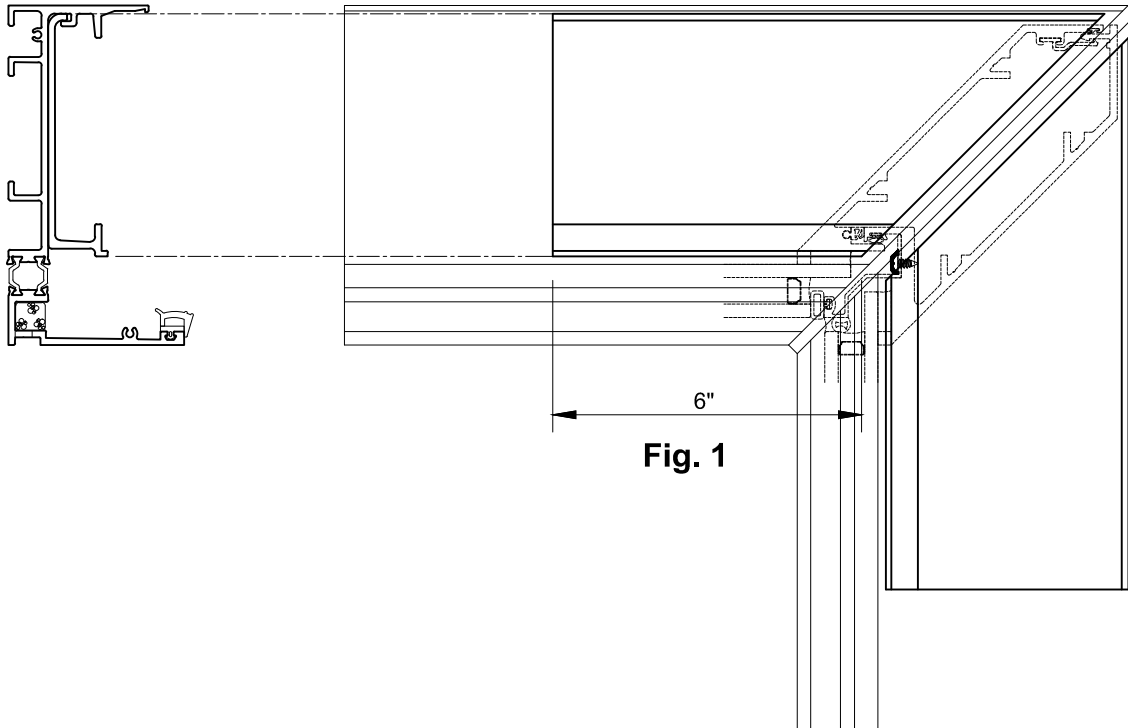


**Fig. 2**

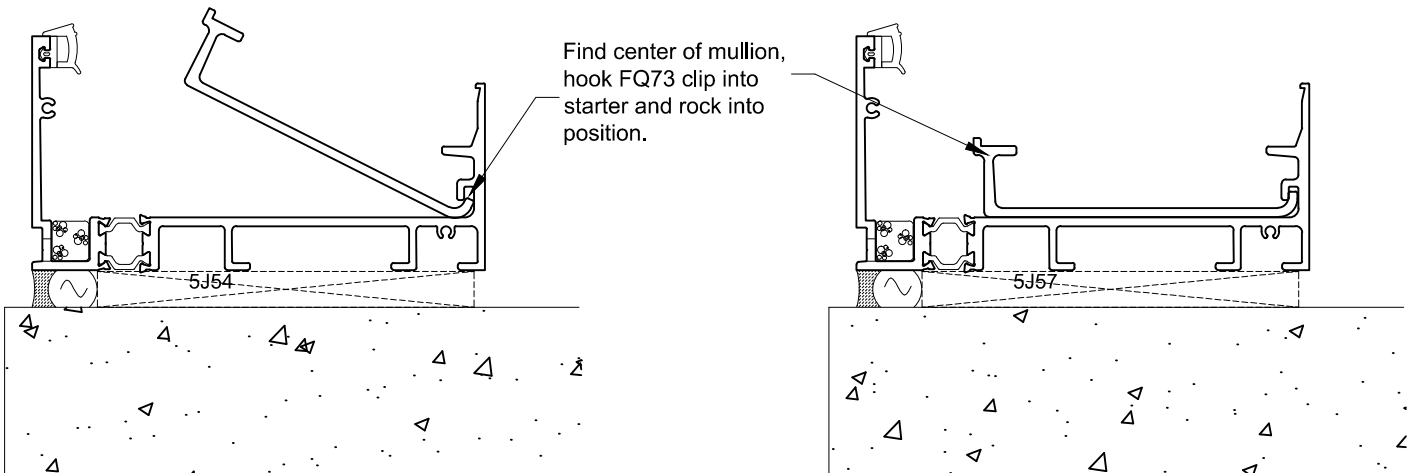


**Step 7: Dead Load Clip Installation - FQ73 - Corners**  
**Use with sill starters: 5J53, 5J54 & 5J55**

A. Locate the FQ73 dead load clip as close to either side of the corner as possible. Hook it into back side of the sill starter and roll it into place.



**Fig. 1**

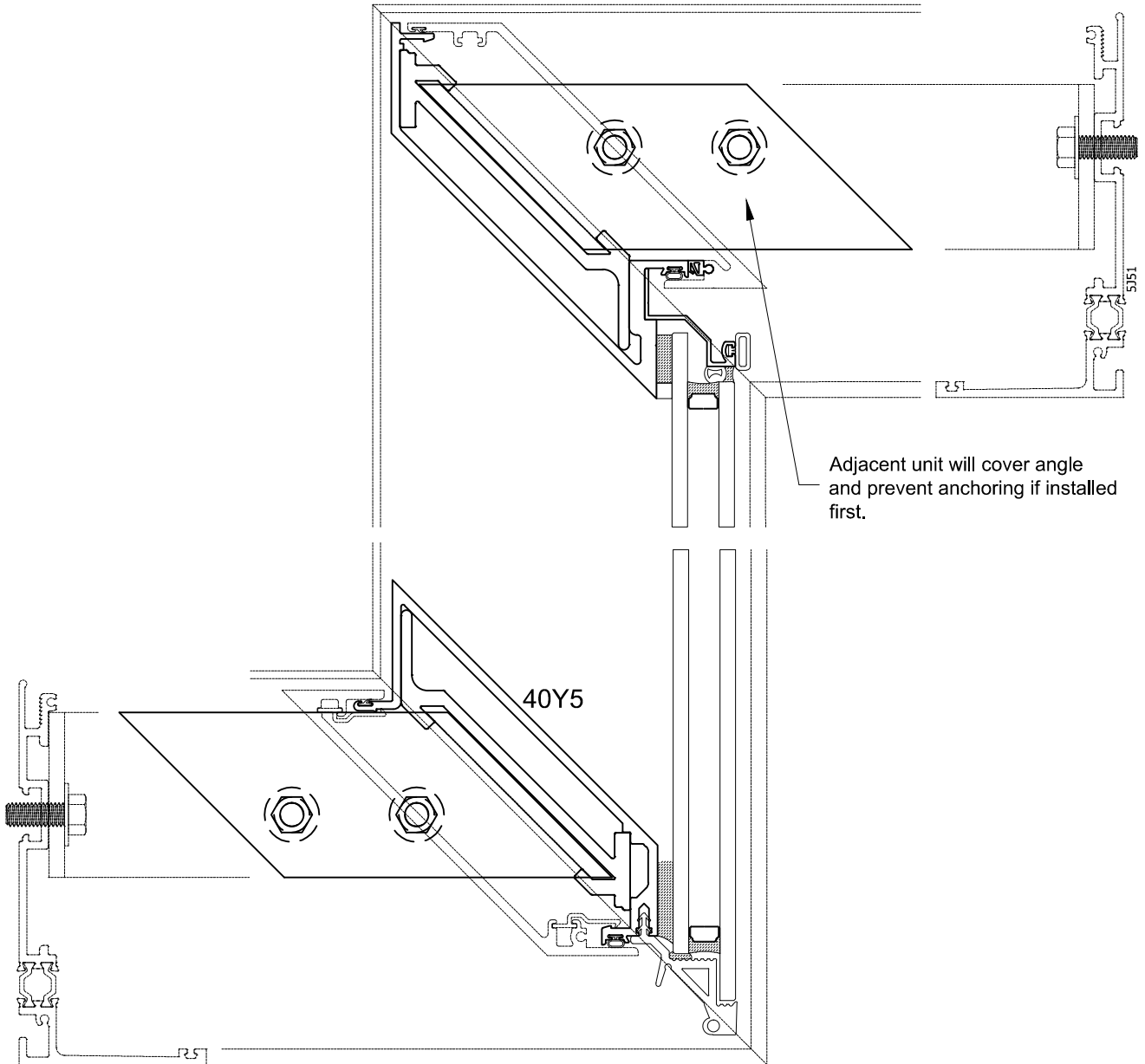


**Fig. 2**



**NOTE: Corner window wall units with corner wind load anchors must be installed prior to adjacent corner units to allow access to unit head anchoring angles.**

**Step 8: Corner Unit and Corner Wind Load Anchor Installation**



PLAN VIEW - OUTSIDE CORNER / INSIDE CORNER WIND LOAD ANCHOR



**NOTE: Corner window wall units with corner wind load anchors must be installed prior to adjacent units to allow access to window unit head wind load anchors.**

**Step 8 Continued: Corner Unit and Corner Wind Load Anchor Installation**

- A. Locate and install the head wind load anchor angles. (See approved project drawings and calculations for the angle size and profile.)
- B. Install the corner unit. Plumb and level it, and slide the wind load angle tight against the head starter. Refer to page 58 for details on installing units.
- C. Mark the anchor hole locations, then drill and tap holes in the head starter. (See approved project drawings and calculations for hole and fastener sizes.)
- D. Install fasteners - NOTE: Fastener length not to exceed depth of perimeter sealant gap. See Fig. 1.

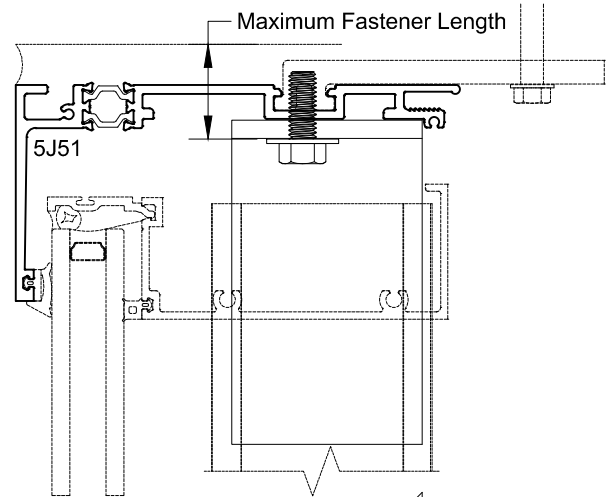
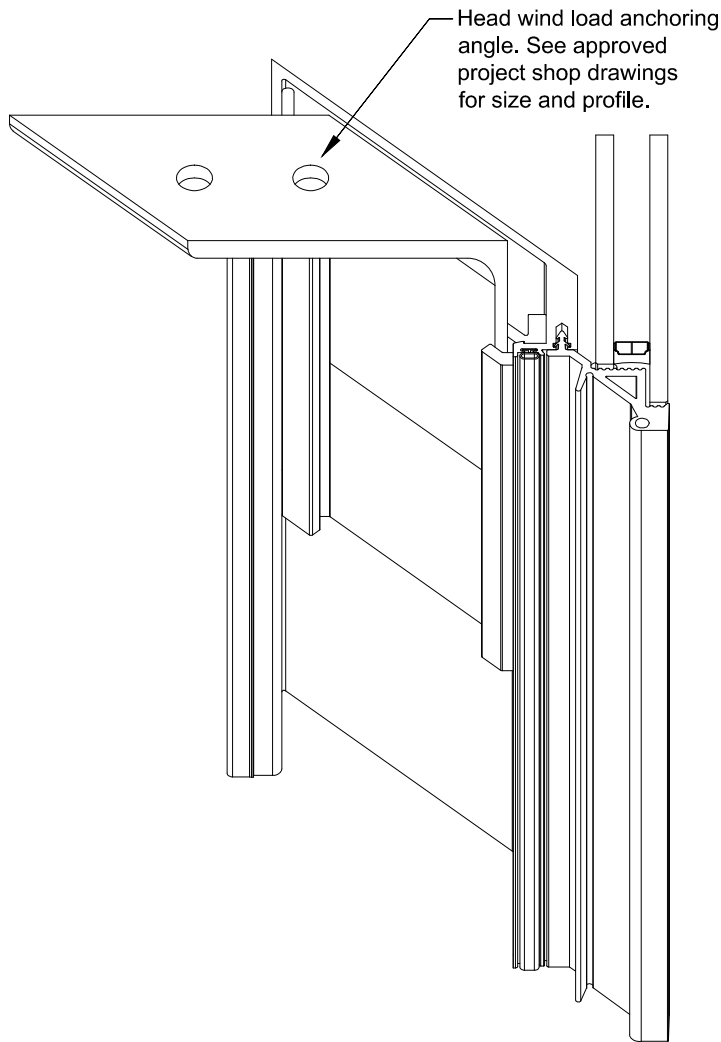
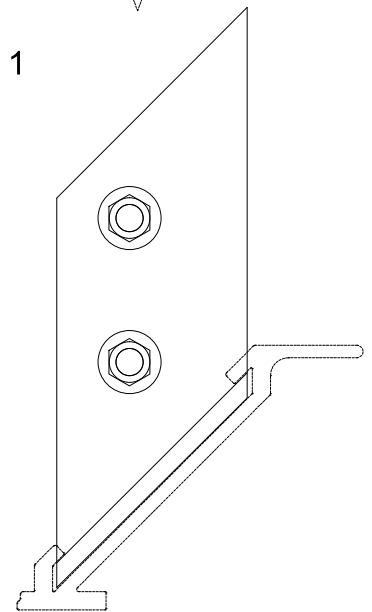


Fig. 1





### Step 9: Assembled Unit Installation

- A. These units are designed to be installed from the interior of the building.
- B. Position the unit so that the sill is lined up with the starter and the head is inside the building.
- C. Set the sill down and tip the head up against the head starter.
  - 1) If no head starter is being used, position the unit so that it is plumb.
  - 2) Take care to avoid damaging any seals inside the sill starters when setting units.
- D. Get the unit into its final position (stack with adjacent units, check for level and plumb, etc.).
  - 1) Refer to page 59 for sealing requirements before stacking.
- E. Install the wind load clip (Refer to page 60 for details).
  - 1) The easiest way to do this is by putting it in the head starter before installing the unit and simply sliding it into place once the unit is in.
  - 2) If no head starter is being used, anchor the head of the unit. Refer to page 62.
- F. Continue installing the next unit.

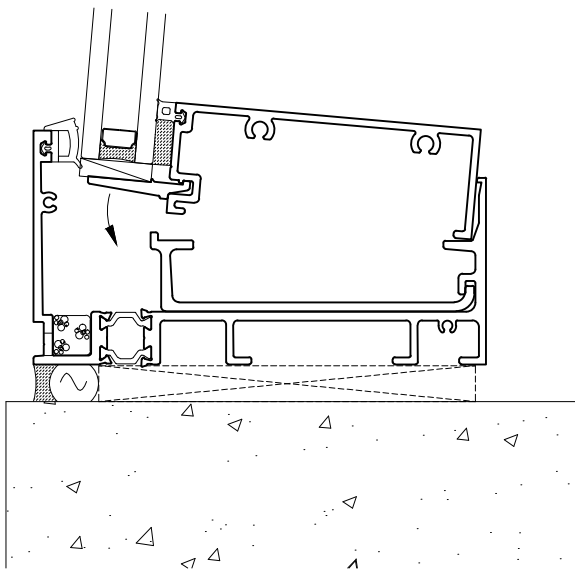


Fig. 1

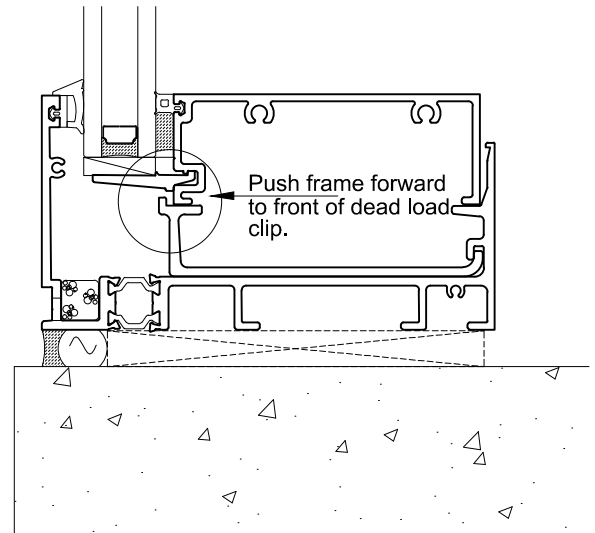


Fig. 2

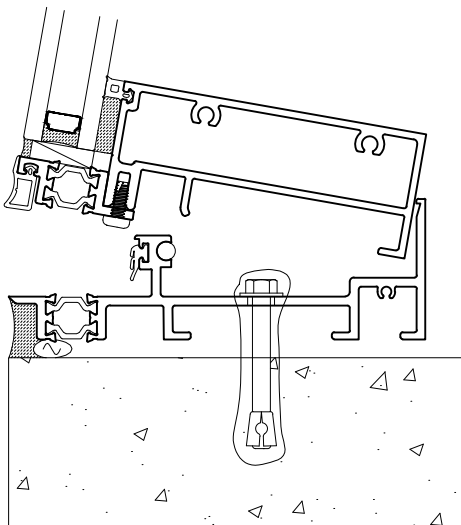


Fig. 1a

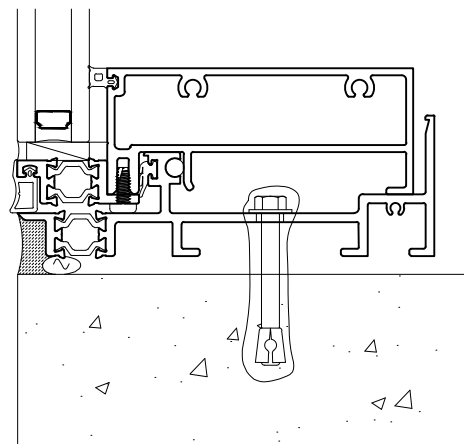


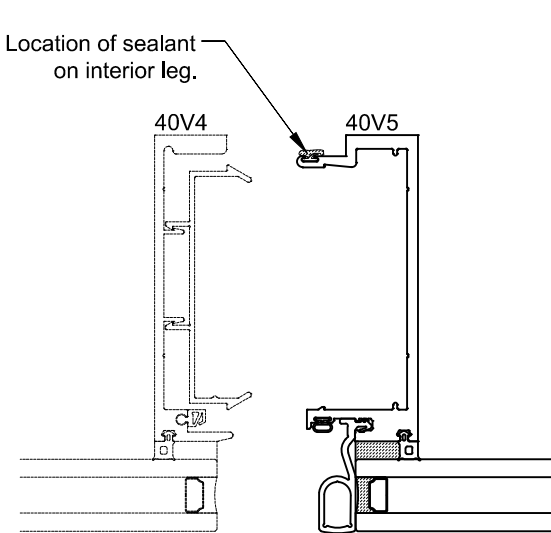
Fig. 2a



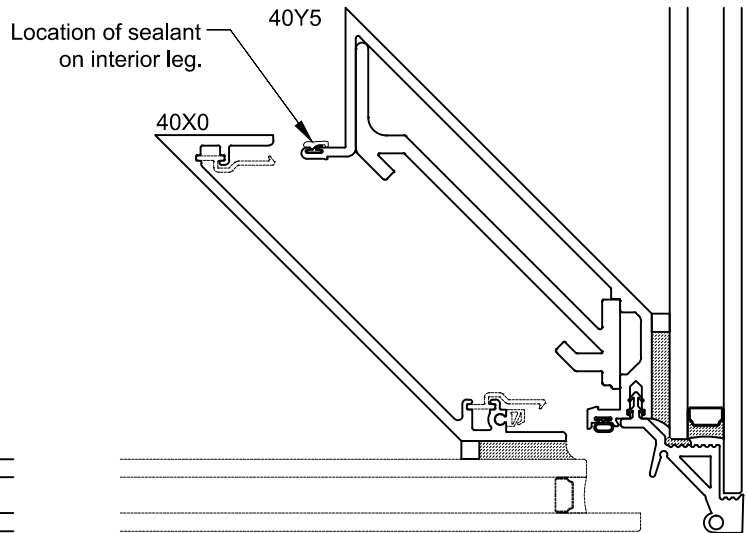
### Step 10: Installation of Vertical Stack Mullion Sealant

Prior to stack assembly of adjacent units, a vertical seal is required at the exterior and interior of the verticals.

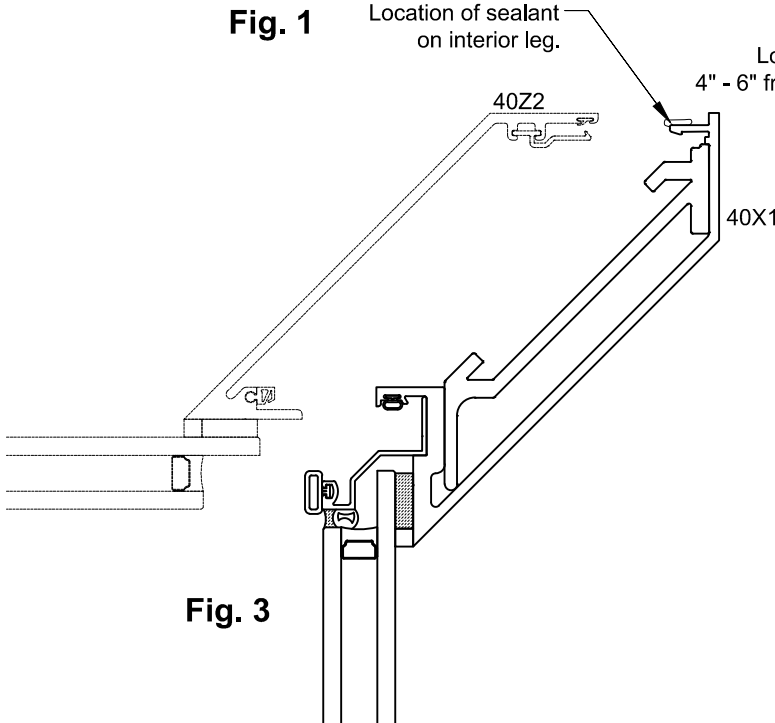
- A. Clean all surfaces that sealant will be applied to using an alcohol two cloth wipe method.
- B. Seal at the locations noted in Fig. 1 through 3 for 4"-6" starting from the top and bottom of the unit.



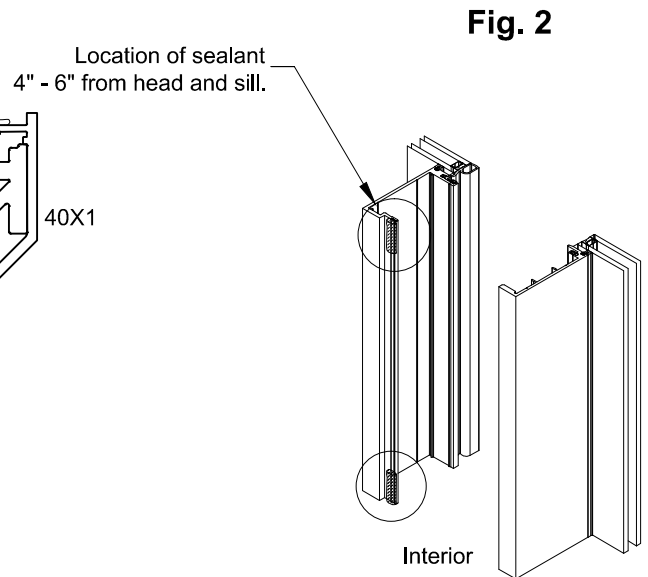
**Fig. 1**



**Fig. 2**



**Fig. 3**



The expansion joints and perimeter caulk joints of the system are designed to accommodate a high performance sealant that is capable of  $\pm 50\%$  movement. All sealant and backer rods required for installation to be furnished and applied by the Installer, as are provisions for separation of dissimilar materials as necessary.

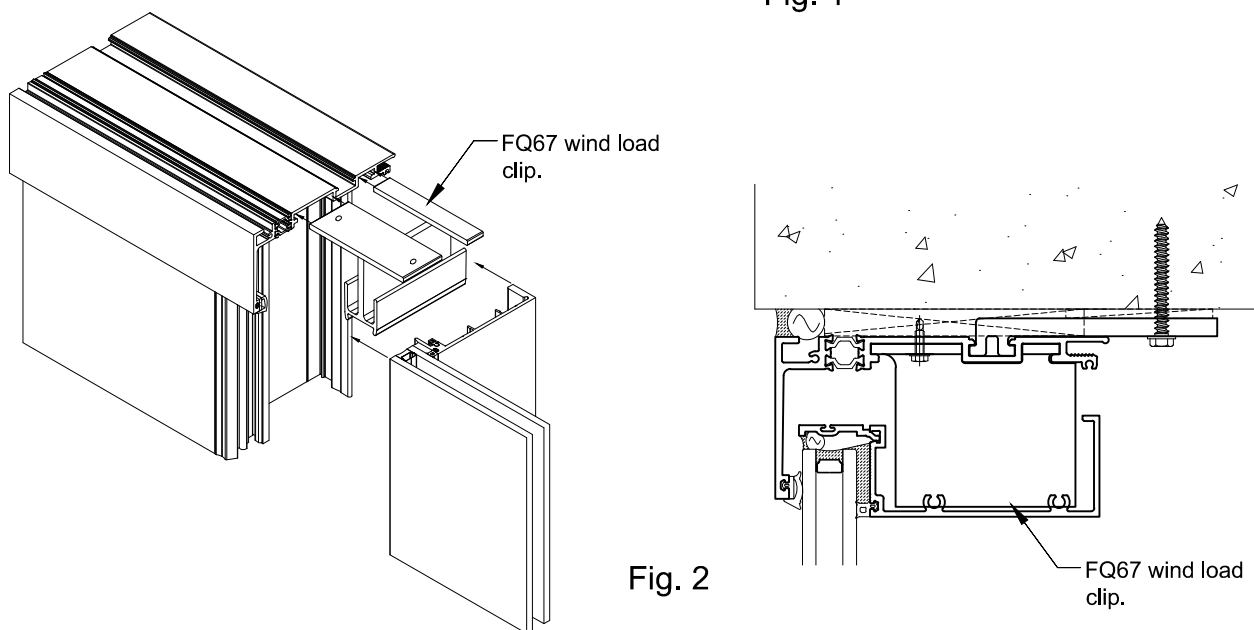
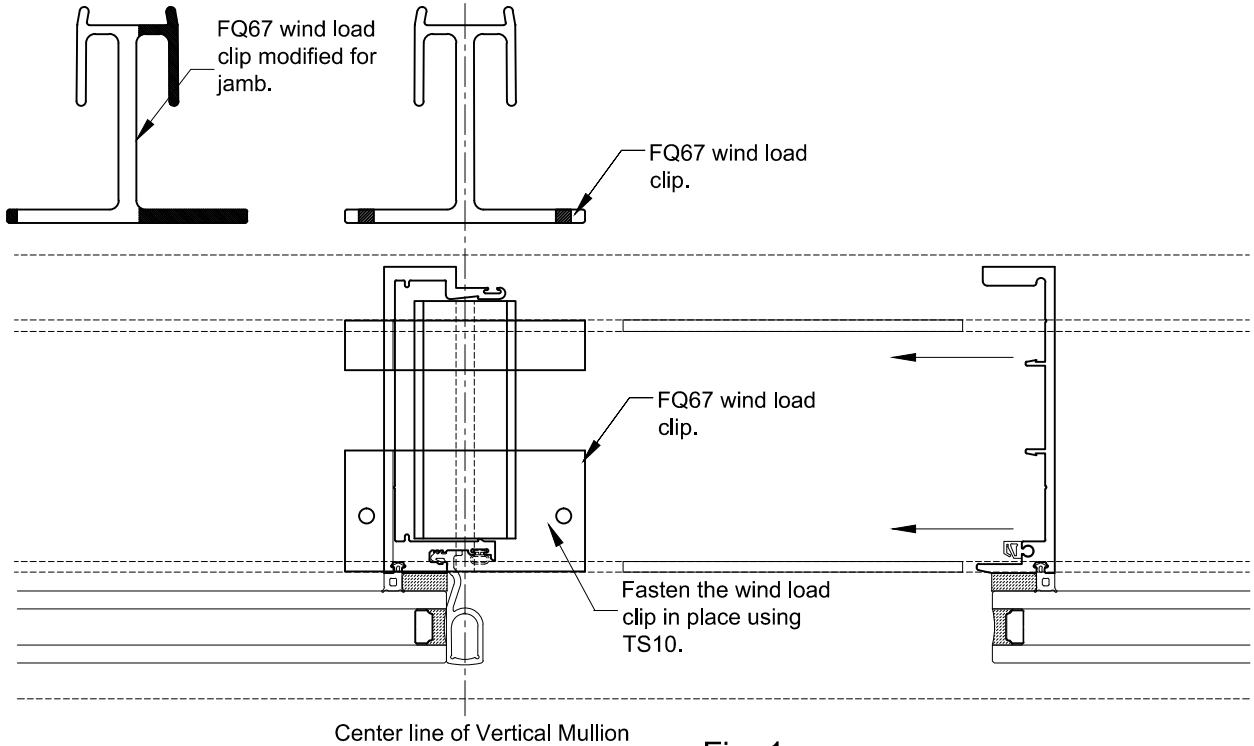
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### Step 11: Installation of Head Wind Load Clip FQ67

- A. The FQ67 wind load clip is to be installed in every vertical stack mullion. End jamb wind load clips will require modification to install. See Fig. 1.
- B. Install wind load clips only after the adjacent vertical mullion has been positioned. See Fig. 2.
- C. Insert the FQ67 wind load clip into the previously milled slots in the head starter and slide over tight to the adjacent mullion. Using TS10, screw the wind load clip in place.
- D. Continue the installation of the window wall system.





### Step 12: Interior Head Drive-In Installation

- A. Install the W229 gasket into the interior head starter drive-in (40Z5). See Fig. 1.
- B. Drive the interior drive-in on until it bottoms out on the head starter. See Fig. 2.
- C. Seal any joints in the 40Z5 and the end pieces of 40Z5 to the end caps.

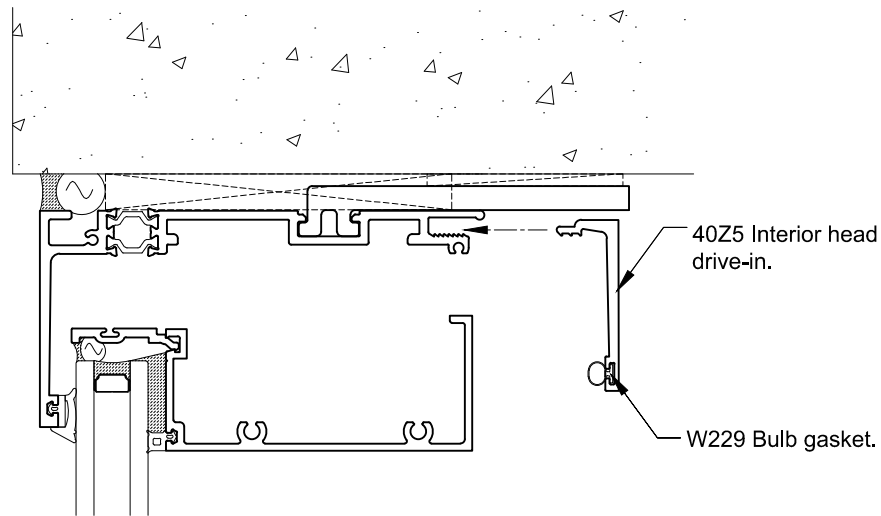


Fig. 1

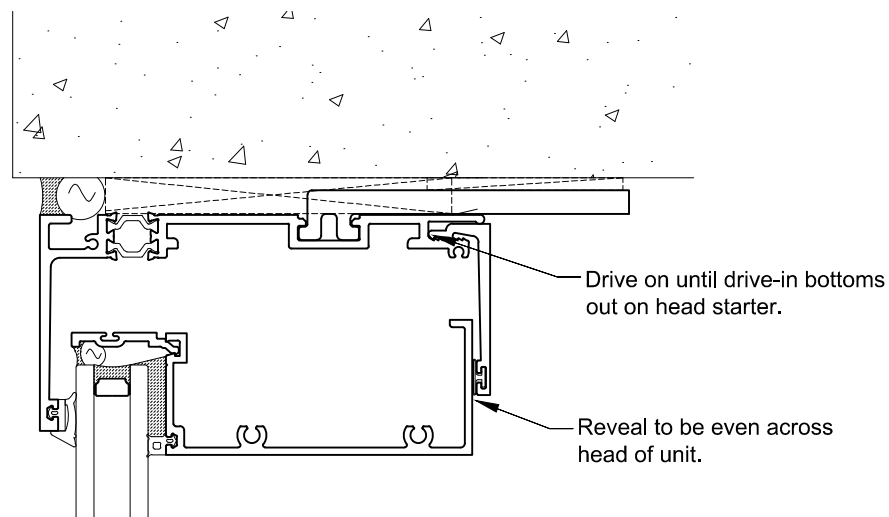


Fig. 2

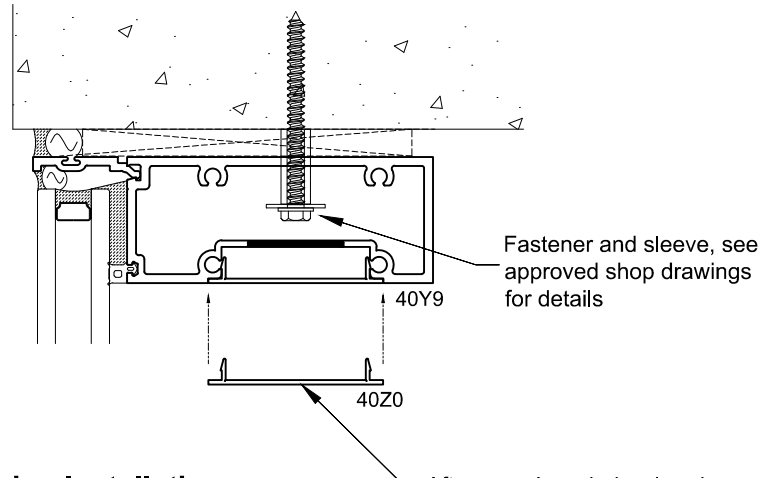
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### Step 11a/12a: Head Installation/Anchoring - No Head Starter

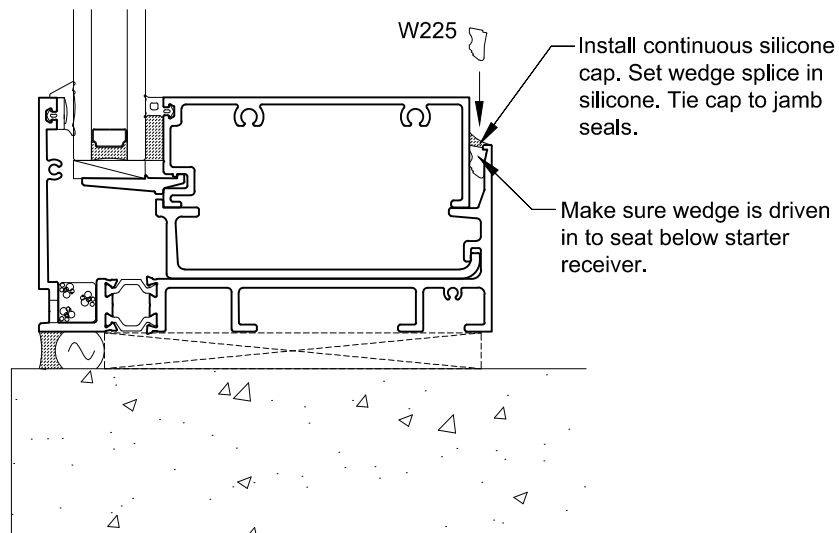
- A. Position the unit in the sill starter and position the unit head so that the unit is level and plumb.
- B. Secure the unit head with fasteners (type and spacing should be noted on the approved shop drawings).
- C. Install the interior closure (40Z0).
- D. Typical sill starters are used with this head installation.



After securing window head, install 40Z0 interior closure.

### Step 13: Sill Interior Wedge Installation

- A. Install the headless wedge. Drive it in making sure the wedge is driven to below the starter receiver.
- B. Set all wedge splices in silicone.
- C. Install a continuous silicone cap seal on top of the wedge. Tie the ends of the cap seal to the jamb seals to create a continuous air tight seal.



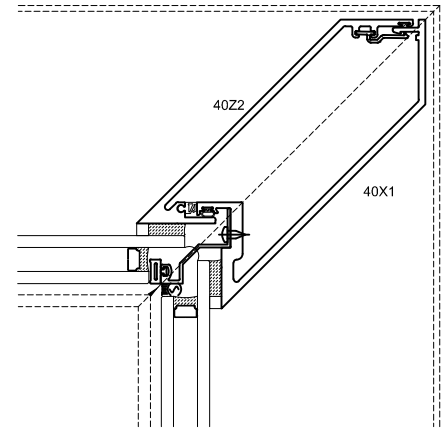
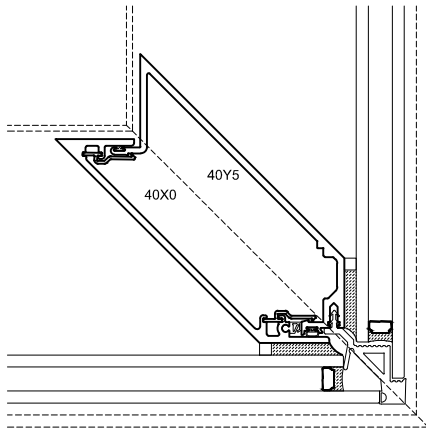
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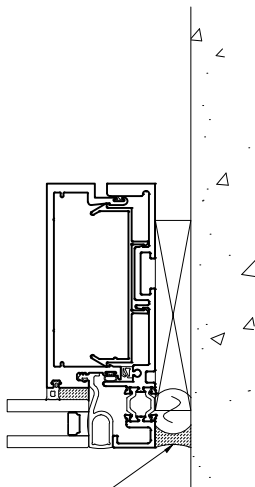


### Step 14: Sealing - Exterior Seals

- A. This is only relevant if using the corners shown below or if the jamb piece is not being used as a starter and will require sealing from the exterior.
- B. Clean the area that is to be sealed using an alcohol two cloth wipe.
- C. Install backer rod as required to achieve the proper joint width to depth ratio per the sealant manufacturer's recommendations.
- D. Apply sealant and tool it to create a finished joint.
- E. If the jamb starter is not used as a starter, step 6 should be completed at this time.



**Fig. 1**



Continuous exterior seal applied after units and jamb covers are installed.

**Fig. 2**

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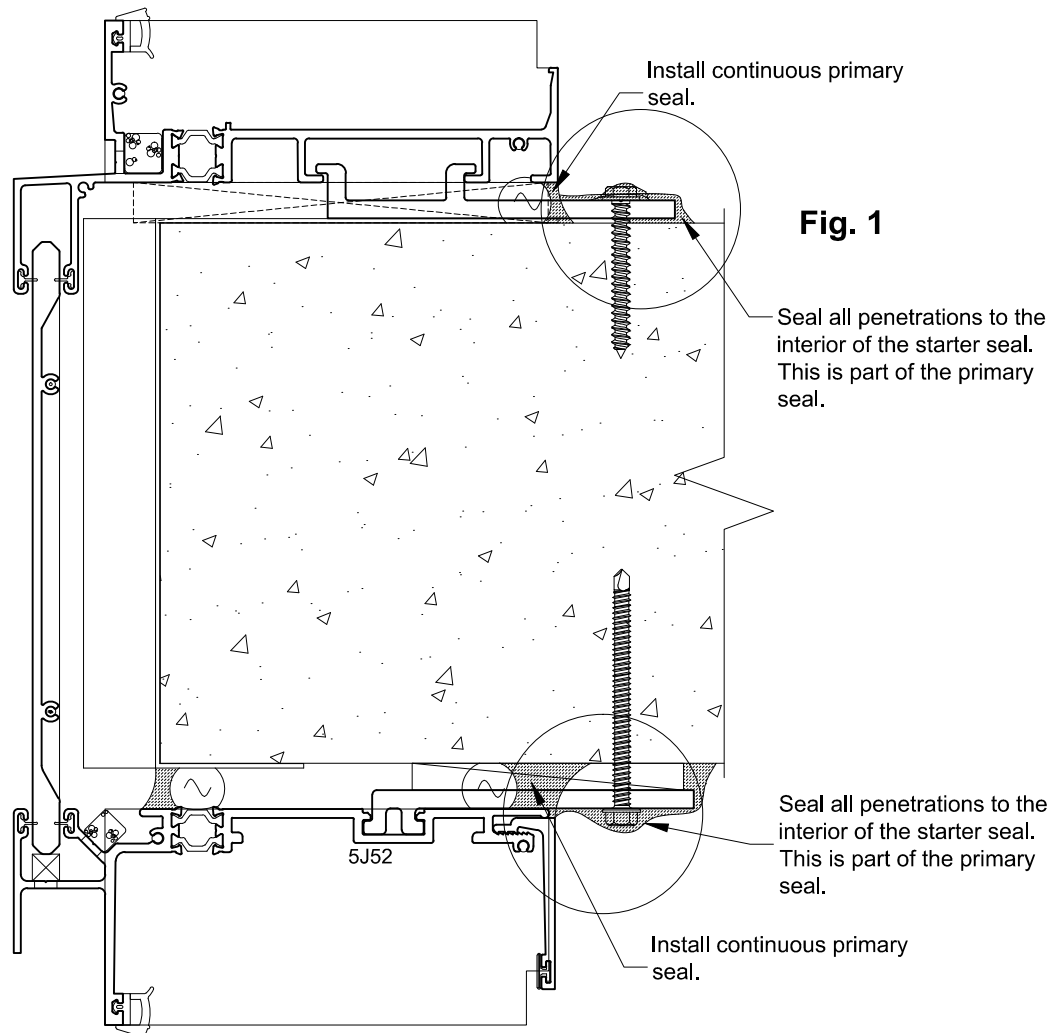
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### Step 15: Interior Perimeter Seal Installation

NOTE: The interior seal is the primary seal.

- A. Clean the area that is to come into contact with sealant with an alcohol two cloth wipe.
- B. Install sealant between the interior starter and the perimeter substrate in accordance with the sealant manufacturers' recommendations for height / depth ratio.
- C. Seal all penetrations to the interior of the starter
- D. Seal the strap anchors (if used). See Fig. 1.



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