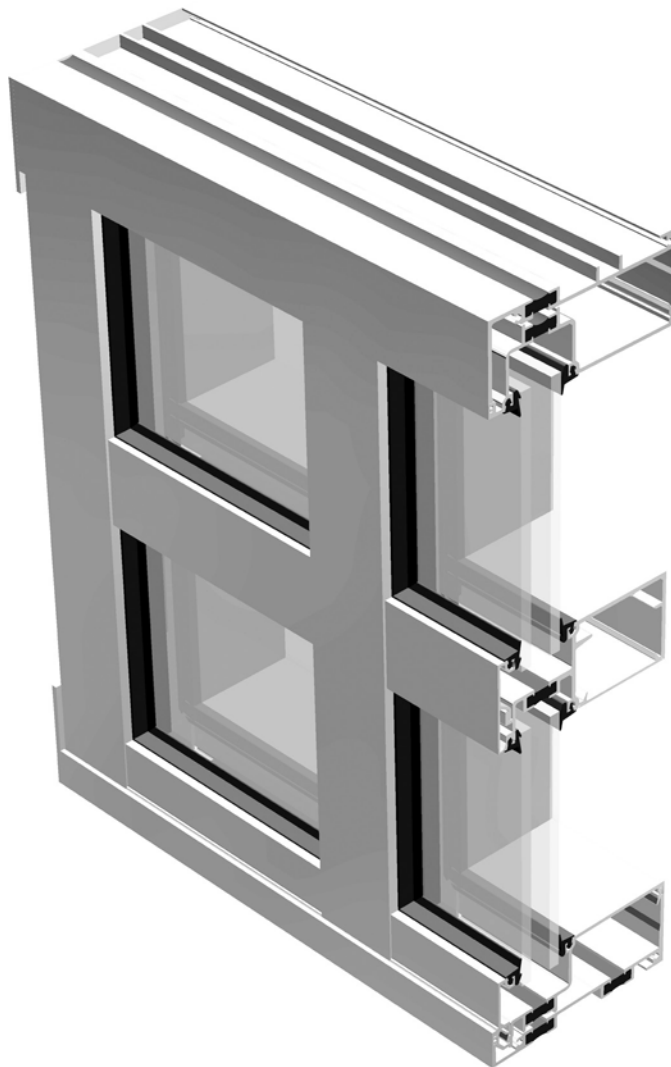


# INSTALLATION INSTRUCTIONS

## ThermaStack™ Thermal Storefront



**Oldcastle** BuildingEnvelope®

Phone: 1-866-OLDCASTLE (653-2278) • [OBE.com](http://OBE.com)

05/12/2022

**IMPORTANT: READ THIS MANUAL THOROUGHLY BEFORE BEGINNING INSTALLATION**

THE ASSEMBLY DETAILS FOUND IN THIS PACKAGE ARE GENERIC AND ARE FOR REPRESENTATION ONLY WITH THE INTENT OF GIVING THE ASSEMBLY TEAM A VISUAL REPRESENTATION AS TO HOW THE ASSEMBLIES TYPICALLY ASSEMBLE. THE SHOP SUBMISSION DRAWINGS AND DETAILS ARE THE GOVERNING DOCUMENTS AND AS SUCH THIS PACKAGE IS TO BE USED ONLY AS A RESOURCE.

FOLLOW SEALANT MANUFACTURER'S RECOMMENDATIONS FOR USE AND APPLICATION OF WEATHER SEAL SILICONE SEALANT.

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

## **GENERAL INFORMATION**

### **PRODUCT USE**

The ThermaStack™ thermal storefront system is intended for assembly and installation by glazing professionals with appropriate experience. Subcontractors must be qualified to provide field instruction and project management.

Oldcastle BuildingEnvelope® does not control the application of its product configurations, sealant, or glazing material and assumes no responsibility for the application. It is the responsibility of the owner, architect, and installer to make these selections in strict compliance with applicable laws and building codes.

The air and water performance of the ThermaStack™ thermal storefront is directly related to the completeness and integrity of the assembly and installation process of the seal installed at the horizontal to vertical connections and at the interior side of the glass.

Variations on details shown may occur, but are not the responsibility of Oldcastle BuildingEnvelope®.

### **PROTECTION AND STORAGE**

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

### **CHECK MATERIAL**

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

Check all materials upon arrival at job site for quality and to determine any shipping damage. Using the contract documents, completely check the surrounding conditions that will receive your materials. Notify the general contractor by letter of any discrepancies before proceeding with the work. Failure to do so constitutes acceptance of work by other trades.

Check shop drawings, installation instructions, architectural drawings and shipping lists to become familiar with the project. The shop drawings take precedence and include specific details for the project. The assembly and installation instructions are of a general nature and cover the most common conditions.



## GENERAL INFORMATION (CONTINUED)

Due to varying job conditions, all sealant must be approved by the sealant manufacturer to ensure it will perform per conditions shown on the instructions and shop drawings. The sealant must be compatible with all surfaces in which adhesion is required, including other sealant surfaces. Use primers where directed by sealant manufacturer. Properly store sealant at the recommended temperatures and check sealant for expiration date and shelf life before using.

### FIELD CONDITIONS

All material to be installed plumb, level, and true. Aluminum to be placed in direct contact with masonry or incompatible material should be isolated with a heavy coat of zinc rich, bituminous paint or non-metallic material unless otherwise specified. After sealant is set and a representative amount of the wall has been glazed (250 sq. ft. or more), perform a water hose test in accordance with AAMA 501.2. On large projects the hose test must be repeated during the glazing operation. Review anchors or embeds in structure as early as possible to confirm that 'as built' building structure can accommodate anticipated anchor tolerances.

### CLEANING MATERIALS

Cement, plaster terrazzo, alkaline, and acid based materials used to clean masonry are very harmful to finishes. Any residue should be removed with water and mild soap immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used. Refer to the architectural finish guide in the detail catalogue.

### EXPANSION JOINTS

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

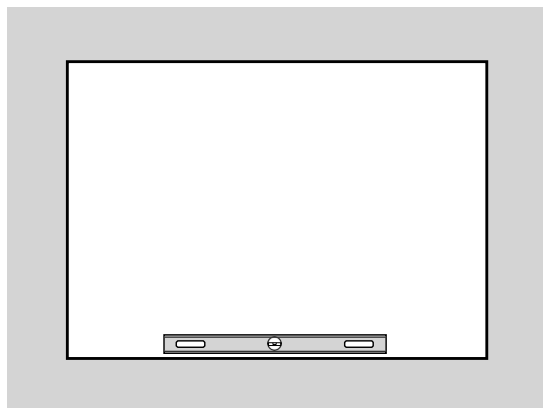


# TABLE OF CONTENTS

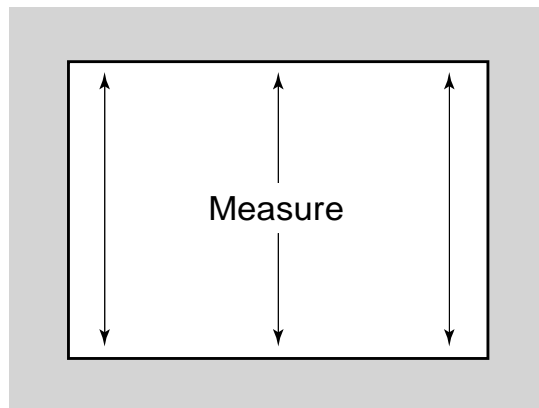
|  |         |
|--|---------|
| GENERAL INFORMATION .....                                  | 2 - 3   |
| SITE PREPARATION .....                                     | 5       |
| TYPICAL ELEVATIONS .....                                   | 6 - 7   |
| EXTERIOR AND INTERIOR GLAZING .....                        | 6       |
| EXTERIOR GLAZING FOR STRUCTURAL SILICONE APPLICATION ..... | 7       |
| FRAME FABRICATION .....                                    | 8 - 9   |
| FABRICATE WEEP HOLES .....                                 | 9       |
| FABRICATE ANCHOR CLIP AND SUPPORT PIN HOLES .....          | 9       |
| FRAME ASSEMBLY .....                                       | 10 - 11 |
| INSTALL ANCHOR CLIPS .....                                 | 10      |
| INSTALL END DAMS AT HEAD AND SILL CHANNELS .....           | 10 - 11 |
| FRAME INSTALLATION .....                                   | 12 - 15 |
| INSTALL HEAD AND SILL CHANNELS .....                       | 12      |
| INSTALL WALL JAMB .....                                    | 12      |
| INSTALL WATER DEFLECTORS .....                             | 14 - 15 |
| PERIMETER SEALING .....                                    | 15      |
| GLAZING .....  | 16 - 18 |
| GLASS SIZES FOR EXTERIOR AND INTERIOR GLAZING .....        | 16      |
| GLAZING GASKETS .....                                      | 16      |
| EXTERIOR GLAZING GLASS INSTALLATION .....                  | 16      |
| INTERIOR GLAZING GLASS INSTALLATION .....                  | 17      |
| GLASS STOP INSTALLATION .....                              | 17      |
| EDGE BLOCK INSTALLATION .....                              | 18      |
| GASKET INSTALLATION .....                                  | 18      |
| STRUCTURAL SILICONE GLAZING .....                          | 19 - 24 |
| GLASS SIZES FOR STRUCTURAL SILICONE GLAZING .....          | 19      |
| GLASS BITES: NON-CORNERS .....                             | 19      |
| GLASS BITES: CORNER CONDITIONS .....                       | 19      |
| HORIZONTAL EXPANSION JOINTS .....                          | 24      |
| HORIZONTAL EXPANSION JOINTS .....                          | 25      |
| TRANSITION GLAZING .....                                   | 26      |
| CORNER CONDITIONS .....                                    | 27      |
| CORNER INSTALLATION .....                                  | 27 - 28 |
| SPECIAL INSTALLATION SEQUENCE FOR FIELD ASSEMBLY .....     | 28      |
| ENTRANCE FRAMES .....                                      | 29 - 32 |
| SILL CHANNEL .....   | 30      |
| HEAD CHANNEL .....   | 31      |
| TRANSOM .....  | 32      |
| PARTS IDENTIFICATION .....                                 | 33 - 36 |

## SITE PREPARATION BEFORE INSTALLATION

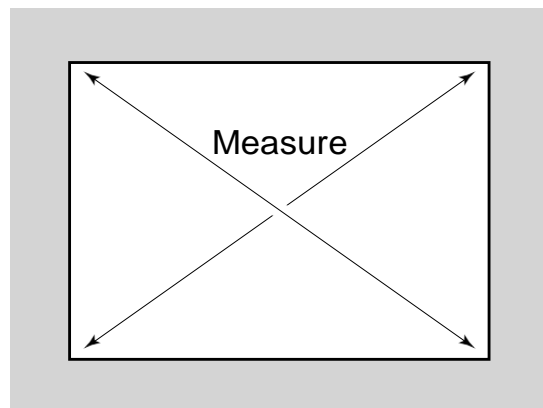
1. Review and measure the opening. Verify framing is plumb, straight, and true around window opening.
2. Verify rough window opening size has 1/2" (12.7) clearance in both width and height to the window. Measure opening at each end and at center vertically and horizontally. Make corrections to openings as required. Measure opening diagonally to check squareness. Chip concrete high points to flush and rounded corners to square.



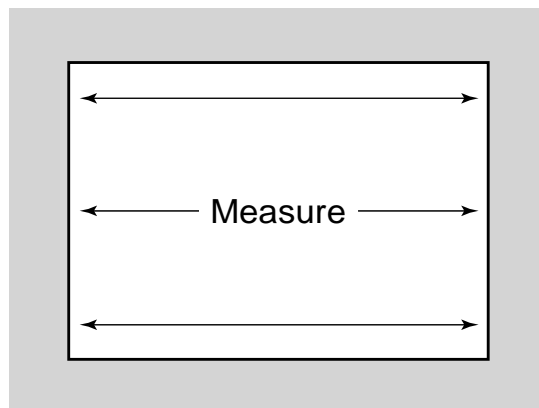
LEVEL



VERTICAL DIMENSION



SQUARE

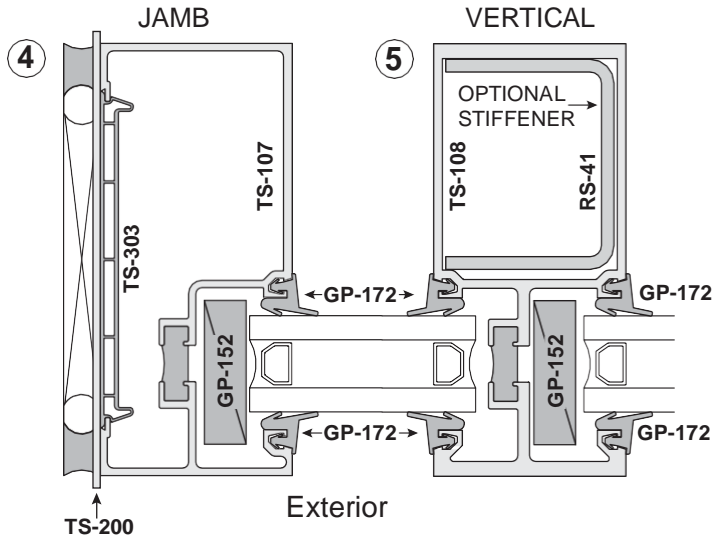


HORIZONTAL DIMENSION

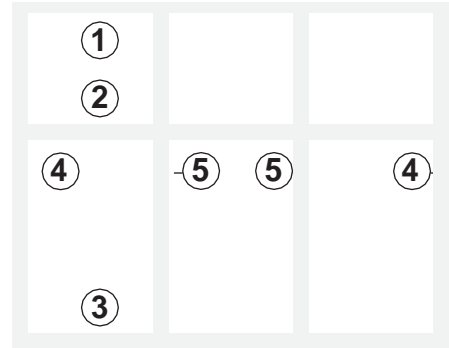
# TYPICAL ELEVATIONS

## EXTERIOR AND INTERIOR GLAZING

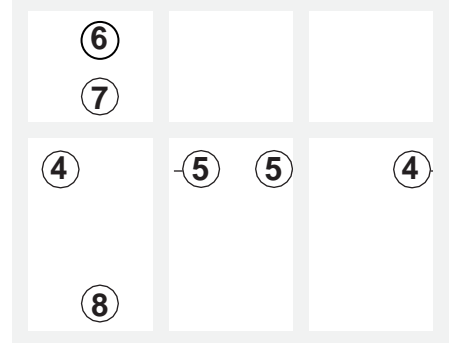
### EXTERIOR AND INTERIOR GLAZING



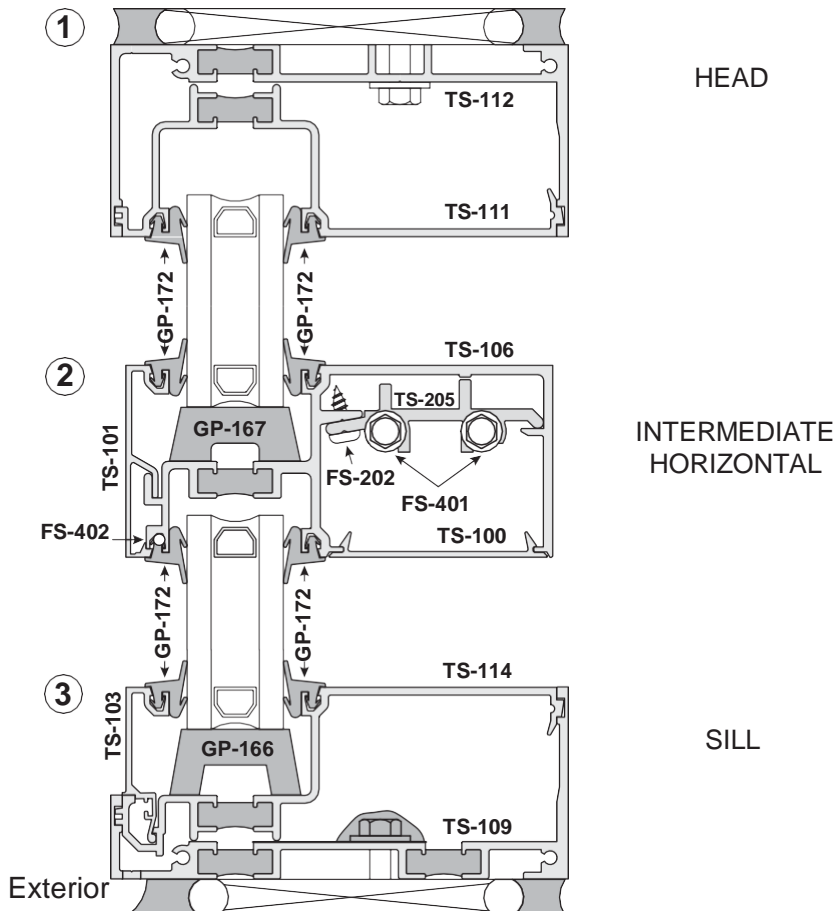
### TYPICAL ELEVATION EXTERIOR GLAZING



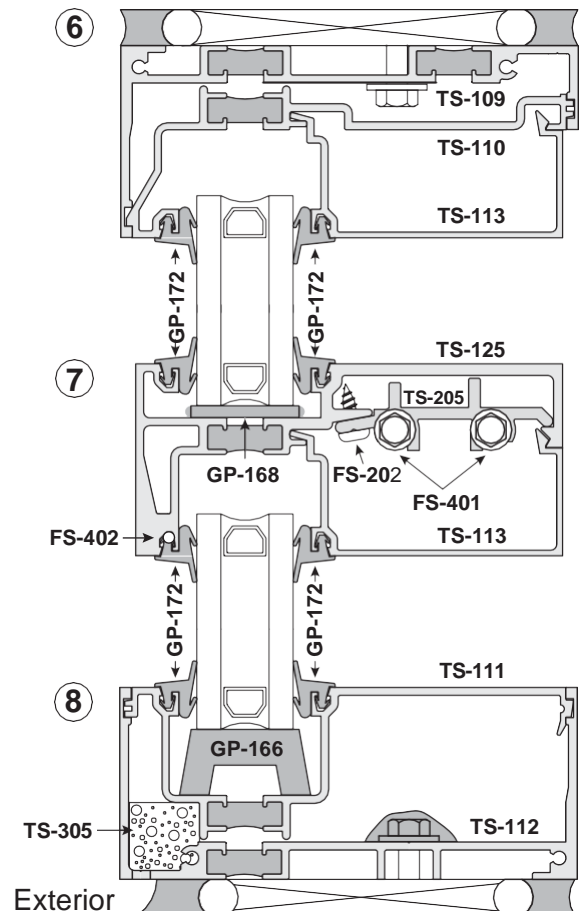
### TYPICAL ELEVATION INTERIOR GLAZING



### EXTERIOR GLAZING



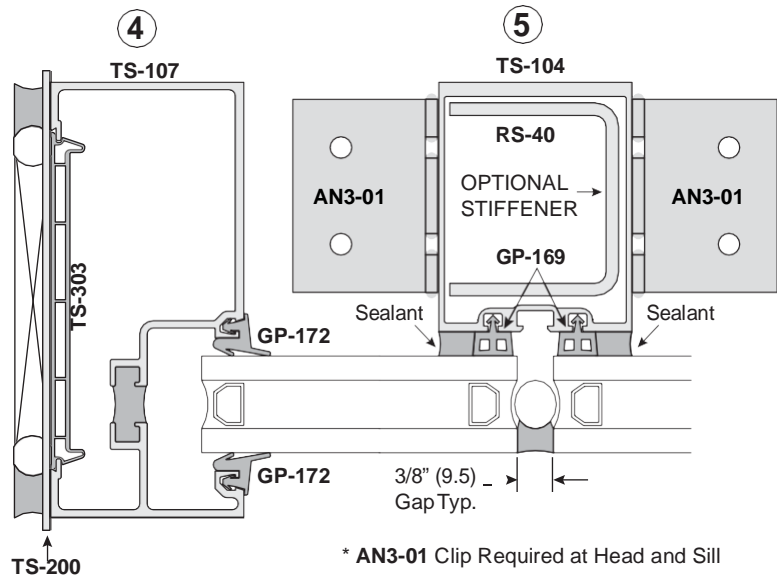
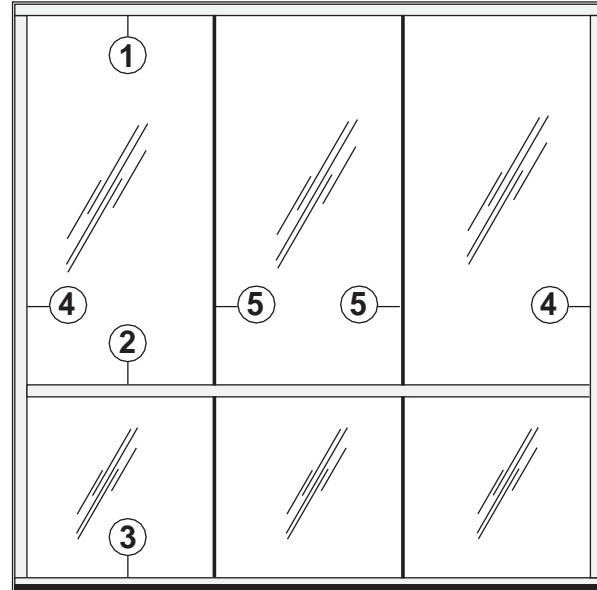
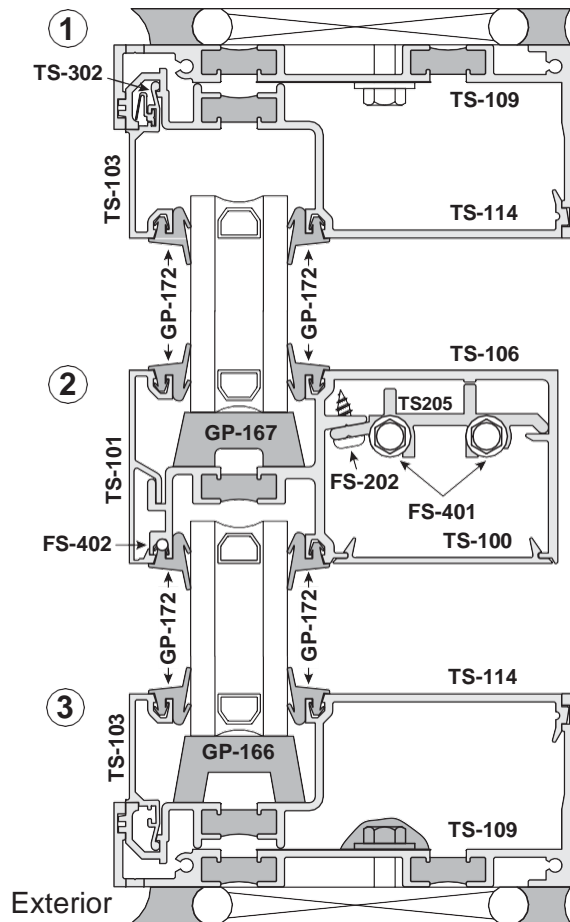
### INTERIOR GLAZING



# TYPICAL ELEVATIONS (CONTINUED)

## EXTERIOR GLAZING FOR STRUCTURAL SILICONE APPLICATION

The following schematic details show proper member selection.



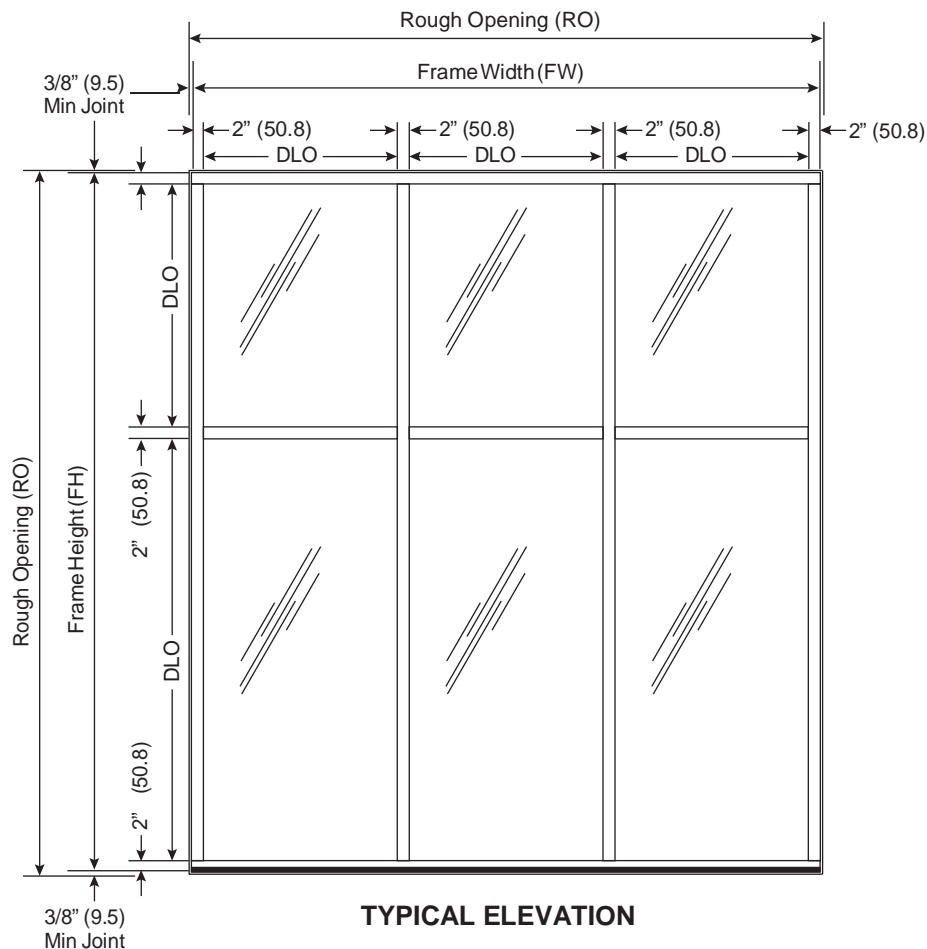
# FRAME FABRICATION

Details shown in these instructions are 1" (25) glazing systems. Measure ROUGH OPENING to determine FRAME DIMENSION allowing 3/8" (9.5) minimum clearance for shimming and caulking around perimeter.

## CUT MEMBERS

1. Cut members to size. Use the information below:

| Component                                       | Dimensioning                      |
|---|-----------------------------------|
| <b>Head and Sill Channels:</b>                  | FRAME WIDTH                       |
| <b>Wall Jambs and Verticals:</b>                | FRAME HEIGHT minus 1-1/32" (26.2) |
| <b>Head and Sill Fillers:</b>                   | D.L.O. plus 0 minus 1/32" (0.8)   |
| <b>Horizontal Members:</b>                      | D.L.O. plus 0 minus 1/32" (0.8)   |
| <b>Intermediate Horizontal Fillers:</b>         | D.L.O. minus 1/32" (0.8)          |
| <b>Horizontal Glazing Beads:</b>                | D.L.O. minus 1/32" (0.8)          |
| <b>Horizontal face Covers: ThermaStack™</b>     | D.L.O. minus 1/32" (0.8)          |
| <b>Horizontal face Covers: ThermaStack™ SSG</b> | FRAME WIDTH minus 4-1/32" (102.4) |
| <b>Vertical Spandrel Adaptors:</b>              | D.L.O. plus 1" (25.4)             |
| <b>Horizontal Spandrel Adaptors:</b>            | D.L.O. minus 1/8" (3.2)           |



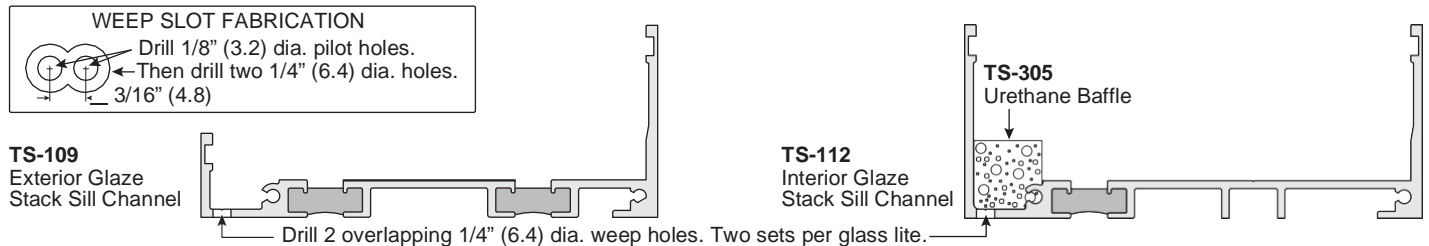


# FRAME FABRICATION (CONTINUED)

## FABRICATE WEEP HOLES

2. Fabricate weep slots shown below in sill channel, two sets per glass lite at 12" (304.8) from verticals. See **DETAIL A**. Weep slots may be drilled on bottom or face of sill channel. Insert Urethane Baffle at Weep Hole locations for Interior Glaze. (Use silicone to hold them in place if necessary)

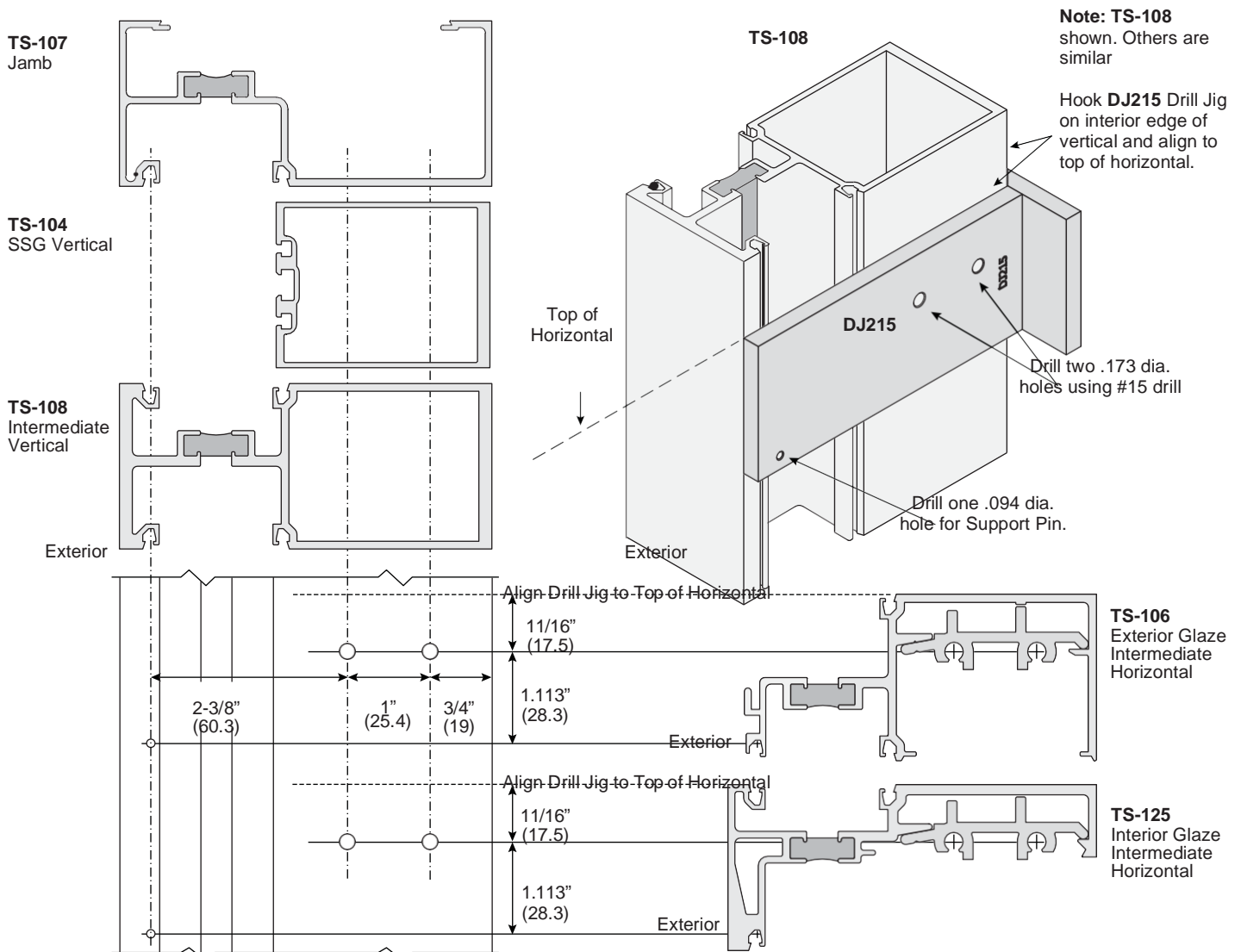
**NOTE:** For best water performance locate weep slots on bottom of sill channel.



**DETAIL A**

## FABRICATE ANCHOR CLIP AND SUPPORT PIN HOLES

3. Mark on verticals the location of horizontal members and drill holes for **TS-201** anchor clips. Drill Jigs are available. The use of Oldcastle BuildingEnvelope® **DJ215** Drill Jig is recommended. See **DETAIL B**.

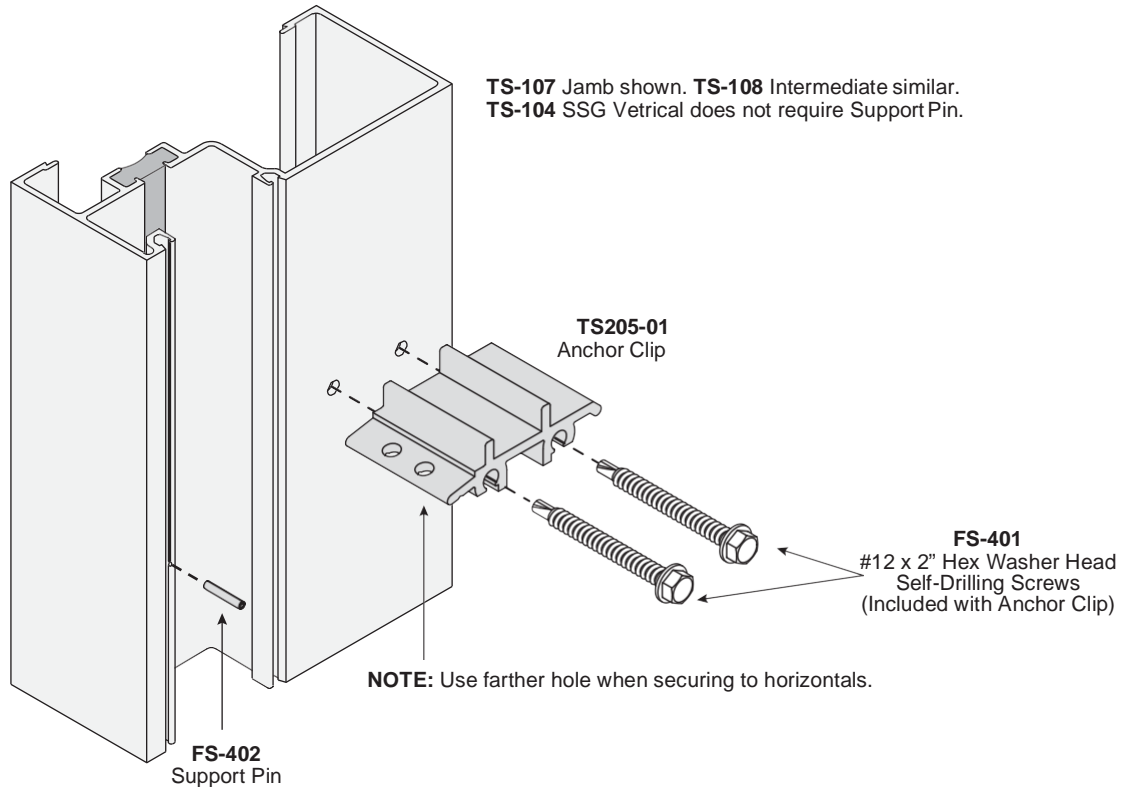


**DETAIL B**

# FRAME ASSEMBLY

## INSTALL ANCHOR CLIPS

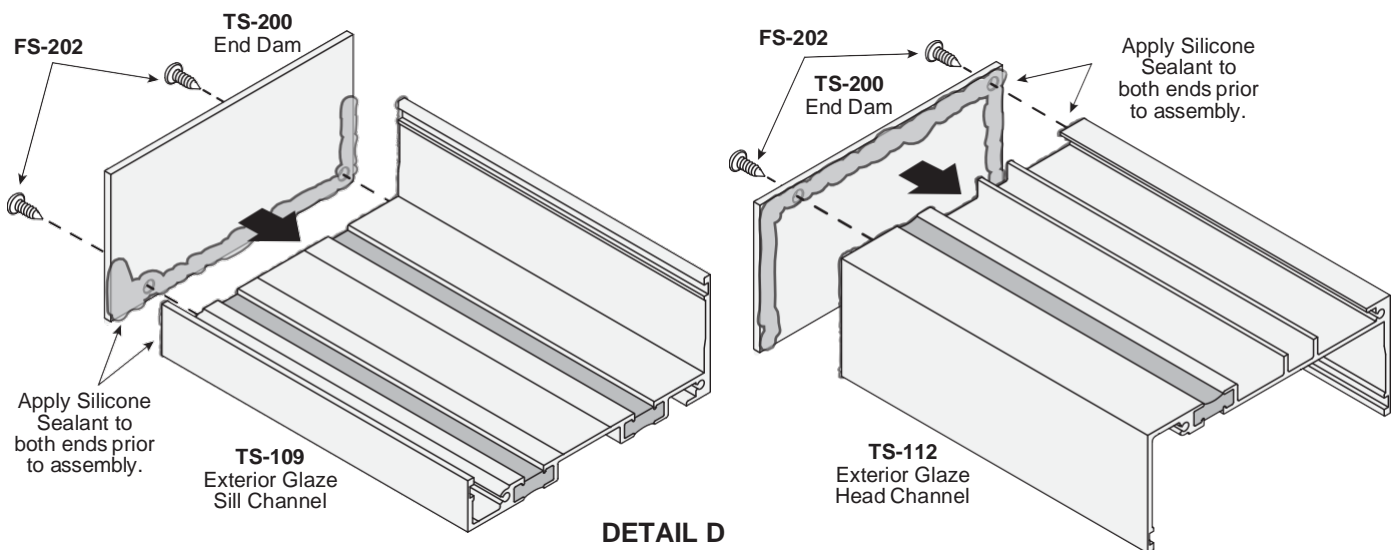
1. Attach anchor clips to verticals with screws provided. See **DETAIL C**.



**DETAIL C**

## INSTALL END DAMS AT HEAD AND SILL CHANNELS

2. Apply End Dams to head and sill channels at ends of opening and secure with screws. See **DETAIL D**.

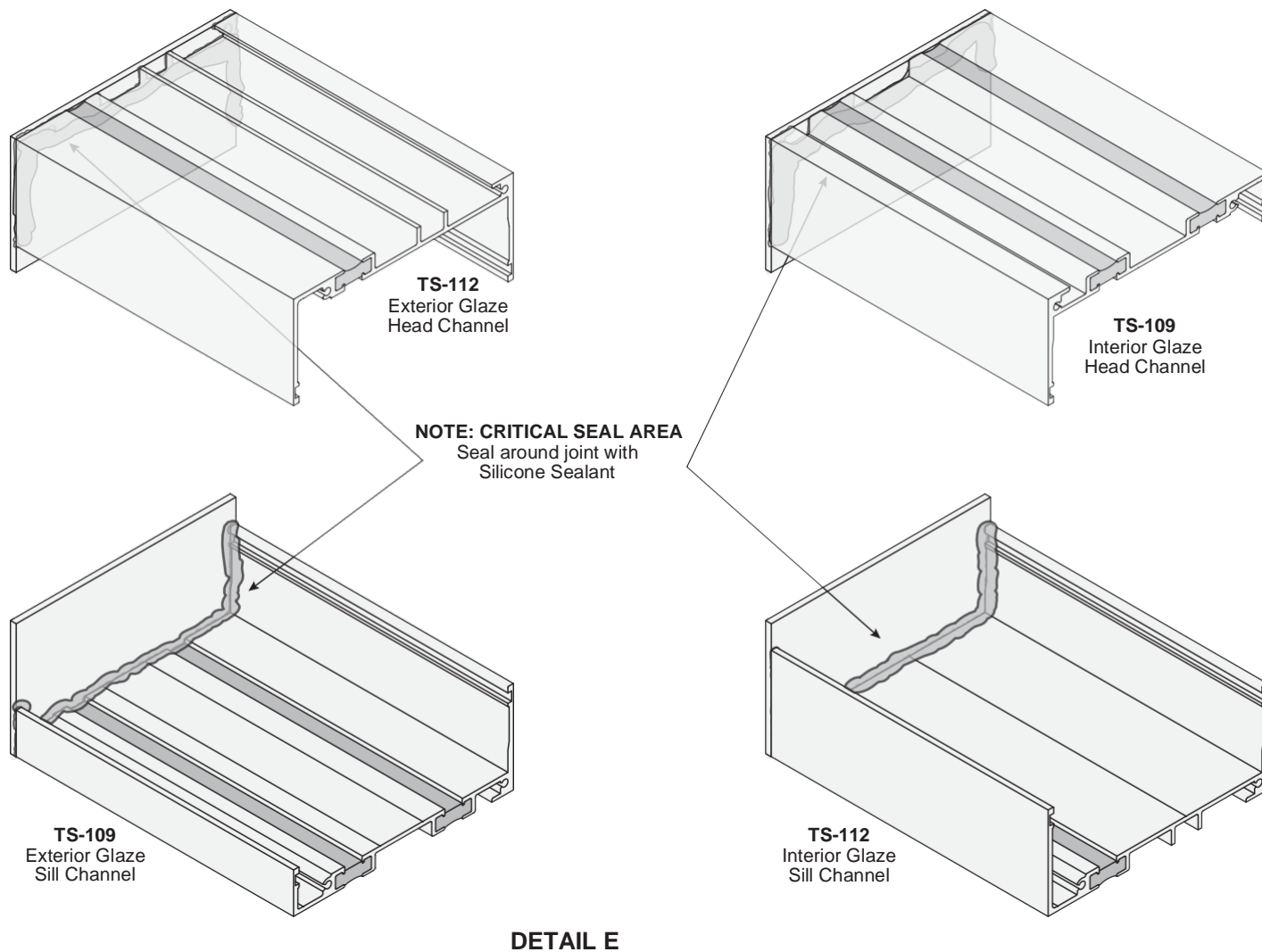


## FRAME ASSEMBLY (CONTINUED)

### INSTALL END DAMS AT HEAD AND SILL CHANNELS (CONTINUED)

3. Seal around joint with Silicone to control water infiltration. See **DETAIL E**.

**NOTE:** Clean all surfaces prior to applying sealants.  
See sealant manufacturer requirements.  
**TYPICAL AT ALL CONDITIONS**



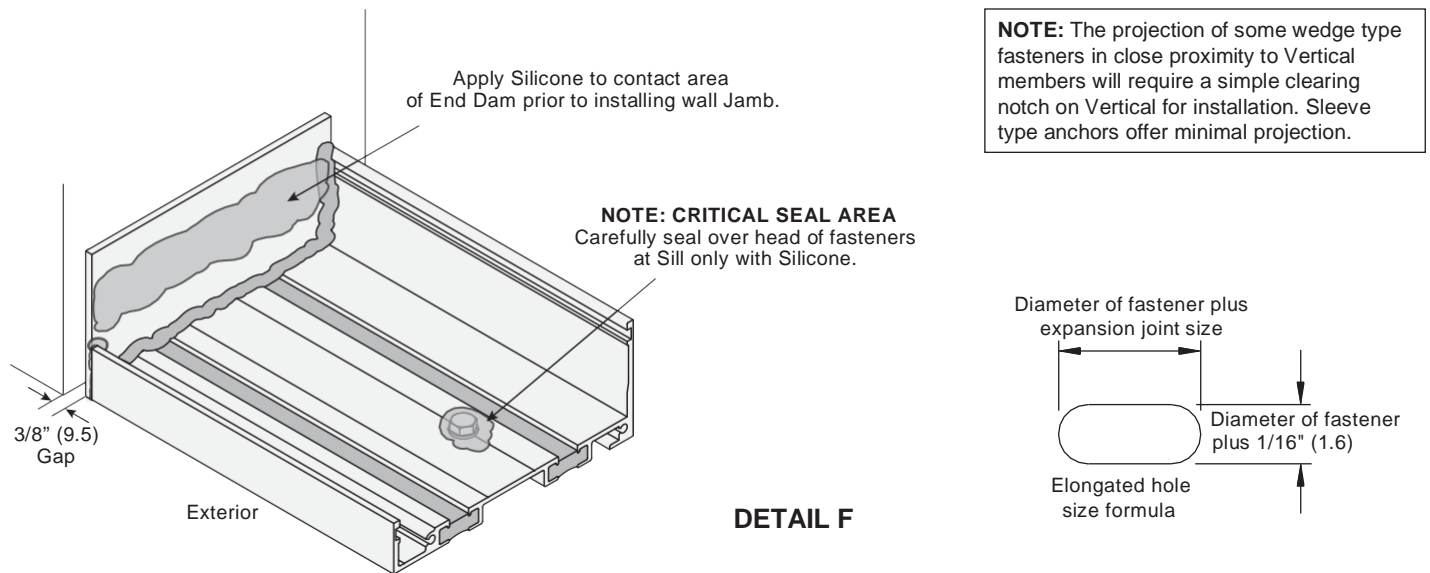
# FRAME INSTALLATION

## INSTALL HEAD AND SILL CHANNELS

1. Set head and sill channels in place plumb and square; shim as required to level and anchor to structure. Locate fasteners 6" (152.4) each side of verticals and 24" (609.6) on center or as required. Holes for fasteners should be elongated laterally to allow for thermal expansion. Seal over head of fasteners with Silicone. See **DETAIL F. Pin head and sill to structure at one point only per cut length.** (This hole is not elongated). Sill should be shimmed at fastener's location and under loading points.

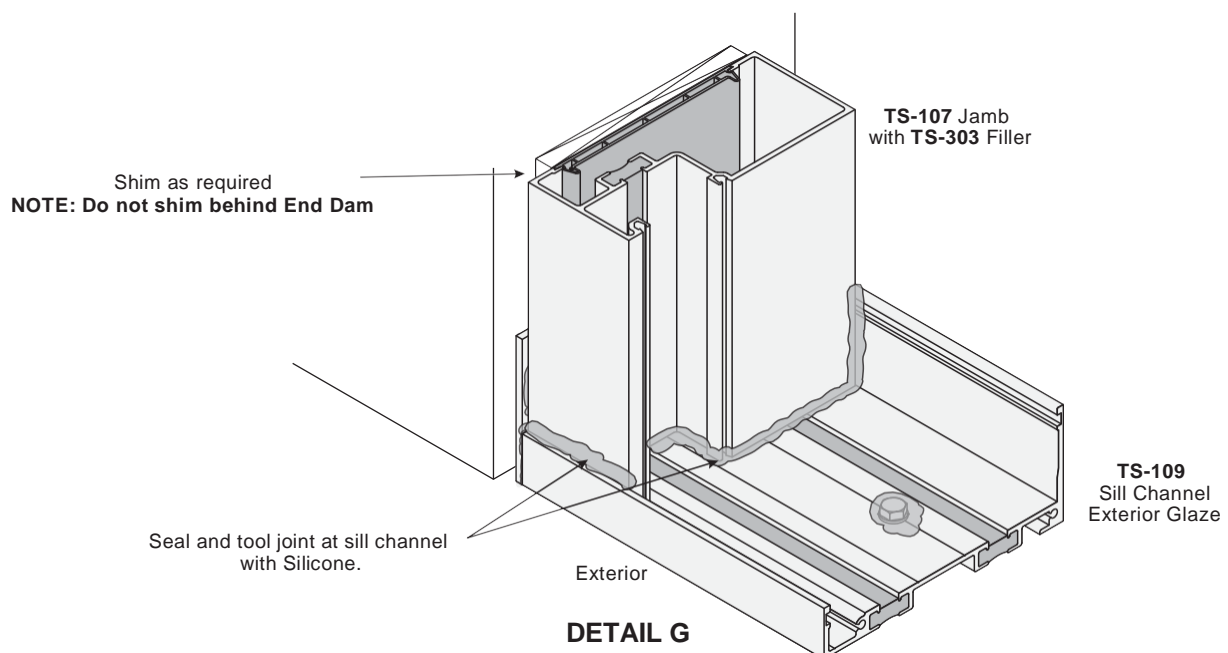
**Ensure sill channel remains clean of debris during installation to prevent blockage of weep holes.**

2. Install urethane baffles into sill channel at weep slot locations (Use Silicone to hold them in place if necessary). See **DETAIL I** on Page 15.



## INSTALL WALL JAMB

3. Install wall jamb into head and sill channels. Shim and plumb as required. See **DETAIL G.**



# FRAME INSTALLATION (CONTINUED)

4. Snap-in head and sill fillers for the first glass bay. See **DETAIL H**.
5. Install next vertical tight against head and sill fillers.

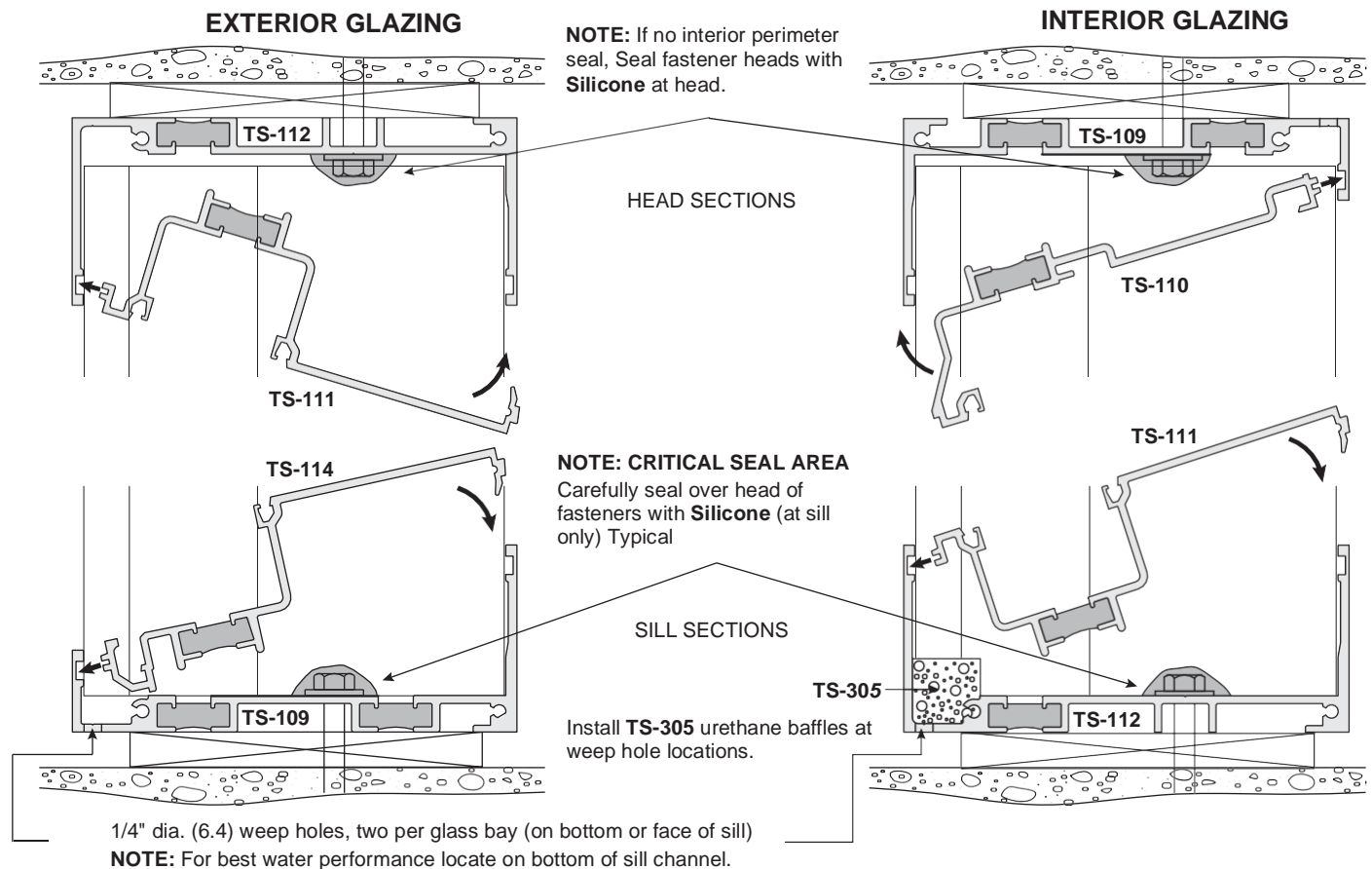
**NOTE:** Verticals are not symmetrical. Never allow two shallow pockets to face each other.

**Verticals must be secured to head/sill channels when end reactions exceed 500 lbs. (2224 N)**

6. Snap-in head and sill fillers for the second glass bay and repeat Steps 4 and 5 until all verticals are installed and all head and sill inserts are snapped-in place. At the last glass bay install wall jamb in place before snapping-in head and sill fillers.

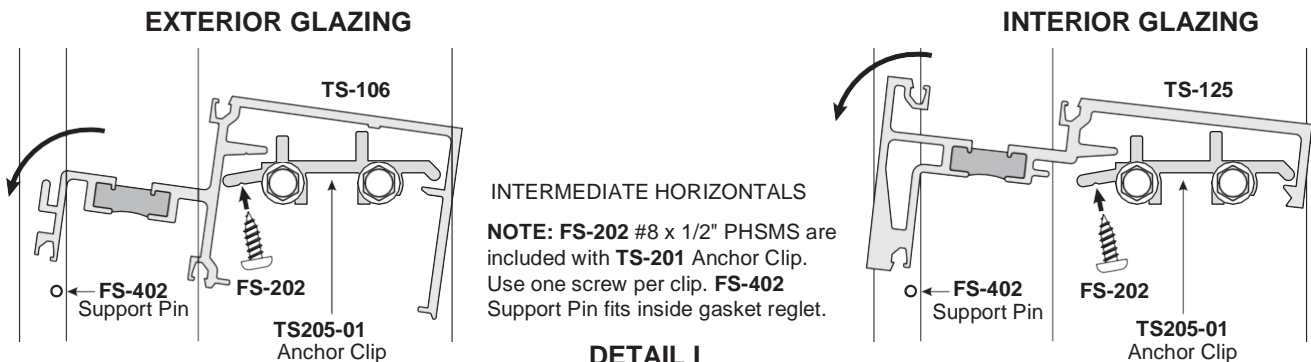
**NOTE:** A check should be made every four bays to monitor accumulation of horizontal members cutting tolerances.

7. Seal joint where verticals meet head and sill. See **DETAIL G** on Page 14.



**DETAIL H**

8. Roll horizontal over anchor clip and support pin. Secure with provided screw. See **DETAIL I**.



**DETAIL I**

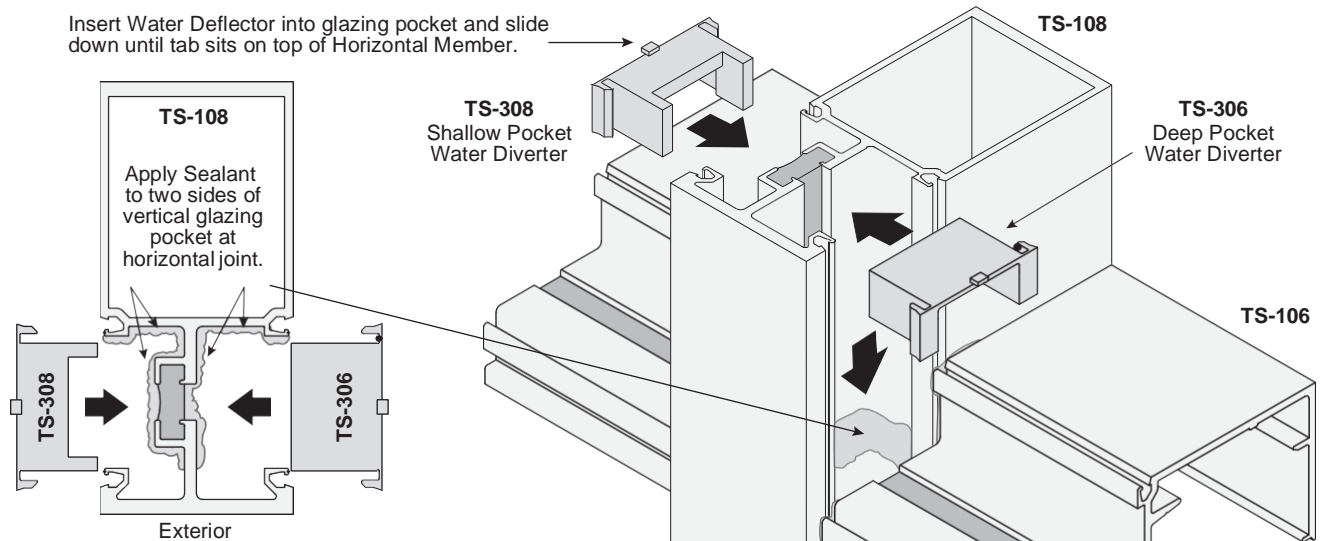
# FRAME INSTALLATION (CONTINUED)

## INSTALL WATER DEFLECTORS

**NOTE:** Exterior Glazing shown. See Page 17 for Interior Glazing. For Structural Glazing See Page 22.

9. Apply Silicone Sealant to vertical glazing pocket at vertical/horizontal intersection. Silicone must be applied to two sides of pocket only. Clearance at outside will allow infiltrated water to run down to subsill. See **DETAIL J**.
10. Insert water deflectors into glazing pocket and slide them down to position. Top of deflector must be flush with horizontal glazing pocket. See **DETAIL K**.
11. After water deflector is installed, fill Gasket Reglets and seal and tool Water Deflector/Horizontal Joint and full face of Horizontal at Vertical intersection with Sealant. See **DETAIL L**.

Insert Water Deflector into glazing pocket and slide down until tab sits on top of Horizontal Member.

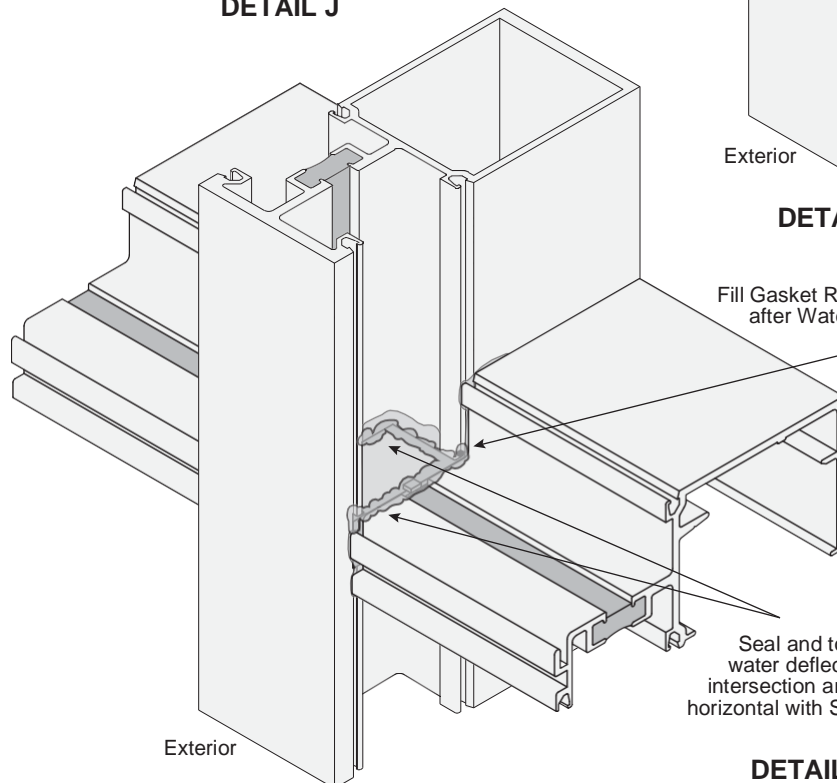


**NOTE:** Use **TS-308** for shallow pocket and **TS-306** for deep pocket.

**DETAIL J**

Exterior

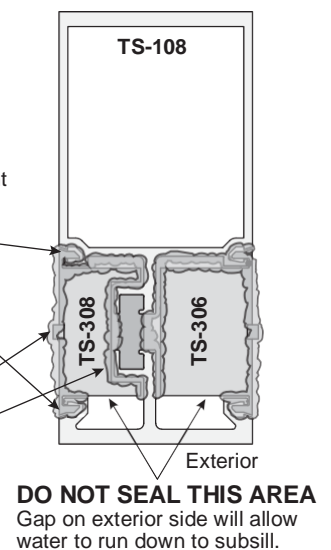
**DETAIL K**



Fill Gasket Reglet with Silicone Sealant after Water Deflector is installed.

Seal and tool joint at water deflector/vertical intersection and full face of horizontal with Silicone Sealant.

**DETAIL L**



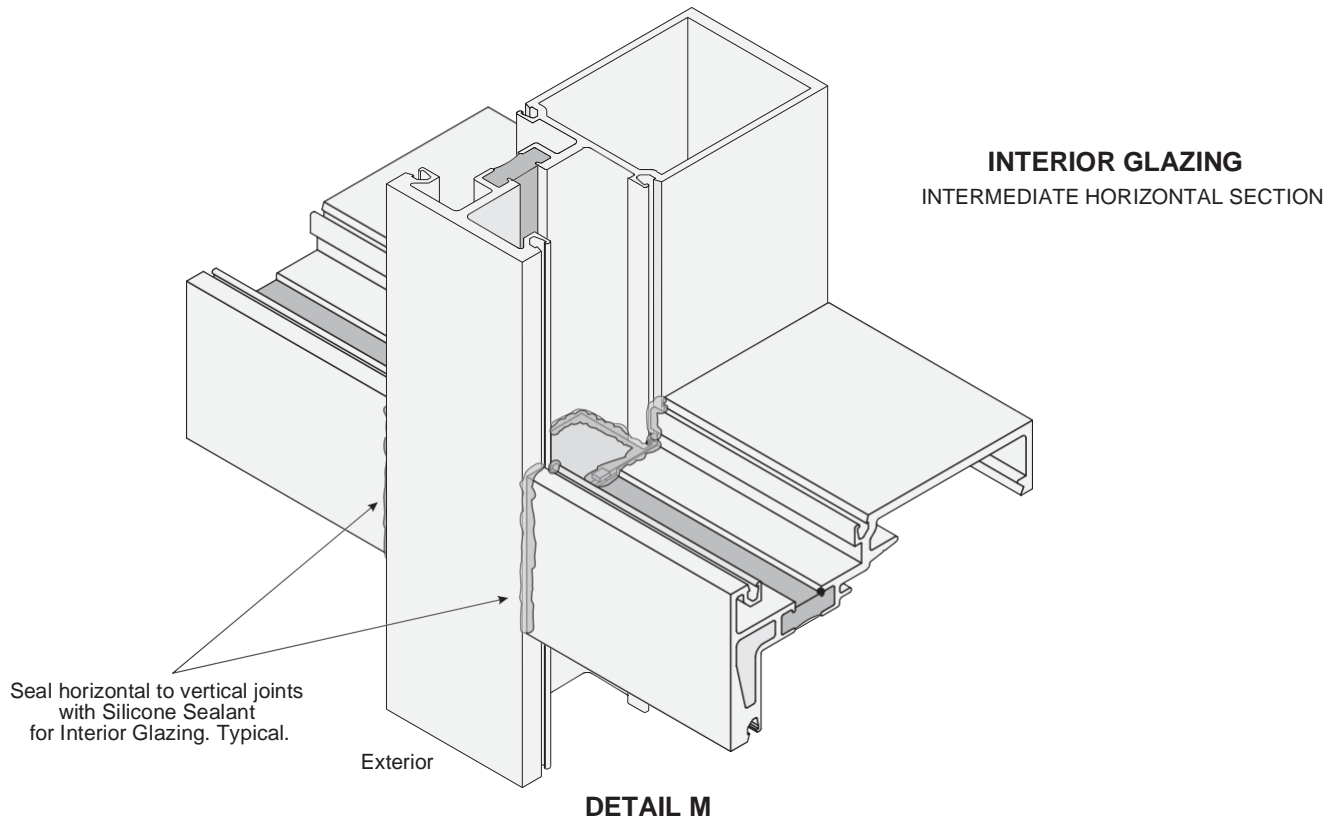


## FRAME INSTALLATION (CONTINUED)

### INSTALL WATER DEFLECTORS (CONTINUED)

12. For interior glazing applications, seal horizontal to vertical joints. See **DETAIL M**.

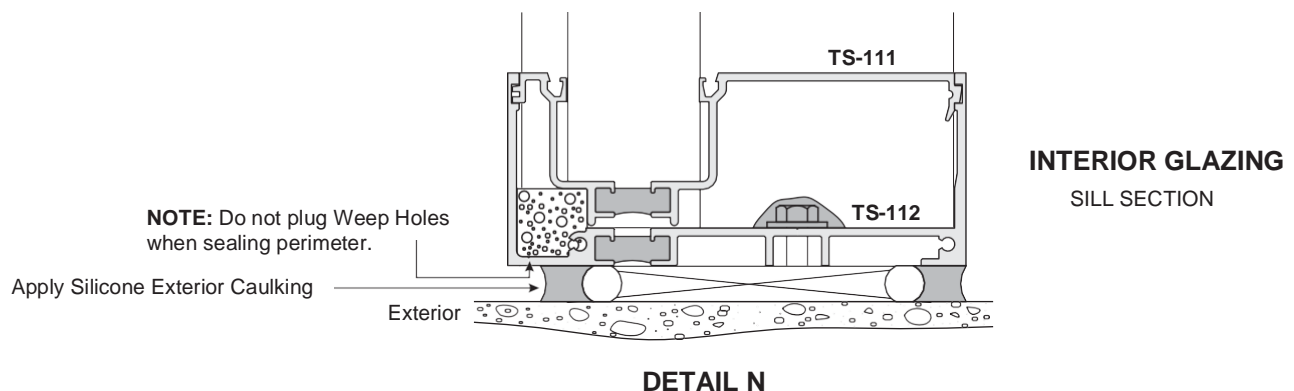
**NOTE:** Water deflectors applied to door jambs must be sealed all around to prevent water from running to floor (water will drain at opposite end).



## PERIMETER SEALING

**INTERIOR GLAZING.** When interior glazing a multistory building exterior perimeter sealing must be done before glazing, unless caulking is to be done from the exterior as a secondary operation. See **DETAIL N**.

**EXTERIOR GLAZING.** Perimeter sealing may be done later.



# GLAZING

## GLASS SIZES FOR EXTERIOR AND INTERIOR GLAZING

**Glass Size: Daylight Opening + 7/8" (22.2)**

**NOTE:** These formulas do not take into account glass tolerance. Consult glass manufacturer before ordering glass.

## GLAZING GASKETS

Cut glazing gaskets to size. Gaskets should be cut 1/8" (3.2) longer per foot of aluminum member to allow for shrinkage. Same gaskets are used for interior and exterior.

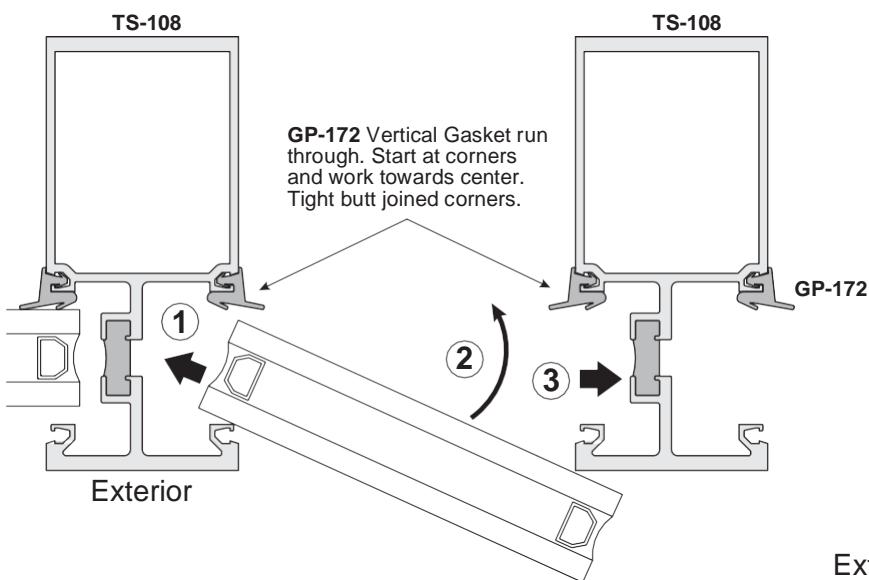
## EXTERIOR GLAZING GLASS INSTALLATION

1. Install interior gaskets. Horizontal gaskets run through. Start at corners and work towards center. Tight butt joined corners are critical to avoid leakage.
2. Install setting blocks in horizontal/sill members. Check deadload charts and shop drawings for correct setting block locations. Rest glass on setting blocks pressed against interior gaskets.
3. Set glass in place following the four step procedure. See **DETAIL O**. Be careful not to disturb interior gasket while installing glass. Center glass in the opening.

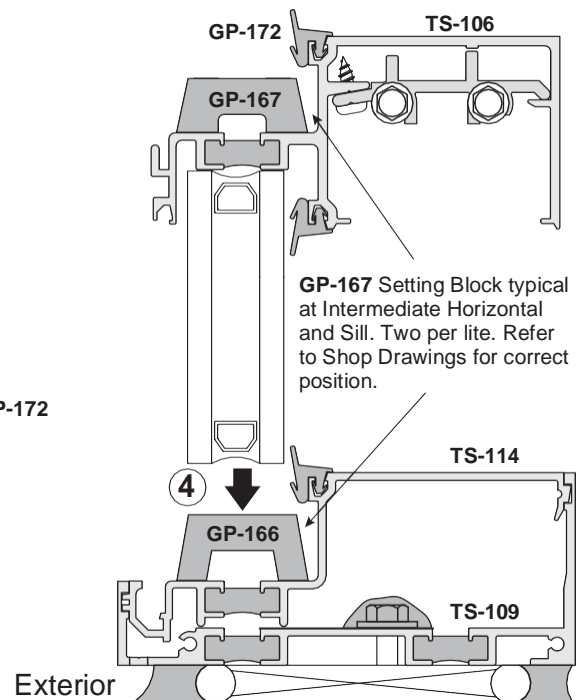
**NOTE:** All glazing pockets must be clean of debris before glazing to prevent blockage of weeps or drains.

### EXTERIOR GLAZING SEQUENCE

- ① Angle panel into deep pocket.
- ② Swing into plane.
- ③ Slide to shallow pocket.
- ④ Slide carefully down onto setting blocks.



**DETAIL O**





## GLAZING (CONTINUED)

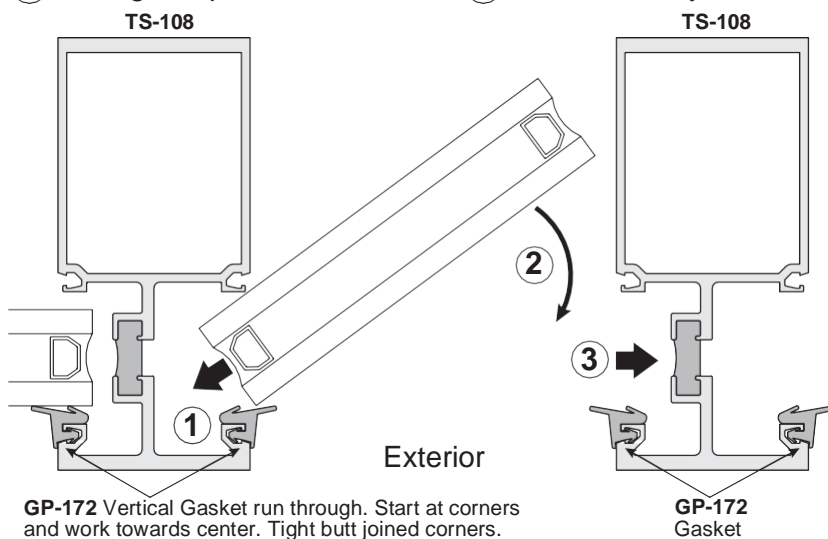
### INTERIOR GLAZING GLASS INSTALLATION

1. Install setting blocks, two per glass lite, into horizontal and sill members. Check deadload charts and shop drawings for correct setting block locations.
2. Install exterior gaskets. Vertical gaskets run through. Start at corners and work towards center. Tight butt joined corners are critical to avoid leakage.
3. Set glass in place following four step procedure. See **DETAIL P**. Be careful not to disturb exterior gasket while installing glass. Center glass in opening and rest on setting blocks. Press against exterior gaskets.

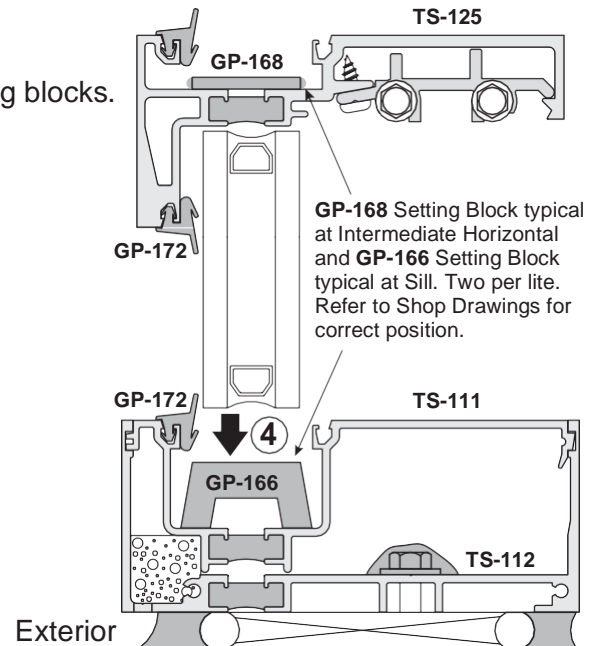
**NOTE:** All glazing pockets must be clean of debris before glazing to prevent blockage of weeps or drains.

#### INTERIOR GLAZING SEQUENCE

- ① Angle panel into deep pocket.
- ② Swing into plane.
- ③ Slide to shallow pocket.
- ④ Slide carefully onto setting blocks.



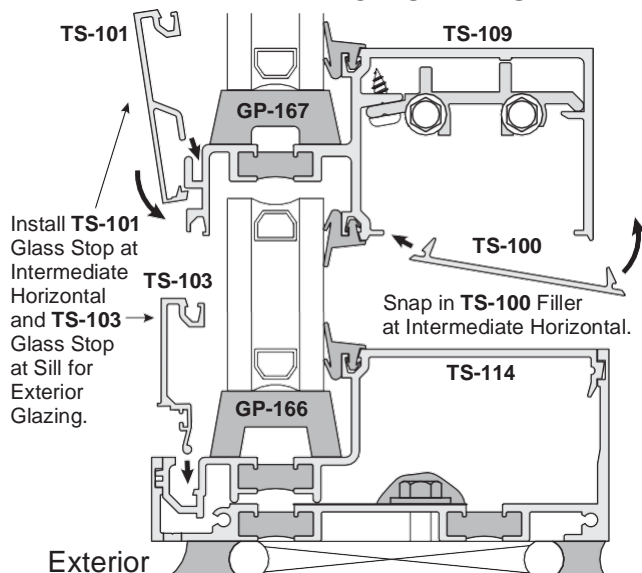
**DETAIL P**



### GLASS STOP INSTALLATION

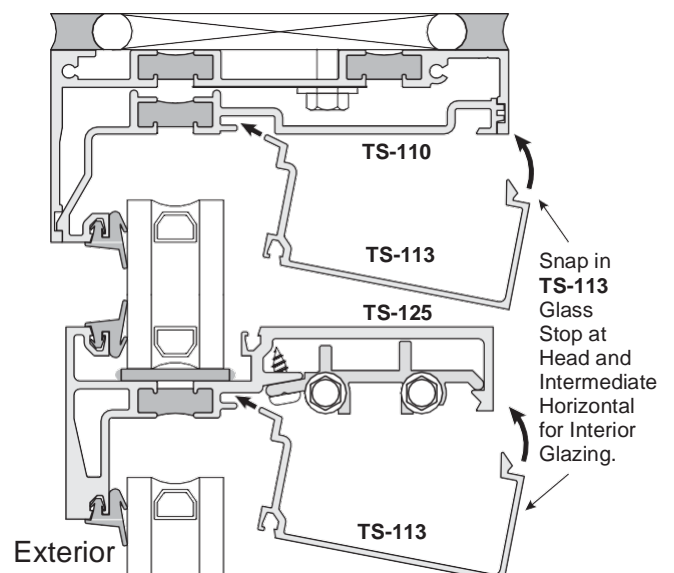
4. Install glass stops as shown in **DETAIL Q**.

#### EXTERIOR GLAZING



**DETAIL Q**

#### INTERIOR GLAZING



## GLAZING (CONTINUED)

### EDGE BLOCK INSTALLATION

- To prevent glass from shifting in the opening "W" Edge Blocks should be installed into vertical pockets at center point or as recommended by glass manufacturer. See **DETAIL R**. Use one "W" block per glass lite at deep glazing pocket only.

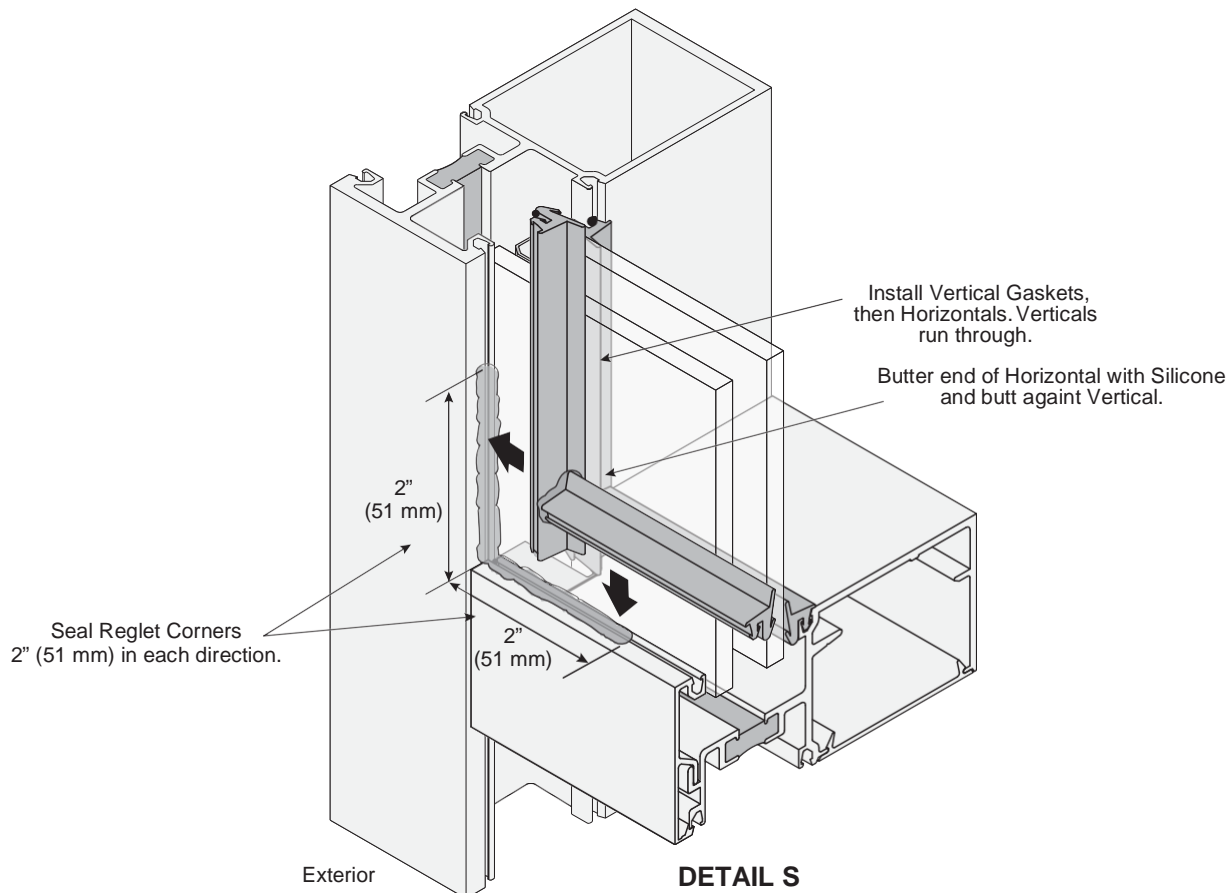
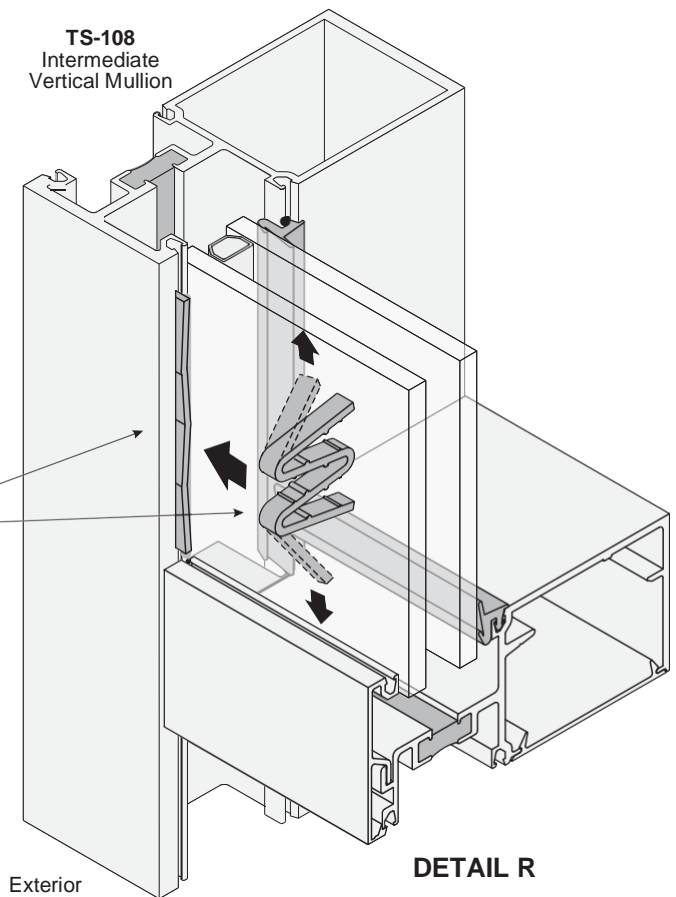
**GP-152 "W" Edge Block**  
at deep pocket of **TS-107**  
and **TS-108** only.

Stretch "W" Block and slide it between glass and mullion into glazing pocket. Push it all the way until it clears glass and locks itself in place.

**NOTE:** Exterior Glazing shown, Interior Glazing reverse.

### GASKET INSTALLATION

- Install remaining gaskets. Vertical gaskets run through. Start at corners and work toward center. Tight butt joined corners are critical to avoid leakage. Seal gasket at corners. See **DETAIL S**.



# STRUCTURAL SILICONE GLAZING

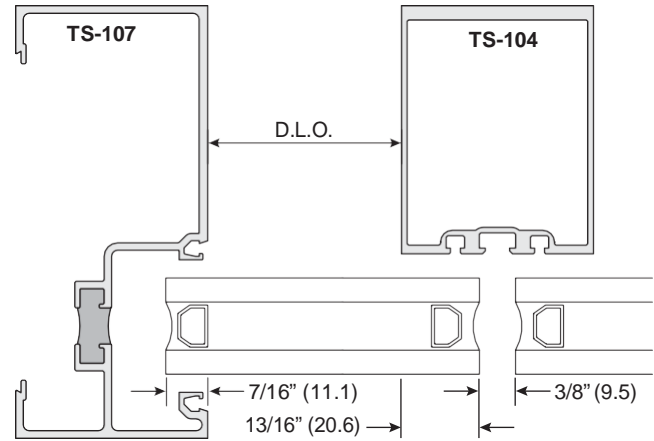
## GLASS SIZES FOR STRUCTURAL SILICONE GLAZING

**Glass Height: Daylight Opening + 7/8" (22.2)**

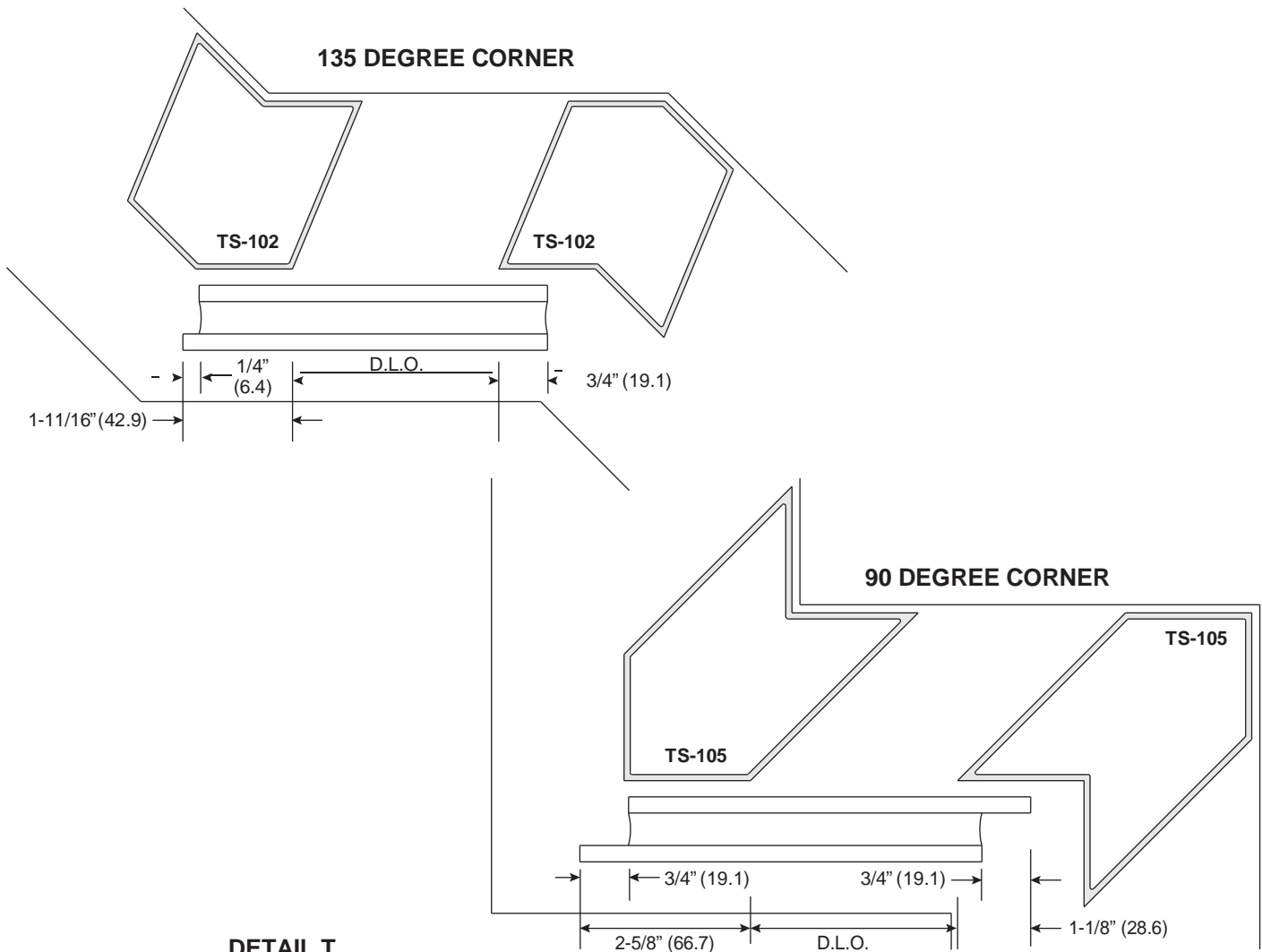
**Glass Width: Daylight Opening + Glass Bites**

**NOTE:** These formulae do not take into account glass tolerance. Consult glass manufacturer before ordering glass.

### GLASS BITES: NON-CORNERS



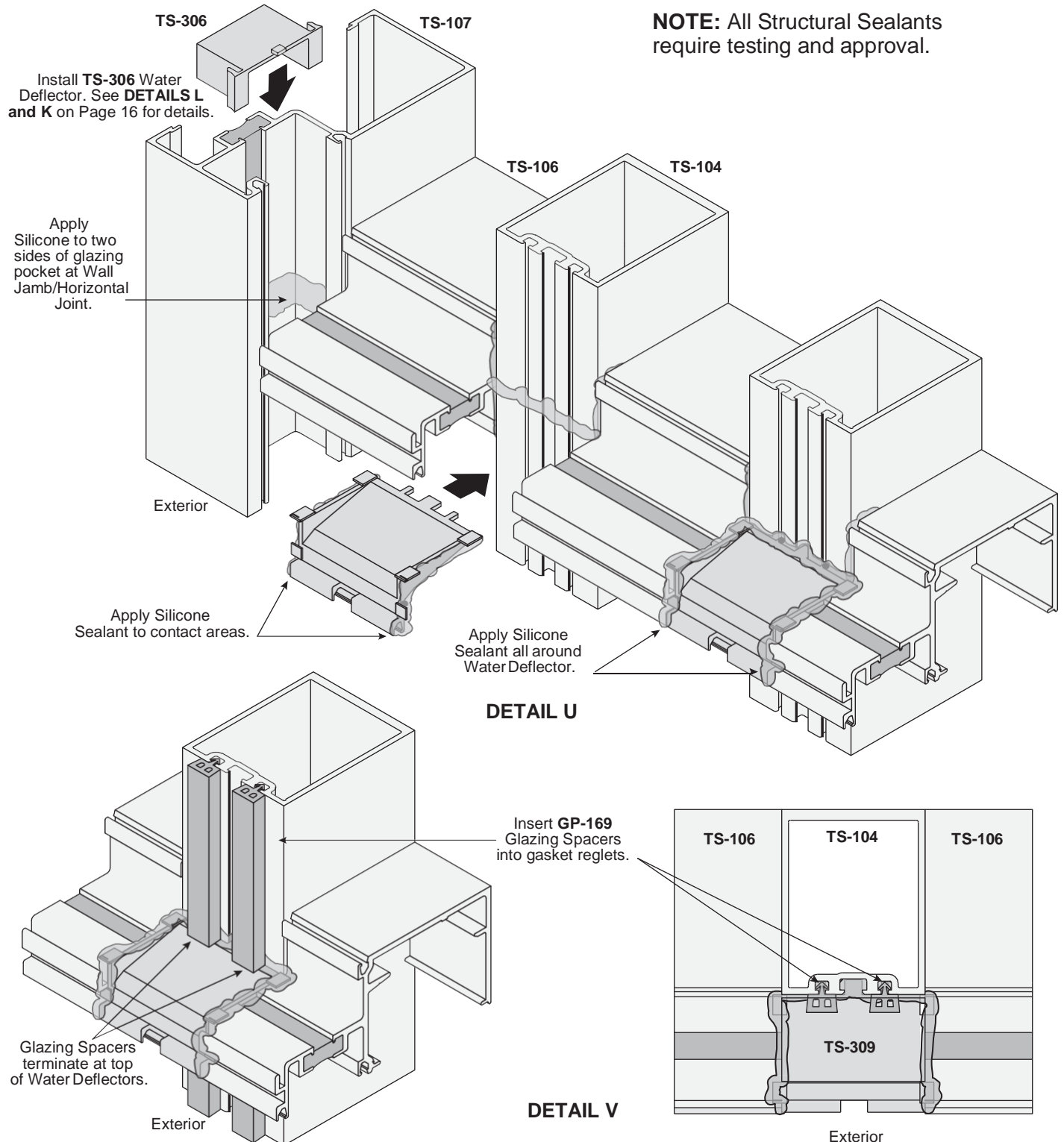
### GLASS BITES: CORNER CONDITIONS



**DETAIL T**

# STRUCTURAL SILICONE GLAZING (CONTINUED)

1. Seal joints between horizontals and verticals. Apply sealant across face of intermediate verticals at water deflectors location. See **DETAIL U**.
2. Apply Silicone Sealant to deflectors contact areas and set them in place. See **DETAIL V**.
3. Insert **GP-169** Spacers into intermediate verticals. See **DETAIL V**. NOTE: **GP-169** Glazing Spacers terminate at top of Water Deflectors.



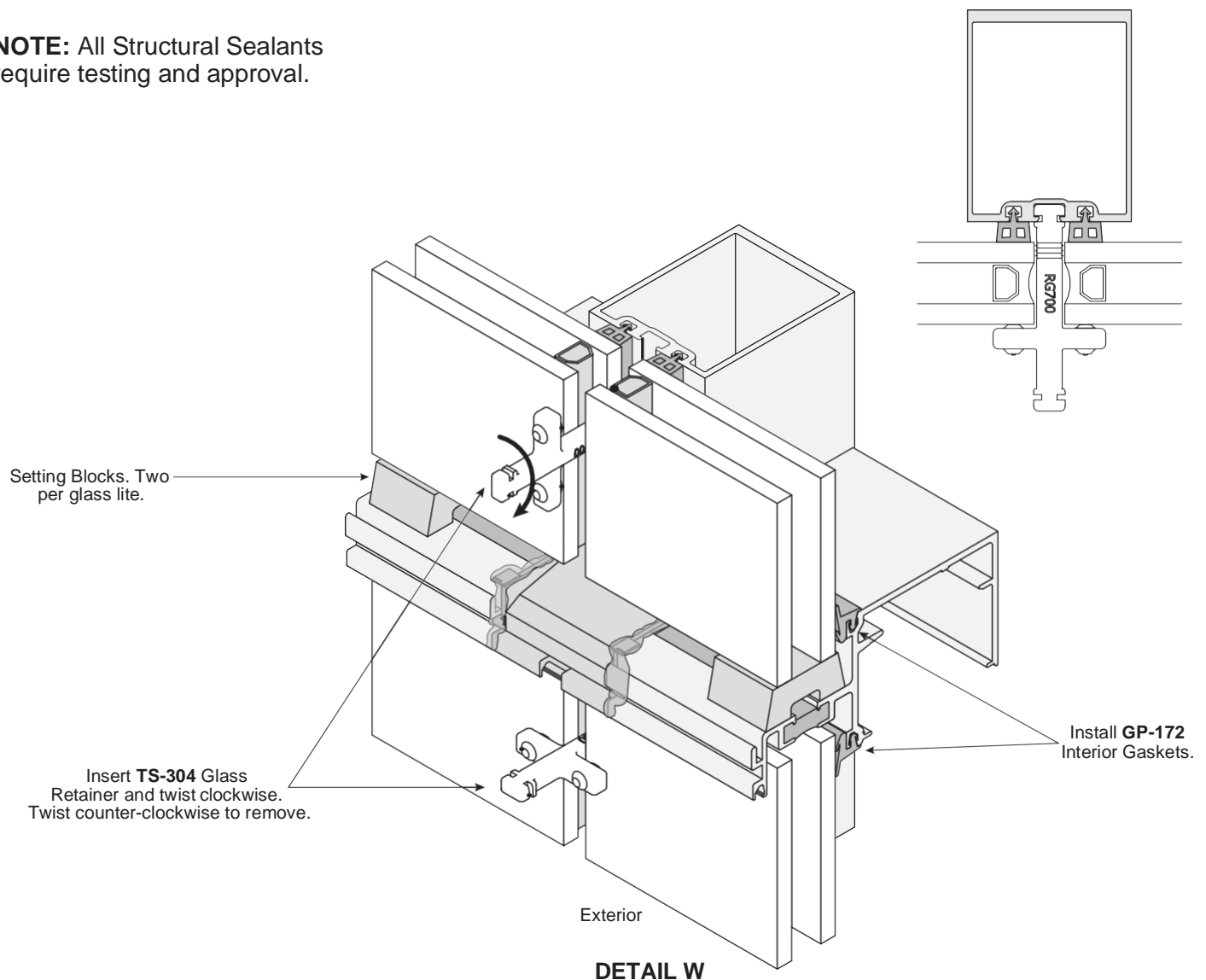
## STRUCTURAL SILICONE GLAZING (CONTINUED)

**NOTE:** All glazing pockets must be clean of debris before glazing. Always protect edges of glass carefully to avoid damage.

1. Install two setting blocks per glass lite in horizontal and sill members. Check deadload charts and shop drawings for correct positioning of setting blocks.
2. Cut glazing gaskets 1/8" (3.2) longer per foot of aluminum member to allow for shrinkage.
3. Install interior gaskets into wall jambs, horizontals, head and sill members.
4. Set lower glass onto setting blocks, holding 3/8" (9.5) joints between lites.
5. Hold glass in place with temporary retainers. See **DETAIL W**.

**NOTE:** Use one retainer for every 150 lbs. (667.2 N) of load I.E. If GLASS HEIGHT x GLASS WIDTH x WINDLOAD = 350 lbs. (1556.9 N) use three temporary retainers.

**NOTE:** All Structural Sealants require testing and approval.

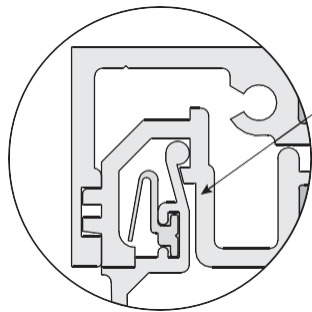


# STRUCTURAL SILICONE GLAZING (CONTINUED)

6. Install exterior face plates at head, sill and intermediate horizontals. See **DETAIL X**.

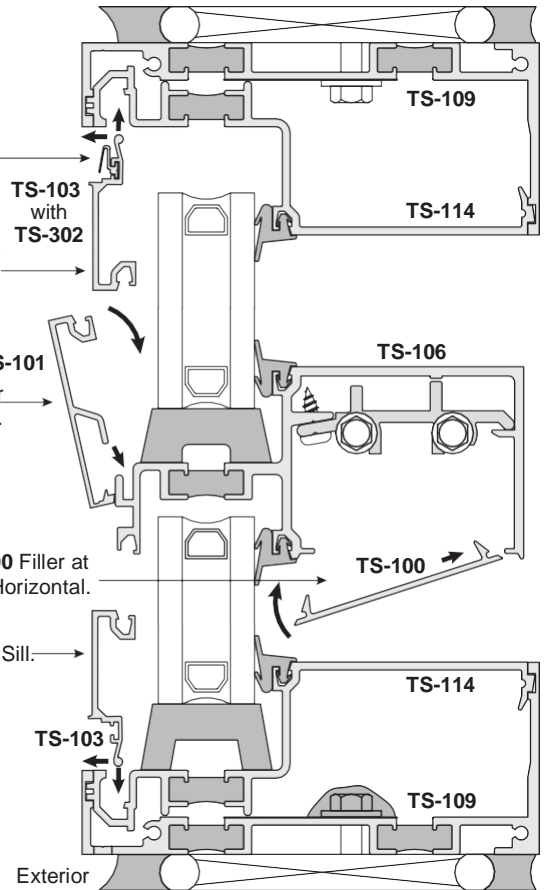
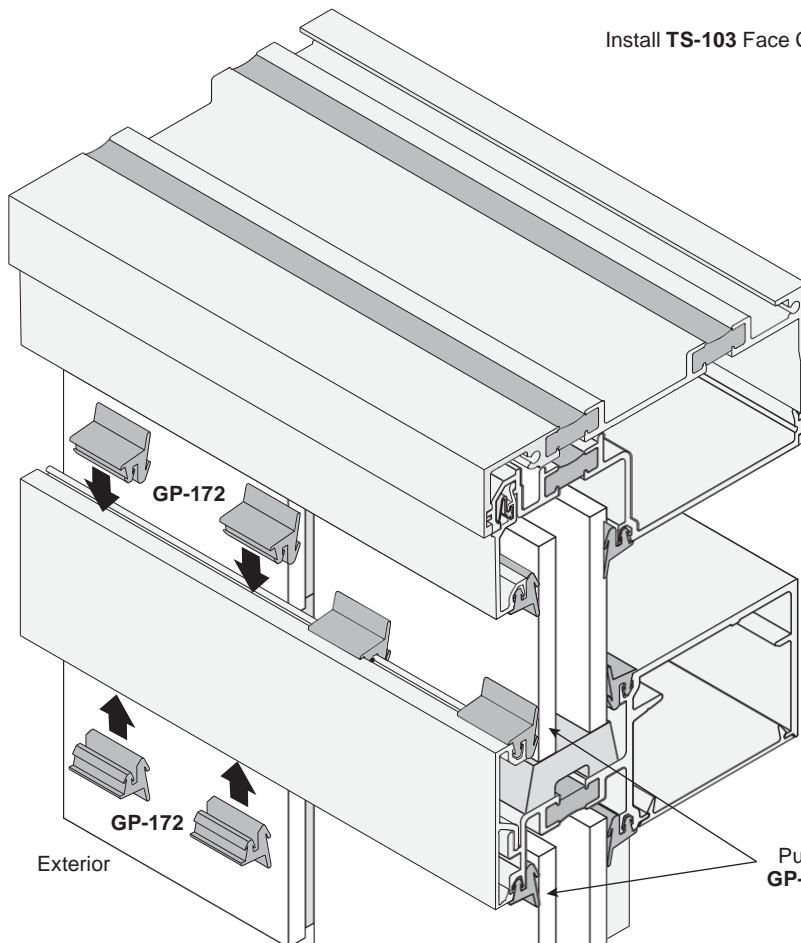
**NOTE:** Head face plate requires the use of **TS-302** Clips at 48" (1.22 m) on center maximum. See **DETAIL Y**. Exterior face plates run through and should be spliced as required. See page 25.

7. Use pieces of exterior gasket to temporarily hold glass tight against interior gaskets. See **DETAIL Z**.

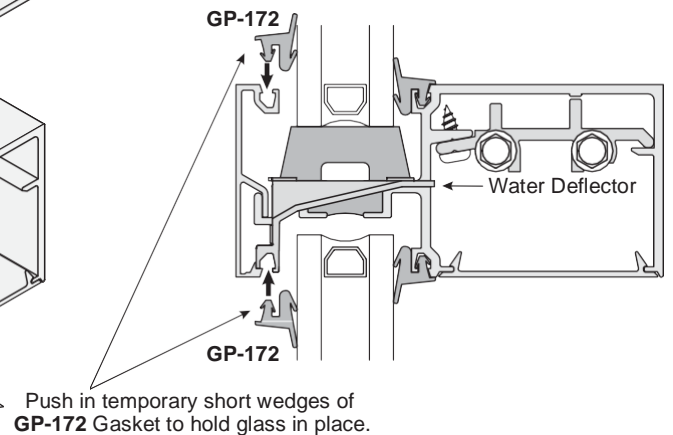


**DETAIL Y**

**NOTE:** All Structural Sealants require testing and approval.



**DETAIL X**



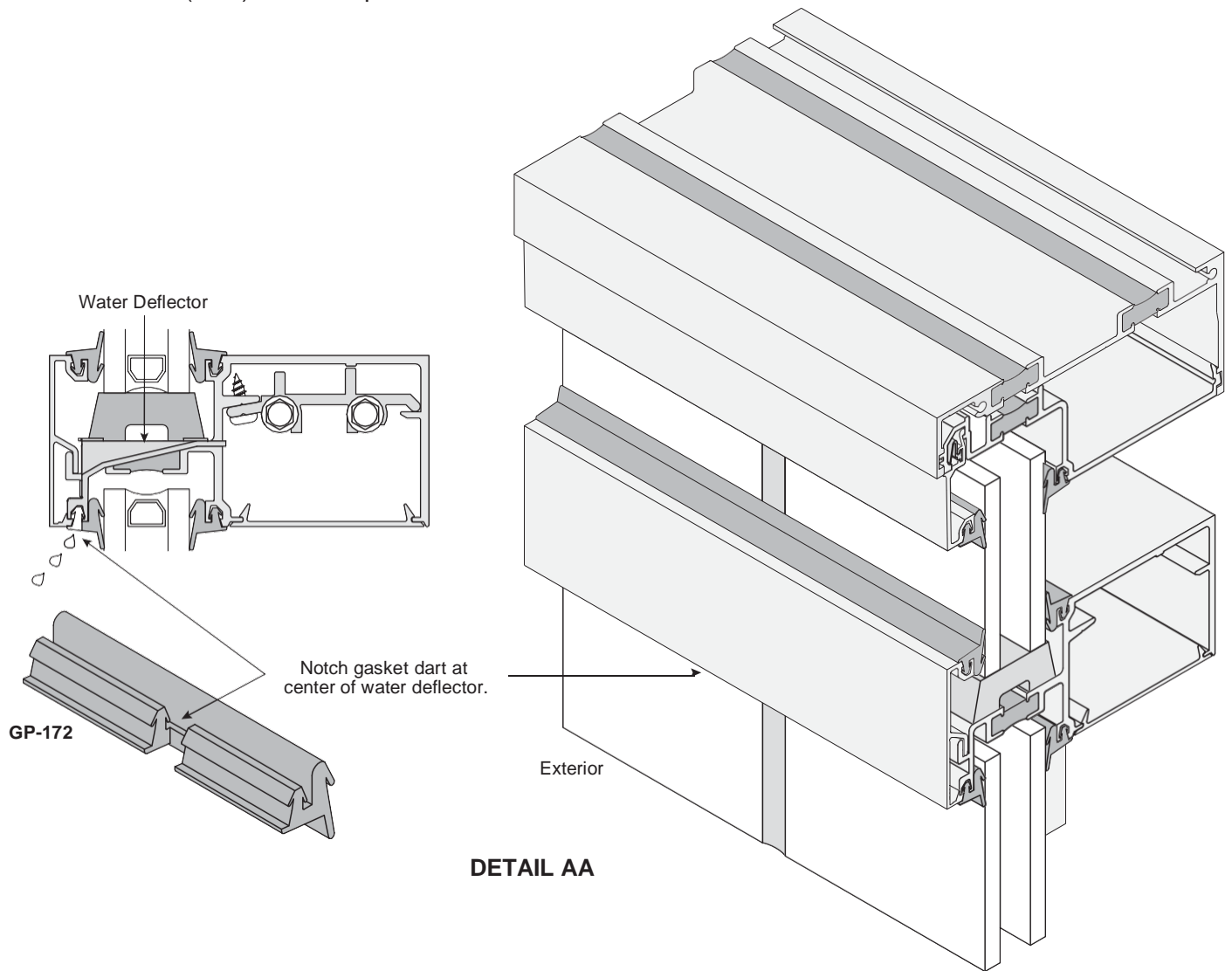
**DETAIL Z**

## STRUCTURAL SILICONE GLAZING (CONTINUED)

Structural silicone is applied from the interior. **Follow silicone manufacturer's instructions and recommendations for surface preparation and silicone application.**

8. Mask face of glass and aluminum adjacent to silicone glazing joint.
9. Apply silicone making sure it completely fills the space behind the glass. Air pockets or voids are not acceptable.
10. Remove masking tape right after tooling, before skin cure begins. Do not remove temporary retainers until silicone has completely cured.
11. After structural silicone has fully cured remove temporary retainers, insert open cell polyurethane rod between glass edges, mask glass and aluminum adjacent to joint, and then apply exterior weatherseal.
12. Install exterior gaskets after removing temporary pieces. Horizontal gaskets run through. Start at corners and work toward center. Tight butt joined corners are critical to avoid leakage.

**NOTE:** On bottom side of intermediate horizontal notch the dart of the glazing gasket at center of verticals to create a 1/2" (12.7) wide weep slot. See **DETAIL AA**.





# STRUCTURAL SILICONE GLAZING (CONTINUED)

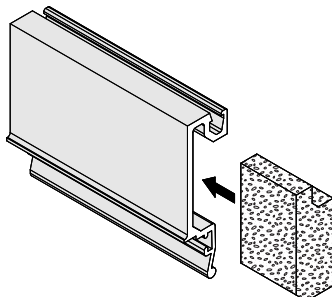
## HORIZONTAL EXPANSION JOINTS

### EXTERIOR FACE SPLICE JOINTS

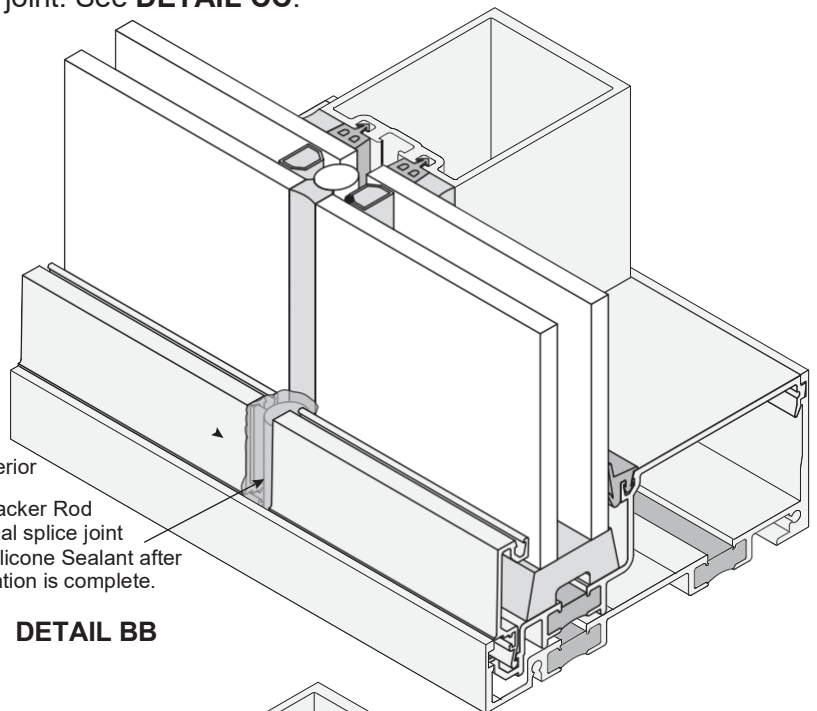
Head and sill faces should be spliced at a different point than head and sill channels. Silicone end caps to edge of sill faces. See **DETAIL BB**. Leave required gap between adjacent pieces.

Insert backer rod between end caps to facilitate joint sealing.

Intermediate horizontal exterior faces should be spliced every three bays or 15' (4.5 m) maximum for easier installation. Align splice with structural silicone joint. See **DETAIL CC**.



Prior to installation, stuff splice end of each **TS-103** section with **TS-206** splice backer.

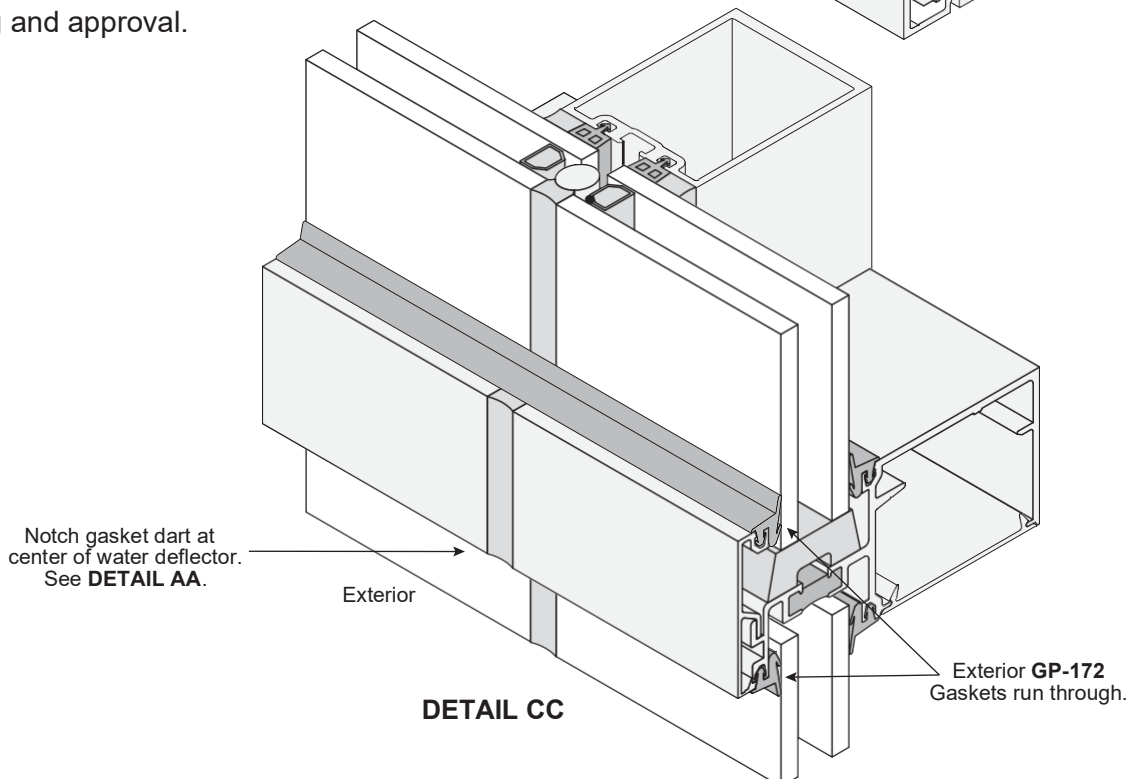


Exterior

Use Backer Rod and seal splice joint with Silicone Sealant after installation is complete.

**DETAIL BB**

**NOTE:** All structural silicone sealants require testing and approval.



Notch gasket dart at center of water deflector. See **DETAIL AA**.

Exterior

Exterior **GP-172** Gaskets run through.

**DETAIL CC**



# HORIZONTAL EXPANSION JOINTS

Elevations exceeding 24' (7.32 m) in width require splice sleeves to accommodate thermal movement. Joints width should be calculated according to job conditions and architectural specifications.

Linear expansion for aluminum, in inches = Length (") x F° difference in temperature x .0000129

Linear expansion for aluminum, in millimeters = Length (m) x C° difference in temperature x .02322

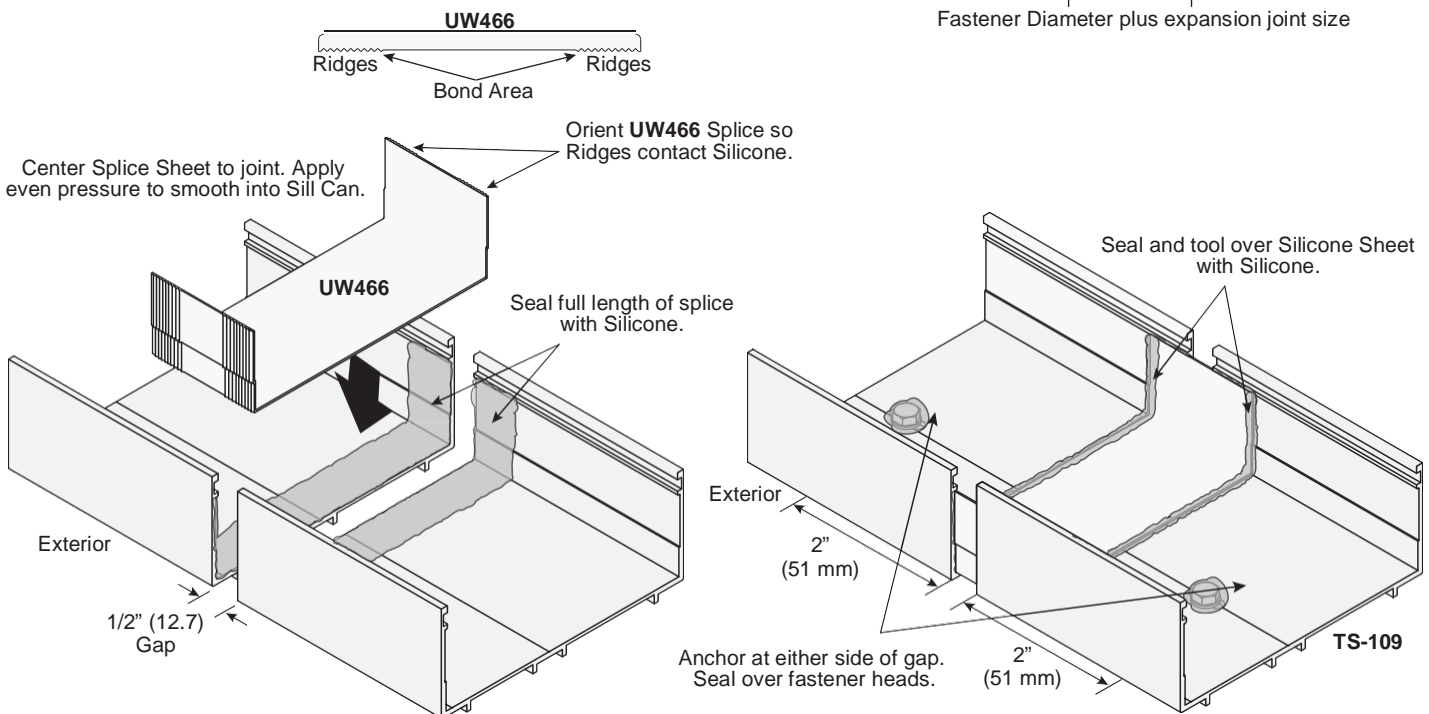
**Locate splice joints near center of D.L.O.** Elongate holes for installation fasteners at head and sill channels to allow for thermal movement. **Pin head and sill channels at one point only per cut length.** (This hole is not elongated)

**NOTE:** A minimum 1/2" (12.7) Expansion Joint is required every 24' (7.32 m)

Elongated Hole Size Formula

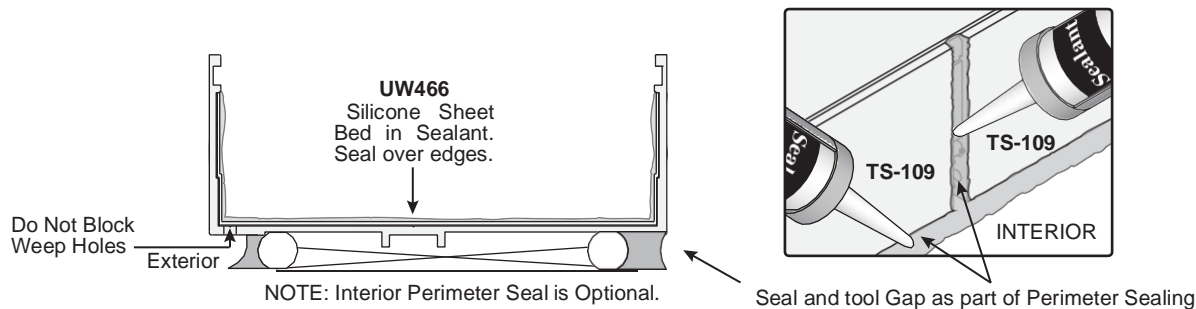
$$\text{Fastener Diameter plus } 1/16" (1.6)$$

$$\text{Fastener Diameter plus expansion joint size}$$



**DETAIL DD**

**NOTE:** Sill Channel for Exterior Glazing Shown. Head Channel for Exterior Glazing and Head and Sill Channels for Interior Glazing similar.

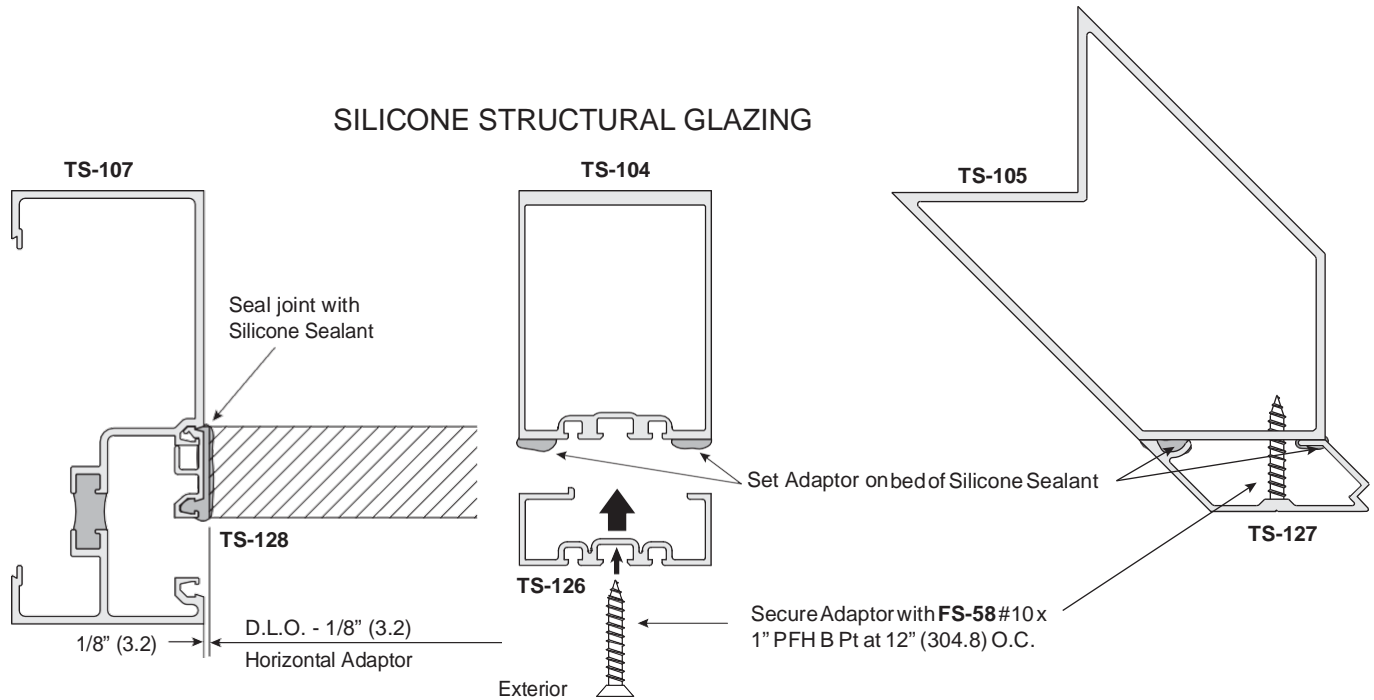


**DETAIL EE**

# TRANSITION GLAZING

Vertical adaptors run through. Adaptors for intermediate verticals are screw applied. Run a bead of Silicone Sealant in vertical member or in the back of adaptor before setting it in place. See **DETAIL FF**.

## SILICONE STRUCTURAL GLAZING

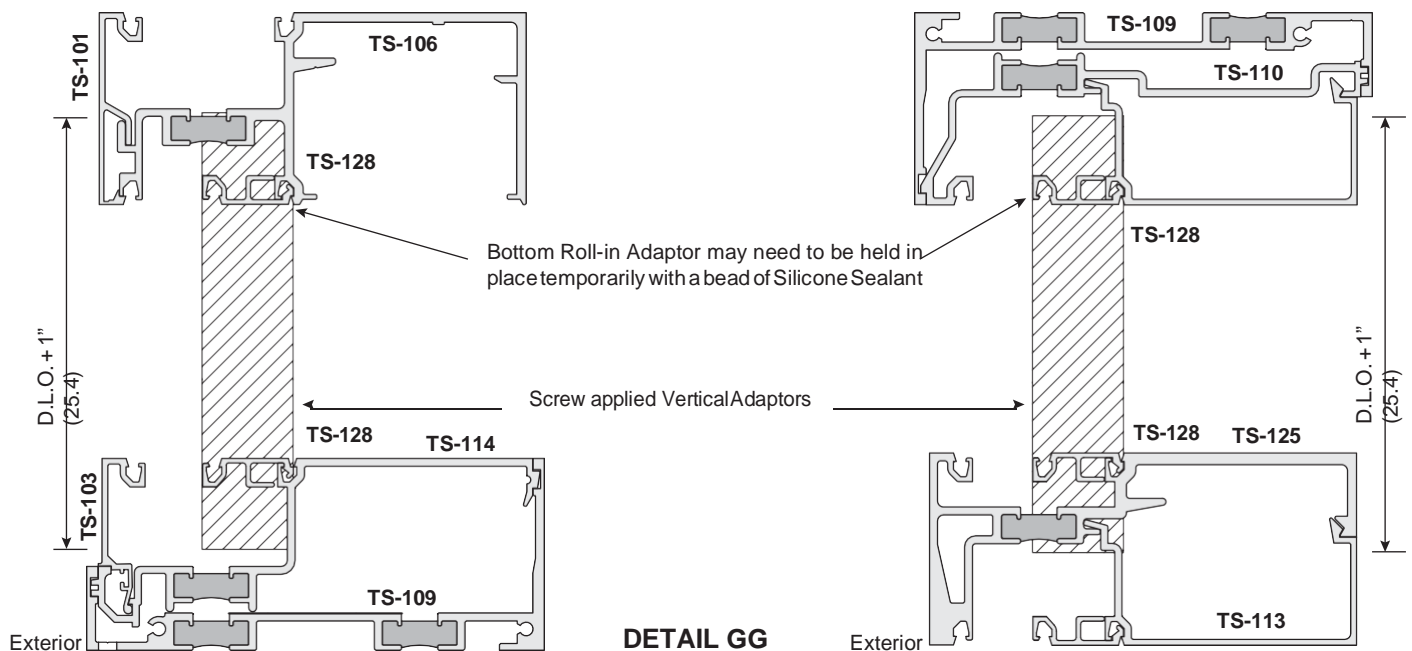


**DETAIL FF**

Horizontal adaptors run between Verticals. Roll-in adaptors need to be installed when setting glass and held in place temporarily with a piece of gasket. When inside access is not possible the adaptor on the bottom of the Horizontal may be held in place with a bead of silicone. Glazing beads for 1/4" (6) spandrel are used for interior glazing applications. See **DETAIL GG**.

## EXTERIOR GLAZING

## INTERIOR GLAZING



**DETAIL GG**

## CORNER CONDITIONS

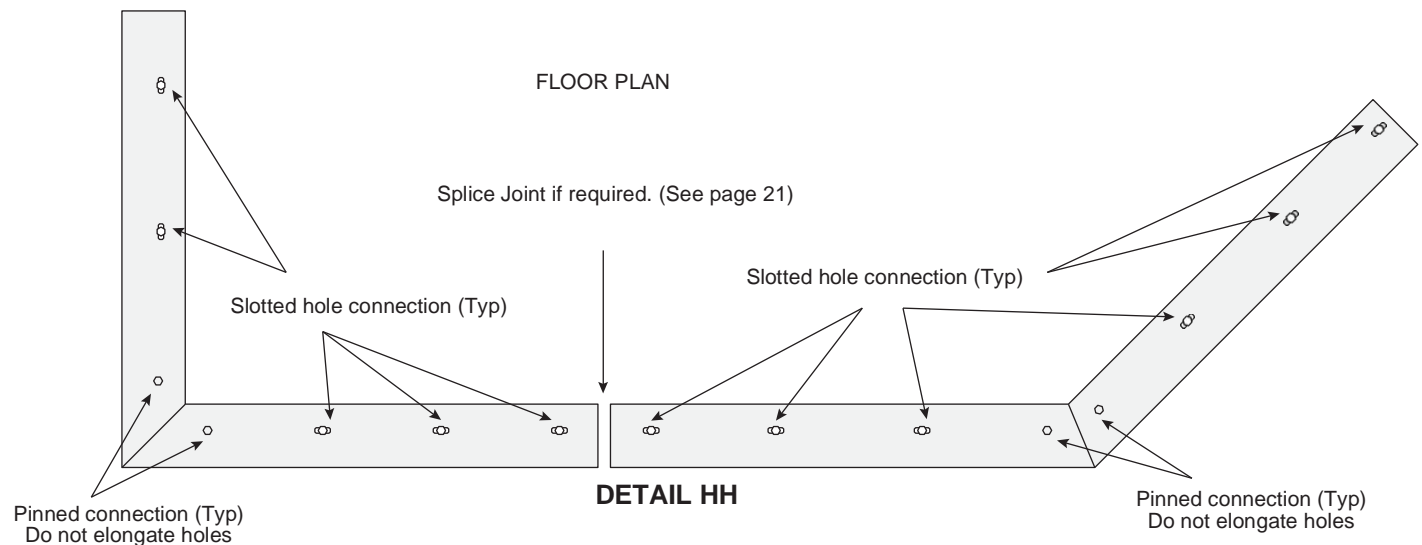
**AVAILABLE CORNER OPTIONS:** 90° INSIDE AND OUTSIDE CORNERS FOR INTERIOR AND EXTERIOR GLAZING. 90° AND 135° INSIDE AND OUTSIDE CORNERS FOR STRUCTURAL SILICONE GLAZING.

Head and sill channels should be mitered as required.

Corner members should be cut the same length as intermediate verticals.

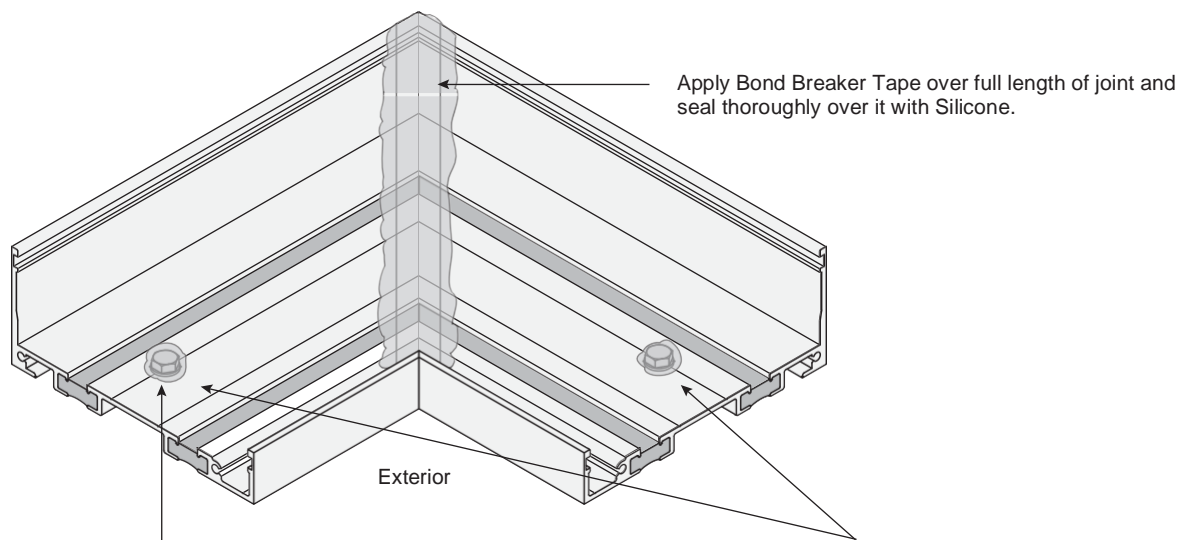
Head and sill channel **must be pinned to structure on both sides of corner**, to prevent movement at mitered joint. (Do not elongate the hole where it is pinned).

Elevations with corners at both ends may require a splice joint to accommodate thermal movement. See **DETAIL HH**.



## CORNER INSTALLATION

1. Install mitered head and sill channels in place and secure them to structure. See **DETAIL II**.
2. Seal joint thoroughly with Silicone. See **DETAIL II**.



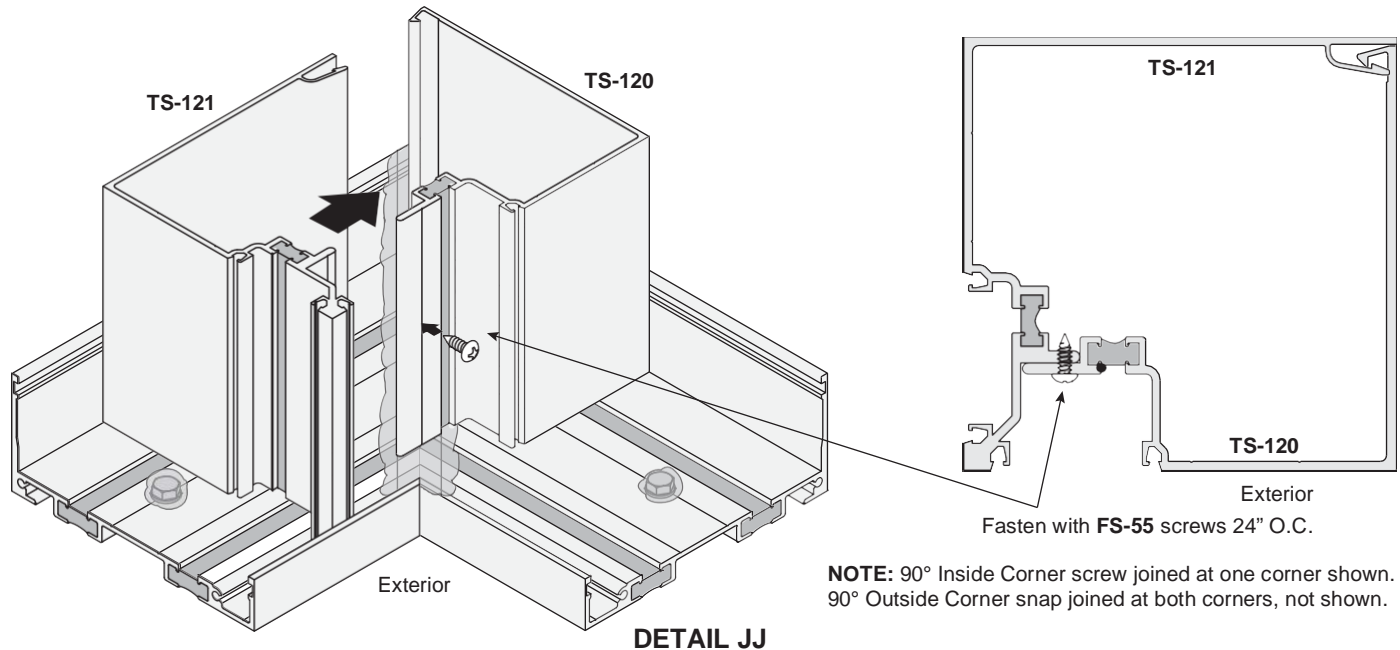
**NOTE:** The projection of some wedge type fasteners in close proximity to Vertical Members will require a simple clearing notch on Vertical for installation.

Pin Head and Sill Channels on both sides of the corner. Seal over head of fasteners (at Sill only) with **Silicone**.

## CORNER INSTALLATION (CONTINUED)

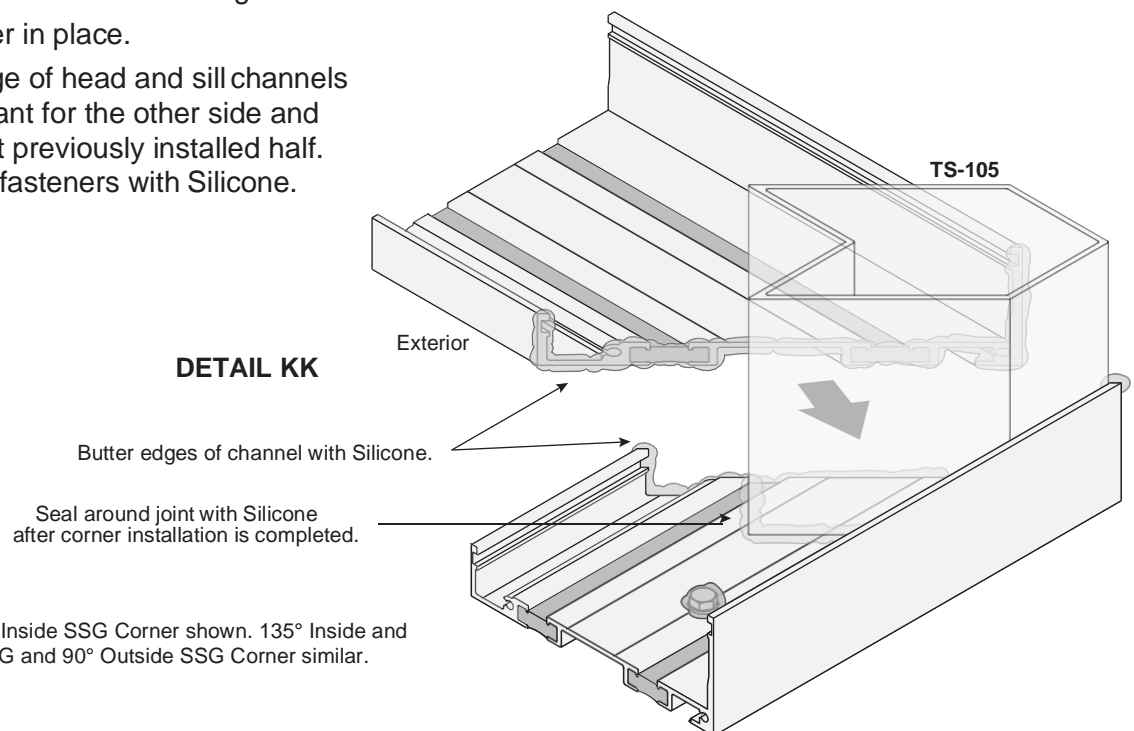
3. Install corner components. Corner components should be installed before adjacent head and sill fillers are snapped-in. Corner components may be installed as a unit. Inside Corner components should be fastened together with **FS-55 (#10 x 1/2" A Pt.)** screws every 24" (609.6) O.C. See **DETAIL JJ**.

**Optional:** Corners may be preassembled and installed as a unit to avoid blind sealing of mitered joint. Attach corner members to preassembled head/sill corner components with clip angles at both sides of vertical.



## SPECIAL INSTALLATION SEQUENCE FOR FIELD ASSEMBLY

1. Install head and sill channels on one side of corner only and secure to structure.
2. Apply Silicone Sealant to mitered edge.
3. Set corner member in place.
4. Butter mitered edge of head and sill channels with Silicone Sealant for the other side and install tight against previously installed half. Seal over head of fasteners with Silicone.

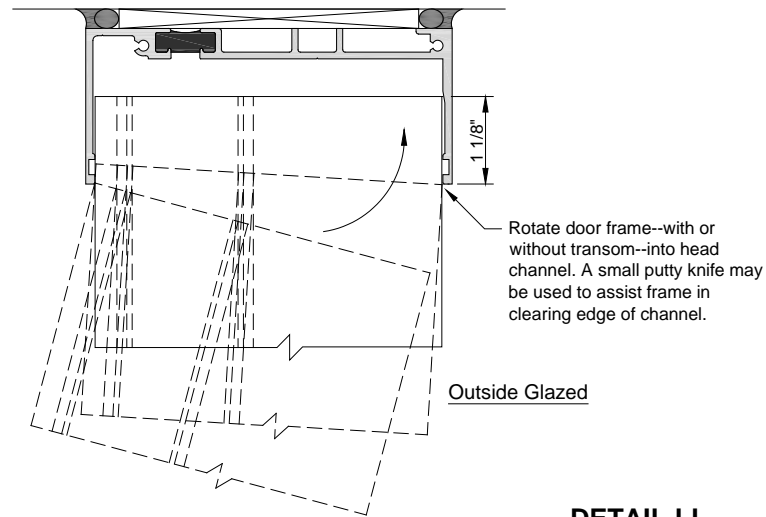


**NOTE:** 90° Inside SSG Corner shown. 135° Inside and Outside SSG and 90° Outside SSG Corner similar.

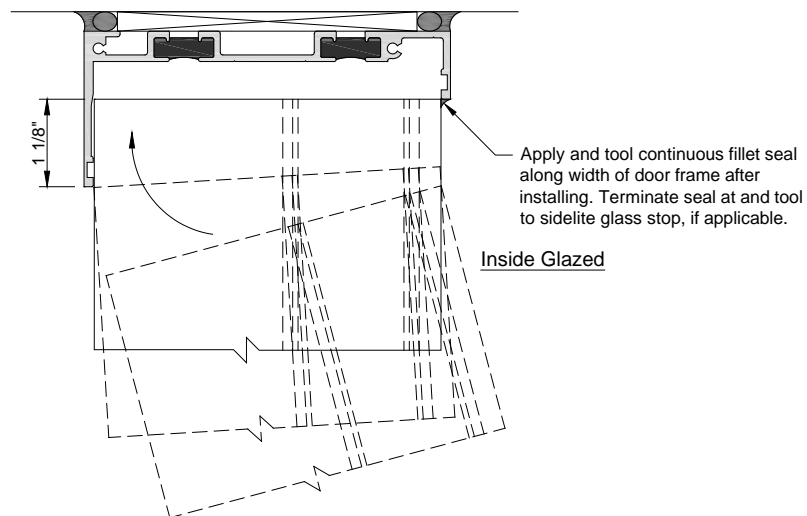
# ENTRANCE FRAMES

**Note:** Cut door jambs to FRAME HEIGHT minus 1/2" (12.7).

Door frames will be pre-assembled as units and rotated into place as shown in **DETAIL LL**. Door jambs run to floor, bed in sealant, and assembled frame will extend into head channel 1-1/8", leaving 7/8" of door header or transom head exposed. Door jambs must be anchored at top and bottom to head and sidelite sill channels via **AN27-01** and **AN3-01** angle clips at head and sill, respectively. Where there is no sidelite, such as an entrance at the perimeter of an elevation, door jamb will be anchored directly to jamb substrate, bolt size and spacing per structural review. Head channel will run continuously across door frame (see **DETAILS PP & QQ**), while sidelite sill channel butts directly into door jamb(s).



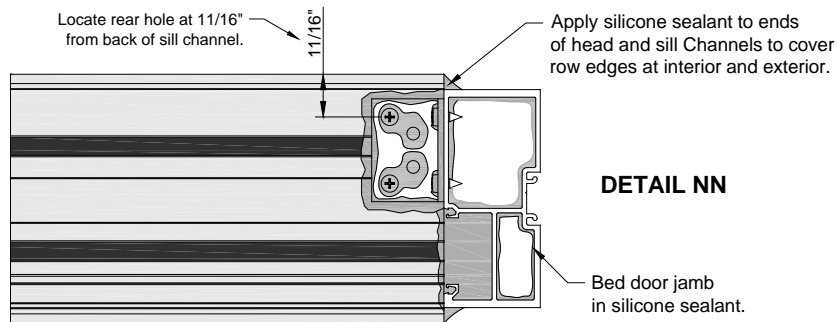
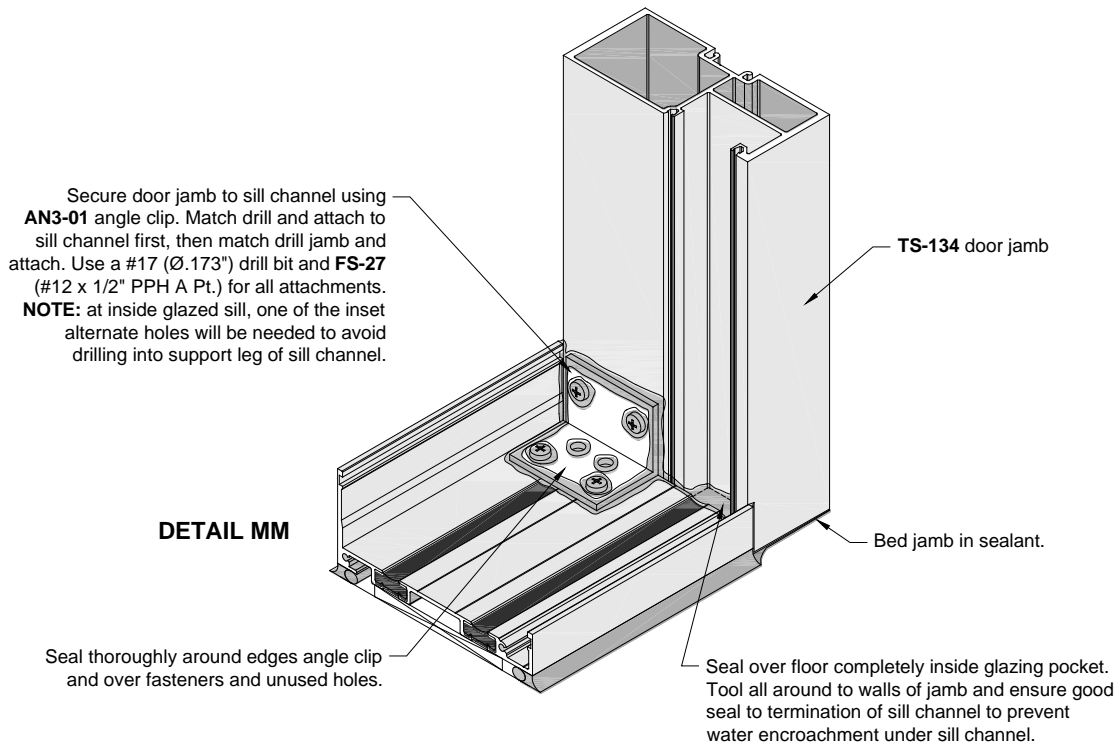
**DETAIL LL**



# ENTRANCE FRAMES (CONTINUED)

## SILL CHANNEL

Butter ends of channel and butt against door jamb. Pin together with **AN3-01** angle clip using **FS-27** fasteners. Anchor sill channel per instructions on Page 12. Seal all round joinery of sill channel to door jamb as well as over angle clip perimeter, fasteners, and any unused holes of the clip. Sill channel is 1/4" deeper than door jamb; seal projecting edges of channel to corners of door jamb. At inside glazed sill channel, one of the alternate attachment holes on the clip must be used to avoid drilling through support leg of **TS-112** channel. Refer to **DETAILS MM** and **NN**.



# ENTRANCE FRAMES (CONTINUED)

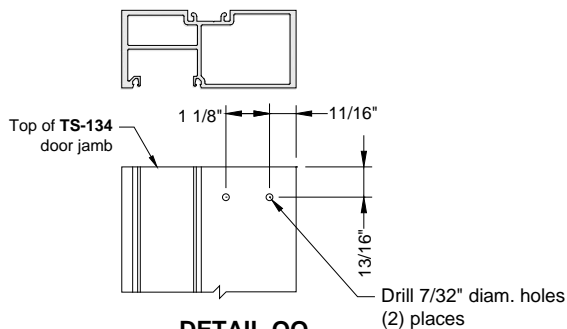
## HEAD CHANNEL

### DOOR JAMB WITHOUT TRANSOM

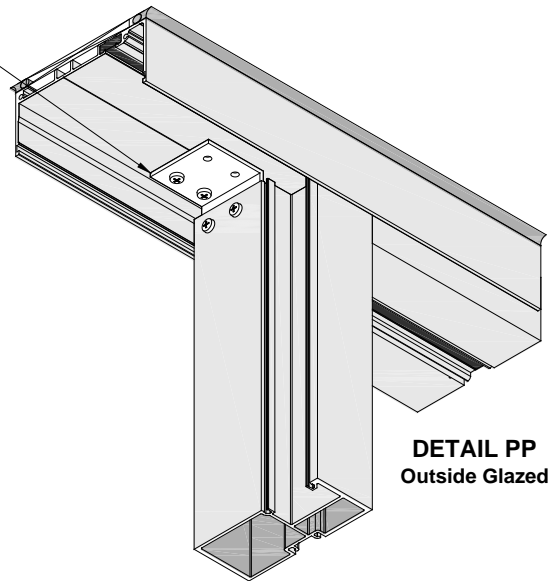
Drill (2) 7/32" diameter holes at top of jamb on the sidelite side for attachment of the **AN27-01** angle clip. See **DETAIL OO**.

Using **AN27-01** angle clip, attach door jamb to head channel. **Note that clip slots inside the door jamb.** Match drill and attach to head channel first, then match drill through jamb into angle clip. A #17 (.173" diam.) drill bit and **FS-27** (#12 x 1/2" PPH A Pt.) screws will be used for all clip connections. Hole choice used to attach clip to the head channel depends on the application and is necessary to avoid drilling through either the thermal break of **TS-109** or the support leg of **TS-112**. See **DETAIL RR**.

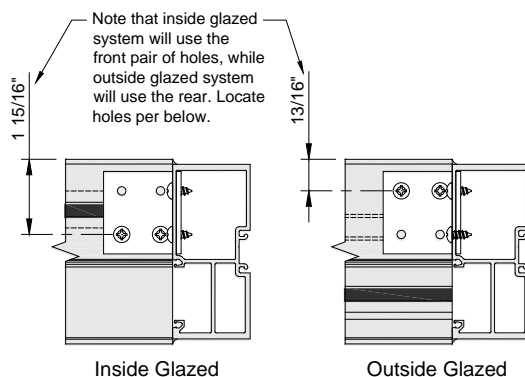
Secure door jamb to head channel using **AN27-01** angle clip. Match drill and attach to head channel first, then match drill through jamb into angle clip. Use a #17 (Ø.173") drill bit and **FS-27** (#12 x 1/2" PPH A Pt.) for all attachments. See **DETAIL RR** for information on proper hole choice.



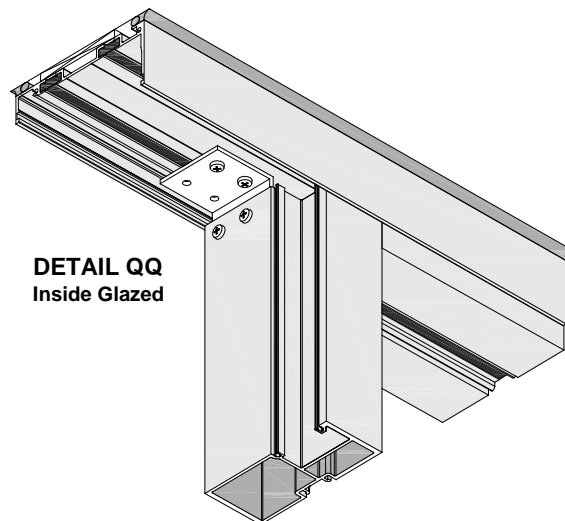
**DETAIL OO**  
Jamb Prep for AN27-01 Angle Clip



**DETAIL PP**  
Outside Glazed



**DETAIL RR**  
**AN27-01 Angle Clips at Head Channel**  
(reflected plan views)



**DETAIL QQ**  
Inside Glazed

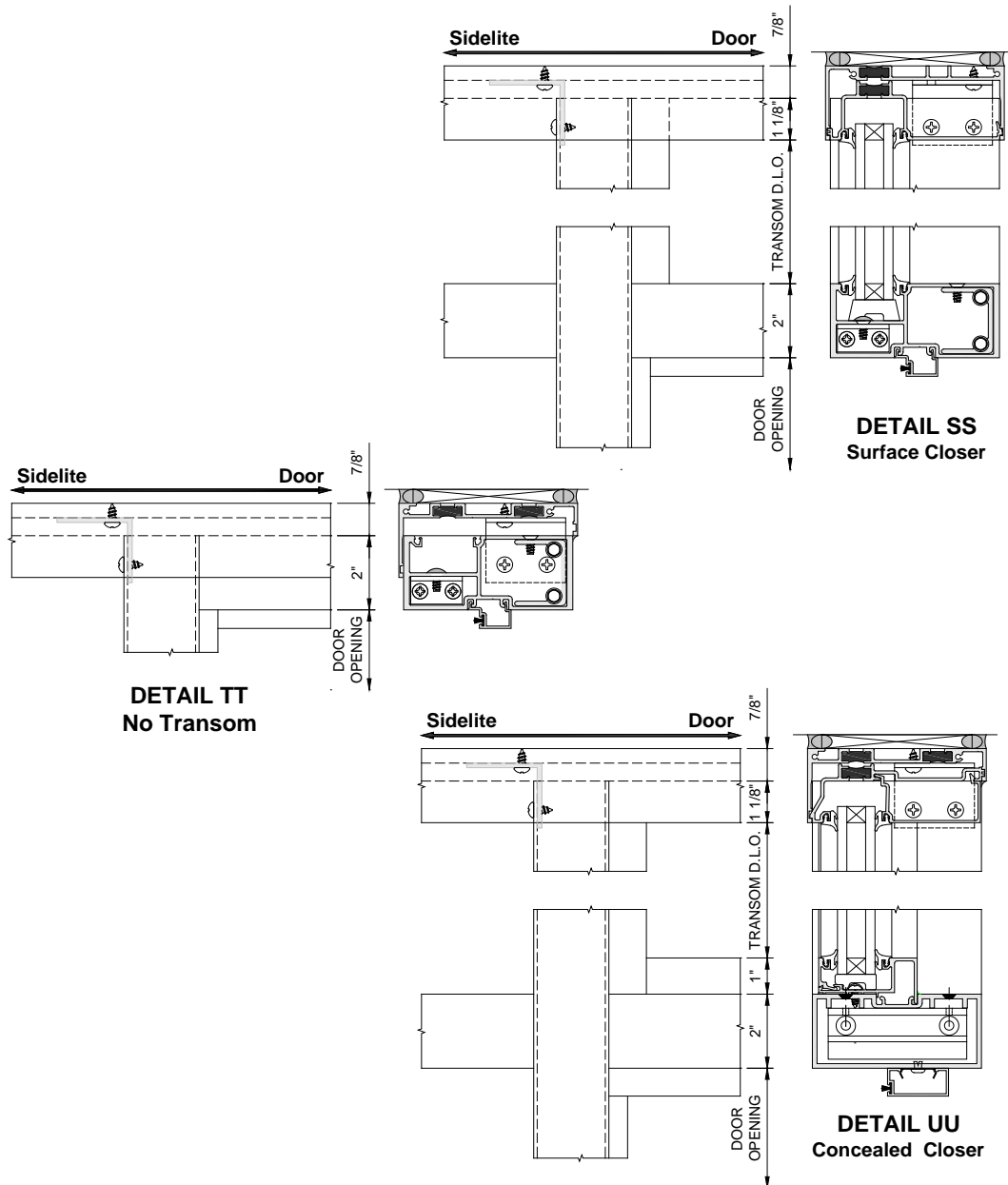
# ENTRANCE FRAMES (CONTINUED)

## DOOR JAMB WITH TRANSOM

Entrances with transoms are fabricated, assembled and installed similarly to those without. Follow the guidelines on the preceding pages. The cut length of door jambs is identical, **FRAME HEIGHT** minus 1/2".

**Transom Glass Size is Transom D.L.O. plus 7/8". Note that transoms are always glazed from the exterior, even when the rest of the elevation is inside glazed.** With the inside glazed application, the **TS-113** glass stop at the transom head will be installed prior to glazing and prior to installing vertical transom sashes.



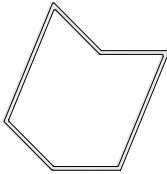


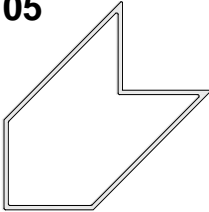
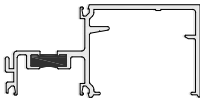
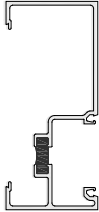
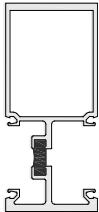
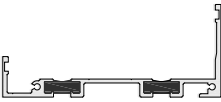
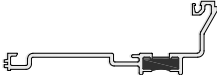



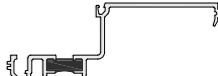
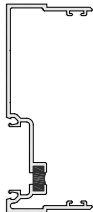

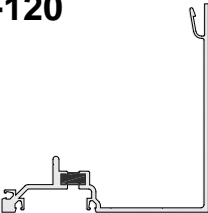
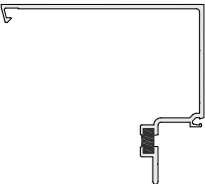
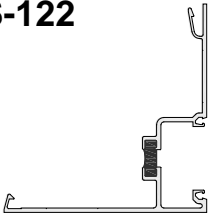
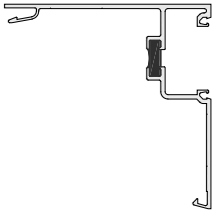

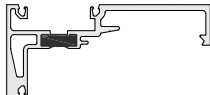

Refer to **DETAILS SS, TT** and **UU** below.








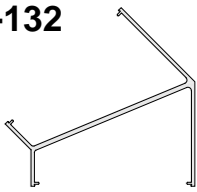



## PARTS IDENTIFICATION

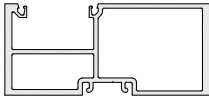
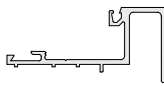

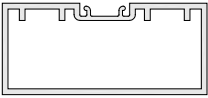
## EXTRUSIONS

|  |  |  |  |
|--|--|--|--|
| <b>TS-100</b><br><br><b>Snap Cover for Intermediate Horizontal - Outside Glazed</b>     | <b>TS-101</b><br><br><b>Glass Stop for Intermediate Horizontal - Outside Glazed</b>   | <b>TS-102</b><br><br><b>135° SSG Corner Mullion</b>  | <b>TS-103</b><br><br><b>Glass Stop for Outside Glazed Sill or Head for SSG</b>      |
| <b>TS-104</b><br><br><b>SSG Mullion</b>   | <b>TS-105</b><br><br><b>90° SSG Corner Mullion</b>                                    | <b>TS-106</b><br><br><b>Intermediate Horizontal - Exterior Glazed</b>                        | <b>TS-107</b><br><br><b>Jamb</b>  |
| <b>TS-108</b><br><br><b>Typical Mullion</b>  | <b>TS-109</b><br><br><b>Head Channel - Int. Glazed<br/>Sill Channel - Ext. Glazed</b> | <b>TS-110</b><br><br><b>Head Insert - Interior Glazed</b>                                    | <b>TS-111</b><br><br><b>Head Insert - Ext. Glazed<br/>Sill Insert - Int. Glazed</b> |
| <b>TS-112</b><br><br><b>Head Channel - Ext. Glazed<br/>Sill Channel - Int. Glazed</b> | <b>TS-113</b><br><br><b>Glass Stop - Interior Glazed</b>                            | <b>TS-114</b><br><br><b>Sill Insert - Ext. Glazed<br/>Head Insert - 2-sided SSG System</b> | <b>TS-118</b><br><br><b>Expansion Mullion Male</b>                                |
| <b>TS-119</b><br><br><b>Expansion Mullion Female</b>                                  | <b>TS-120</b><br><br><b>90° Inside Corner Female</b>                                | <b>TS-121</b><br><br><b>90° Inside Corner Male</b>   | <b>TS-122</b><br><br><b>90° Outside Corner Male</b>                               |
| <b>TS-123</b><br><br><b>90° Outside Corner Mullion Female</b>                         | <b>TS-124</b><br><br><b>Pocket Filler</b>   | <b>TS-125</b><br><br><b>Intermediate Horizontal - Inside Glazed</b>                        | <b>TS-126</b><br><br><b>SSG 1/4" Pocket Reducer</b>                               |

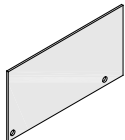


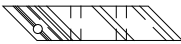

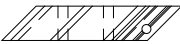












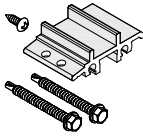
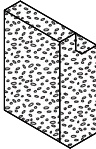
**EXTRUSIONS (cont.)**

|   |  |   |  |
|---|--|---|--|
| <b>TS-127</b><br><br><b>SSG Outside 90°<br/>Pocket Reducer</b> | <b>TS-128</b><br><br><b>Typical Captured<br/>Pocket Reducer</b> | <b>TS-129</b><br><br><b>SSG Inside 90°<br/>Pocket Reducer</b>       | <b>TS-130</b><br><br><b>SSG Outside 135°<br/>Pocket Reducer</b> |
| <b>TS-131</b><br><br><b>SSG Inside 135°<br/>Pocket Reducer</b> | <b>TS-132</b><br><br><b>135° Captured<br/>Corner Mullion</b>    | <b>TS-133</b><br><br><b>135° Captured<br/>Corner Mullion Filler</b> |  |

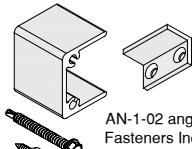
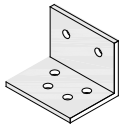
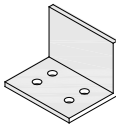
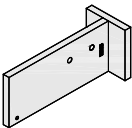
**ENTRANCE FRAMING EXTRUSIONS**

|   |   |   |  |
|---|---|---|--|
| <b>TS-134</b><br><br><b>Door Frame for<br/>Standard Entrance</b> | <b>TS-135</b><br><br><b>Transom Sash</b> | <b>TS-136</b><br><br><b>Transom Sash Stop</b> | <b>FG-3160</b><br><br><b>Door Header for<br/>Concealed Closer</b> |
|---|---|---|--|


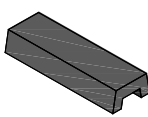
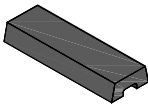
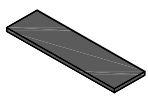




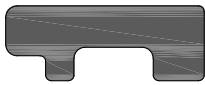


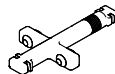
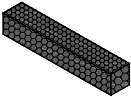
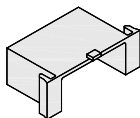
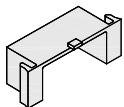
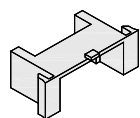
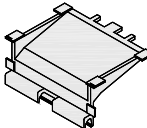
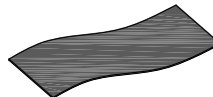


**PARTS & ACCESSORIES**

|  |   |  |  |
|--|---|--|--|
| <b>TS-200</b><br><br><b>End Dam for Head &amp;<br/>Sill Channels</b>  | <b>TS-203</b><br><br><b>SSG Corner Water<br/>Diverter Plate</b>  | <b>TS204-01</b><br><br><br><b>SSG 90° Outside<br/>Corner Shear Block Kit<br/>w/ Screws - Left Hand</b>  | <b>TS204-02</b><br><br><br><b>SSG 90° Outside<br/>Corner Shear Block Kit<br/>w/ Screws - Right Hand</b>  |
| <b>TS204-03</b><br><br><br><b>SSG 90° Inside Corner<br/>Shear Block Kit w/<br/>Screws - Left Hand</b>  | <b>TS204-04</b><br><br><br><b>SSG 90° Inside Corner<br/>Shear Block Kit w/<br/>Screws - Right Hand</b>  | <b>TS204-05</b><br><br><br><b>SSG 135° Outside<br/>Corner Shear Block Kit<br/>w/ Screws - Left Hand</b> | <b>TS204-06</b><br><br><br><b>SSG 135° Outside<br/>Corner Shear Block Kit<br/>w/ Screws - Right Hand</b> |
| <b>TS204-07</b><br><br><br><b>SSG 135° Inside Corner<br/>Shear Block Kit w/<br/>Screws - Left Hand</b> | <b>TS204-08</b><br><br><br><b>SSG 135° Inside Corner<br/>Shear Block Kit w/<br/>Screws - Right Hand</b> | <b>TS205-01</b><br><br><b>Typical Shear Block Kit<br/>w/ Screws</b>  | <b>TS206</b><br><br><b>Splice Backer at SSG<br/>Head &amp; Sill</b>   |


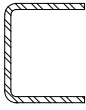

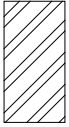
## PARTS &amp; ACCESSORIES (cont.)

|   |   |   |  |
|---|---|---|--|
| <b>TS207-01</b><br><br>AN-1-02 angle and Fasteners Included<br><b>Shear Block Kit for TS-134 Door Header</b> | <b>AN3-01</b><br><br><b>SSG &amp; Sidelite Sill Clip Angle</b> | <b>AN27-01</b><br><br><b>Door Jamb at Header Clip Angle</b> | <b>DJ-215</b><br><br><b>Drill Fixture for Vertical Mullions</b> |
|---|---|---|--|







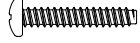



## GASKETS, GLAZING MATERIALS WATER CONTROL

|  |   |  |   |
|--|---|--|---|
| <b>GP-152</b><br><br><b>'W' Edge Block</b>                  | <b>GP-166</b><br><br><b>Setting Block at Sill</b>                              | <b>GP-167</b><br><br><b>Setting Block at Exterior Glazed Intermediate Horizontal</b> | <b>GP-168</b><br><br><b>Setting Block at Exterior Glazed Intermediate Horizontal</b> |
| <b>GP-169</b><br><br><b>Vertical SSG Spacer Gasket</b>     | <b>GP-172</b><br><br><b>Typical Glazing Gasket (3/16" face clearance)</b>      | <b>GP-173</b><br><br><b>Light Glazing Gasket (1/8" face clearance)</b>              | <b>GP-174</b><br><br><b>Heavy Glazing Gasket (1/4" face clearance)</b>              |
| <b>GP-190</b><br><br><b>Setting Block at Transom Sash</b> | <b>TS-302</b><br><br><b>Retainer Clip at Head in 2-sided SSG Application</b> | <b>TS-303</b><br><br><b>Vinyl Jamb Filler</b>                                      | <b>TS-304</b><br><br><b>Temporary Glazing Clip for SSG Mullion</b>                 |
| <b>TS-305</b><br><br><b>1-3/8" x 1-3/8" Weep Baffle</b>   | <b>TS-306</b><br><br><b>Deep Pocket Water Diverter</b>                       | <b>TS-307</b><br><br><b>Shallow Pocket Water Diverter at Expansion Vertical</b>    | <b>TS-308</b><br><br><b>Typical Shallow Pocket Water Diverter</b>                  |
| <b>TS-309</b><br><br><b>SSG Water Deflector</b>           | <b>UW466</b><br><br><b>2" Wide Silicone Splice Sheet</b>                     | <b>V-11</b><br><br><b>Weather Seal at Expansion Vertical</b>                       | <b>V2108-20</b><br><br><b>1/4" x 5/8" DSA Spacer Tape</b>                          |

## STEEL REINFORCEMENT

|  |  |   |  |
|--|--|---|--|
| <b>RS-40</b><br><br><b>Stiffener for TS-104 SSG Mullion</b> | <b>RS-41</b><br><br><b>Stiffener for TS-108 Typical Mullion</b> | <b>RS-42</b><br><br><b>Stiffener for TS-119 Expansion Mullion</b> | <b>RS-43</b><br><br><b>Stiffener for TS-134 Door Jamb</b> |
|--|--|---|--|

## FASTENERS

|  |   |   |   |
|--|---|---|---|
| <b>FS-27</b><br><br><b>#12 x 1/2" PPH A Pt., for attaching angle clips</b>  | <b>FS-42</b><br><br><b>#12 x 1/2" PFHUC B Pt., for attaching entrance frame shear block (included in kit)</b>          | <b>FS-55</b><br><br><b>#10 x 1/2" PPH AB Pt., for pinning IS90 corner mullion halves and attaching transom sash</b> | <b>FS-58</b><br><br><b>#10 x 1" PFH B Pt., for attaching SSG pocket reducers</b>                           |
| <b>FS-202</b><br><br><b>#8 x 1/2" PPH A Pt., for attaching end dams at head &amp; sill channels</b>               | <b>FS-238</b><br><br><b>1/4"-20 x 5/8" PPH type F thread cutting screw, for attaching RS-43 steel bar at door jamb</b> | <b>FS-258</b><br><br><b>#12 x 1-1/4" PPH B Pt., for attaching SSG corner shear blocks (included in kits)</b>        | <b>FS-322</b><br><br><b>#12-14 x 1" HWH #3 Pt. Gr. 5 self-drilling screw, for attaching steel channels</b> |
| <b>FS-401</b><br><br><b>#12 x 2" HWH TEKS, for vertical attachment of typical shear block (included in kit)</b> | <b>FS-402</b><br><br><b>3/32" x 1/2" coiled roll pin, for front of system support at intermediate horizontals</b>    |   |   |