

Oldcastle BuildingEnvelope®

***SERIES 3000 THERMAL MULTI-PLANE
INSTALLATION AND GLAZING MANUAL***

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

SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

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GENERAL INFORMATION

The Oldcastle BuildingEnvelope® Series 3000 Thermal Multi-Plane (2" x 4-1/2") system represents the latest in product development technology complemented by installer on-the-job input and experience. Proper use of this system will assure optimum results in erection and long-term performance.

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

Over the years many components were added to our flush glaze systems. In addition, there are many ways to install storefront products. This manual represents recommendations for the best results.

PROTECTION AND STORAGE:

Handle the material carefully. Do not drop from the truck. Stack with adequate separation so that the material will not rub together. Store material off the ground. Protect against the elements and other construction hazards by using a well-ventilated covering. Remove material from package if it is wet or is located in a damp area.

CHECK MATERIAL:

Check all material upon arrival for quality and to assure against shipping damage. Any visible damage must be noted on the freight bill at the time of receipt. If a claim is required, then the receiving party must process a claim with the freight company.

Completely check construction, which will receive your materials against contract documents. Notify general contractor by letter of any discrepancies before proceeding with work. Failure to do so constitutes acceptance of work by other trades.

Check shop drawings and installation instructions to become familiar with the project. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and cover the most common conditions. Due to varying job conditions, all sealants used should be approved by the sealant manufacturer, to insure they will function for conditions shown on instructions and shop drawings. They must be compatible with all surfaces in which adhesion is required, including other sealant surfaces. Use primers where directed by manufacturer of sealant. Be sure to properly store sealants at recommended temperatures and check sealant for remainder of shelf life before using.

FIELD CONDITIONS:

- Do not install wall if there is a walkway with a down slope towards an entrance or a storefront.
- All materials to be installed plumb, level and true. Aluminum to be placed in direct contact with the masonry or incompatible materials should be isolated with a heavy coat of zinc-chromate or bituminous paint.
- After sealant is set and a representative amount of wall has been glazed (250 square feet or more), run a water hose to check installation. On large jobs, hose test should be repeated during glazing operation. Test should be conducted in accordance with AAMA 501.2 specifications.
- Coordinate protection of installed materials with general contractors and other trades.

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GENERAL INFORMATION

CLEANING MATERIALS:

Cement, plaster, terrazzo, alkaline and acid based materials used to clean masonry are very harmful to finishes and should be removed with water and a mild soap immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used.

EXPANSION JOINTS:

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

THERMAL IMPROVEMENT SUGGESTIONS:

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

1. Blinds or drapes prevent warm air from washing the window.
2. Warm air ventilators too far from window will not adequately wash the window with air to prevent condensation.
3. In extreme conditions, the fan of the heating systems should not cycle on and off, but run continuously.
4. Some heating systems have a water injection feature that can raise humidity levels. The higher the humidity levels the more likely condensation or frost will form. Raising the temperature and reducing humidity will usually solve this problem.
5. On rare occasions, an extremely cold storm may cause frost to appear on the glass or framing. A space heater and electric fan blowing along the plane of the window wall can reduce or eliminate this temporary condition.

FABRICATION SUGGESTIONS:

Oldcastle BuildingEnvelope® recommends the use of our EZ Punch tooling for faster and more accurate fabrication of wall systems. If hand fabricating the mullions; drill fixtures are available to improve accuracy. Fabrication instructions for use of these drill fixtures are described within this manual on pages 37 through 41.

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MATERIAL FABRICATION AND CUT LIST

Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 1/4" minimum clearance for shimming and caulking around perimeter frame. (FG-3413 Sill Receptor requires minimum 3/8" joint at head)

Cut material to size per dimensions given below:

Frame Members

Sub-Sill or Sill Receptor: Frame Width plus 1/4"

Mullions and Mullion Fillers: Frame Height (Rough Opening minus Head & Sill Joints minus Sub Sill height; FG-3223 minus 3/8", FG-3413 minus 1/2")

Horizontal, Head & Sill: Day Light Opening (D.L.O.)

Horizontal Glazing Beads & Fillers: D.L.O. minus 1/16"

Accessories

Horizontal Gaskets: D.L.O. plus 1/4" per foot

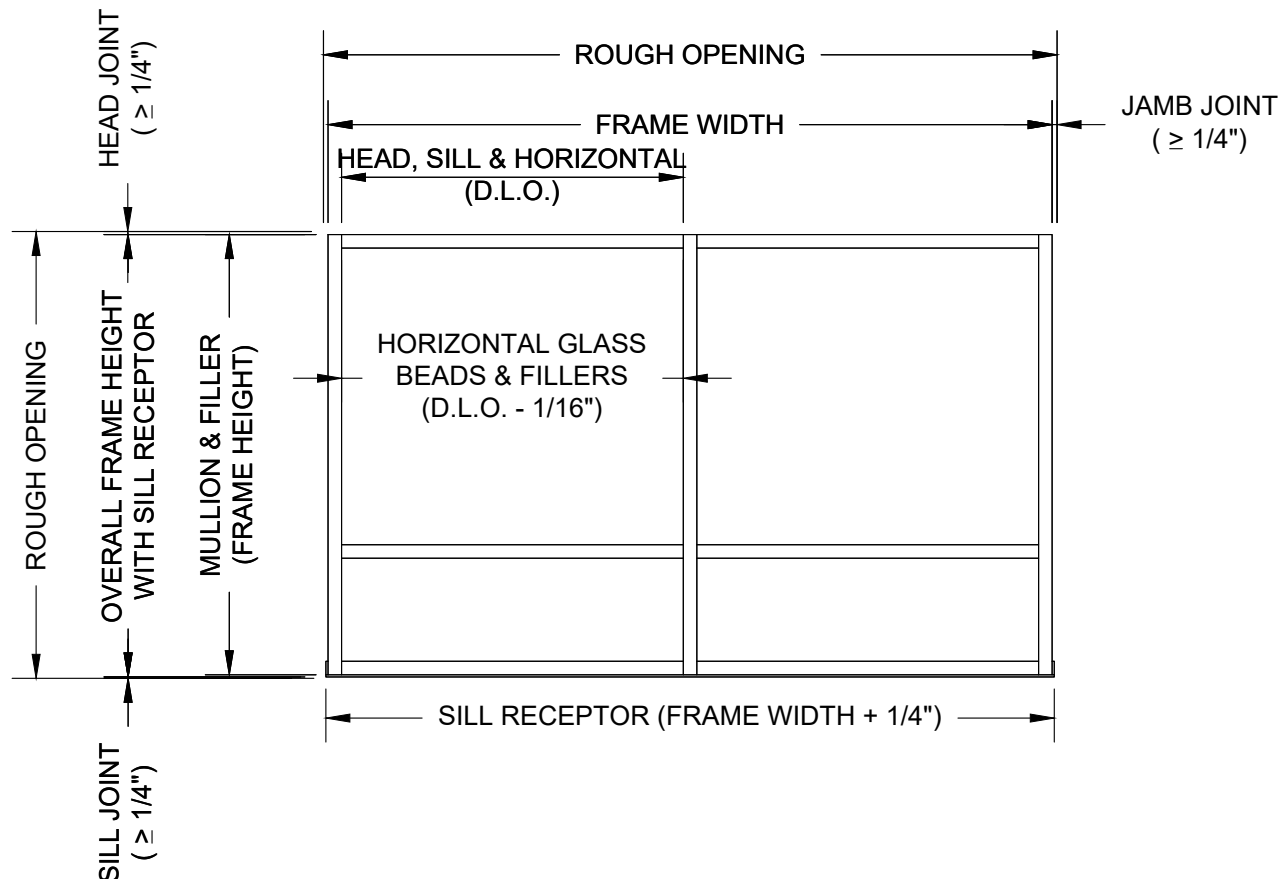
Vertical Gaskets: D.L.O. plus 1" plus 1/4" per foot

Accessories

Horizontal Glazing Adaptors: D.L.O. minus 1/16"

Vertical Glazing Adaptors: D.L.O. plus 7/8"

Door Jamb: Rough Opening minus Head Joint



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2-SIDED SSG FRAME FABRICATION AND CUT LIST:

Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 1/4" minimum clearance for shimming and caulking around perimeter frame. (FG-3413 Sill Receptor requires minimum 3/8" joint at head)
(Reference page 6 for elevation and terminology)

Cut material to size per dimensions given below:

Frame Members

Sub-Sill or Sill Receptor: Frame Width plus 1/4"

Mullions and Jamb (see Dtl A): Overall Frame Height minus 3" minus Sub Sill height.
(FG-3223 minus 3/8", FG-3413 minus 1/2")

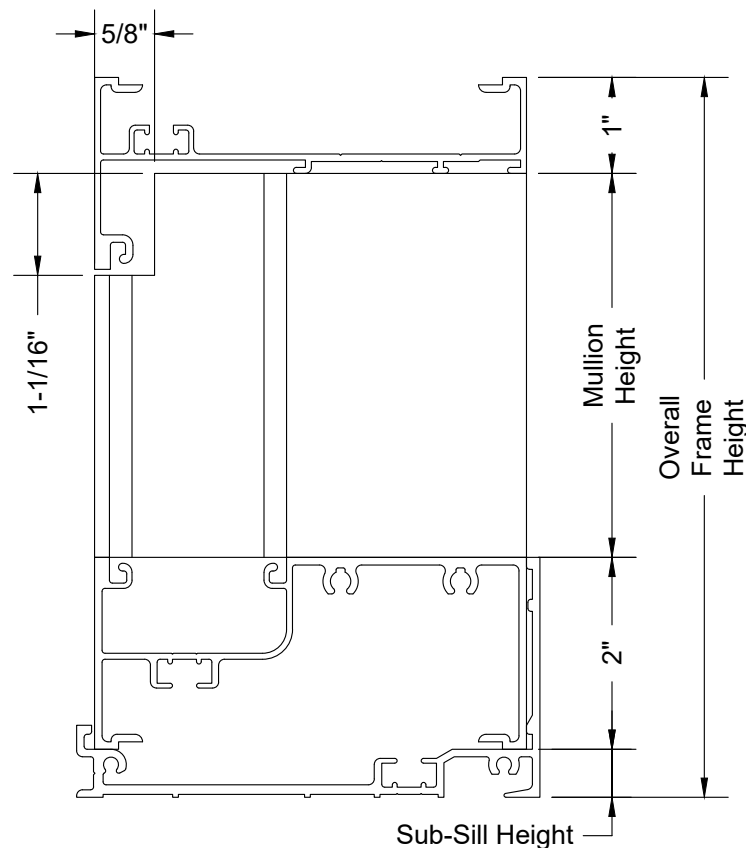
Head & Sill:
Horizontal (Shear Block Assy) Frame Width
Horizontal (Screw Spline Assy) Day Light Opening (D.L.O.)
Horizontal Glazing Beads & Fillers: D.L.O. minus 1/16"

Accessories

Head & Sill Exterior Gaskets: D.L.O. plus 1" plus 1/4" per foot
Head & Sill Interior Gaskets: D.L.O. plus 1/4" per foot
Horizontal Gaskets: D.L.O. plus 1/4" per foot
Vertical Gaskets: D.L.O. plus 1" plus 1/4" per foot

Other Members (as required)

Horizontal Glazing Adaptors: D.L.O. minus 1/16"
Vertical Glazing Adaptors: D.L.O. plus 7/8"
Door Jamb: Rough Opening minus Head Joint

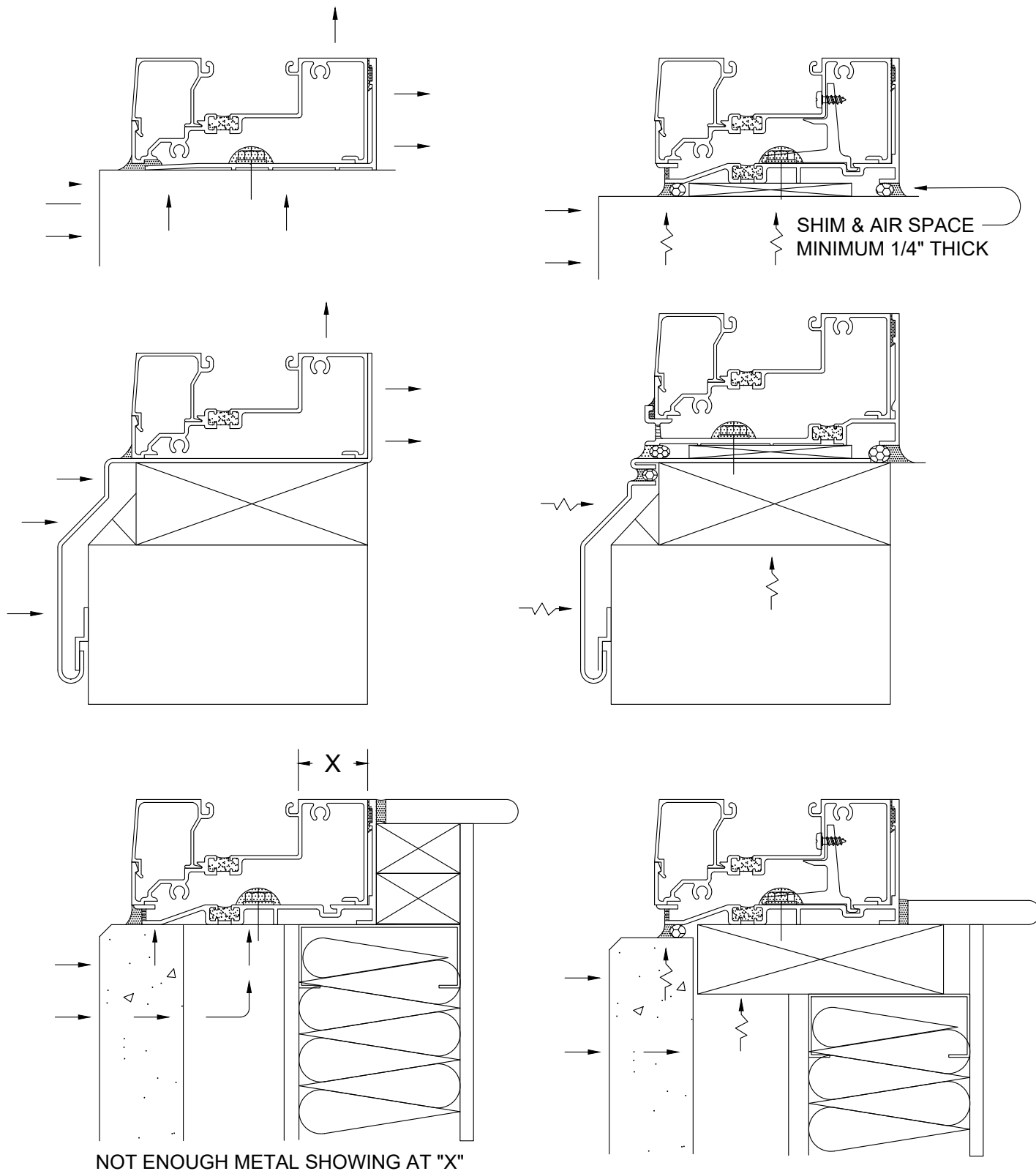


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RECOMMENDATIONS FOR THERMAL PERFORMANCE

NOT RECOMMENDED

PREFERRED

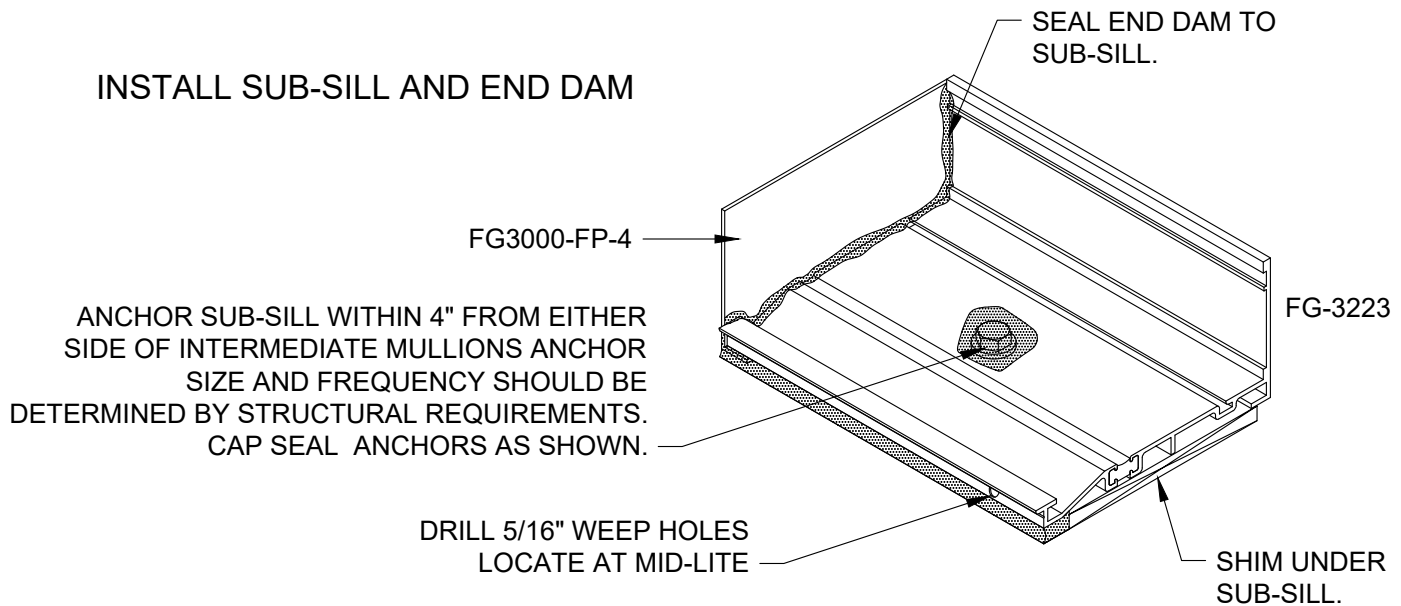


TO DERIVE THE GREATEST BENEFIT FROM YOUR STOREFRONT INSTALLATION,
WE RECOMMEND YOU REVIEW THE DETAILS ABOVE.

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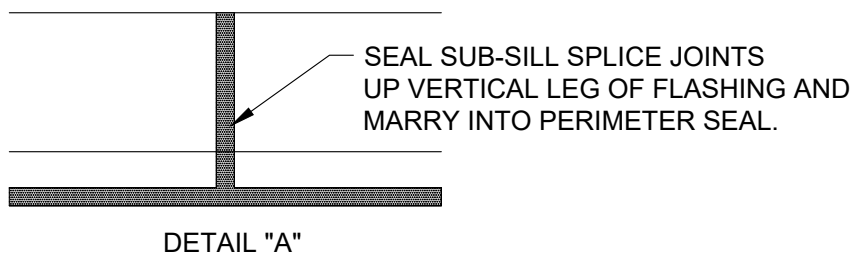
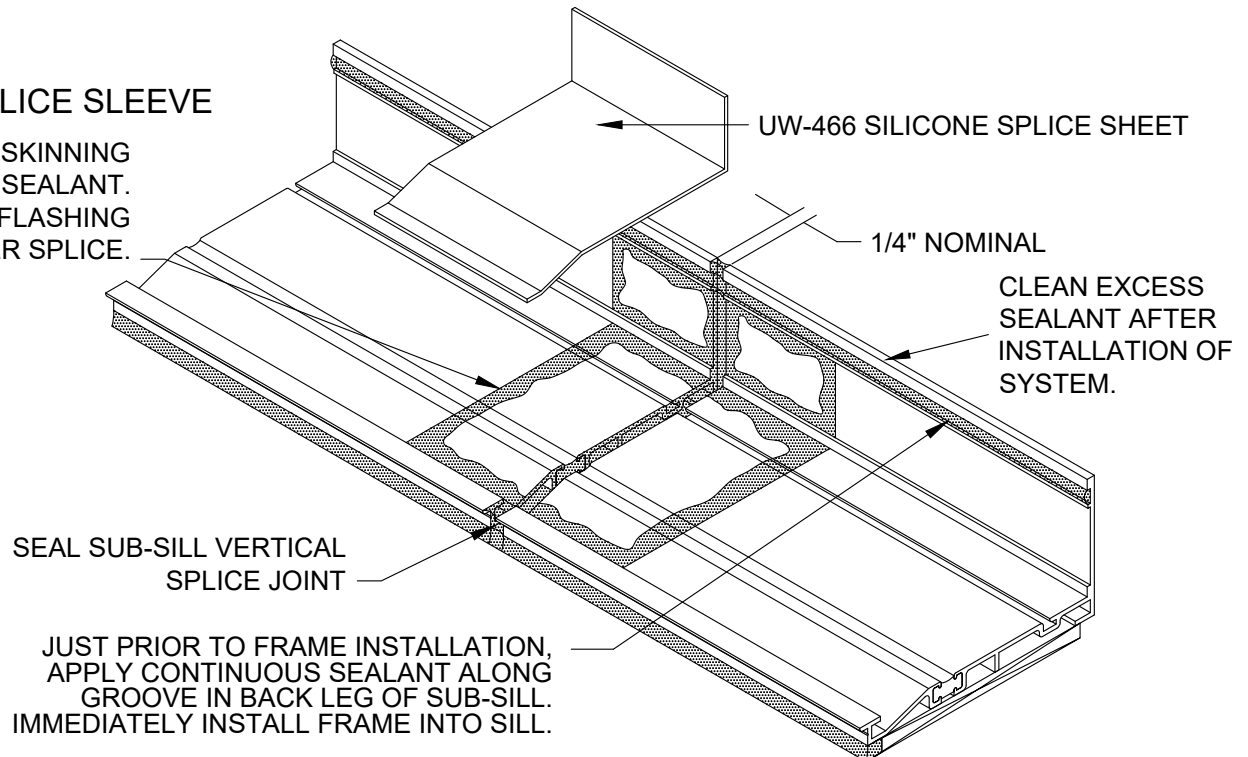
FG-3223 SUB SILL INSTALLATION

INSTALL SUB-SILL AND END DAM



INSTALL SPLICE SLEEVE

SEAL WITH A NON-SKINNING NON-HARDENING SEALANT. FILL BREAK IN FLASHING AND UNDER SPLICE.



NOTE:

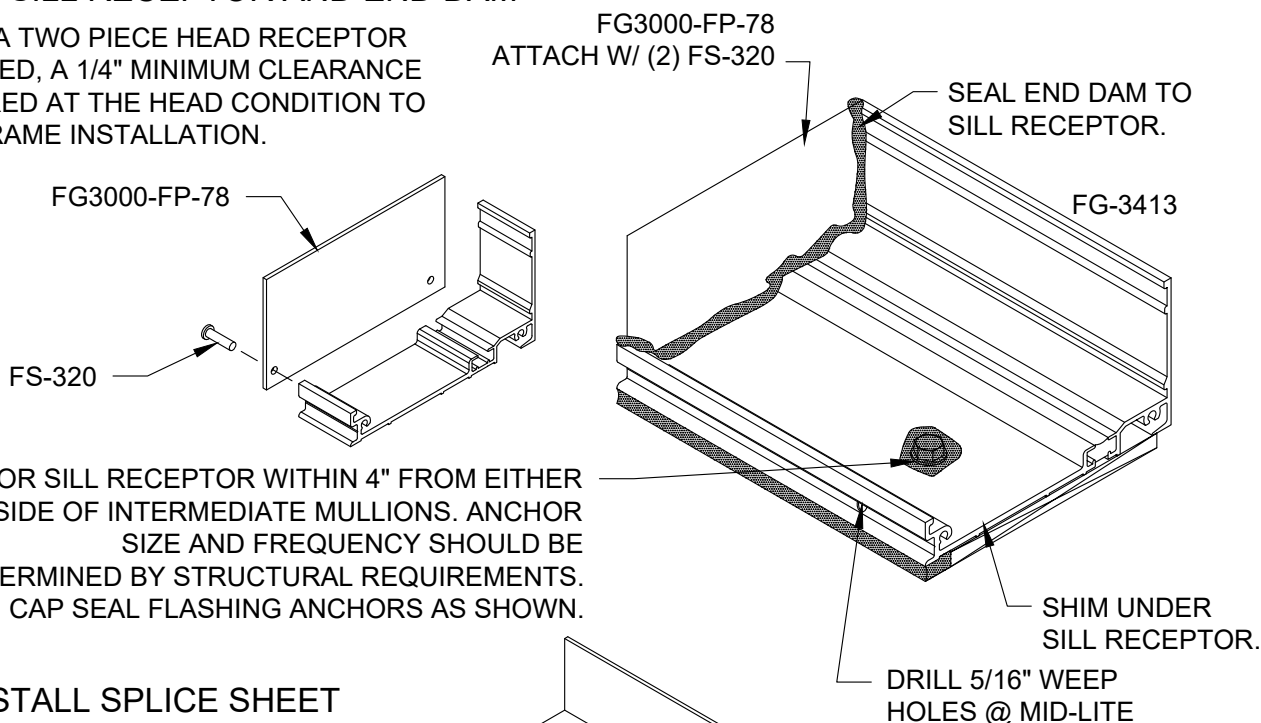
- 1) SUB-SILL SHALL BE INSTALLED LEVEL AND SHOULD NEVER TILT TOWARDS INTERIOR OF BUILDING.
- 2) REFERENCE PAGE 43 FOR END REACTIONS FOR SPECIFIC SILL ANCHORS
- 3) SPLICE SUB-SILL AT MID-LITE ON LONG RUNS

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FG-3413 SUB SILL INSTALLATION

INSTALL SILL RECEPTOR AND END DAM

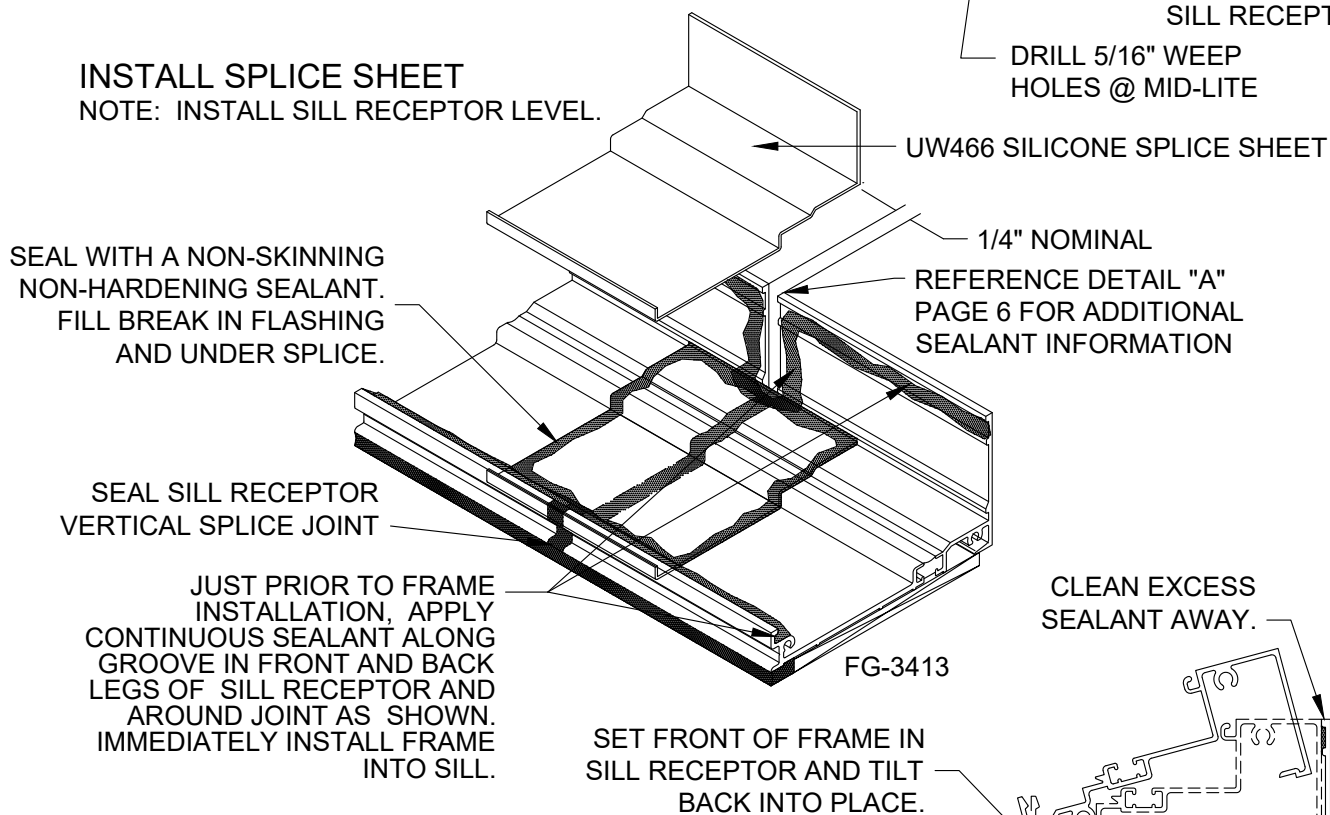
NOTE: IF A TWO PIECE HEAD RECEPTOR IS NOT USED, A 1/4" MINIMUM CLEARANCE IS REQUIRED AT THE HEAD CONDITION TO ALLOW FRAME INSTALLATION.



ANCHOR SILL RECEPTOR WITHIN 4" FROM EITHER SIDE OF INTERMEDIATE MULLIONS. ANCHOR SIZE AND FREQUENCY SHOULD BE DETERMINED BY STRUCTURAL REQUIREMENTS. CAP SEAL FLASHING ANCHORS AS SHOWN.

INSTALL SPLICE SHEET

NOTE: INSTALL SILL RECEPTOR LEVEL.



CLEAN EXCESS SEALANT AWAY.

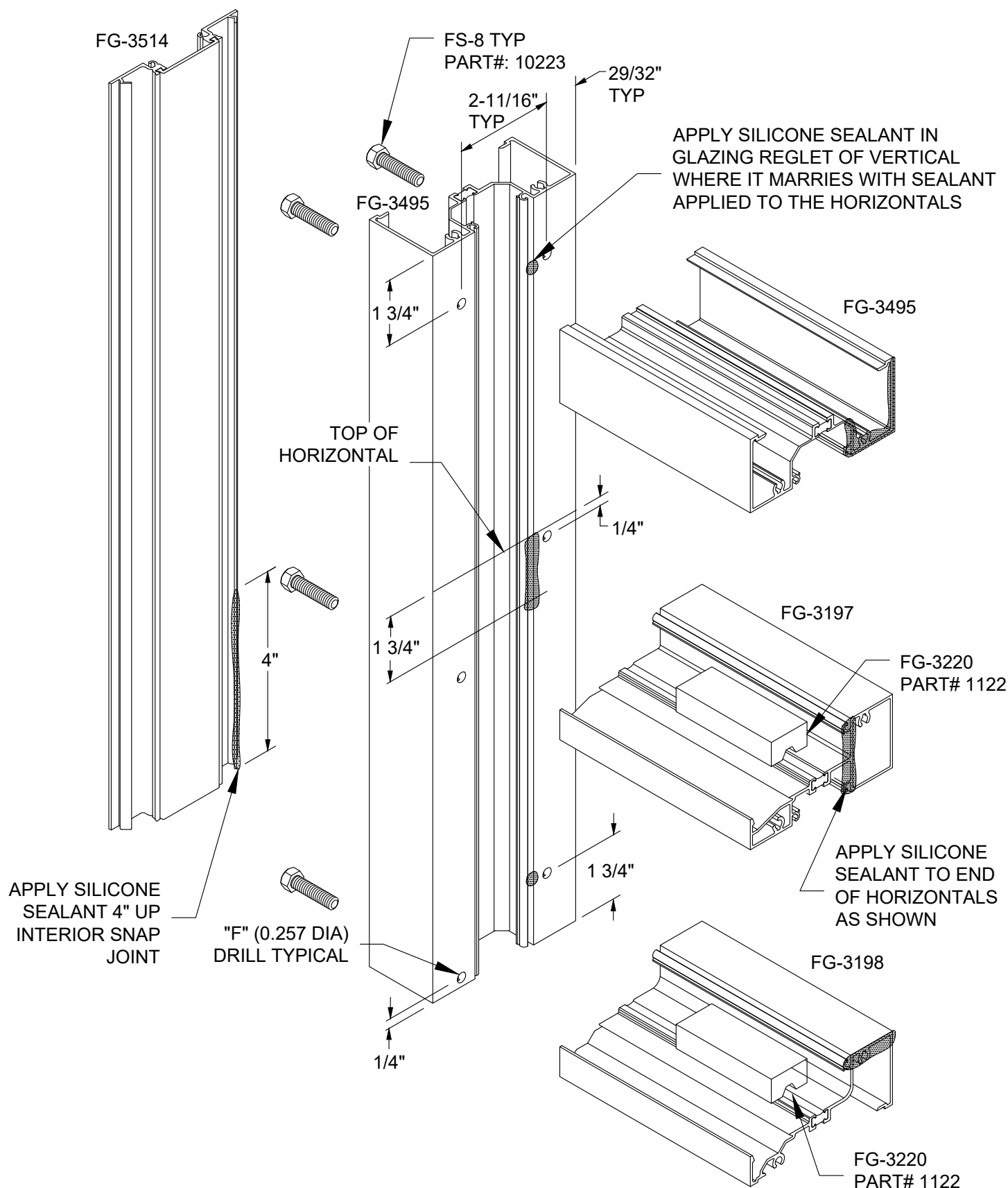
INTERIOR PERIMETER SEAL AT SILL IS OPTIONAL AND FOR COSMETIC PURPOSES ONLY.

NOTE:

- 1) SUB-SILL SHALL BE INSTALLED LEVEL AND SHOULD NEVER TILT TOWARDS INTERIOR OF BUILDING.
- 2) THE FG-3413 SILL RECEPTOR IS DESIGNED TO WITHSTAND A MAXIMUM END REACTION OF 600 LBS.
- 3) SPLICE SILL RECEPTOR AT MID-LITE.

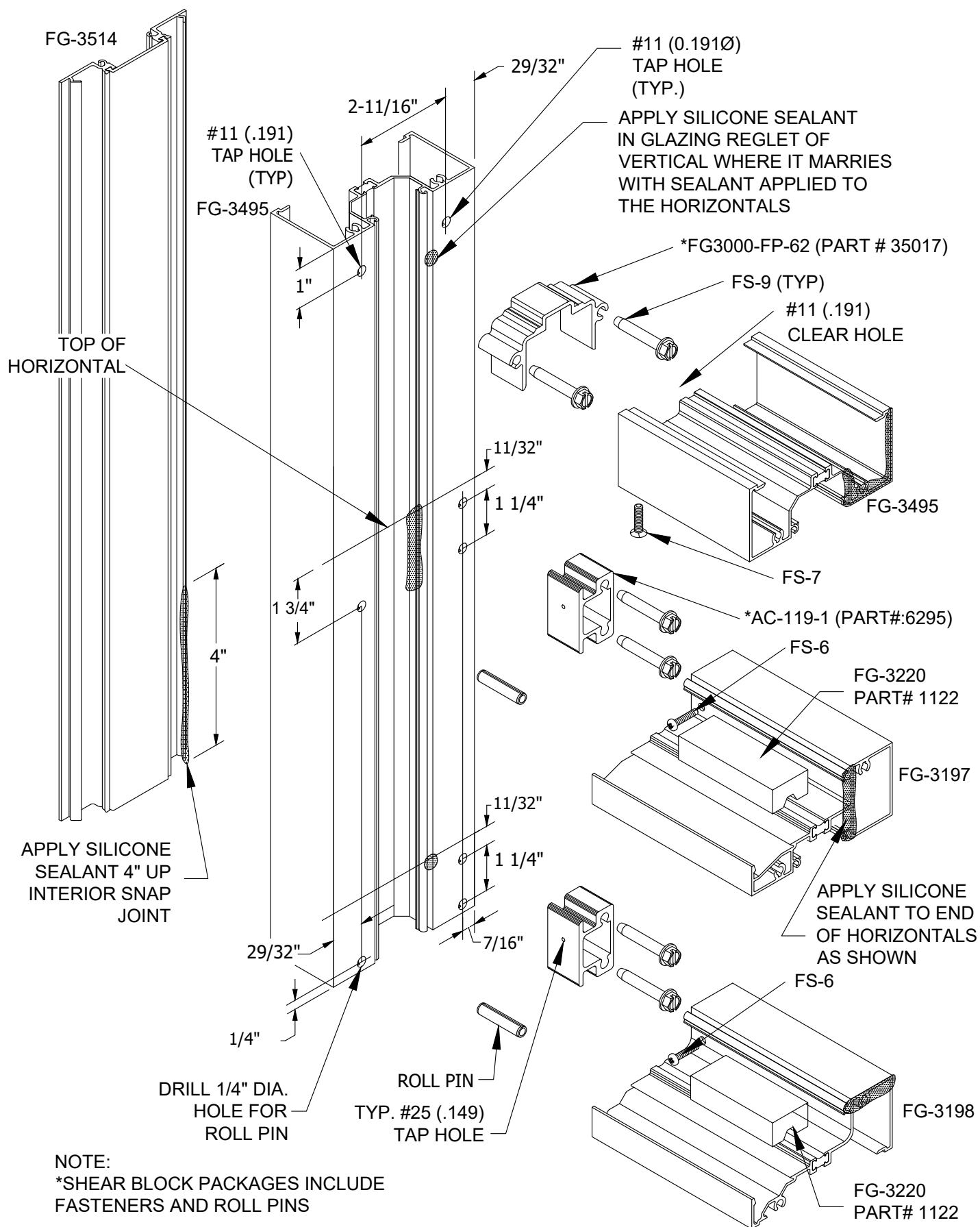
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OUTSIDE GLAZED, CENTER SET SCREW SPLINE ASSEMBLY



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OUTSIDE GLAZED, CENTER SET, SHEAR BLOCK FABRICATION & ASSEMBLY

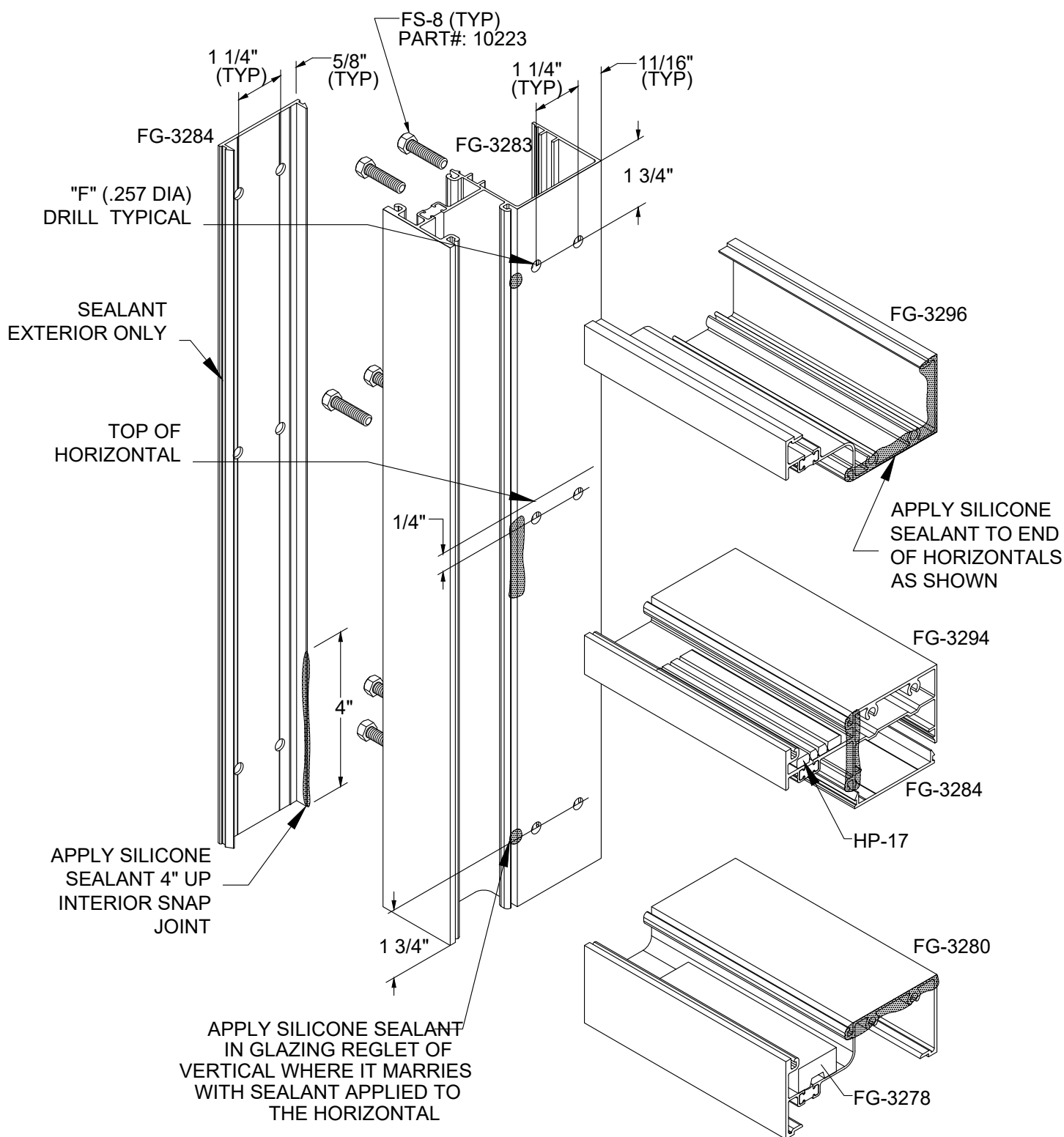


REFERENCE PAGE 37 FOR USE OF DJ-8 DRILL FIXTURE.
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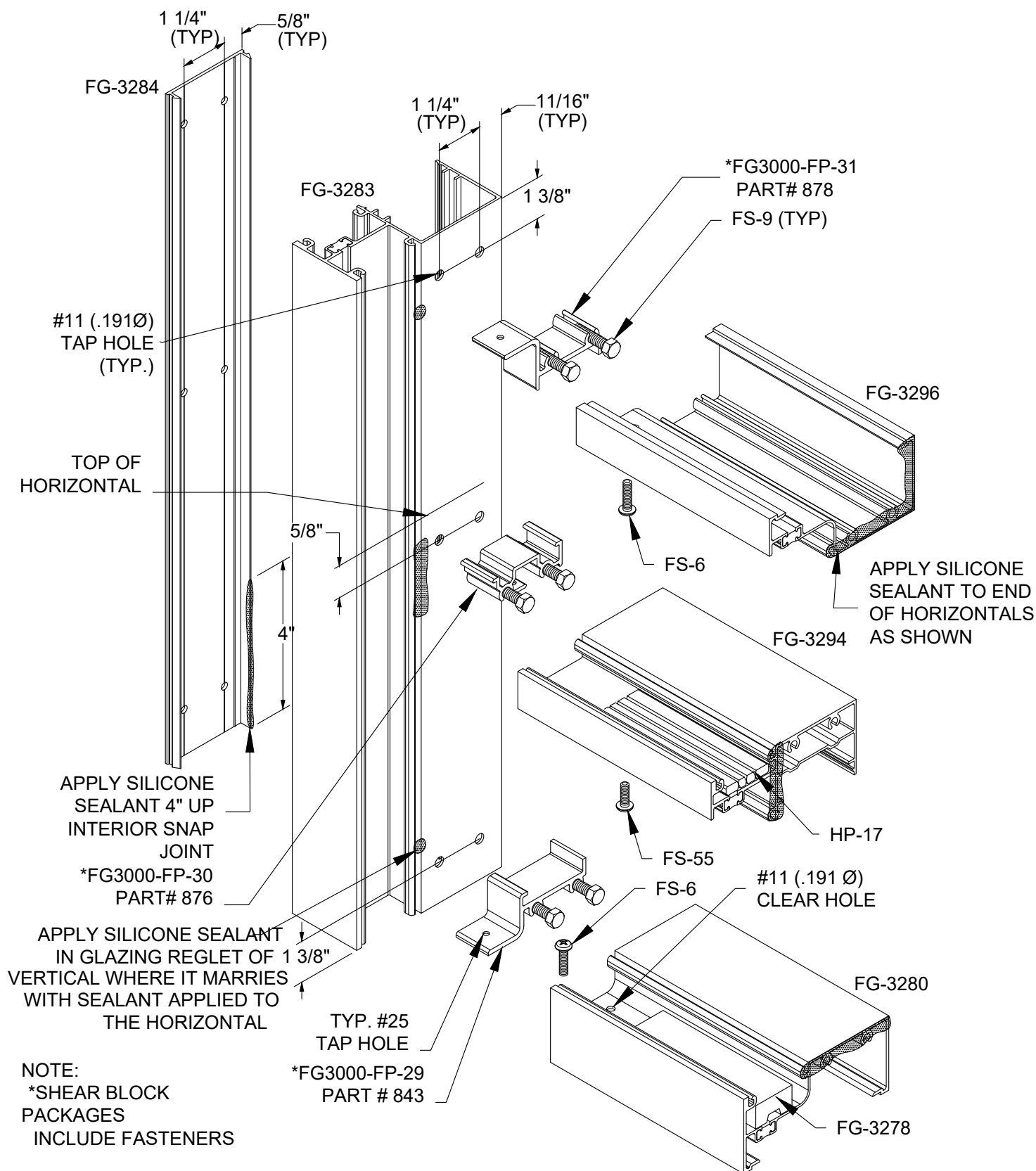
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OUTSIDE GLAZED, FRONT SET SCREW SPLINE FABRICATION & ASSEMBLY



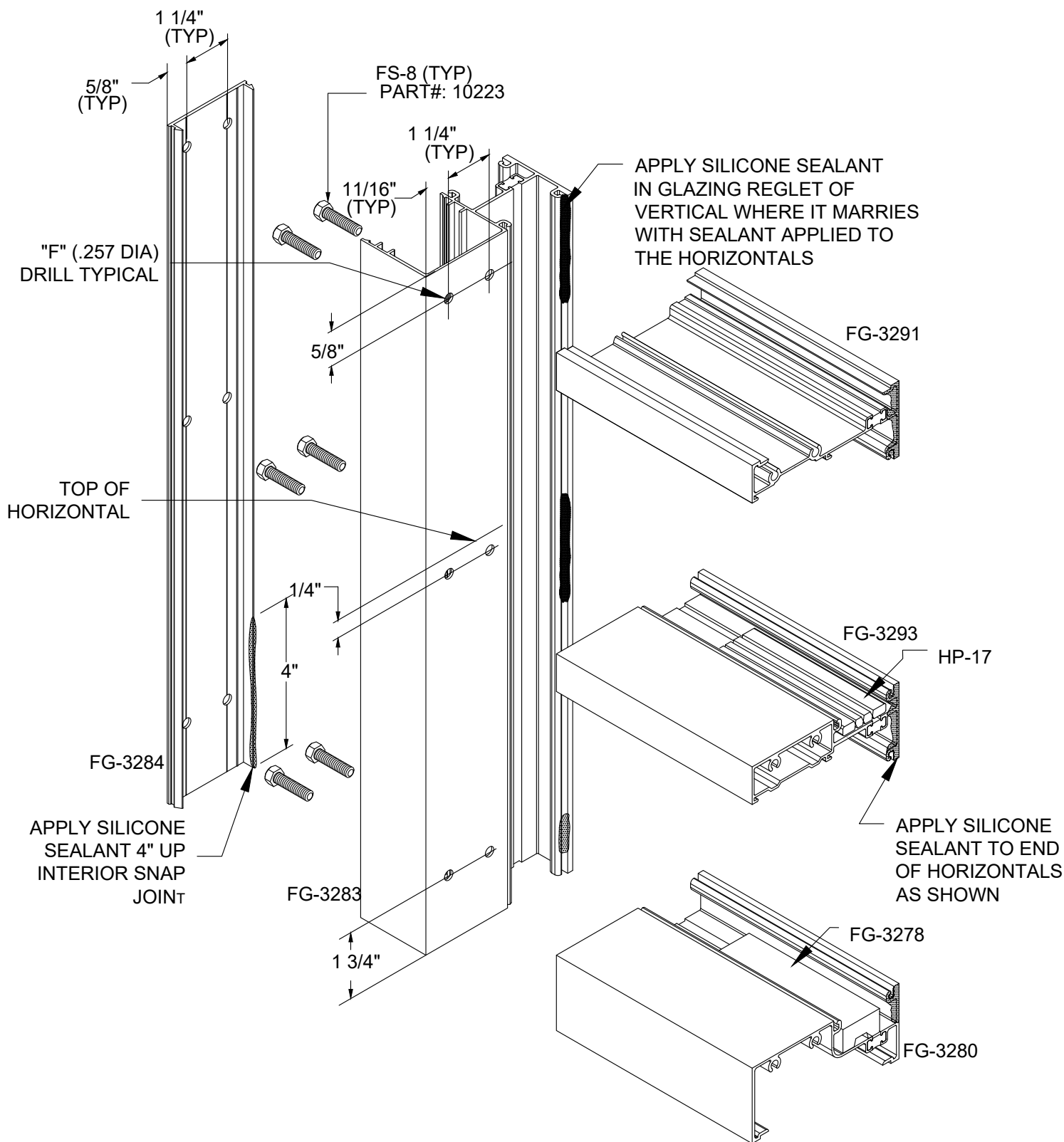
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OUTSIDE GLAZED, FRONT SET SHEAR BLOCK FABRICATION & ASSEMBLY



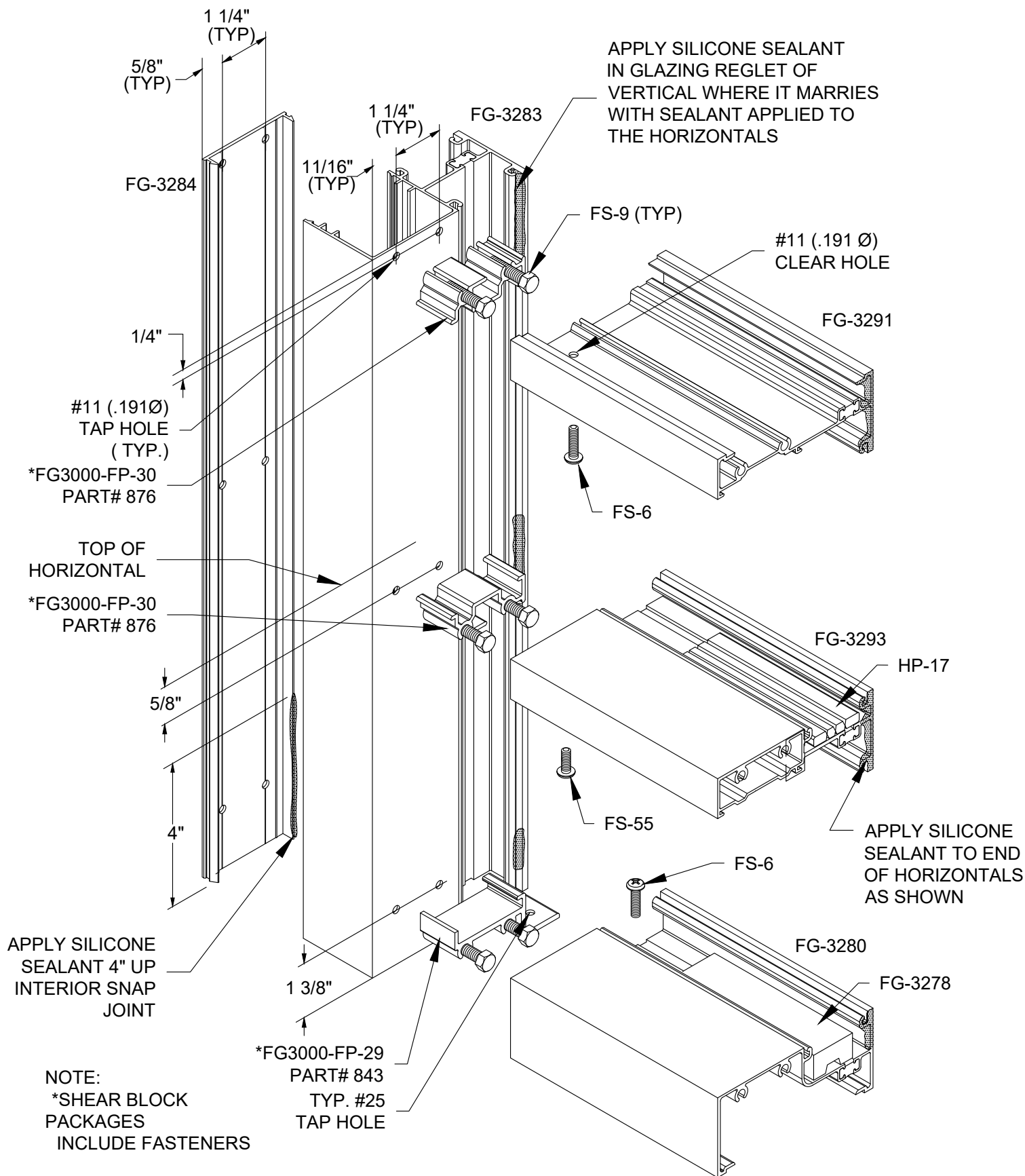
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OUTSIDE GLAZED, BACK SET SCREW SPLINE FABRICATION & ASSEMBLY



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OUTSIDE GLAZED, BACK SET SHEAR BLOCK FABRICATION & ASSEMBLY



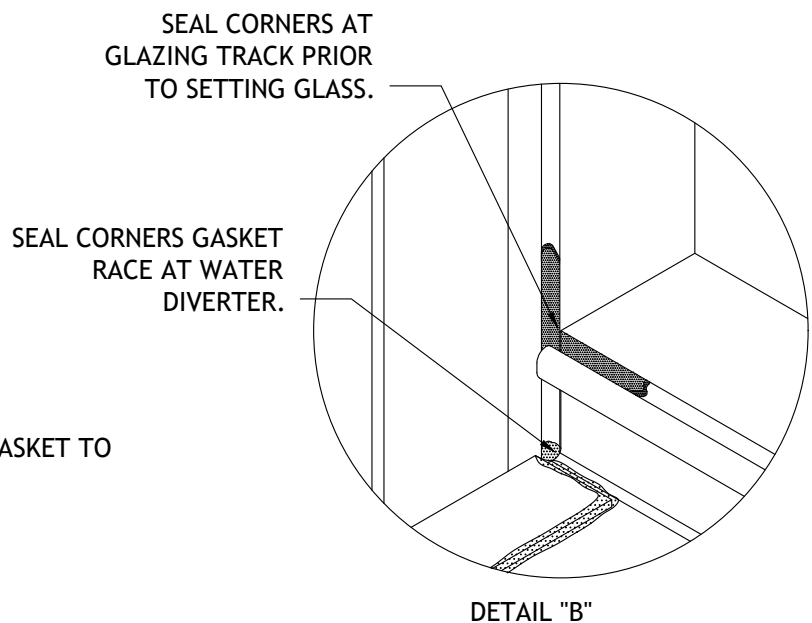
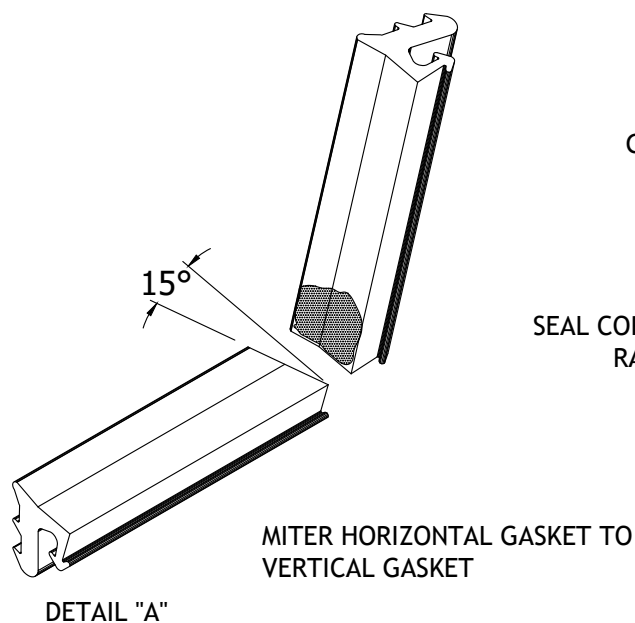
REFERENCE PAGE 41 FOR USE OF DJ-7 DRILL FIXTURE.

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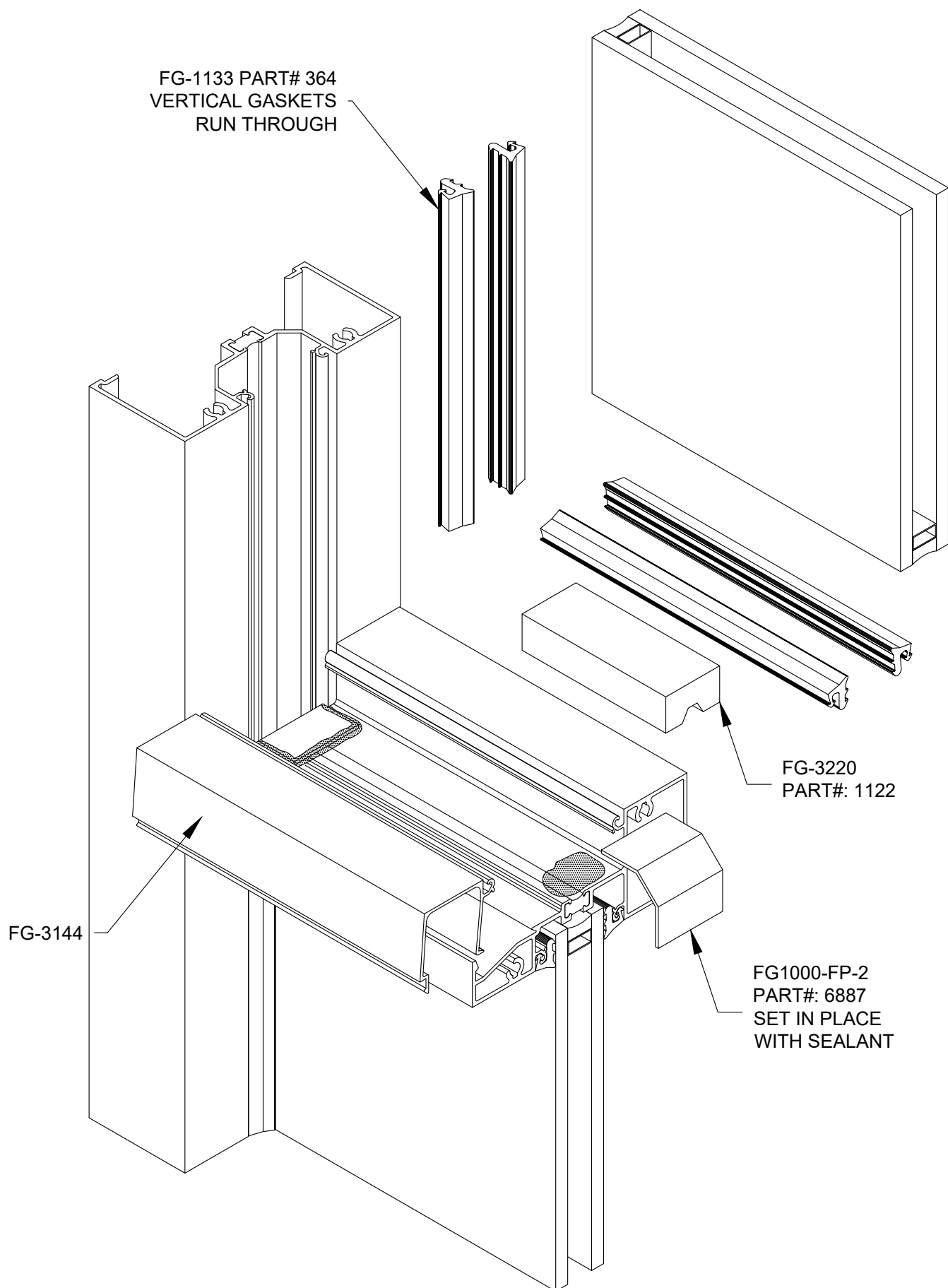
OUTSIDE GLAZING GUIDELINES

1. REMOVE GASKETS FROM ROLL AND ALLOW TO RELAX OVERNIGHT. ALL GASKETS TO BE CUT D.L.O. PLUS 1/4" PER FOOT HORIZONTALLY AND D.L.O. PLUS 1" PLUS 1/4" PER FOOT VERTICALLY.
2. VERTICAL GASKETS RUN THRU, HORIZONTAL GASKETS SHOULD BE MITERED ON ENDS AS SHOWN IN DETAIL "A".
3. INSTALL INTERIOR GASKETS PRIOR TO GLAZING. CORNERS OF INTERIOR GASKETS TO BE SET IN SEALANT (DTL."B") AND CORNERS SEALED JUST PRIOR TO SETTING GLASS (DTL."A").
NOTE: CLEAN GASKETS AND SURFACES WITH ISOPROPYL ALCOHOL PRIOR TO SEALING CORNERS.
4. LOCATE SETTING BLOCKS AT EITHER 1/4 POINTS OR 1/8 POINTS, DEPENDENT ON SIZE OF GLASS.
5. GLASS BITE AT TYPICAL HORIZONTAL AND VERTICAL MEMBERS IS 7/16". AT SSG VERTICAL 3/4".
6. GLAZE OPENINGS FROM BOTTOM TO TOP. INSTALLING WATER DIVERTERS IN HORIZONTAL ABOVE, AFTER LITE BELOW IS IN POSITION.
7. WATER DIVERTERS (FG1000-FP-2) MUST BE LOCATED ON EACH END OF HORIZONTALS AND SET IN SEALANT.
8. WHEN INSTALLING GLASS: FIRST, WET TOP OF SETTING BLOCK WITH SOAPY WATER. ONCE GLASS IS SET IN PLACE, PUSH GLASS AGAINST INTERIOR GASKET AT SETTING BLOCK AREA. FAILURE TO DO SO MAY CAUSE DIAGONAL CRACKS TOWARDS SETTING BLOCKS DUE TO GLASS BENDING WHILE INSTALLING GASKET(S) IN CORNERS.



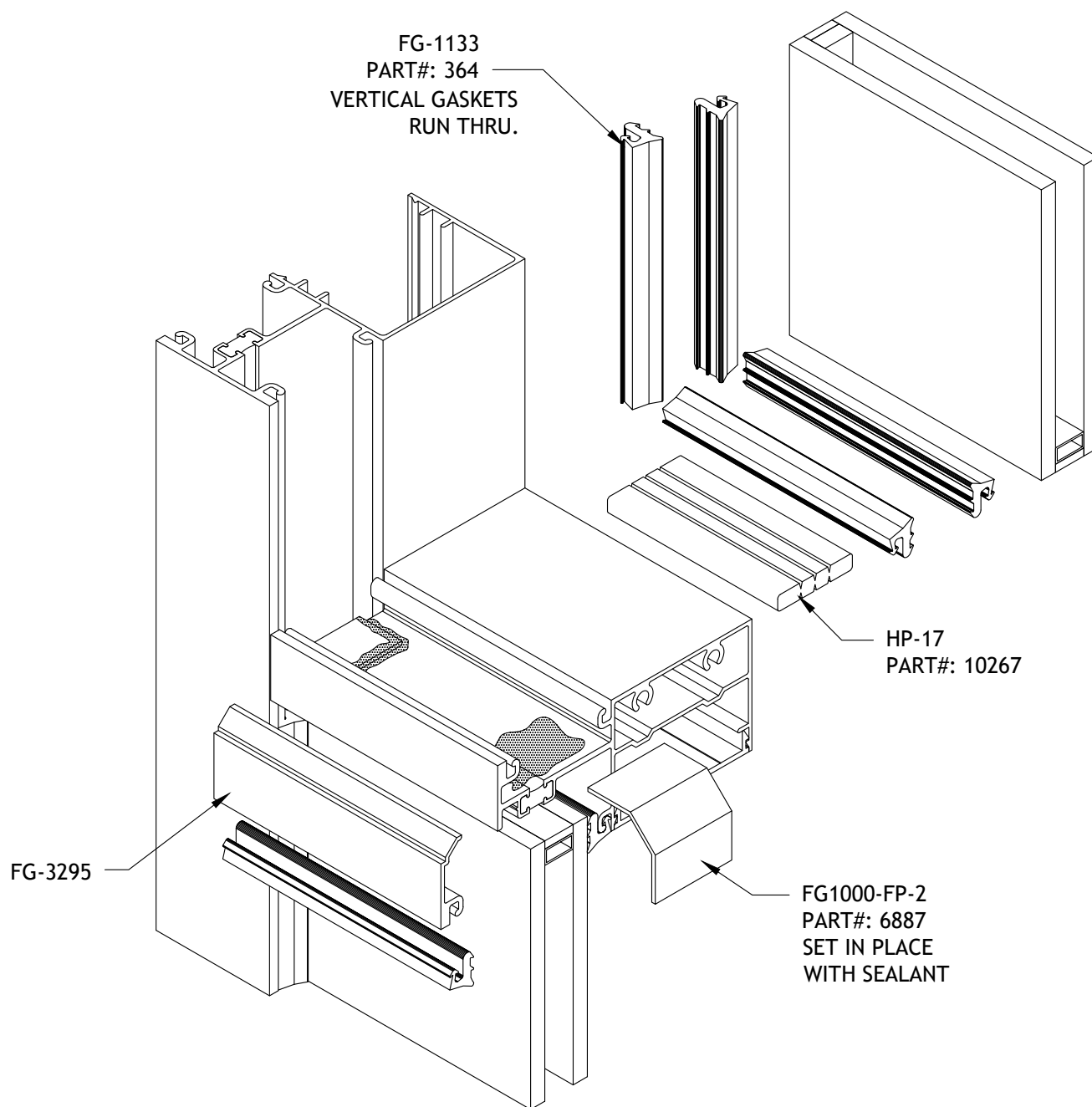
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OUTSIDE GLAZED, CENTER SET GLAZING DETAIL



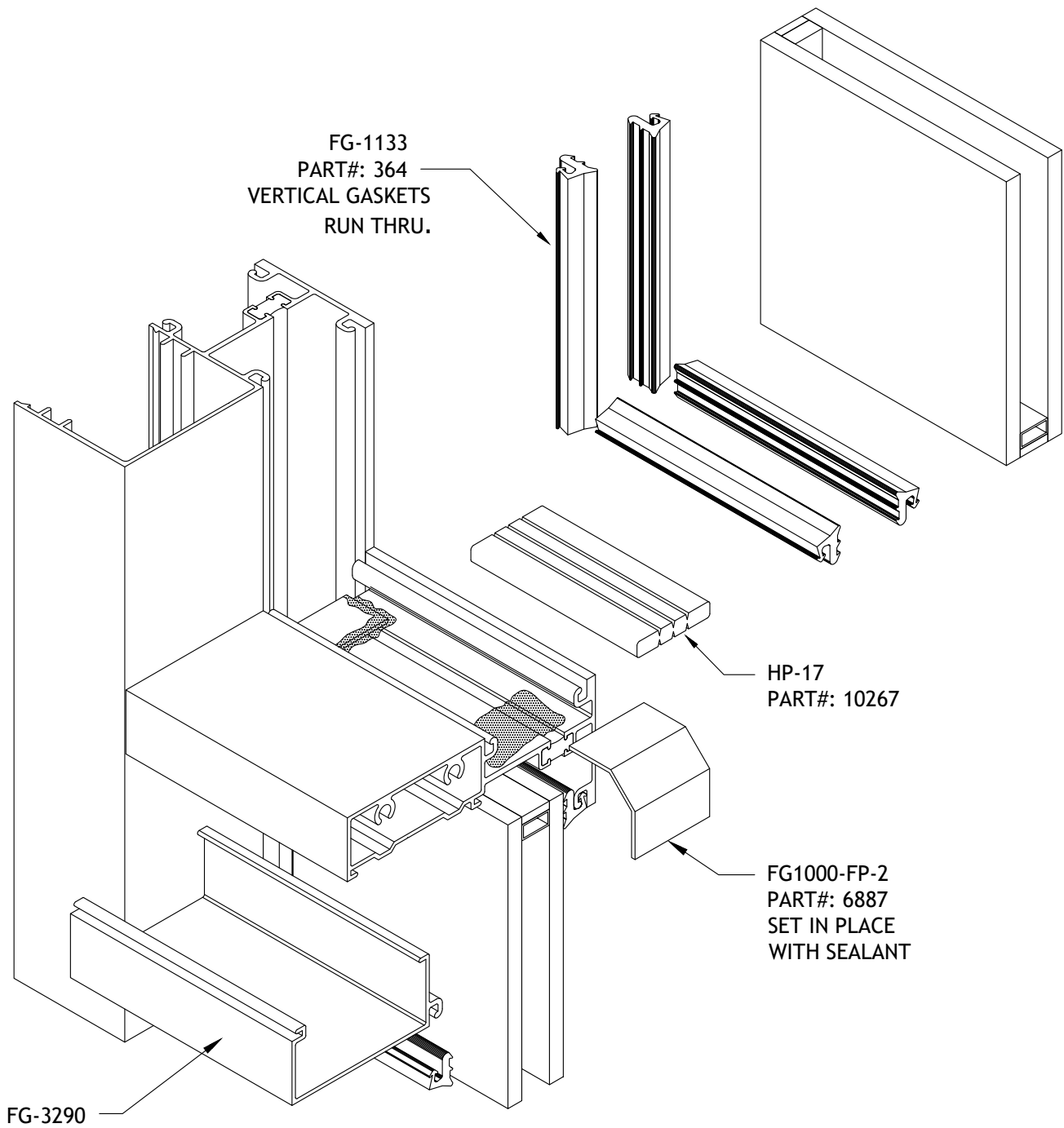
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OUTSIDE GLAZED, FRONT SET GLAZING DETAIL



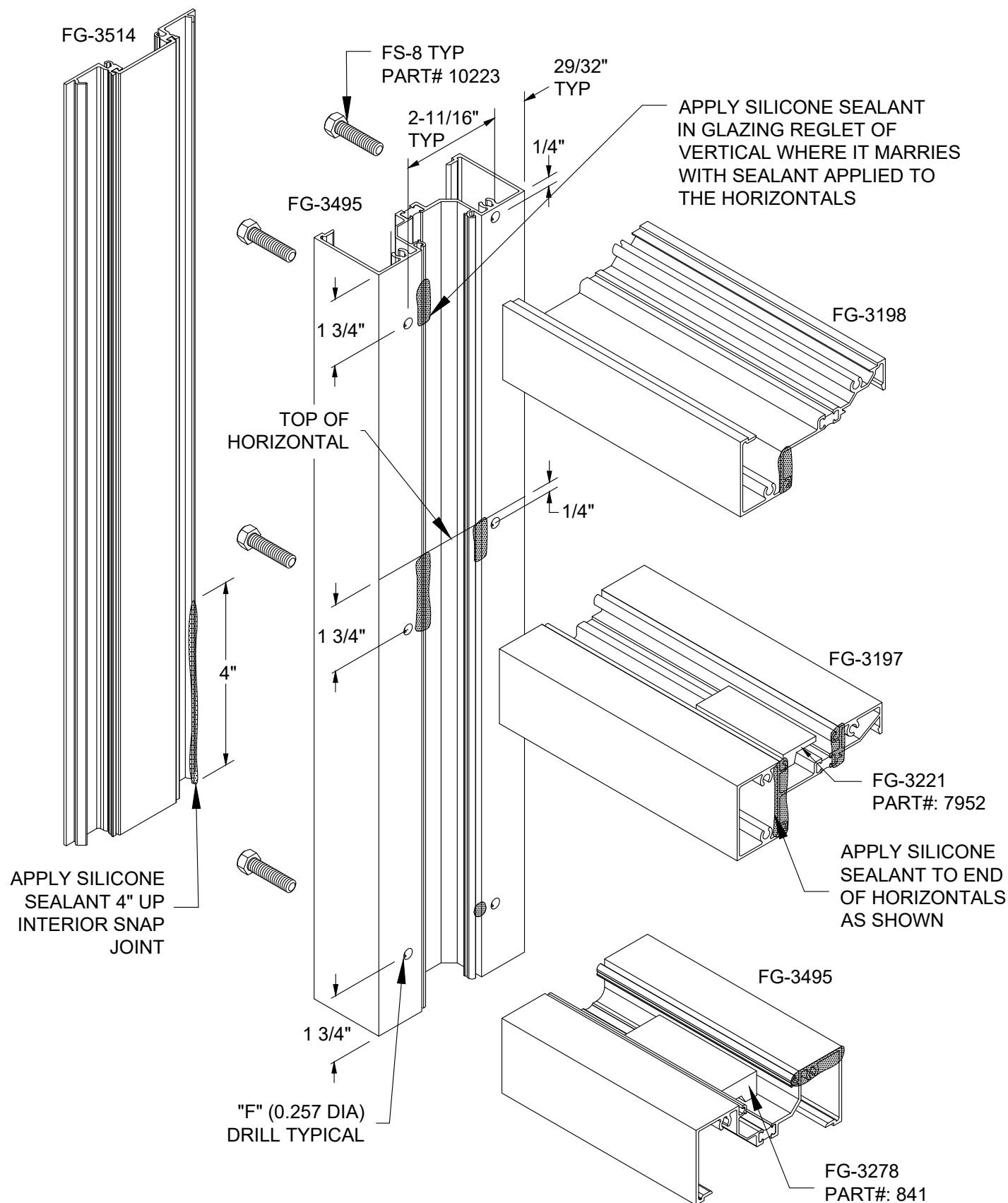
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OUTSIDE GLAZED, BACK SET GLAZING DETAIL



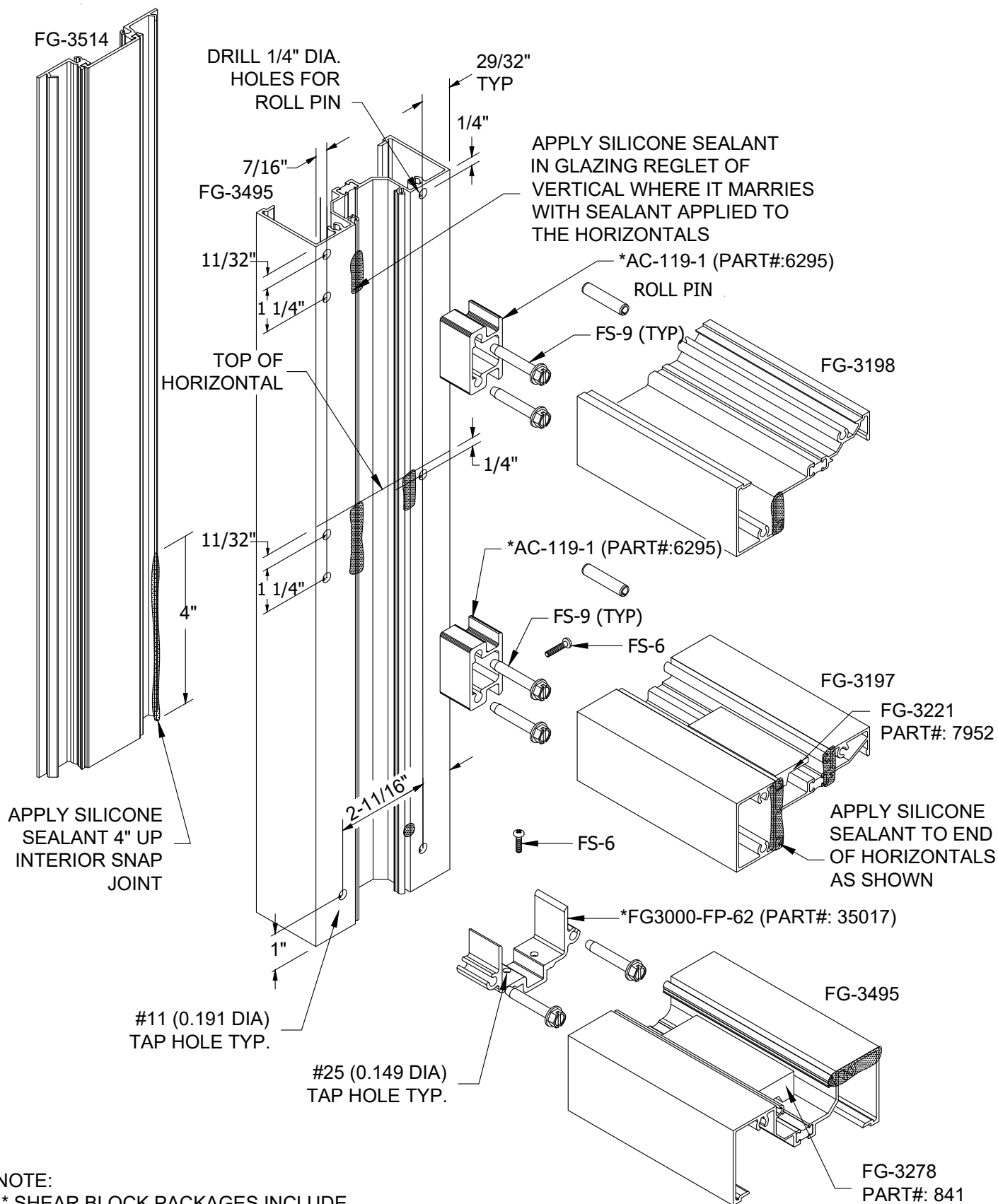
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INSIDE GLAZED, CENTER SET SCREW SPLINE FABRICATION & ASSEMBLY



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INSIDE GLAZED, CENTER SET SHEAR BLOCK FABRICATION & ASSEMBLY



NOTE:

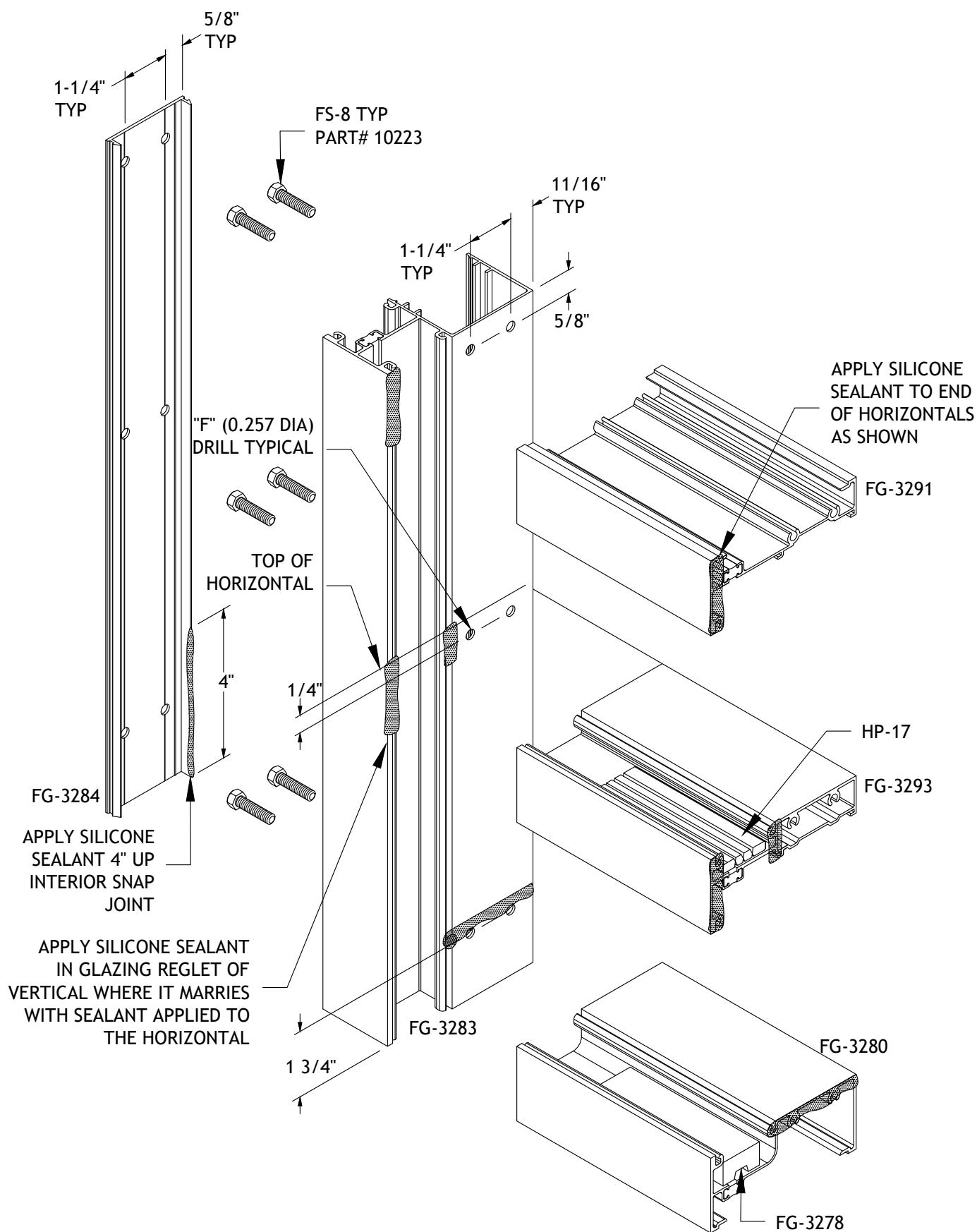
* SHEAR BLOCK PACKAGES INCLUDE FASTENERS AND ROLL PINS

REFERENCE PAGE 38 FOR USE OF DJ-8 DRILL FIXTURE.

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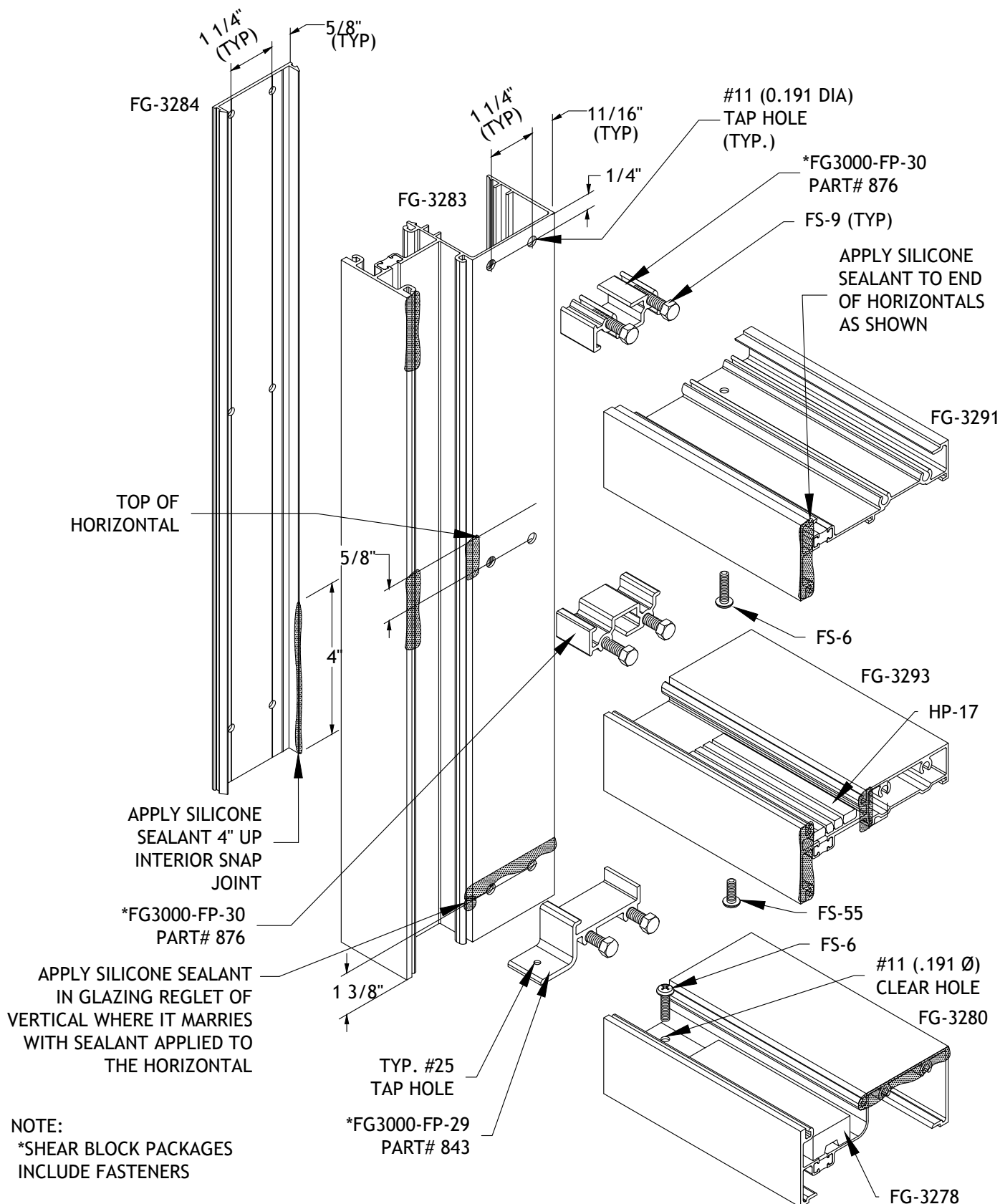
INSIDE GLAZED, FRONT SET SCREW SPLINE FABRICATION & ASSEMBLY



REFERENCE PAGE 39 FOR USE OF DJ-7 DRILL FIXTURE.
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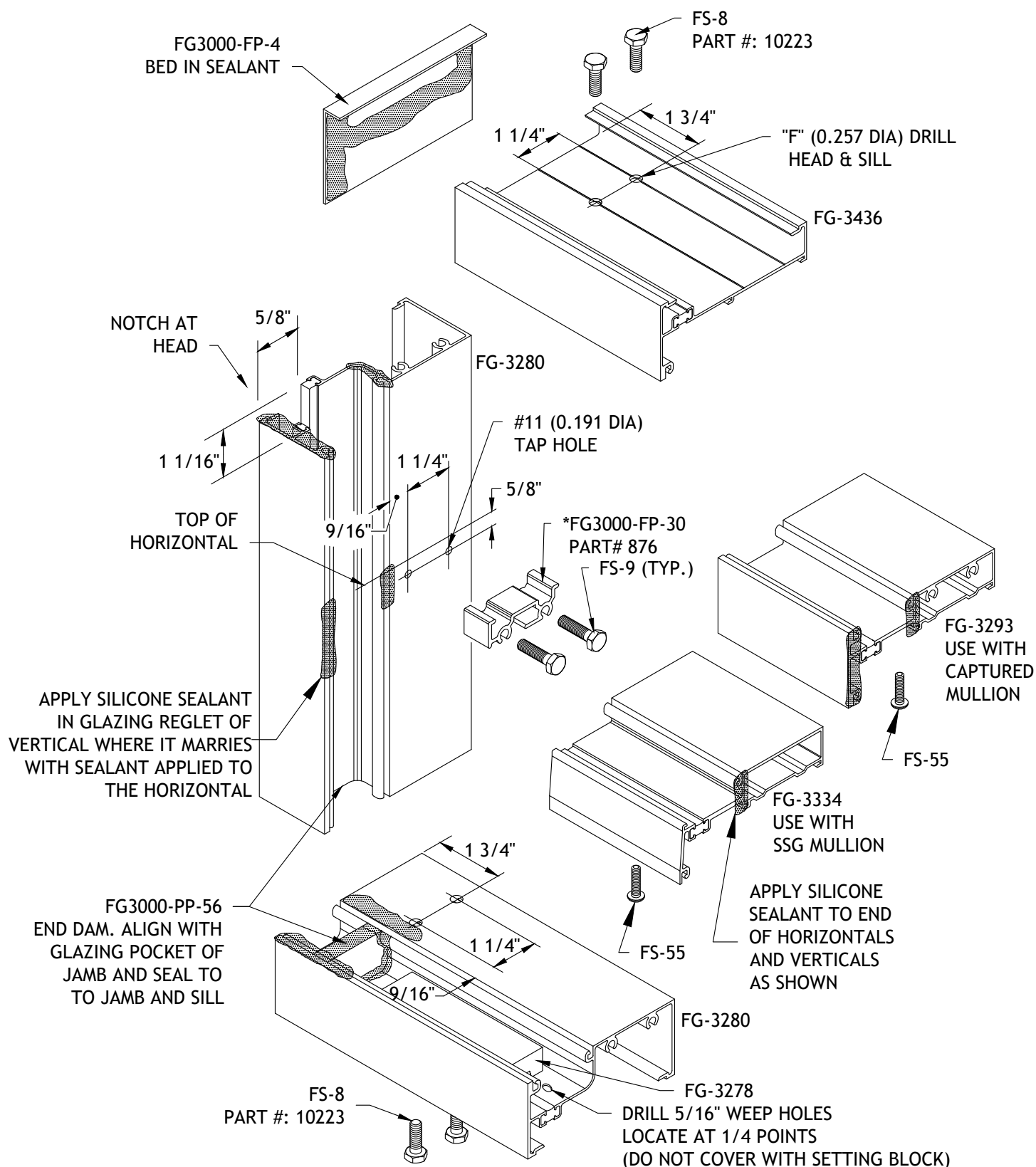
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INSIDE GLAZED, FRONT SET SHEAR BLOCK FABRICATION & ASSEMBLY



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INSIDE GLAZED, FRONT SET SHEAR BLOCK FABRICATION & ASSEMBLY



NOTE:

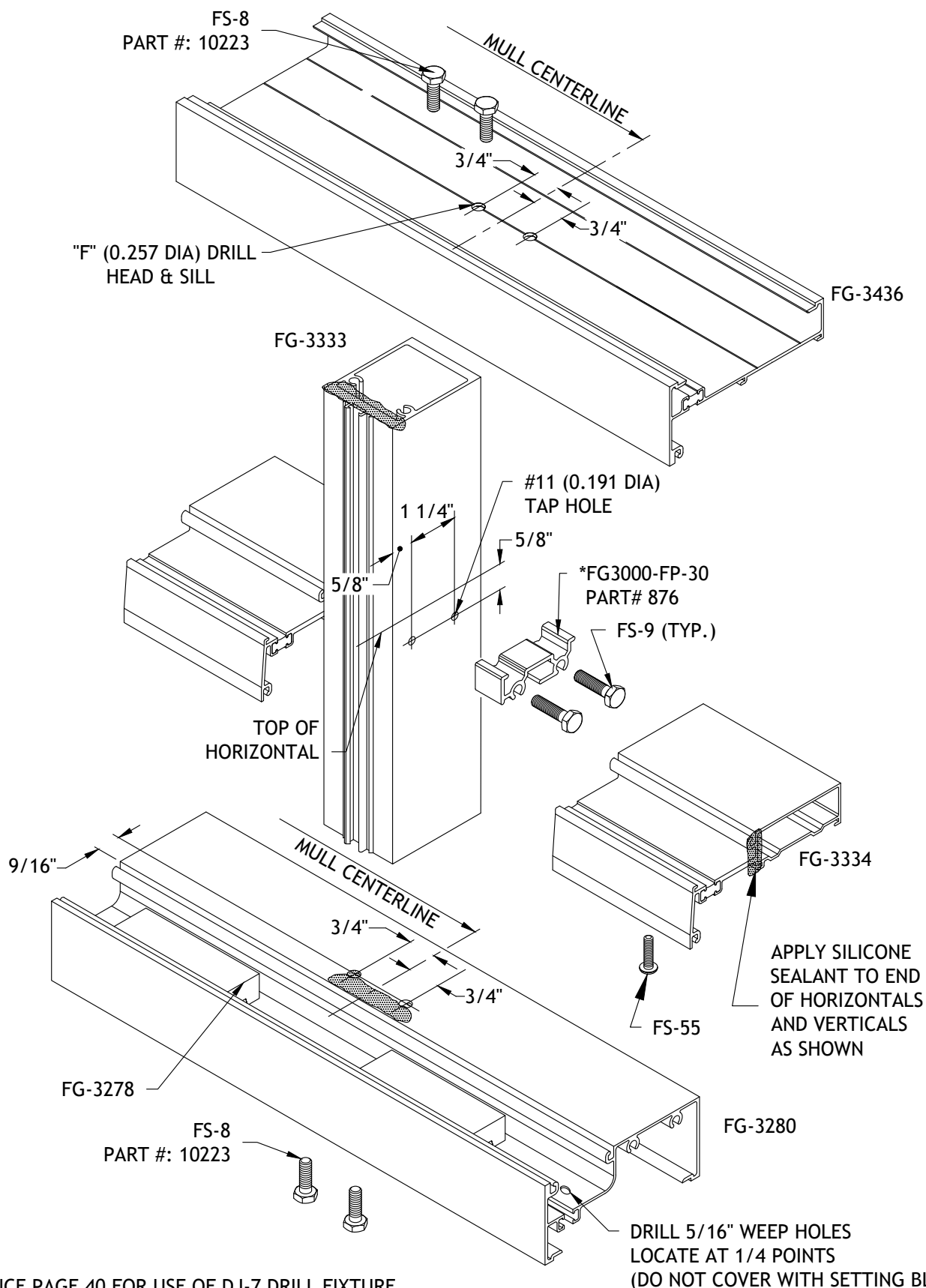
*SHEAR BLOCK PACKAGES
INCLUDE FASTENERS

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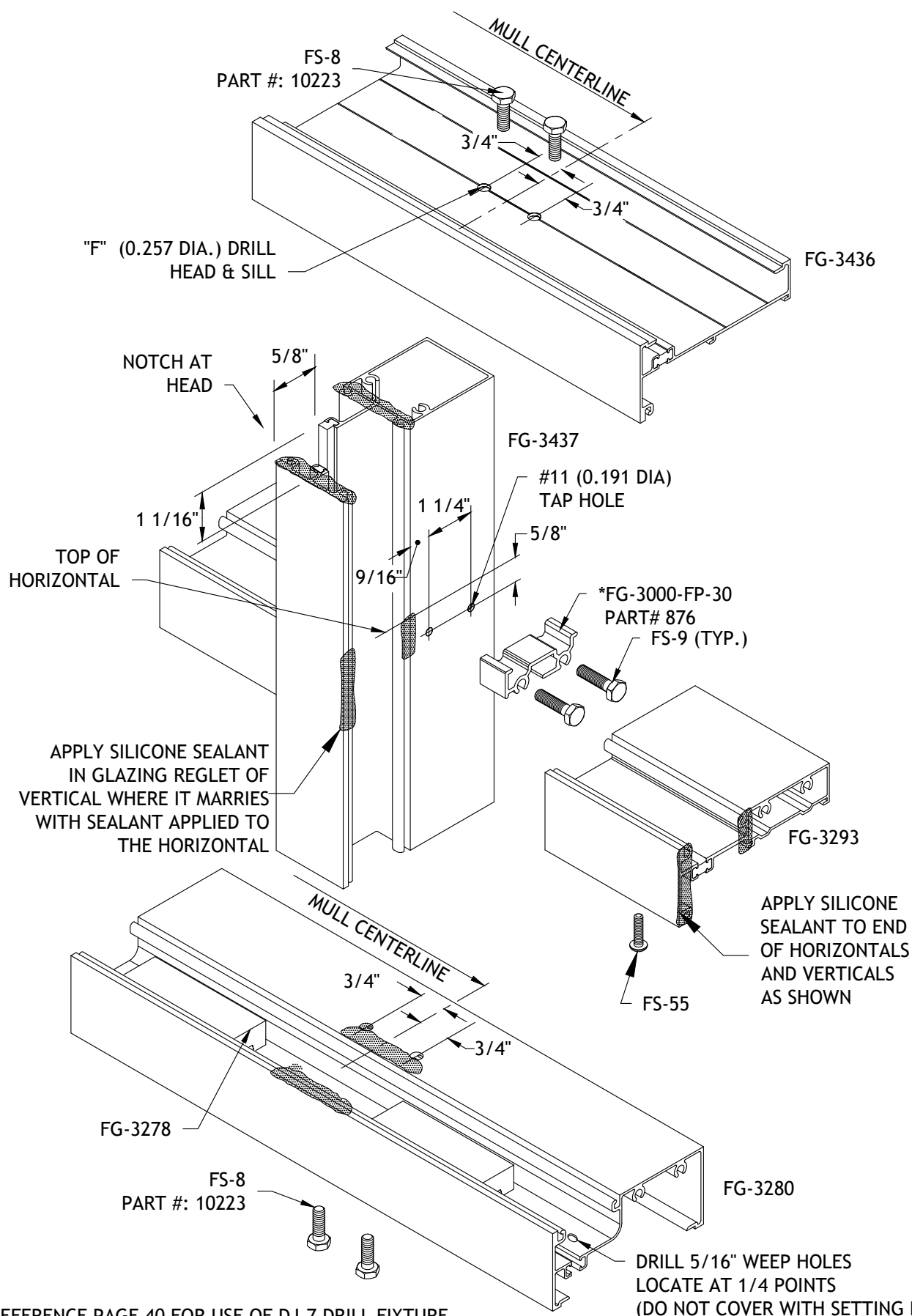
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INSIDE GLAZED, FRONT SET 2-SIDED SSG FRAMING FABRICATION AND ASSEMBLY



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INSIDE GLAZED, FRONT SET FABRICATION & ASSEMBLY

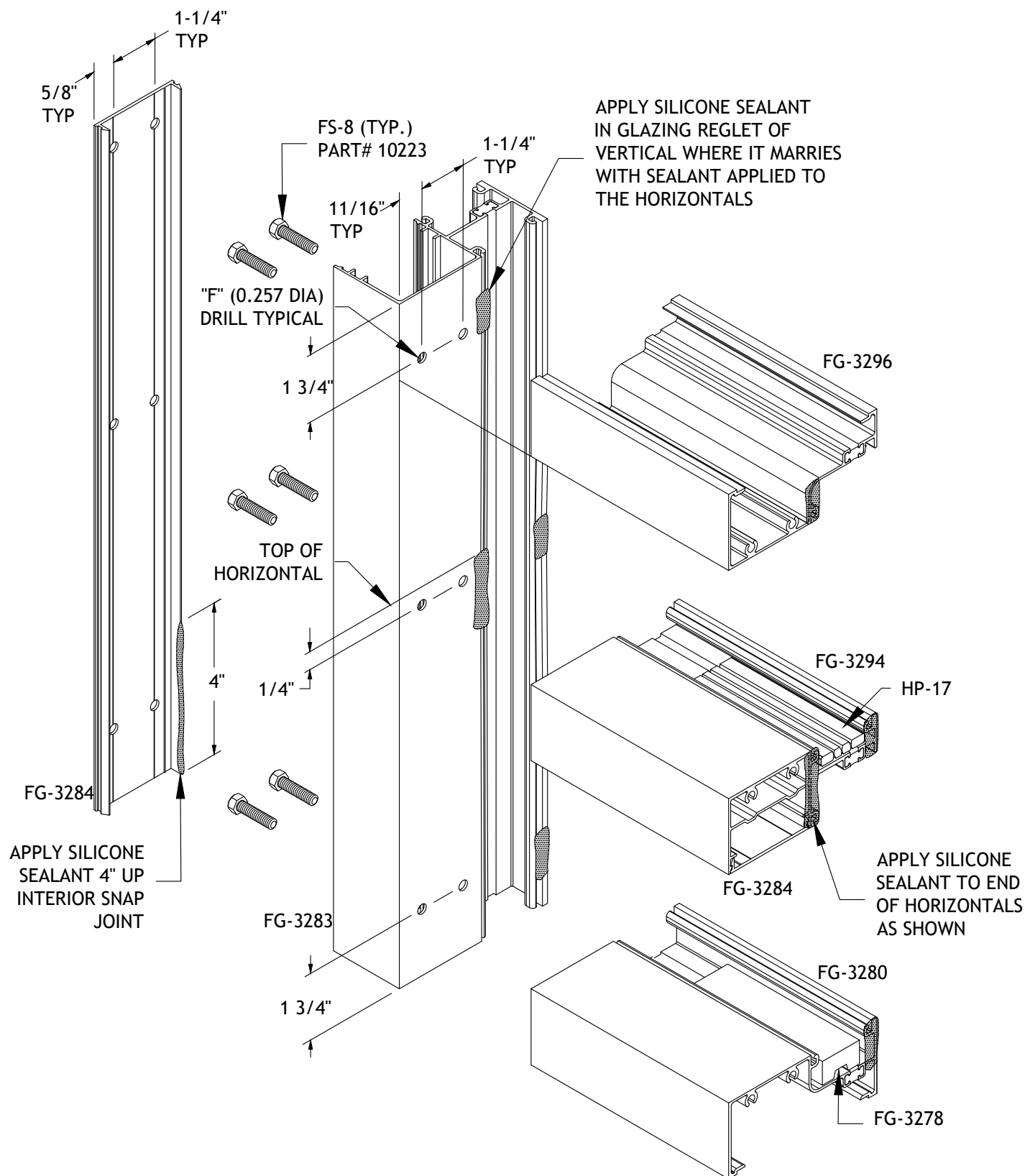


REFERENCE PAGE 40 FOR USE OF DJ-7 DRILL FIXTURE.
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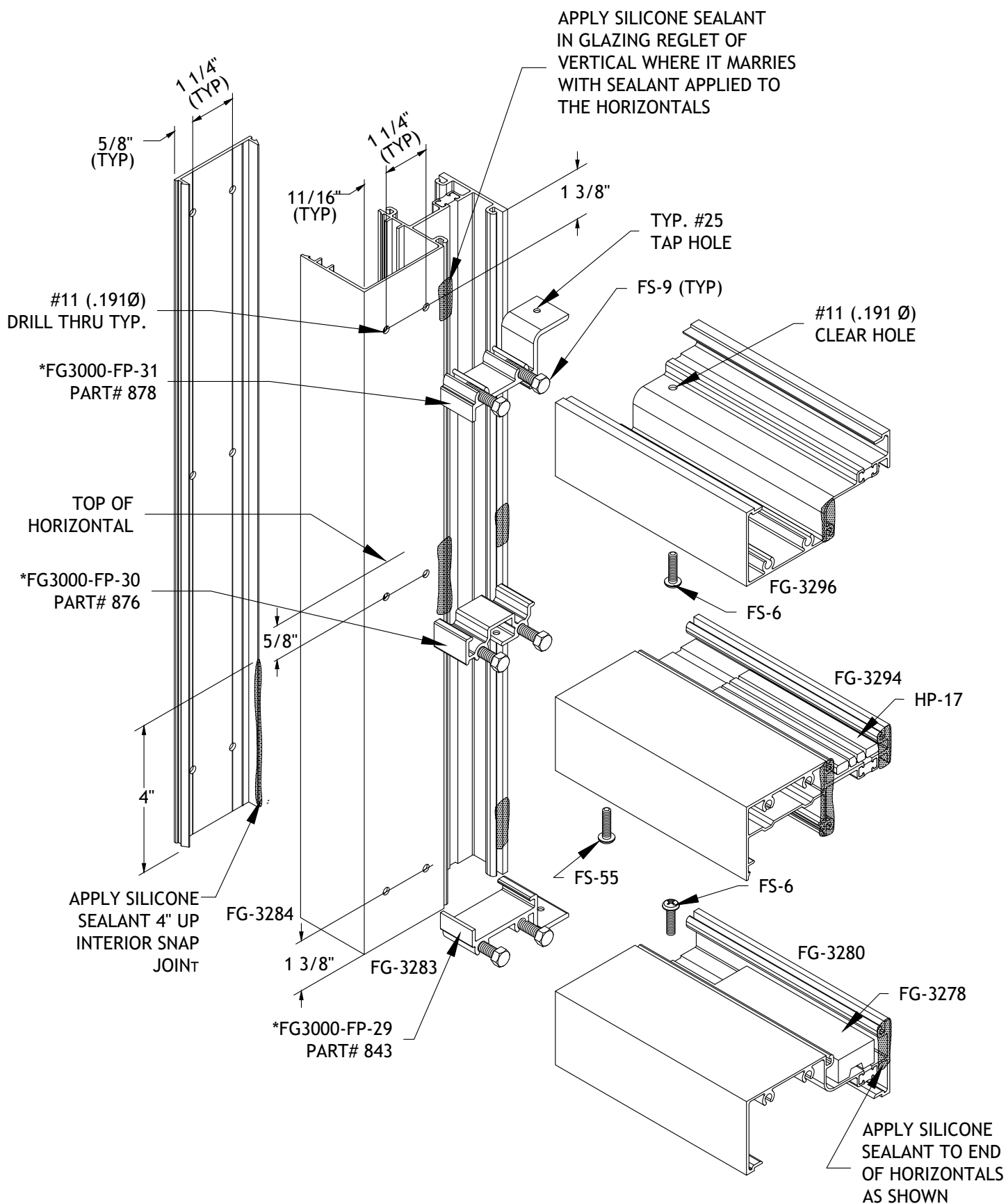
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INSIDE GLAZED, BACK SET SCREW SPLINE FABRICATION & ASSEMBLY



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

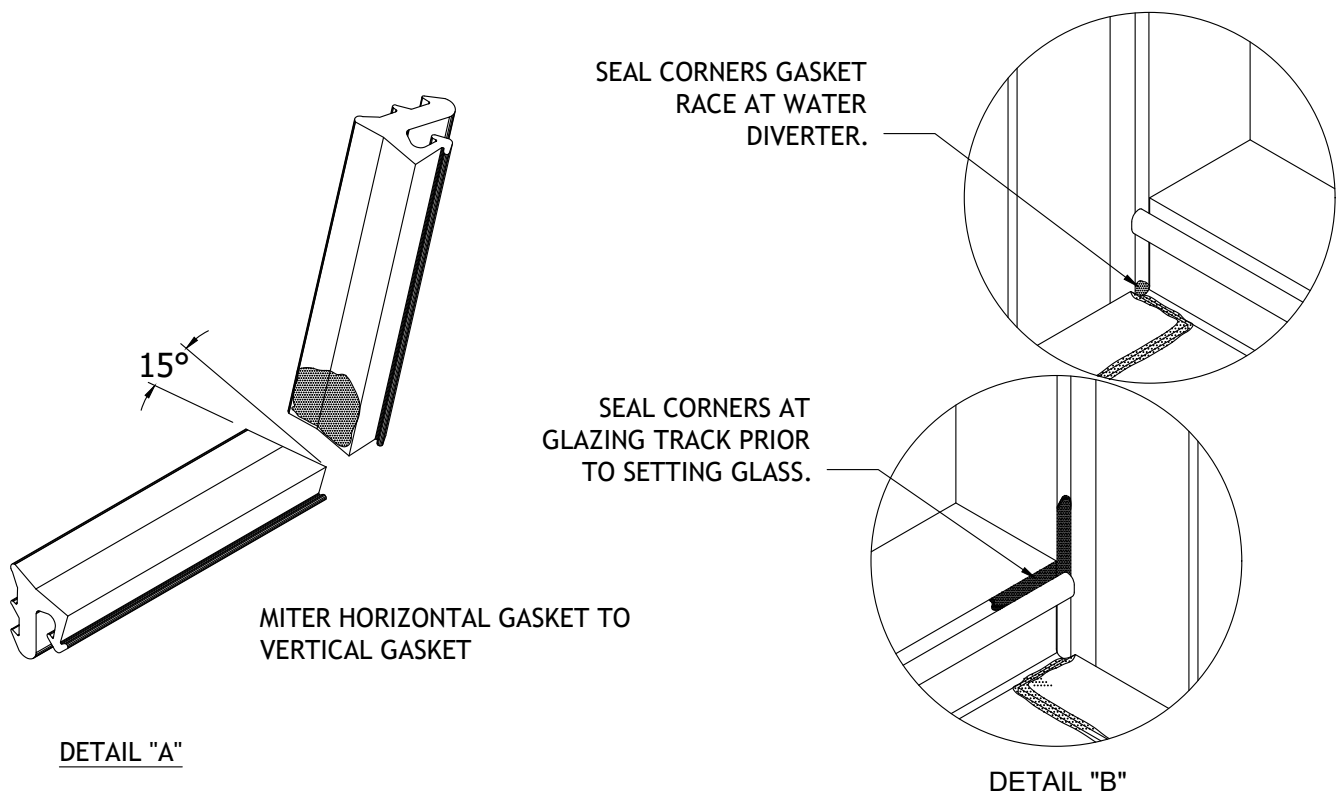
INSIDE GLAZED, BACK SET SHEAR BLOCK FABRICATION & ASSEMBLY



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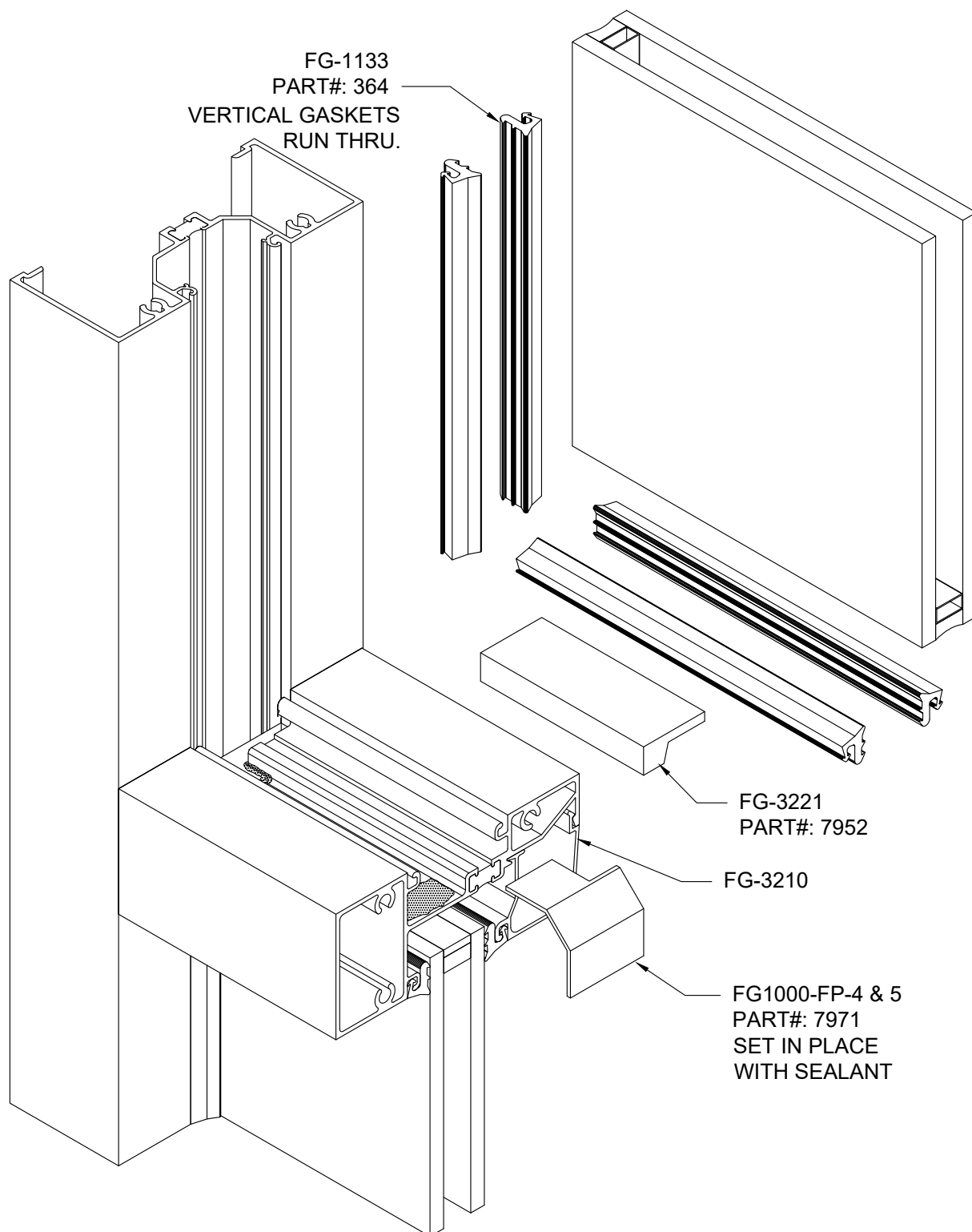
INSIDE GLAZING GUIDELINES

1. REMOVE GASKETS FROM ROLL AND ALLOW TO RELAX OVERNIGHT. ALL GASKETS TO BE CUT D.L.O. PLUS 1/4" PER FOOT HORIZONTALLY AND D.L.O. PLUS 1" PLUS 1/4" PER FOOT VERTICALLY.
2. VERTICAL GASKETS RUN THRU, HORIZONTAL GASKETS SHOULD BE MITERED ON ENDS AS SHOWN IN DETAIL "A".
3. INSTALL EXTERIOR GASKETS PRIOR TO GLAZING. CORNERS OF EXTERIOR GASKETS TO BE SET IN SEALANT (DTL."B") AND CORNERS SEALED JUST PRIOR TO SETTING GLASS (DTL."A"). NOTE: CLEAN GASKETS AND SURFACES WITH ISOPROPYL ALCOHOL PRIOR TO SEALING CORNERS.
4. LOCATE SETTING BLOCKS AT EITHER 1/4 POINTS OR 1/8 POINTS, DEPENDENT ON SIZE OF GLASS.
5. GLASS BITE AT TYPICAL HORIZONTAL AND VERTICAL MEMBERS IS 7/16". AT SSG VERTICAL 3/4".
6. GLAZE OPENINGS FROM BOTTOM TO TOP, INSTALLING WATER DIVERTERS IN HORIZONTAL ABOVE, AFTER LITE BELOW IS IN POSITION.
7. WATER DIVERTERS (FG1000-FP-2) MUST BE LOCATED ON EACH END OF HORIZONTALS AND SET IN SEALANT.
8. WHEN INSTALLING GLASS: FIRST, WET TOP OF SETTING BLOCK WITH SOAPY WATER. ONCE GLASS IS SET IN PLACE, PUSH GLASS AGAINST EXTERIOR GASKET AT SETTING BLOCK AREA. FAILURE TO DO SO MAY CAUSE DIAGONAL CRACKS TOWARDS SETTING BLOCKS DUE TO GLASS BENDING WHILE INSTALLING GASKET(S) IN CORNERS.



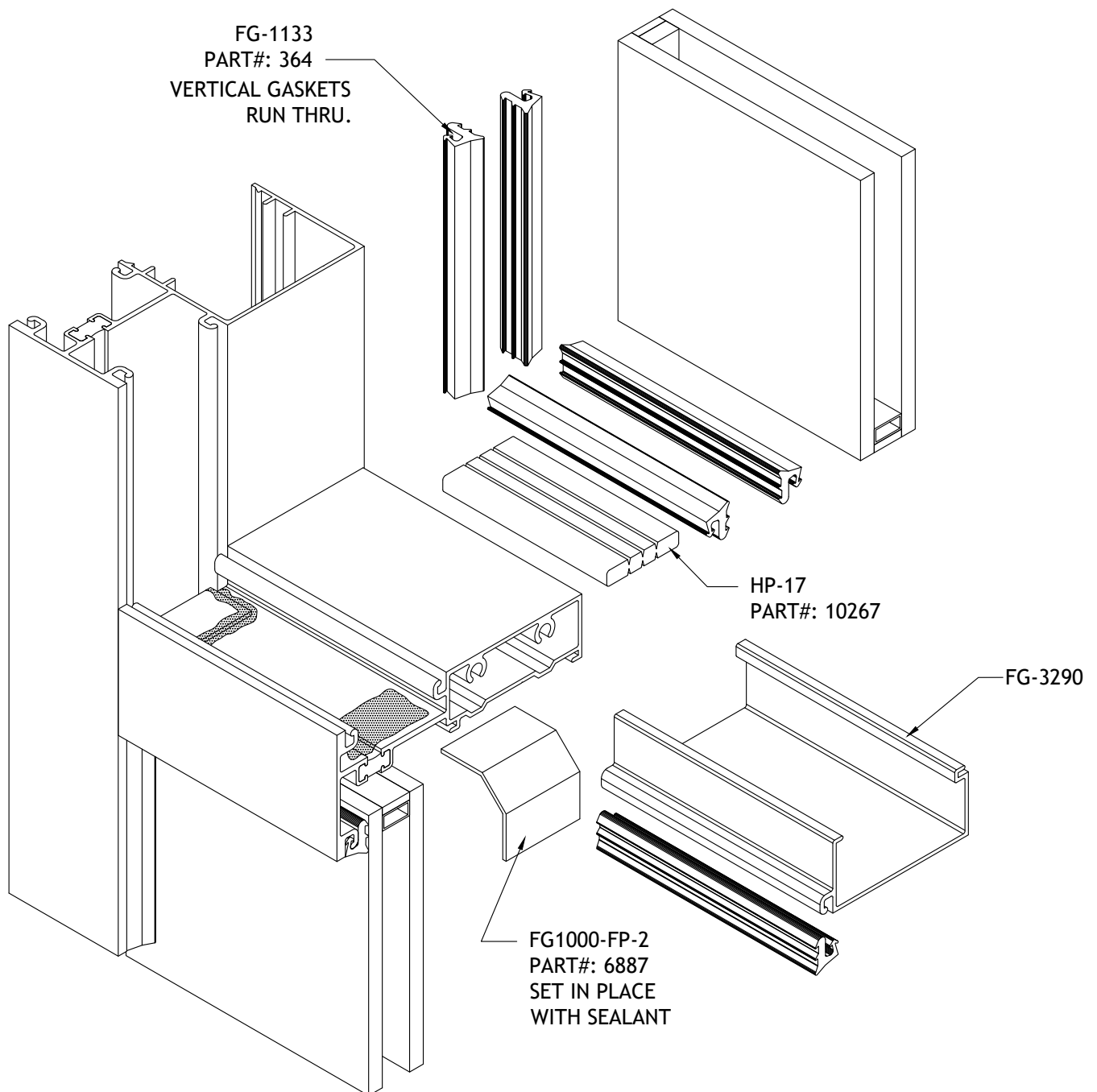
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INSIDE GLAZED, CENTER SET GLAZING DETAIL



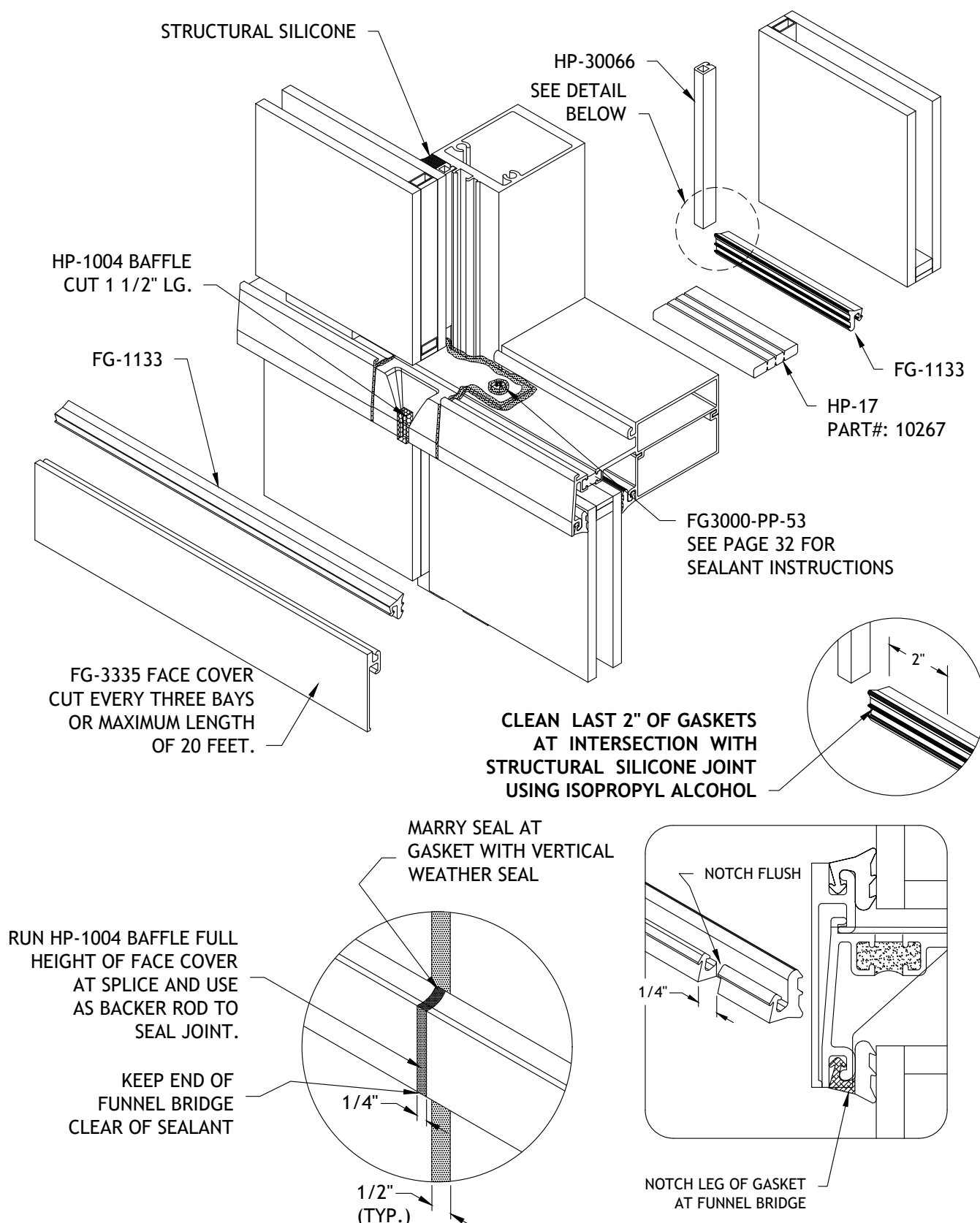
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INSIDE GLAZED, FRONT SET GLAZING DETAIL



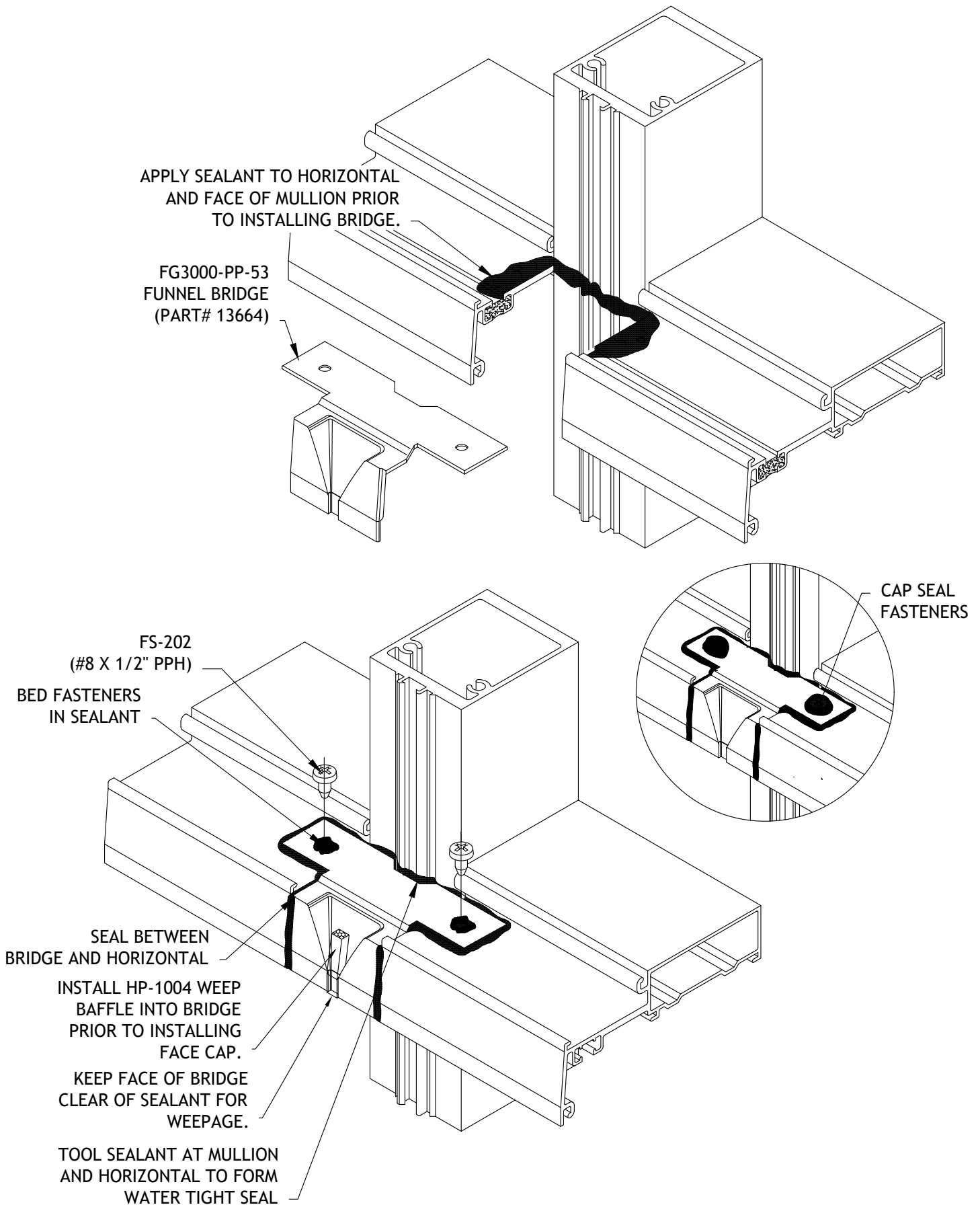
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INSIDE GLAZED, FRONT SET 2-SIDED SSG GLAZING DETAIL



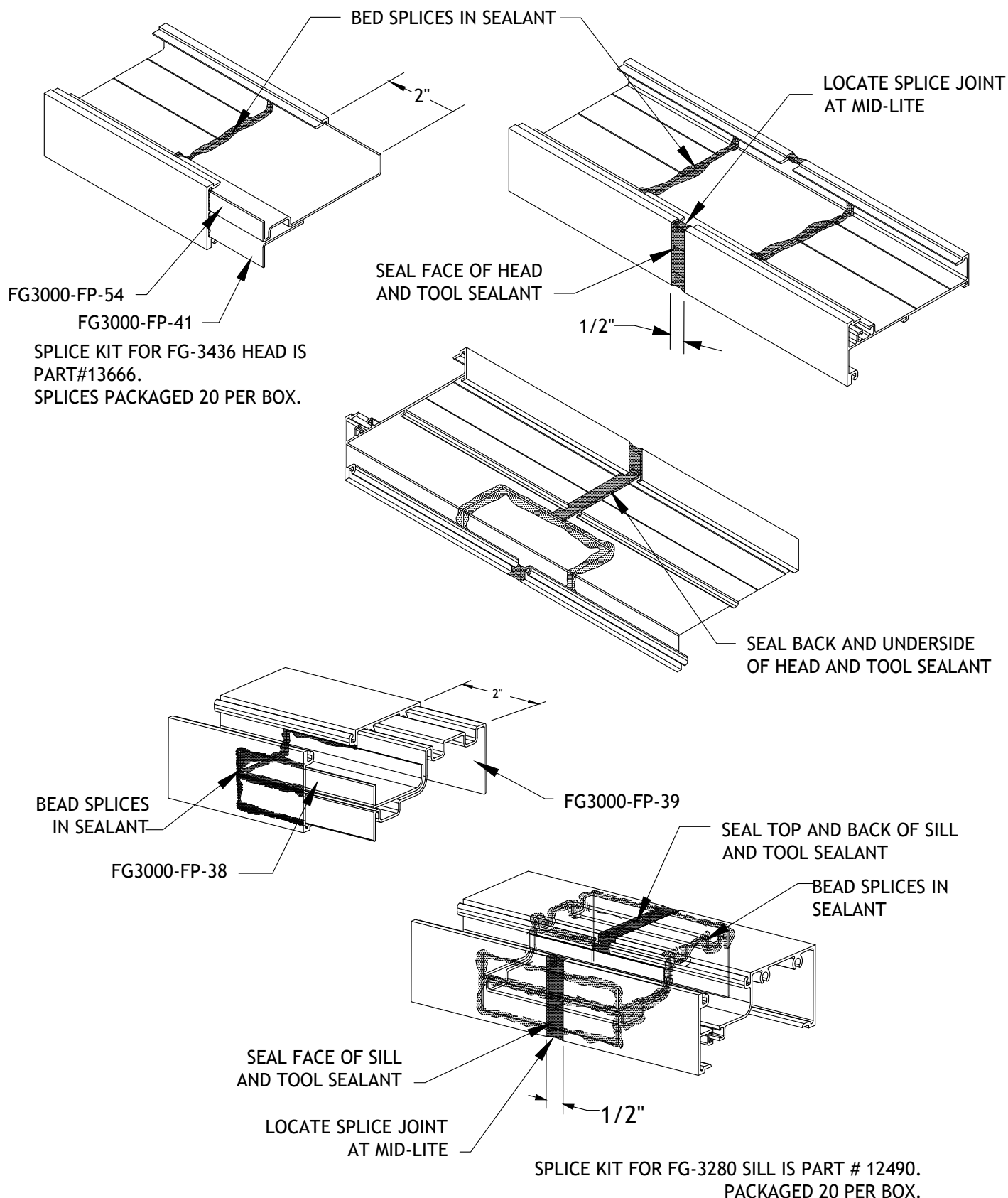
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

S.S.G. BRIDGE INSTALLATION FOR 2-SIDED S.S.G. SYSTEM



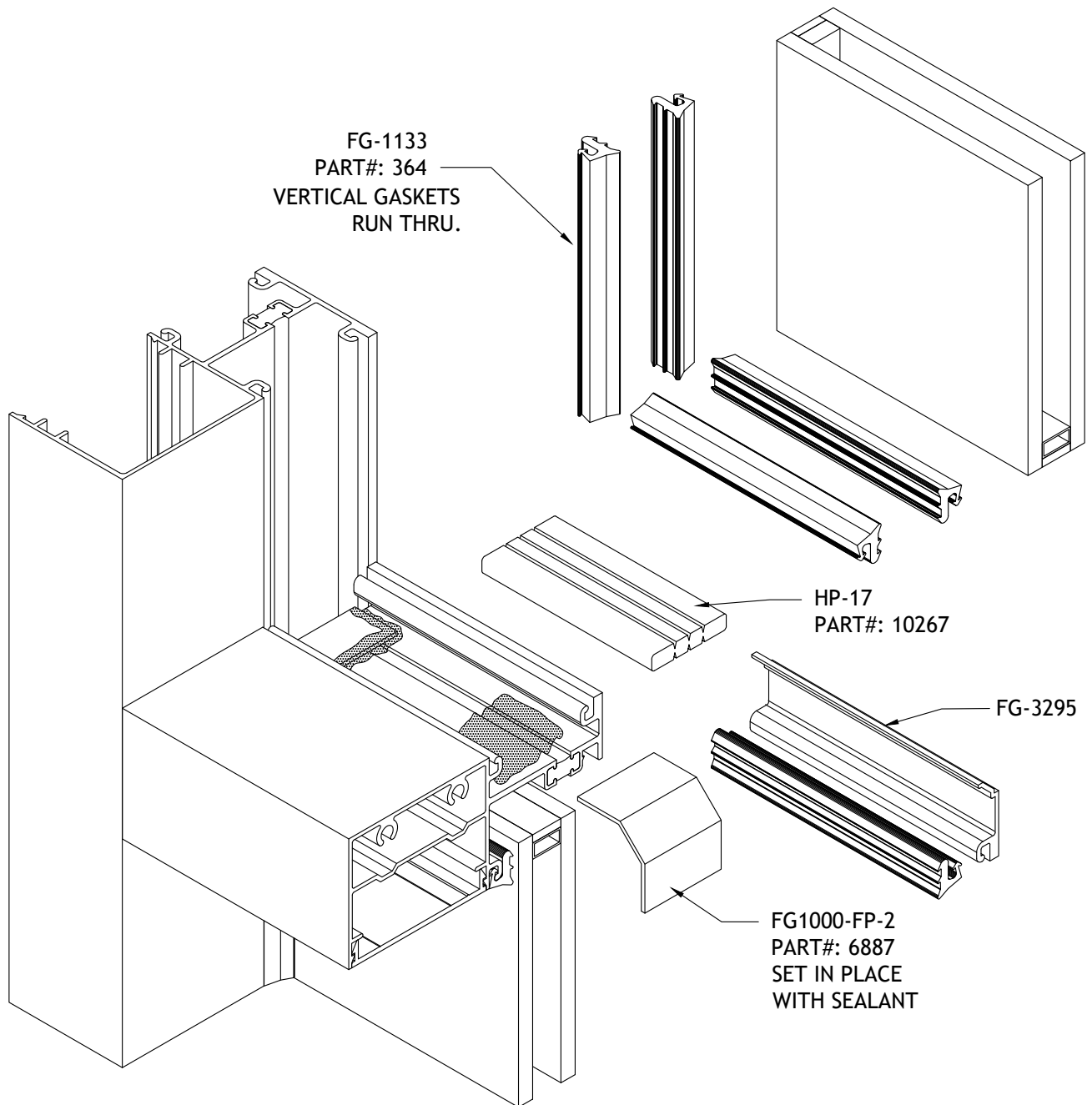
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

HEAD & SILL SPLICING FOR RIBBON WINDOW AND 2-SIDED S.S.G. APPLICATION



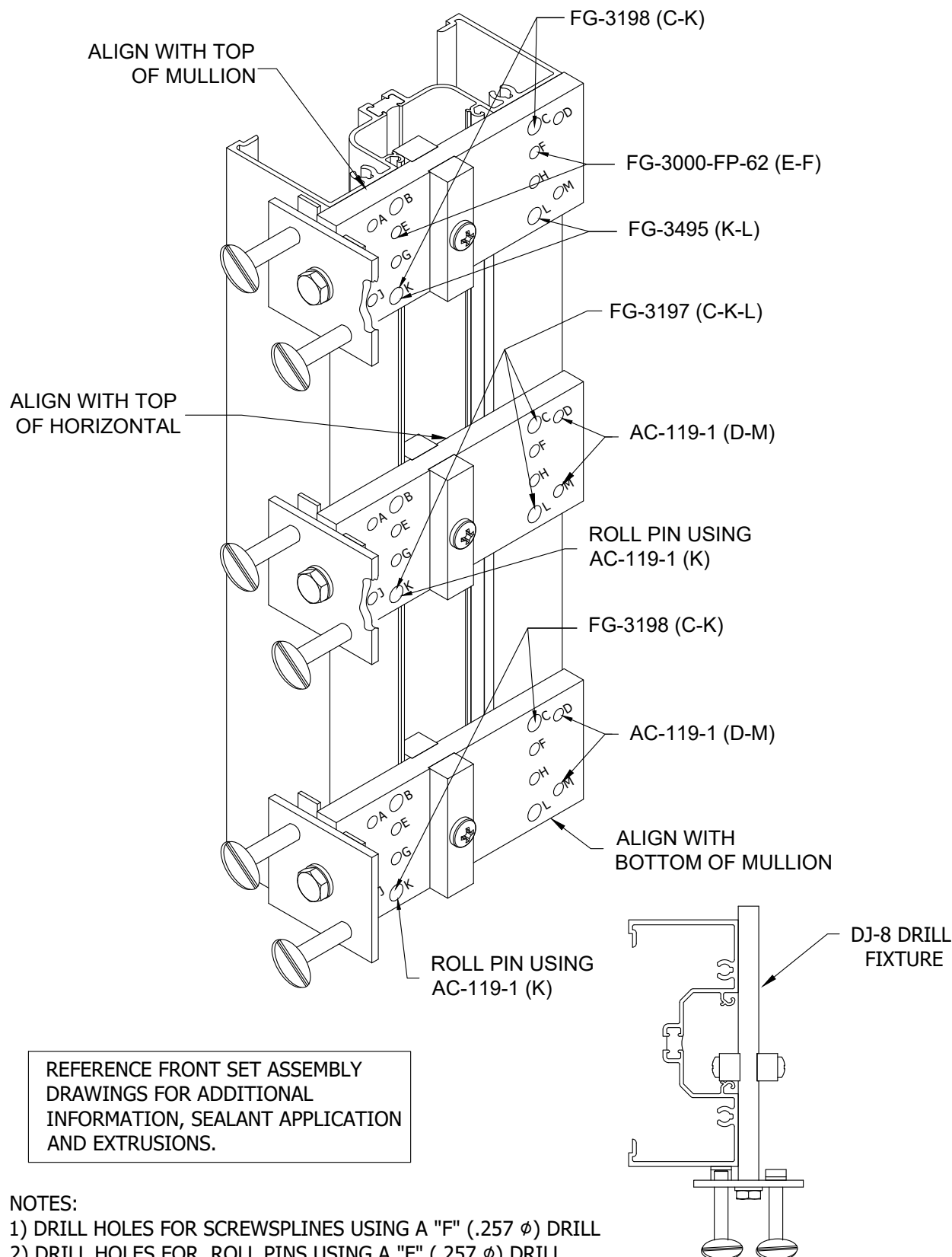
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

INSIDE GLAZED, BACK SET GLAZING DETAIL



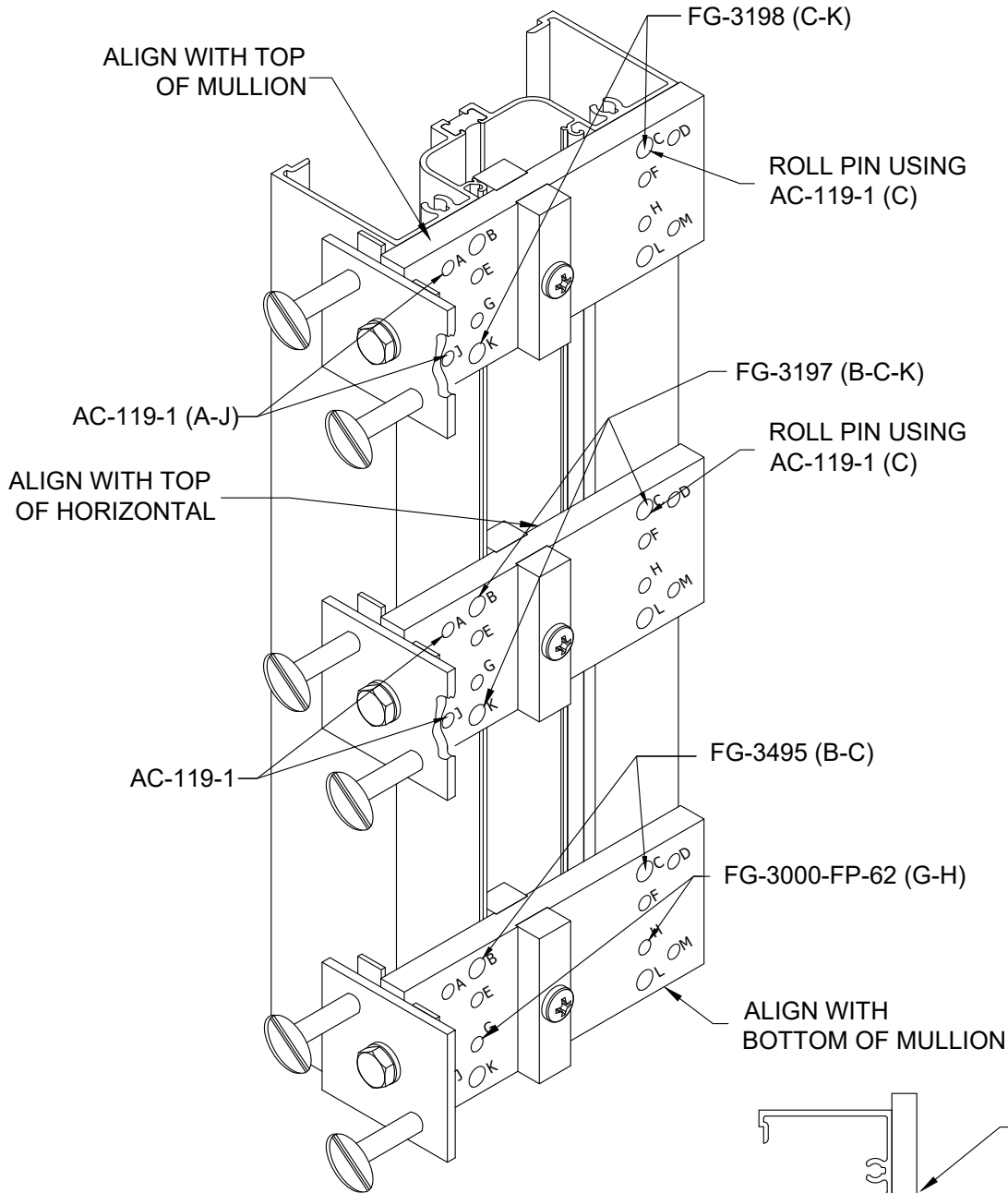
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

OUTSIDE GLAZED, CENTER SET FABRICATION USING DRILL FIXTURE



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

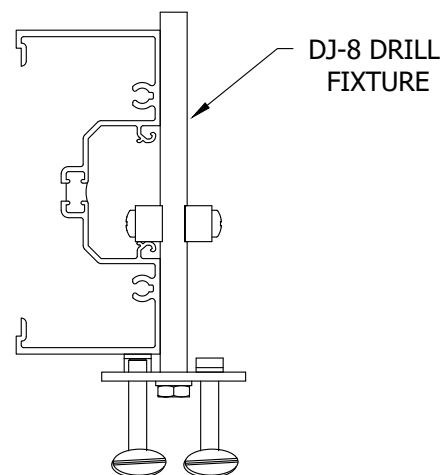
INSIDE GLAZED, CENTER SET FABRICATION USING DRILL FIXTURE



REFERENCE FRONT SET ASSEMBLY DRAWINGS FOR ADDITIONAL INFORMATION, SEALANT APPLICATION AND EXTRUSIONS.

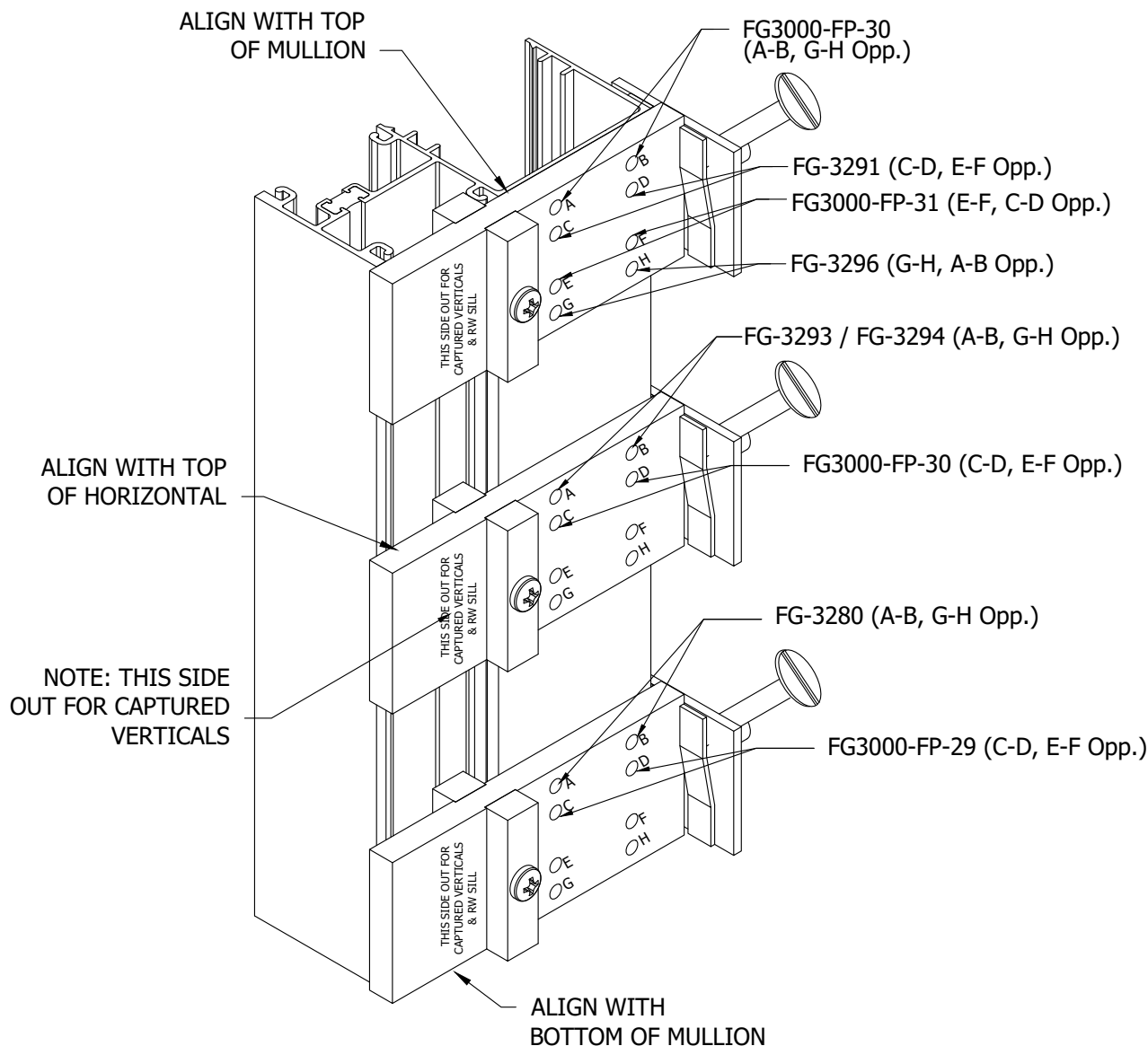
NOTES:

- 1) DRILL HOLES FOR SCREWSPLINES USING A "F" (.257 ϕ) DRILL
- 2) DRILL HOLES FOR ROLL PINS USING A "F" (.257 ϕ) DRILL
- 3) DRILL HOLES FOR SHEAR BLOCKS USING #11 (.191 ϕ) DRILL



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

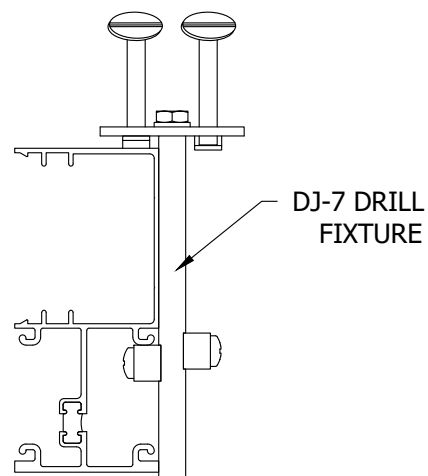
FRONT SET FABRICATION USING DRILL FIXTURE



REFERENCE FRONT SET ASSEMBLY DRAWINGS FOR ADDITIONAL INFORMATION, SEALANT APPLICATION AND EXTRUSIONS.

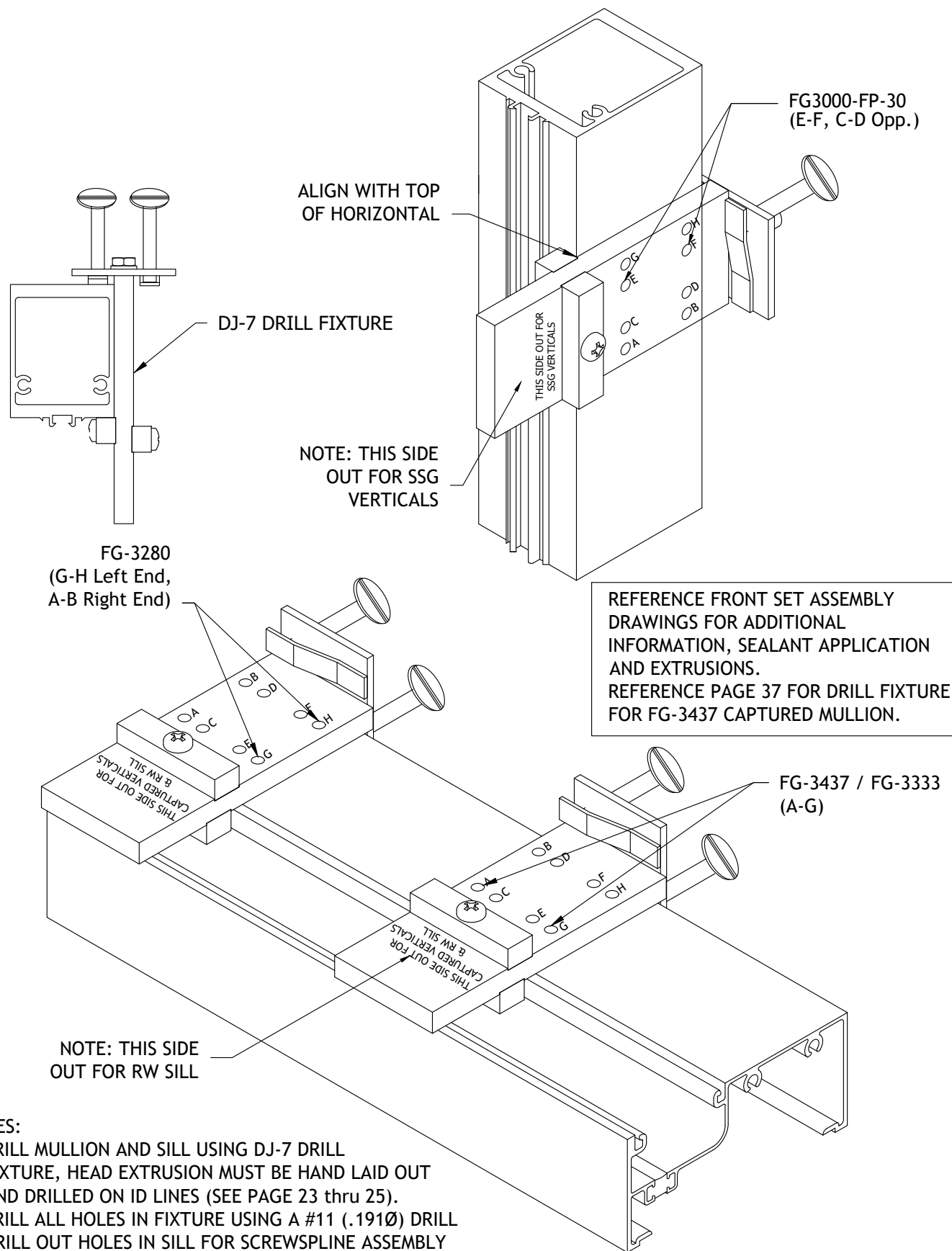
NOTES:

- 1) DRILL ALL HOLES USING A #11 (.191 ϕ) DRILL (SHEAR BLOCKS REQUIRE #11 DRILL)
- 2) DRILL OUT HOLES FOR SCREWSPLINE ASSEMBLY USING "F" (.257 ϕ) DRILL



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

2-SIDED S.S.G. SYSTEM FABRICATION USING DRILL FIXTURE

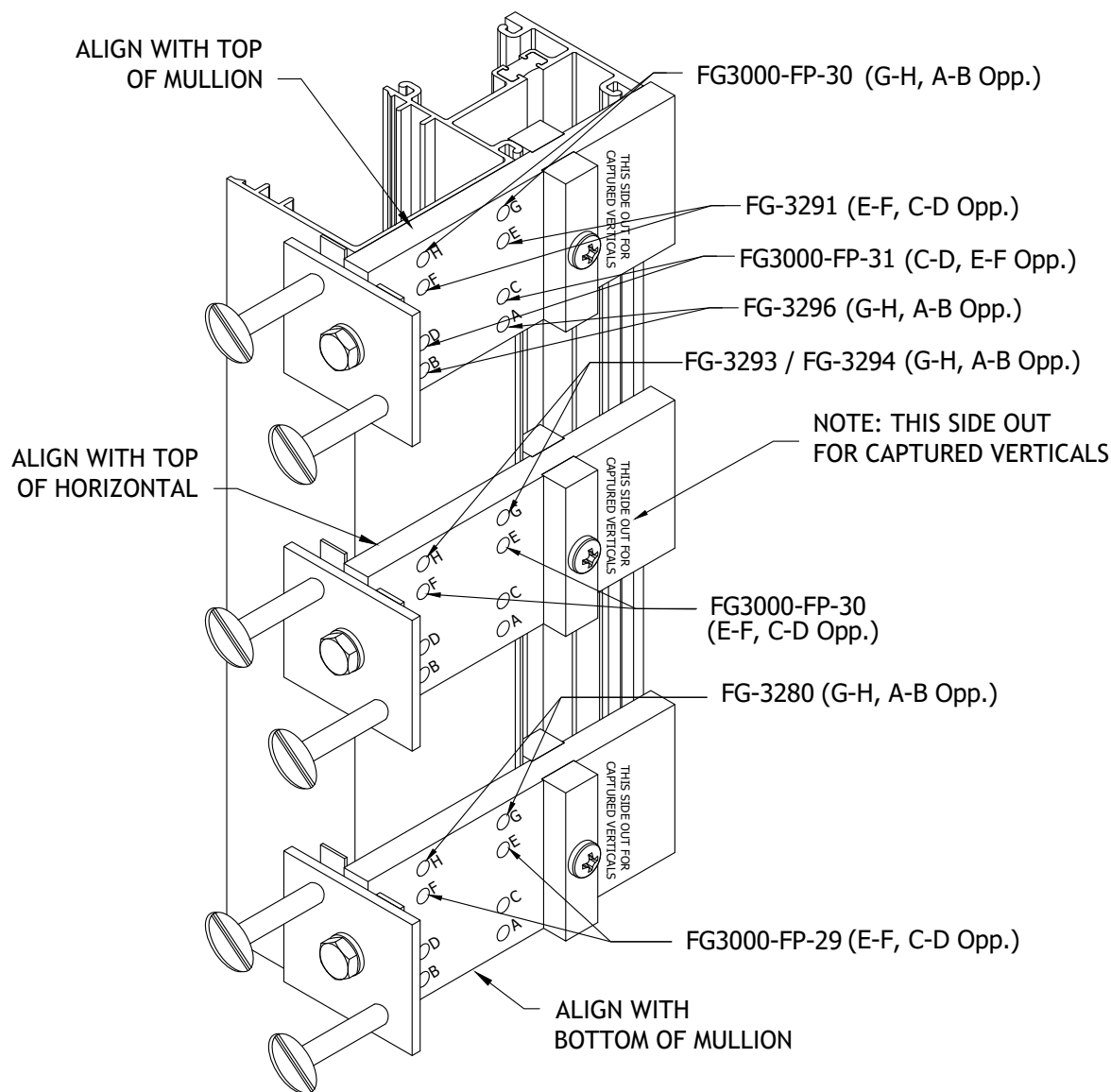


NOTES:

- 1) DRILL MULLION AND SILL USING DJ-7 DRILL FIXTURE, HEAD EXTRUSION MUST BE HAND LAID OUT AND DRILLED ON ID LINES (SEE PAGE 23 thru 25).
- 1) DRILL ALL HOLES IN FIXTURE USING A #11 (.191Ø) DRILL
- 2) DRILL OUT HOLES IN SILL FOR SCREWSPLINE ASSEMBLY USING "F" (.257Ø) DRILL

SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

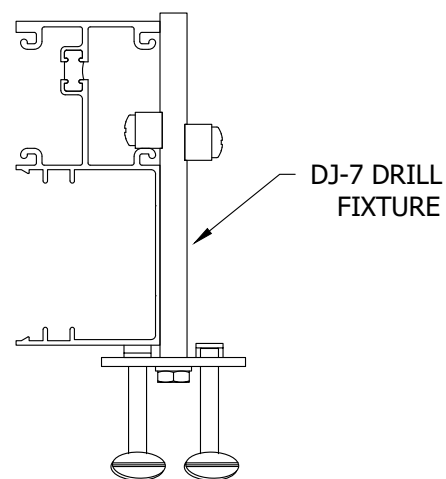
BACK SET FABRICATION USING DRILL FIXTURE



REFERENCE FRONT SET ASSEMBLY DRAWINGS FOR ADDITIONAL INFORMATION, SEALANT APPLICATION AND EXTRUSIONS.

NOTES:

- 1) DRILL ALL HOLES USING A #11 (.191 ϕ) DRILL (SHEAR BLOCKS REQUIRE #11 DRILL)
- 2) DRILL OUT HOLES FOR SCREWSPLINE ASSEMBLY USING "F" (.257 ϕ) DRILL



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

FRAME INSTALLATION

FG-3648 ALUMINUM POURED
AND DEBRIDGED FILLER

SEE PAGE 44 FOR
OPTIONAL CENTER SET
HEAD ANCHORAGE.

FG-2122

FG-2188 PVC
FILLER

FG-2122

LOCATE SILL ANCHORS NO
MORE THAN 4" FROM EACH
SIDE OF VERTICAL MULLION
(1 ANCHOR AT JAMBS).
ADDITIONAL ANCHORS MAY
BE REQUIRED BASED ON
JOB-SPECIFIC STRUCTURAL
REQUIREMENTS. SEE PAGES
44 & 45 FOR PERIMETER
ANCHOR CONDITIONS.

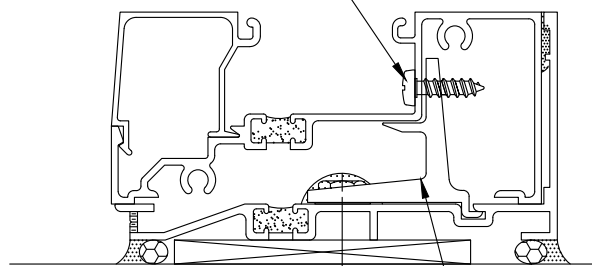
NOTES:

1. WHEN USING OPTIONAL FG-3413 SUBSILL, SILL ANCHORS ARE NOT REQUIRED.
2. (2) HEAD AND JAMB PERIMETER ANCHORING APPROACHES ARE AVAILABLE:
 - FG-2122 IN 4" LENGTHS AT ANCHOR BOLT LOCATIONS, WITH FG-2188 PVC FILLER OPTIONALLY RUN BETWEEN, OR
 - FG-3648 ALUMINUM POURED AND DEBRIDGED FILLER, RUN CONTINUOUSLY.
3. ANCHOR BOLT SIZE AND FREQUENCY WILL BE PER STRUCTURAL REQUIREMENTS.
4. SILL AND HEAD ANCHORS SHOULD BE LOCATED SO THAT THE ANCHOR IS NOT MORE THAN 4" AWAY FROM EACH SIDE OF VERTICAL MULLION, OR ON ONE SIDE FOR JAMBS.
5. INSTALLATION WITHOUT SUBSILL IS NOT RECOMMENDED.
6. INSTALLATION USING A NON-THERMAL OR SHEET METAL FLASHING WILL RESULT IN LOSS OF THERMAL CONTINUITY AND IS NOT RECOMMENDED.
7. DO NOT ANCHOR WALL THROUGH VERTICAL LEG OF SUBSILL.

SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

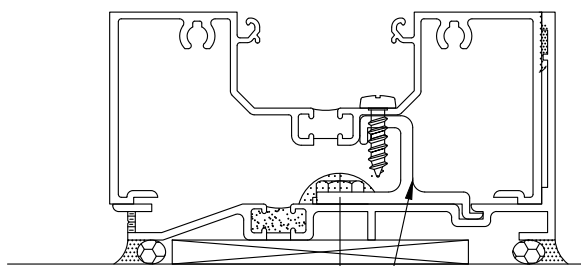
SILL ANCHORING

FS-6 (2) PER ANCHOR
(TYPICAL)



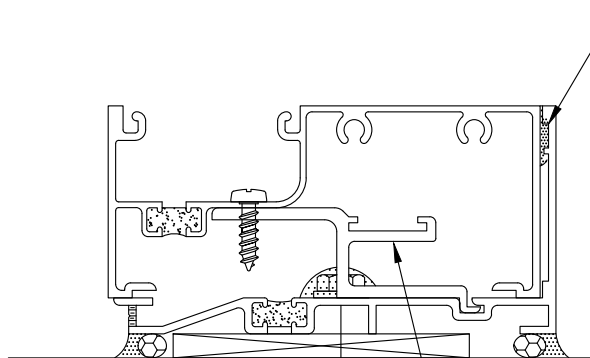
FG3000-FP-15
(PART#: 637)

MAXIMUM END REACTION 600 LBS.



FG3000-FP-61
(PART #35014:)

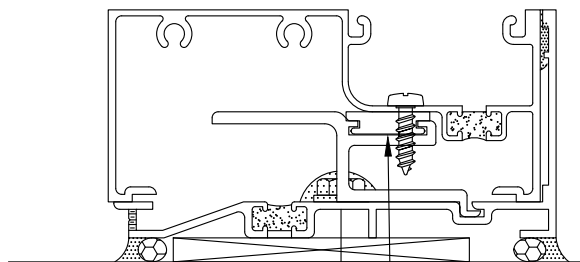
MAXIMUM END REACTION 400 LBS.



FG3000-FP-27
PART#: 829

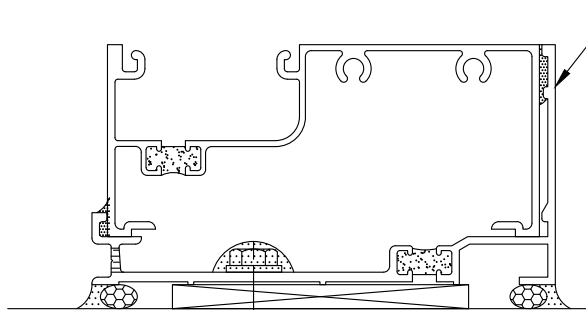
MAXIMUM END REACTION 350 LBS.

FG-3223 SUB-SILL
(STANDARD)



FG3000-FP-27 (PART#: 829)
W/ FG3000-FP-28 ISOLATOR
(PART#: 822)

MAXIMUM END REACTION 350 LBS.



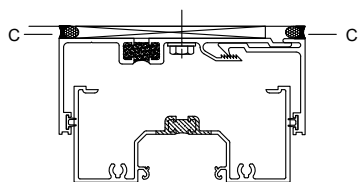
FG-3413
SILL RECEPTOR
(OPTIONAL)

OPTIONAL SILL, MAY BE USED WITH
CENTER, FRONT OR BACK SET SYSTEMS.
NO SILL ANCHOR REQUIRED

MAXIMUM END REACTION 600 LBS.

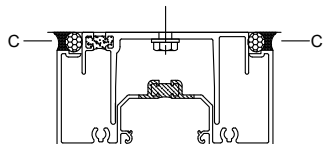
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

OUTSIDE GLAZED ANCHORAGE & PERIMETER SEAL

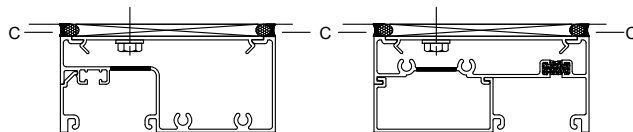


OPTIONAL MO-678/MO-244
HEAD RECEPTOR
MAXIMUM END REACTION
OF 450 LBS.

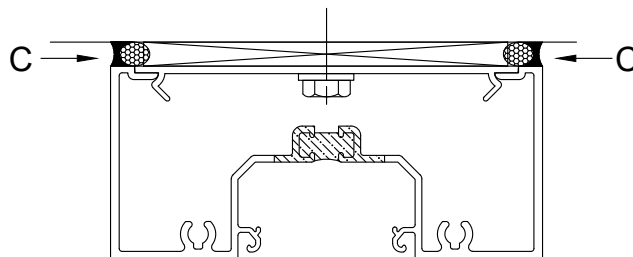
FG-3648 ALUM.
POURED AND
DEBRIDGED
FILLER OPTION



OPTIONAL FG3000-FP-52
ANCHOR, AVAILABLE FOR
CENTER SET SYSTEM ONLY.
MAXIMUM END REACTION
OF 600LBS.



APPLY SEALANT ALONG LENGTH OF SILL FLASHING AT
POINT (A).

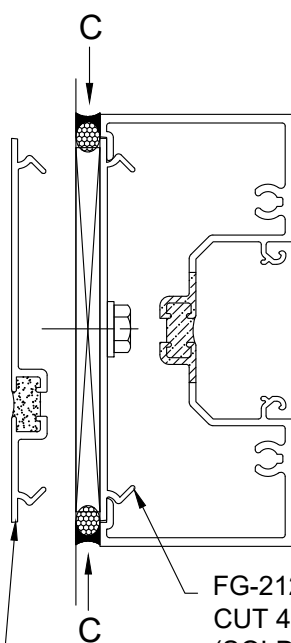
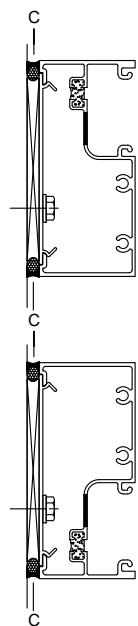


WHEN USING OPTIONAL FG-3413 SILL RECEPTOR,
ONCE THE WALL IS SECURED, APPLY CONTINUOUS
FILLET SEAL TO FACE OF FRAME AND SUBSILL AT (B).

THE QUALITY OF THE INSIDE AND OUTSIDE PERIMETER
SEALS (C) MAY BE IMPROVED BY USING FG-2188 RIGID
PVC FILLER. THE PART MAY BE USED IN FULL LENGTHS
OR CUT INTO PIECES. ITS PURPOSE IS TO PROVIDE
SUPPORT FOR THE BACKER ROD REGARDLESS OF
JOINT SIZE. INTERIOR PERIMETER SEAL AT SILL (D) IS
FOR COSMETIC PURPOSES AND IS OPTIONAL.

THE FILLER COMBINATION OF FG-2122 AT BOLT
LOCATIONS WITH FG-2188 FILLER RUNNING BETWEEN
MAY BE SUBSTITUTED WITH FG-3648 POURED AND
DEBRIDGED FILLER, RUN CONTINUOUSLY AT HEAD
AND/OR JAMB AS REQUIRED.

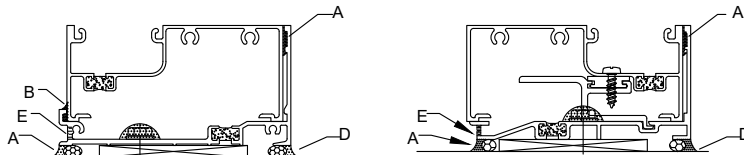
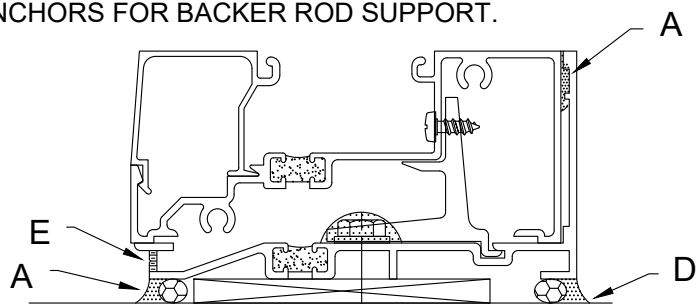
WHEN OPTIONAL CENTER SET HEAD ANCHOR IS USED,
EITHER FG-2188 OR FG-3648 MAY BE USED BETWEEN
ANCHORS FOR BACKER ROD SUPPORT.



FG-2122
CUT 4" LONG
(SOLD IN STOCK
LENGTHS)

FG-3648 ALUM.
POURED AND
DEBRIDGED
FILLER OPTION

NOTE: 5/16" WEEP HOLES
REQUIRED IN SUBSILL (E) AT
MID-LITE

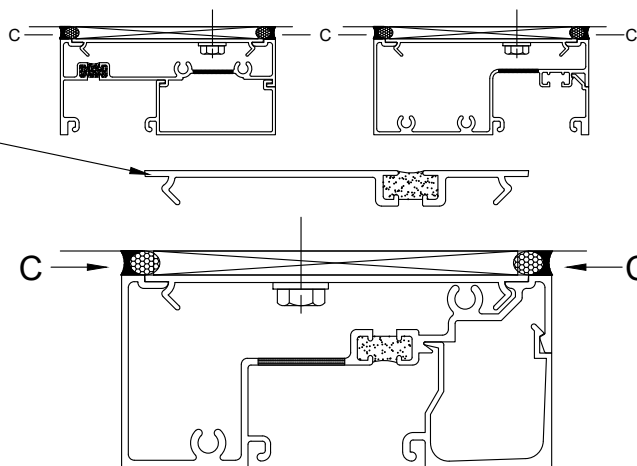


SHOWN WITH OPTIONAL SILL

SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

INSIDE GLAZED ANCHORAGE & PERIMETER SEAL

FG-3648 ALUM.
POURED AND
DEBRIDGED
FILLER OPTION



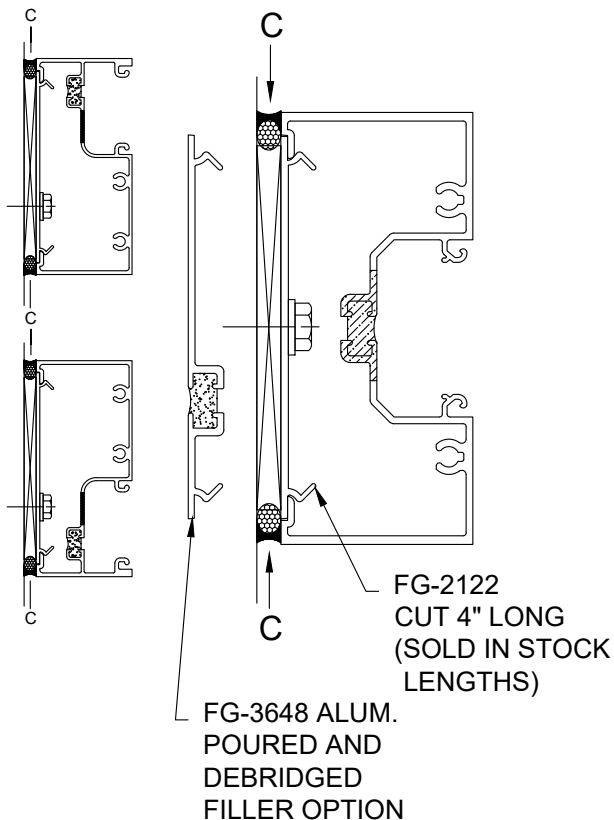
APPLY SEALANT ALONG LENGTH OF SILL FLASHING AT POINT (A).

WHEN USING OPTIONAL FG-3413 SILL RECEPTOR, ONCE THE WALL IS SECURED, APPLY CONTINUOUS FILLET SEAL TO FACE OF FRAME AND SUBSILL AT (B).

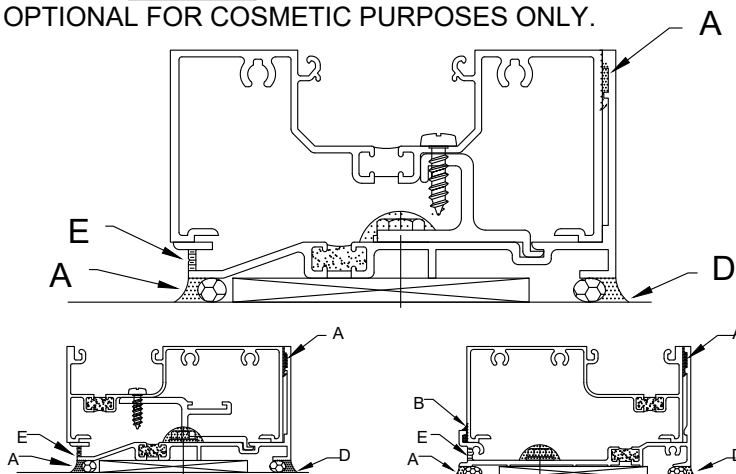
THE QUALITY OF THE INSIDE AND OUTSIDE PERIMETER SEALS (C) MAY BE IMPROVED BY USING FG-2188 RIGID PVC FILLER. THE PART MAY BE USED BETWEEN 4" SECTIONS OF FG-2122. ITS PURPOSE IS TO PROVIDE SUPPORT FOR THE BACKER ROD REGARDLESS OF JOINT SIZE.

THE FILLER COMBINATION OF FG-2122 AT BOLT LOCATIONS WITH FG-2188 FILLER RUNNING BETWEEN MAY BE SUBSTITUTED WITH FG-3648 POURED AND DEBRIDGED FILLER, RUN CONTINUOUSLY AT HEAD AND/OR JAMB AS REQUIRED.

FOR TYPICAL FULLY CAPTURED SYSTEMS, INTERIOR PERIMETER SEAL AT SILL (D) IS FOR COSMETIC PURPOSES AND IS OPTIONAL. FOR 2-SIDED SSG SYSTEM, INTERIOR PERIMETER SEALS "C" & "D" ARE OPTIONAL FOR COSMETIC PURPOSES ONLY.



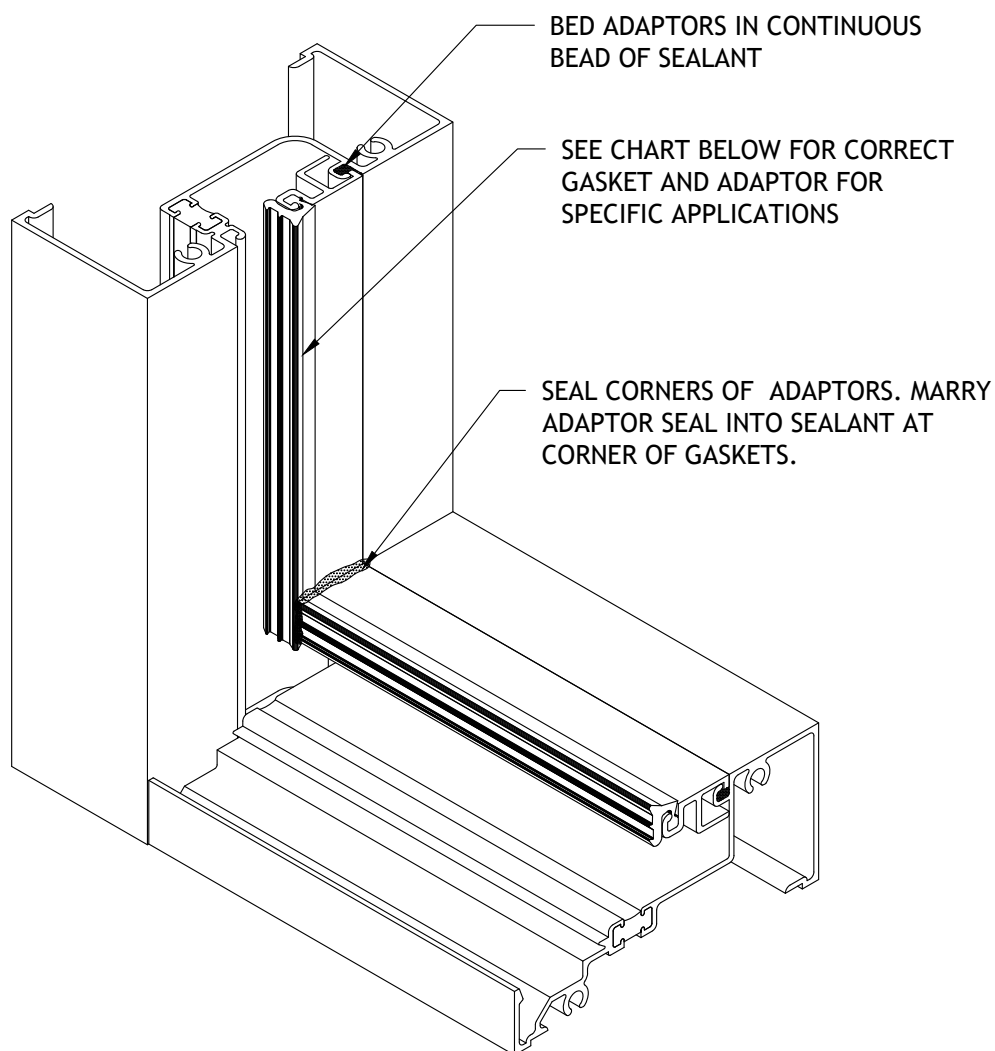
NOTE: 5/16" WEEP HOLES
REQUIRED IN SUBSILL (E) AT
MID-LITE



SHOWN WITH OPTIONAL SILL

SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

POCKET REDUCER INSTALLATION



NOTE:
ADAPTORS SHOULD BE INSTALLED ON INTERIOR
SIDE OF ALL GLAZING OPTIONS.

GLASS	ADAPTOR	GASKETS	GLASS	ADAPTOR	GASKETS
1/4"	FG-3194	FG-1133 Both Sides	11/16"	FG-3237	FG-1133 & FG-1134
5/16"	FG-3236	FG-5125 Both Sides	3/4"	FG-3237	FG-1134 Both Sides
3/8"	FG-3236	FG-1133 & FG-5125	13/16"	N/A	Not Available
7/16"	FG-3236	FG-1133 Both Sides	7/8"	None	FG-5125 Both Sides
1/2"	FG-3237	FG-5125 Both Sides	15/16"	None	FG-1133 & FG-5125
9/16"	FG-3237	FG-1133 & FG-5125	1"	None	FG-1133 Both Sides
5/8"	FG-3237	FG-1133 Both Sides	1 1/16"	None	FG-1133 & FG-1134
5/8"	NONE	FG-3129 Both Sides	1 1/8"	None	FG-1134 Both Sides

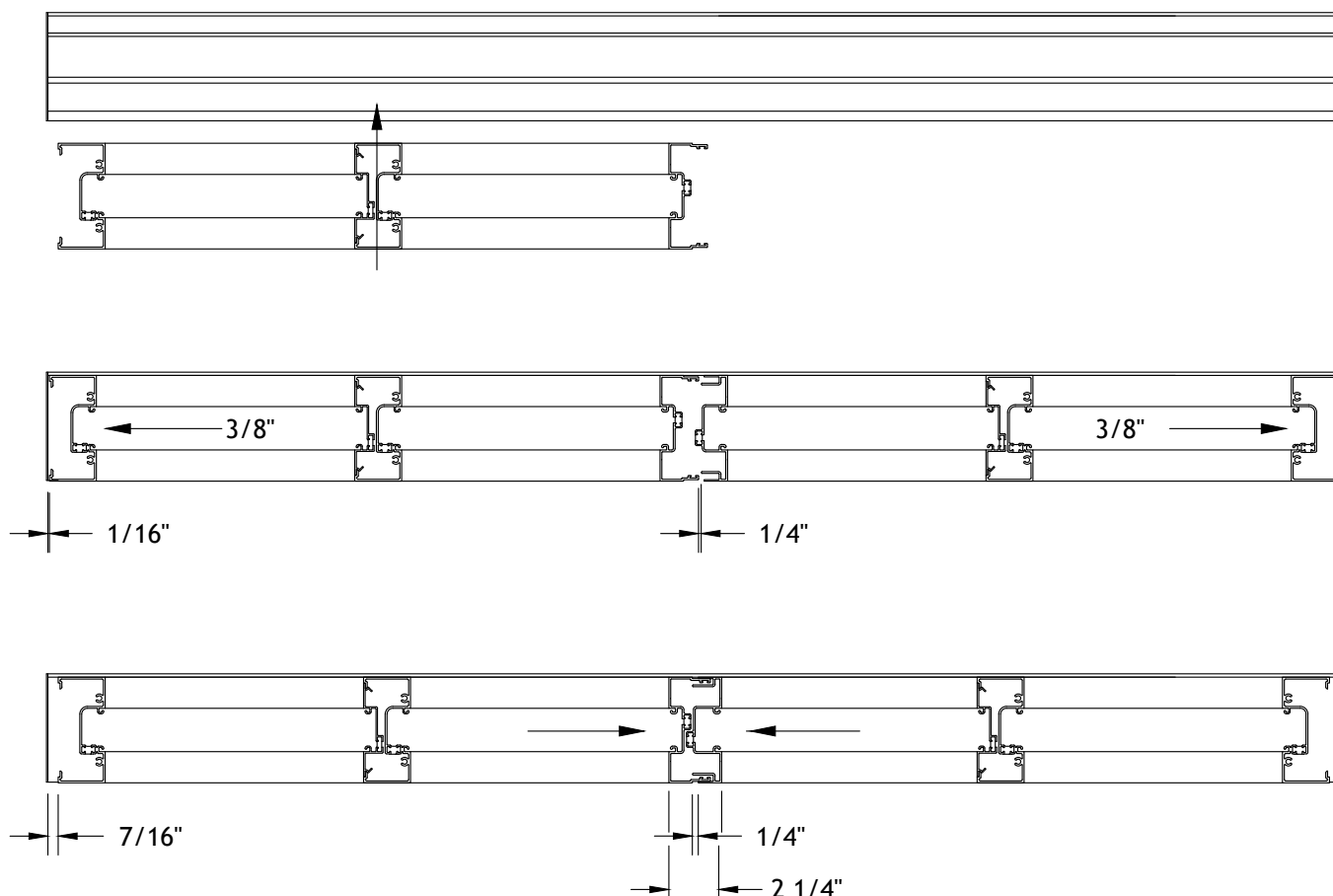
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

EXPANSION VERTICAL

The example below shows installation of the center set system, options for front or back set are also available. Please reference price catalog for specific extrusions and anchors required for your installation. Please note the locations of various seals and insure proper locations of these seals when installing typical runs and expansion sections of each of these systems. These seals are shown in the sub-sill installation and assembly sections of this manual.

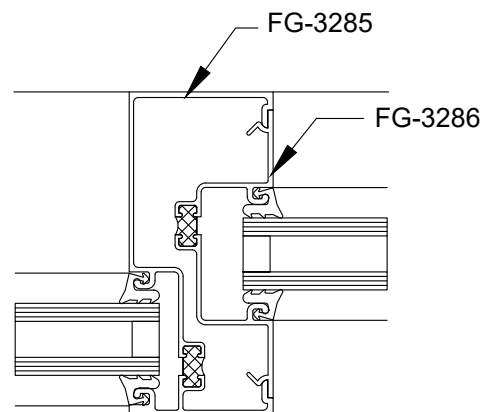
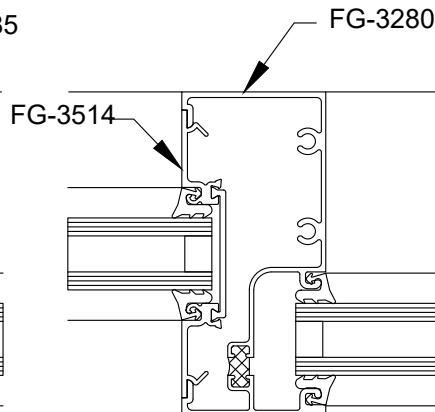
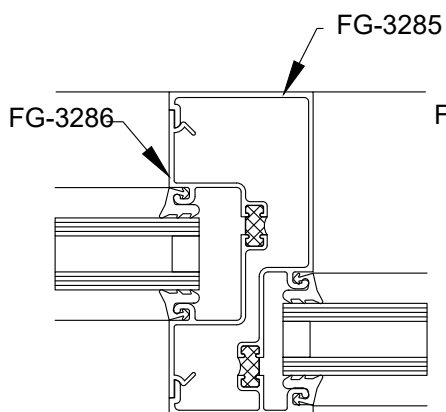
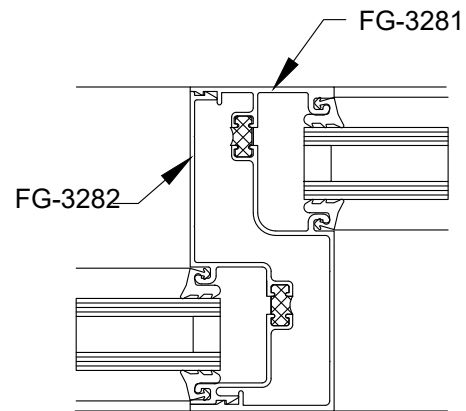
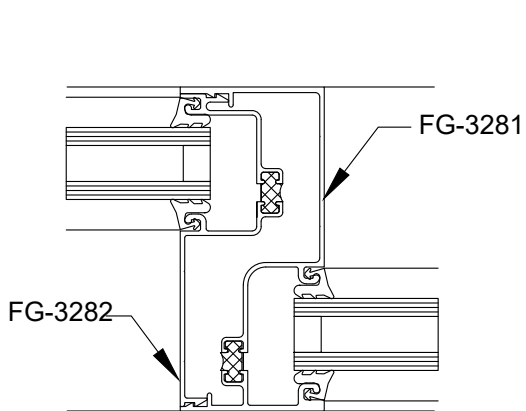
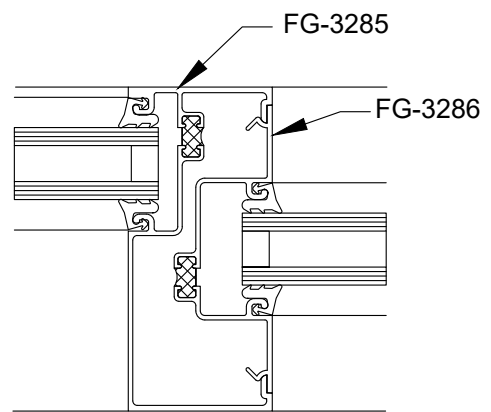
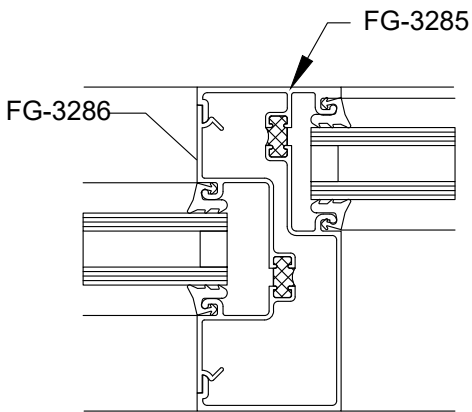
The sub-sills for these products are designed so that sill anchors may be properly sealed prior to frame installation. The frame is either installed over the hook-in anchors or dropped into the sill receptor. This prevents any additional fasteners from penetrating the sill and potentially causing leaks from under the sill. Be sure to properly cap seal all sill anchors prior to beginning installation of frames.

Multiple units may require the use of an expansion mullion if total run exceeds 24 feet in length. When elevation exceeds the 24 foot limit, locate thermal mullions at a distance of no more than every 20 feet. Locate splice in sub-sill at a distance of no more than every 12 feet. A minimum of 7/16" clearance between the jamb and sill end dam must be provided at each end of units when using expansion mullions. This will allow the minimum 3/8" clearance to move the units sideways so that the second unit may be rotated into position and interlocked into first unit. Once in position units should be centered into opening to provide equal joints at the jambs. Vistawall recommends the use of either the FG-2188 PVC filler or FG-3648 aluminum poured and debridged filler in the jambs and head to improve the perimeter seal.



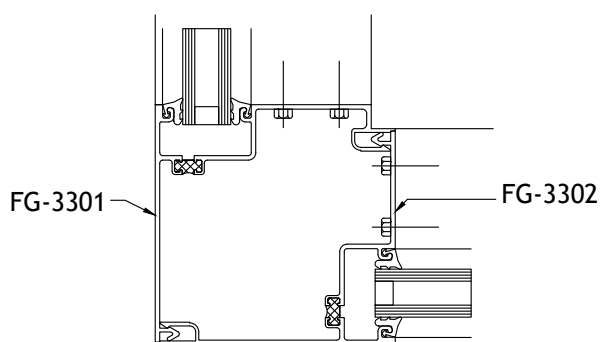
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

OPTIONAL VERTICALS FOR MULTI-SET APPLICATION

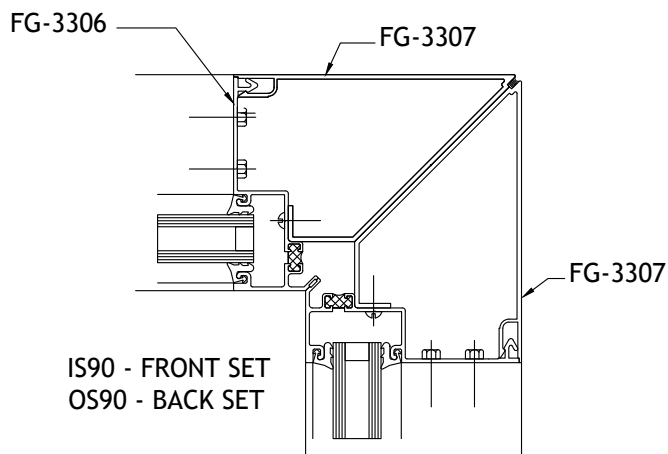


SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

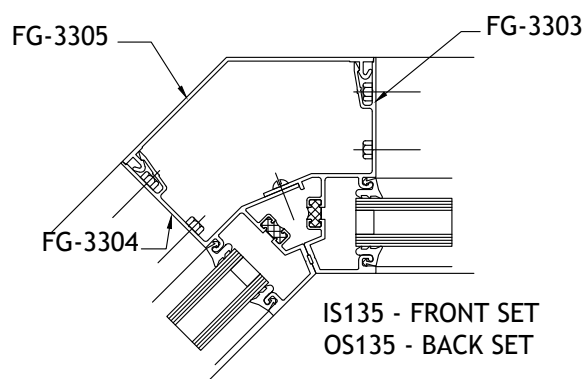
CORNER DETAILS



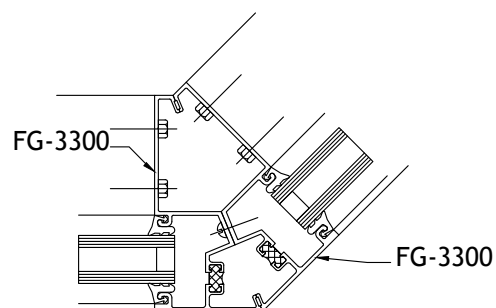
OS90 - FRONT SET
IS90 - BACK SET



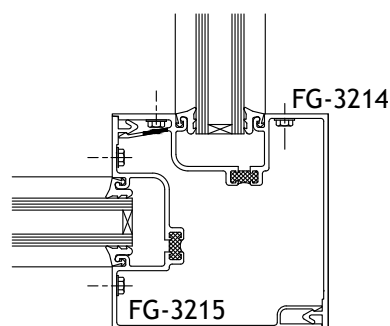
IS90 - FRONT SET
OS90 - BACK SET



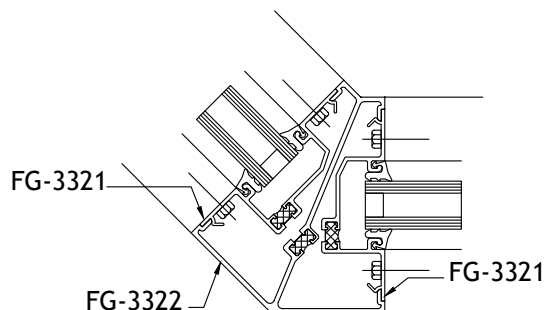
IS135 - FRONT SET
OS135 - BACK SET



OS135 - FRONT SET
IS135 - BACK SET

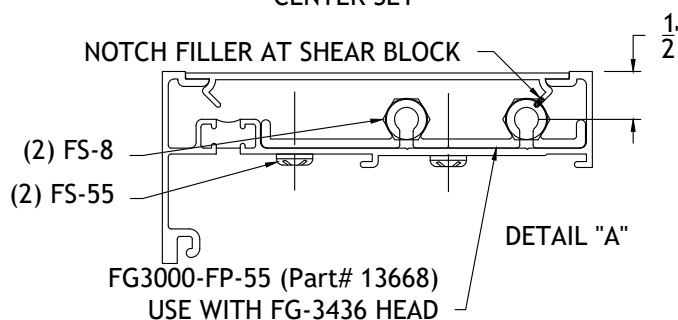


OS90 OR IS90 -
CENTER SET



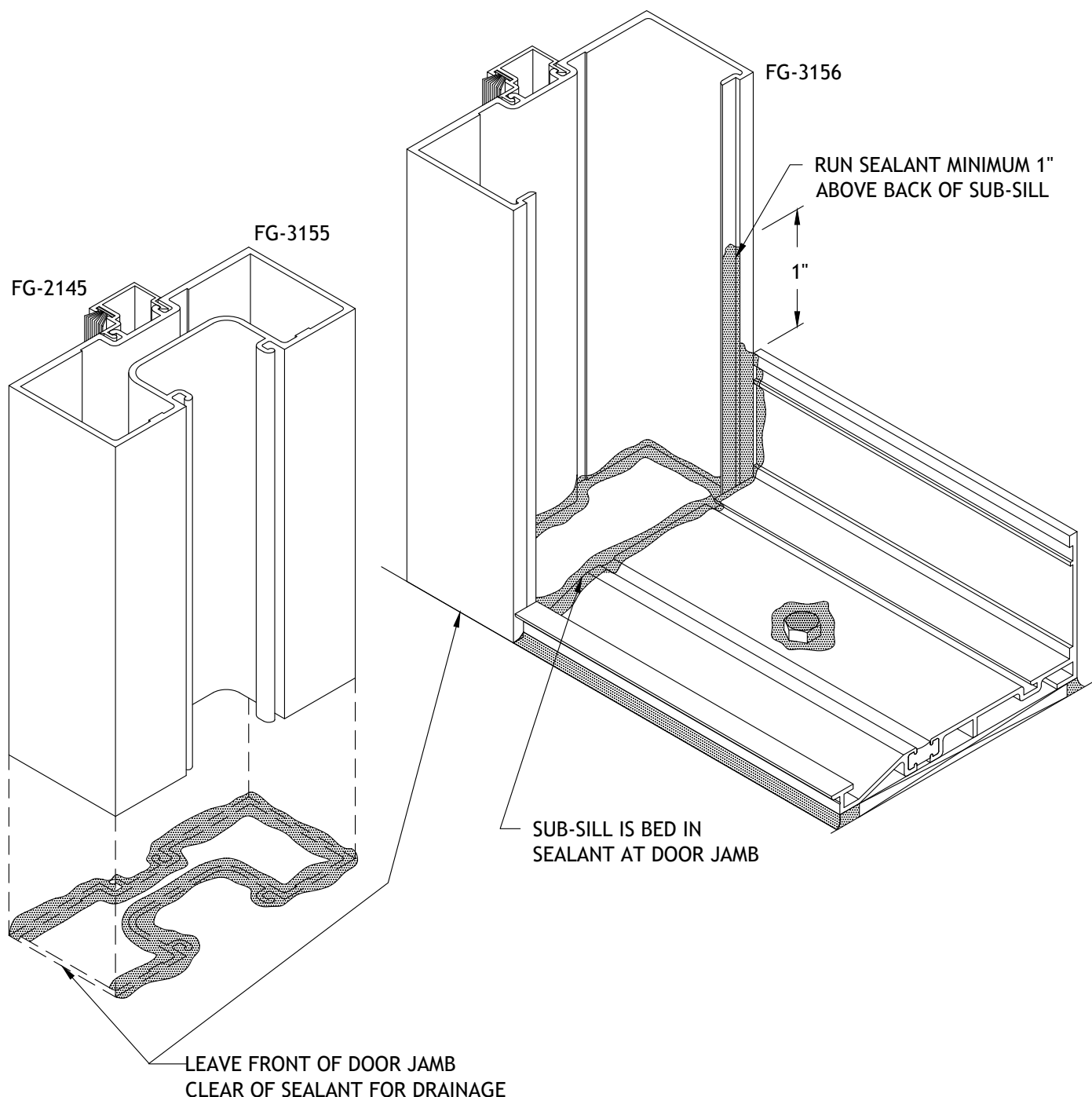
OS135 OR IS135 -
CENTER SET

NOTE: WHEN USING ALL CORNER ASSEMBLIES WITH RIBBON WINDOW APPLICATIONS, THE CORNER WILL RUN THROUGH. ATTACH USING CONNECTIONS SHOWN IN FABRICATION AND ASSEMBLY SECTION OF THIS MANUAL. SPECIAL SHEAR BLOCK FOR HEAD IS SHOWN IN DETAIL "A" ON THIS PAGE.



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

ENTRANCE FRAMING






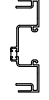





NOTES:

- 1) USE SHEAR BLOCKS AS SHOWN IN FRAME ASSEMBLY SECTION OF THIS MANUAL TO SECURE HORIZONTALS TO TUBULAR FRAMES.
- 2) DOOR FRAME IS ANCHORED BY FASTENERS THROUGH THRESHOLD AND DOOR FRAME HEADER.
- 3) DO NOT FABRICATE STANDARD 2 PIECE POUR & DEBRIDGED FRAME EXTRUSIONS FOR DOOR FRAMES. IF THERMAL FRAME IS REQUIRED, OPTIONAL THERMAL DOOR FRAME FG-3389 OR FG-3444 MAY BE USED IN CONJUNCTION WITH THERMAL DOORS.
- 4) WHEN USING THE CENTER SET SYSTEM, THE TWO-PIECE OR TUBULAR FRAMING OPTION ARE AVAILABLE AS SHOWN ABOVE. WHEN USING EITHER THE FRONT SET OR BACK SET SYSTEM ONLY THE TUBULAR OPTION IS AVAILABLE. THE VERTICAL FOR THE FRONT OR BACK SET OPTIONS IS FG-3287.



SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

PARTS LIST

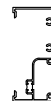





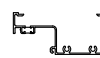
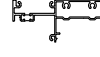

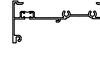
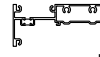

SERIES 3000 MULTIPLANE CENTER SET

 FG-3495	Open Back Head / Jamb / Mullion
 FG-3595	Open Back Heavy Mullion
 FG-3328	Expansion Mullion (mates w/ FG-3327)
 FG-3329	Expansion Mullion (mates w/ FG-3326)
 FG-3514	Open Back Filler
 FG-3197	Intermediate Horizontal
 FG-3198	Sill
 FG-3144	Glass Stop for FG-3197, FG-3198 & FG-3320
 FG-3210	Heavy Glass Stop for Inside Glazing

SERIES 3000 MULTIPLANE SILL RECEPTORS

 FG-3223	Sill Receptor
 FG-3413	Sill Receptor



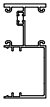









SERIES 3000 THERMAL FRONT SET

 FG-3280	Open Back Jamb & Sill
 FG-3283	Open Back Mullion
 FG-3297	Open Back Heavy Mullion
 FG-3326	Expansion Mullion (mates w/ FG-3327)
 FG-3327	Expansion Mullion (mates w/ FG-3326)
 FG-3284	Open Back Filler (Mullion & Horizontal)
 FG-3296	Outside Glazed Head
 FG-3294	Outside Glazed Horizontal
 FG-3295	Face Stop for FG-3294 & FG-3296
 FG-3291	Inside Glazed Head
 FG-3293	Inside Glazed Horizontal
 FG-3290	Glass Stop for FG-3291 & FG-3293





SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

PARTS LIST



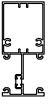

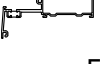


SERIES 3000 MULTIPLANE BACK SET

 FG-3280	Open Back Jamb & Sill
 FG-3283	Open Back Mullion
 FG-3297	Open Back Heavy Mullion
 FG-3326	Expansion Mullion (mates w/ FG-3327)
 FG-3327	Expansion Mullion (mates w/ FG-3326)
 FG-3284	Open Back Filler (Mullion & Horizontal)
 FG-3296	Inside Glazed Head
 FG-3294	Inside Glazed Horizontal
 FG-3295	Face Stop for FG-3294 & FG-3296
 FG-3291	Outside Glazed Head
 FG-3293	Outside Glazed Horizontal
 FG-3290	Glass Stop for FG-3291 & FG-3293

SERIES 3000 MULTIPLANE OPTIONAL VERTICALS

 FG-3285	Open Back Mullion-Center Set to Front Set or Back Set
 FG-3286	Open Back Filler for FG-3285
 FG-3281	Open Back Mullion - Front Set to Back Set or Back Set to Front Set
 FG-3282	Open Back Filler for FG-3281

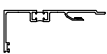

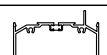









SERIES 3000 THERMAL RIBBON WINDOW / FRONT SET SSG

 FG-3280	Open Back Jamb & Sill
 FG-3333	SSG Mullion
 FG-3437	Captured Mullion
 FG-3436	Head
 FG-3334	Intermediate Horizontal
 FG-3335	Face Stop for FG-3334
 FG-3290	Glass Stop for FG-3436 & FG-3334







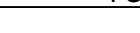
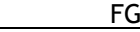





SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

PARTS LIST

SERIES 3000 MULTIPLANE AUXILIARY EXTRUSIONS

	Head Receptor
MO-678	
	Receptor Face
MO-244	
	4-13/16" High Sidelight Base
FG-3320	
	4-5/8" High Sidelight Base (mates w/ FG-3332)
FG-3331	
	4-5/8" High Sidelight Base (mates w/ FG-3331)
FG-3332	
	Center Set 90° Corner
FG-3214	
	Center Set 90° Corner (Self-Mating 180°)
FG-3215	
	Front Set Outside 90°, Back Set Inside 90° Corner
FG-3301	
	Front Set Outside 90°, Back Set Inside 90° Corner (Mates w/ FG-3301)
FG-3302	
	Front Set Inside 90°, Back Set Outside 90° Corner (2 per corner)
FG-3306	
	90° Corner mates w/ FG-3306 (2 per corner)
FG-3307	
	Center Set 135° Corner
FG-3322	




SERIES 3000 MULTIPLANE AUXILIARY EXTRUSIONS

	Center Set 135° Corner Filler (2 per corner)
FG-3321	
	135° Corner mates w/ FG-3303
FG-3304	
	135° Filler for FG-3303/FG-3304
FG-3305	
	Front Set 135° Outside, Back Set Inside 135° Corner (2 per corner)
FG-3300	
	Front Set 135° Inside, Back Set Outside 135° Corner (2 per corner)
FG-3303	
	Alum. Perimeter Filler
FG-2122	
	PVC Perimeter Filler
FG-2188	
	Alum. Poured and Debridged Perimeter Filler
FG-3648	
	Pocket Filler
FG-3126	
	Vinyl Pocket Filler for Window Applications 12' lg.
FG-3218	
	Glazing Adaptor for 1/4" glass Use with mullions only
FG-3194	
	Glazing Adaptor for 1/2", 9/16", 5/8", 11/16" & 3/4" Use with mullions only
FG-3237	
	Glazing Adaptor for 5/16", 3/8" & 7/16" Use with mullions only
FG-3236	






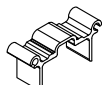

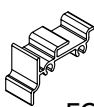
SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

PARTS LIST

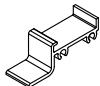






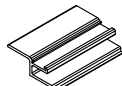

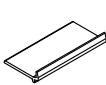
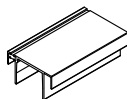
SERIES 3000 MULTIPLANE AUXILIARY EXTRUSIONS

 FG-3594	Glazing Adaptor for 1/4" glass Use with FG-3514 filler
 FG-3537	Glazing Adaptor for 1/2", 9/16", 5/8", 11/16" & 3/4" Use with FG-3514 filler
 FG-3536	Glazing Adaptor for 5/16", 3/8" & 7/16" Use with FG-3514 filler

SERIES 3000 MULTIPLANE ACCESSORIES

 FG1000-FP-2	Water Diverter for Center Set Outside Glazed & all Front Set or Back Set
 FG1000-FP-4/5	Water Diverter for Center Set Inside Glazed
 UW-466	2" Wide Silicone Sheet for splicing of sill receptors
 FG3000-FP-4	End Dam for FG-3223
 FG3000-FP-78	End Dam for FG-3413
 FG3000-FP-62	Shear Block for FG-3495
 AC-119-1	Shear Block for FG-3197 & FG-3198
 FG-3647-01	Shear Block for Sidelite Base Horizontal (FG-3331/3332)




SERIES 3000 MULTIPLANE ACCESSORIES

 FG3000-FP-29	Shear Block for FG-3280
 FG3000-FP-30	Shear Block for FG-3291, FG-3293, FG-3294 & FG-3334
 FG3000-FP-56	End Dam for FG-3280 Sill for SSG System
 FG3000-FP-31	Shear Block for FG-3296
 FG3000-FP-55	Shear Block for FG-3436 Head at Corners
 FG3000-FP-61	Anchor for FG-3223 Inside Glazed Center Set
 FG3000-FP-15	Anchor for FG-3223 Outside Glazed Center Set
 FG3000-FP-27	Anchor for FG-3223 Front or Back Set
 FG3000-FP-28	Sill Anchor Isolator for Back Set Only (mates w/ FG3000-FP-27)
 FG3000-FP-32	Anchor for FG-3223 use w/ FG-3332 Sidelight Base
 FG3000-FP-52	Anchor for FG-3231 Head








SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

PARTS LIST



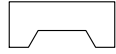
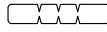
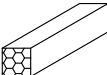


SERIES 3000 MULTIPLANE ACCESSORIES

 FG3000-FP-53	Funnel Bridge for FG-3334
 FG3000-FP-41/54	Splices for FG-3436 Head
 FG3000-FP-38/39	Splices for FG-3280 Sill

SERIES 3000 MULTIPLANE ACCESSORIES GASKETS & SETTING BLOCKS

 FG-1133	1" Glazing Gasket
 FG-1134	Light Gasket
 FG-3129	5/8" Glazing Gasket
 FG-5125	Heavy Gasket
 HP-30066	Spacer Gasket for SSG Mullion
 CW-998	Gasket for Expansion Mullions
 V-11	Gasket for Head Receptor






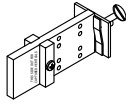
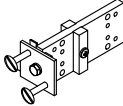

SERIES 3000 MULTIPLANE ACCESSORIES GASKETS & SETTING BLOCKS

 FG-3220	Setting Block for FG-3197, FG-3198 & FG-3231
 FG-3221	Setting Block for FG-3197 Inside Glazed
 FG-3278	Setting Block for FG-3280
 HP-17	Setting Block for FG-3293, FG-3294 & FG-3334
 HP-1004	Weep Baffle
 GP-152	Side Block for Deep Pocket
 GP-154	Side Block for Shallow Pocket

SERIES 3000 THERMAL MULTIPLANE INSTALLATION MANUAL

PARTS LIST

SERIES 3000 MULTIPLANE ACCESSORIES FASTENERS & DRILL JIGS

 FS-6	#10 X 3/4" P.P.H. Attachment of Sill to Sill Anchor & Shear Blocks
 FS-7	#10 X 3/4" P.F.H. Attachment of Shear Blocks
 FS-8	#14 X 1" H.H.S.T.S. Assembly Screw
 FS-55	#10 x 1/2" P.R.H. Attachment of Shear Blocks at Horizontals
 FS-202	#8 x 1/2" P.P.H. Attachment of FG3000-FP-53 Bridge
 DJ-7	Drill Fixture for Front or Back Set Shear Block or Screwspline Assembly
 DJ-8	Drill Fixture for Center Set Shear Block or Screwspline Assembly
 FS-320	M4 x 16mm headed helical pin Attachment of end dam to FG-3413 Sub Sill