

VersaTherm

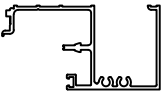
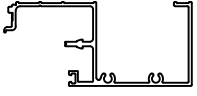
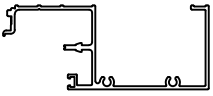
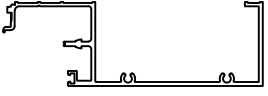



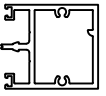
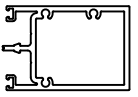
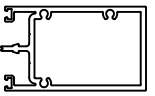
TABLE OF CONTENTS

GENERAL CONSTRUCTION NOTES	3
PARTS LIST	4-7
ELEVATION TYPES and DETAILS	8-10
FRAME FABRICATION	
Step 1 Determine Frame Size	11
Step 2 Cut Material to Size	12
Step 3 Drill Holes in Head and sill	13-14
Step 4 Drill Holes in Intermediate Verticals	15
Step 5 Drill Holes in Intermediate Horizontals	16
Step 6 Notch Head and Sill	17
Step 7 Attach Jambs to Head and Sill	18-19
Step 8 Attach First horizontals to Jamb	20
Step 9 Attach Intermediate Vertical	21
Step 10 Splice Sleeve Assembly.....	22
GLAZING	
Step 1 Install End Dams.....	23
Step 2 Install Glazing Gasket Around Frame	23
Step 3 Install Setting Chairs and Blocks at Sill.....	24
Step 4 Install Lower Lites	24
Step 5 Install Glazing Clips	25
Step 6 Glaze upper units	26
Step 7 Install Face covers	26

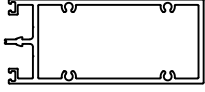



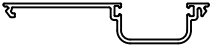

GENERAL CONSTRUCTION NOTES

1. These instructions cover typical product application, fabrication, installation and standard conditions and are general in nature. They provide useful guidelines, but the final shop drawings may include additional details specific to the project. Any conflict or discrepancies must be clarified prior to execution.
2. Materials stored at the job site must be kept in a safe place protected from possible damage by other trades. Stack with adequate separation so materials will not rub together and store off the ground. Cardboard or paper wrapped materials must be kept dry. Check arriving materials for quantity and keep a record of where various materials are stored.
3. All field welding must be done in accordance with AISC guidelines. All aluminum and glass should be shielded from field welding to avoid damage from weld splatter. Results will be unsightly and may be structurally unsound. Advise general contractor and other trades accordingly.
4. Coordinate protection of installed work with general contractor and/or other trades.
5. Coordinate sequence of other trades which affect framing installation with the general contractor (e.g. fire proofing, back up walls, partitions, ceilings, mechanical ducts, HVAC, etc.).
6. General contractor should furnish and guarantee bench marks, offset lines and opening dimensions. These items should be checked for accuracy before proceeding with erection. Make certain that all adjacent substrate construction is in accordance with the contract documents and/or approved shop drawings. If not, notify the general contractor in writing before proceeding with installation because this could constitute acceptance of adjacent substrate construction by others.
7. Isolate all aluminum to be placed directly in contact with masonry or other incompatible materials with a heavy coat of zinc chromate or bituminous paint. Fasteners attaching framing to building structure are typically not provided by Tubelite.
8. Sealant selection is the responsibility of the erector, installer and/or glazing contractor and must be approved by the sealant manufacturer with regard to application and compatibility for its intended use. All sealants must be used in strict accordance with the manufacturer's instructions and applied only by trained personnel to surfaces that have been properly prepared.
9. Sealant must be compatible with all materials with which they have contact, including other sealant surfaces. Consult the sealant manufacturer for recommendations relative to shelf life, compatibility, cleaning of substrate, priming, tooling adhesion, etc. Recommend sealant manufacturer perform adhesion "pull test" at "wet" glazing for quality assurance.
10. Drainage gutters and weep holes must be kept clean at all times. Tubelite will not accept responsibility for improper drainage as a result of clogged gutters and weep holes.
11. This product requires clearances at the head, sill and jambs to allow for thermal expansion and contraction as well as construction tolerances. Refer to final distribution drawings for joint sizes. Joints smaller than 1/2" may be subject to failure. Consult the sealant manufacturer for proper sizing of joints.
12. All framing members, entrances and other materials are to be installed plumb, level and true with regard to established bench marks, column center lines or other working points established by the general contractor and checked by the erector, installer and/or glazing contractor.
13. After sealant is set and a representative amount of the wall has been glazed (500 square feet or more), run a water hose test to check installation. On large projects, a hose test should be repeated during glazing operation. This testing should be conducted in accordance with AAMA 501.2 specifications.
14. Cleaning of exposed aluminum surfaces should be done per AAMA recommendations.
15. Care must be taken when assembling aluminum framing components. Over tightening any fastener may cause stripping or fastener failure. Tubelite recommends the use of drill motors with clutches engaged to provide satisfactory tightening of the screw while preventing over torque. The use of impact drill motors is not recommended due to the absence of a clutch device.
16. Check www.tubeliteinc.com for any installation instruction updates.









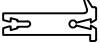

Extrusions

SHAPE	DESCRIPTION	PART No.
	1-15/16" Permieter	E2888
	2-9/16" Perimeter	E3093
	2-15/16" Perimeter	E2858
	4-1/16" Perimeter	E3133
	3/16" Face	E2857
	9/16" Face	E3135
	1-3/16" Face	E2859
	1-15/16 Intermediate	E2874
	2-9/16" Intermediate	E3095
	2-15/16 Intermediate	E2860




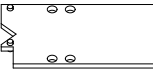
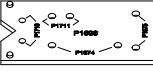

Extrusions

SHAPE	DESCRIPTION	PART No.
	4-1/16" Intermediate	E3134
	1/4" Glass Reducer	E2867
	1" Closure	E2866
	1/2" X 1/2" Angle Use with corners	E0189
	Front Plane Pocket Closure Use with E45305	E3173
	Center Plane Pocket Closure Use with E4544	E2882

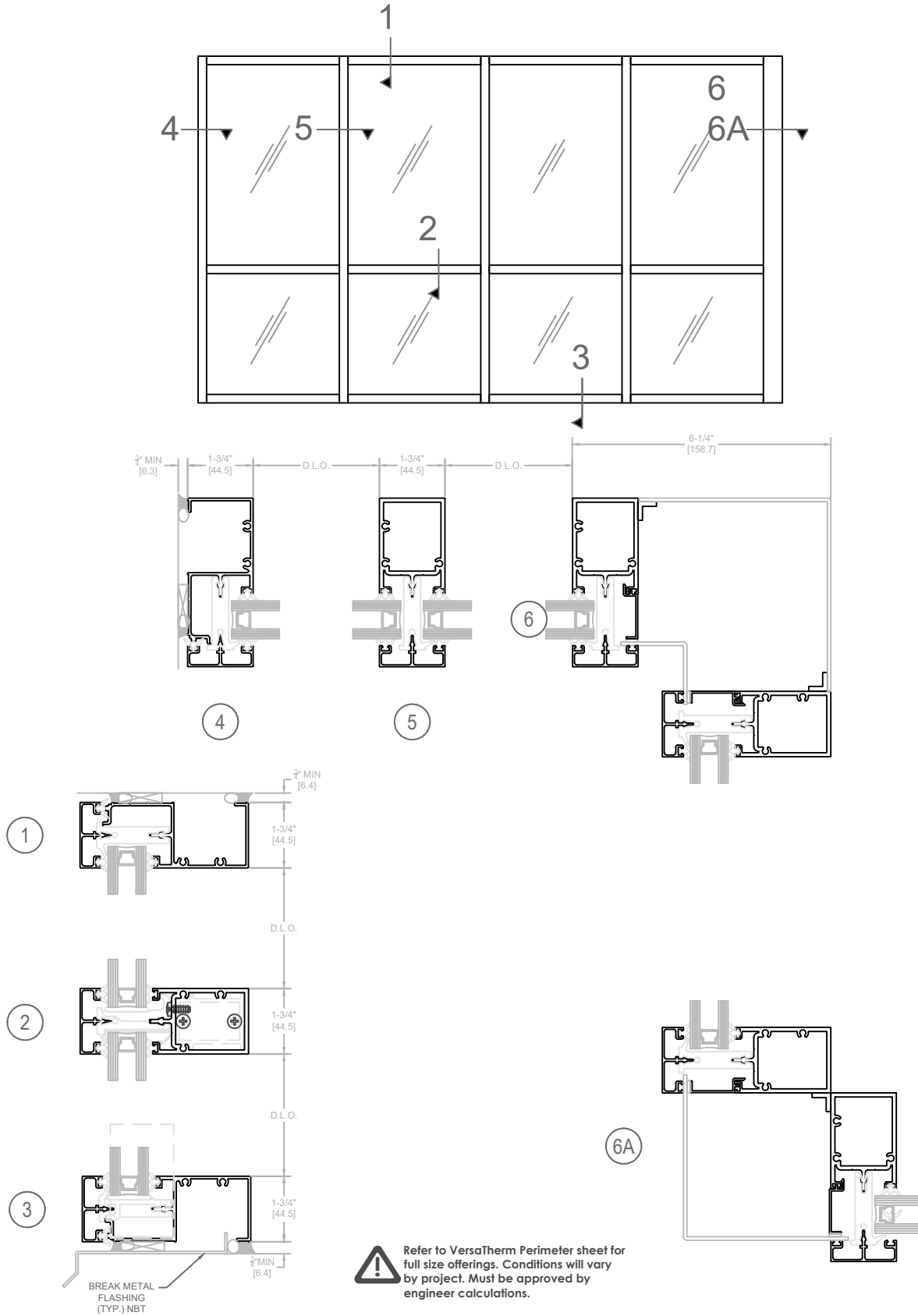
Accessories

SHAPE	DESCRIPTION	PART No.
	Standard Gasket @ Interior	P2183
	Wedge (Use on Fixed Pocket Members and Optionally on Exterior)	P1112
	1" Glazing Shelf (For intermediate Horizontals)	P1677
	Perimeter Shelf (For Perimeter Members)	P1679
	1-15/16" Roll Over Shear Block (Use With E2874)	P1711
	Shear Block (Use With E2680, E3905, and E3134)	P1703
	Water Diverter	P1709
	End Dam	P1691
	1" Glazing Clip	P1708
	1" Setting Block	P1680

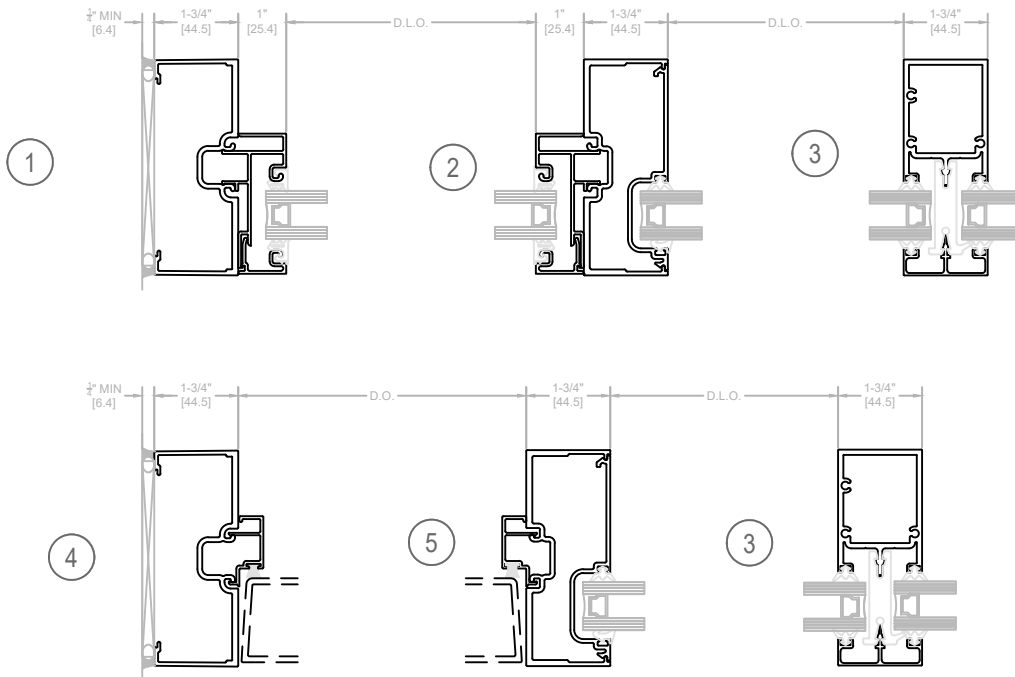
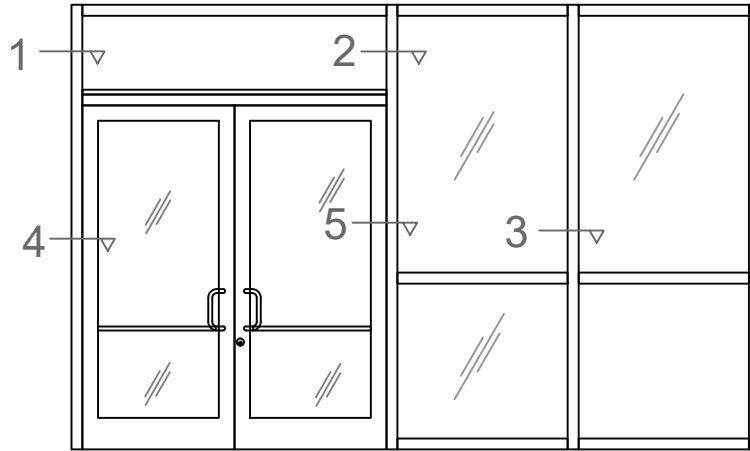
Accessories

SHAPE	DESCRIPTION	PART No.
	#10 x 1-3/4" screw (Use With Shear Blocks)	S009
	#10 x 1" Screw (Use With Screw Splines)	S146
	#10-24 x 1/2" Screw (Use with P1703 Clip)	S206
	Screw Spline Drill Fixture	P1697
	Shear Clip Drill Fixture	P1698
	Standard Gasket @ Exterior	P0017

Standard Details

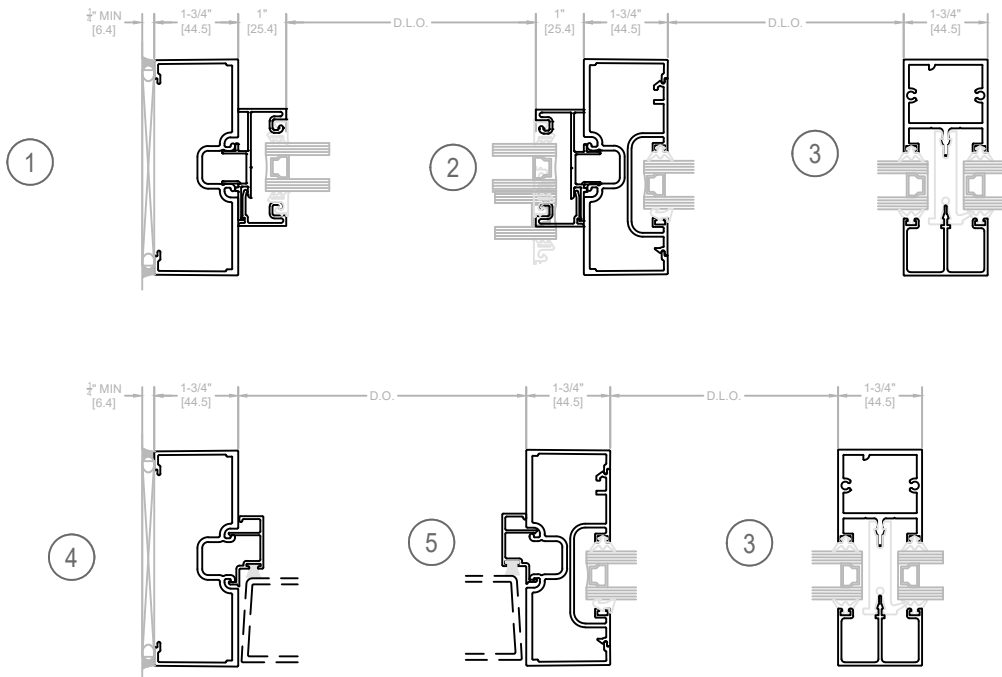
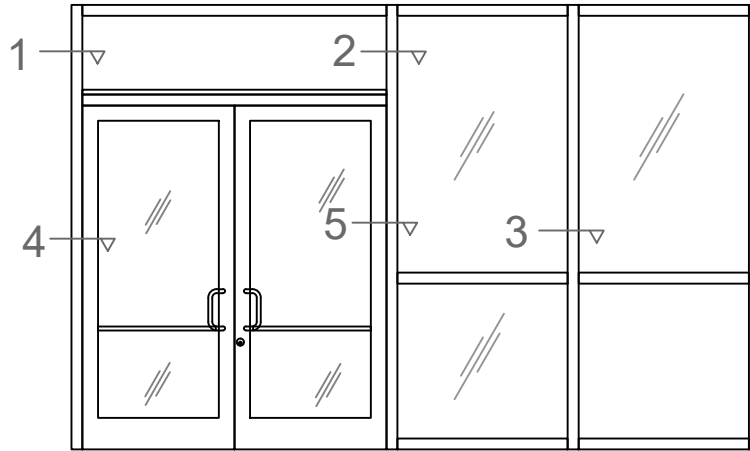


Vertical Door Framing Details



! Refer to VersaTherm Perimeter sheet for full size offerings. Conditions will vary by project. Must be approved by engineer calculations.

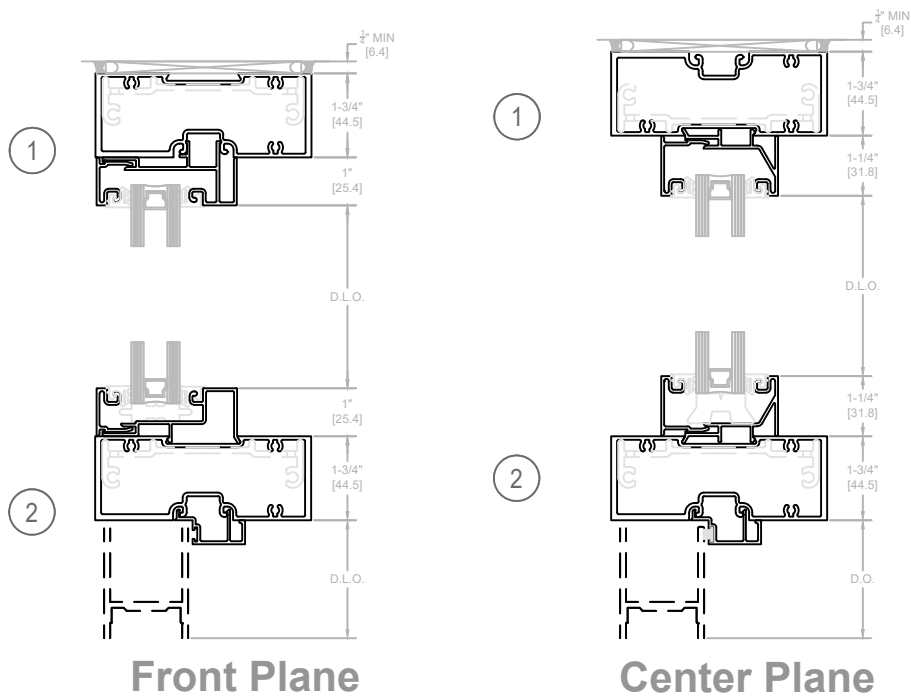
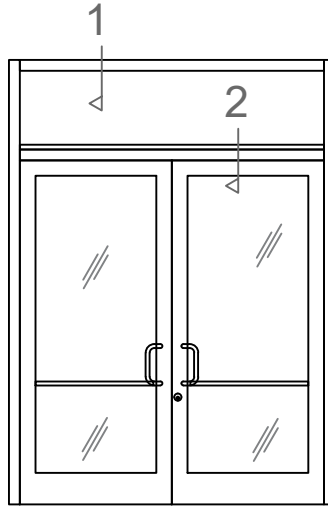
Vertical Door Framing Details (Center Plane)



! Refer to VersaTherm Perimeter sheet for full size offerings. Conditions will vary by project. Must be approved by engineer calculations.

Horizontal Door Framing Details

STEP 1



Refer to VersaTherm Perimeter sheet for full size offerings. Conditions will vary by project. Must be approved by engineer calculations.

FRAME UNIT FABRICATION

Determine Frame size

Frame Width

- Make sure the opening is square and plumb. Measure each diagonal of the opening. See **FIG. 1**.
- Measure the width of the opening at the top, middle, and bottom. Select the smallest of these dimensions and subtract the left and right caulk joint width per approved shop drawings ($\frac{1}{4}$ " Min caulk joint at each jamb). See **FIG. 2**.

Frame Height

Measure the height of the opening at several points along the entire width of the opening.

Frame Height = RO-1/2"

Allow larger clearance if necessary to accommodate building tolerances or out of square openings. SEE **FIG. 3**.

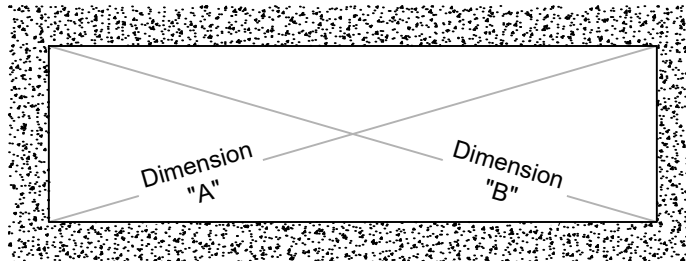


FIG. 1

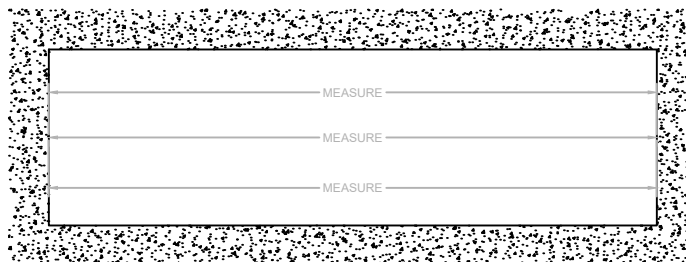


FIG. 2

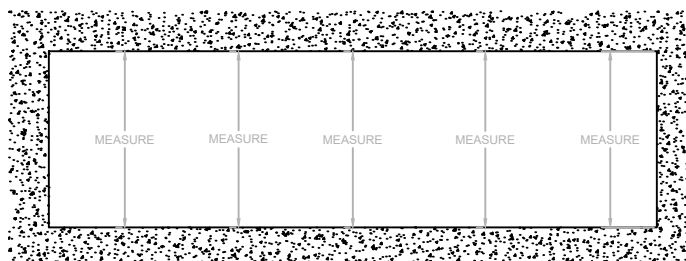
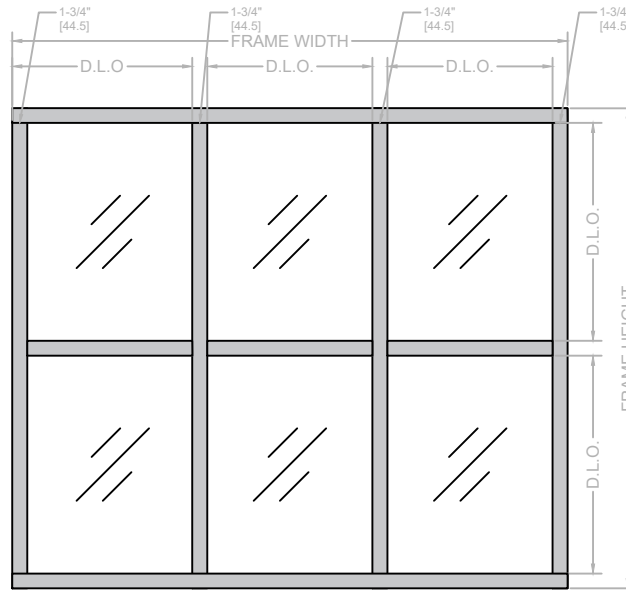


FIG. 3

FRAME UNIT FABRICATION



TYPICAL ELEVATION

STEP 2

Framing Members:

Verticals
Head & Sill

Horizontals

Vertical Face Covers
Horizontal Face covers

Vertical Glazing Reducers
Horizontal Glazing Reducers
Glazing Pocket fillers
E0188 Corner angle

Accessories

Exterior Vertical Gasket
Exterior Horizontal Gasket
Interior Vertical Gasket
Interior Horizontal Gasket

Cut Size:

= Frame Height-3-1/2"[88.9]
= Frame WIDTH
(Rough opening -caulk gap)

= D.L.O

= Frame Height*
= D.L.O-1/32"[1]

= D.L.O +1"
= DLO- $\frac{1}{32}$ "
= D.L.O.
= Frame Height

= Frame Height + Allowance**
= D.L.O. + Allowance**
= D.L.O. + Allowance**
= Frame Width

Note: Door framing material is cut to size from the factory

FRAME UNIT FABRICATION

STEP 3

Drill holes in head, sill and jambs

A. Mark and drill .201" diameter holes in the head and sill FIG. 1. P1697 Drill fixture is available for use Fig.2

NOTE: Distances for screw splines will vary. See following page for details.

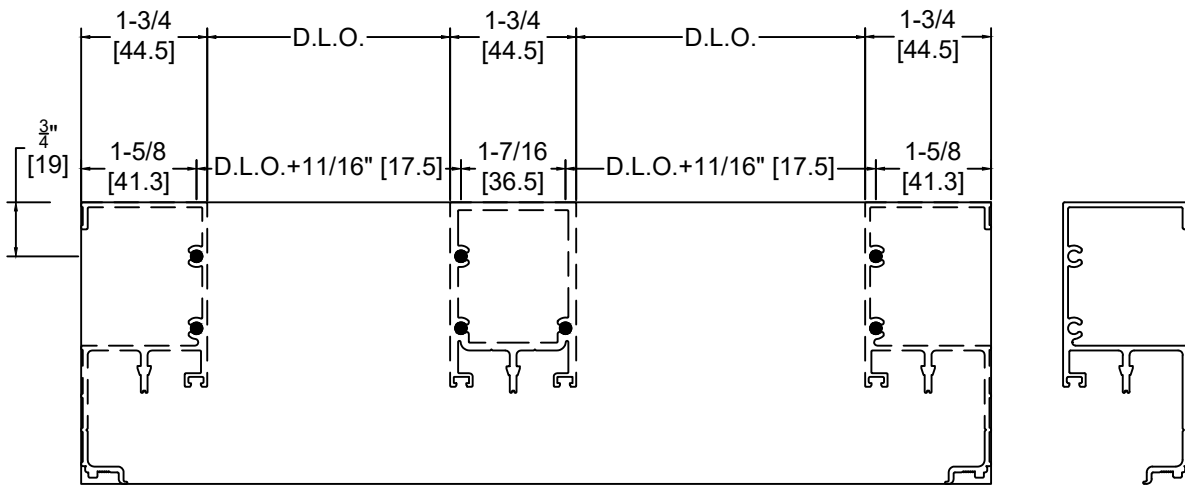


FIG. 1

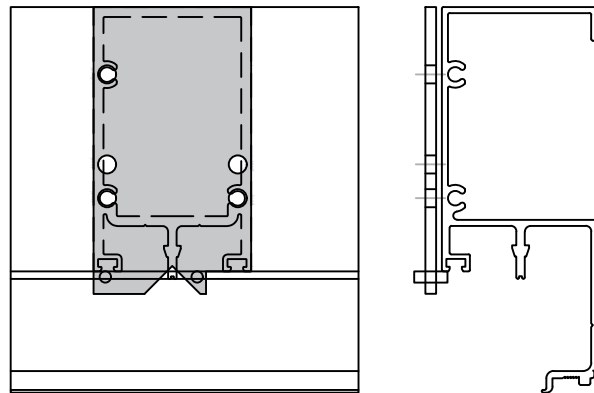
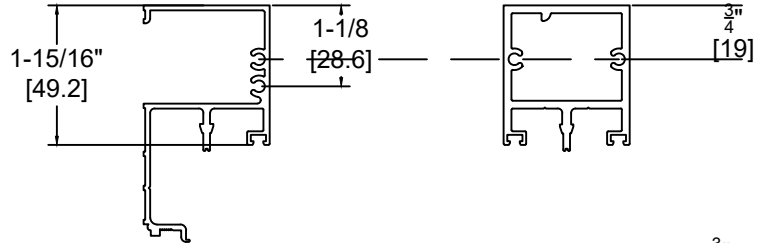


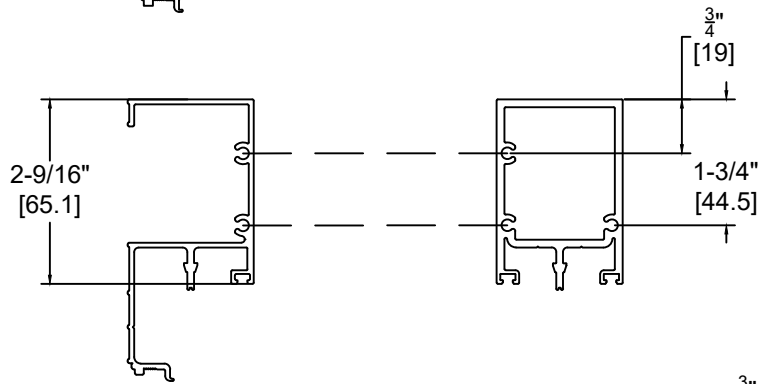
FIG. 2

FRAME UNIT FABRICATION

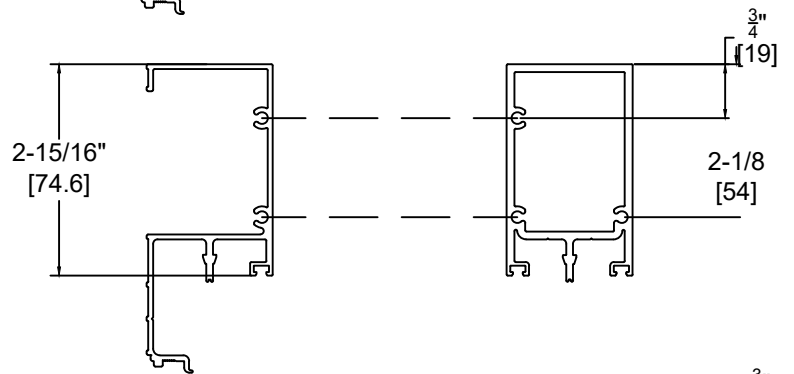
E2888 & E2874



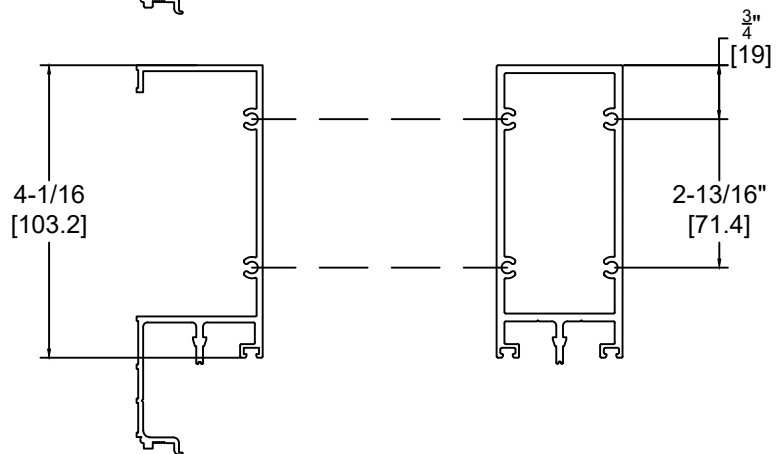
E3093 & E3095



E2858 & E2860



E3133 & E3134

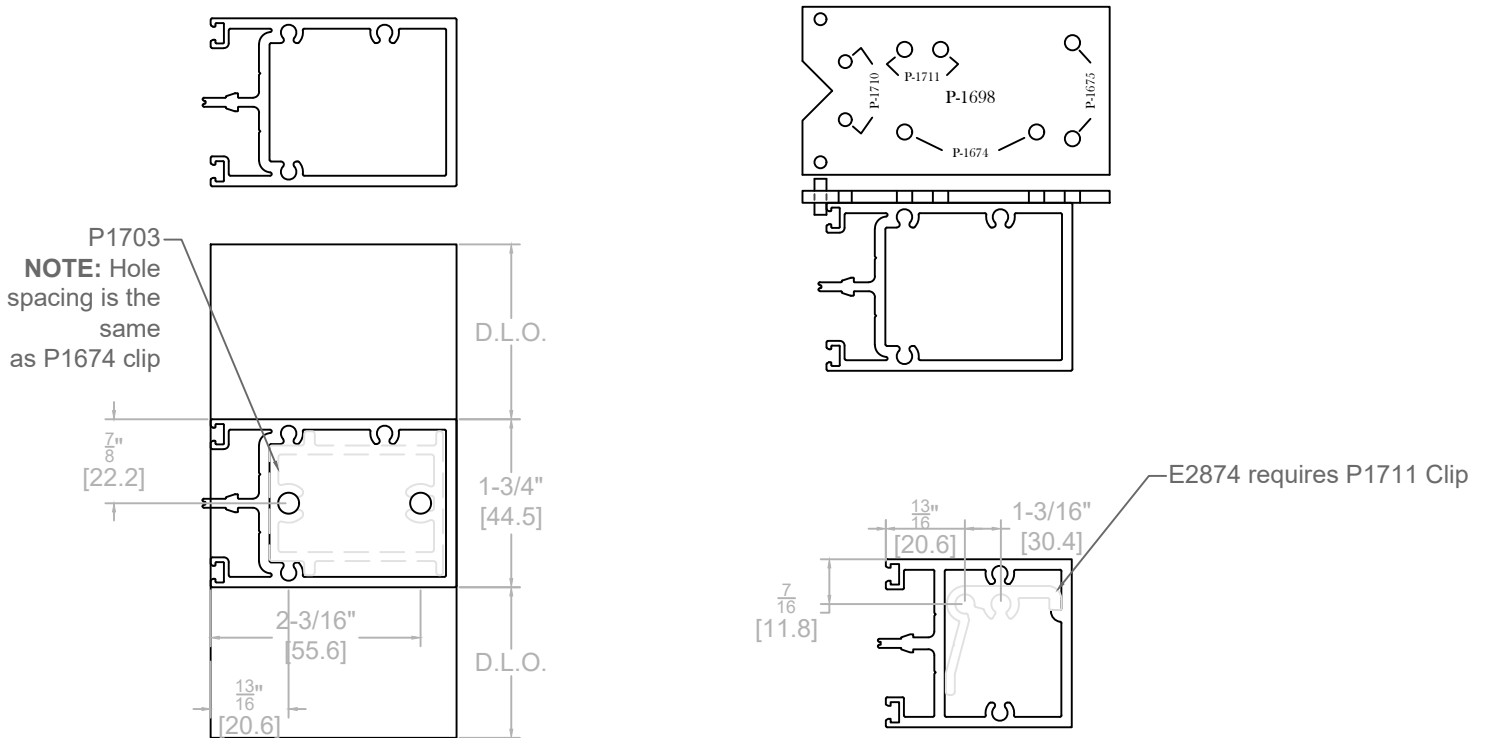


FRAME UNIT FABRICATION

STEP 4

Drill holes in Intermediate verticals

- A. Prep intermediate verticals for P1703 or P1711 shear clip. P1698 drill Fixture is available.
- B. For P1711 or P1703 drill two .1495" (#25 drill bit) holes for S009.



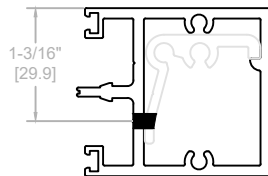
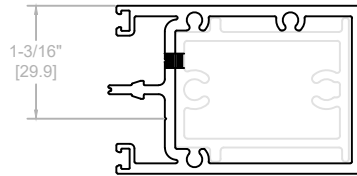
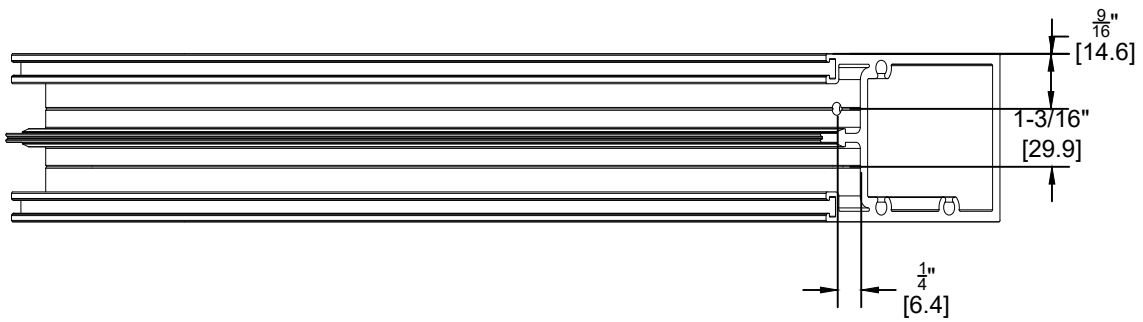
NOTE: Shear clips are only used at intermediate Horizontals to intermediate verticals

FRAME UNIT FABRICATION

STEP 5

Drill holes in Intermediate Horizontals

- A. For P1703 or P1711 drill one .1495" (#25 drill bit) hole in shear clip for S206
- B. Drill .201" (#7 drill bit) clearance hole in horizontal.

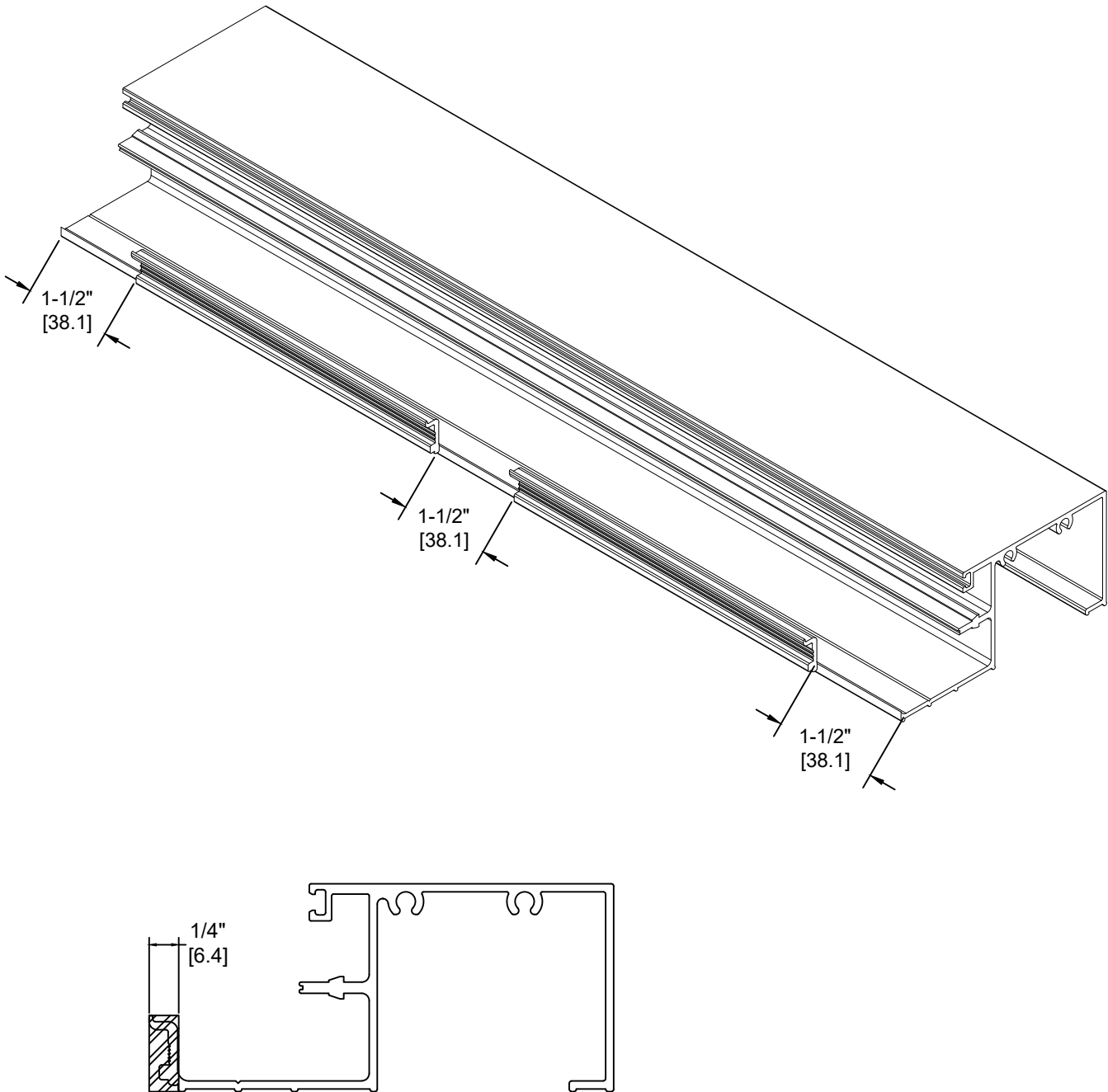


FRAME UNIT FABRICATION

STEP 6

Notch head and sill

- A. Notching is required at the head and sill for weeping and to clear face cover tongue.
- B. Notch 1-1/2" in from each end and on the centerline of each intermediate vertical.

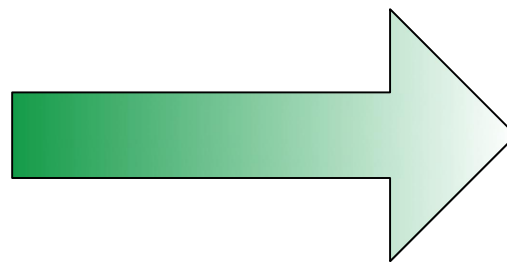
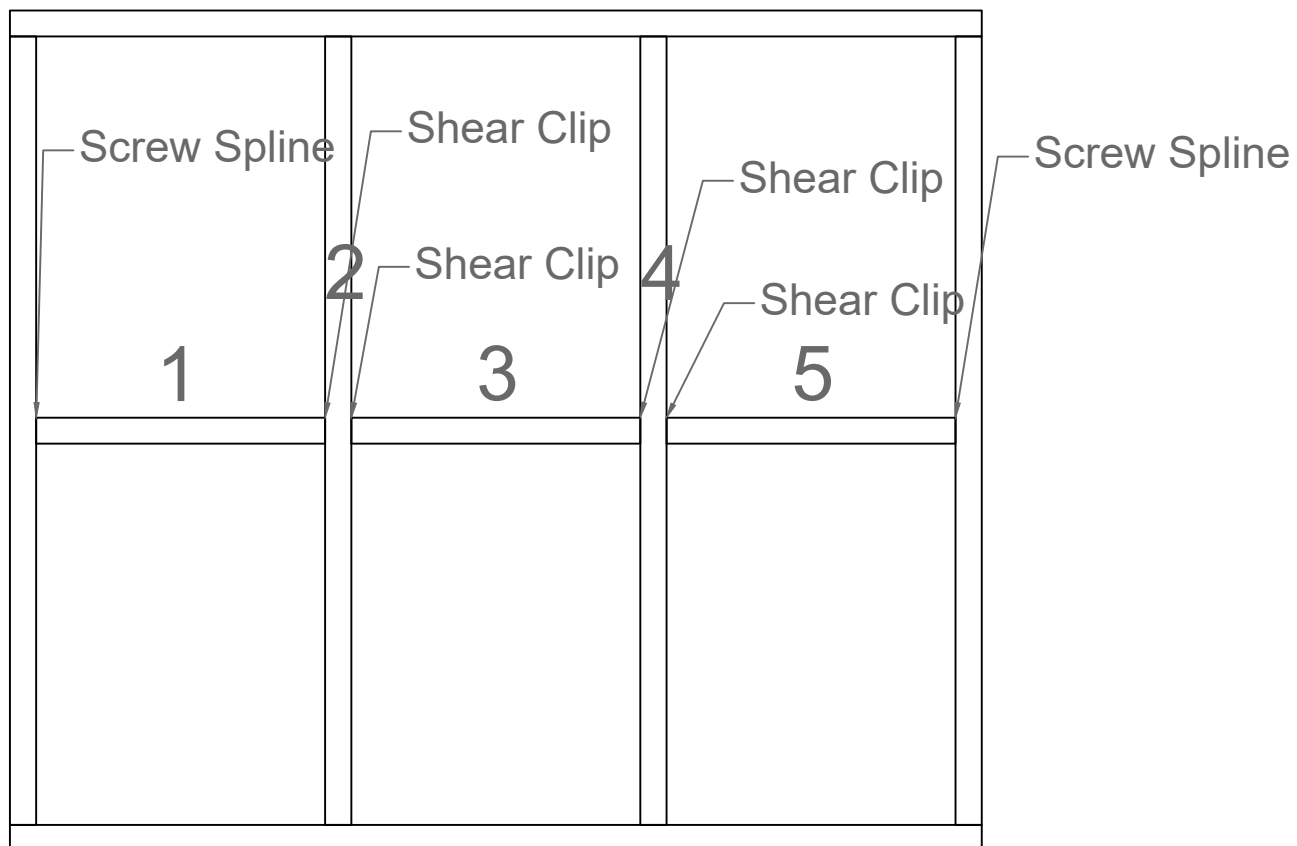


FRAME UNIT FABRICATION

STEP 7

Shear clip assembly

NOTE: When using shear clips frames must be assembled in one direction. Fig.1. Horizontals that terminate at a jamb will use screw splines instead of shear clips.



Direction of
assembly

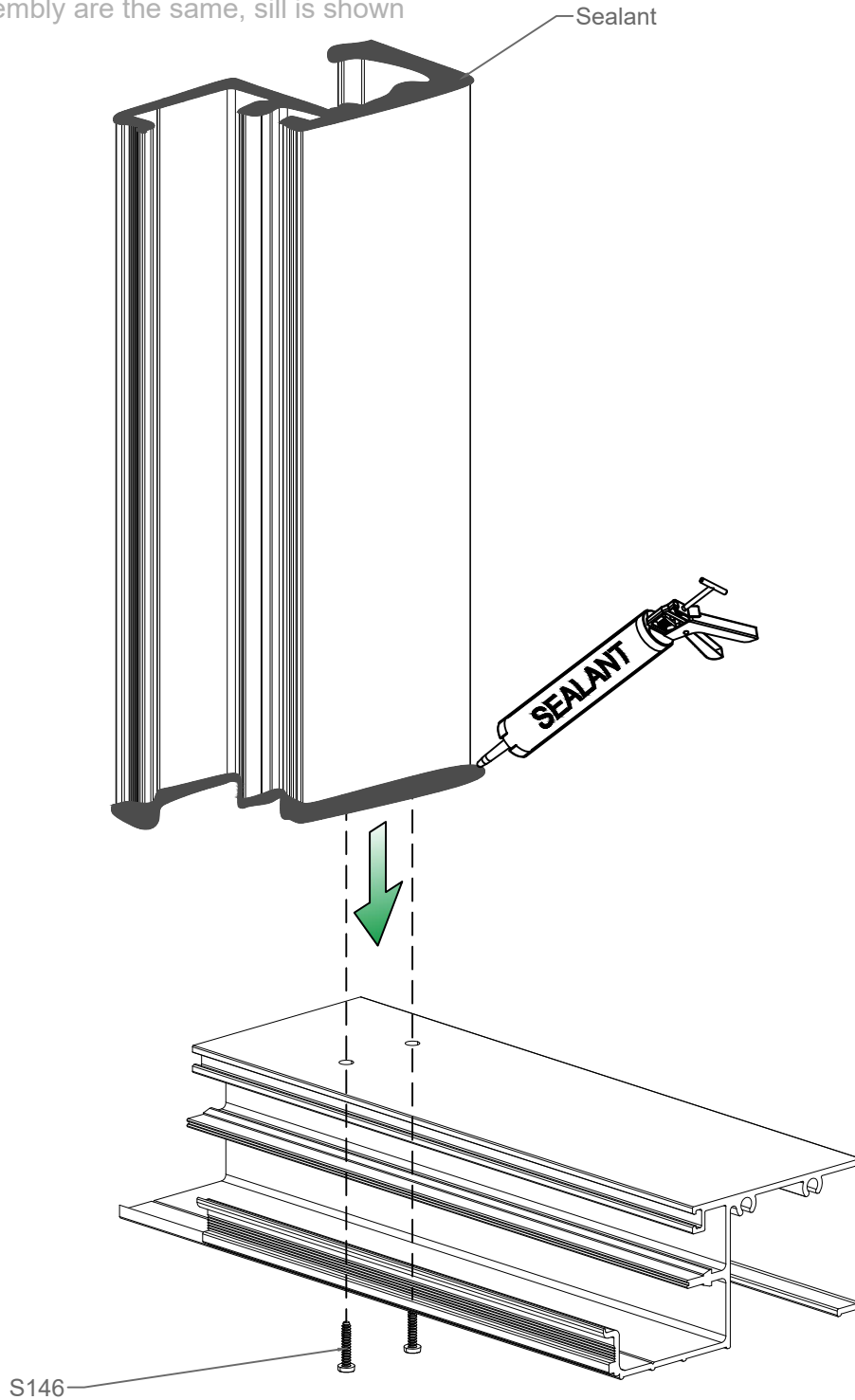
FRAME UNIT FABRICATION

STEP 7

Attach jambs to head and sill

- A. Seal both ends of jamb with prior to assembly.
- B. Using 2 S146 screws, attach jambs to head and sill

Head and sill assembly are the same, sill is shown

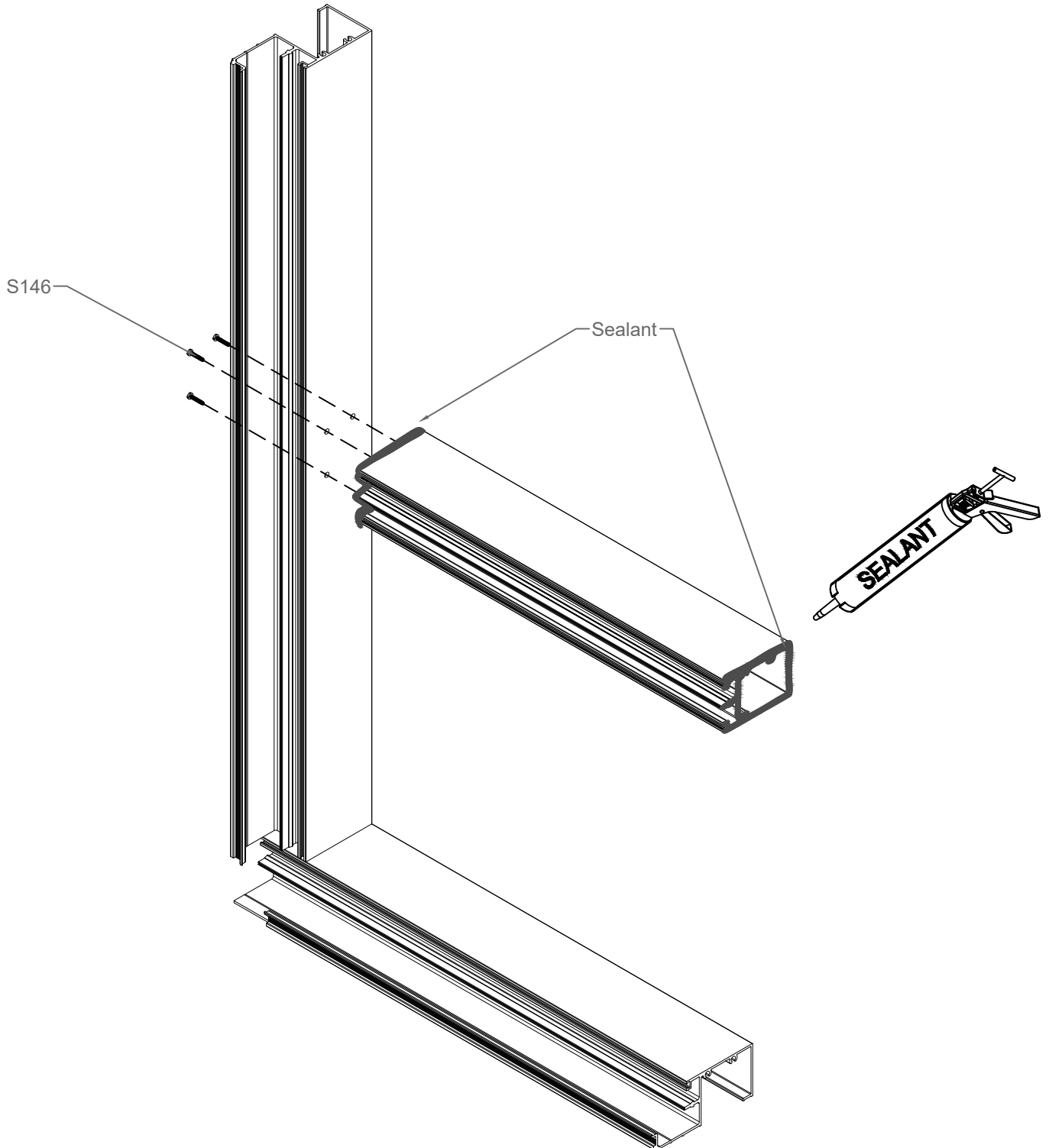


FRAME UNIT FABRICATION

STEP 8

Attach first horizontal to jamb

- A. Seal both ends of horizontal prior to assembly.
- B. Using 3 S146 screws, attach Horizontal to jamb.



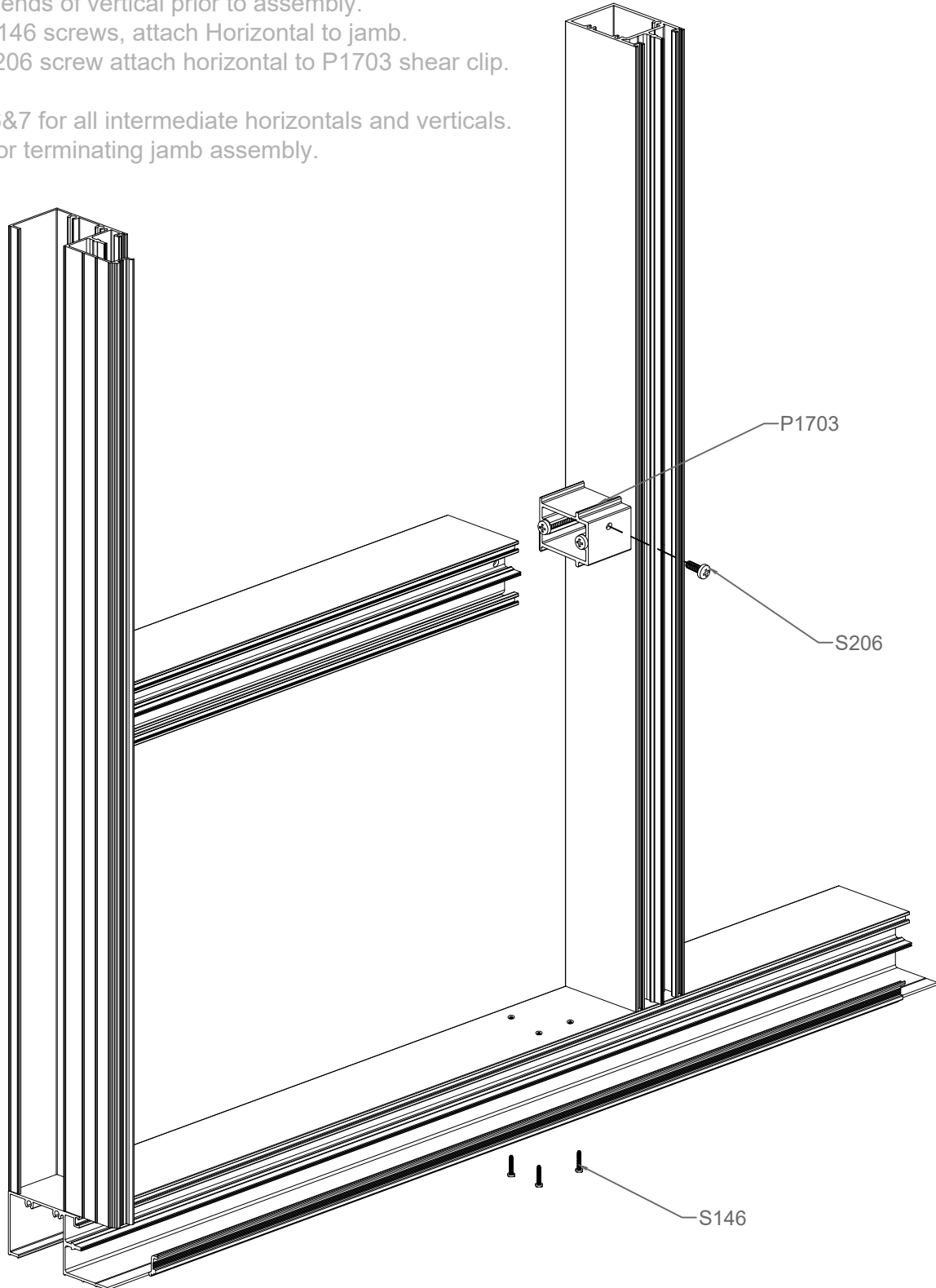
FRAME UNIT FABRICATION

STEP 9

Attach Intermediate vertical

- A. Attach P1703 shear clip using 2 S009 screws.
- B. Seal both ends of vertical prior to assembly.
- C. Using 3 S146 screws, attach Horizontal to jamb.
- D. using 1 S206 screw attach horizontal to P1703 shear clip.

Repeat steps 6&7 for all intermediate horizontals and verticals.
 Follow step 5 for terminating jamb assembly.



Frame unit Fabrication

STEP 10

Splice assembly

- A. Seal all contacting sides of splice
- B. Split head/sill members on splice, tool sealant if needed.

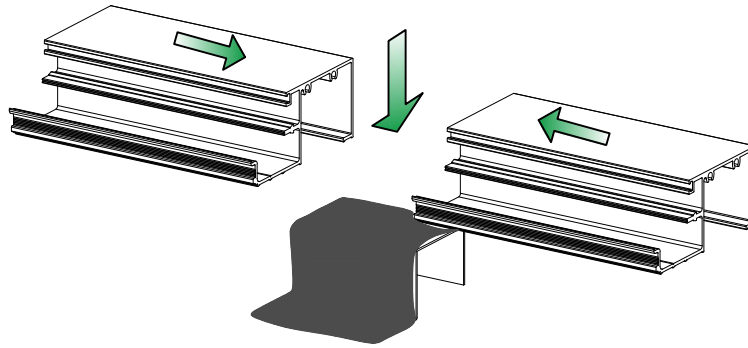


FIG. 1

STEP 10

Install vertical mullion

- A. Set vertical mullion over splice location so screw splines will fasten to both sides of splice location. Fig. 2.

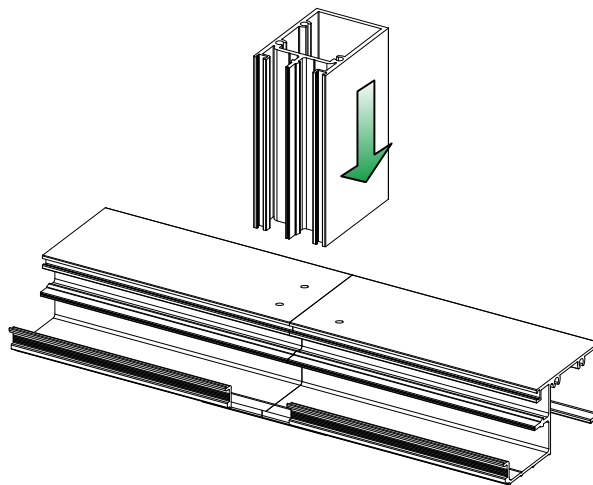


FIG. 2

Glazing

STEP 1

Install End dams

- A. Install P1691 end dams on both ends of sill.
- B. Apply a bed of sealant to the ends of jamb and sill. **Fig 1.**
- C. Set end dam in sealant and tool over the dam. sealant should ramp towards the weep. Apply more sealant if necessary. **Fig 2.**

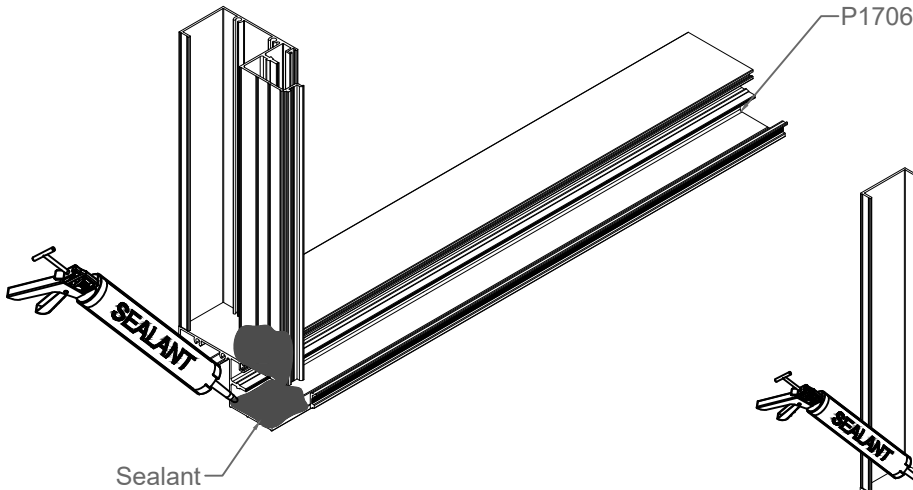


FIG. 1

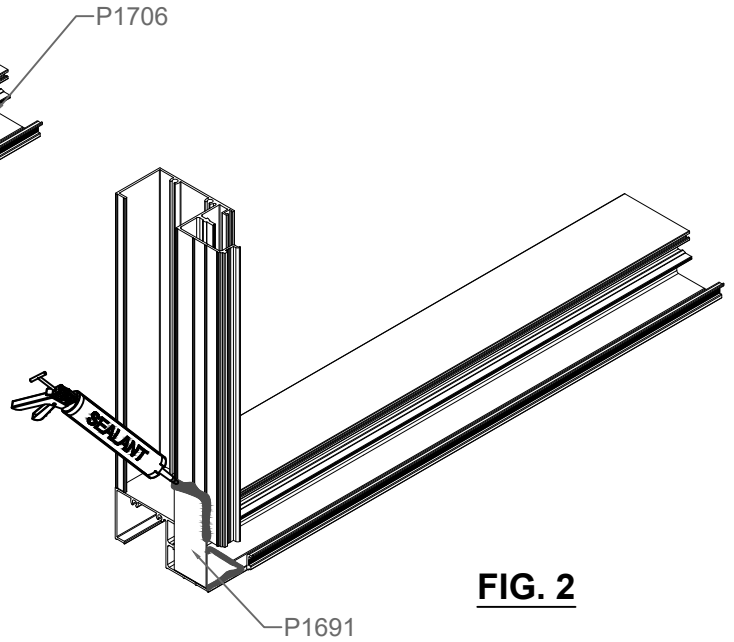


FIG. 2

STEP 2

Install Glazing Gasket

- A. Install P2183 glazing gasket around frame.
- B. Crowd gasket in the reglet to allow for expansion and contraction.

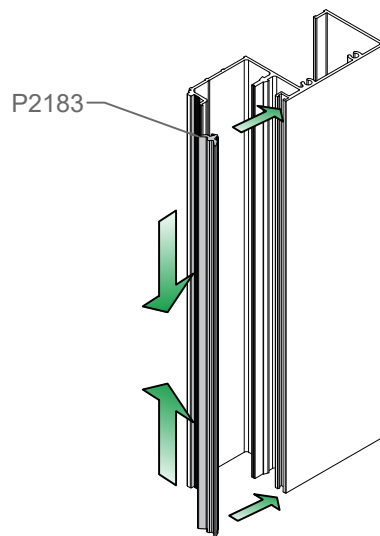


FIG. 3

Glazing

STEP 3

Install Setting chair and setting blocks

- A. Install P1679 Setting chair and P1680 Setting block. Fig. 1.
- B. 2 setting chairs and block will be used at each lite, set at $\frac{1}{4}$ points or as specified in approved shop drawings. Only one shown for detail clarity.

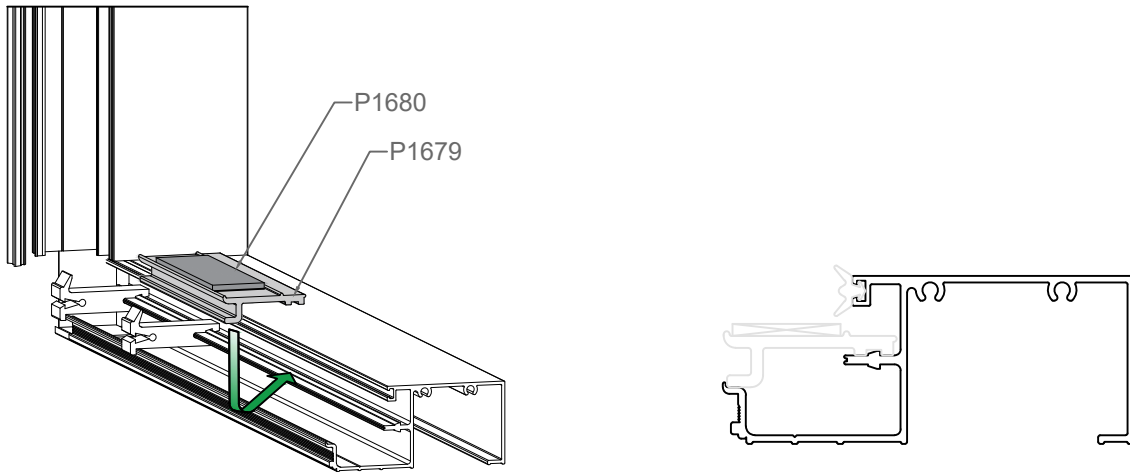


FIG. 1

STEP 4

Install lower lites

- A. Position the glass in the frame.
- B. Install P1709 water diverter on top of the glass. Fig. 2.
- C. Water diverter will run continuous and will need to be notched to clear the vertical tongue.

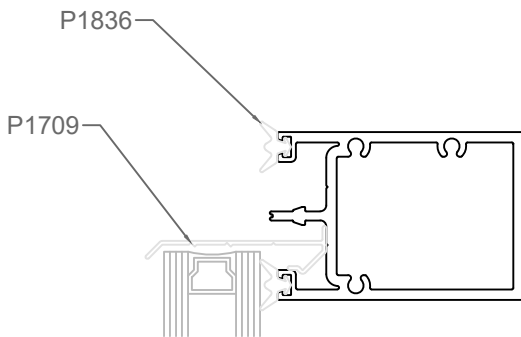


FIG. 2

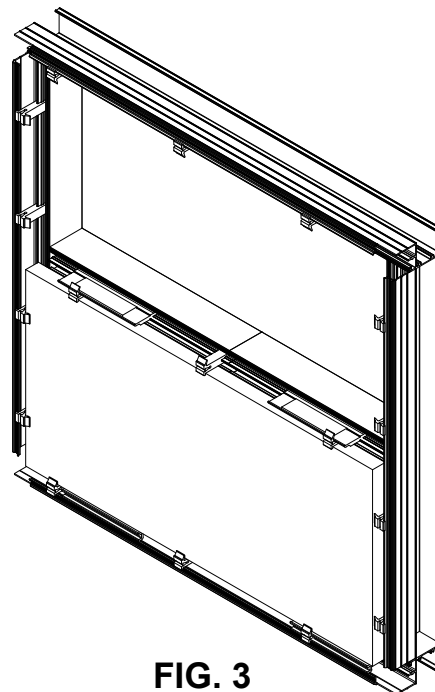


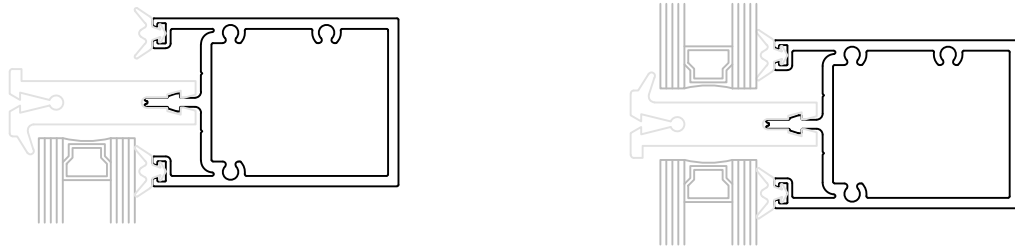
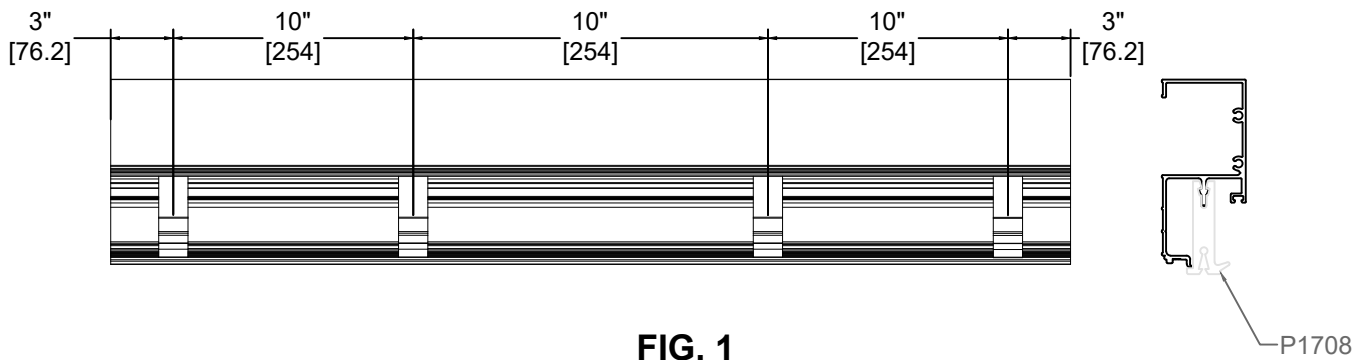
FIG. 3

Glazing

STEP 5

Attach Glazing clips at lower lites

- A. Install P1708 glazing clips around the bottom lite. Fig. 1.
- B. Clips should be 3" from ends, and 10" on center.



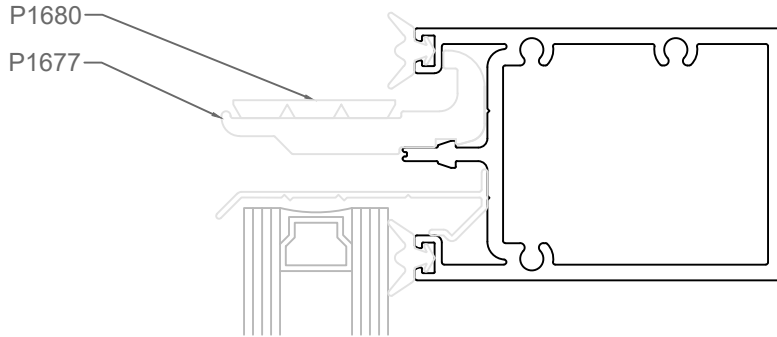
NOTE: P1708 Glazing clips at intermediate members should alternate orientation to retain the glass.

Glazing

STEP 6

Install setting chairs and setting blocks for upper lites

- A. Install P1677 setting chair and P1680 setting blocks at quarter points or per approved shop drawings. Fig. 1.
- B. Install upper lites and repeat steps 4 & 5



STEP 7

Install face covers

- A. Glaze face covers with P2183 glazing gasket
- B. Install face covers on the exterior of the frame.
- C. vertical covers will run through to allow water to drain from the system.

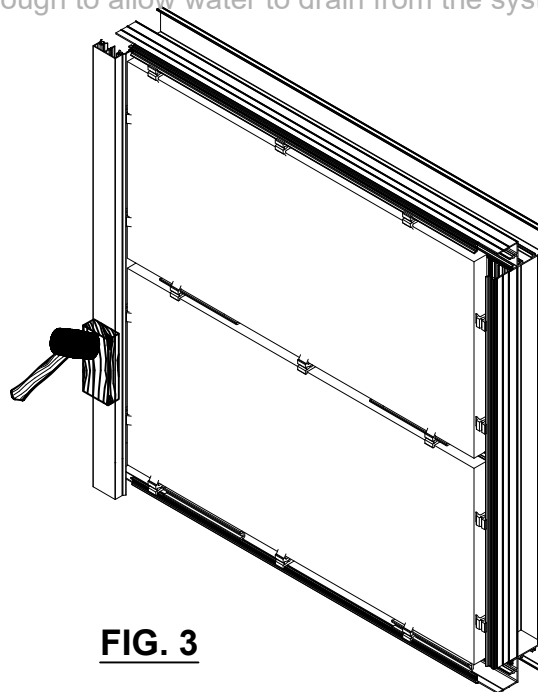


FIG. 3