



STEELBUILT
CURTAINWALL® SYSTEMS

Architectural Specification Manual
45 mm System

STEELBUILT CURTAINWALL® SYSTEMS

Envision expansive window openings, with more glass and less frame. Imagine a curtainwall system that only requires frame profiles one-third the size of traditional aluminum systems.

Now that dream is a reality with the new SteelBuilt Curtainwall® Systems from Technical Glass Products (TGP). SteelBuilt Curtainwall Systems give you all the advantage of steel: greater strength, superior performance and improved aesthetics. Utilized throughout Europe for many years, SteelBuilt Curtainwall Systems have been tested to North American standards and are now available to open tremendous new design opportunities.

For specifications, photographs and additional information contact:

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CSI-SPECIFICATION

Full copies of our detail drawings and CSI format Specifications can be downloaded from our Web site or obtained from our office.

This Architectural Specification Manual provides a summary of the specification, design and applications that can be achieved with SteelBuilt Curtainwall® Systems. Many special finishes and components are available, please consult Technical Glass Products.

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LAWS AND BUILDING AND SAFETY CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, WINDOW, AND CURTAIN WALL PRODUCTS VARY WIDELY. TGP DOES NOT CONTROL THE SELECTION OF PRODUCT CONFIGURATIONS, OPERATING HARDWARE, OR GLAZING MATERIALS, AND ASSUMES NO RESPONSIBILITY THEREFOR.

Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses () are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:

- m – meter
- cm – centimeter
- mm – millimeter
- s – second
- Pa – pascal
- MPa – megapascal

TGP reserves the right to change configurations without prior notice when deemed necessary for product improvement.

FEATURES

- Offers all the advantage of steel: greater strength, superior performance and improved aesthetics
- Narrow sight line of 1-3/4" (45 mm) or 2-3/8" (60 mm)
- Variety of system depths
- Infill options up to 2"
- Stainless steel or anodized cover caps available
- Painted finishes in standard and custom choices
- Concealed fastener joinery creates smooth, monolithic appearance
- Shear block fabrication method
- Compatible with SteelBuilt Window & Doors® Systems
- Silicone compatible glazing materials for long-lasting seals

Optional Features

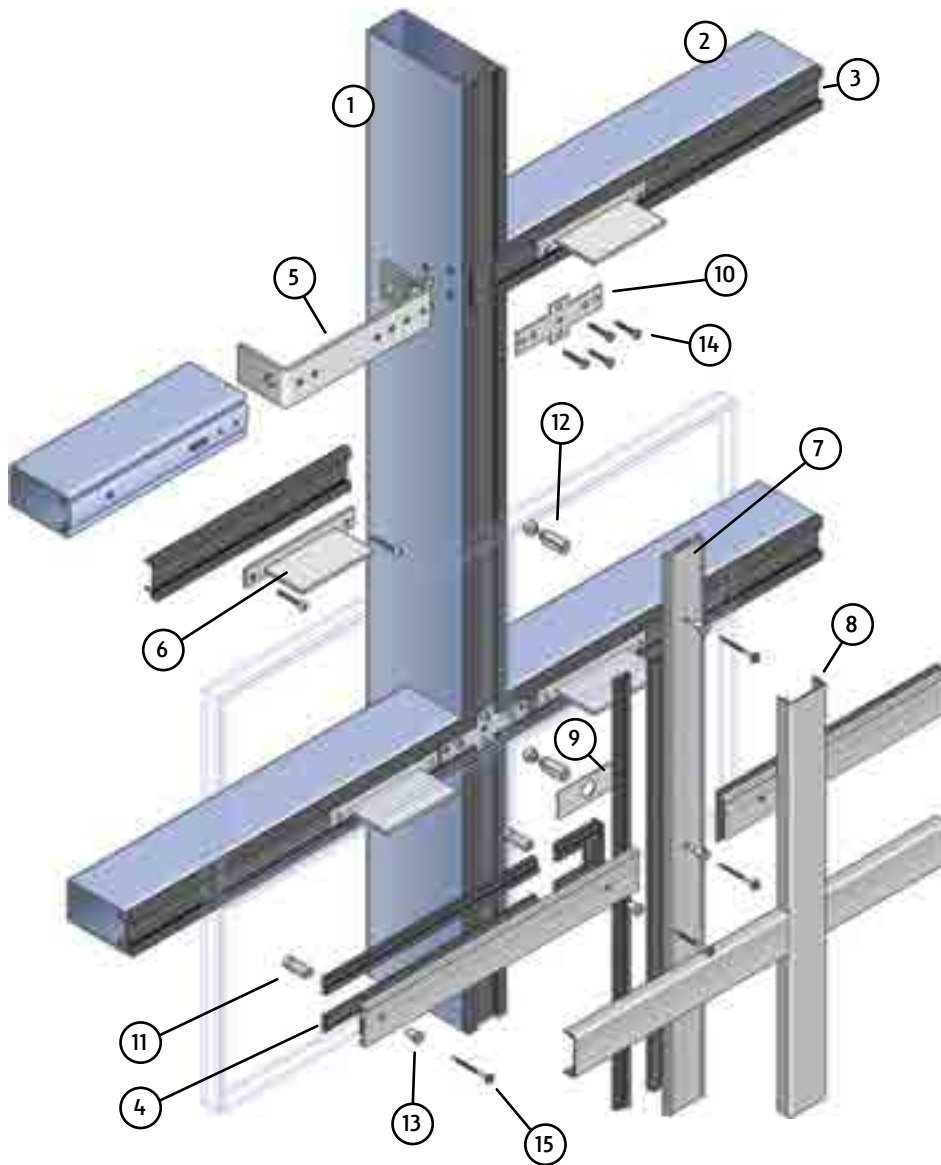
- Stainless steel cover caps
- Custom aluminum cover caps available
- Steel reinforcing available

Product Applications

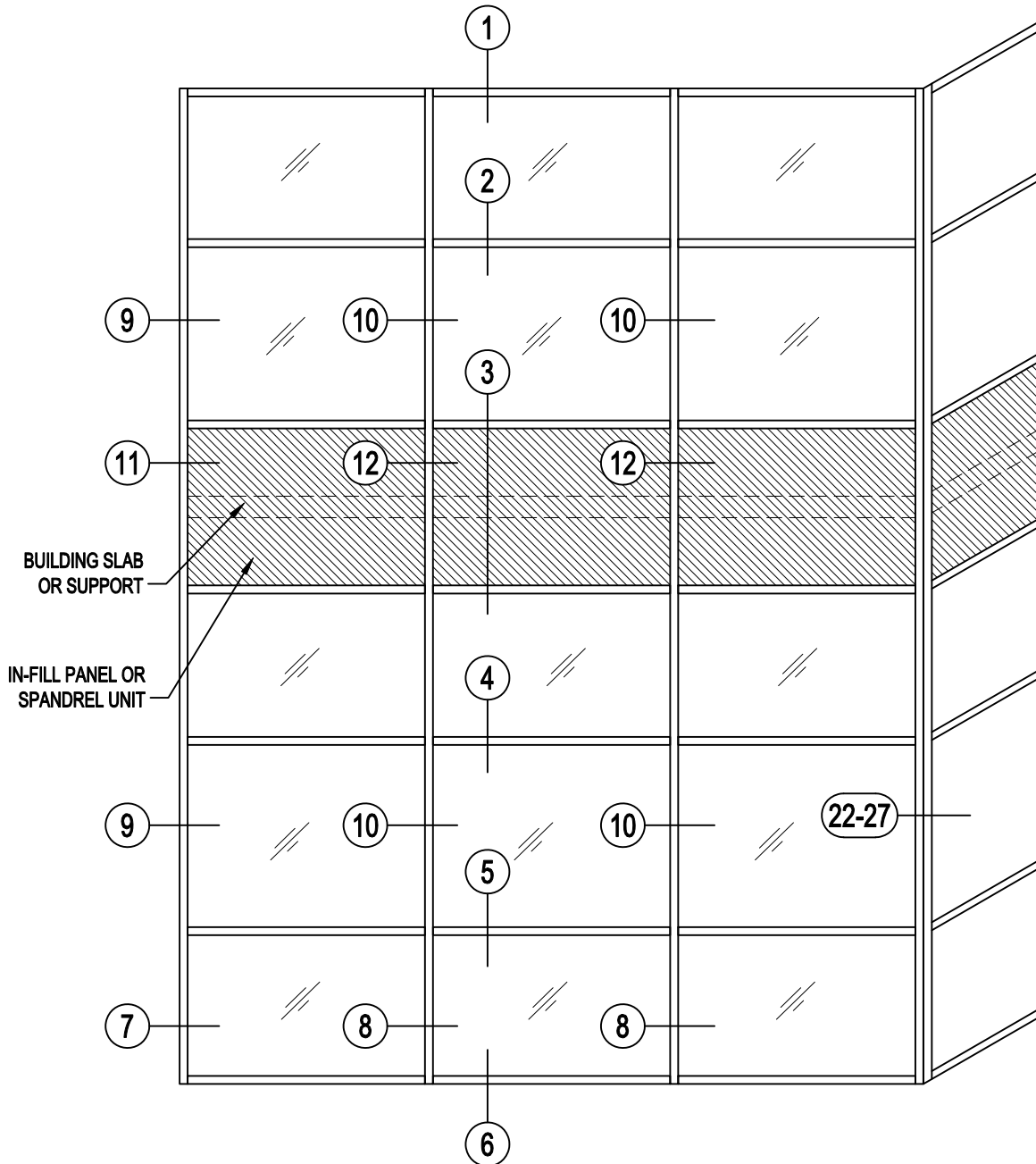
- Ideal for low to mid-rise applications where large glass and narrow sight lines are desired
- Ideal choice for high span applications
- Coastal environments that benefit from the durability of stainless steel

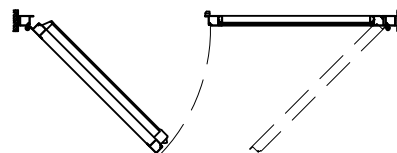
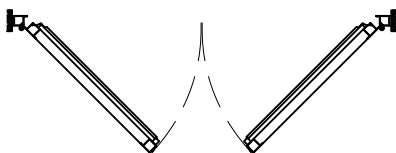
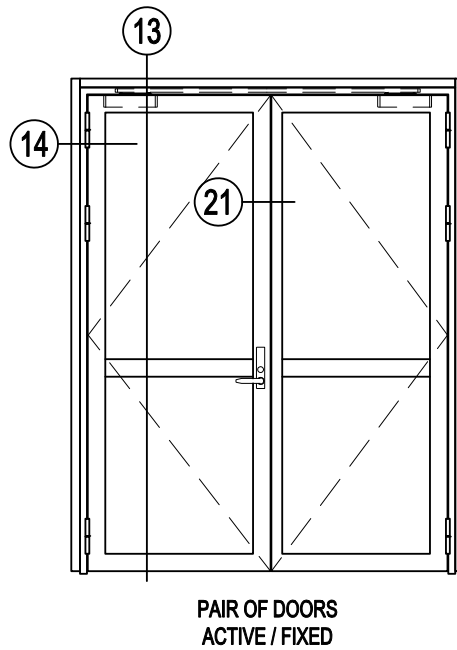
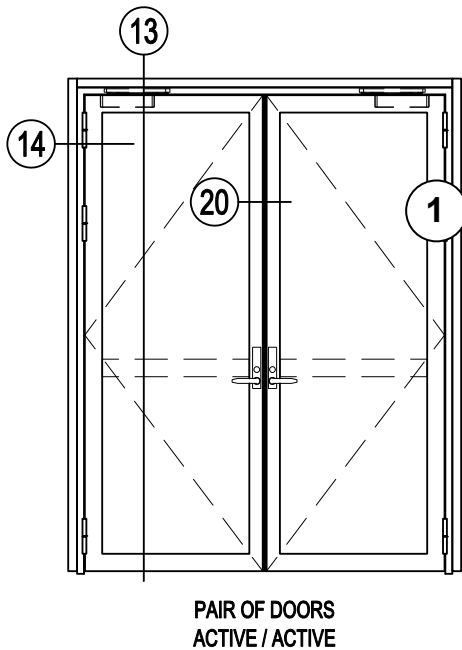
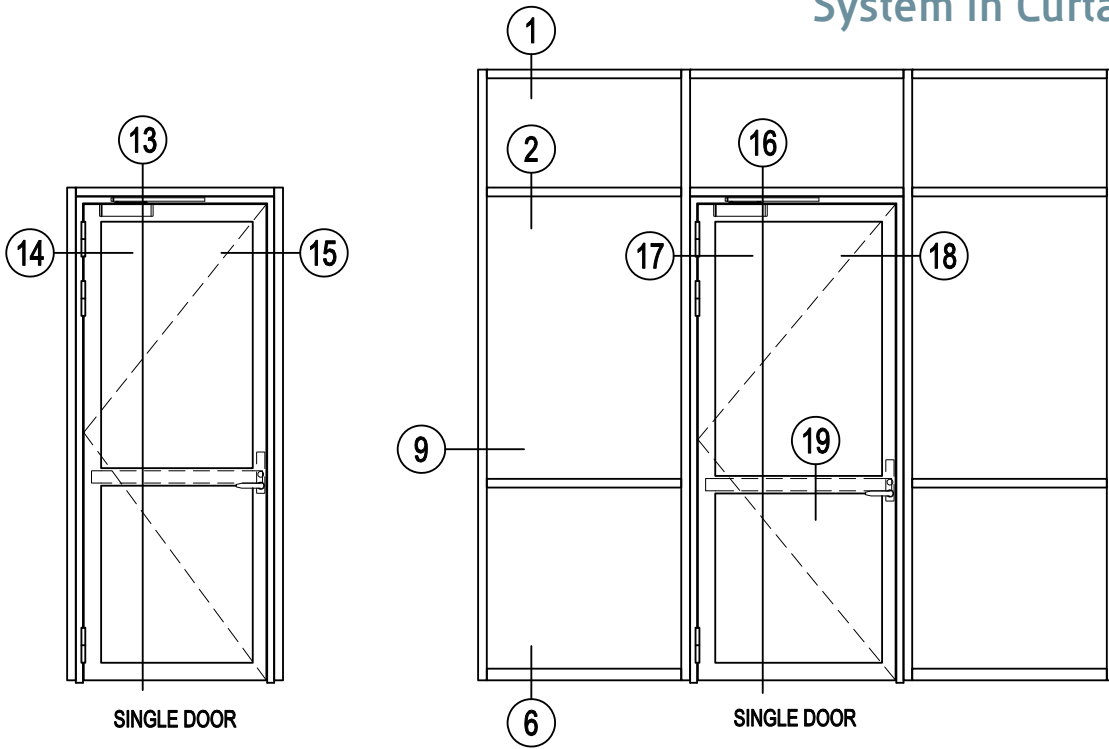


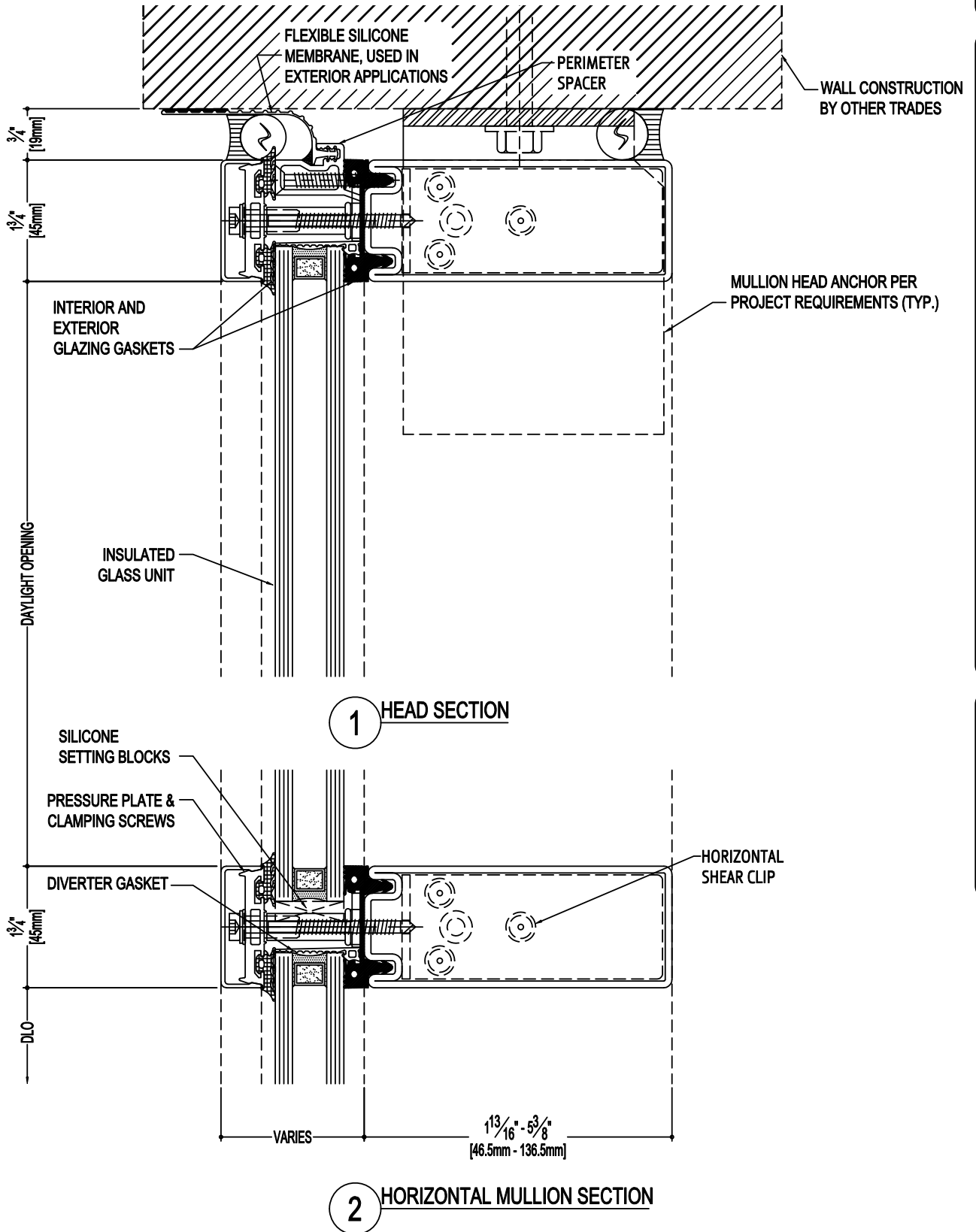
45 mm SYSTEM

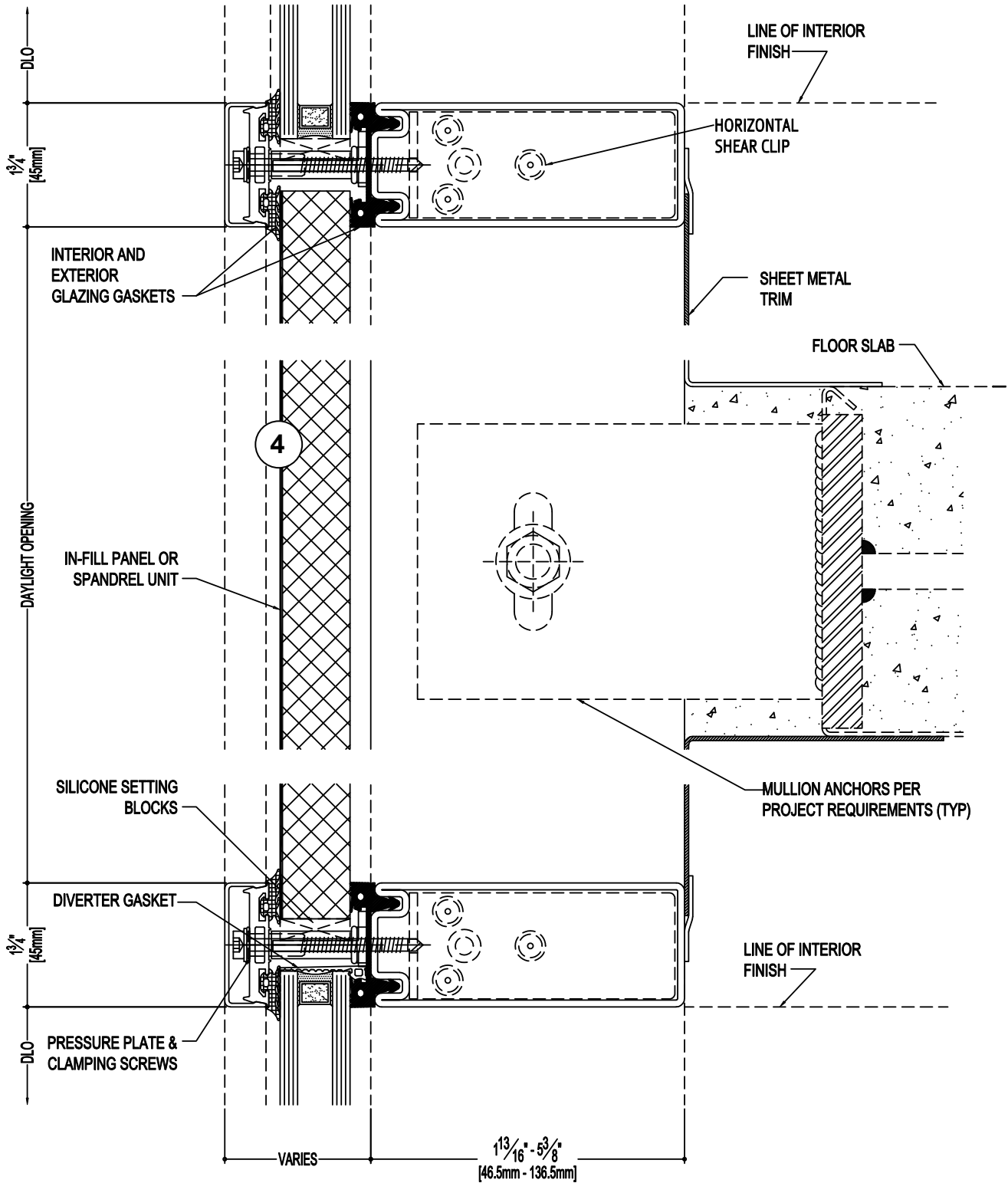


- | | |
|------------------------------|-------------------------|
| 1. Vertical Mullion | 9. Intersection Cover |
| 2. Horizontal Mullion | 10. Connecting Plate |
| 3. Full-width Mullion Gasket | 11. Spacer |
| 4. Front Gasket | 12. Sealing Washer |
| 5. Shear Block | 13. Guide Bushing |
| 6. Glass Setting Pad | 14. Fastening Screw |
| 7. Pressure Plate | 15. Self Drilling Screw |
| 8. Cover Cap | |

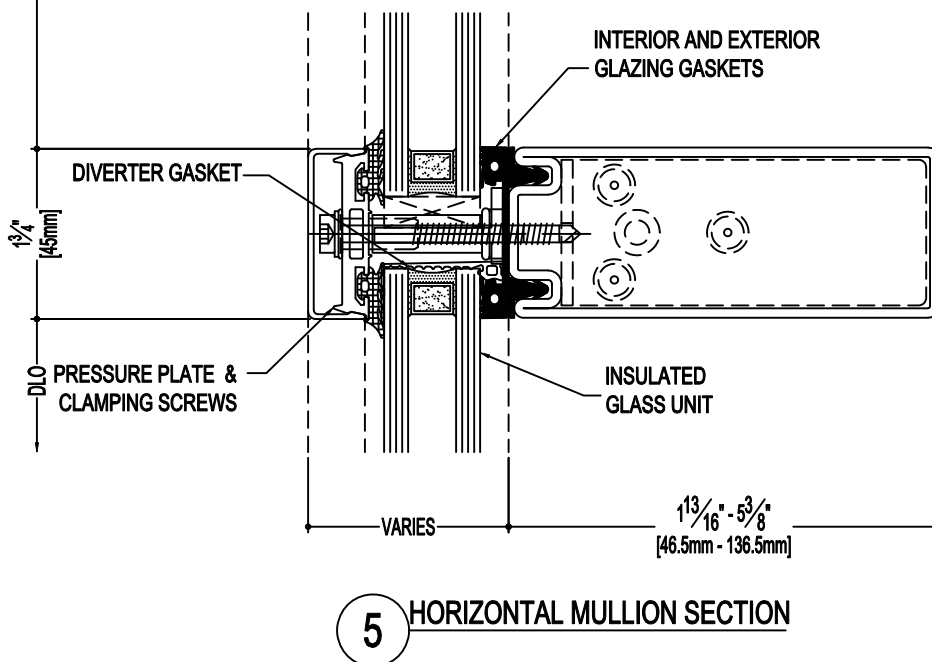
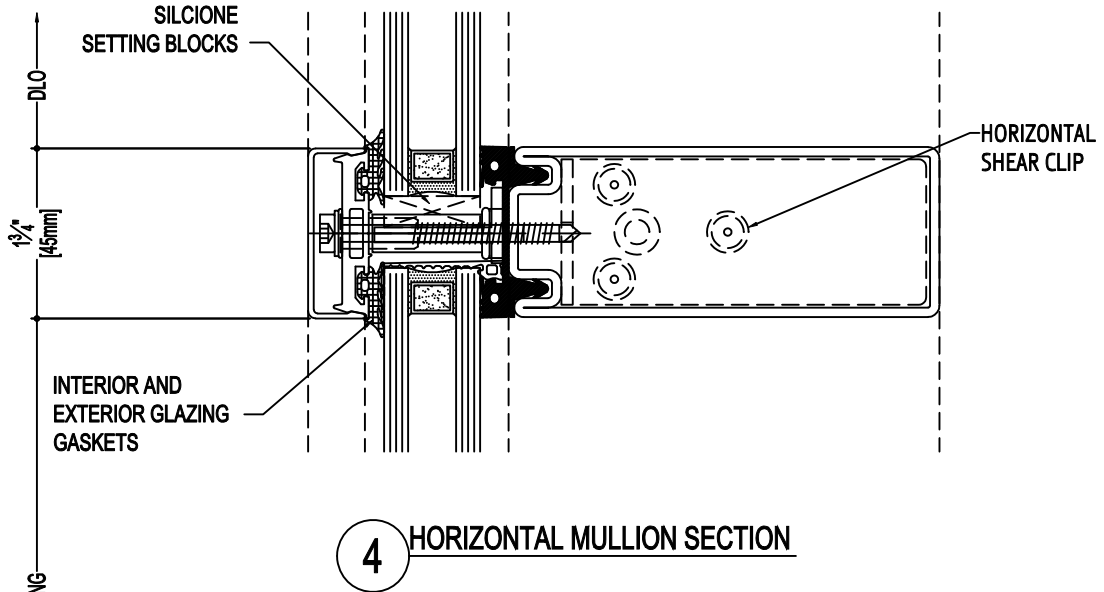


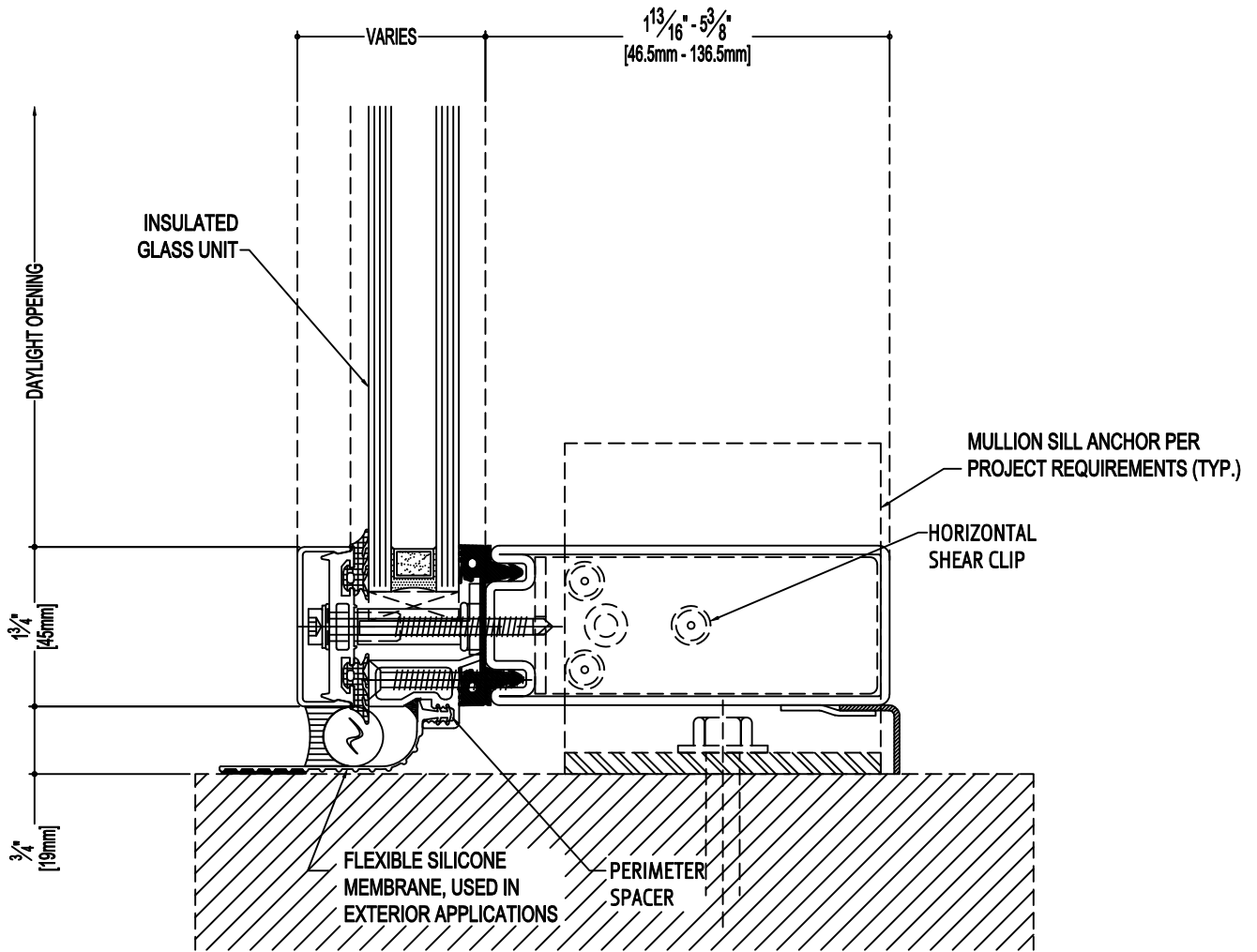




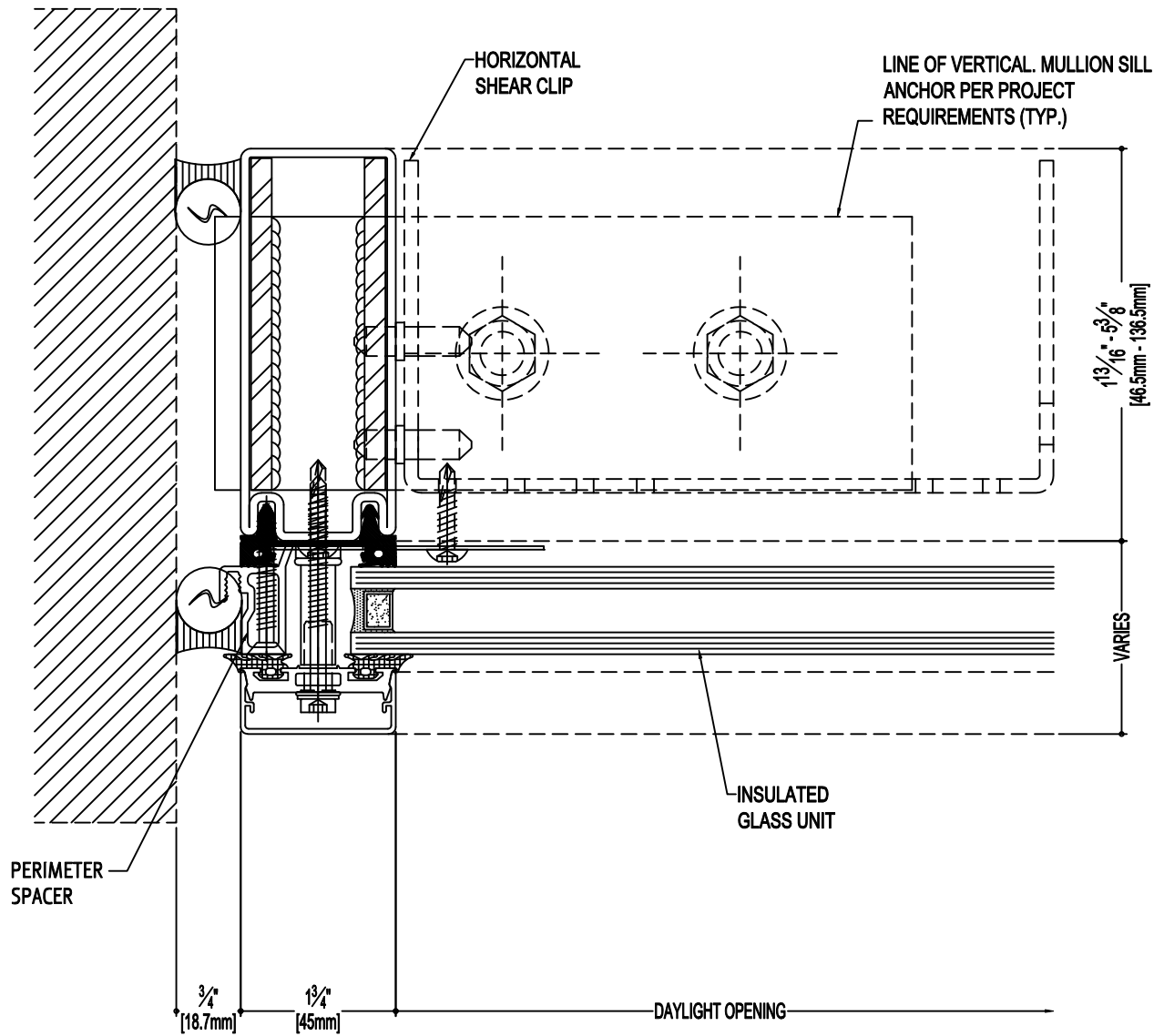


3 HORIZONTAL MULLION SECTION AT SLAB EDGE

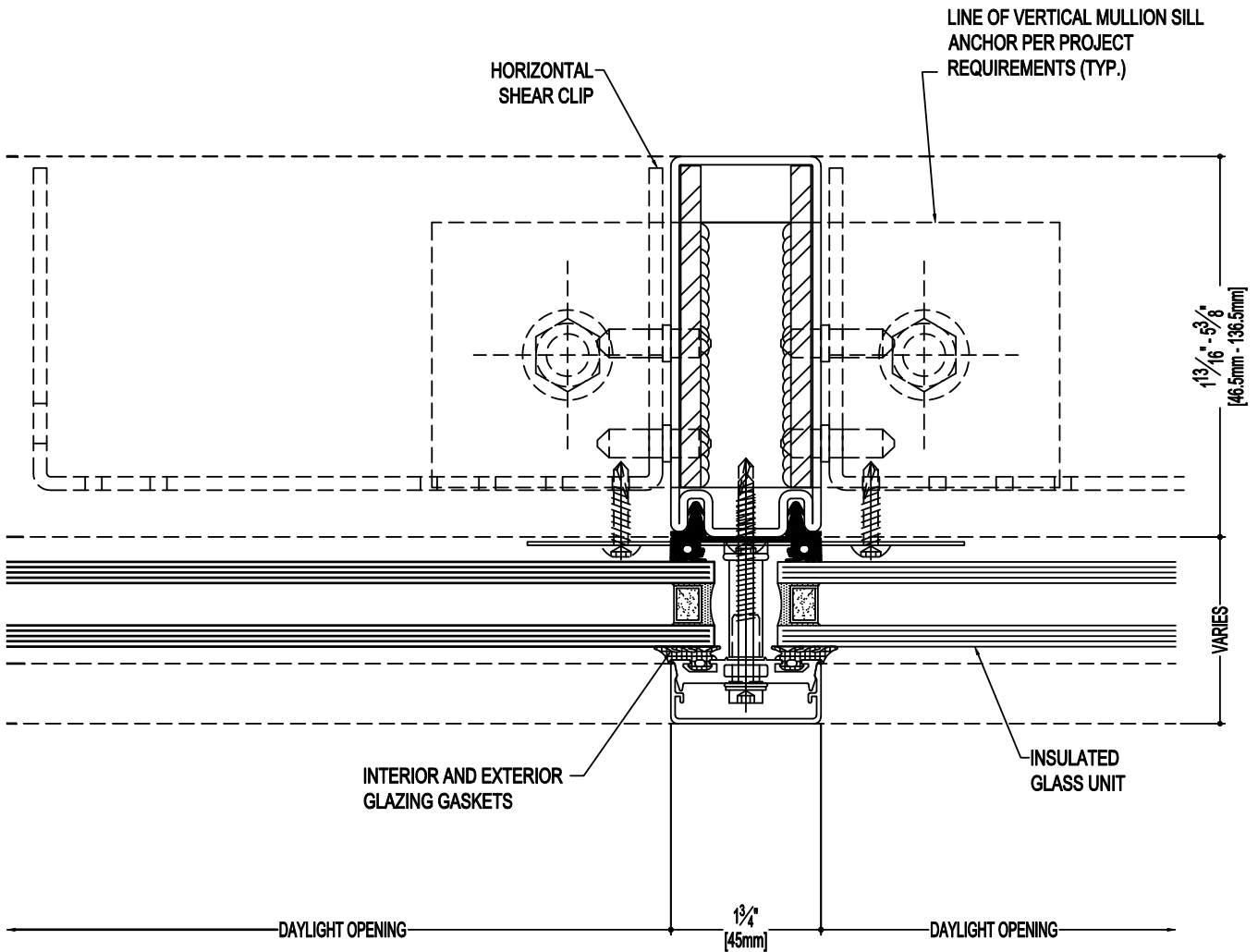




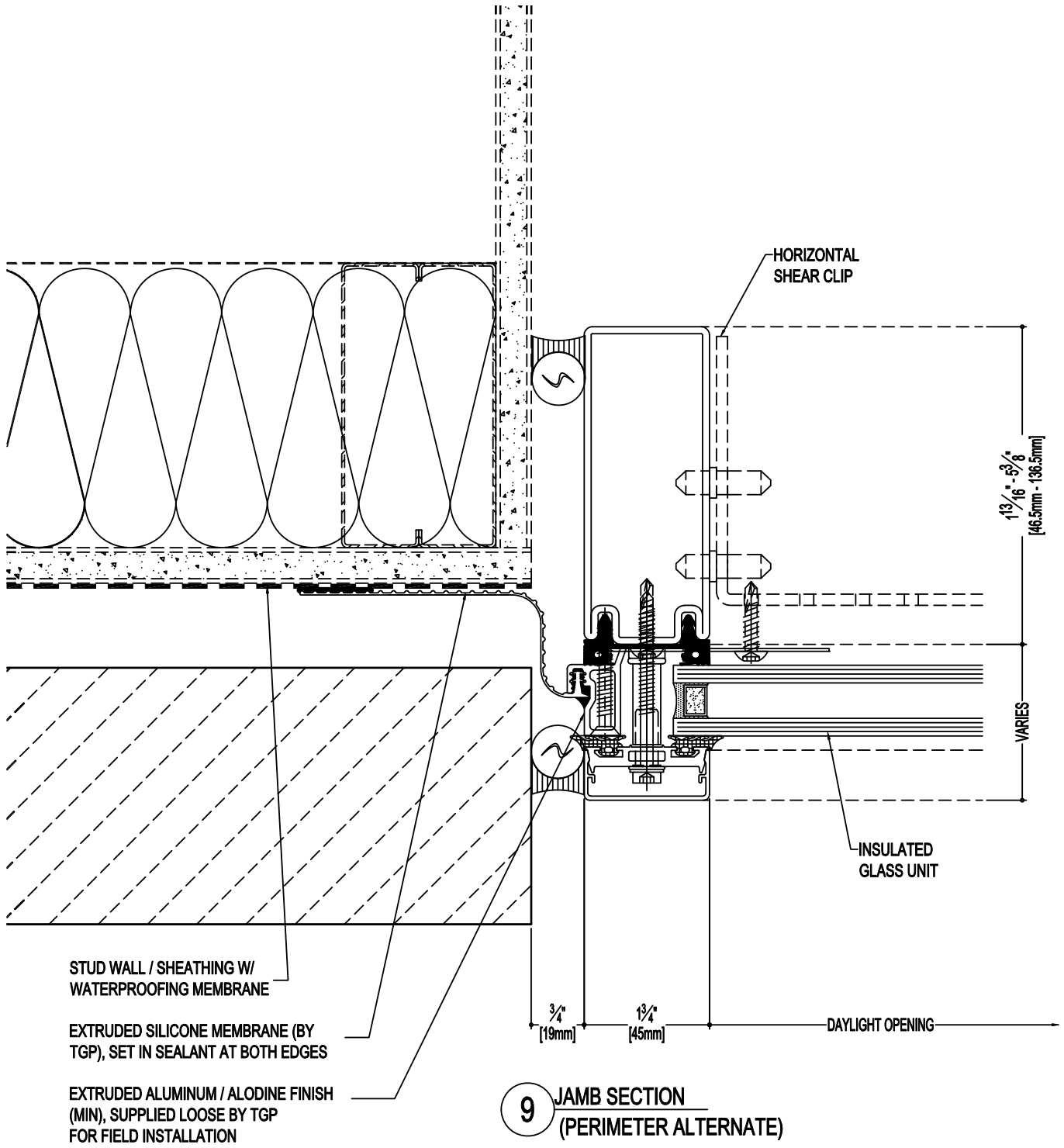
6 SILL SECTION

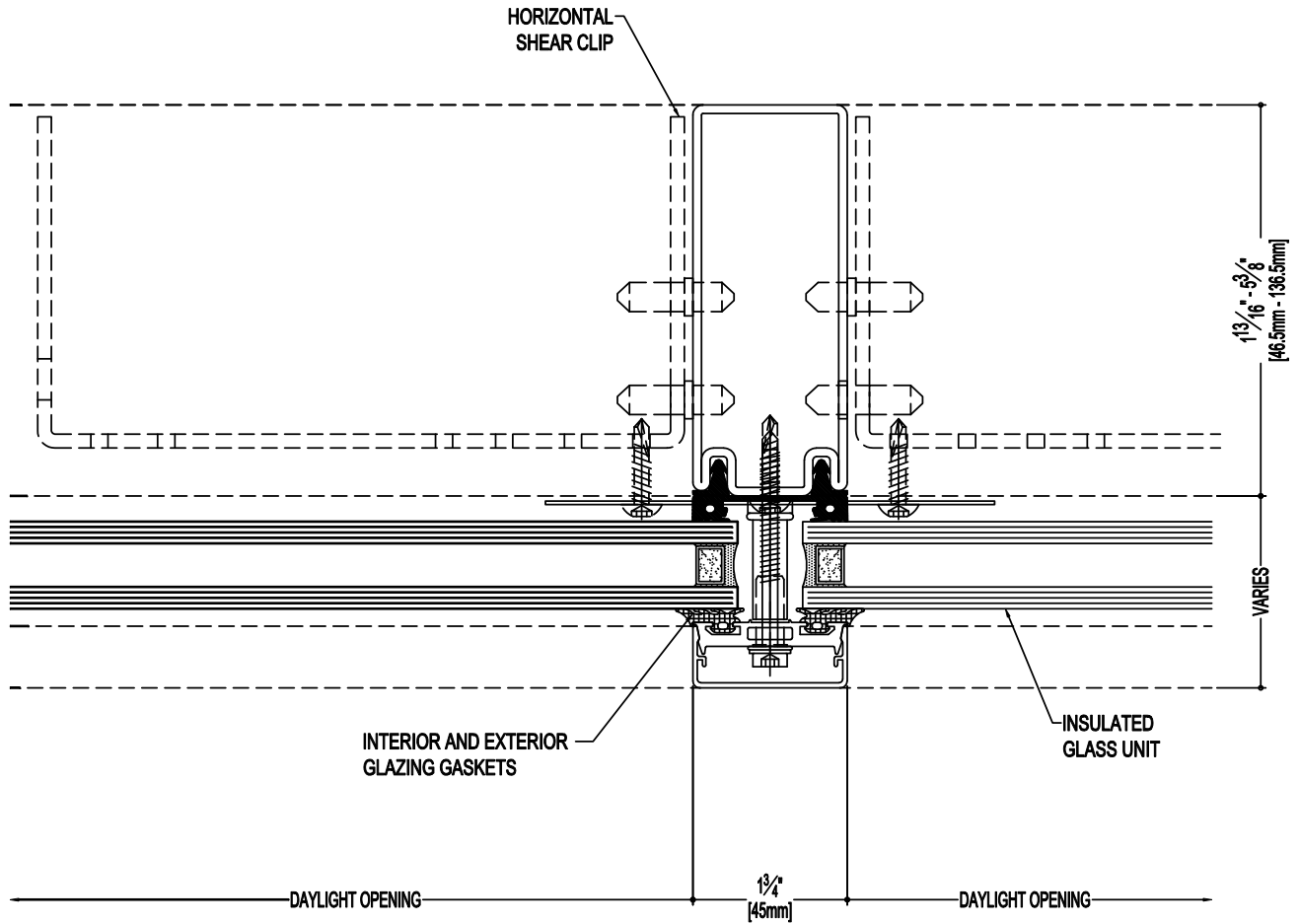


7 JAMB SECTION
SHOWN AT SILL

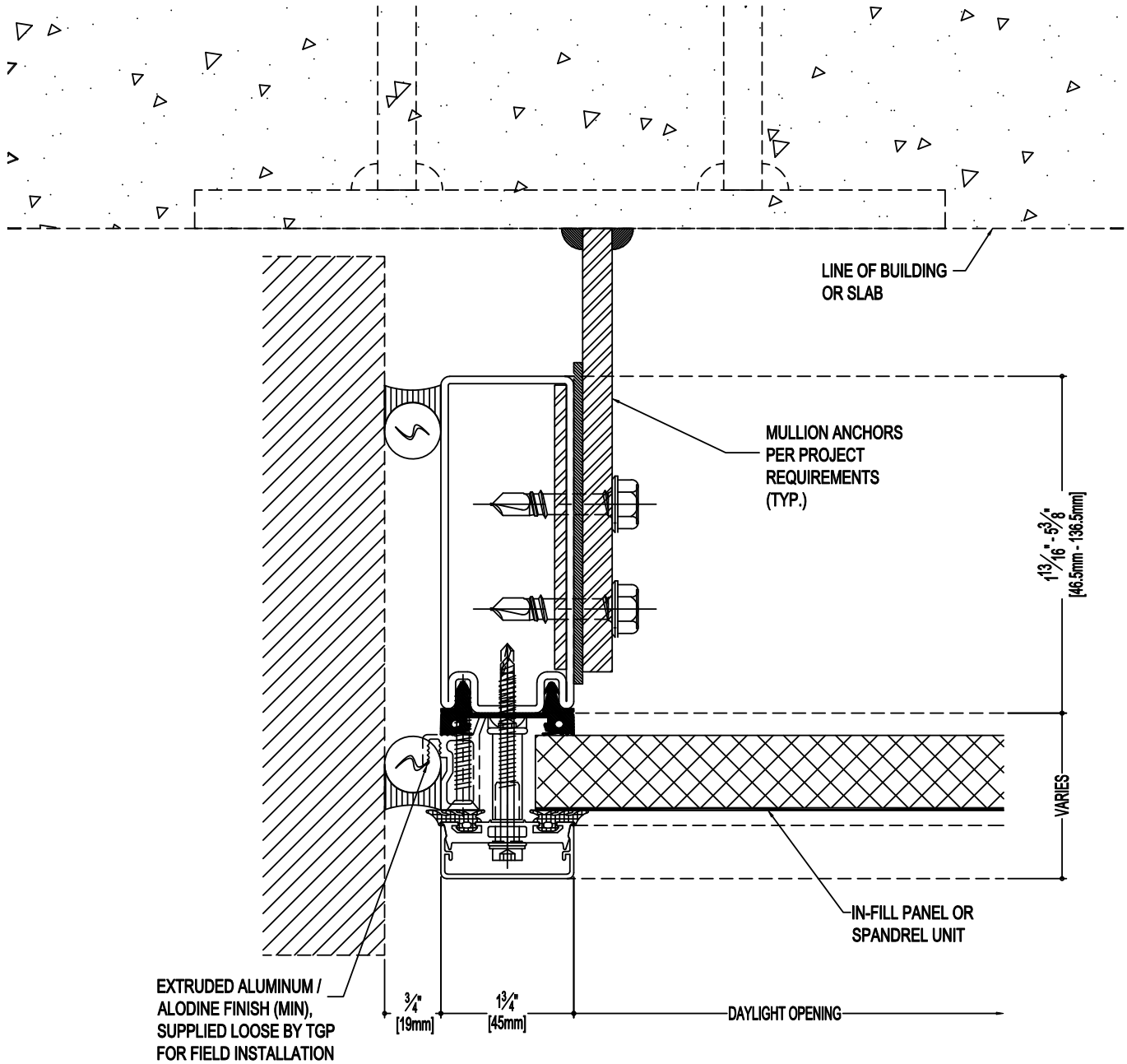


8 VERTICAL MULLION SECTION
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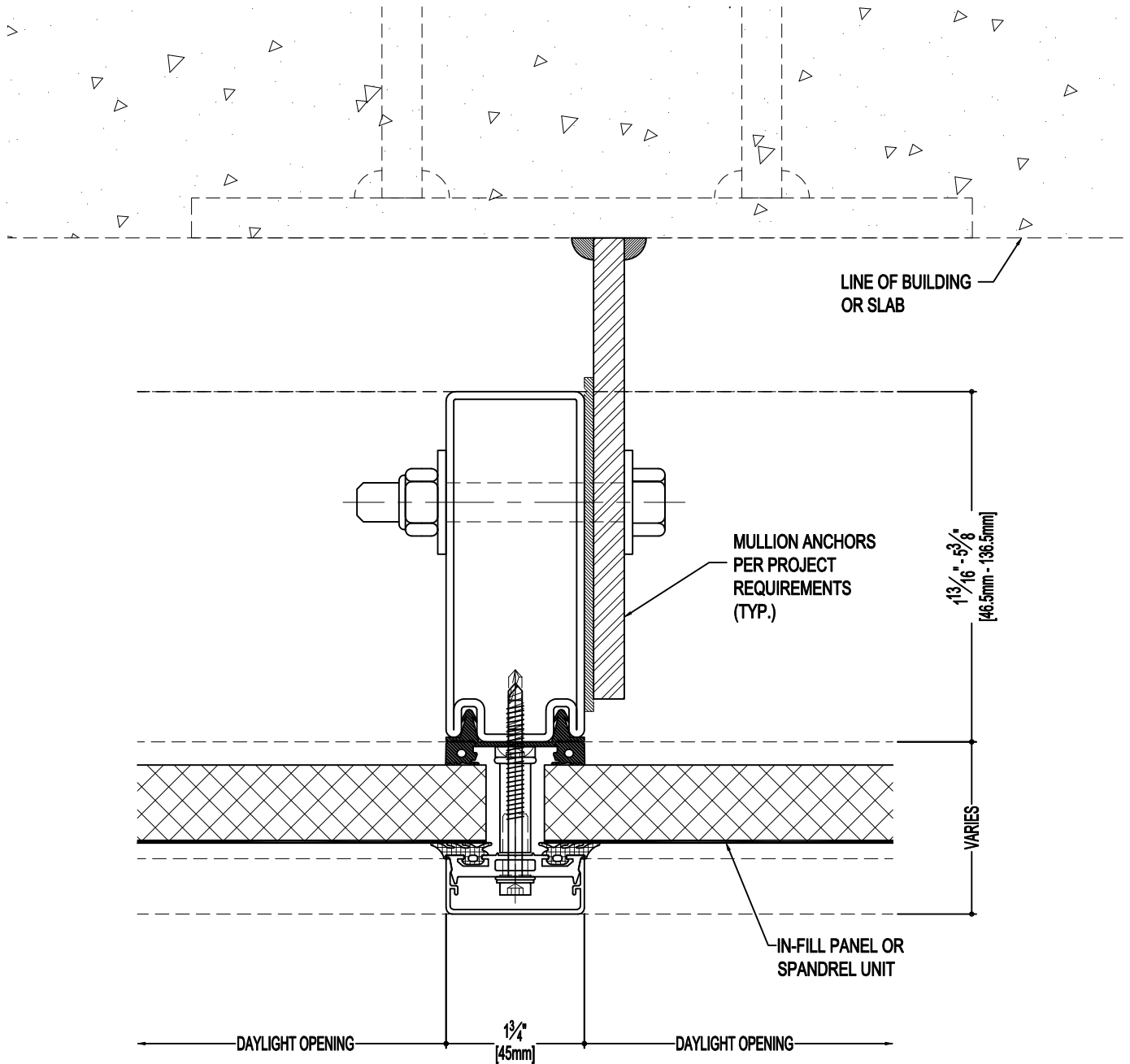




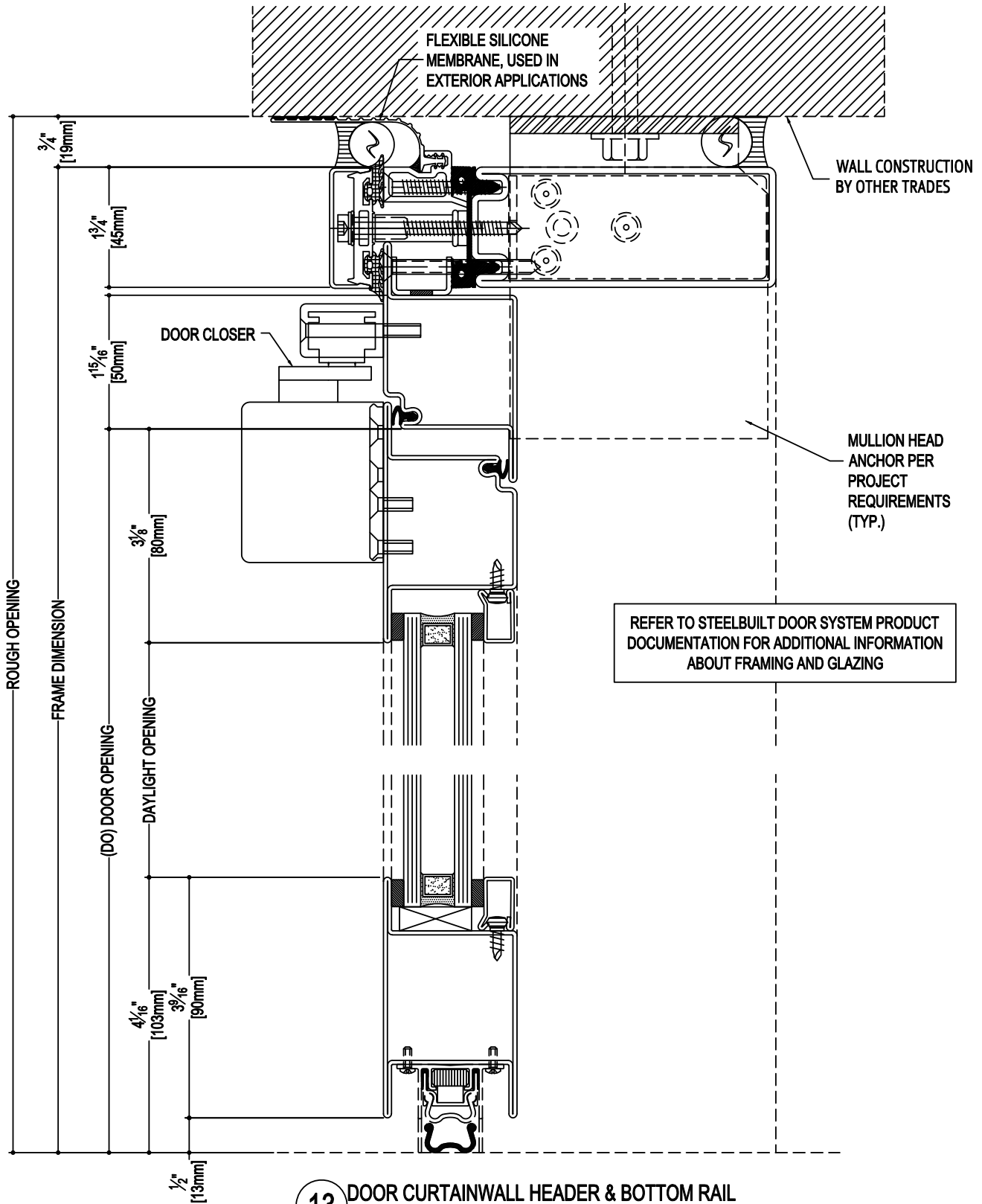
10 VERTICAL MULLION SECTION



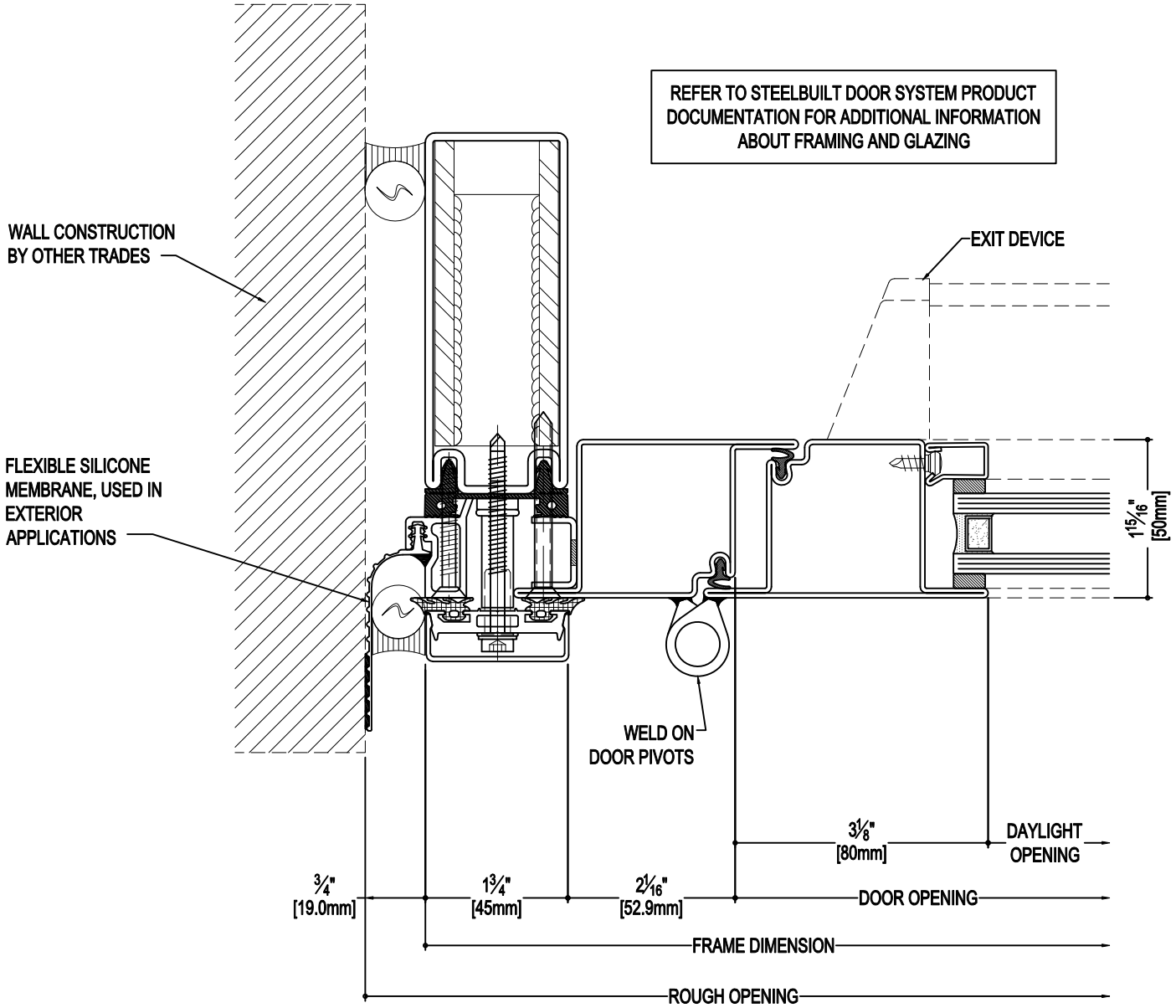
11 VERTICAL MULLION SECTION AT SLAB



12 VERTICAL MULLION SECTION AT SLAB

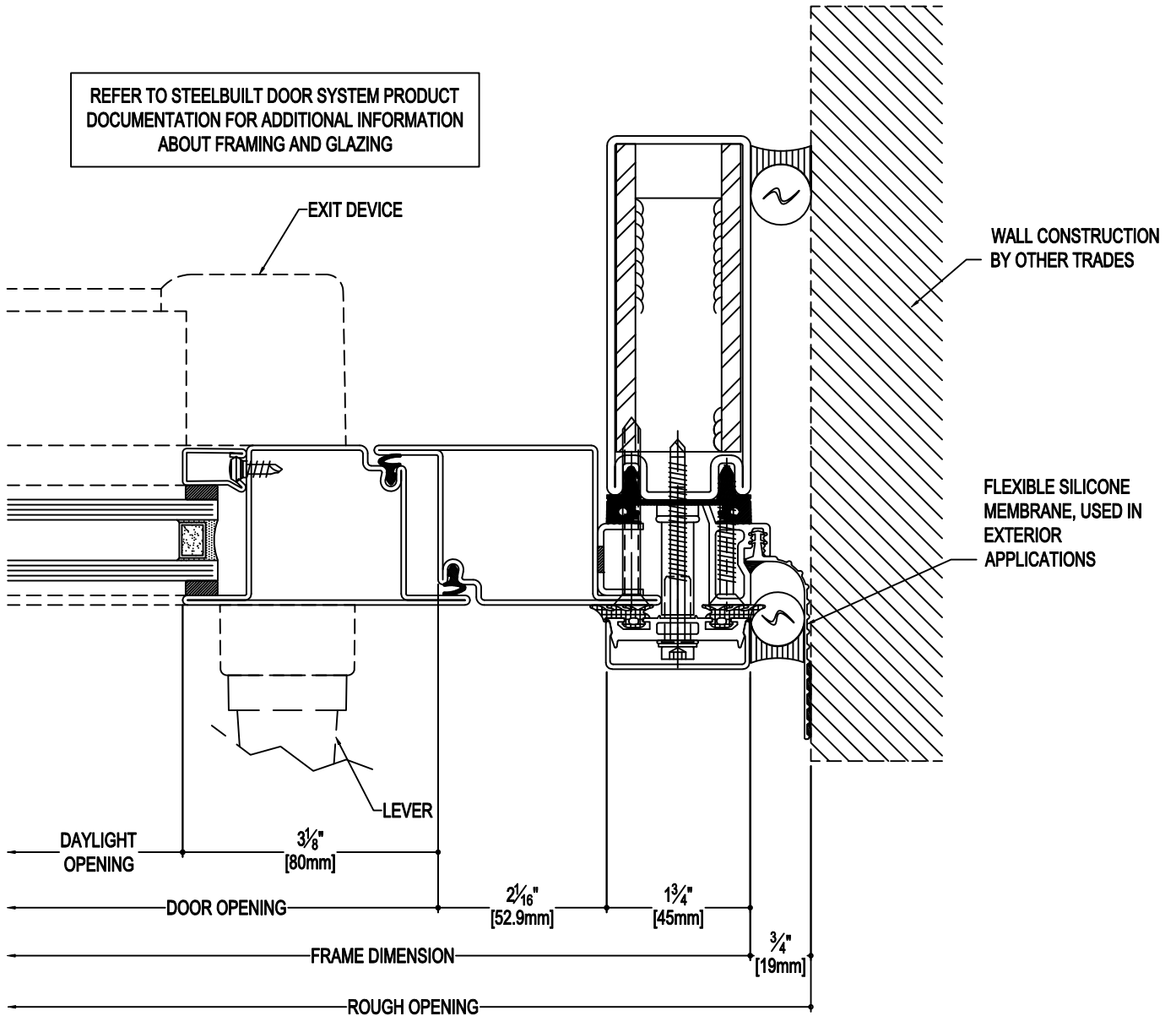


REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING

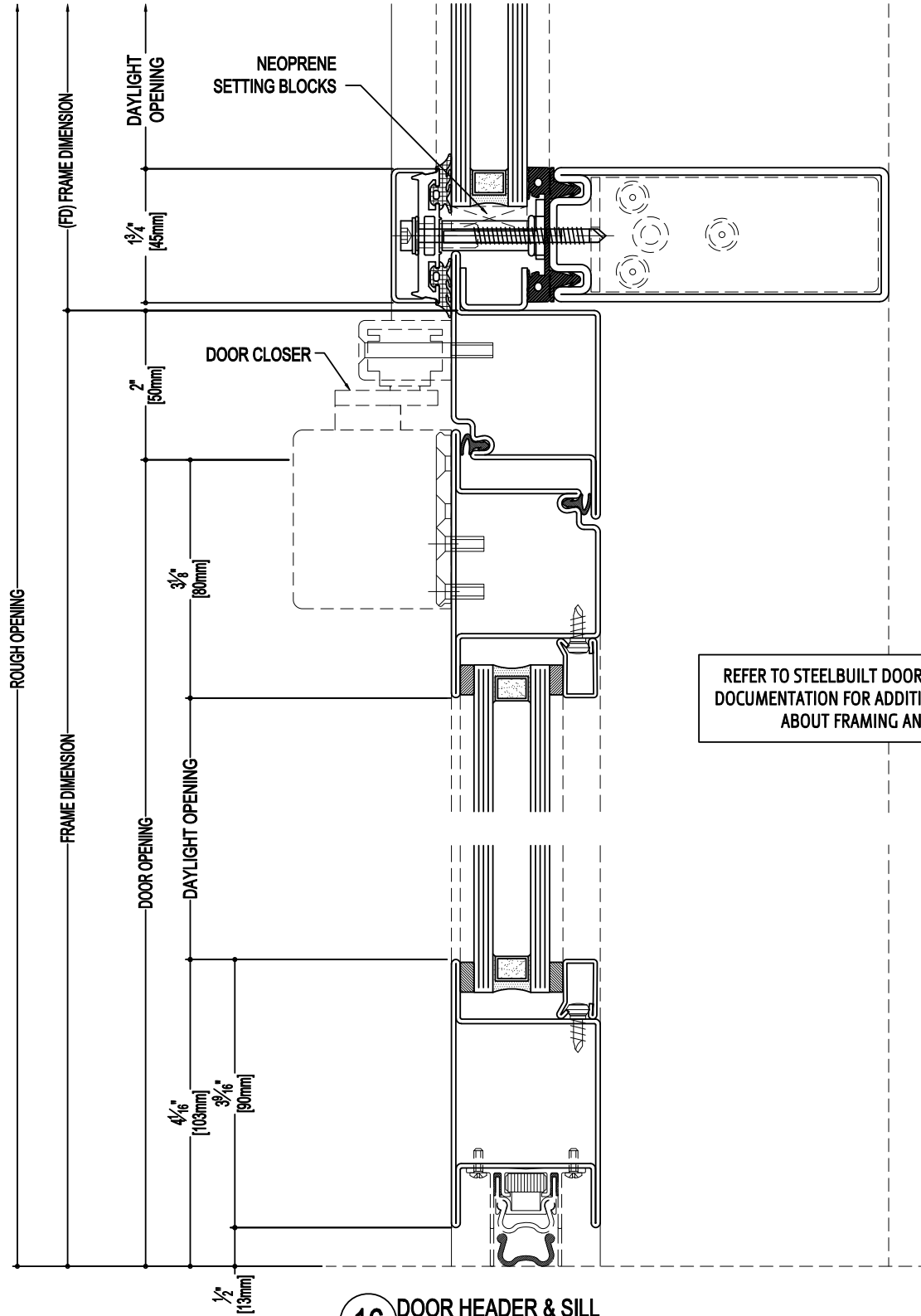


14 DOOR JAMB AT PIVOT

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING



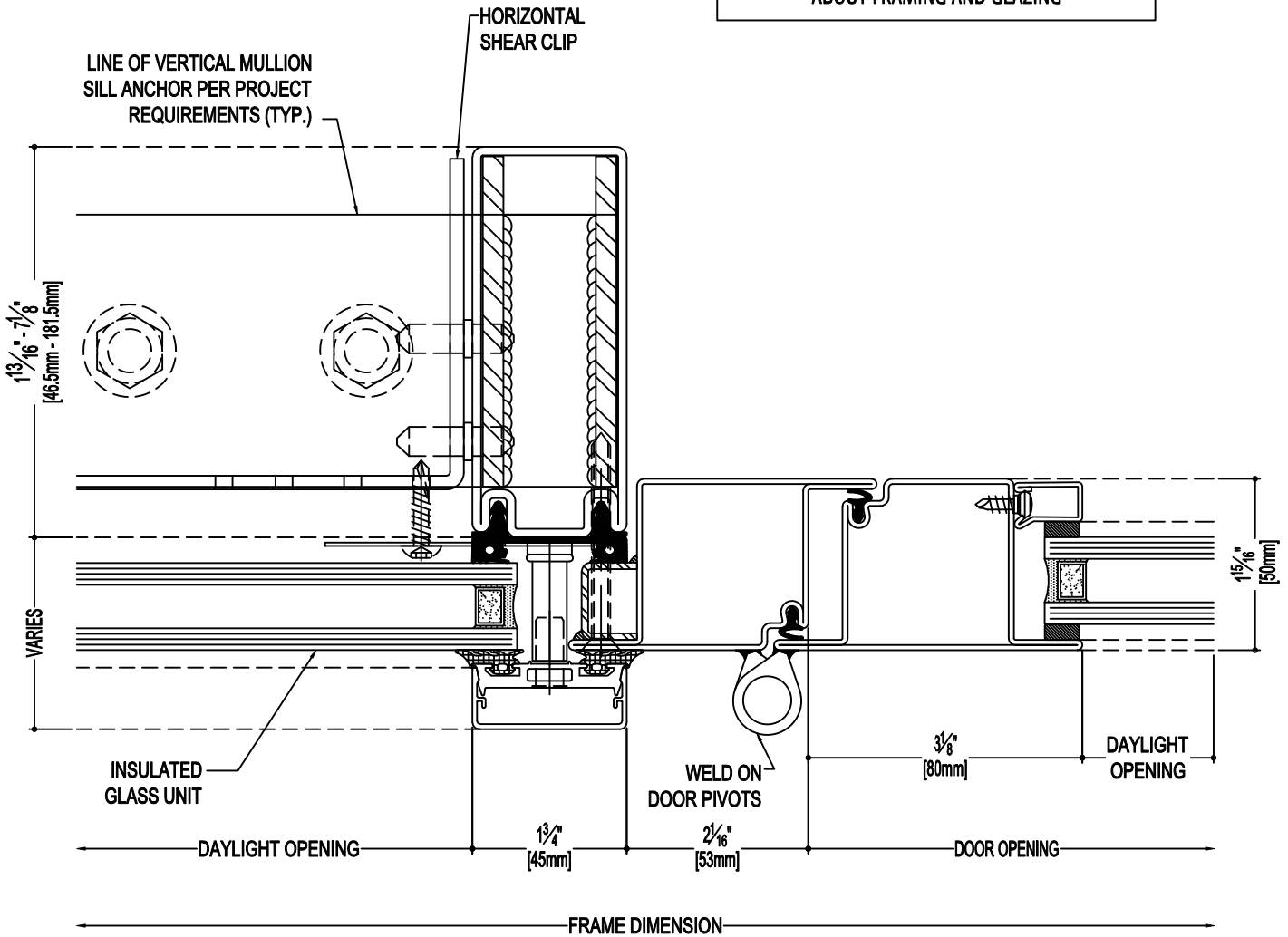
15 DOOR JAMB AT LEVER



REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING

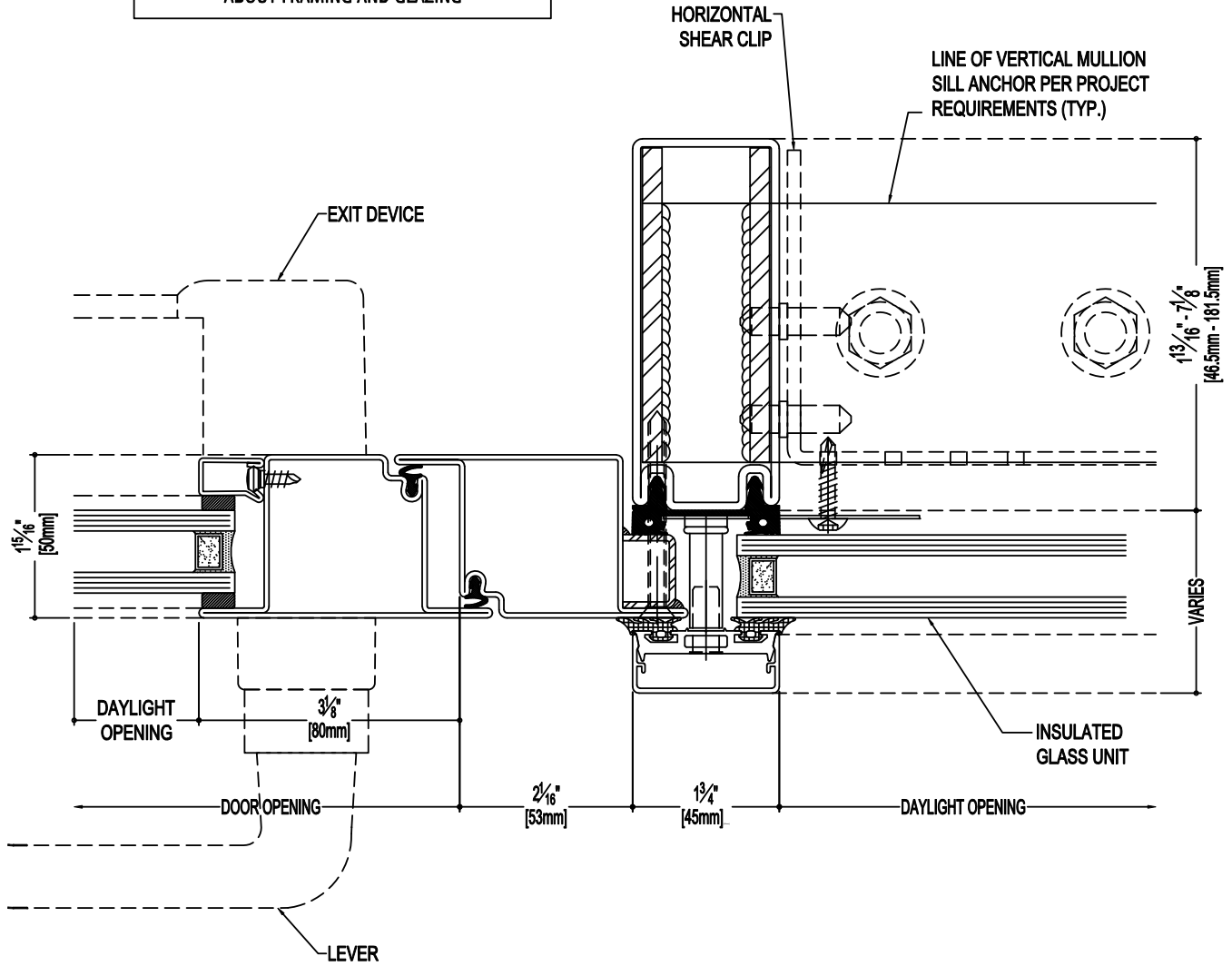
16 DOOR HEADER & SILL

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING

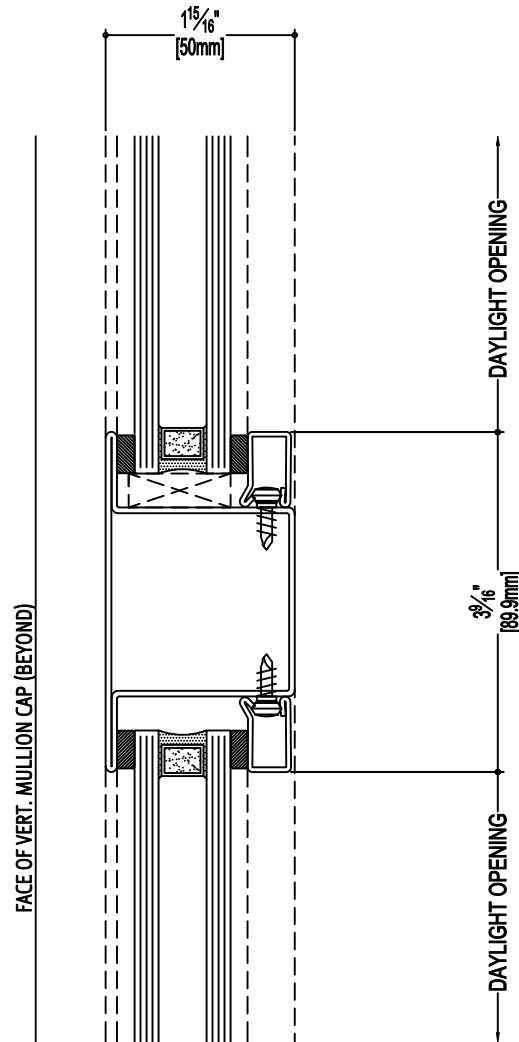


17 DOOR JAMB AT PIVOT

REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING

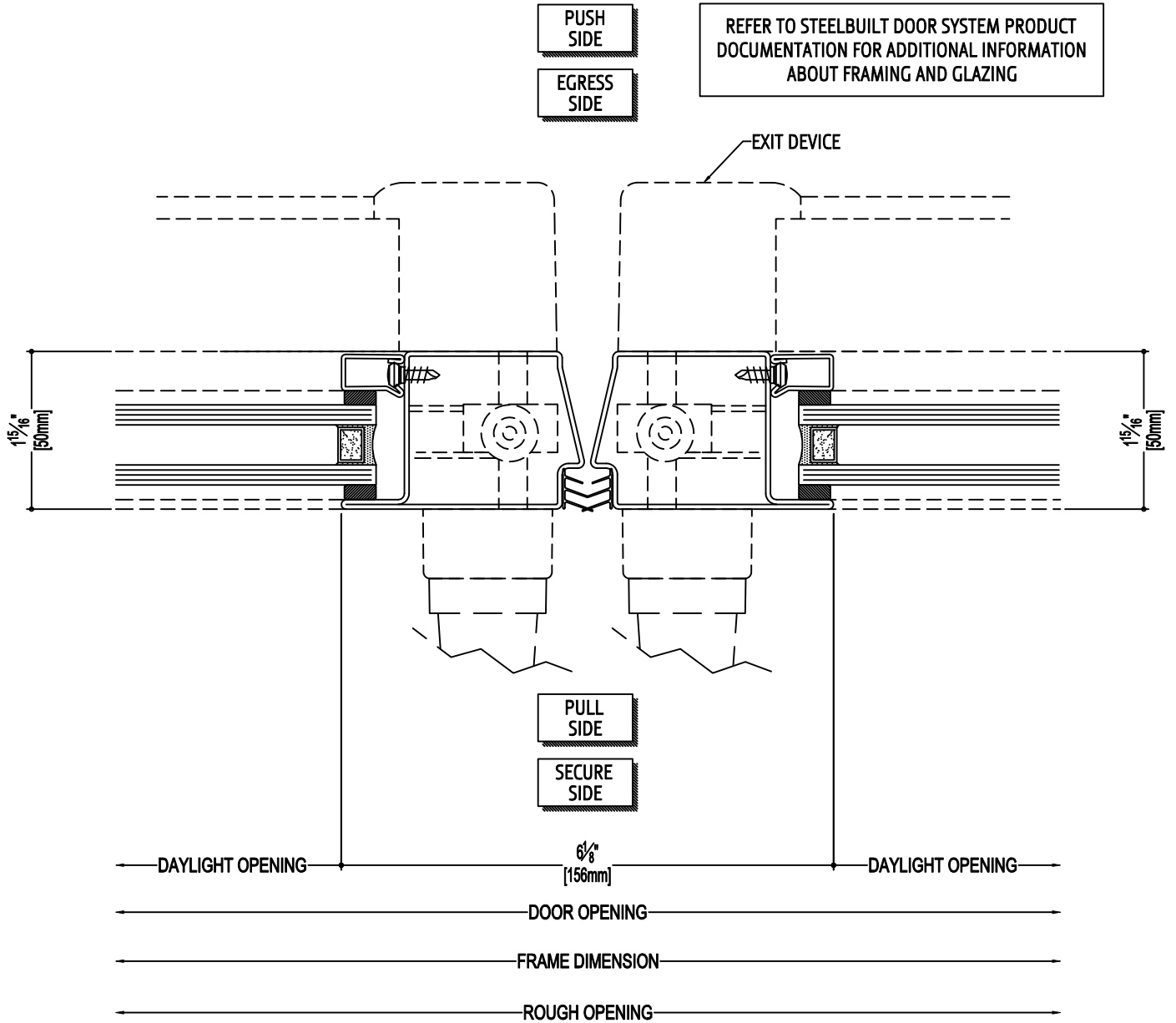


18 DOOR JAMB AT LEVER

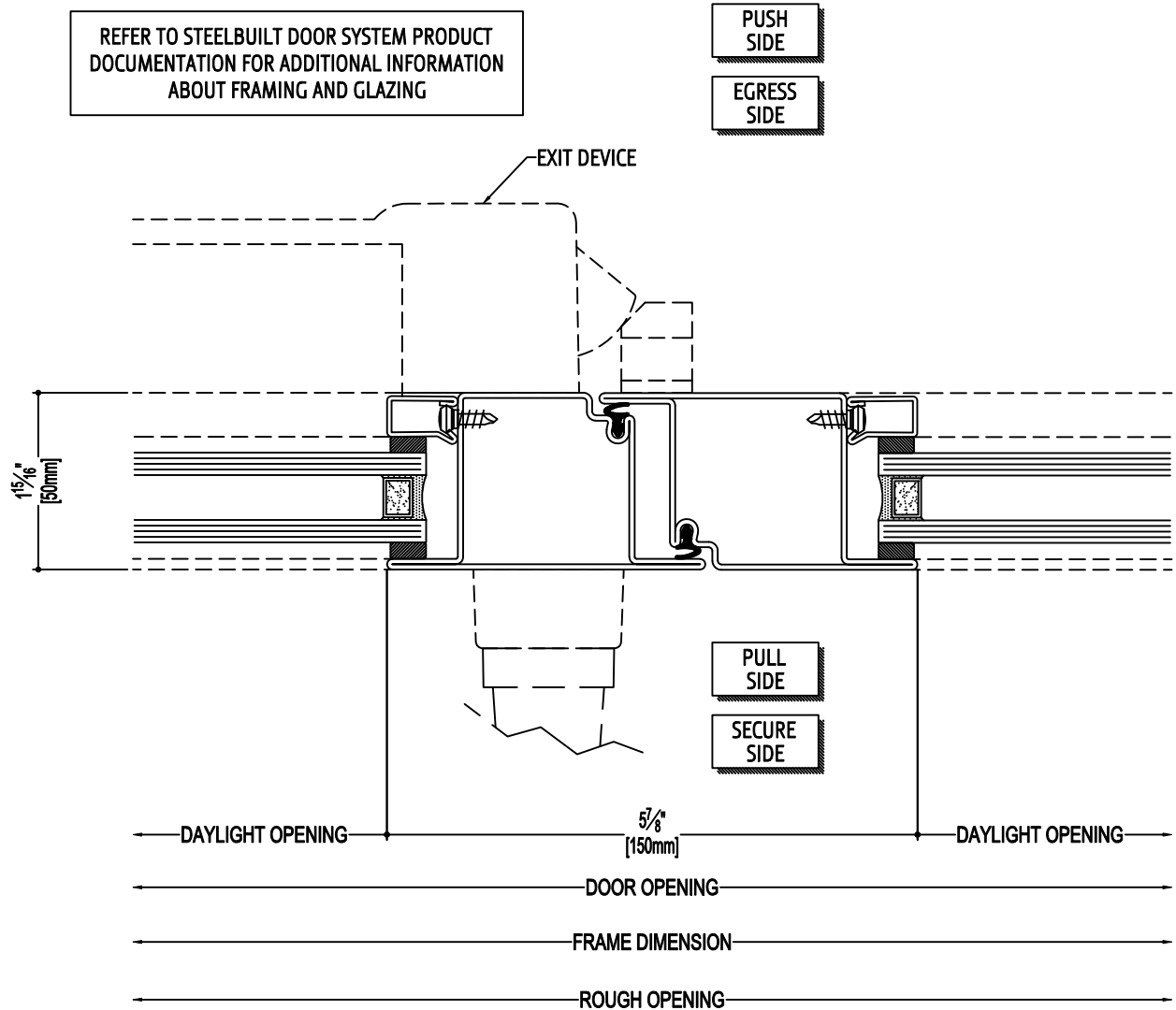


REFER TO STEELBUILT DOOR SYSTEM PRODUCT DOCUMENTATION FOR ADDITIONAL INFORMATION ABOUT FRAMING AND GLAZING

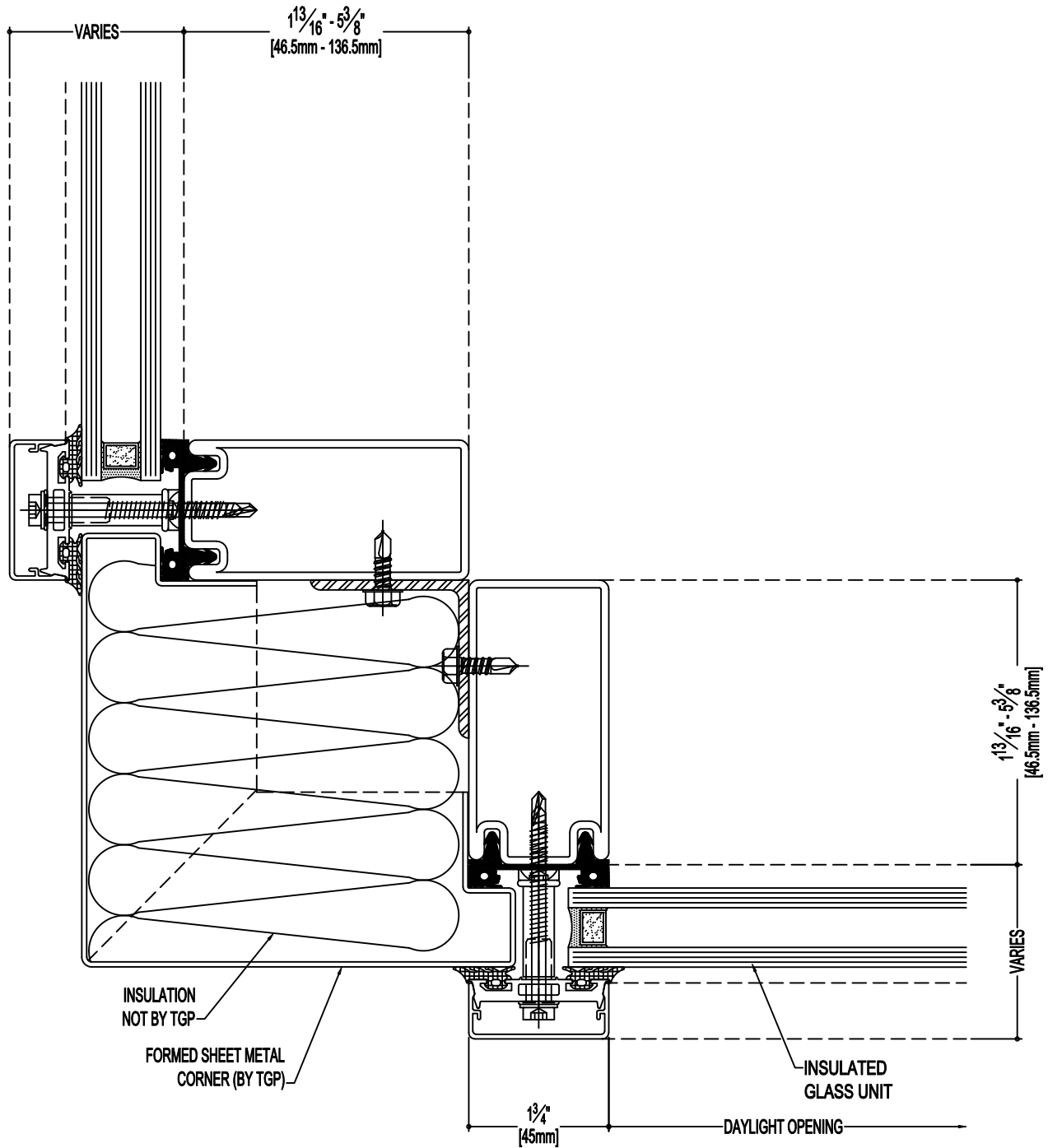
19 DOOR MULLION



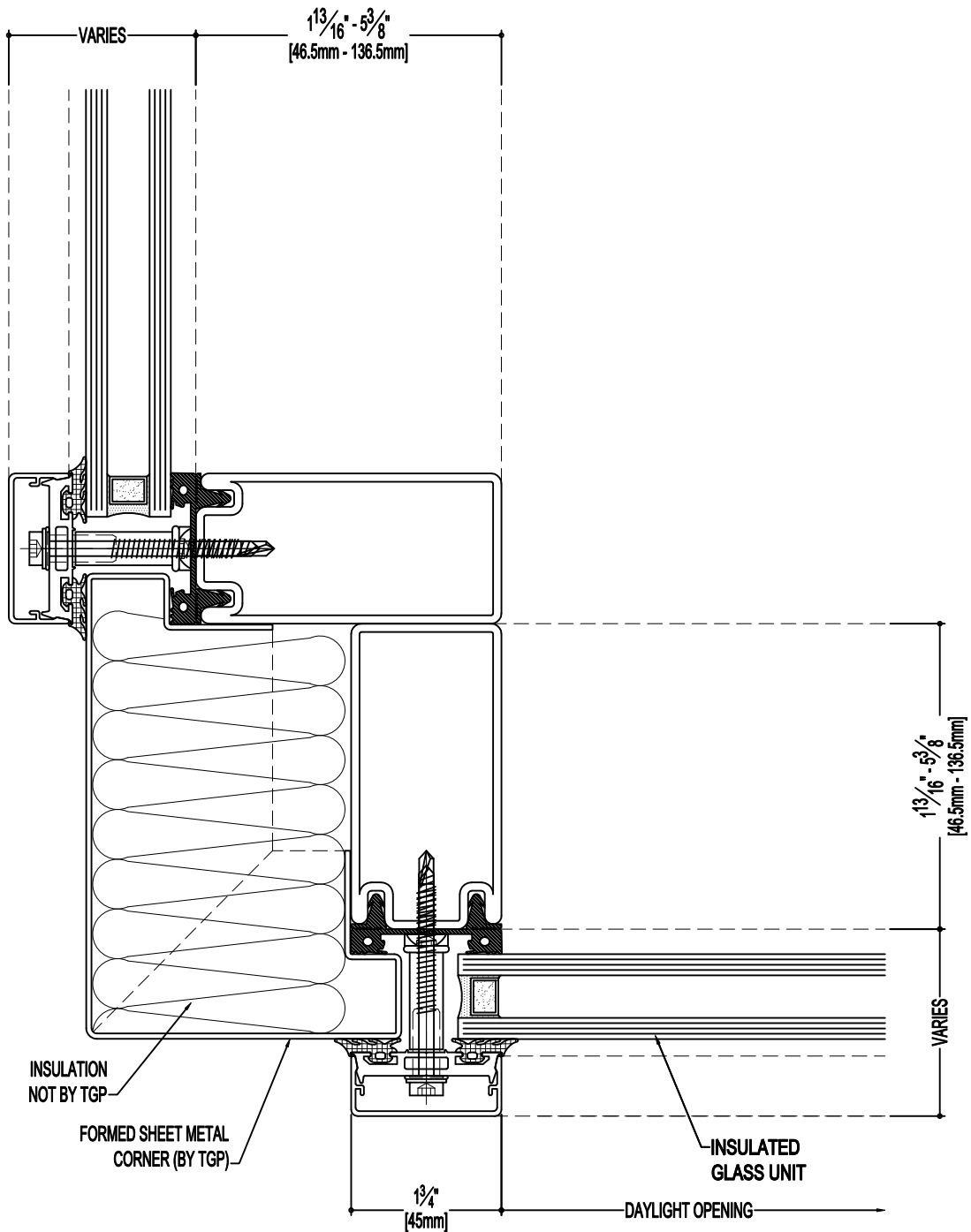
20 ACTIVE / ACTIVE MEETING RAIL



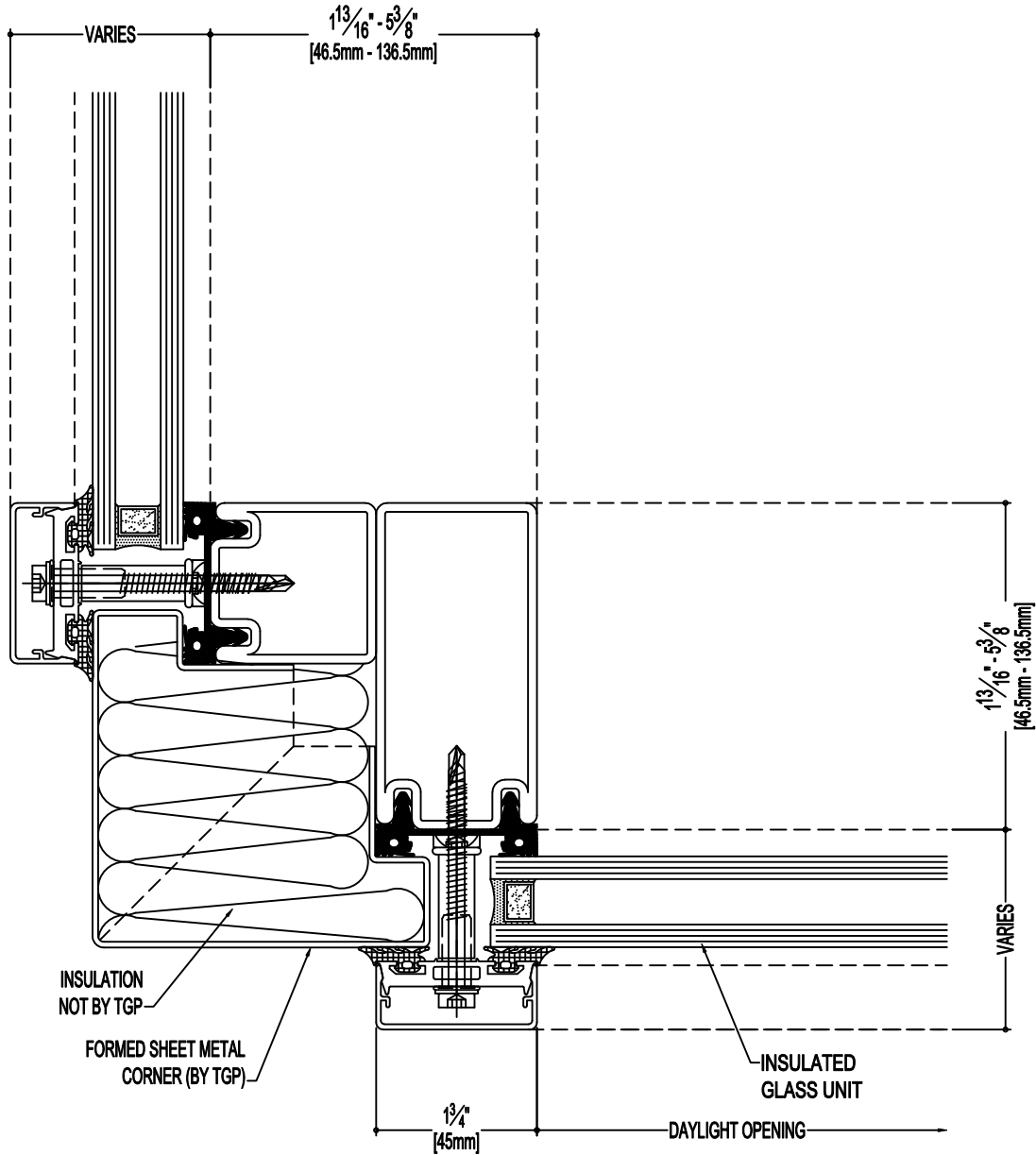
21 ACTIVE / FIXED MEETING RAIL



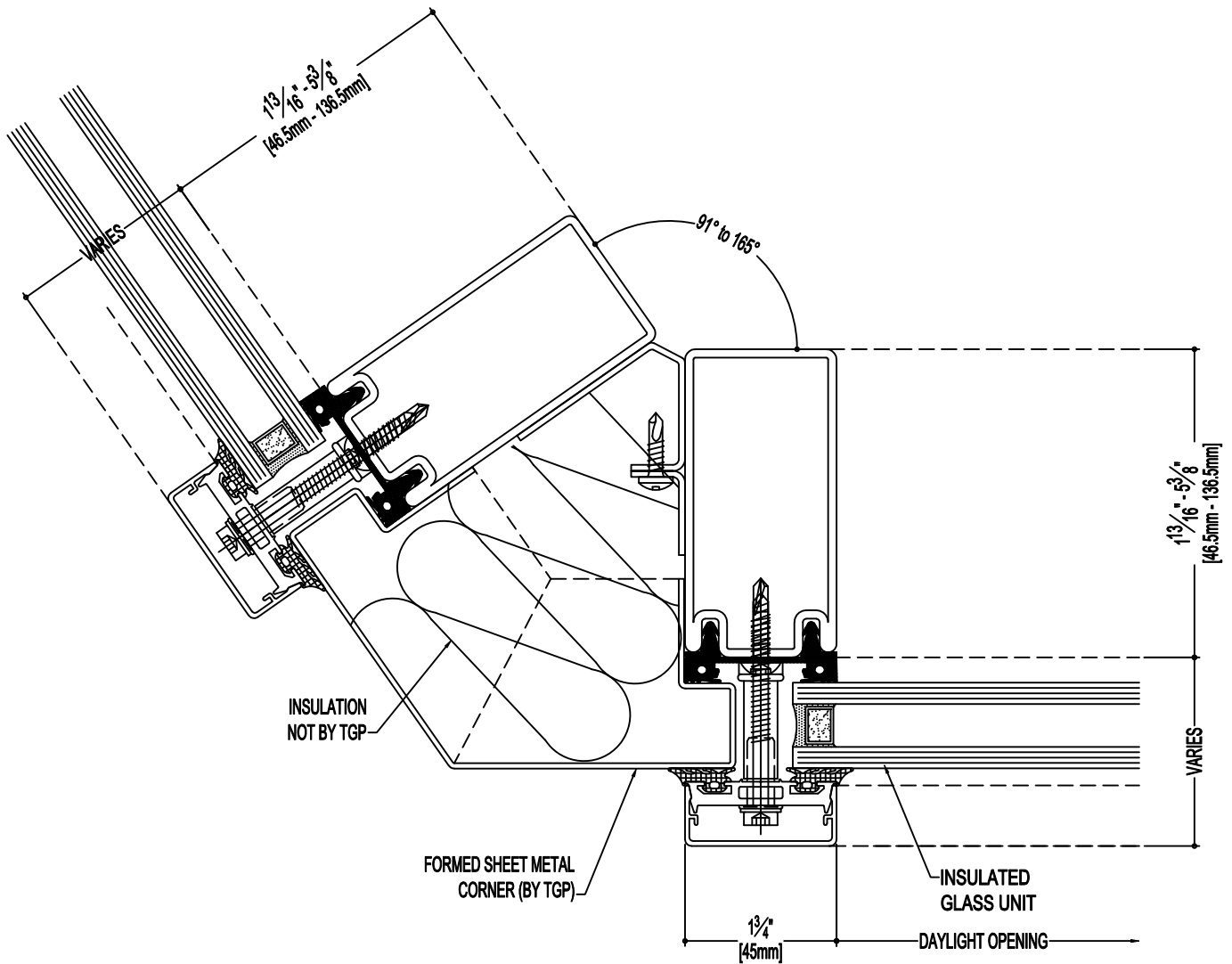
22 90 DEGREE OUTSIDE CORNER



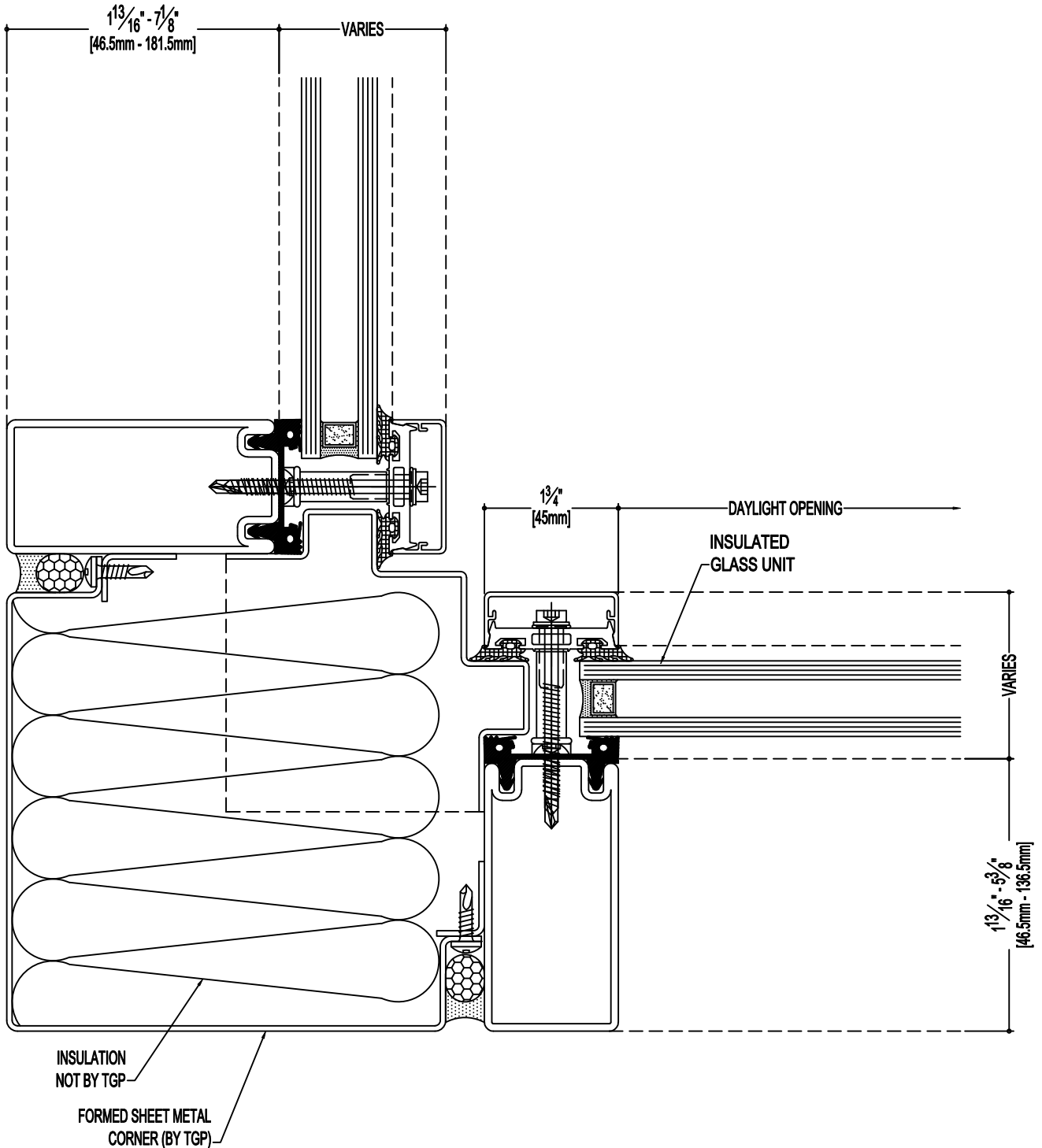
23 90 DEGREE OUTSIDE CORNER OPTION



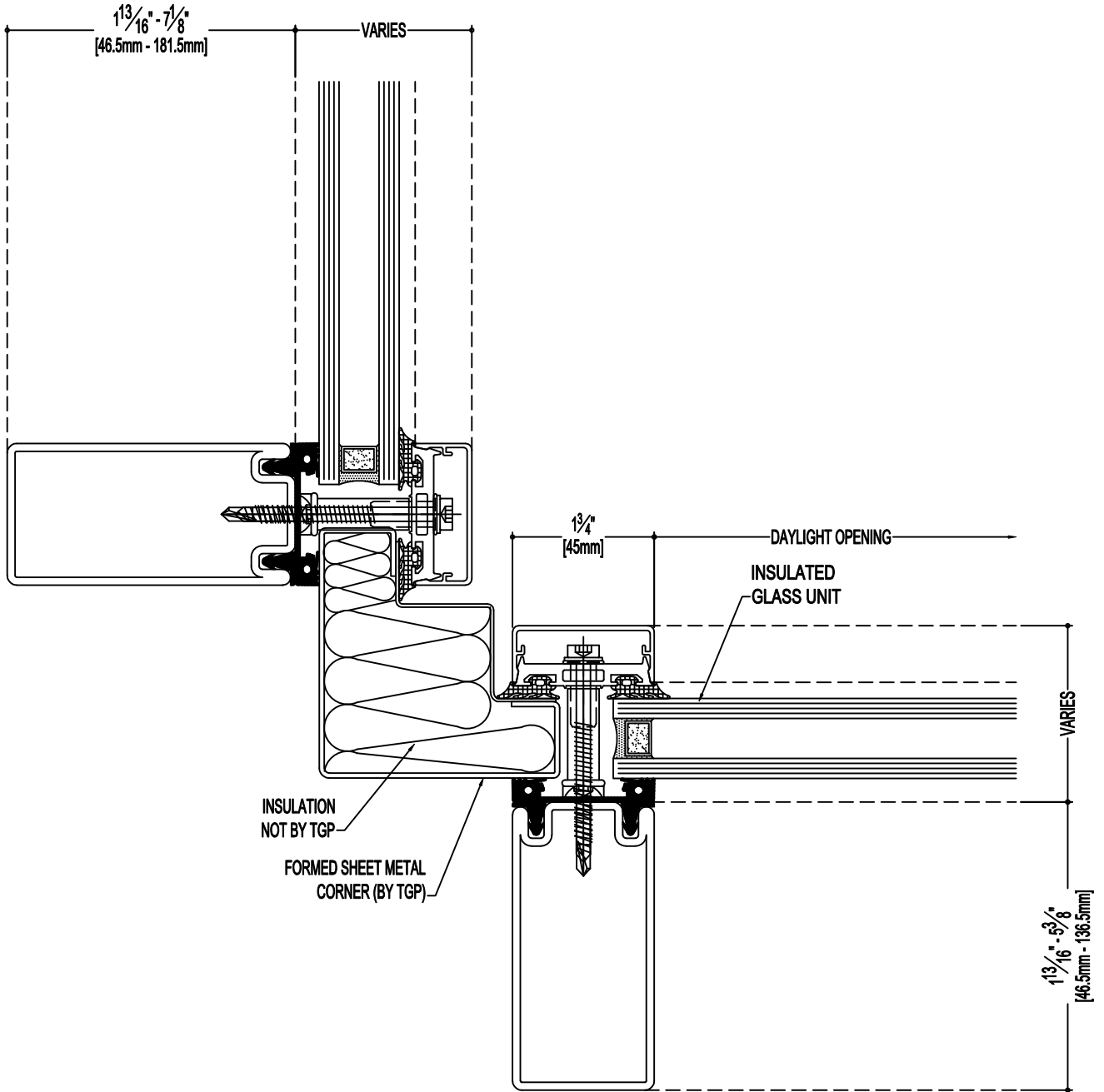
24 90 DEGREE OUTSIDE CORNER OPTION



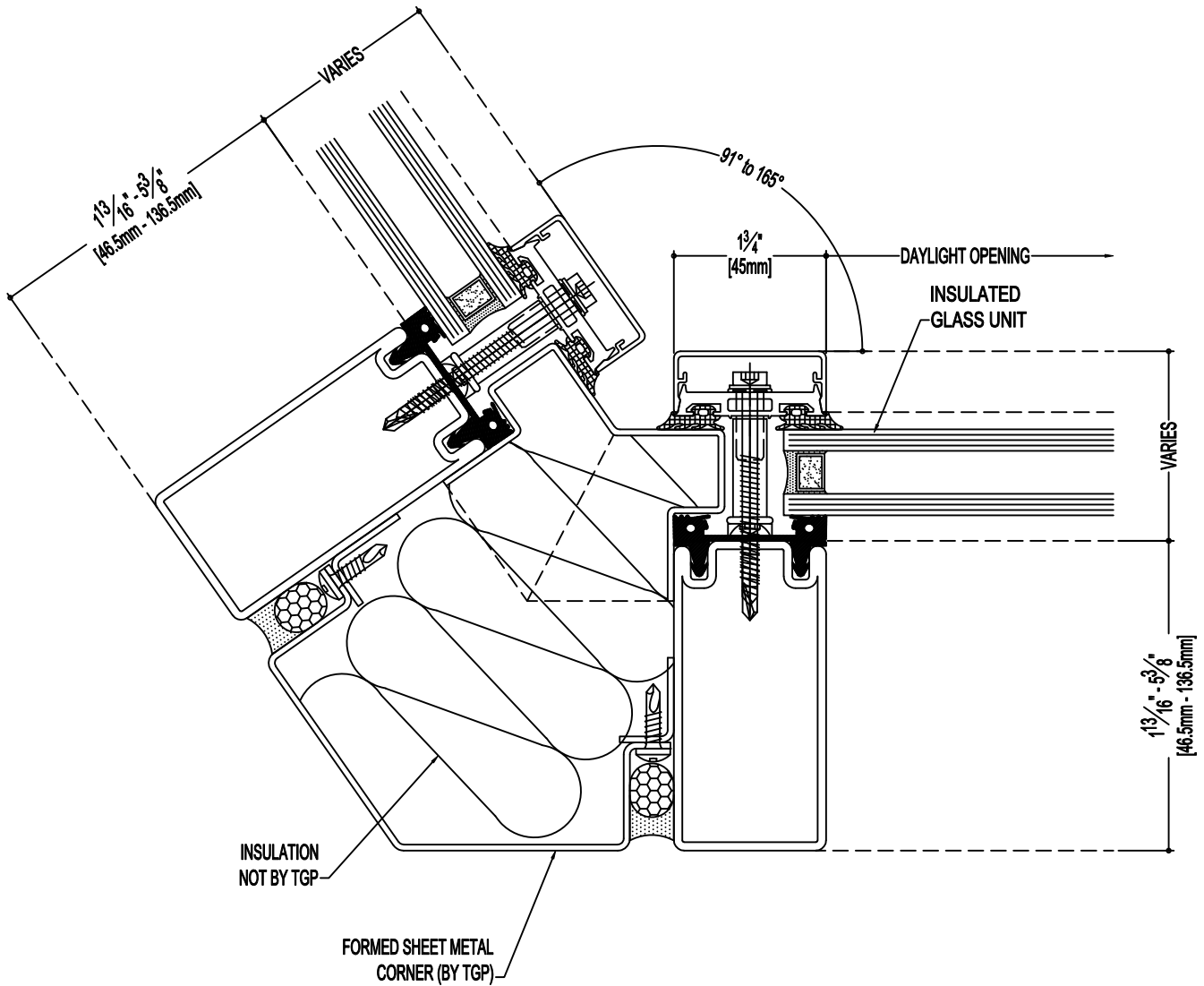
25 ANGLED OUTSIDE CORNER
125 DEGREE SHOWN



26 90 DEGREE INSIDE CORNER

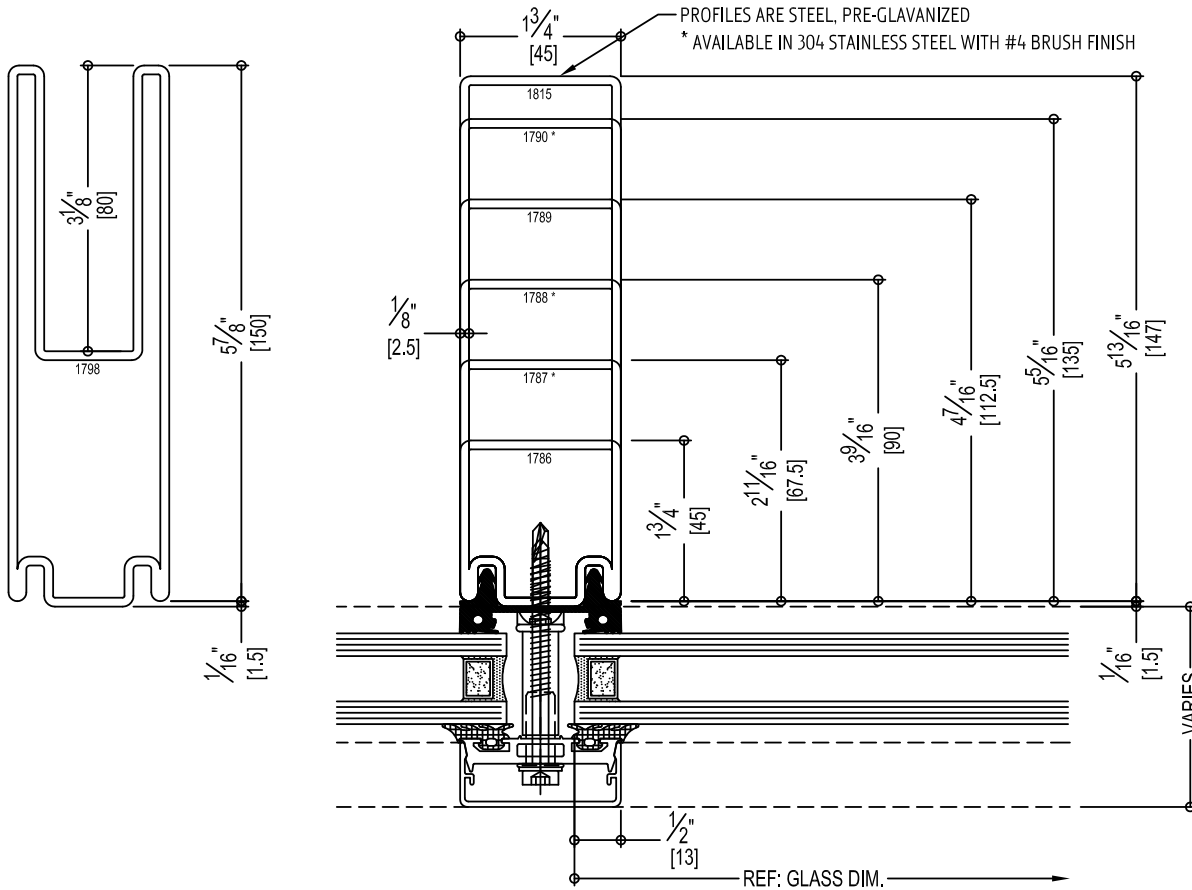


27 90 DEGREE INSIDE CORNER OPTION

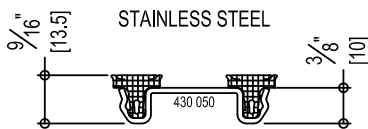


28 ANGLED INSIDE CORNER
125 DEGREE SHOWN

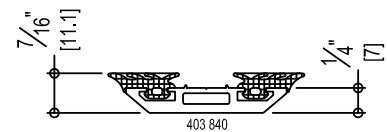
MULLION PROFILE OPTIONS



PRESSURE PLATE / GASKET

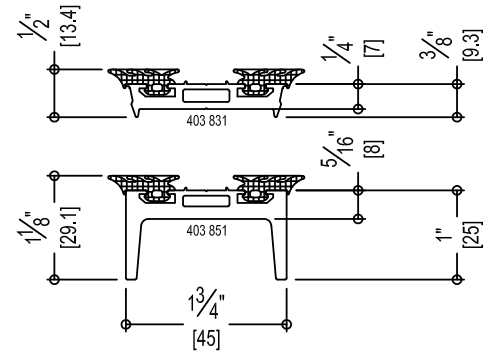
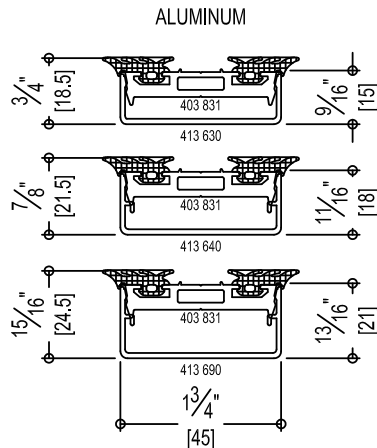
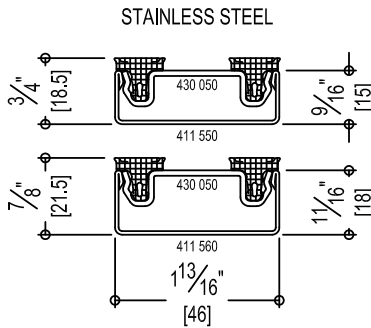


ALUMINUM PRESSURE PLATE & GASKET



ALUMINUM AND STAINLESS COVER CAPS ARE INTERCHANGABLE WITH ALUMINUM AND STAINLESS PRESURE PLATES

COVER CAP



WIND LOAD CHARTS

Mullions are designed for deflection limitations in accordance with AAMA TIR-A11 of L/175 up to 13'-6" and L/240 +1/4" above 13'-6". These curves are for mullions WITH HORIZONTALS and are based on precise engineering calculations for stress and deflection. Allowable wind load stress for STEEL 30,000 p.s.i. (207MPa.). Charted curves, in all cases are for the limiting value. A 4/3 increase in allowable stress has not been used to develop these curves. For special situations not covered by these curves, contact your TGP representative for additional information.

DEAD LOAD CHARTS

Horizontal or deadload limitations are based upon 1/8" (3.2), maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1" (25.4) thick insulating glass or 1/4" (6.35) thick glass supported on two setting blocks placed at the loading points shown.

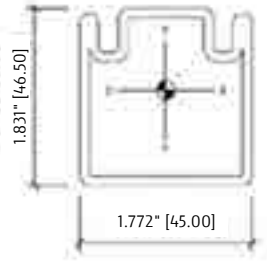
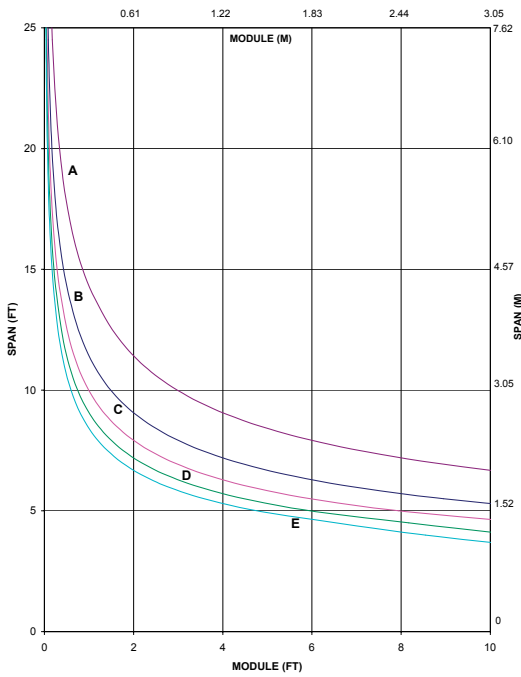
SILICONE GLAZING CHART

Structural silicone glazing is used primarily to eliminate the need or appearance of exterior pressure plates and caps. The size of the silicone bond line, used to structurally retain the glass to the building and the curtain wall frame, is based on the size of the individual lites of glass, the wind load requirements of a given project, and the design pressure of 20 psi capacity allowed by most silicone sealant manufacturers. The accompanying chart is meant to give the maximum wind load pressure based on either a 1/2" or 3/4" weather joint between lites of glass, and the shortest dimension of the individual lite of glass. This chart is not meant to dictate final silicone bond line or loading requirements. While TGP can assist in determining the bond line dimension, the silicone sealant manufacturers must review and approve the final details, typically done during the shop drawing phase of most projects.

THERMAL CHART

Thermal transmittance (U-Value) is a measure of the rate of heat loss of a building component. The test method measures the thermal characteristics of the system under steady-state conditions.

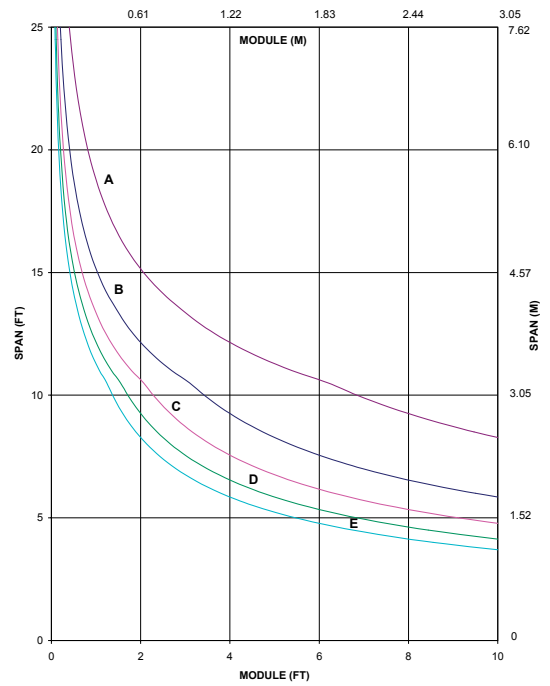
Single Span



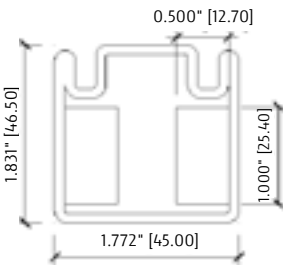
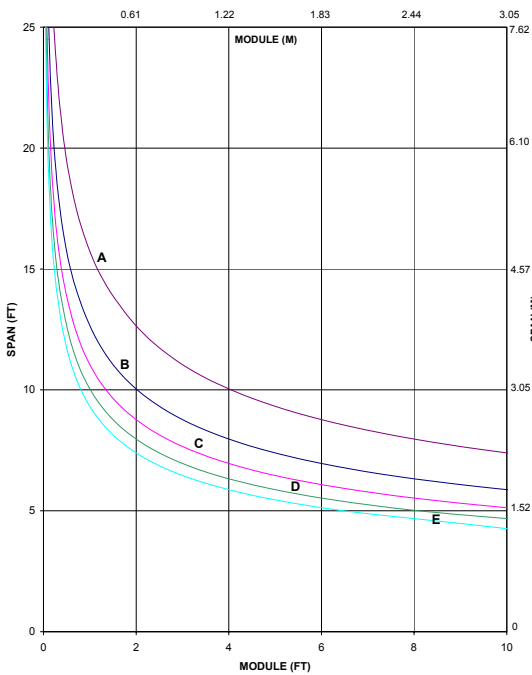
RP-1786

- CURVE 'A' - 10 PSF
- CURVE 'B' - 20 PSF
- CURVE 'C' - 30 PSF
- CURVE 'D' - 40 PSF
- CURVE 'E' - 50 PSF

Twin Span

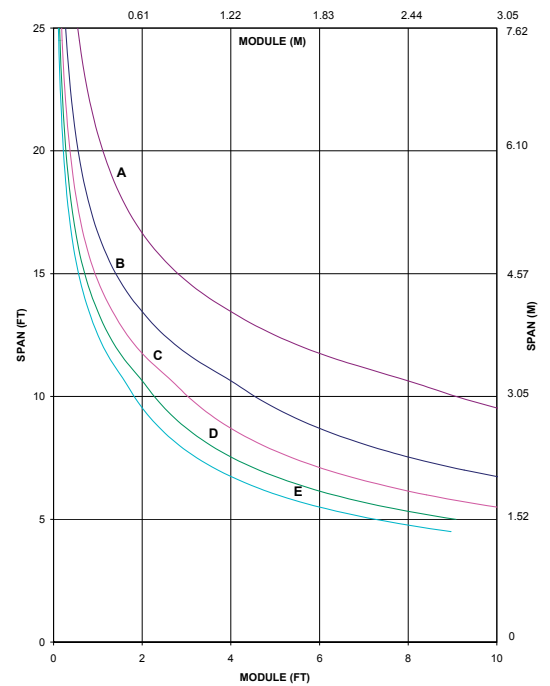


Single Span Reinforced

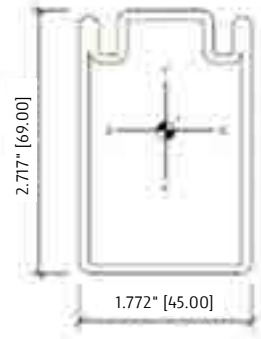
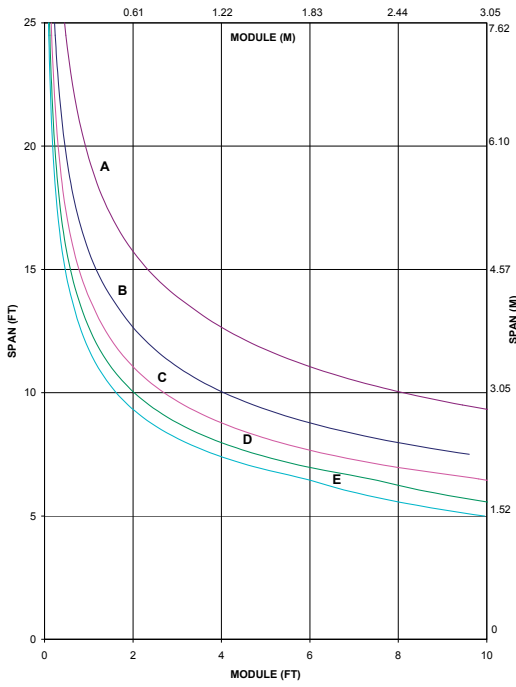


RP-1786
W/ (2) 1" x 1/2"
Steel Bars

Twin Span Reinforced



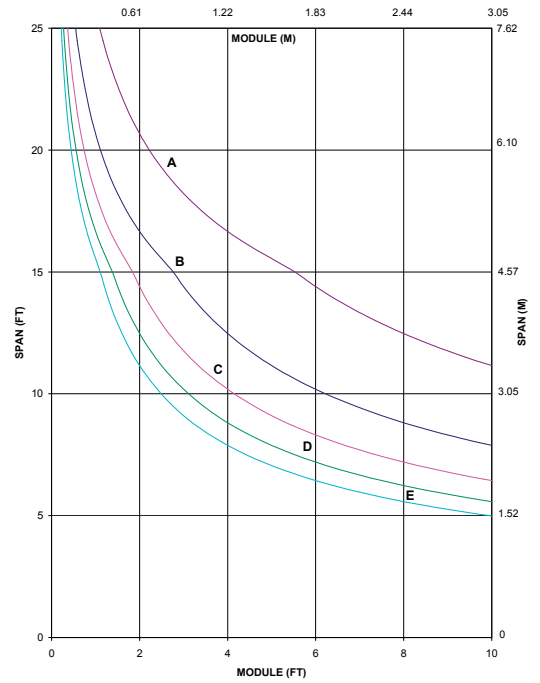
Single Span



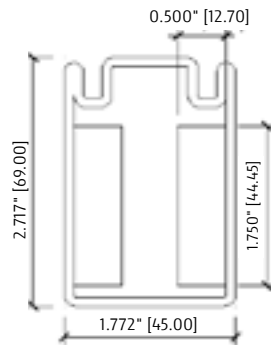
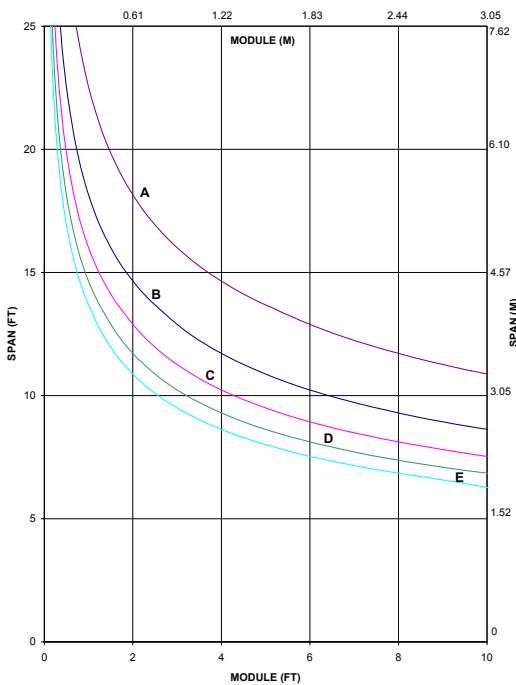
RP-1787

- CURVE 'A' - 10 PSF
- CURVE 'B' - 20 PSF
- CURVE 'C' - 30 PSF
- CURVE 'D' - 40 PSF
- CURVE 'E' - 50 PSF

Twin Span

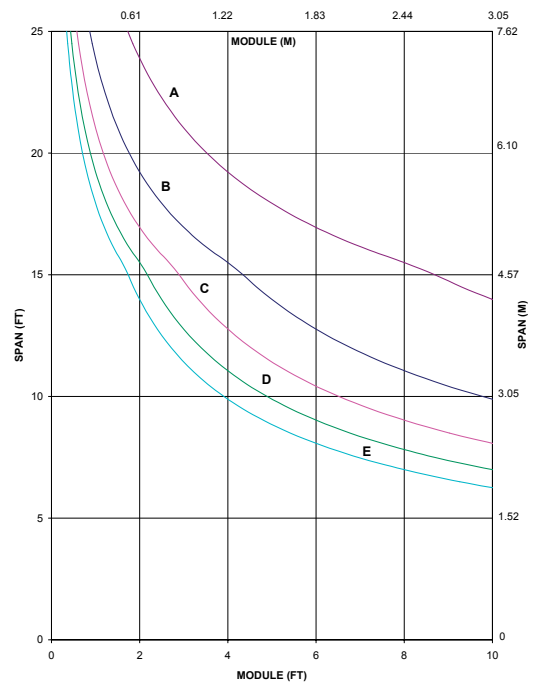


Single Span Reinforced

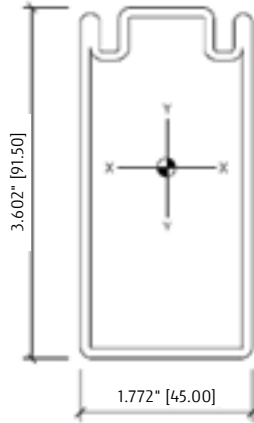
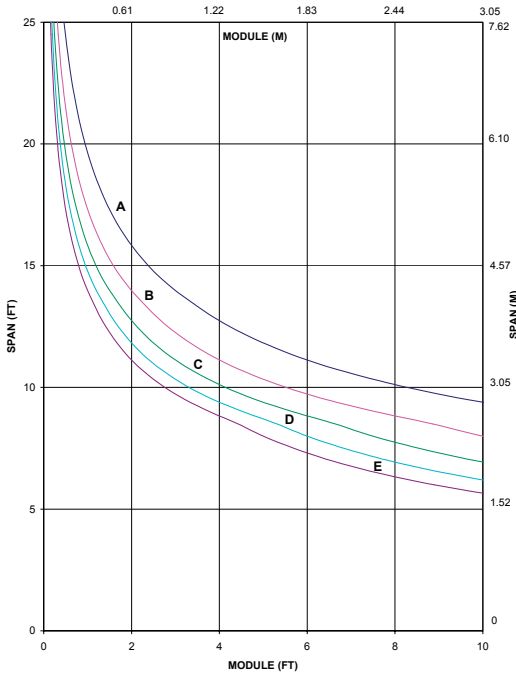


RP-1787
W/ (2) 1-3/4" x 1/2"
Steel Bars

Twin Span Reinforced



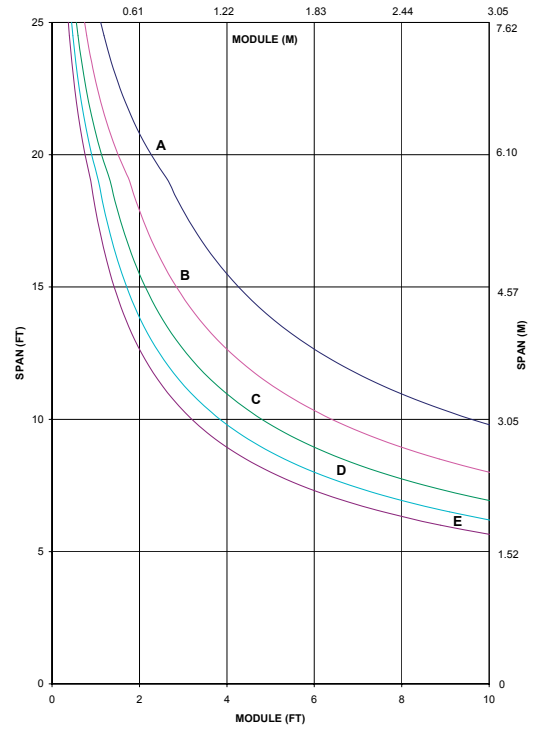
Single Span



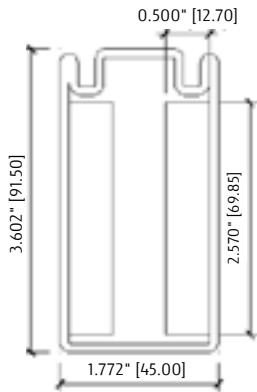
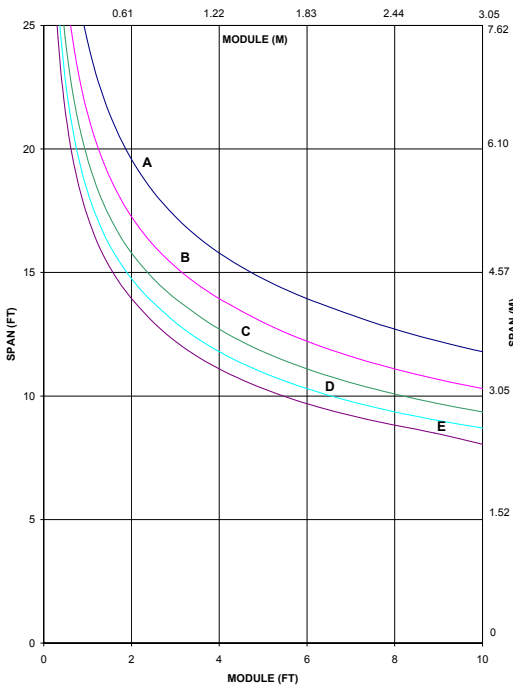
RP-1788

**CURVE 'A' - 20 PSF
 CURVE 'B' - 30 PSF
 CURVE 'C' - 40 PSF
 CURVE 'D' - 50 PSF
 CURVE 'E' - 60 PSF**

Twin Span

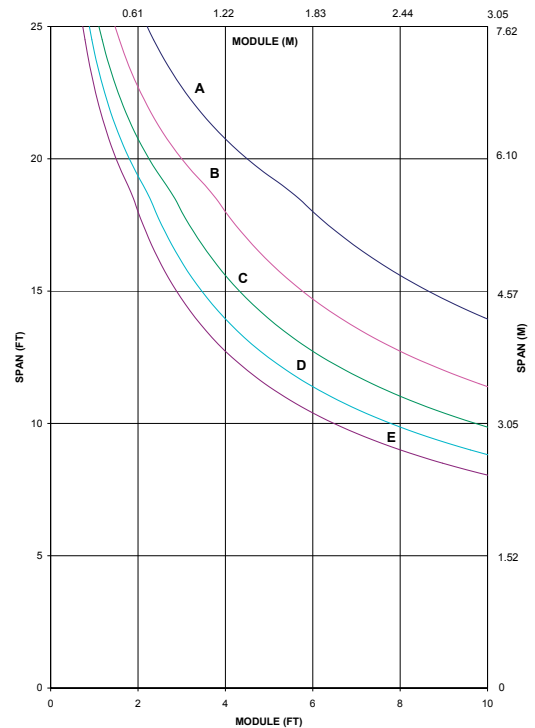


Single Span Reinforced

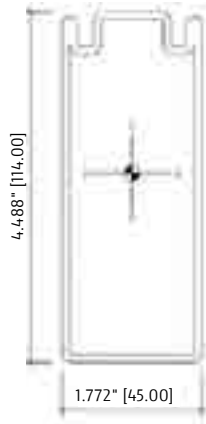
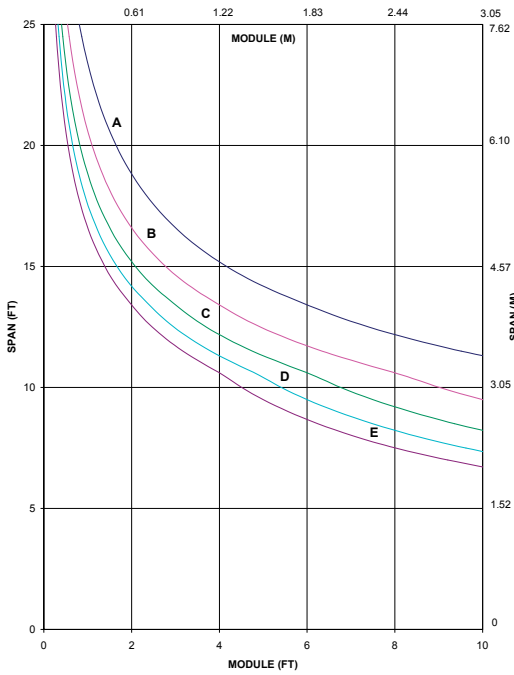


**RP-1788
 W/ (2) 2-3/4" x 1/2"
 Steel Bars**

Twin Span Reinforced



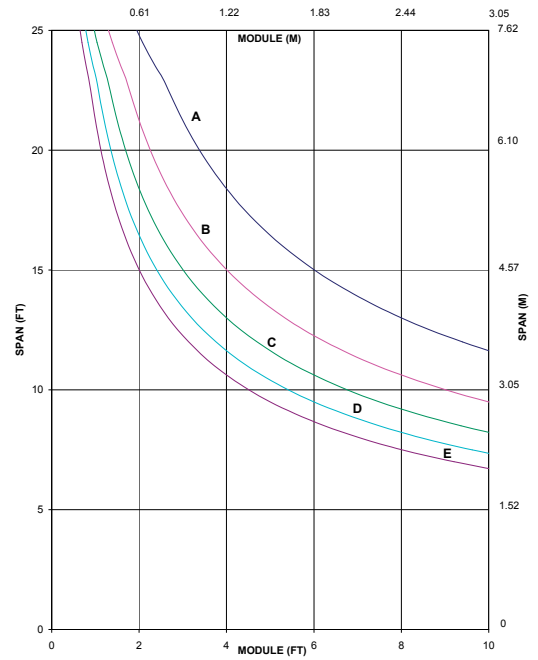
Single Span



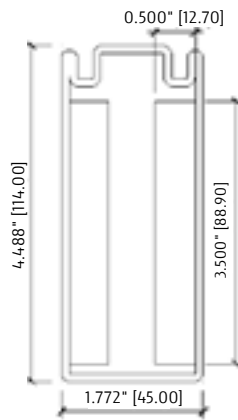
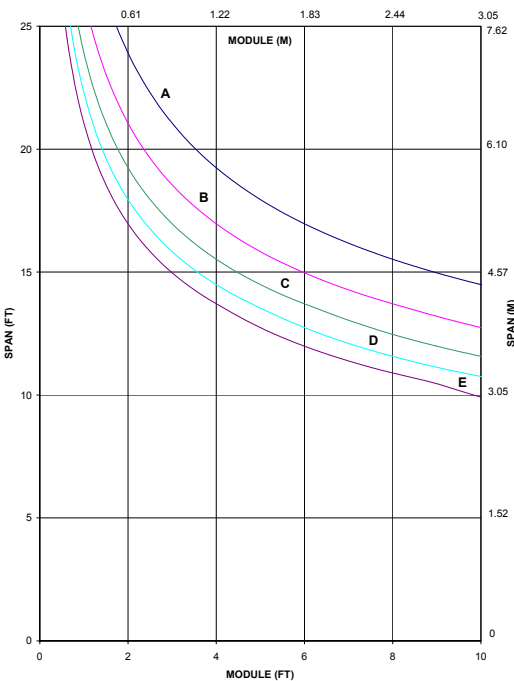
RP-1789

**CURVE 'A' - 20 PSF
 CURVE 'B' - 30 PSF
 CURVE 'C' - 40 PSF
 CURVE 'D' - 50 PSF
 CURVE 'E' - 60 PSF**

Twin Span

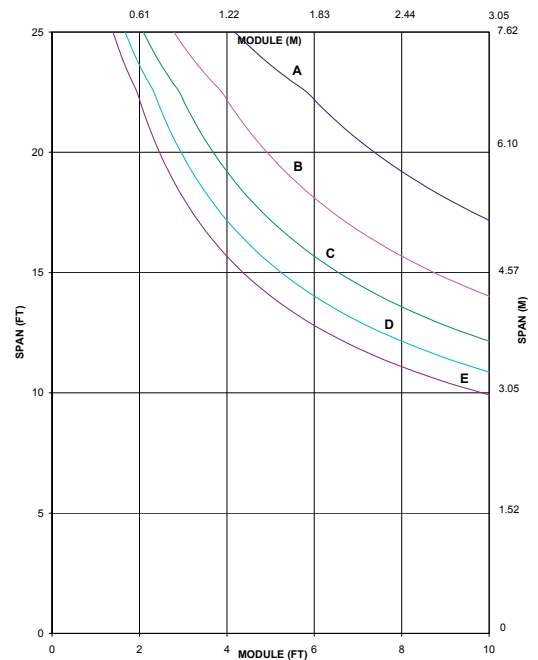


Single Span Reinforced

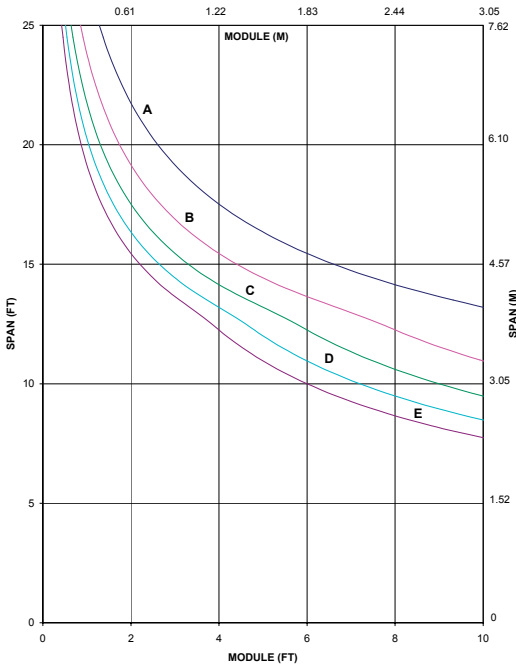


**RP-1789
 W/(2) 3-1/2" x 1/2"
 Steel Bars**

Twin Span Reinforced



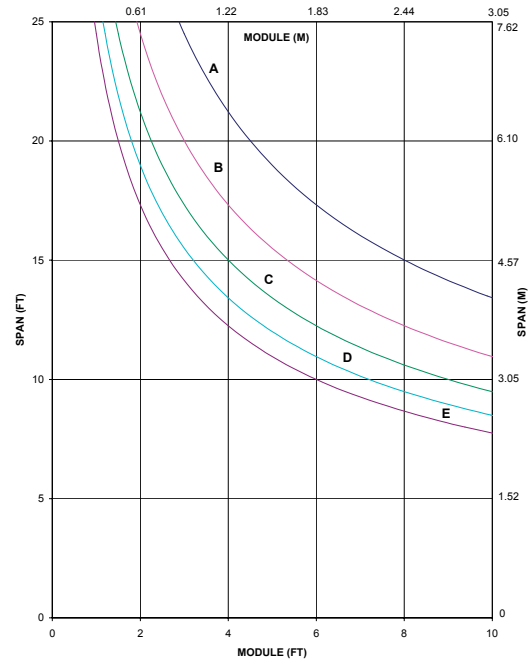
Single Span



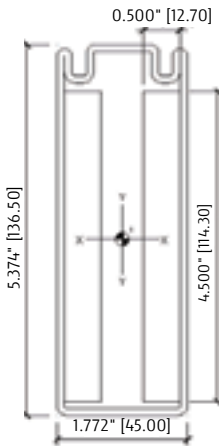
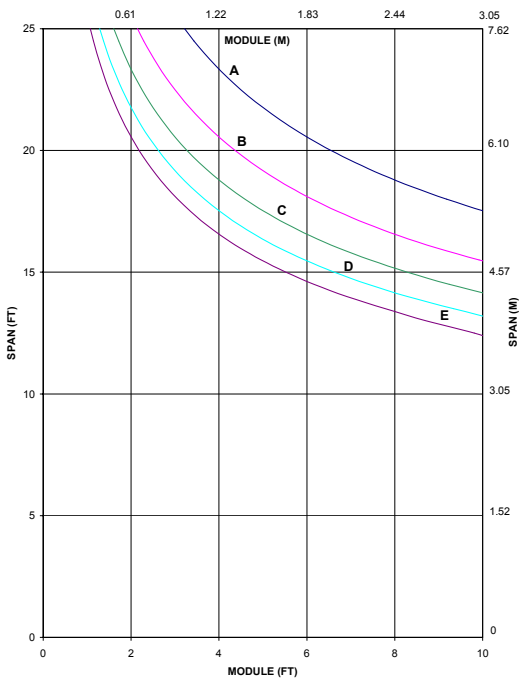
RP-1790

CURVE 'A' - 20 PSF
CURVE 'B' - 30 PSF
CURVE 'C' - 40 PSF
CURVE 'D' - 50 PSF
CURVE 'E' - 60 PSF

Twin Span

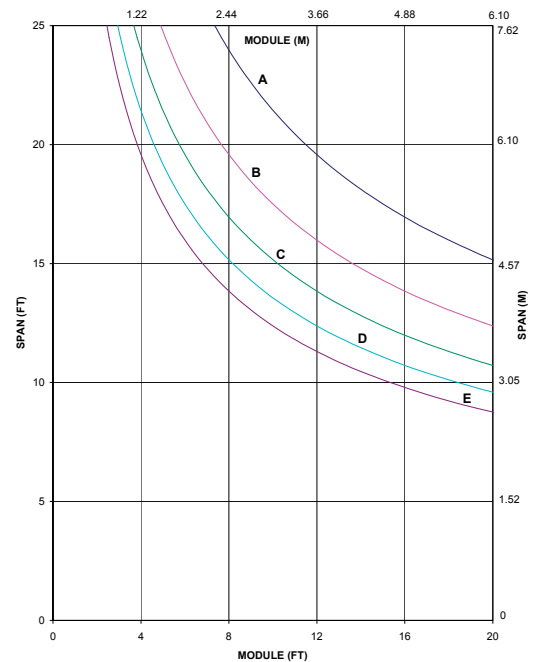


Single Span Reinforced

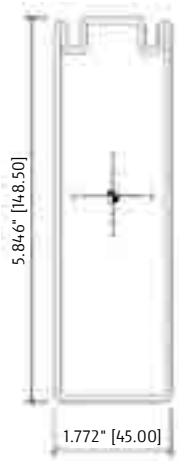
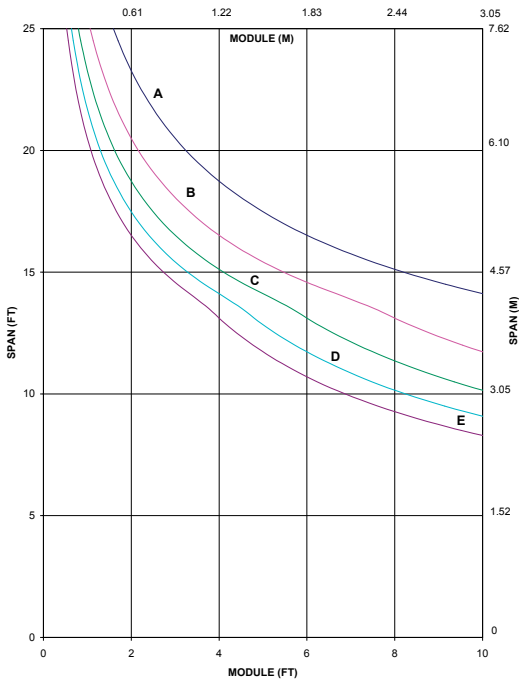


RP-1790
W/ (2) 4-1/2" x 1/2"
Steel Bars

Twin Span Reinforced



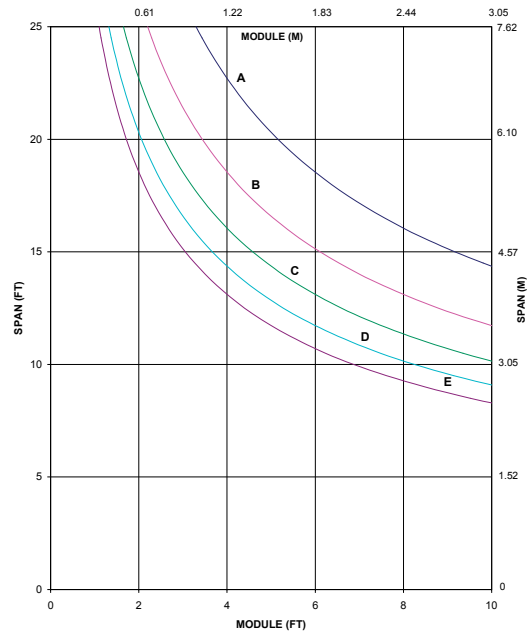
Single Span



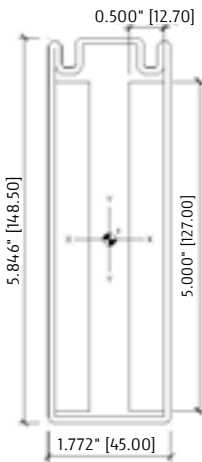
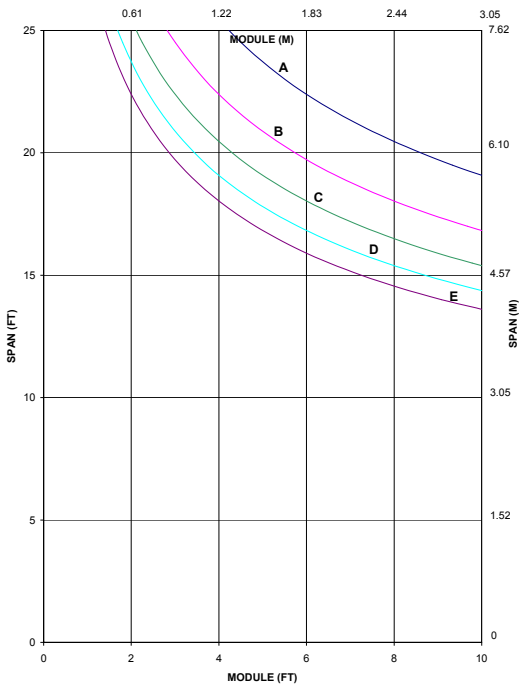
RP-1815

**CURVE 'A' - 20 PSF
 CURVE 'B' - 30 PSF
 CURVE 'C' - 40 PSF
 CURVE 'D' - 50 PSF
 CURVE 'E' - 60 PSF**

Twin Span

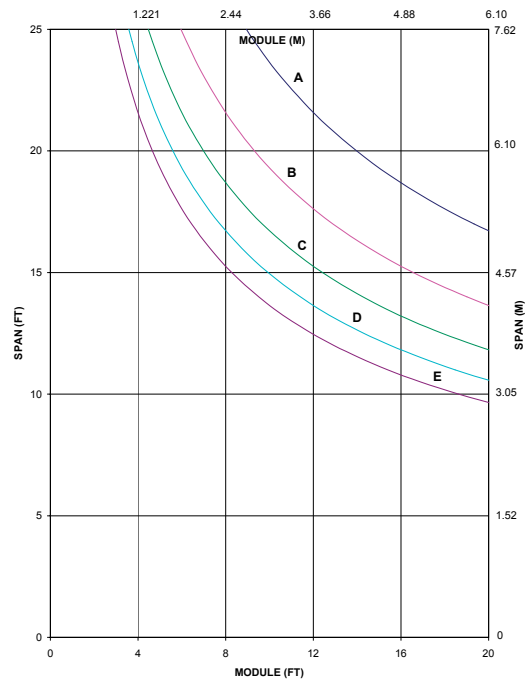


Single Span Reinforced

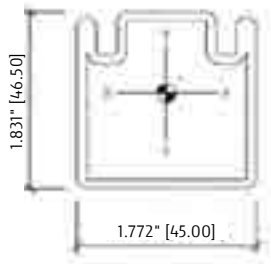
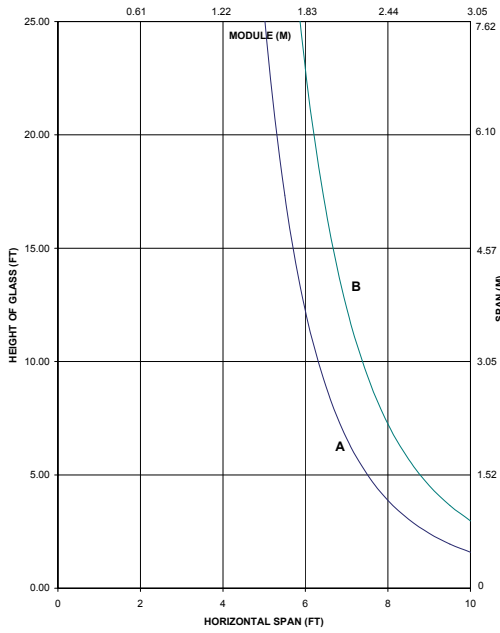


**RP-1815
 W/ (2) 5" x 1/2"
 Steel Bars**

Twin Span Reinforced



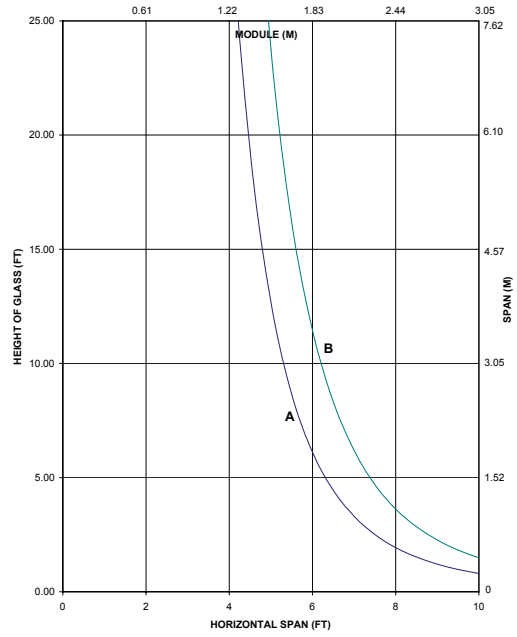
1/4" Glass



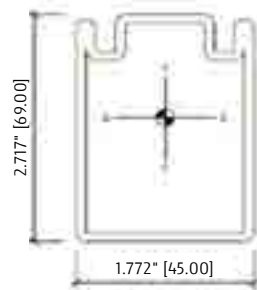
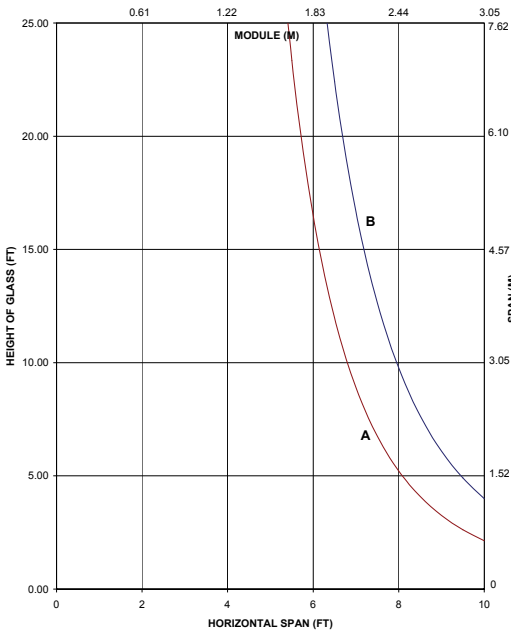
RP-1786

A = 1/4 POINT LOADING
B = 1/8 POINT LOADING

1" Glass

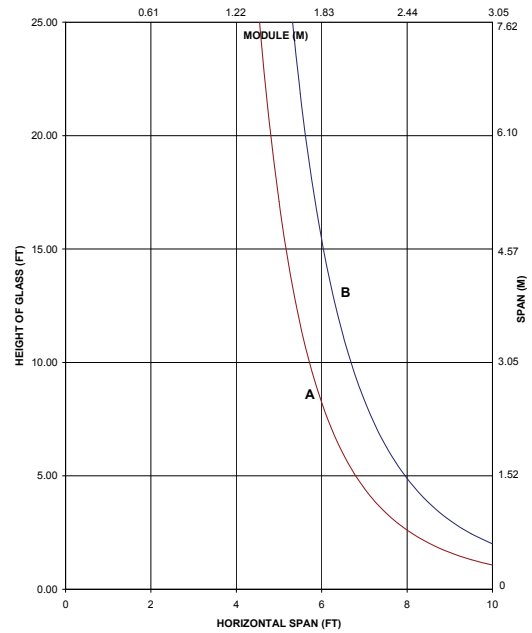


1/4" Glass

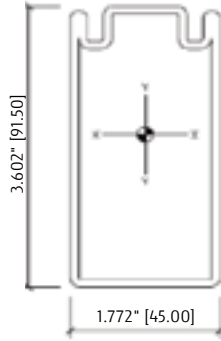
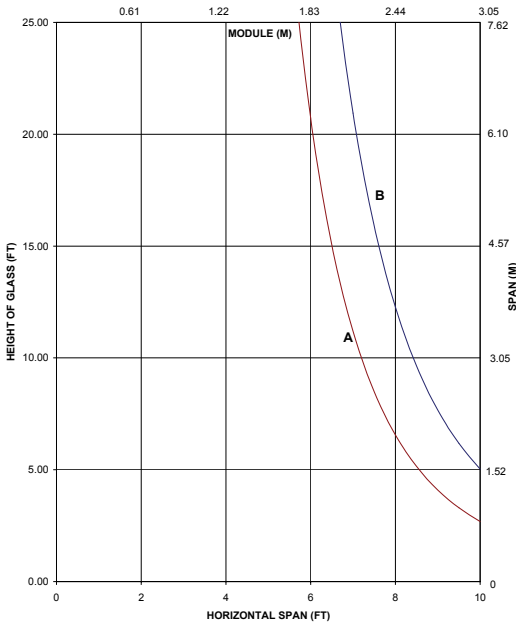


RP-1787

1" Glass



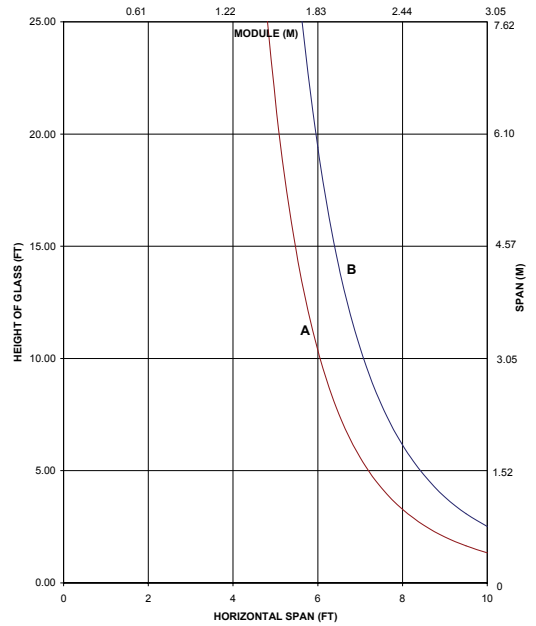
1/4" Glass



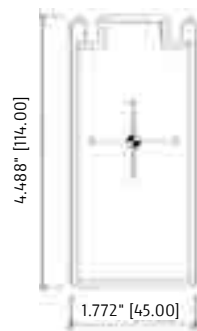
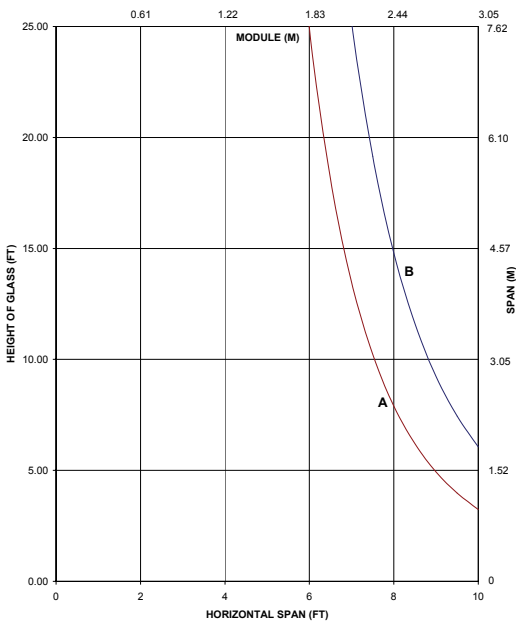
RP-1788

A = 1/4 POINT LOADING
B = 1/8 POINT LOADING

1" Glass

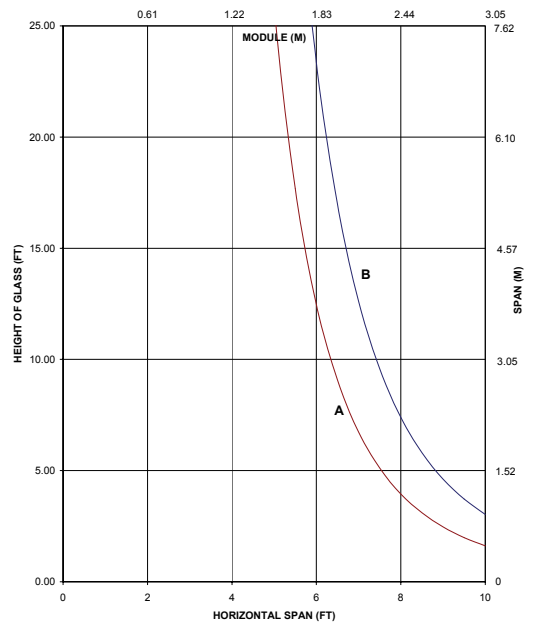


1/4" Glass

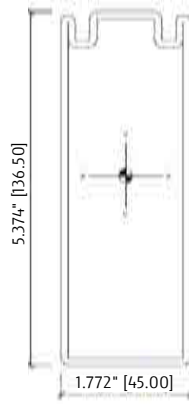
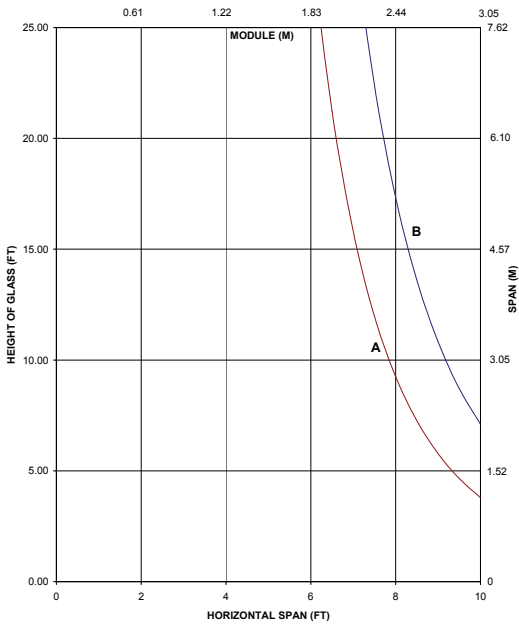


RP-1789

1" Glass



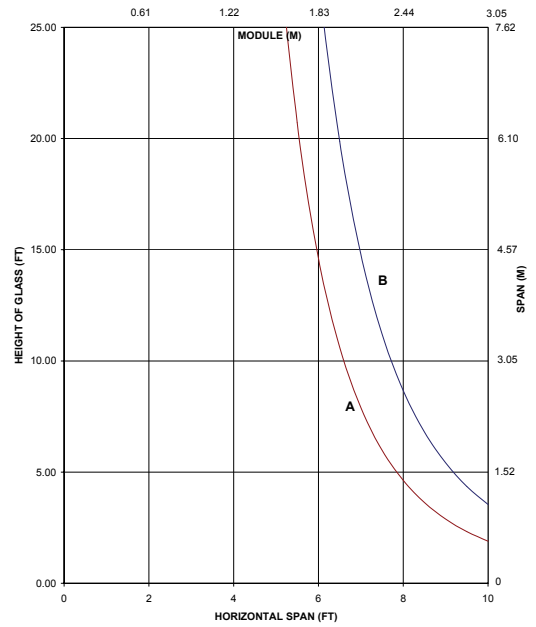
1/4" Glass



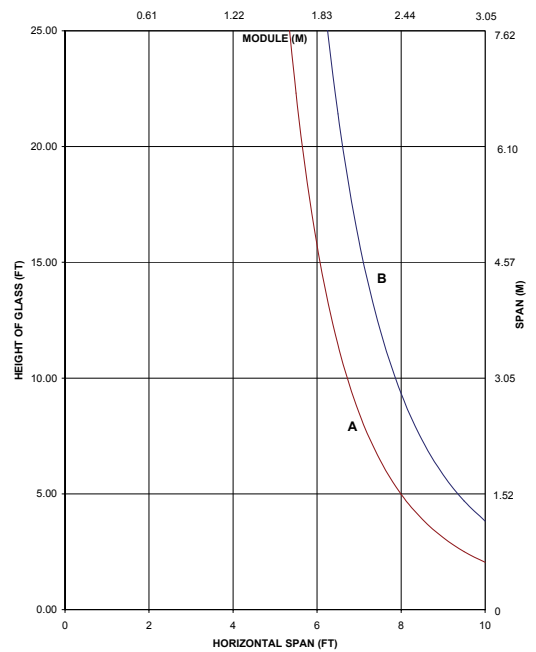
RP-1790

A = 1/4 POINT LOADING
B = 1/8 POINT LOADING

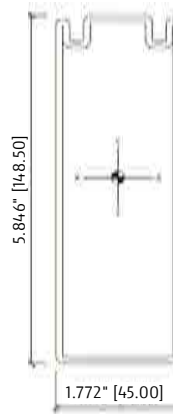
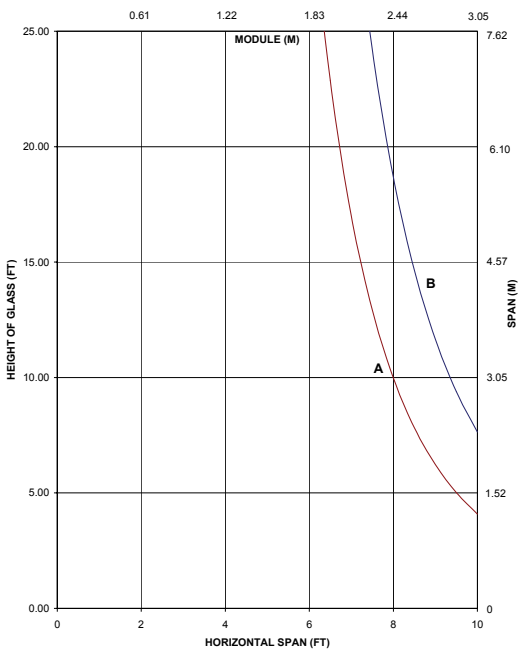
1" Glass



1" Glass



1/4" Glass



RP-1815

Thermal Transmittance¹ (btu/hr + ft² + °F)

Glass U-Factor ³	Overall U-Factor ²	
	Stainless Steel Cover Cap	Aluminum Cover Cap
0.48	.51	.51
0.44	.49	.49
0.30	.35	.36
0.247	.31	.32
0.123	.19	.20

NOTE: For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. Glass properties are based on center of glass values and are obtained from your glass supplier.
3. Overall U-Factor is based on the standard NFRC specimen size of matrix 2000 mm wide by 2000 mm high (78-3/4" by 78-3/4").