

Pilkington Profilit™

Architectural Specification Manual: Canada

Pilkington Profilit™

PILKINGTON PROFILIT GLAZING SYSTEM

Pilkington Profilit™ architectural glazing systems have been designed for worldwide architectural markets. They incorporate the latest window and material technology. The framing and component details shown in this manual can only be obtained from Technical Glass Products.

The Pilkington Profilit glazing system is based on a range of unique cast glass channels, which have high structural strength and are contained within a custom designed aluminum perimeter frame. A unique feature of the Pilkington Profilit system is the wide range of glazing designs that can be achieved without the need to incorporate vertical or horizontal aluminum members.

For specifications, photographs, videos and additional information contact:

TECHNICAL GLASS PRODUCTS
8699 Escarpment Way, Unit #5
Milton, ON L9T 0J5

Office: 800.426.0279 x8410
Fax: 800.451.9857
E-mail: sales@tgpamerica.com
Web: tgpamerica.com

CSI-SPECIFICATION

Full copies of our CSI 08 45 11 specification 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 Pilkington Profilit. Many special finishes and components are available, please consult Technical Glass Products.

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SECTION 1 | INTRODUCTION

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TRANSLUCENT LINEAR CHANNEL GLAZING SYSTEM

The Pilkington Profilit™ translucent linear channel glazing system consists of unique, self supporting cast glass channels and an extruded metal perimeter frame. The end result is an opaque but light-transmitting wall. Pilkington Profilit can be used in interior or exterior applications. The “U-shaped” channels can be installed either vertically or horizontally.

The glass is available in a variety of colors and textures with varying translucency allowing for the passage of natural light without the loss of privacy. Pilkington Profilit is energy efficient, provides excellent sound reduction, and it's one of the most cost-efficient glass wall systems available. Single or dual glazing options are available for interior and exterior applications, including cladding and screen walls.

FEATURES

- Available in long channel lengths (23 feet/7 meters)
- Allows natural light while maintaining privacy
- Can be tempered to meet impact safety requirements
- Energy efficient
- Excellent light transmission
- Sound insulation (up to 44 db)
- Can be utilized in curved walls
- Installs vertically or horizontally
- Aluminum perimeter frame with full range of finish options
- Minimal maintenance
- Proven performance -- used in Europe for more than 40 years

PROFILE OPTIONS

Series	Flange	Glass Thickness
K-60	2.36" (60 mm)	7 mm
K-41	1.61" (41 mm)	6 mm

DESIGN OPTIONS

Pilkington Profilit comes in a broad spectrum of colors, textures and finishes. Please visit tgpamerica.com to view any of these design options.

SURFACE TEXTURES

All textures can be sandblasted unless they have a surface applied specialty coating.

- Standard: lightly dimpled surface
- Macro: netted screen surface
- Slim Line: thin, linear grooves
- Wave: well defined ridge texture
- Clear: no visible texture

FUNCTIONAL COATINGS

Optional performance coatings improve U-values or better control solar heat gain. These options can't be sandblasted.

- Low-E: improved u-values
- Antisol®: improved solar heat gain

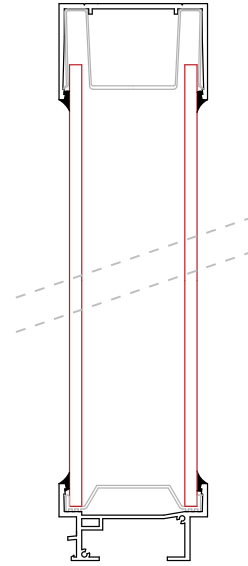
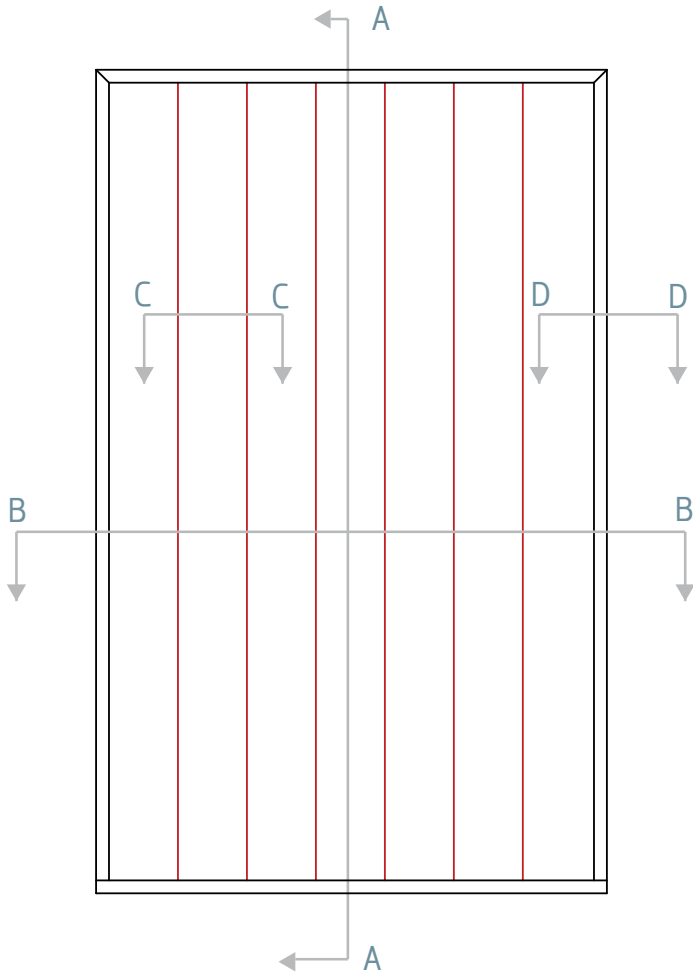
COLOR COATINGS/SANDBLASTED

All coatings can be applied onto all available textures.

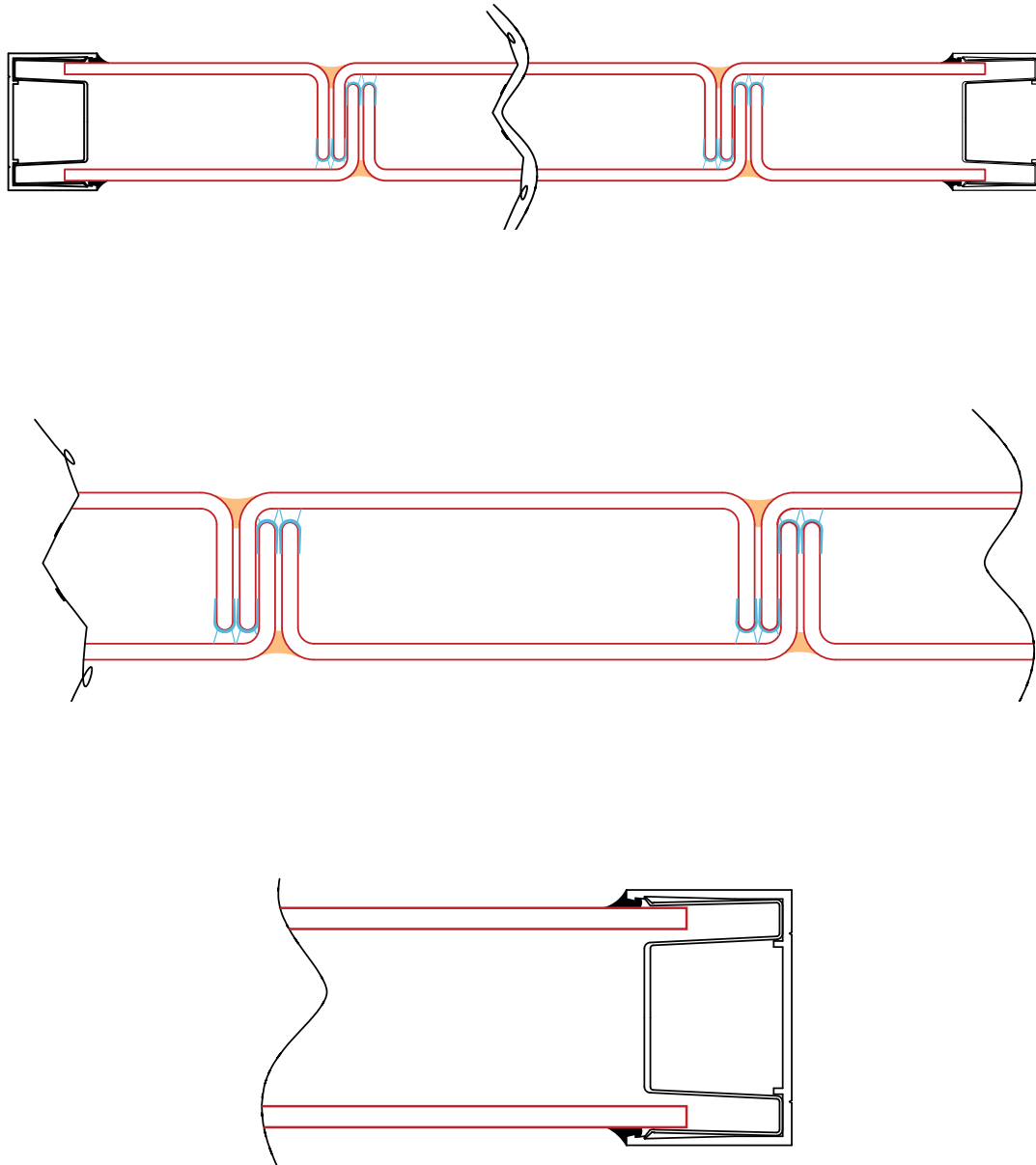
- Amethyst-slight blue transparent coating
- Opaque Enameled Frit-a variety of opaque colored frits that are heat tempered to the glass
- Opaque Color Coating-a variety of high performance opaque colors that don't require tempering, most RAL color system options are available
- Metallic Color Coating-opaque custom-blended, high-performance metallic colors that don't require tempering
- Sandblasted-improves privacy while allowing light transmission; can be applied to all textures (unless they have a surface-applied specialty coating)

GLASS COLORS

- Standard Cast: Standard channel glass has an inherent slight green hue
- Low Iron: Pilkington Profilit™ OW (Low-Iron) is a low iron composition glass that creates a nearly colorless product with improved light transmission. Please see Pilkington Profilit OW (Low-Iron) fact sheet for more information.



GLASS INSTALLED VERTICALLY SHOWN IN SECTIONAL VIEWS



DUAL GLAZED K-60 PERFORMANCE VALUES

GLASS TYPE	U-VALUE GLASS ONLY	LIGHT TRANSMISSION	SOLAR HEAT GAIN COEFFICIENT	STC RATING	SHADING COEFFICIENT
STANDARD CAST	0.49	75%	0.70	42	.75
CLEAR	0.49	75%	0.70	42	.75
AMETHYST	0.49	52%	0.51	42	.59
ANTISOL	0.49	41%	0.38	42	.52
PLUS 1.7 (LOW-E) COATING ON #3 SURFACE	0.40	70%	0.45	42	.73
LOW-IRON	0.49	90%	0.70	42	**

See Page 6 for information on Lumira® aerogel insulation which maximizes the performance values for the Pilkington Profilit system.

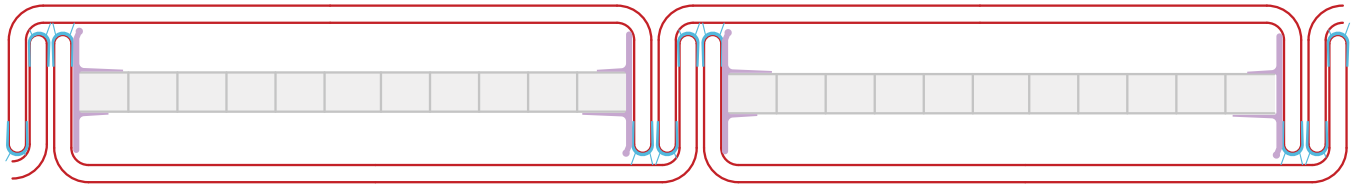
*K-41 Series is typically used in interior installations, thus performance values are not listed.

** Performance details coming soon.

3M S20SIAR400 Film is available for Solar Heat Gain control. Contact TGP at 1-800-426-0279 for performance information.

LUMIRA® AEROGEL

Lumira aerogel, formerly Nanogel® aerogel, a surface-treated amorphous silica, is a safe and non-hazardous material. It is encased in 16 mm polycarbonate sheeting, which is centered in the Pilkington Profilit channel glass cavity. Combined with Pilkington Profilit channel glass, all the components of the system are safe, recyclable and environmentally friendly. For projects requiring extra thermal performance, contact TGP for custom Lumira aerogel information.



What is Aerogel?

Aerogel is a unique form of highly porous, non-hazardous silica, described as a lattice work of glass strands with very small pores and extremely low solids content (5% solid, 95% air). It is known as the lightest weight and best insulating solid in the world.

PERFORMANCE ANALYSIS: PRELIMINARY TEST RESULTS

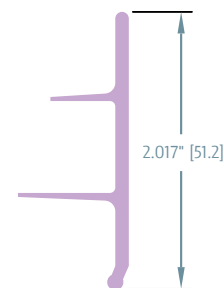
K 25/60 Series Profilit	Uninsulated	Lumira® Aerogel Panel* 16 mm (Clear)	Lumira® Aerogel Panel* 25 mm (Clear)
U Value (Glass Only)	0.49	0.21	0.19
Light Transmission	70%	50%	38%
Solar Heat Gain Coeff. (SHGC) Coeff. (SHGC) (NFRC 200)	0.63	0.42	0.31
Sound Transmission Coeff. (STC) - (E 90)	42	44	44
Condensation Resistance Factor (CRF) (AAMA 1503)	G 70 F 60	G 79 F 60	G 79 F 60

* Additional Lumira aerogel options, including polycarbonate colors and 25 mm panels for increased performance, are available. Please contact TGP.

KEY BENEFITS

- Reduces overall energy consumption
- Enhances daylight design
- Provides cost-effective daylighting solutions
- Simplifies installation
- Improves thermal and acoustic insulation
- Improves ability to meet building codes without tradeoffs

CENTERING CLIP FOR LUMIRA AEROGEL SYSTEM



SAFETY GLAZING

National Building Codes reference ANSI Z 97.1-1984 and Consumer Products Safety Commission: Title 16 part 1201, 16 CFR 1201 safety standards for architectural glazing materials. Pilkington Profilit is available in tempered or filmed options to meet these impact safety requirements.

TEMPERING

Pilkington Profilit T Tempered Glass:

- Meets ASTM C1048-97B "STANDARD SPECIFICATION FOR HEAT TREATED GLASS"
- Meets ANSI Z97:1 and CPSC CFR 1201 (Cat. I and II)

HEAT SOAKING

- Optional heat soaking of tempered Pilkington Profilit can be supplied according to standard Bauregelliste 11.4.2.

SAFETY FILM

3M Scotchshield Ultra Safety (SCLARL 400) can be laminated to the inside surface of Pilkington Profilit. Film is factory applied except in special circumstances.

- Meets ANSI Z97:1 and CPSC CFR 1201 (Cat. I and II)

PRODUCT CERTIFICATION

The Pilkington Profilit Translucent Linear Glazing System has been installed throughout the world for over 40 years and has been tested in the United States, Great Britain and Germany for:

- Air, Water and Structural Performance
- Sound Reduction
- Thermal Performance
- Glazing Safety
- Impact Safety
- Hurricane Impact
- Seismic Performance

TESTING

Pilkington Profilit has been tested to meet the following standards:

- AAMA 501.4
 - AAMA 101
 - AAMA 1801-97
 - AAMA/NWWDA 101/1
 - S.297
 - ASTM F 588-97
 - NFRC 100-97
 - ANSI Z97.1-1984
 - CPSC - 16CFR1201, Cat II
 - Category II impact safety (with safety film or tempering)
 - NOA #06-0810.12
 - Miami Dade large missile impact - TSA 202, 203 and 204
- Formal test reports are available by contacting Technical Glass Products at 1-800-426-0279.

ALUMINUM FRAMING SYSTEMS

Aluminum perimeter frames are extruded from window grade alloy 6063 complying with the requirements of ASTM B221. The frames consist of a basic channel system with a plastic insert for the glass. Various frame finishes are offered including anodized, painted and mill finish.

The profiles are available in two sizes for both the K-41 and K-60 Series glass types with many variations of extrusion to suit any installation condition. The profiles are also available with a thermal break, preventing cold bridging through the Pilkington Profilit system. The PVC insert locates the glass within the aluminum frame, preventing glass-to-metal contact and is impact and weather resistant. The simplicity of the aluminum framework, with the small number of components, allows for a quick easy installation.

Note: TGP framing systems are designed to meet or exceed the AAMA industry standards and US perimeter detailing.

FINISHES

MILL FINISH

Frame profiles may be supplied for finishing in accordance with individual contract requirements.

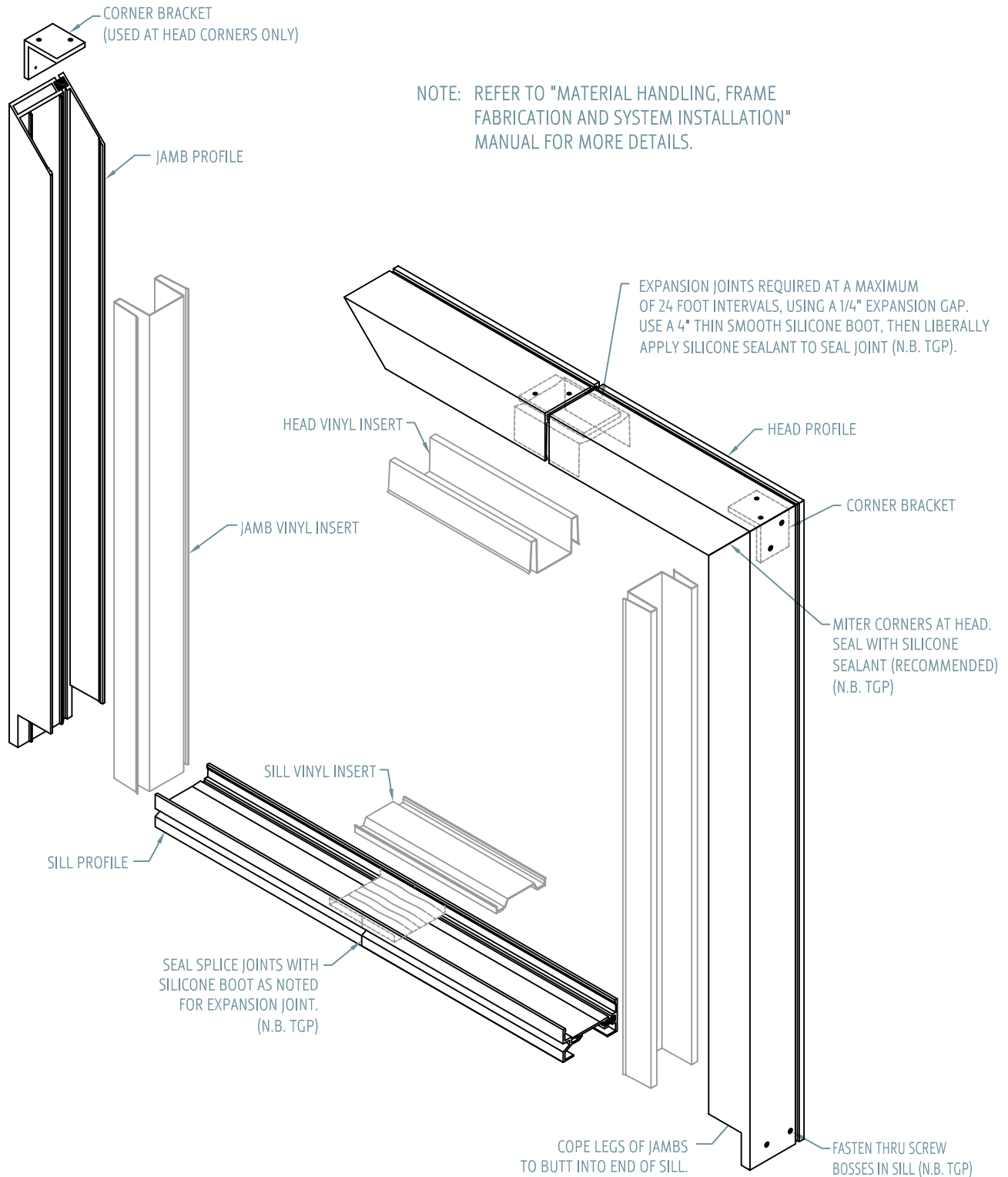
ANODIZED

Frame profiles can also be supplied with anodized finish in a full range of anodized colors. This is classified as a “superior external architectural” finish and has a surface penetration of .007 or greater inches.

ARCHITECTURAL PAINTED COATINGS

A wide range of architectural painting specifications can be pre-applied to the finish, including a wide range of PPG Architectural paint systems and colors.

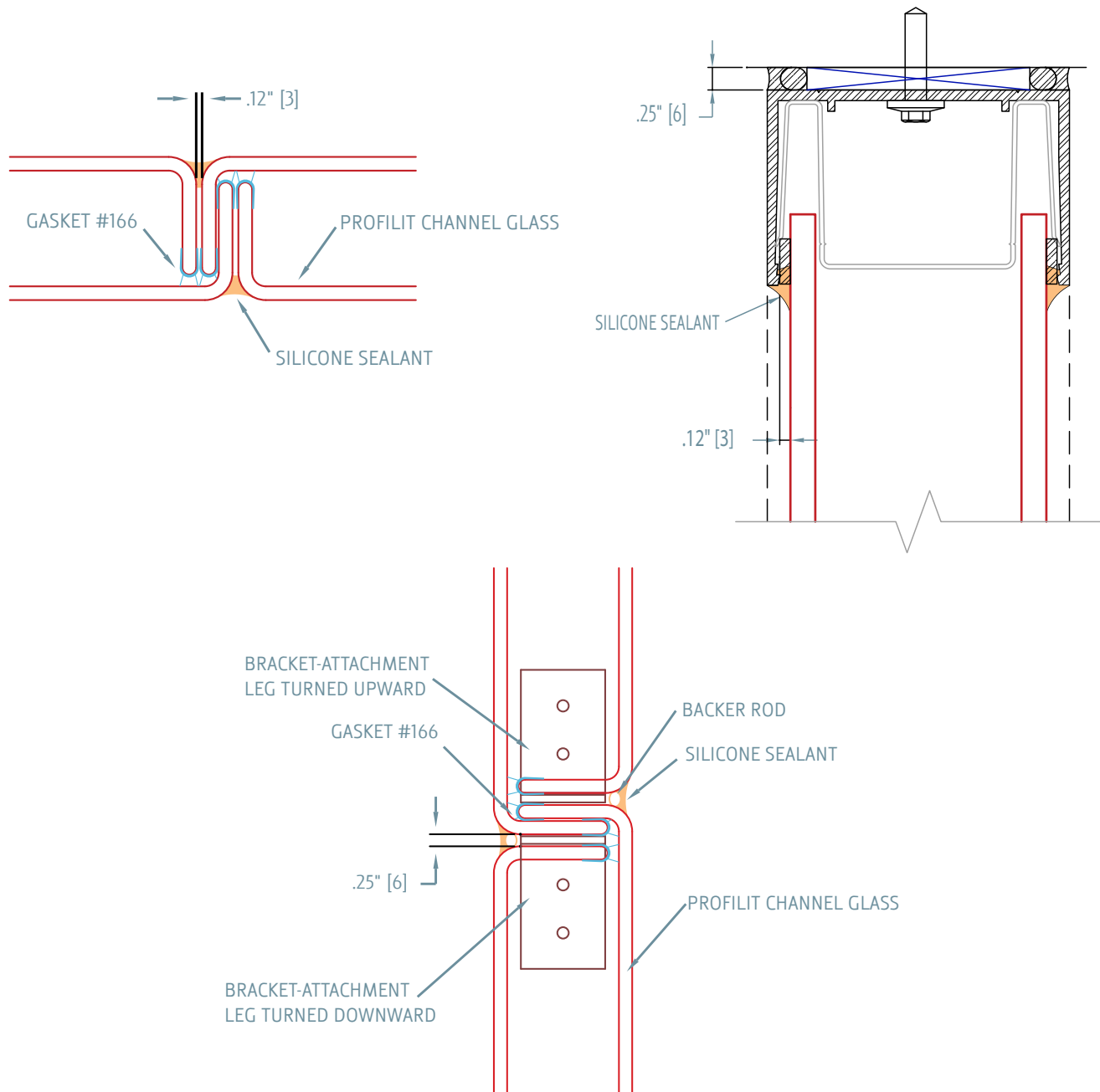
SYSTEMS ISOMETRIC VIEW



SEALANTS

The sealant used is a high quality translucent silicone, which picks up the natural tint of the glass. The sealant is applied to all glass-to-glass, glass-to-aluminum and aluminum-to-structure joints, providing a completely weather-tight seal to the Pilkington Profilit system. The silicone recommended is a one-part moisture curing sealant. The sealant has outstanding durability, resisting chemical and atmospheric deterioration.

Recommended Sealants: Schnee Moorhead S731, Dow Corning 1199, GE Sil-Glaze SCS 2801, and Tremco Tremsil 600.





SECTION 2 | DESIGN

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SINGLE GLAZED TEMPERED MAXIMUM GLASS PROFILE LENGTHS IN METERS (Unsupported Glass Length for Vertical Installations in Canada)

Design Load kN/m ²	Design Load lbs/ft ²	SINGLE GLAZING - Wired and Non Wired							
		Pilkington Profilit Glass Type	K 22/41/6	K 25/41/6	K 32/41/6	K 50/41/6	K 22/60/7	K 25/60/7	K 32/60/7
0.50	10.50		2.70	2.50	2.30	1.90	4.20	4.00	3.60
0.60	12.50		2.40	2.30	2.00	1.70	3.85	3.60	3.30
0.70	14.60		2.30	2.10	1.90	1.60	3.55	3.40	3.00
0.80	16.70		2.10	2.00	1.80	1.50	3.35	3.20	2.85
0.90	18.80		2.00	1.90	1.70	1.40	3.10	2.95	2.70
1.00	20.00		1.90	1.80	1.60	1.30	3.00	2.80	2.55
1.20	25.00		1.70	1.60	1.50	1.20	2.70	2.55	2.30
1.40	29.20		1.60	1.50	1.35	1.10	2.50	2.40	2.15
1.60	33.40		1.50	1.40	1.25	1.00	2.35	2.20	2.00
1.80	37.60		1.40	1.30	1.20	0.95	2.20	2.10	1.90
2.00	41.70		1.30	1.20	1.10	0.90	2.10	2.00	1.80
3.00	62.00		1.00	1.00	0.90	0.75	1.70	1.60	1.45

These tables give maximum installation lengths in meters for vertically glazed tempered Pilkington Profilit glass within closed buildings and should be used as a guide only. All design details should be confirmed by Technical Glass Products' technical service department. All installation lengths have been calculated to accommodate a 50% overload safety factor in accordance with National Testing protocol.

Please Note: Longer installation lengths may be achieved with the use of wind anchors. Contact TGP for further information

DOUBLE GLAZED TEMPERED MAXIMUM GLASS PROFILE LENGTHS IN METERS (Unsupported Glass Length for Vertical Installations in Canada)

Design Load kN/m ²	Design Load lbs/ft ²	DOUBLE GLAZING - Wired and Non Wired						
Pilkington Profilit Glass Type		K 22/41/6	K 25/41/6	K 32/41/6	K 50/41/6	K 22/60/7	K 25/60/7	K 32/60/7
0.50	10.50	3.80	3.60	3.20	2.70	6.00	5.70	5.10
0.60	12.50	3.40	3.25	3.00	2.40	5.40	5.15	4.65
0.70	14.60	3.20	3.00	2.70	2.25	5.00	4.75	4.30
0.80	16.70	3.00	2.80	2.55	2.10	4.70	4.50	4.00
0.90	18.80	2.80	2.70	2.40	2.00	4.40	4.20	3.80
1.00	20.00	2.65	2.50	2.30	1.90	4.20	4.00	3.60
1.10	23.00	2.55	2.40	2.20	1.80	4.05	3.80	3.45
1.20	25.00	2.40	2.30	2.00	1.70	3.80	3.60	3.30
1.40	29.20	2.25	2.10	1.90	1.60	3.50	3.40	3.00
1.60	33.40	2.10	2.00	1.75	1.45	3.30	3.15	2.80
1.80	37.60	2.00	1.90	1.65	1.35	3.10	3.00	2.65
2.00	41.70	1.85	1.75	1.55	1.30	3.00	2.80	2.55
3.00	62.00	1.50	1.40	1.30	1.00	2.40	2.30	2.00

These tables give maximum installation lengths in meters for vertically glazed tempered Pilkington Profilit glass within closed buildings and should be used as a guide only. All design details should be confirmed by Technical Glass Products' technical service department. All installation lengths have been calculated to accommodate a 50% overload safety factor in accordance with National Testing protocol.

Maximum span (width) for horizontal Pilkington Profilit is 13'-0" or lesser lengths as indicated by the chart.

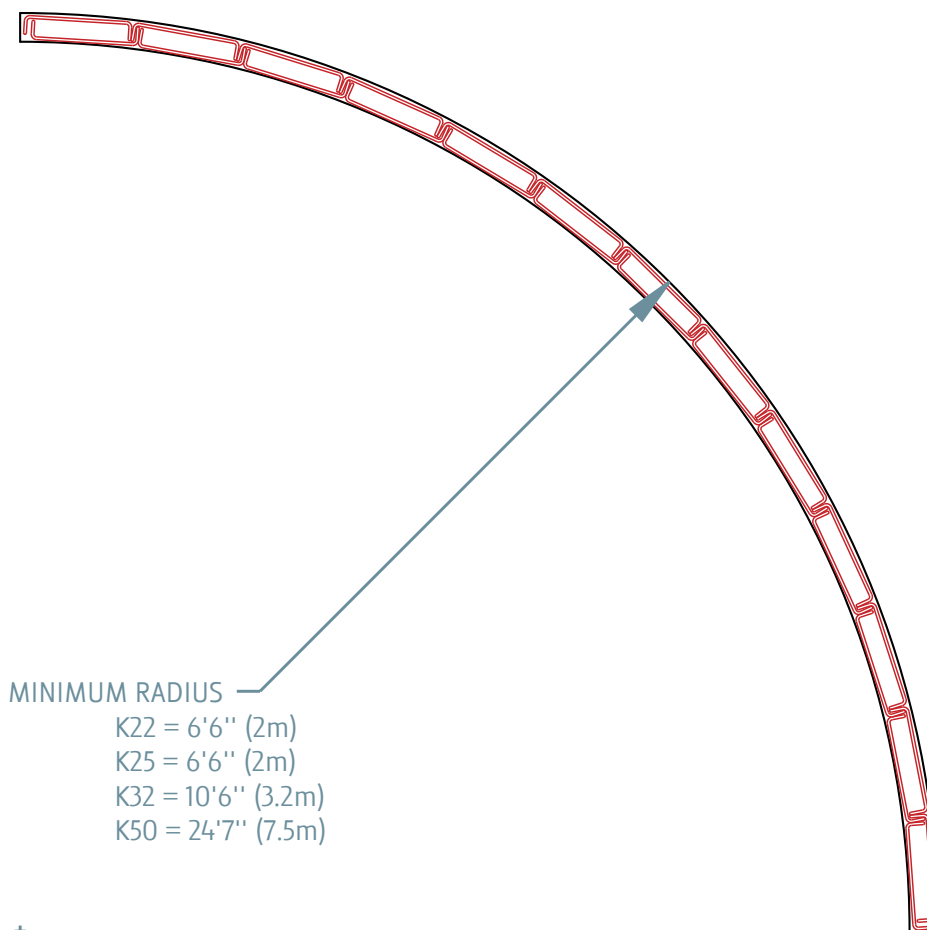
Please Note: Longer installation lengths may be achieved with the use of wind anchors. Contact TGP for further information

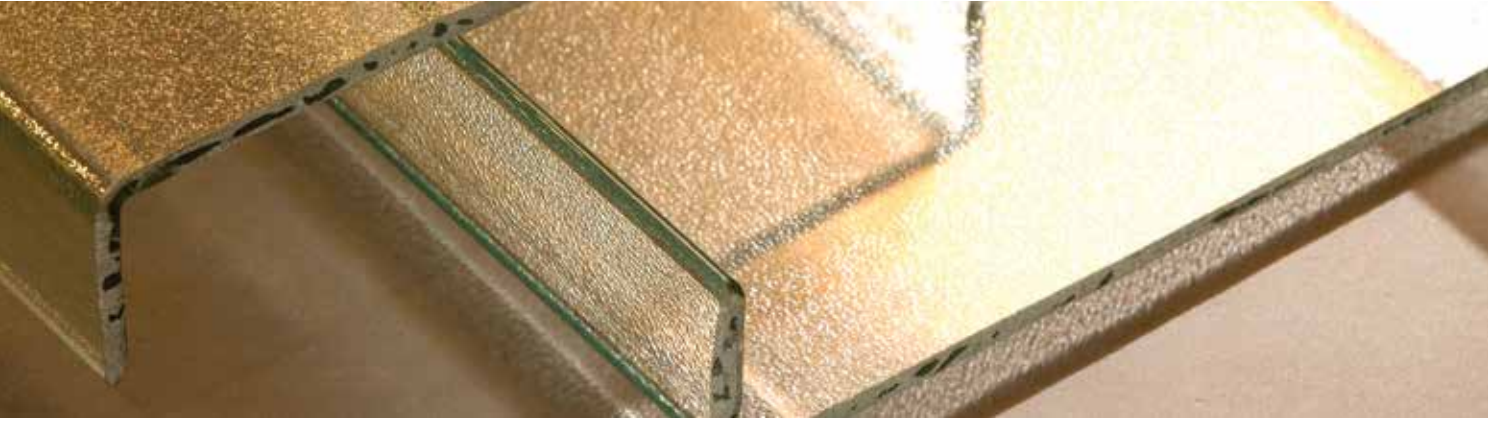
BENDING LIMITS OF THE ALUMINUM PROFILES

It is possible to curve the aluminum profiles successfully on plan. Non thermally broken profiles can also be curved on elevation to form arches; glass is cut at an angle to accommodate the arch and fit within the profile.

The minimum radius that the aluminum profiles may be bent is 6'6". This radius is measured to the outside of the frame as shown in the drawing below.:

K-60 Series 980WA and WT
981WA and WT

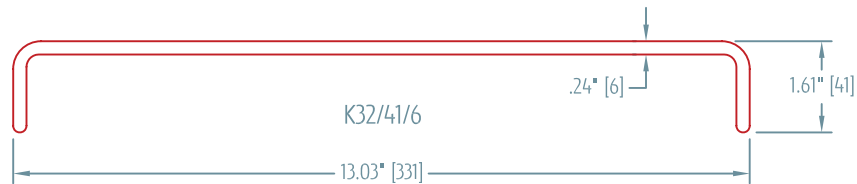
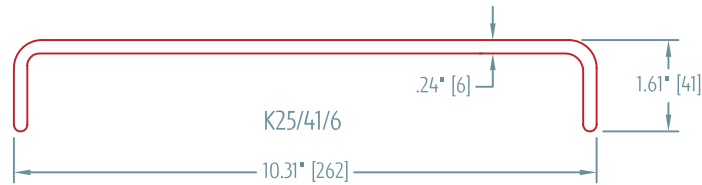
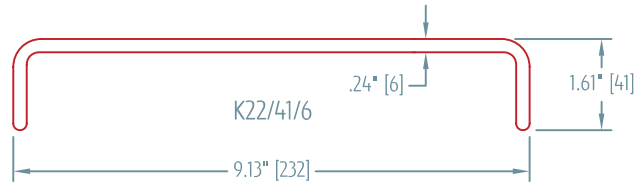


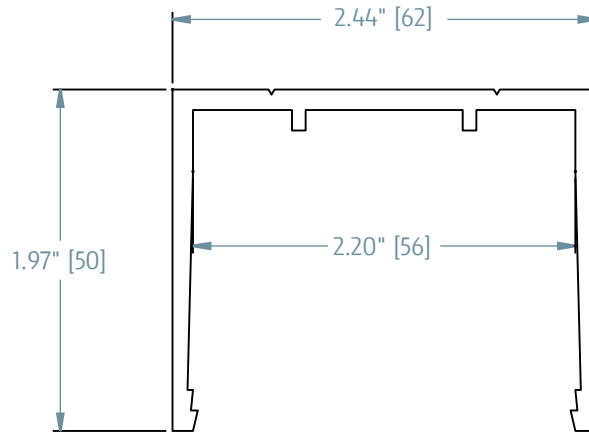


SECTION 3 | THE PRODUCT

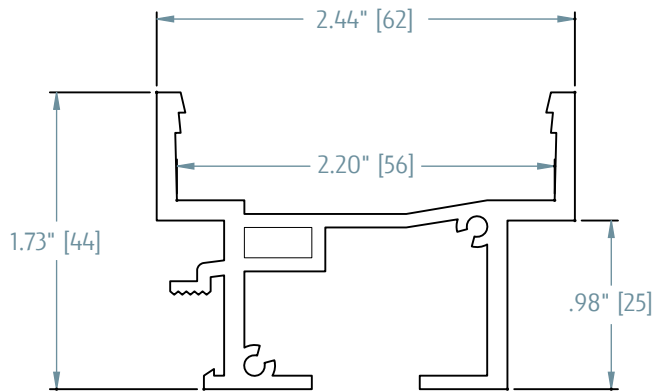
PROFILES AND COMPONENTS

CHANNEL GLASS AVAILABLE IN .24 IN (6 mm) THICKNESS

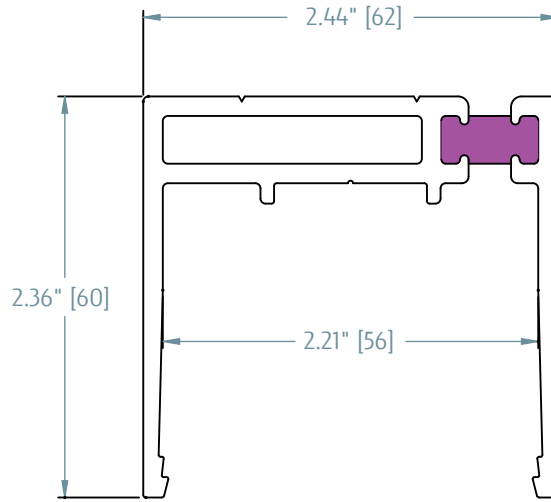




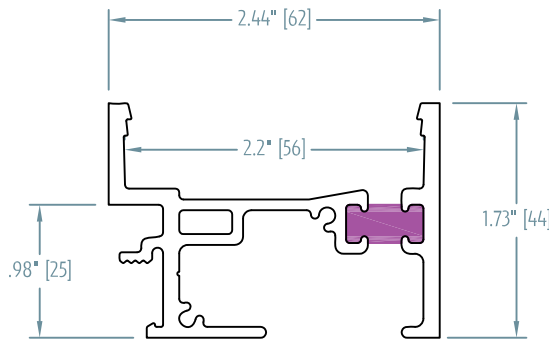
950WA HEAD / JAMB OR SILL FOR INTERIOR APPLICATIONS



961WA SILL

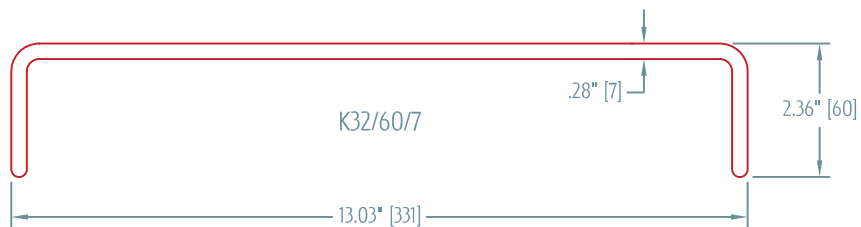
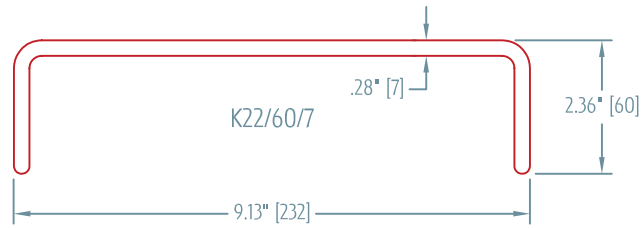


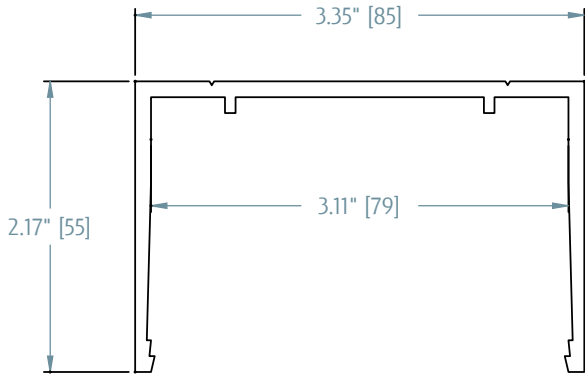
950WT HEAD / JAMB



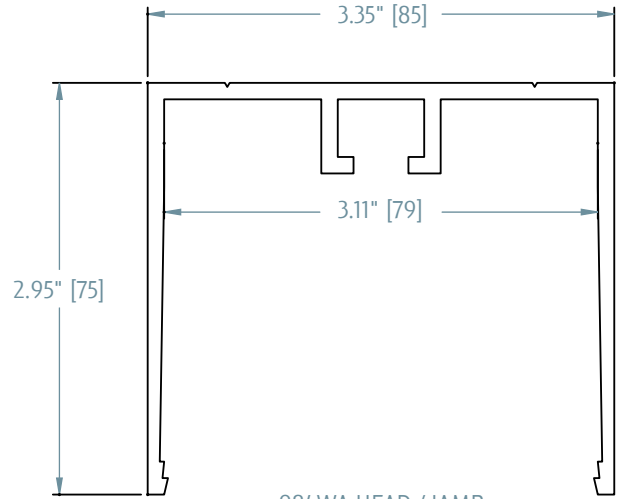
961WT SILL

CHANNEL GLASS AVAILABLE IN .28 IN (7 mm) THICKNESS

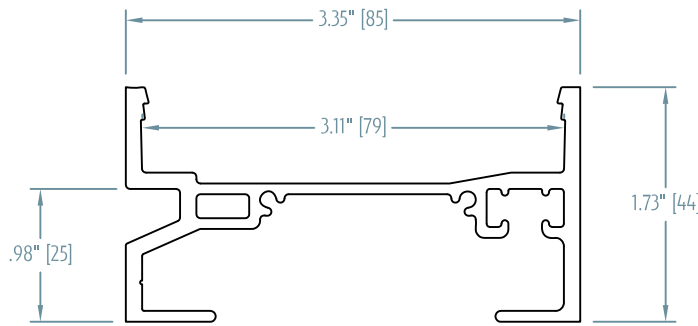




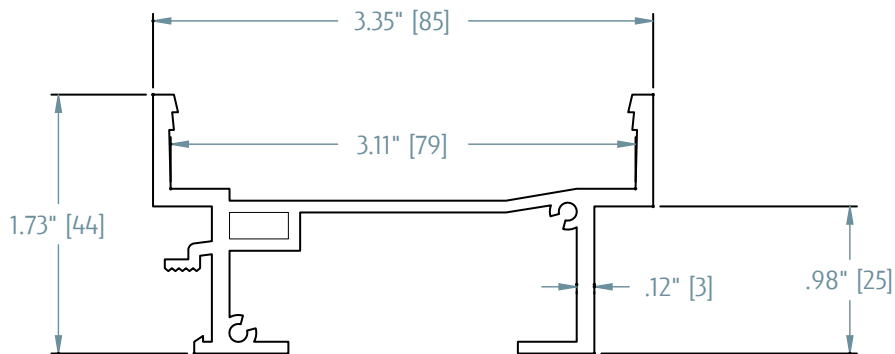
980WA HEAD / JAMB OR SILL FOR INTERIOR APPLICATIONS



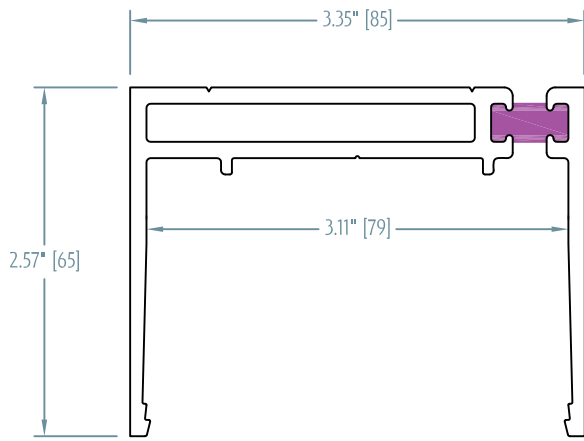
984WA HEAD / JAMB FOR HORIZONTAL INSTALLATION ONLY



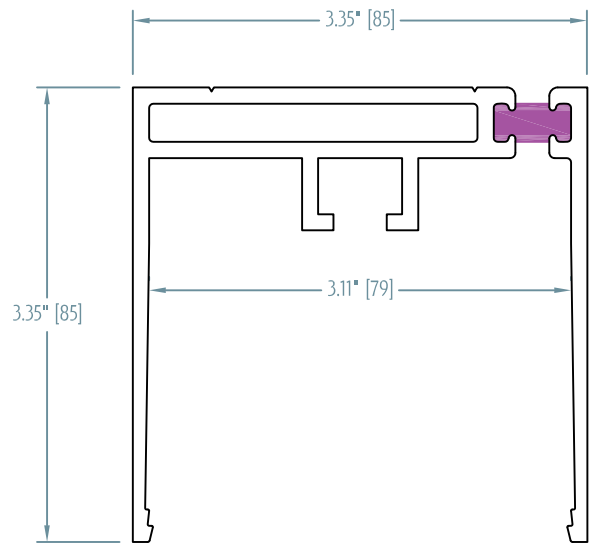
981WA-R6 SILL



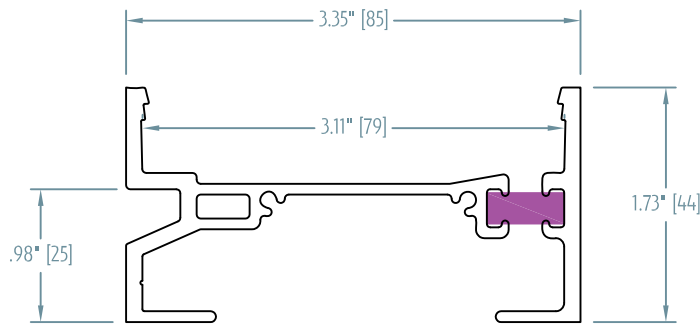
981WA



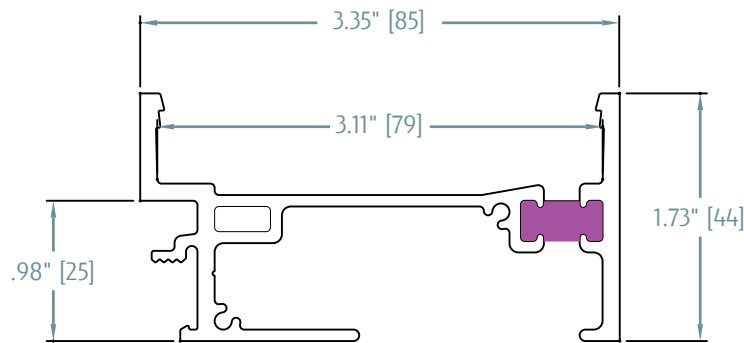
980WT HEAD / JAMB



984WT HEAD / JAMB
FOR HORIZONTAL INSTALLATION ONLY



981WT-R6 SILL



981WT SILL



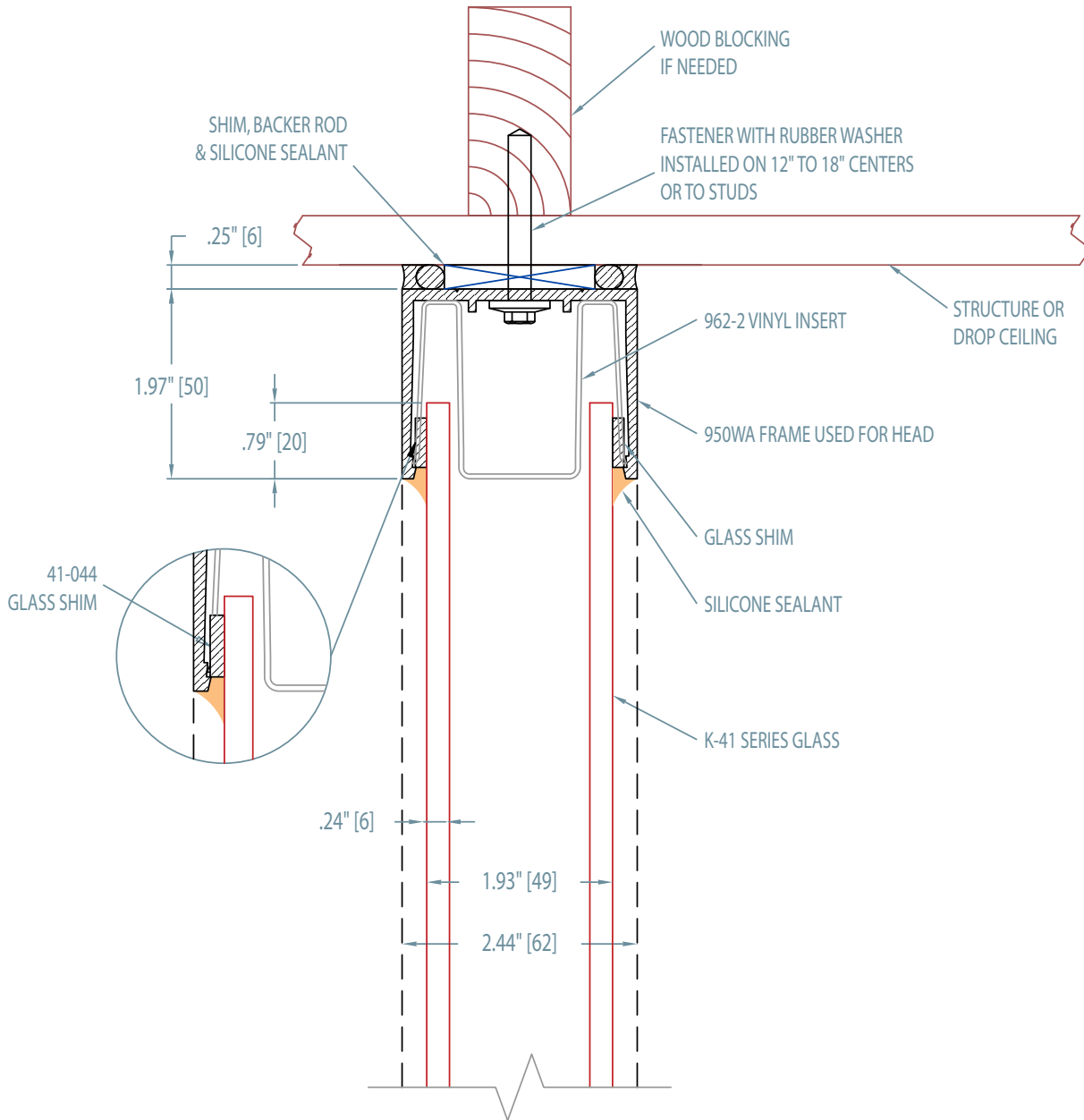
SECTION 4 | CONSTRUCTION APPLICATIONS AND DETAILS

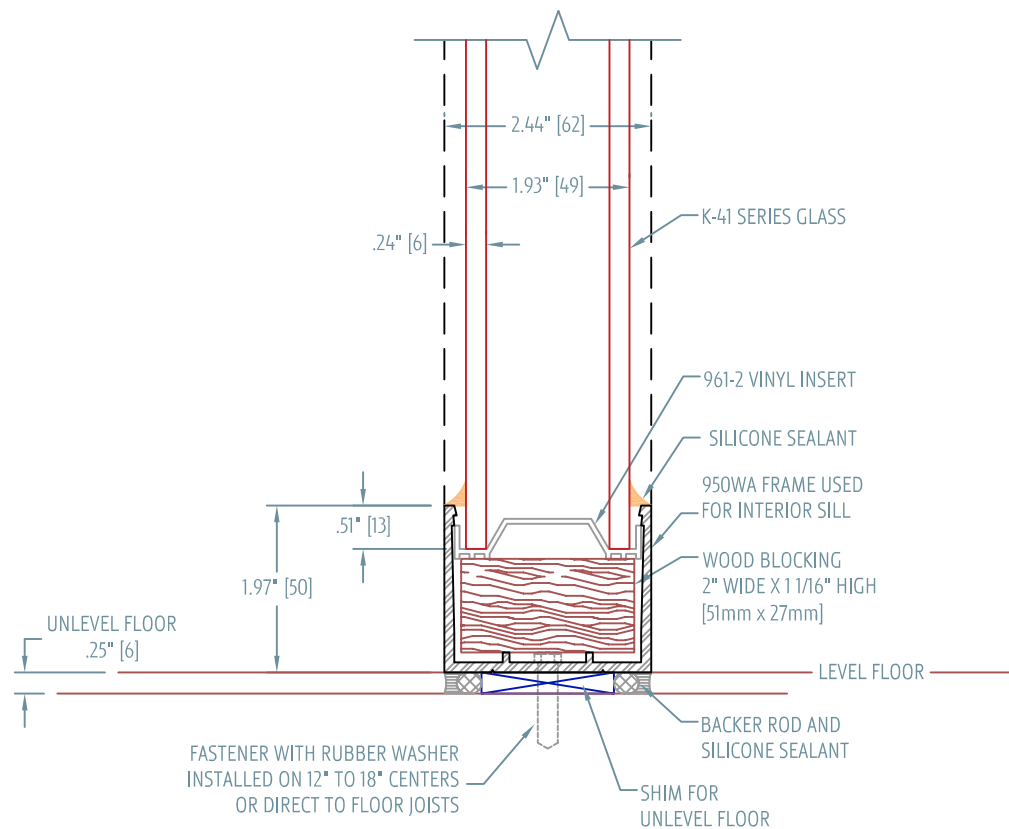
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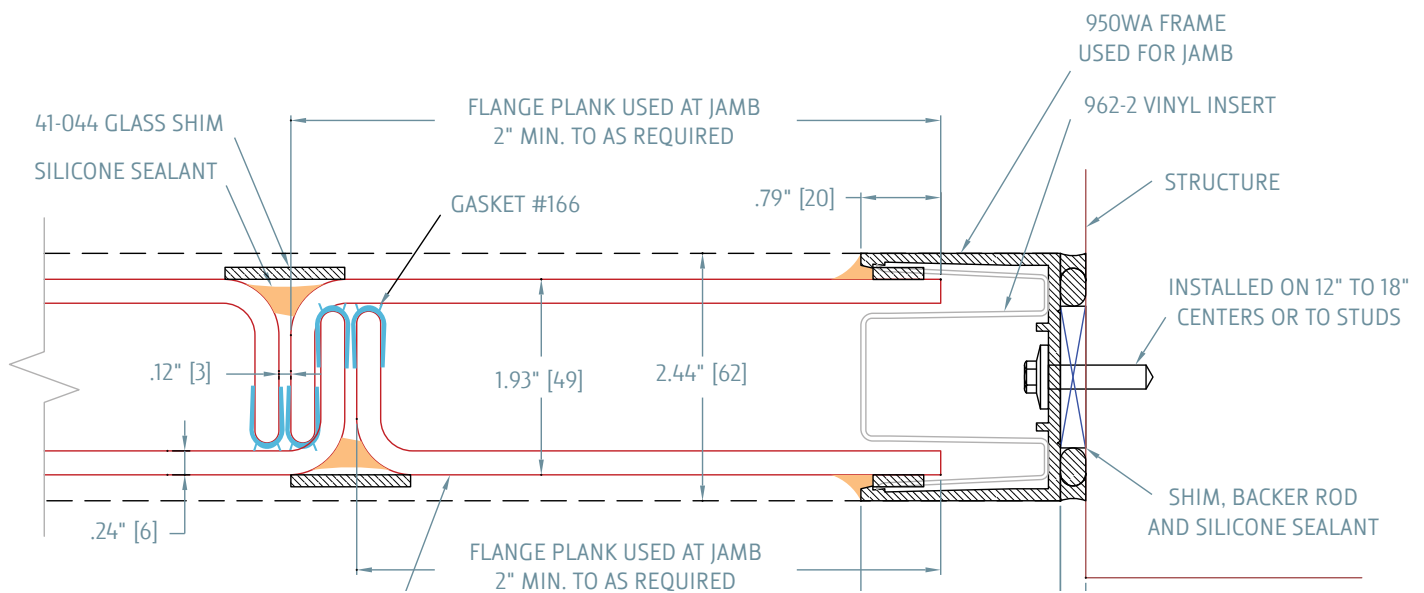
SECTION | 4

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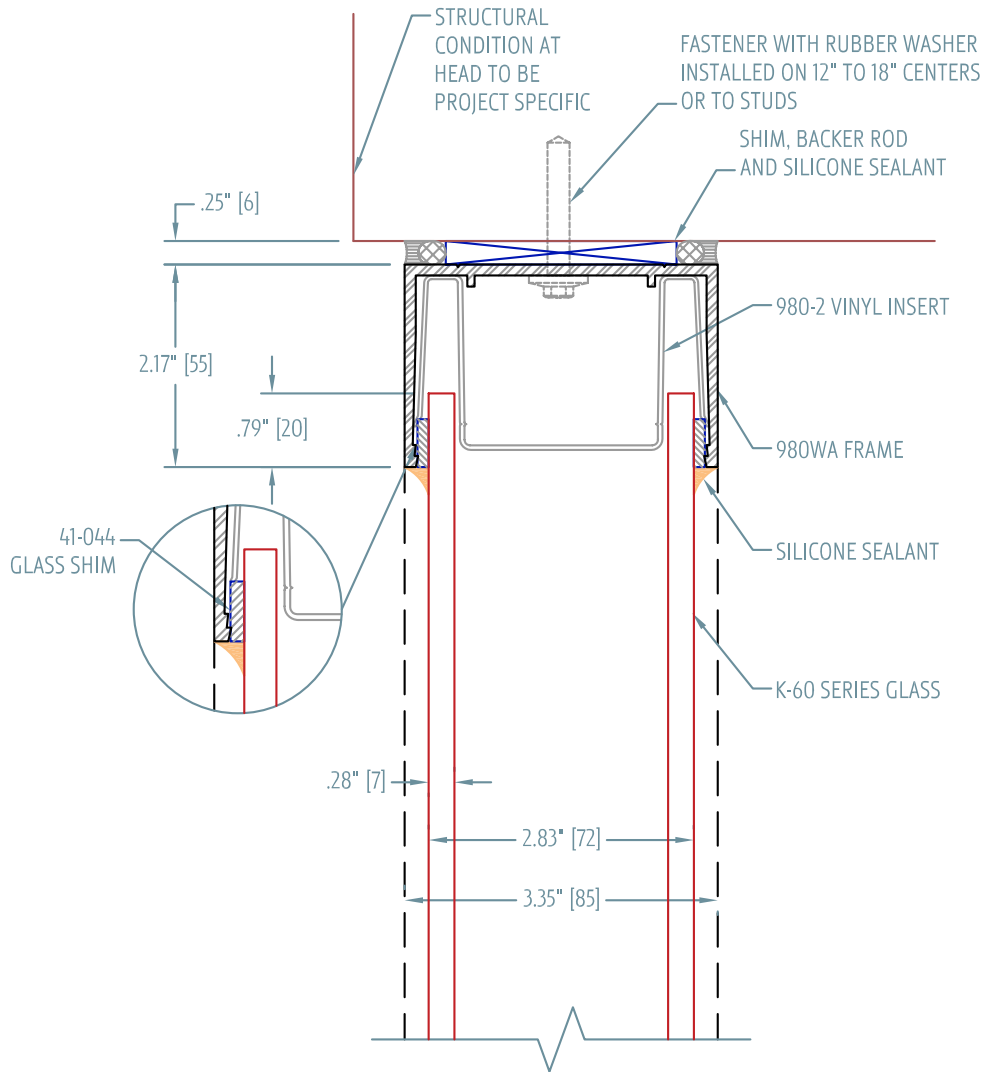




NOTE: USE WOOD BLOCKING TO MAINTAIN A MINIMUM 1/2" GLASS BITE INTO FRAMING.

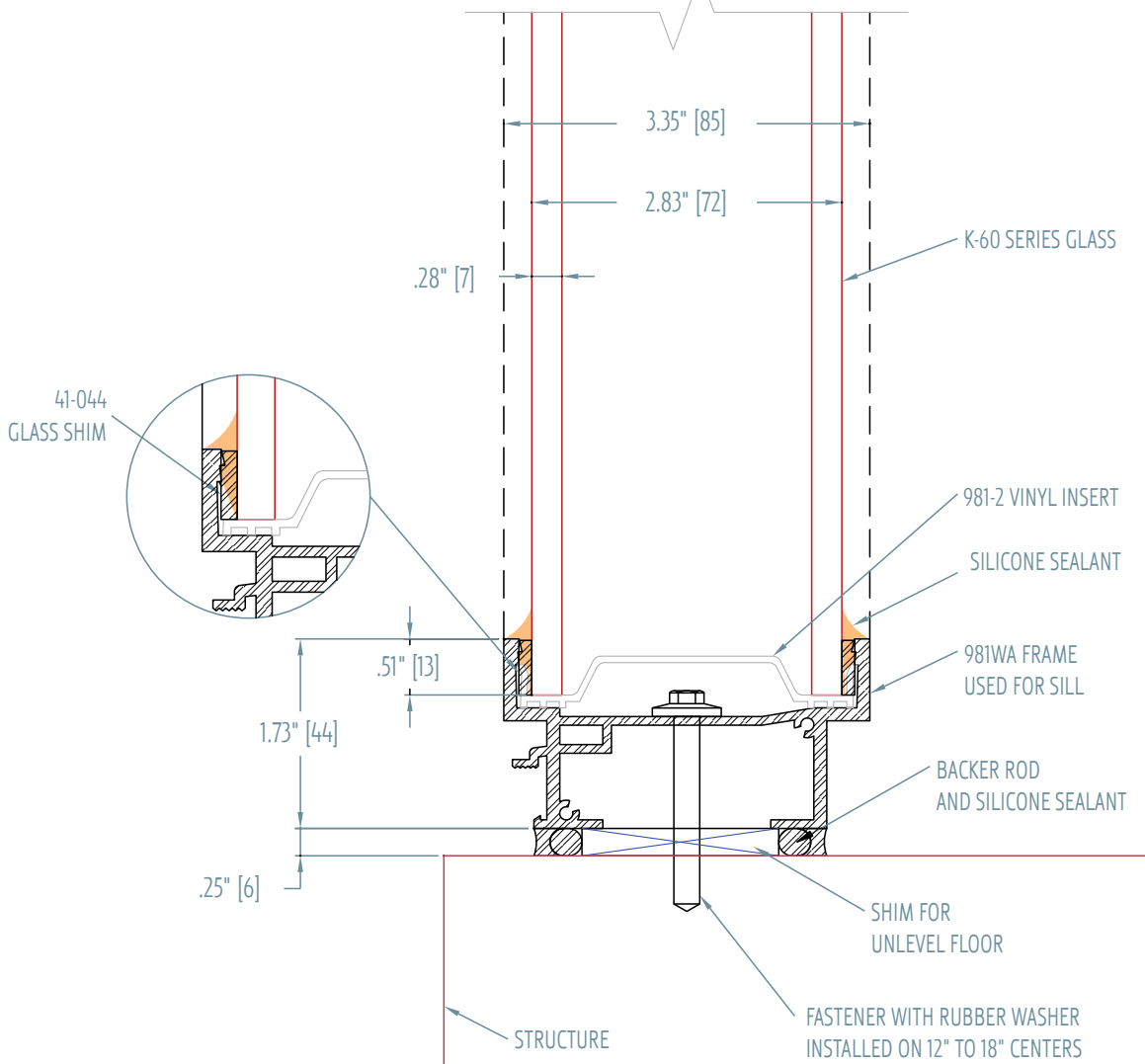


NOTE: MINIMUM 3/4" GLASS BITE INTO FRAMING

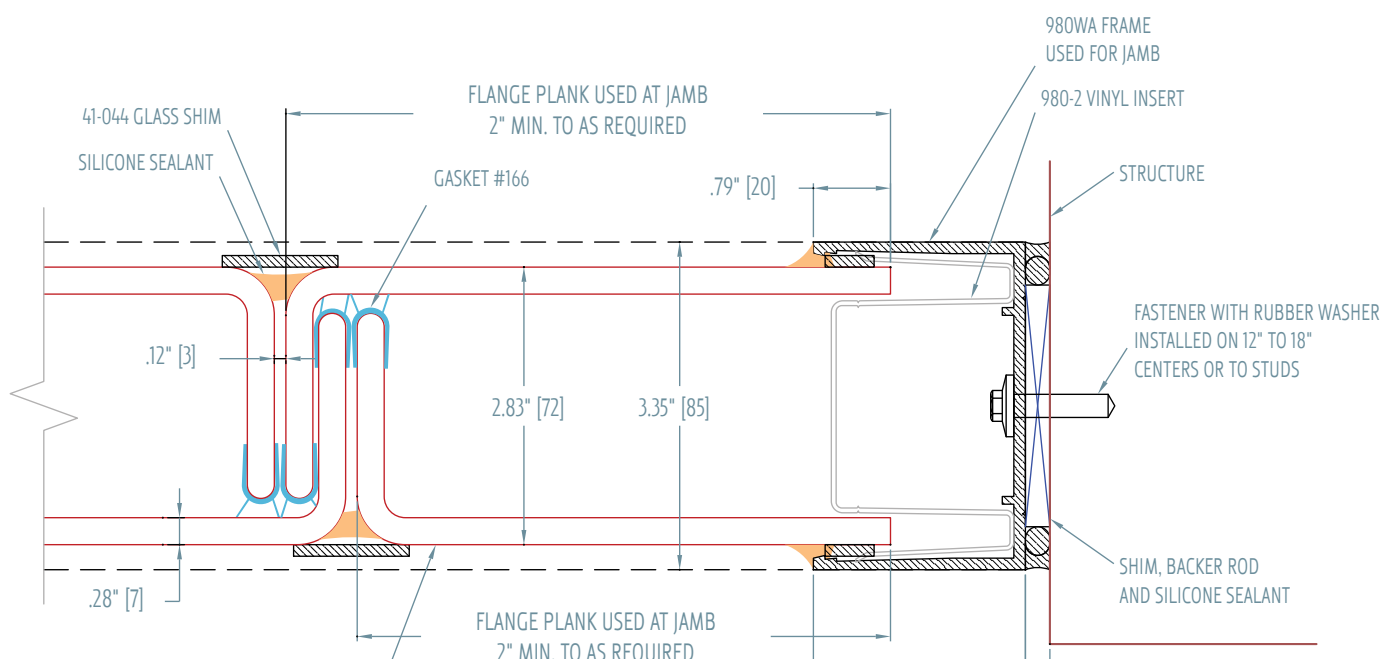


NOTE: MAINTAIN A 3/4" GLASS BITE INTO FRAMING

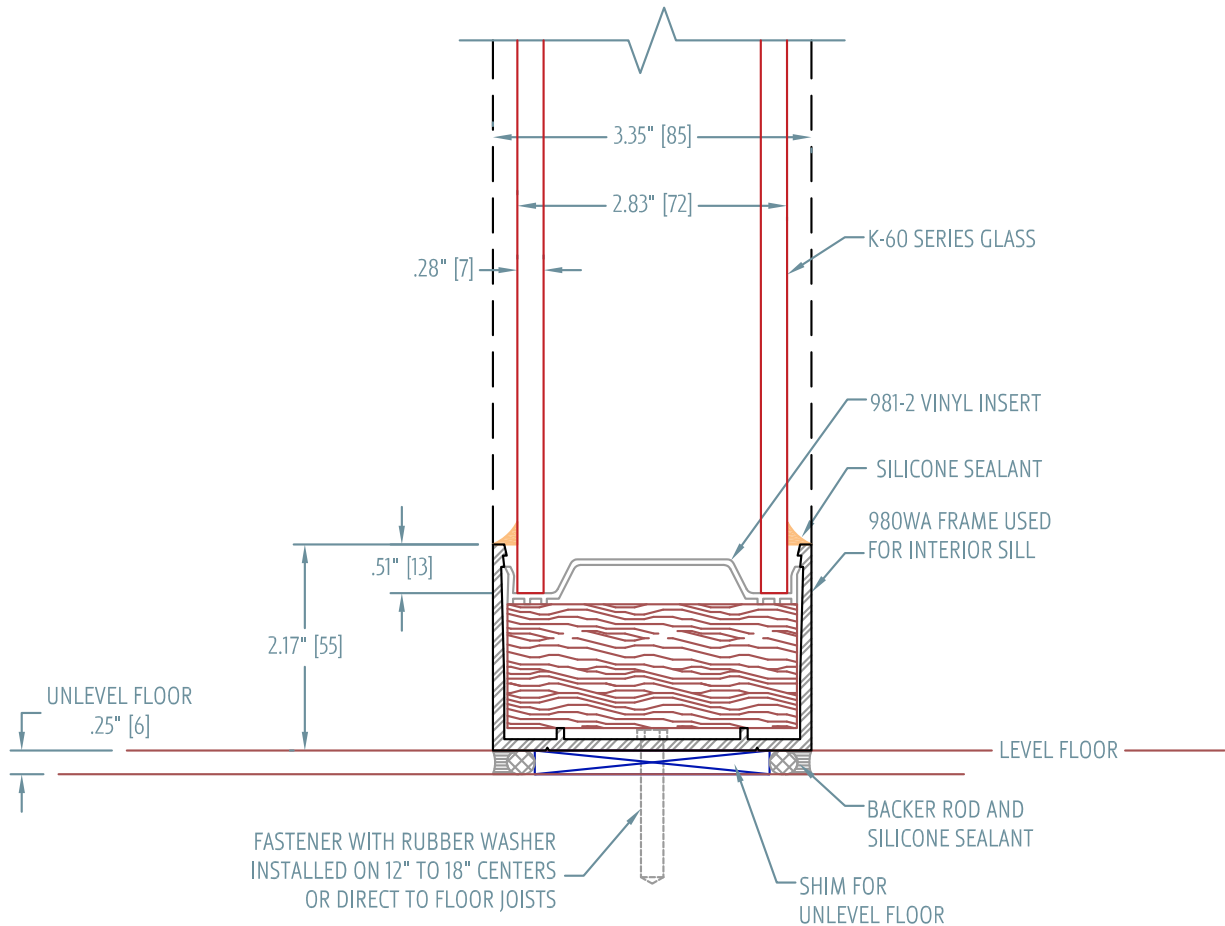
K-60 SERIES GLASS INSTALLED INTO 981WA FRAME PROFILE WITH 981-2 VINYL INSERT.



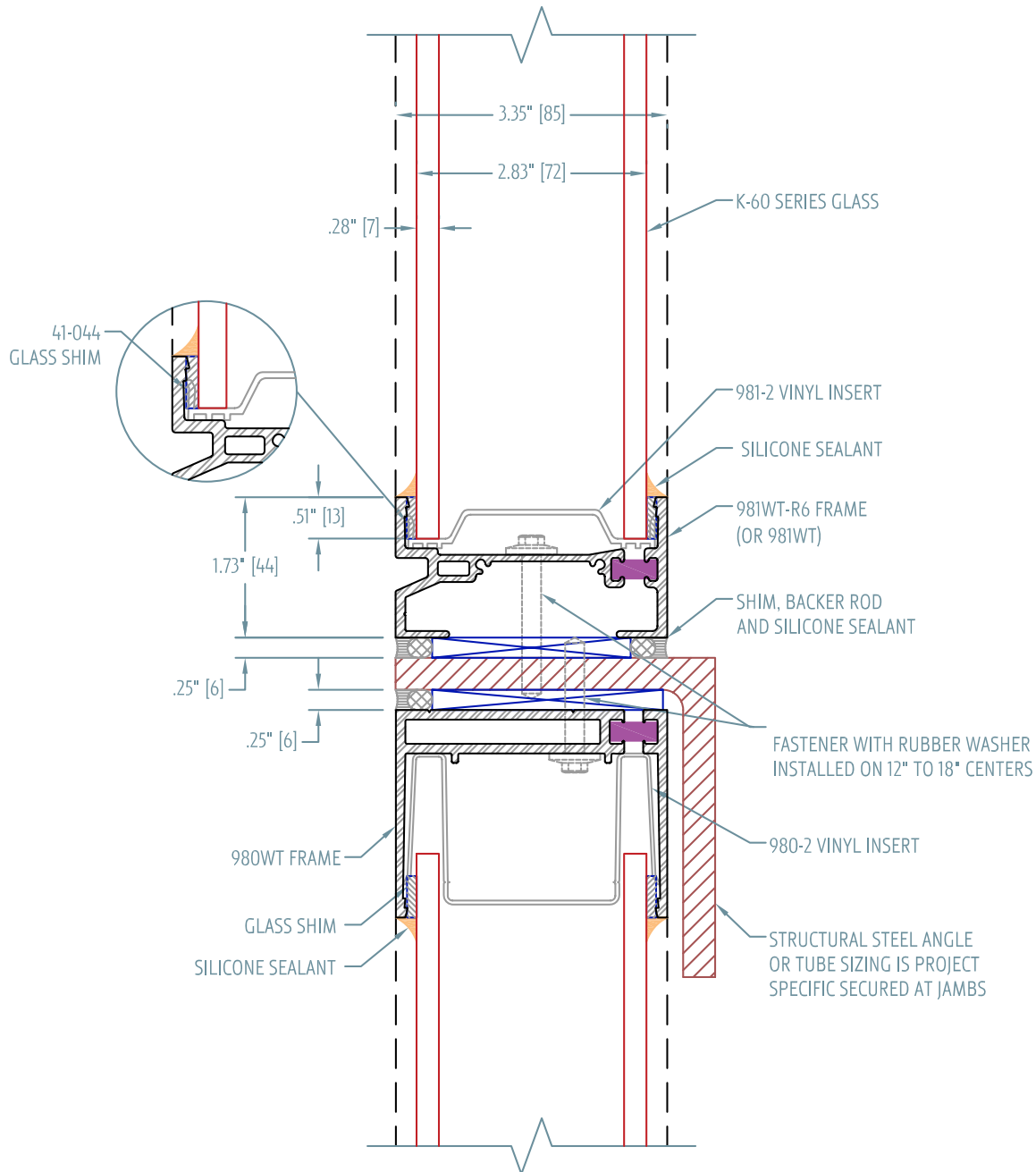
NOTE: MAINTAIN A 1/2" GLASS BITE INTO FRAMING



NOTE: MAINTAIN A 3/4" GLASS BITE INTO FRAMING

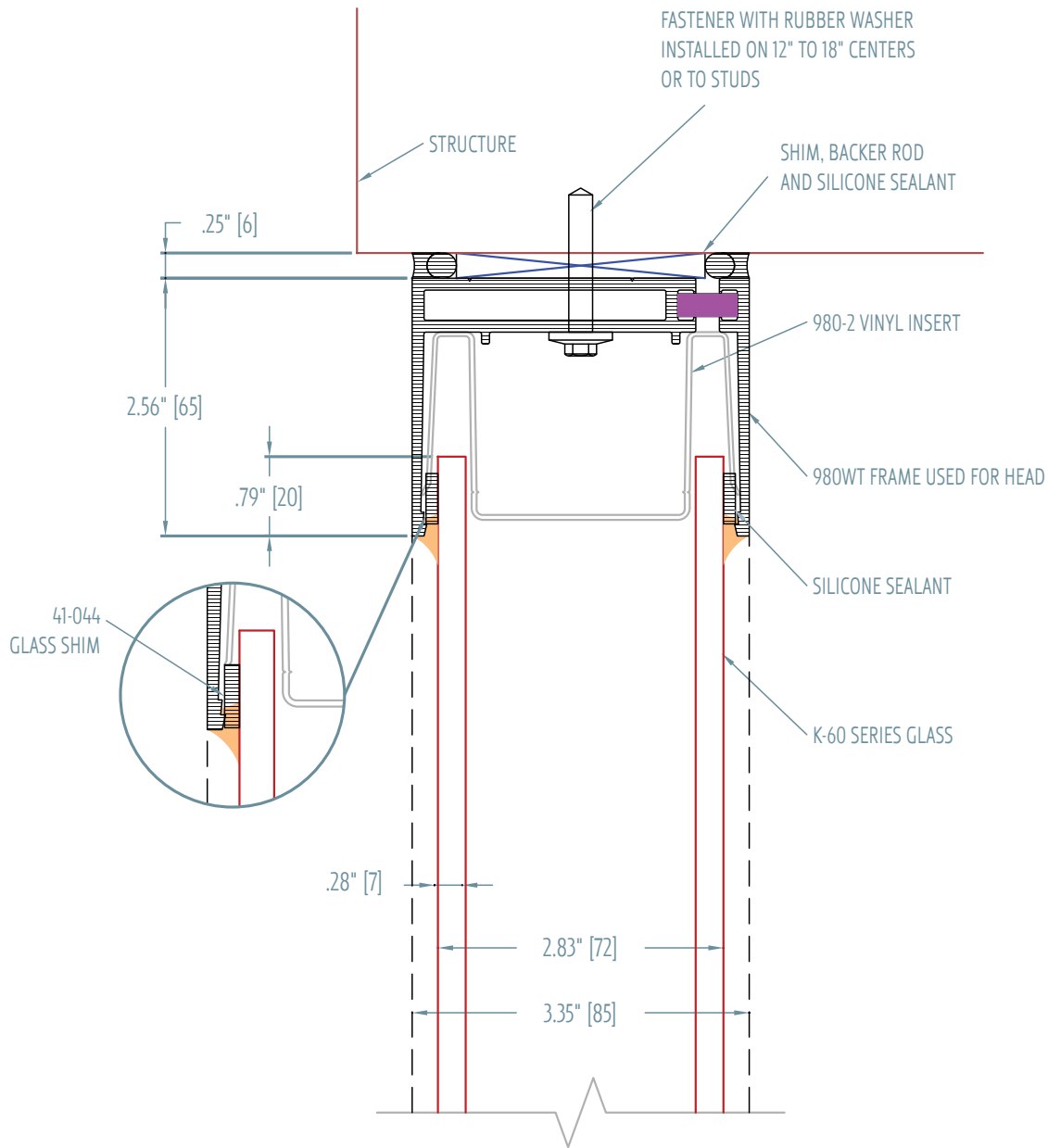


NOTE: USE WOOD BLOCKING TO MAINTAIN 1/2" GLASS BITE INTO FRAMING

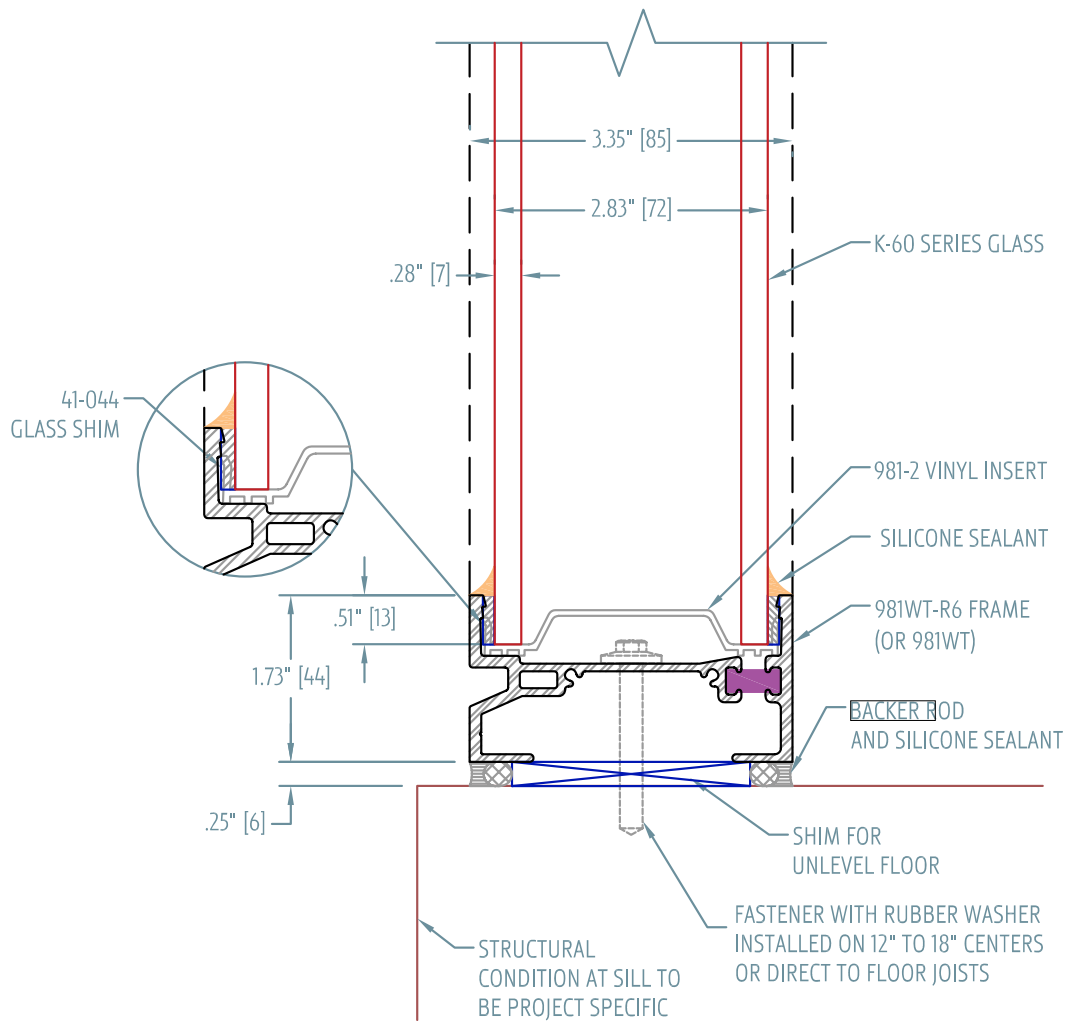


NOTE: SEE PAGE 37 FOR A HEAD RECEPTOR DETAIL TO ACCOMMODATE INTERSTORY MOVEMENT.

Pilkington Profilit™ K-60 Exterior Thermal Head Detail

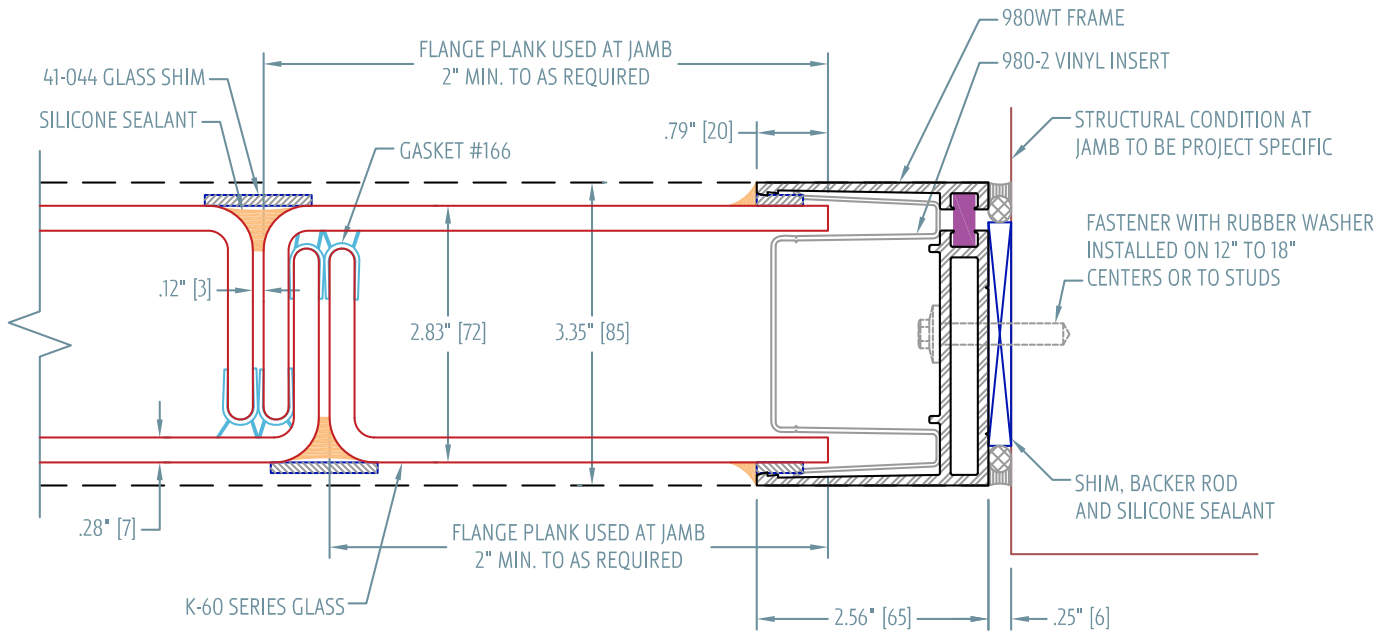


NOTE: MAINTAIN A 3/4" GLASS BITE INTO FRAMING

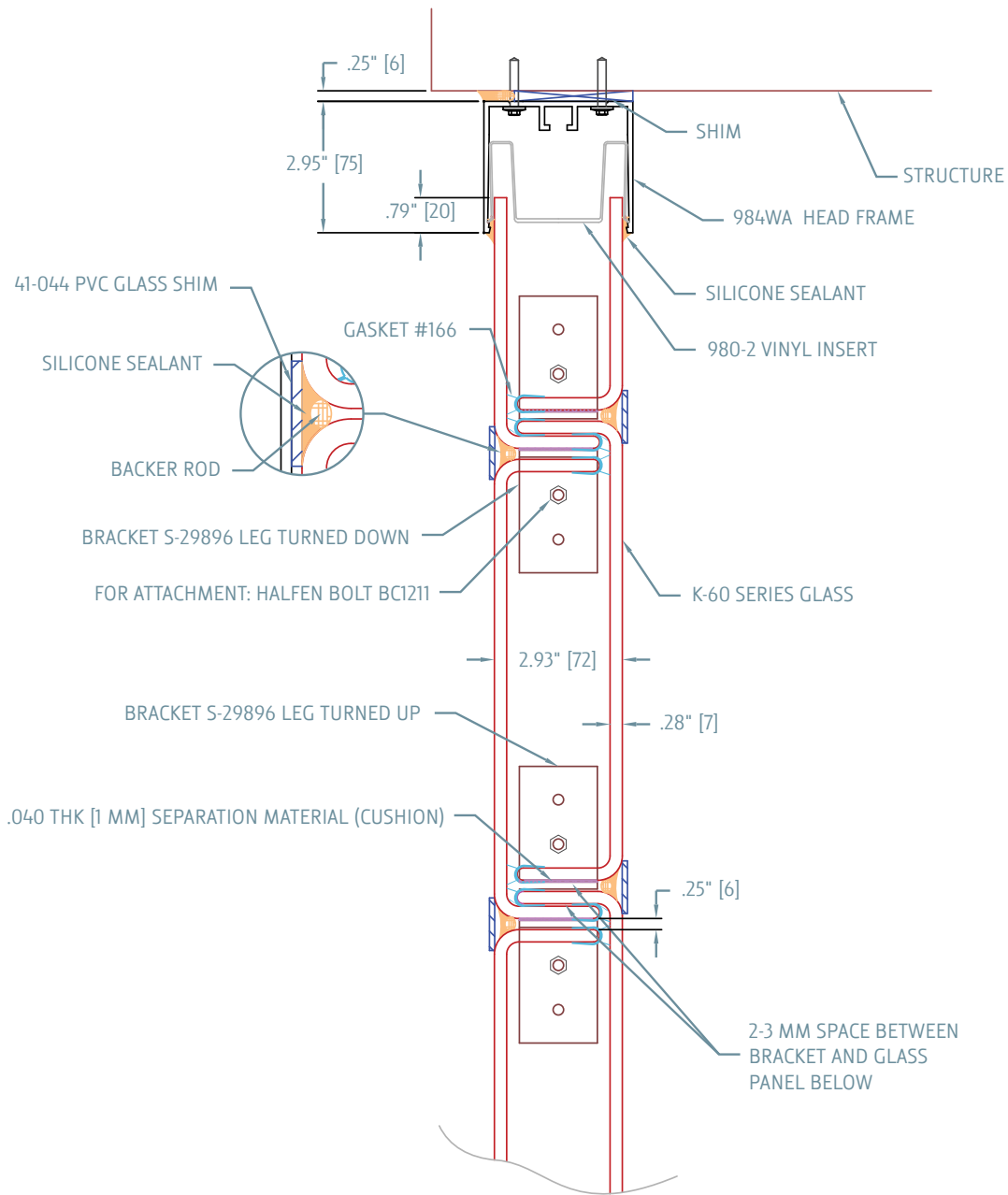


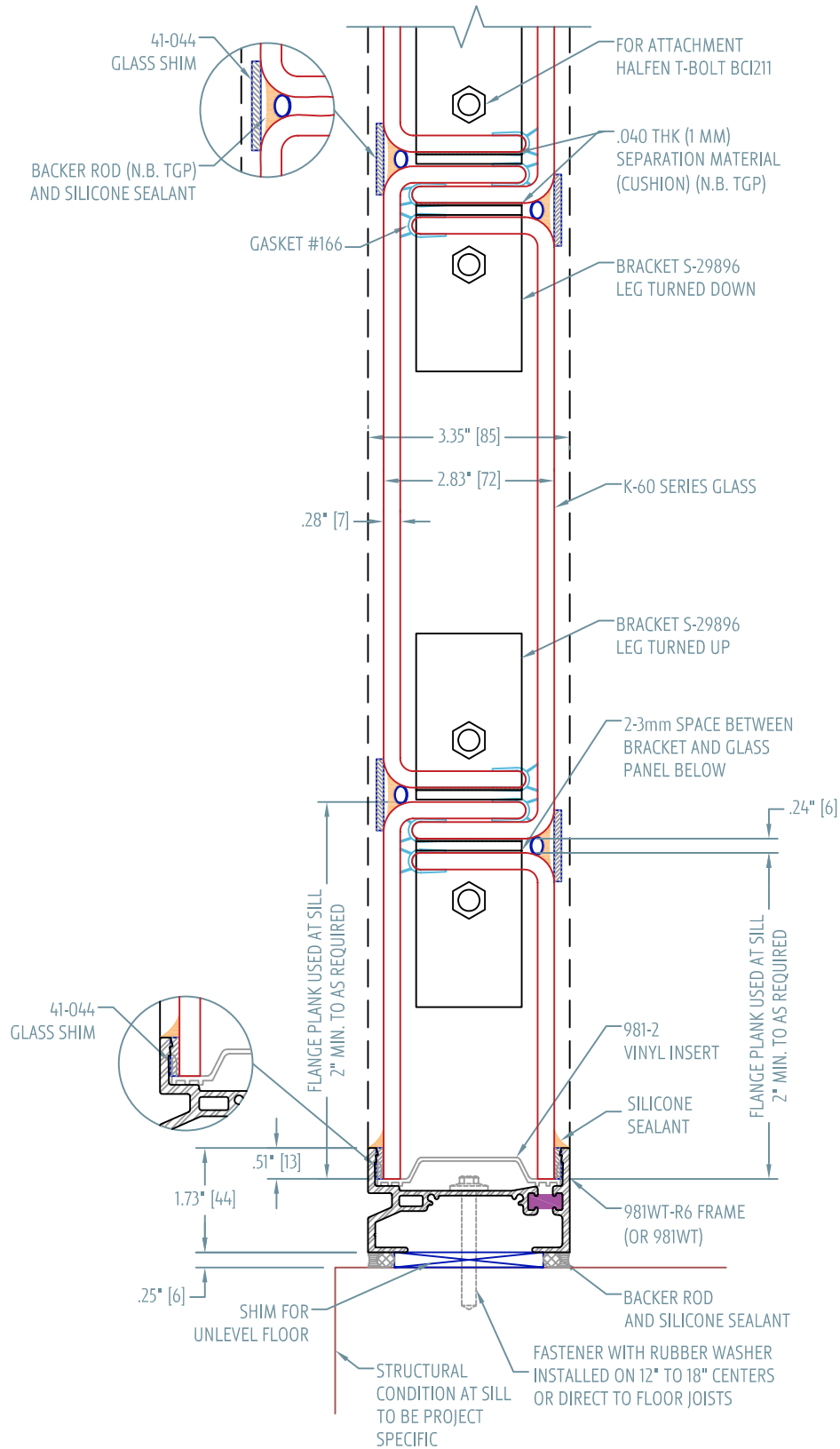
NOTE: MAINTAIN A 1/2" GLASS BITE INTO FRAMING

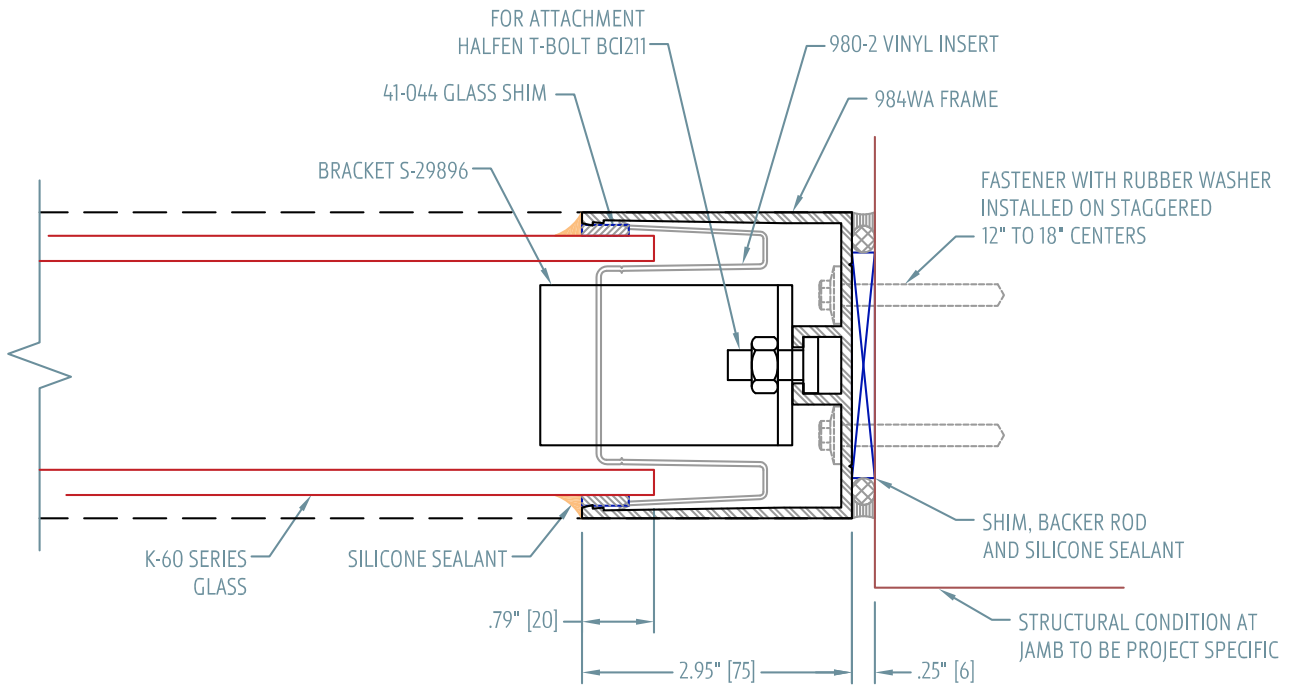
Pilkington Profilit™ K-60 Exterior Thermal Jamb Detail



NOTE: MAINTAIN A 3/4" GLASS BITE INTO FRAMING

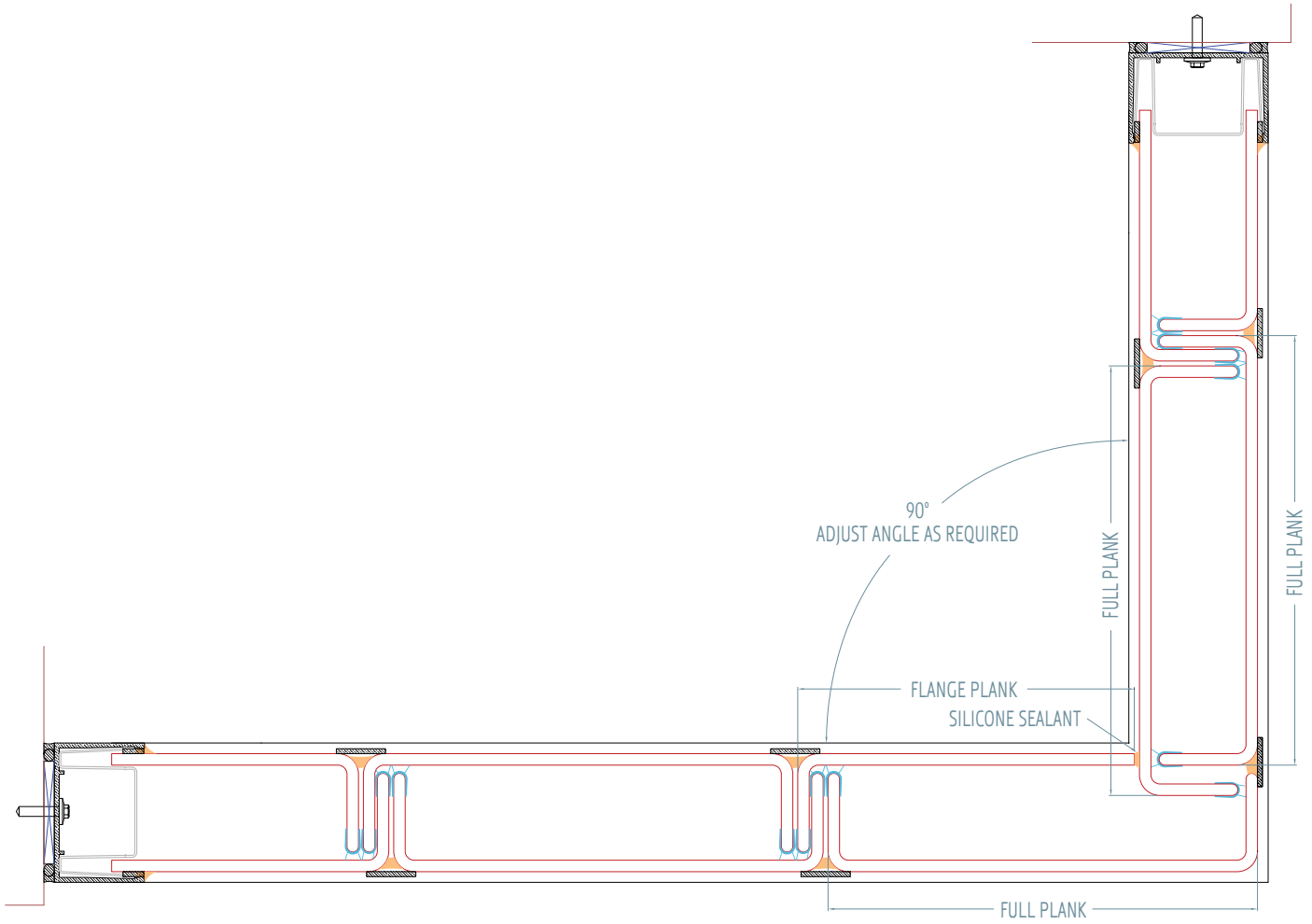




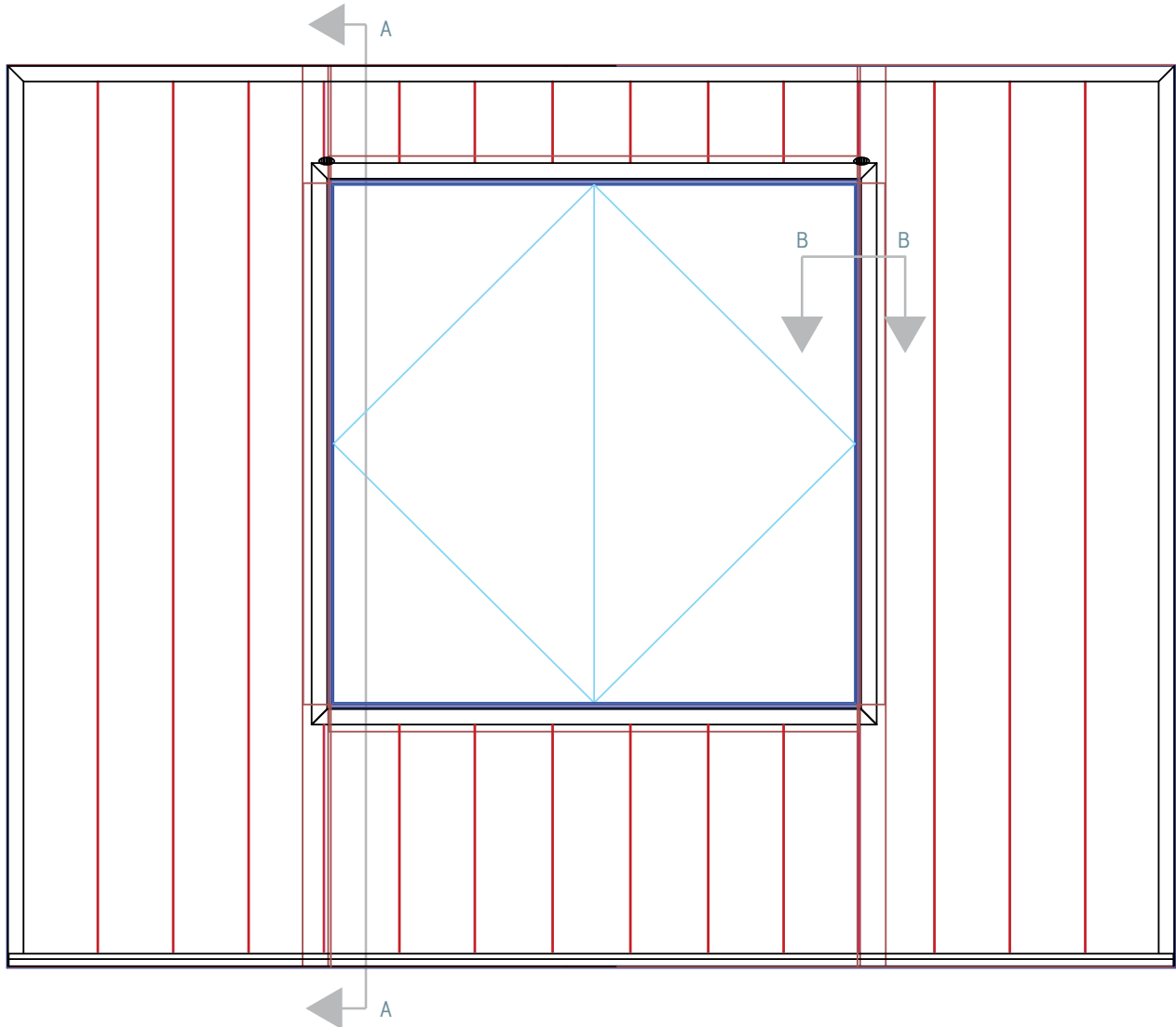


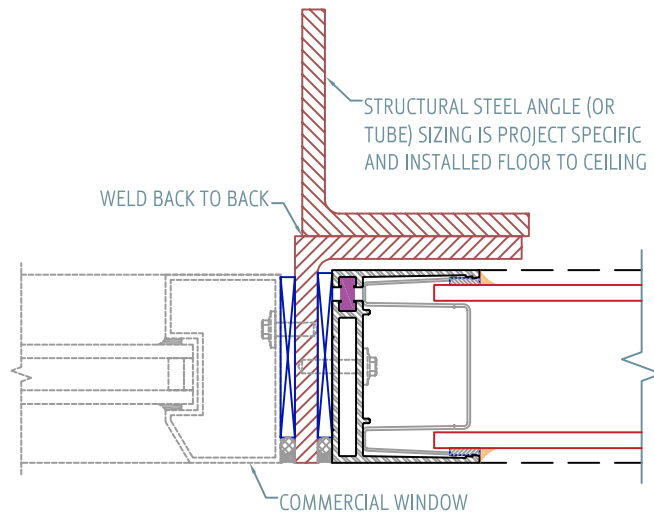
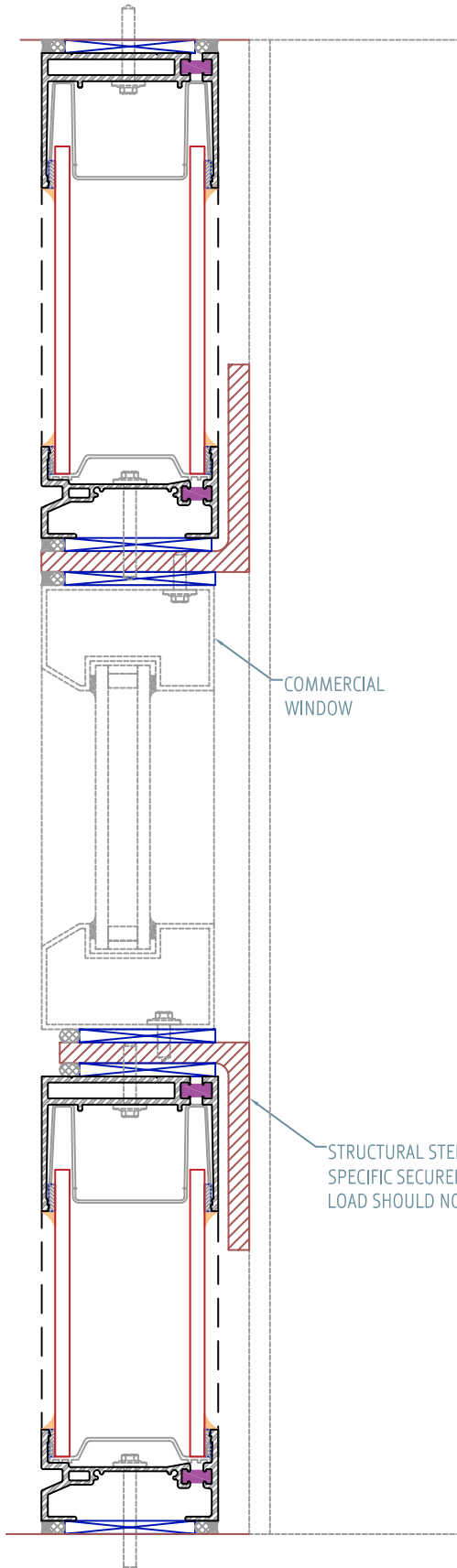
NOTE: MAINTAIN A MINIMUM 3/4" GLASS BITE INTO FRAMING

GLASS SHOWN ON A CORNER WHERE FLANGES GIVE VERTICAL STRENGTH, TYPICAL OF BOTH K-41 AND K-60 GLASS



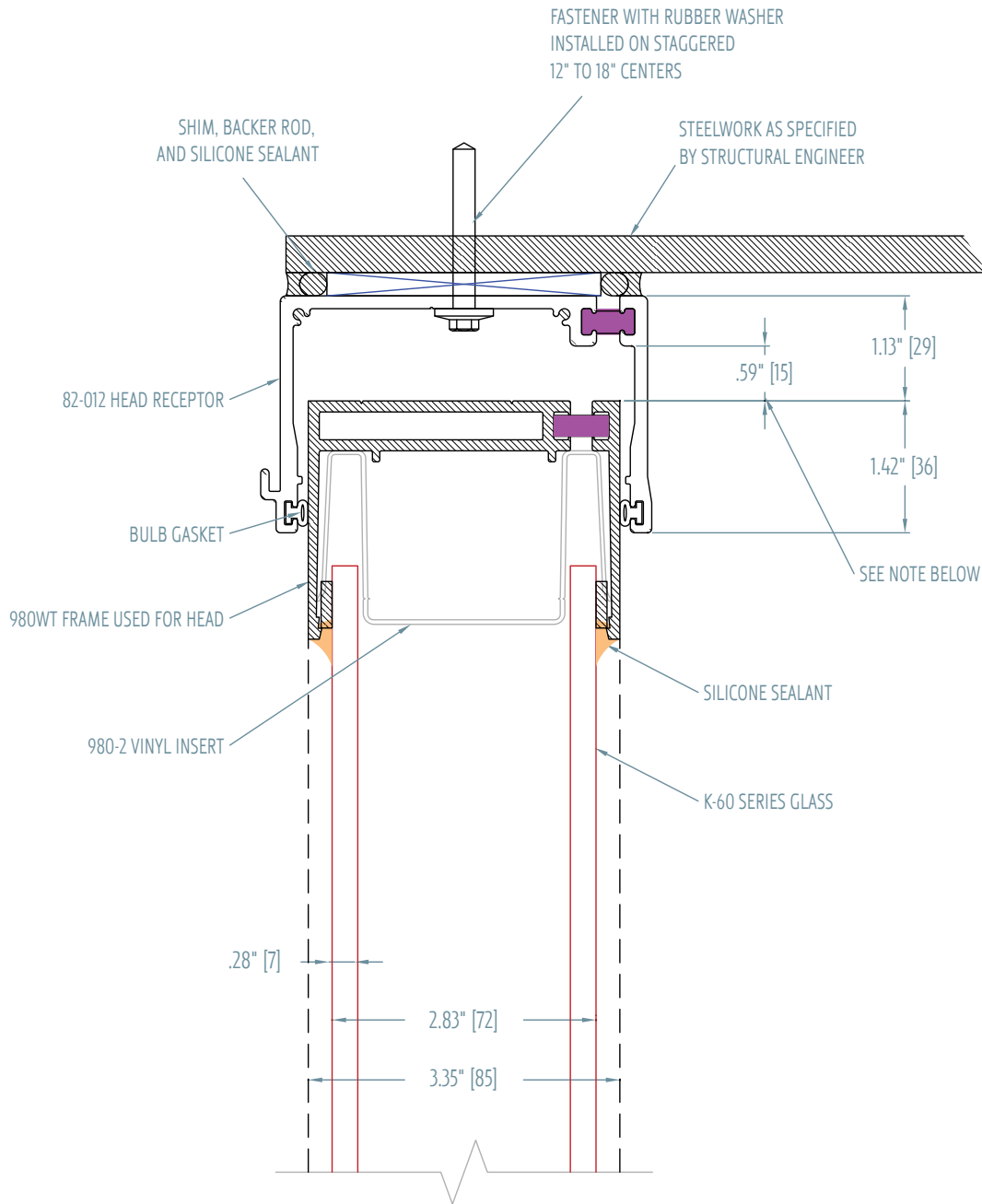
WINDOW GLASS INSTALLED INTO THE PILKINGTON PROFILIT SYSTEM WITH STRUCTURAL ANGLE USED AS SUPPORTS





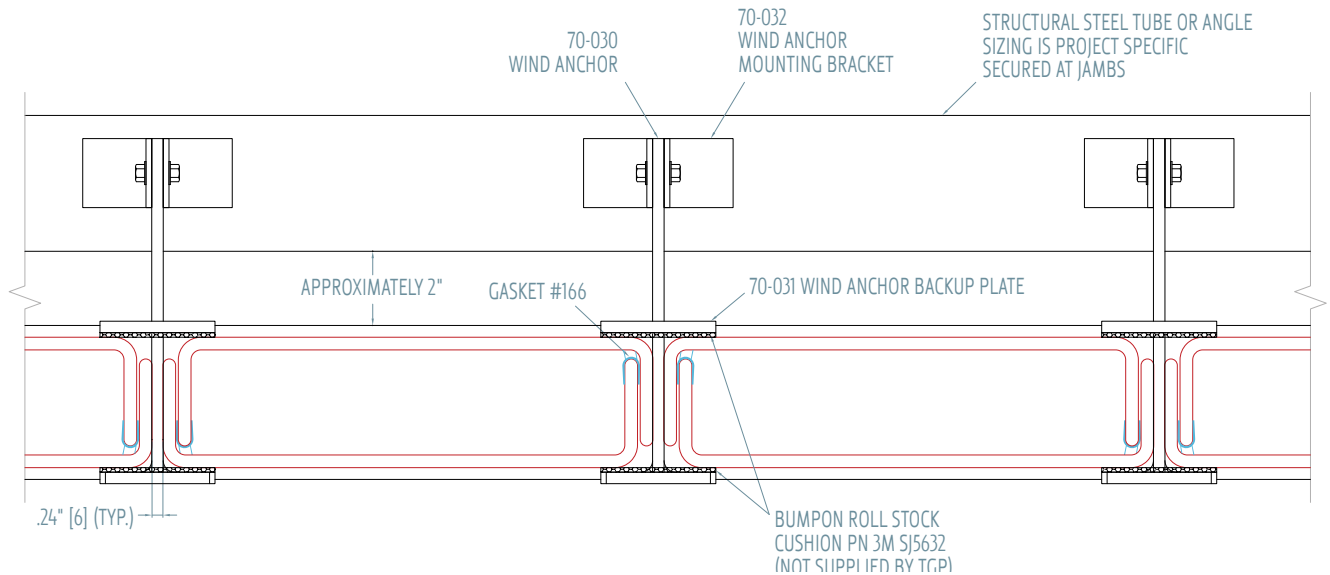
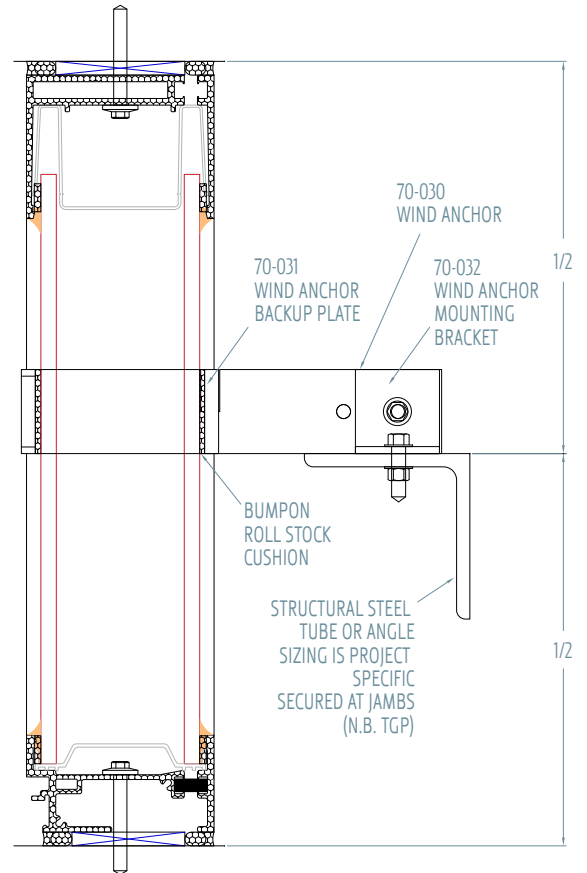
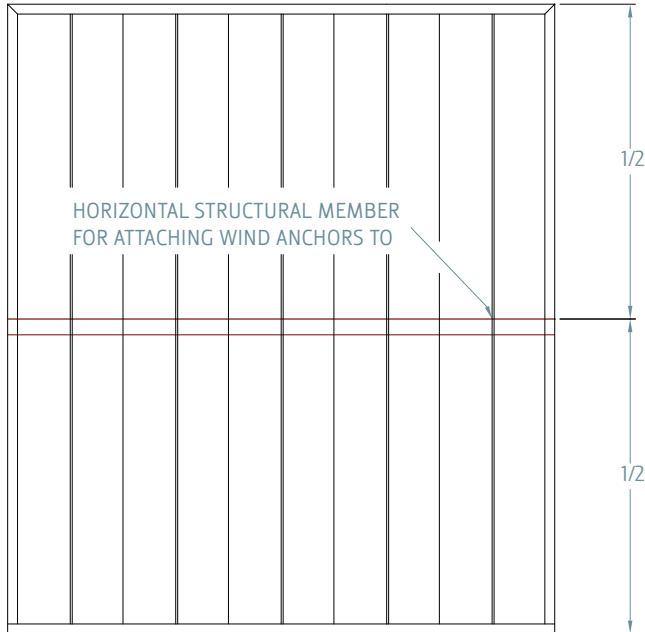
STRUCTURAL STEEL ANGLE (OR TUBE) SIZING IS PROJECT SPECIFIC SECURED AT VERTICAL STRUCTURAL SUPPORT. LOAD SHOULD NOT BE TRANSFERRED INTO CHANNEL GLASS.

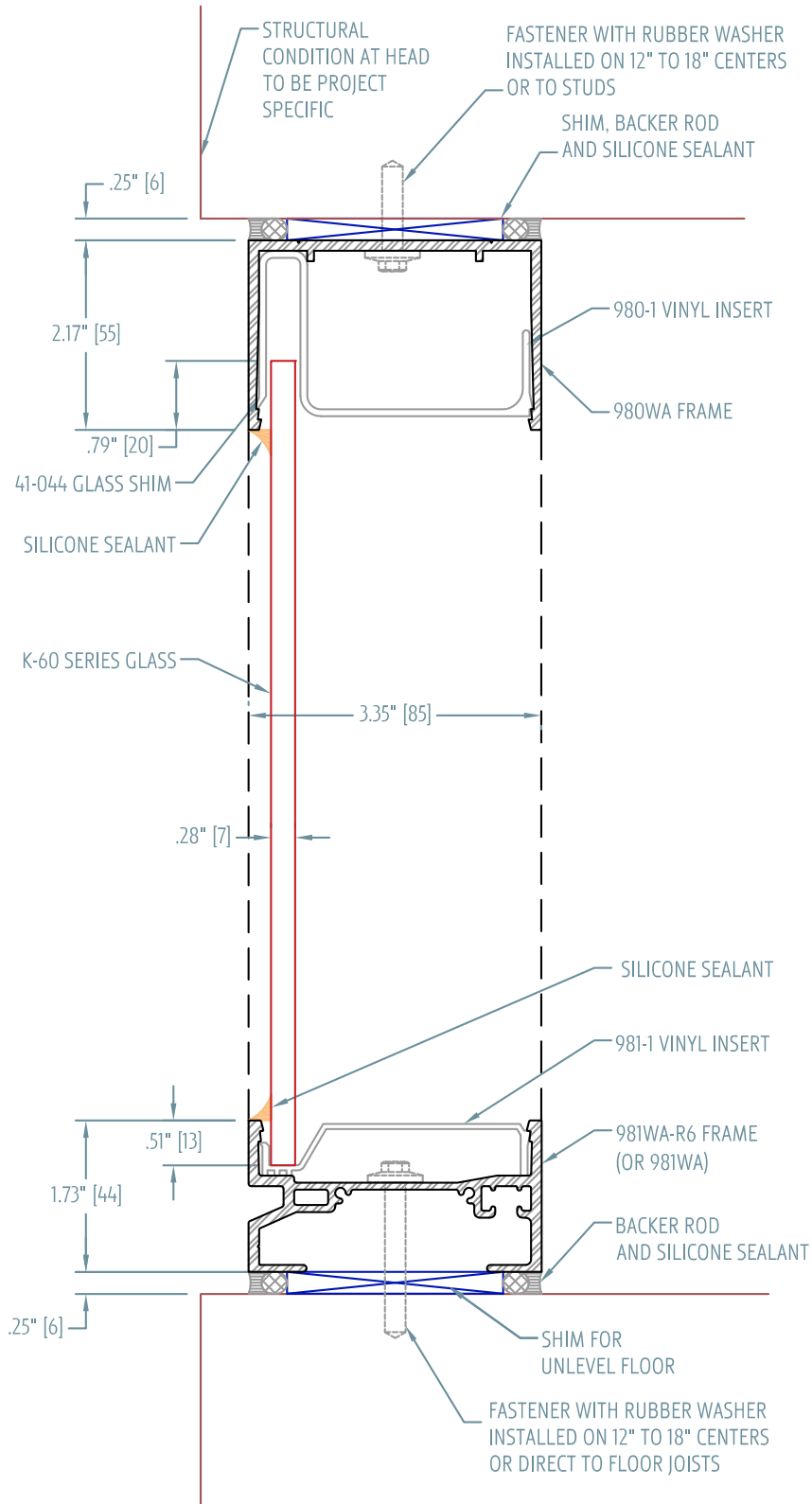
STRUCTURAL STEEL ANGLE (OR TUBE) SIZING IS PROJECT SPECIFIC AND INSTALLED FLOOR TO CEILING

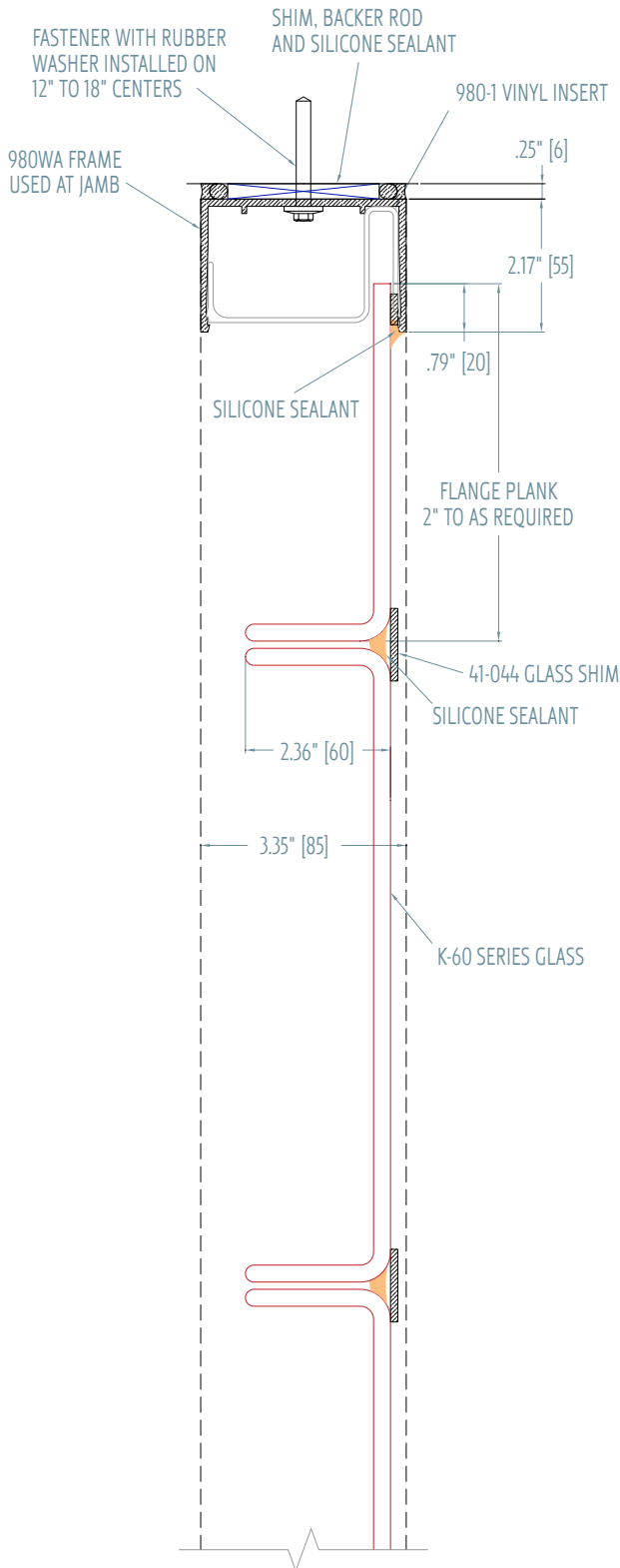


ALSO AVAILABLE IN THERMALLY BROKEN PROFILES

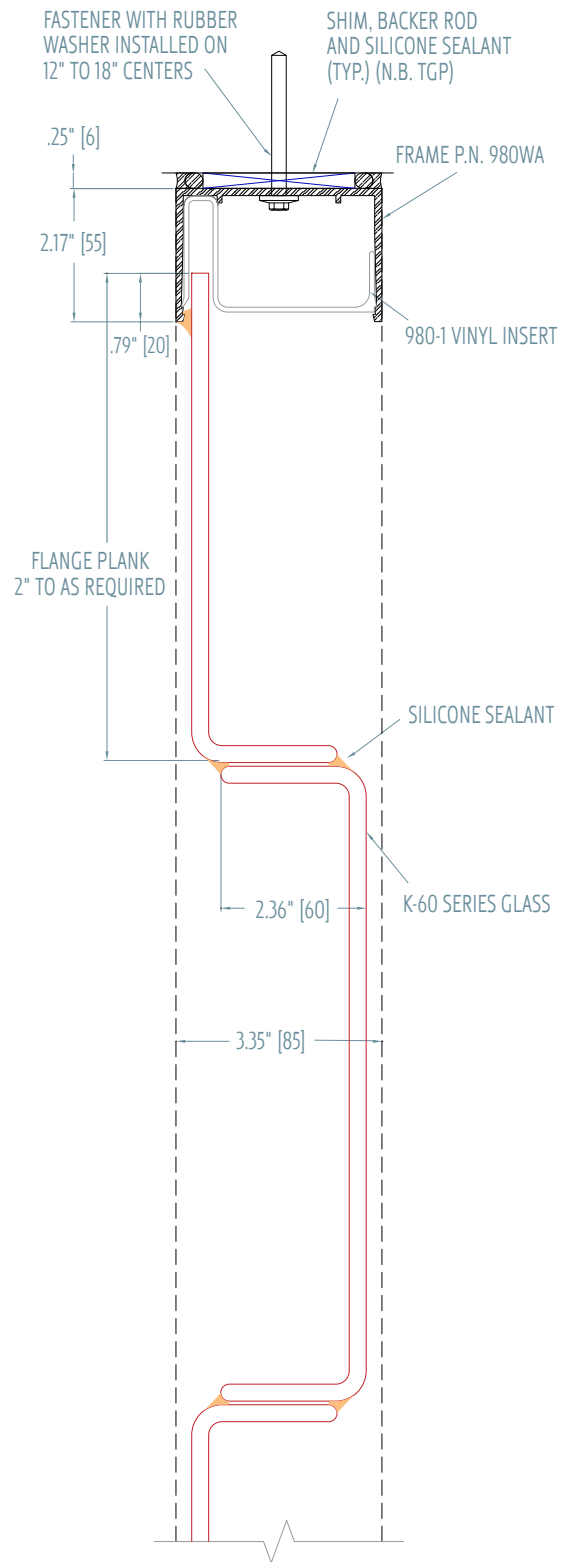
ALSO AVAILABLE IN THERMALLY BROKEN PROFILES







STANDARD SINGLE GLAZING



STAGGERED SINGLE GLAZING