

# Architectural Binder Section NW Acoustical 545

GENERATION 

Comprehensive Product Line by NanaWall

## NW Acoustical 545—Generation 4 Folding Glass Wall for Interior Acoustical Separation

NW Acoustical 545, part of the Generation 4 Comprehensive Product Line by NanaWall, is able to achieve sound control up to an impressive unit STC 41. This system combines solid, single species wood framing and specialized gasketing with sound-enhanced glass to achieve optimal performance with the range of unit STC from STC 31 up to STC 41—all while allowing maximal transparency and natural daylight to flood interior spaces. NW Acoustical 545 is specifically engineered for workplace applications and for interior spaces where acoustical privacy and ease of use are of utmost concern.

Comprised of a host of proprietary and patented features, this floor supported system offers an extremely streamlined appearance with minimal exposed hardware combined with the warmth of wood to create a new level of aesthetics. As a custom-built architectural solution, this system is available in inswing or outswing configurations and can accommodate open corner designs.

### Minimal Sightline Equals Increased Transparency

Panel frames are slim and attractive with a total 5 11/16" (144 mm) junction where the two adjacent folding vertical stiles meet. The panel profiles offer a smooth and subtly rounded design. Top and bottom rails are a minimal 3 1/4" (82 mm), along with stiles as thin as 2 5/8" (67 mm), provide slim-line aesthetics. Panel depth is 3 3/8" (86 mm). To coordinate with interior design programs, simulated divided lites, horizontal and vertical mullions are possible.

### Quadruple Laminated Cross-Grained Wood for Added Strength

NW Acoustical 545 panels are built with quadruple laminated cross-grained solid premium wood to achieve the tall, slim-framed design of this fourth generation wood system. The quadruple-layer laminated wood allows for larger panel sizes, creates structural integrity, and provides long-term durability. Unlike other systems on the market, NanaWall wood framed systems are built on solid single-species wood frames and are not veneered over inferior wood. This allows for maintenance sanding and refinishing down the road that will not compromise the beautiful wood finish. NW Acoustical 545 is manufactured with sustainably harvested wood.

### Unique Gothic Arch Roller Design Provides Frictionless Smooth Operation

NW Acoustical 545 is engineered for ease of use. Hinged panels are intuitive and convenient to operate allowing staff to effortlessly open or close the system on demand.

The bottom rollers run on two stainless steel wheels with a unique Gothic arch design supported by a double row of encapsulated and self-lubricating ball bearings. With a 2-point contact of each wheel to the floor track, the system glides quietly and smoothly with less friction by providing an equal distribution of weight on the stainless steel track.

The rollers run above the water table, visible during operation and concealed between the panel profiles when the system is closed. This proprietary design allows for continued long-term smooth operation and has been (internally) tested to 20,000 opening and closing cycles in accordance with DIN/EN 1191.

### Floating Left/Right FourFold or SixFold Panel Sets for Wider Openings and Flexible Space Management

NW Acoustical 545, along with the Generation 4 Folding Glass Wall by NanaWall product family, is the only floor supported, acoustically rated, wood framed folding system available that allows for larger opening sizes and flexible space management with the integration of FourFold or SixFold Panel Sets. These panel sets can move and stack either to the right, left, or center within the same track allowing the panels to be stacked in the most convenient location as needed. In offices, workspaces can be separated into individual rooms or opened into one large conference area.

### Floor Supported Folding System for Office Interiors

With floor supported systems, the main weight of the unit is carried by the lower stainless steel wheel assembly gliding on top of the stainless steel track. The top track is used merely as a guide. Floor supported systems are ideal for applications where the load-bearing capability of the header is a concern.

The benefits of floor supported are:

#### **Reduced Structural Requirements**

- Control construction costs. NanaWall Floor Supported Technology requires less header load and limits the need for extensive pre-cambering.
- Improves the likelihood of keeping existing header when retrofitting/remodeling thus reducing construction costs—as long as the maximum deflection is 1/4" (6 mm).

#### **Long-term Durability and Smooth Operation**

- Floor supported systems are durable and offer smooth operation with stainless steel wheels on a stainless steel track.

#### **Two Sill Options for Seamless Integration**

The Surface Mounted Flush sill is ADA-compliant and when installed with finished flooring has a mere 15/16" (23.5 mm) of track exposed. The shallow surface mounted sill allows for easy installation. The sill can be installed on top of the foundation or sub-floor without the need of cutting into the structural slab. Finished flooring can butt up to the floor track creating a seamless integration between interior spaces.

The Flush sill option is ADA-compliant with an aluminum floor track insert that provides high heel protection. Additionally, the insert offers protection from dirt and debris collecting in the bottom track. This sill needs to be recessed into existing flooring. The flanges of the sill sit on top of the finished floor to create a clean transition. A lighted option is possible; LED rope lights by others may be run under the sill insert to illuminate the way.

#### **Swing Doors for Traffic Management**

To accommodate traffic flow, swing panels can be added either to the end of a chain of panels for systems with an odd number of panels folding in one direction or hinged to the side jamb, depending on unit height and configuration. Please reference the NW Acoustical 545 size charts.

NW Acoustical 545 allows for an up to 3' 3" (1000 mm) wide swing panel hinged to the side jamb. Swing panels have been tested and passed over 500,000 cycles and can be optionally outfitted with higher bottom rails for ADA compliance. Top door closers by others are possible.

#### **System Width Adjustment Feature for Long-term Tight, Consistent Sealing**

System width adjusts with ease. To allow for construction tolerance, a patented (Patent No. US10683688B2) lateral adjustment feature of +/- 3/16" (5 mm) for system width is available at the side jamb. This allows for consistent seal compression within system.

#### **Concealed Panel Alignment Means Less Exposed Panel Hinges**

The patented (Patent No. US10711510B2) TwinX mechanism aligns panels of over 7' (2150 mm) in height by adding a hidden spring-loaded structural reinforcement feature without the need for an additional exposed hinge in the middle of the system. TwinX interlocks the panels together when the system is closed providing a consistent seal between the panels. This unique feature provides a clean-lined, sleek, and uniform appearance to the system.

#### **Multipurpose Frame Insert Provides Continuous Surface at Side Jamb and Head Track**

Standard to the system is a black polyamide clip-on multipurpose frame insert that conceals all visible frame-to-structure attachment points and screw heads to create a clean, even appearance. Additionally, this frame cover piece creates a hollow space to run and guide concealed cabling for the NW Acoustical 545 to connect to a security system by others.

#### **Anti-tilt Feature for Dynamic Stacking of Panel Sets**

Each floor supported FourFold or SixFold Panel Set is outfitted with a proprietary engineered anti-tilt feature in the head track. This feature assures that the floating panels stack neatly and securely when in open formation. Panels may stack either to the right side, left side, or anywhere within the opening.

#### **System Sizes**

Depending on the desired unit STC and glazing of the unit, maximum panel sizes range. Units can reach heights of 9' 10" (3000 mm) and panel widths up to 3' 3" (1000 mm). Unlimited system widths are possible with the addition of unhinged FourFold or SixFold Panel Sets.

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## Glazing Options

NW Acoustical 545 is able to achieve unit sound ratings from STC 31 to STC 41. The glass pocket can accommodate glass from 1/4" (6 mm) monolithic to 1 7/8" (48 mm) insulated glass.

## Concealed Locking for Clean Appearance

Standard to the system is concealed locking between folding panels that operates with a 180° turn of a flat handle. The top and bottom locking bolts have approximately a 1" (24 mm) throw for maximum security engagement into the head and floor track.

### Standard and Tested Locking Option on Primary Swing Panels:

1. Multi-point locking operated by lever handles and with European profile cylinder. Locking is independently tested for acoustical performance and forced entry.

### Non-standard Commercial Locking Options on Primary Swing Panels (no acoustical performance value for primary swing panel):

1. Deadbolt lock(s) and push/pull handles and key/key European profile cylinder on both sides. Only recommended for end swing panel with door closer by others.

### Standard and Tested Locking Option for Secondary Swing Panels:

1. Concealed edge lock with top and bottom locking bolts have approximately a 1" (24 mm) throw for maximum security engagement into the head and floor track. Locking is independently tested for acoustical performance and forced entry.

For additional hardware options, contact NanaWall.

## Handles

### Stainless Steel Lever Handles

Stainless steel lever handles and escutcheon plates are available either in brushed satin or black titanium finish.

### Stainless Steel Flat Handles

Stainless steel flat handles are available either in brushed satin or black titanium finish.

### Spring-Loaded Pull Handle

For outswing units with larger panel sizes, a spring-loaded pull handle is supplied for ease of closing the system.

The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal-to-metal contact.

Handles are either silver or black titanium stainless steel with the attachment to coordinate with the hinge hardware of the system.

## Finishes

NW Acoustical 545 is available in Sapeli Mahogany, Meranti, Red Grandis, and European Pine. Other specialty wood options are available upon request. Market availability of quadruple laminated cross-grained wood may differ by wood species.


Eco-friendly water-based pre-treatment is applied to each solid wood framed folding system to be field finished by others. Please request our Wood Finish booklet to review the wood options.

## LEED Scoring

NW Acoustical 545 with an STC 41 qualifies for Enhanced Acoustical Performance IEQc9 (LEED for Schools) and EQc9 (LEED for Interior Design and Construction).



## NW Acoustical 545

TYPE OF TEST	RESULTS
 Acoustical Performance <sup>①</sup>	STC (Rw) 33 and OITC 27 achieved with STC 32 glass (1 1/8" [28 mm] double IGU, 4 mm tempered + 4 mm tempered)
	STC (Rw) 37 and OITC 32 achieved with STC 39 glass (1 1/8" [28 mm] double IGU, 6 mm enhanced laminated + 6 mm tempered)
	STC (Rw) 42 and OITC 37 achieved with STC 48 glass (1 9/16" [40 mm] double IGU, 10 mm enhanced laminated + 8 mm enhanced laminated) with head track recessed

① Excerpts of results of a three panel unit 9' 10" W x 8' 2" H (3000 mm x 2500 mm) tested in February 2021 by SG Bauakustik, Muelheim an der Ruhr, Germany, an EN DIN ISO accredited and certified independent testing laboratory.

**Check [www.NanaWall.com](http://www.NanaWall.com) for the latest updates.**





## Acoustical Performance Interpolation with Other Glazing Options

SURFACE MOUNTED FLUSH SILL   FLUSH SILL			
TYPE OF GLASS	GLASS ONLY STC	COMPLETE SYSTEM STC (Rw)	MAXIMUM UNIT HEIGHT POSSIBLE (*)
1/4" (6 mm) tempered	31	31	9' 10" (3000 mm)
1/4" (6 mm) laminated	35	34	9' 10" (3000 mm)
1/2" (12 mm) enhanced laminated	39	37	9' 10" (3000 mm)
1 7/16" (36 mm) double IGU, 6 mm laminated + 6 mm laminated	42	39	9' 10" (3000 mm)
1 1/2" (38 mm) double IGU, 6 mm enhanced laminated + 8 mm enhanced laminated	44	41	9' 10" (3000 mm)

NOTES			
(*) can vary, dependent on weight of the glass			
Contact NanaWall for other glass types.			

## Surface Mounted Flush Sill | Flush Sill

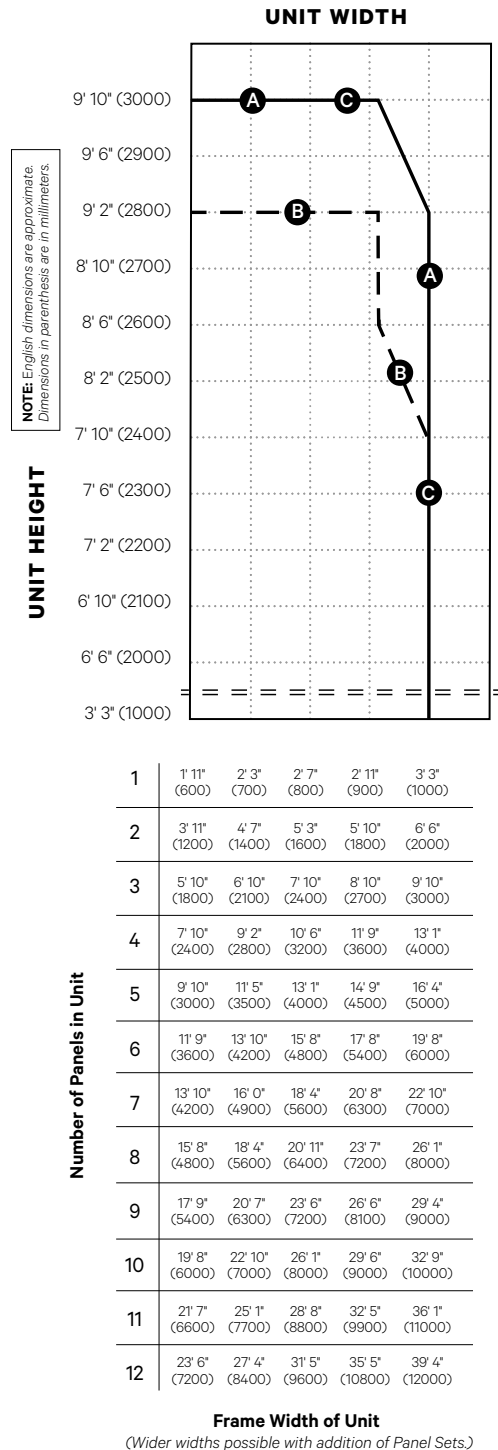
## NW Acoustical 545

TYPE OF TEST	INWARD OPENING UNITS	OUTWARD OPENING UNITS
 <p><b>Air Infiltration</b> <sup>①</sup></p> <p>ASTM E-283, ft<sup>3</sup>/min./ft. and NFRC 400</p>	<p>@ <b>1.57</b> psf (75 Pa): <b>0.11</b></p> <p>(0.13 exfiltration)</p> <p><b>A2</b></p>	<p>@ <b>1.57</b> psf (75 Pa): <b>0.13</b></p> <p>(0.11 exfiltration)</p> <p><b>A2</b></p>
	<p>@ <b>6.24</b> psf (300 Pa): <b>0.25</b></p>	<p>@ <b>6.24</b> psf (300 Pa): <b>0.28</b></p>
 <p><b>Forced Entry Resistance</b> <sup>①</sup></p> <p>AAMA-1304</p>	In accordance with AAMA-1304 requirements	
 <p><b>Operating Force</b> <sup>①</sup></p> <p>ASTM E2068</p>	<p>The NW Acoustical 545 meets:</p> <ul style="list-style-type: none"> <li>• Swing Panel: Open 1 lbf (2.8 N) &amp; Close 1 lbf (3.9 N)</li> <li>• Folding Panels: Initiate Motion - Open 4 lbf (20 N) &amp; Close 3 lbf (15 N)</li> <li>• Folding Panels: Maintain Motion - Open 1 lbf (3 N) &amp; Close 1 lbf (4 N)</li> </ul>	
 <p><b>Operation / Cycling Performance</b></p> <p>AAMA 920 &amp; DIN EN 1191</p> <p>Windows and Pedestrian Doors - Mechanical Durability</p>	<p>The NW Acoustical 545 meets:</p> <ul style="list-style-type: none"> <li>• "AAMA 920" requirement for swing panel attached to side jamb: 500,000 cycles - Pass <sup>①</sup></li> <li>• German "DIN EN 1191/12400 Classification," where a unit is tested after 20,000 opening and closing cycles and is still functional</li> </ul>	

<sup>①</sup> Derived from excerpts of results of 13' 1" W x 8' 6" H (4000 mm x 2600 mm) 4 panel unit (1L3R configuration) with low profile saddle sill specific or equivalent to lab tested by Intertek Building & Construction, an independent testing laboratory in March 2020 per AAMA/WDMA/CSA 101/IS.2/A440-17, NAFS-17 - North American Fenestration Standard



## Size Chart NW Acoustical 545: UNIT STC 31 to STC 41



Any Custom Size is Possible Up to the Maximum Size Limit Lines Shown

**FOR UNIT STC 31 - 41 (max. 7 lbs/ft<sup>2</sup> [35 kg/m<sup>2</sup>])**  
**MAXIMUM SIZE LIMIT LINE OF:**

**A CONFIGURATIONS** ———  
 (Swing panel at jamb only.)

**Standard Configurations:**

1L	1L 1R	1L 4R	2L 1R	4L 1R	6L 1R
1R	1L 2R	1L 6R			

**Sample Configurations with Unhinged FourFold or SixFold Panel Sets:**

1L 4L/R | 1L 4L/R 1R | 4L/R 1R

Addition of Panel Sets to all A Configurations possible.

**B CONFIGURATIONS** - - -  
 (Swing panel as part of odd number of panels.)

**Standard Configurations:**

3L	5L	1L 3R	3L 2R	5L 1R	4L 3R	3L 6R	6L 3R	5L 6R
3R	5R	3L 1R	3L 3R	2L 5R	5L 2R	4L 5R	5L 3R	6L 5R
		2L 3R	1L 5R	3L 4R	3L 5R	5L 4R	5L 5R	

**Sample Configurations with Unhinged FourFold or SixFold Panel Sets:**

3L 4L/R | 3L 6L/R | 3L 4L/R 3R

Addition of Panel Sets to all B Configurations possible.

**C CONFIGURATIONS** ———  
 (No swing panels.)

**Standard Configurations:**

2L	4L	6L	2L 2R	4L 2R	6L 2R
2R	4R	6R	2L 4R	4L 4R	6L 4R
			2L 6R	4L 6R	6L 6R

**Sample Configurations with Unhinged FourFold or SixFold Panel Sets:**

2L 4L/R | 4L/R 4R | 6L 6L/R | 4L/R 4L/R | 6L/R 4L/R

Addition of Panel Sets to all C Configurations possible.

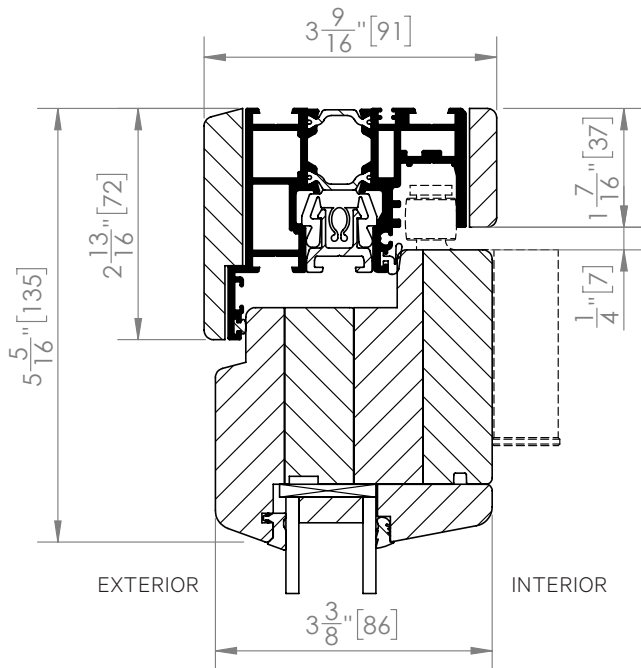
**GLAZING**

- Total Glass thicknesses from 1/4" (6 mm) to 1 7/8" (48 mm) can be accommodated.
- Dry glazing system.

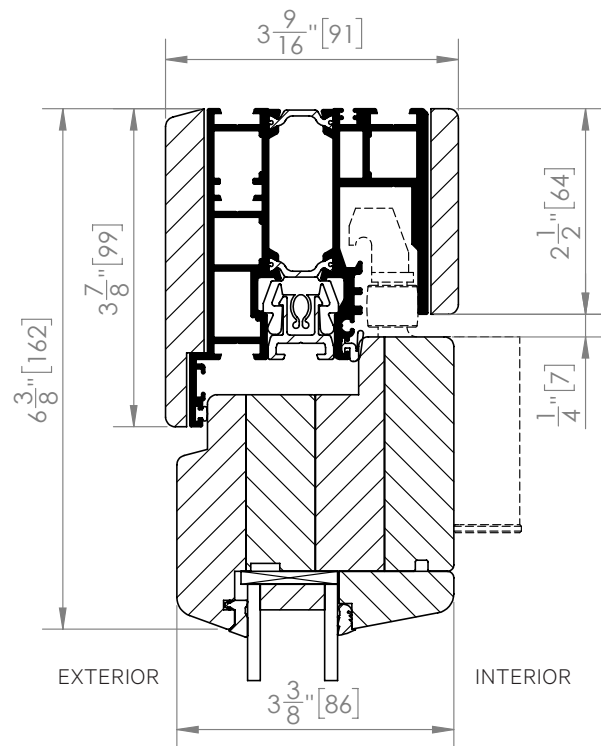
**NOTES**

- Max. panel width swing panel attached to side jamb 3' 3" (1000 mm).
- Min. panel width 31 1/2" (800 mm) for paired panels hinged to side jamb.
- Min. panel width 25 5/8" (650 mm) for Panel Sets 4L/R, 6L/R.
- Max. number of hinged panels to one side is 6.
- No limitation on number of unhinged panel sets in a unit. Additional adequate structural lateral support by others where panels stack.
- For other configurations, contact NanaWall.

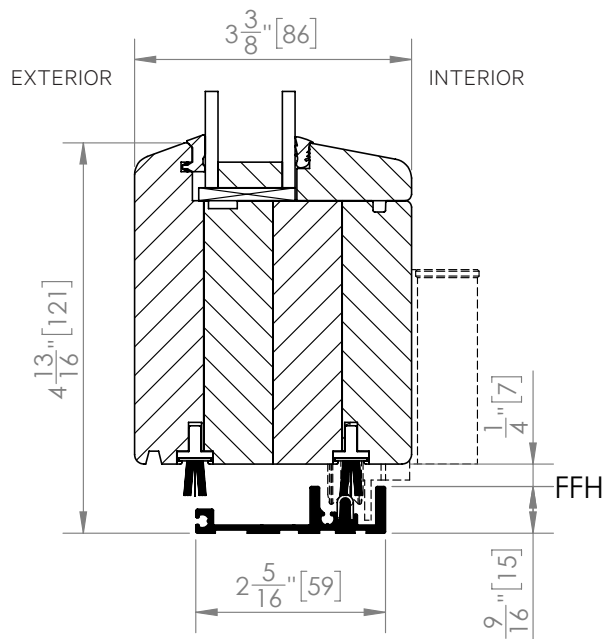
**Detail 1.0**  
Head Jamb



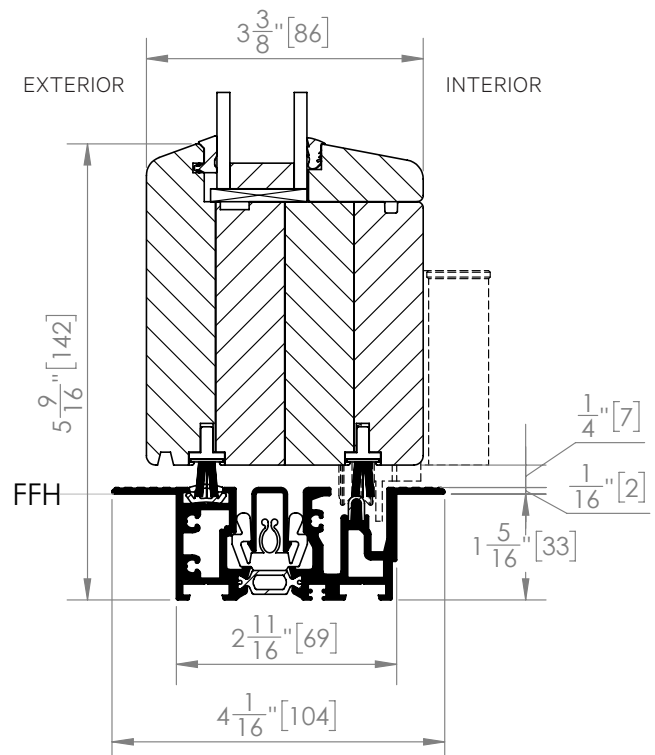
**Detail 12.0**  
Head Jamb for Unhinged Panel Sets



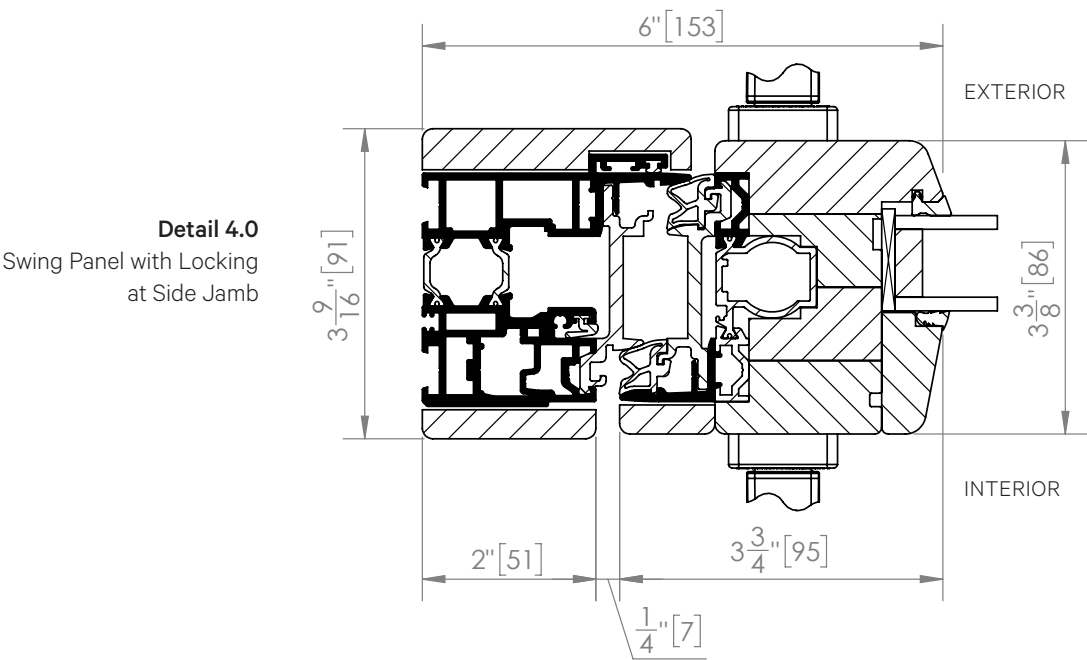
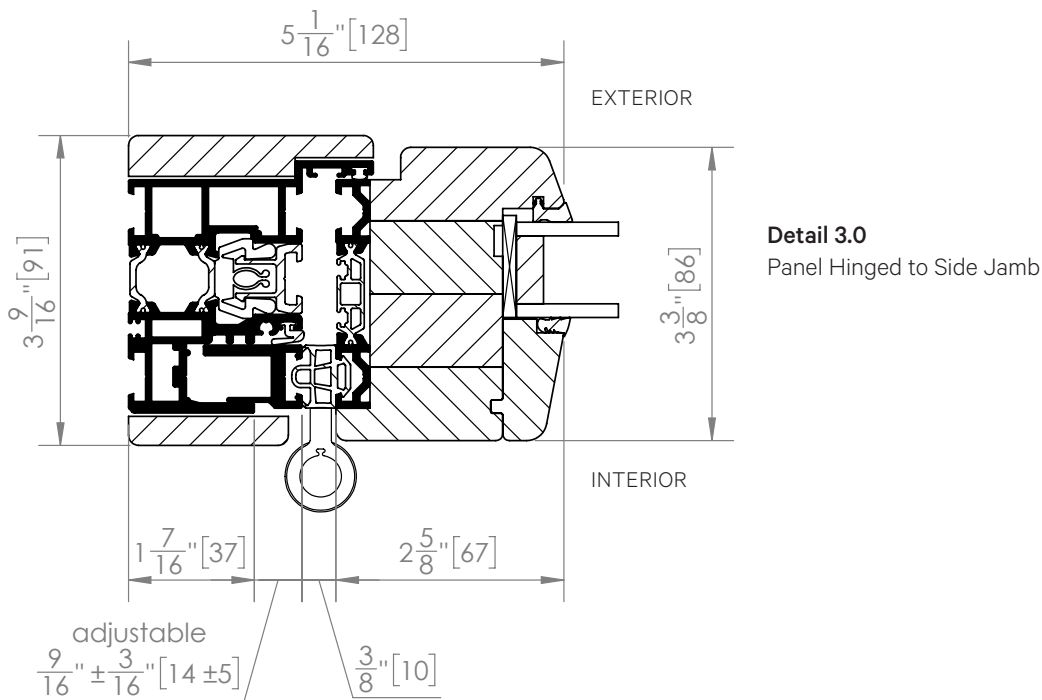
**Detail 33.0**  
Surface Mounted Flush Sill

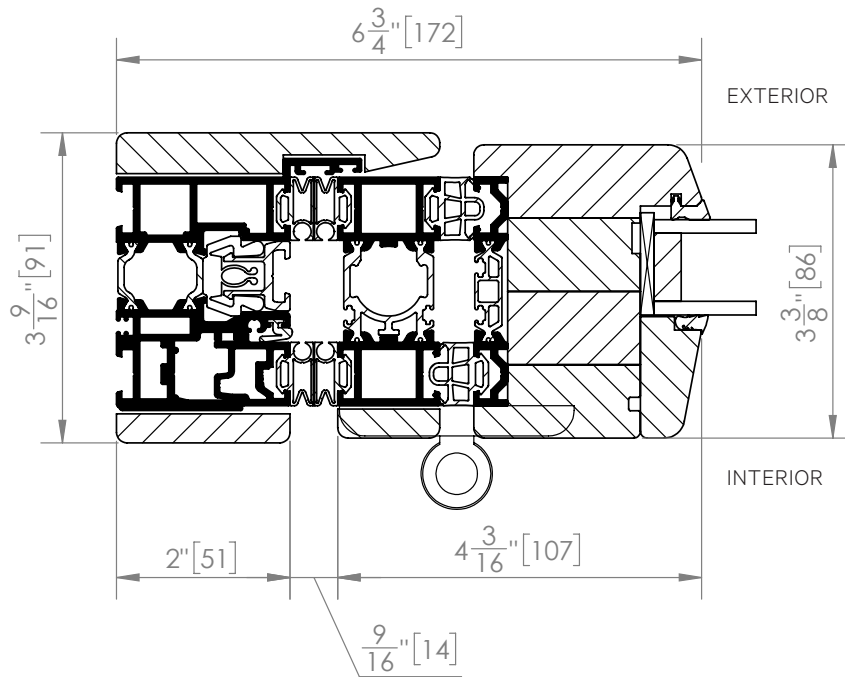


**Detail 24.0**  
Flush Sill



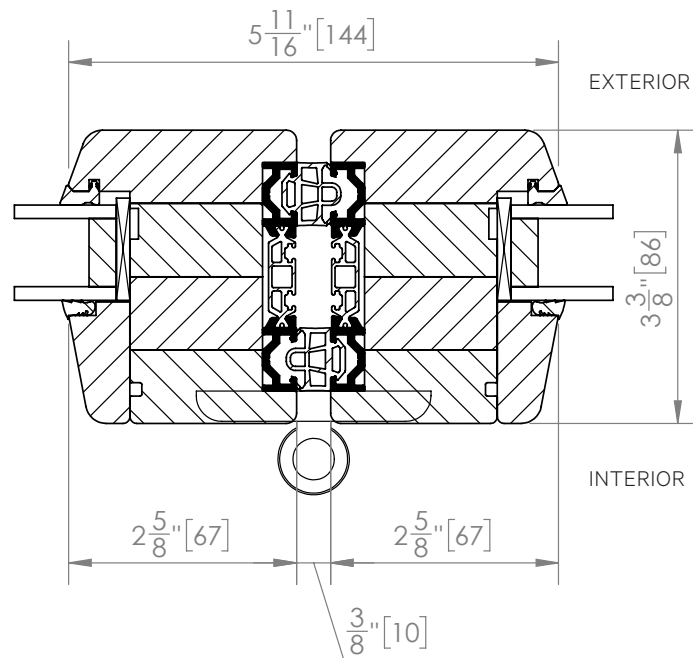


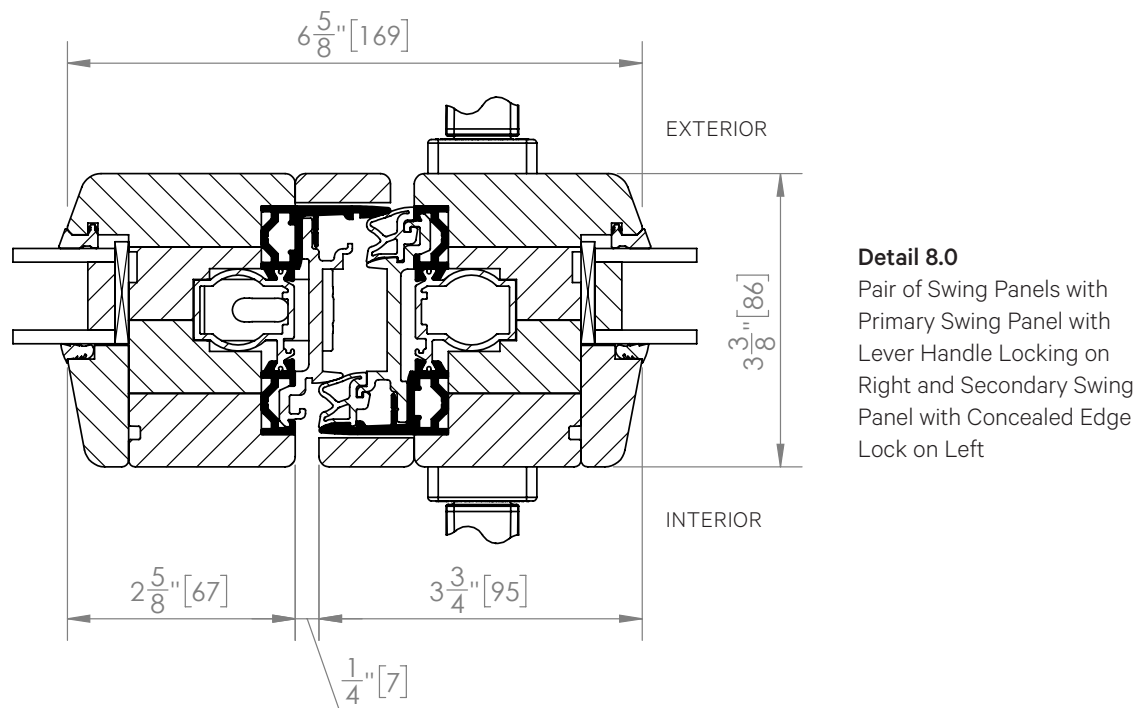
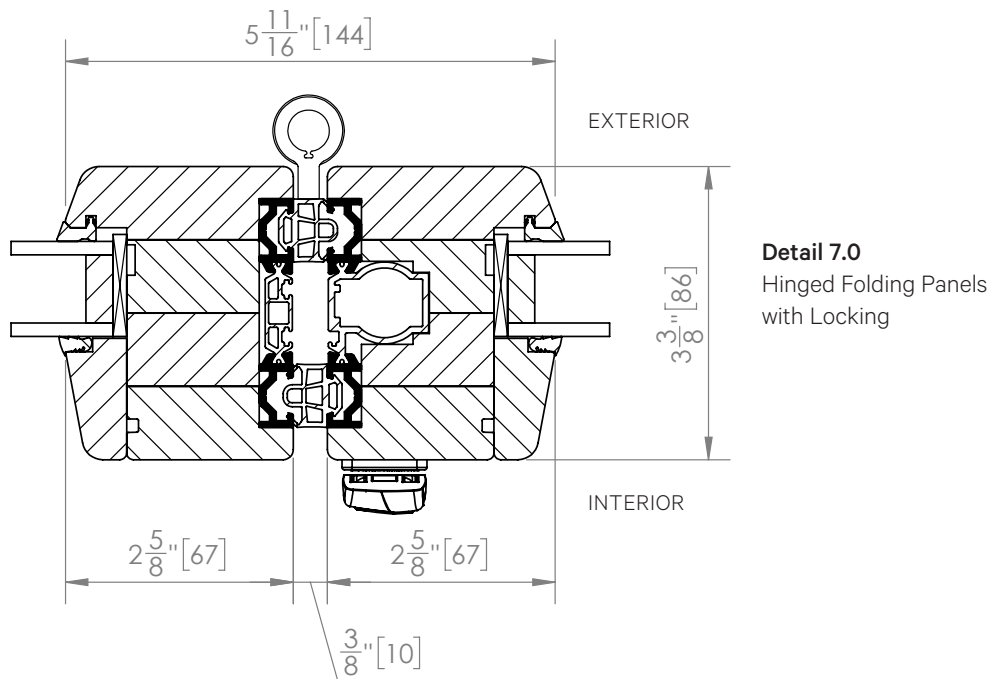


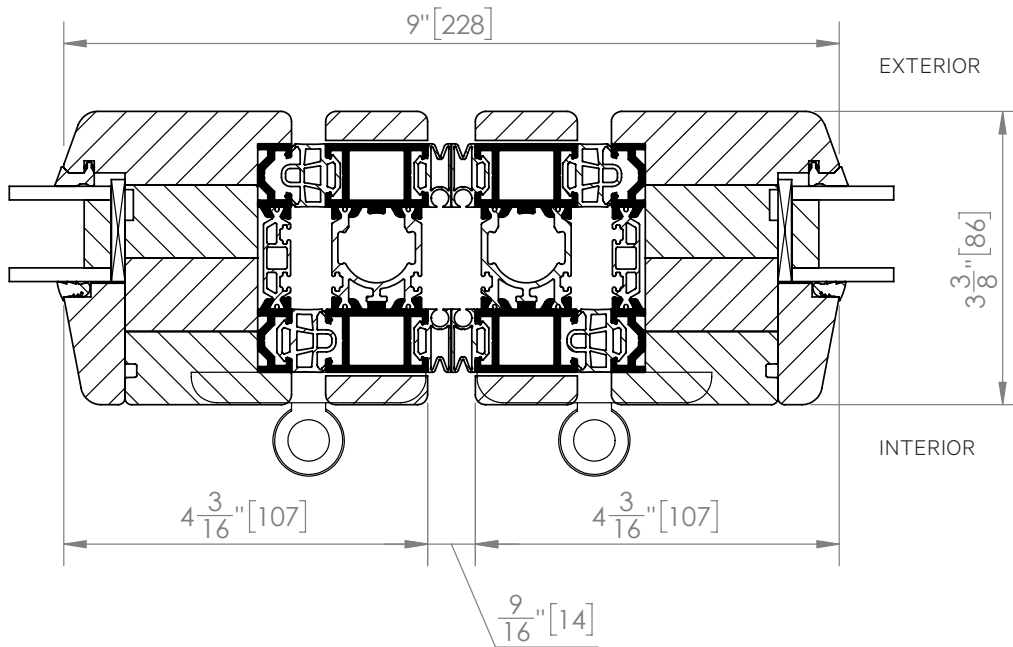


**Detail 5.0**  
Panel with Running Post  
and Top and Bottom Rollers  
Attached Meeting at Side Jamb

**Detail 7C.0**  
Hinged Folding Panels  
with Running Post and Top  
and Bottom Rollers Attached

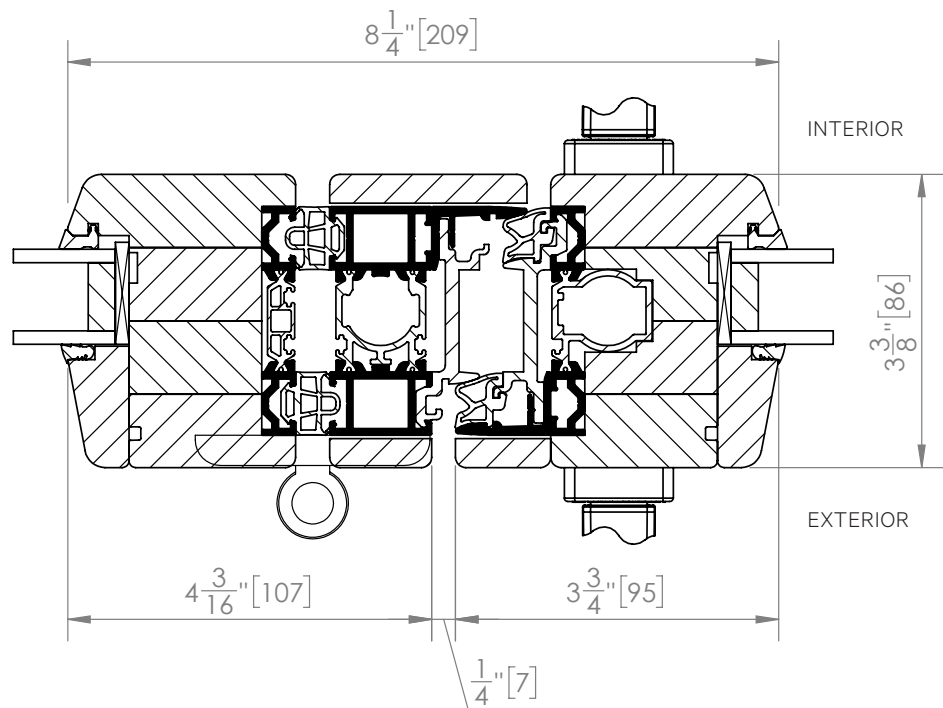






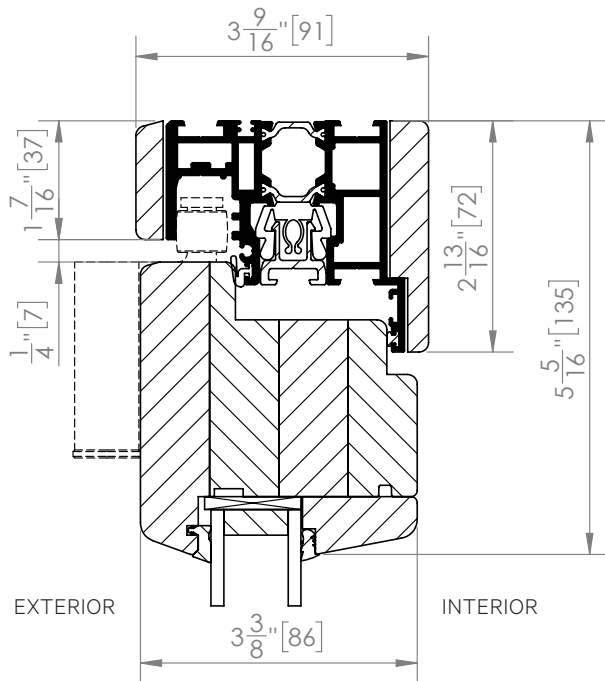
**Detail 9.0**  
Meeting of Folding Panels  
with Running Post and Top  
and Bottom Rollers Attached

**Detail 10.0**  
Meeting of Swing Panel with  
Locking and Folding Panel  
with Running Post and Top  
and Bottom Rollers Attached

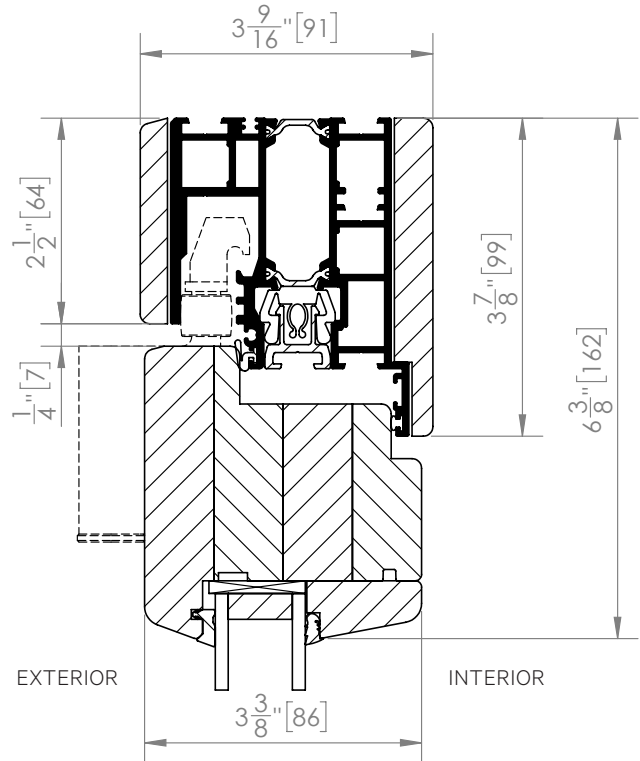


**Detail 1.1**

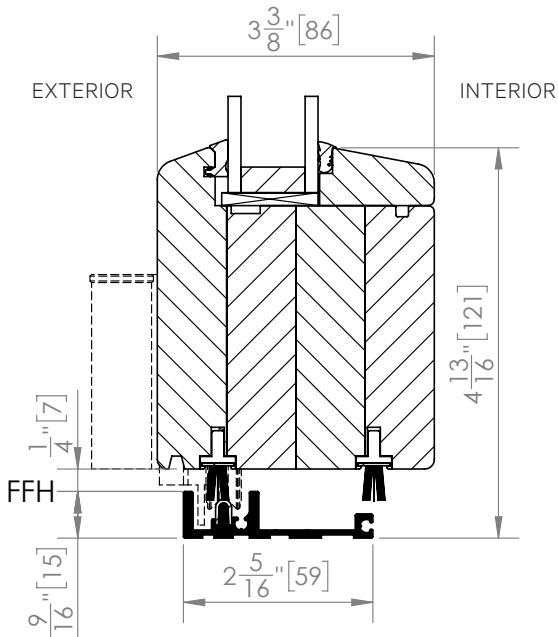
Head Jamb

**Detail 12.1**

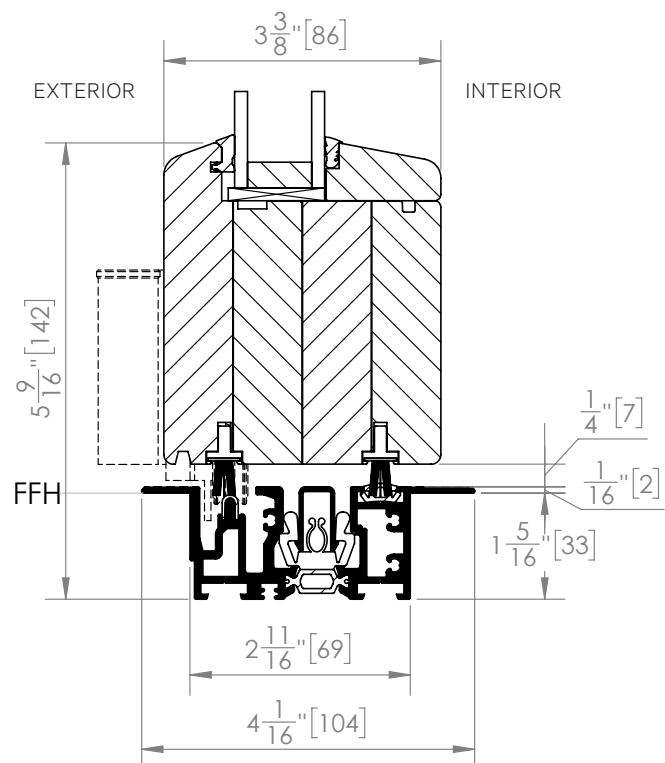
Head Jamb for Unhinged Panel Sets

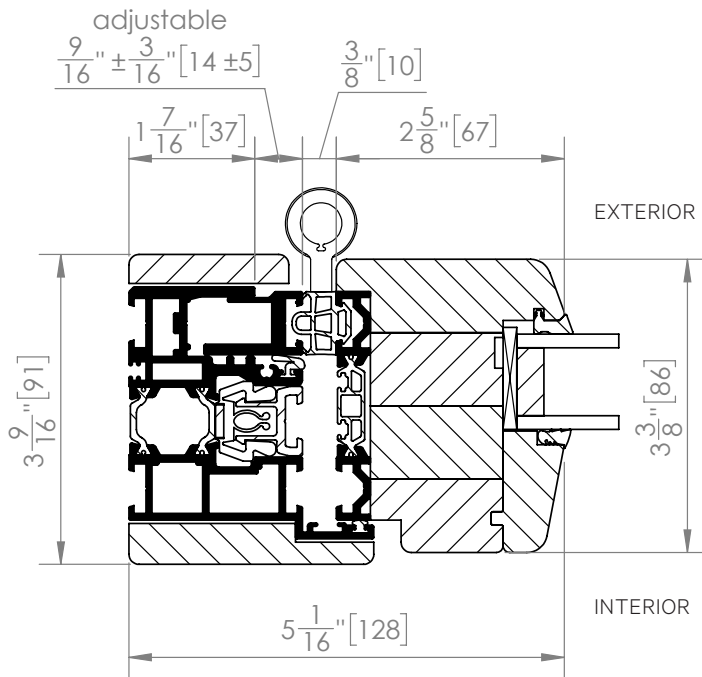
**Detail 33.1**

Surface Mounted Flush Sill

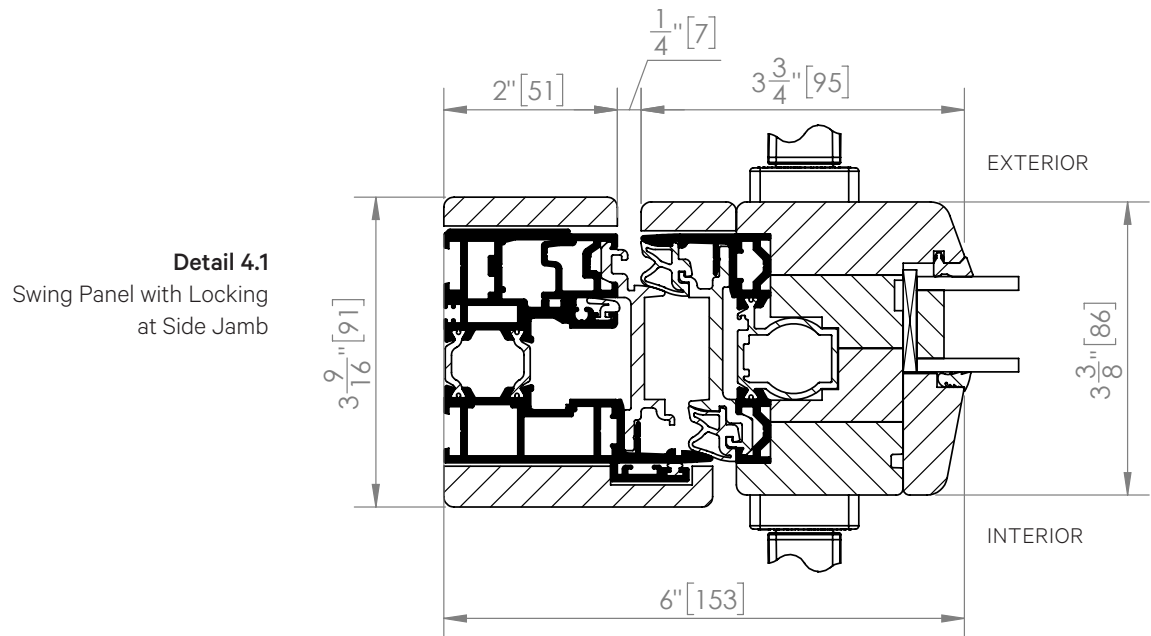
**Detail 24.1**

Flush Sill

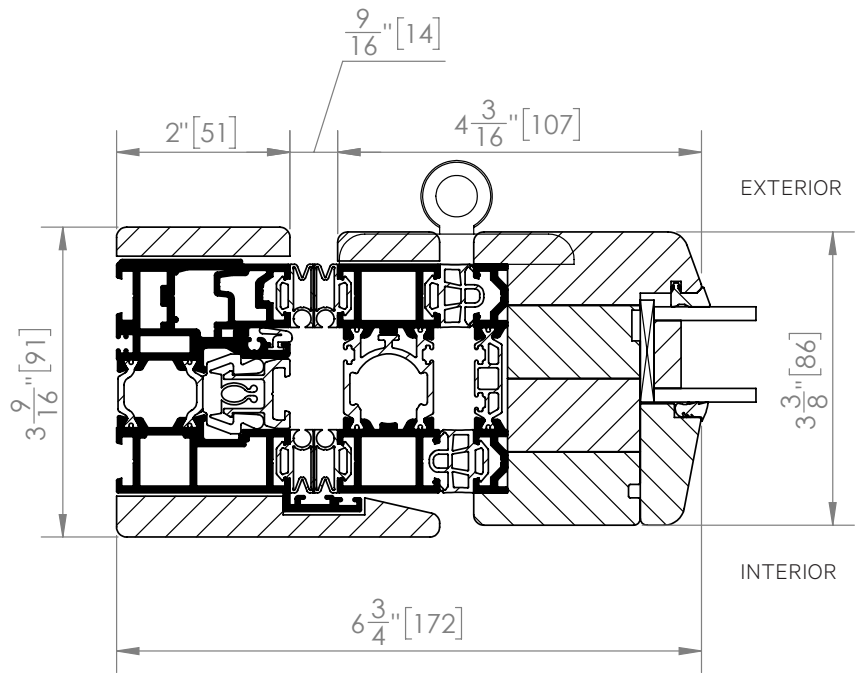




**Detail 3.1**  
Panel Hinged to Side Jamb

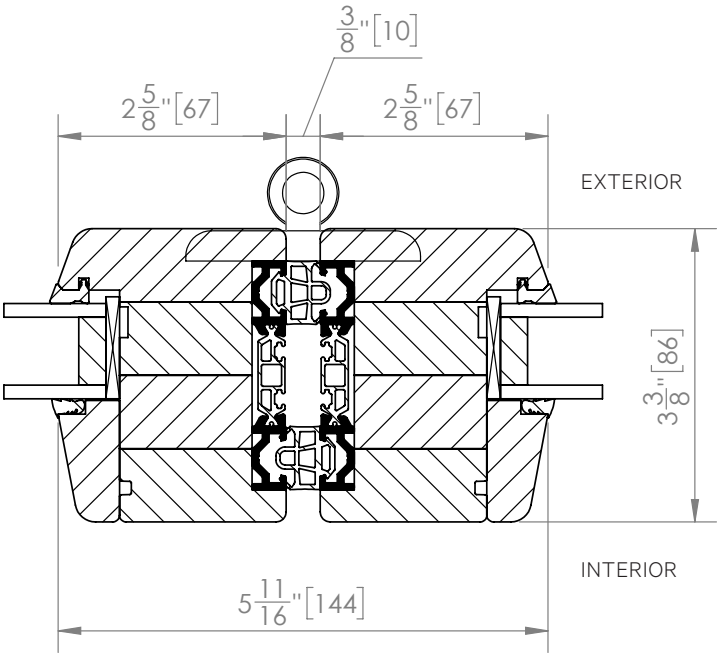


**Detail 4.1**  
Swing Panel with Locking  
at Side Jamb

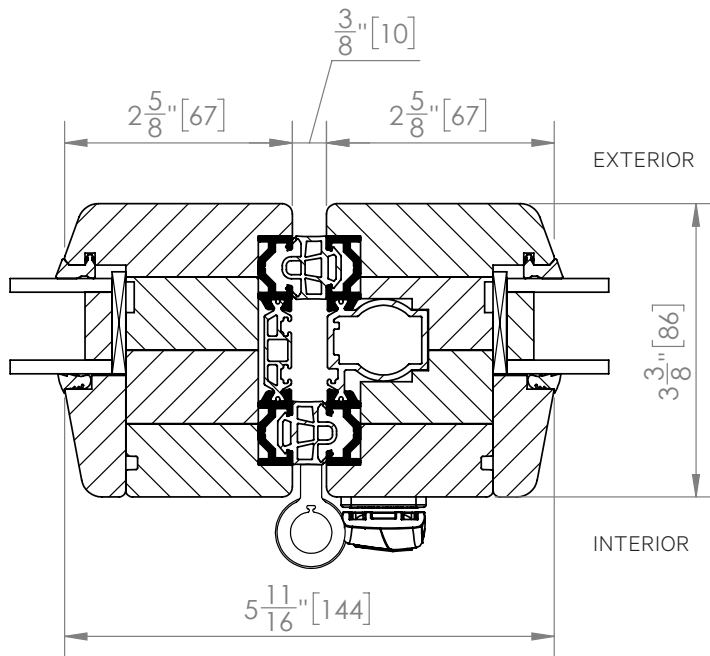


**Detail 5.1**  
Panel with Running Post  
and Top and Bottom Rollers  
Attached Meeting at Side Jamb

**Detail 7C.1**  
Hinged Folding Panels  
with Running Post and Top and  
Bottom Rollers Attached

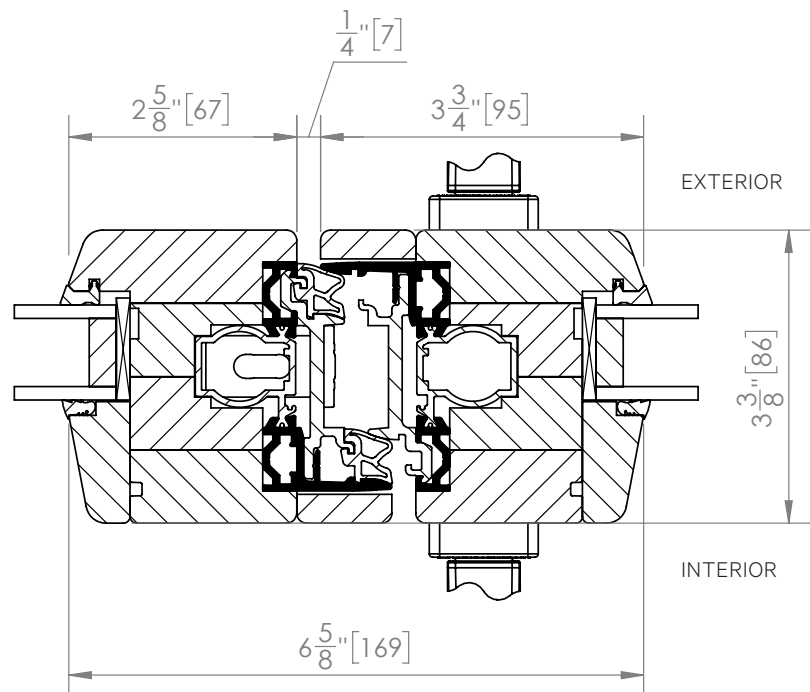




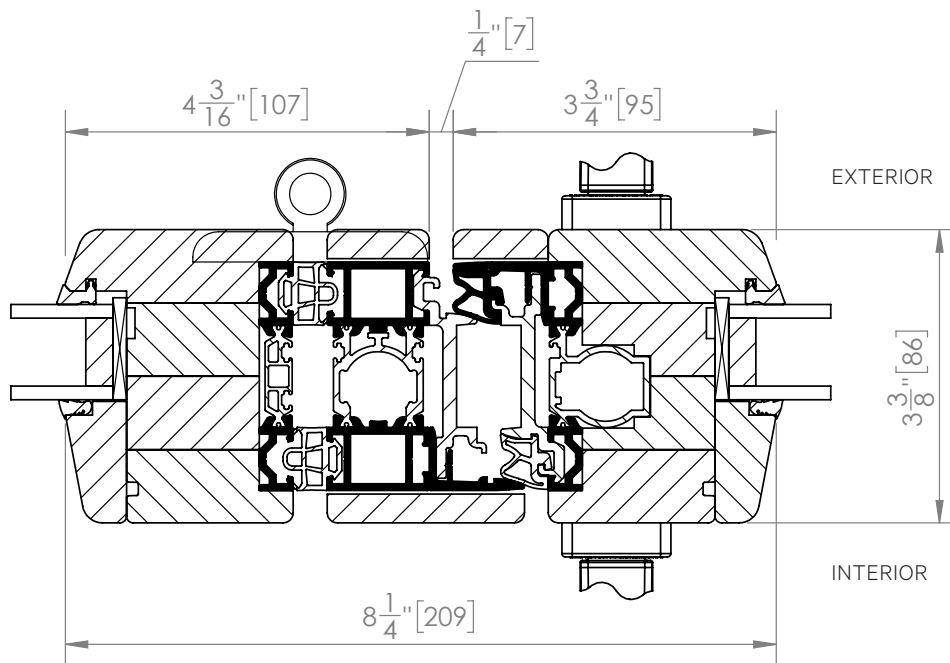
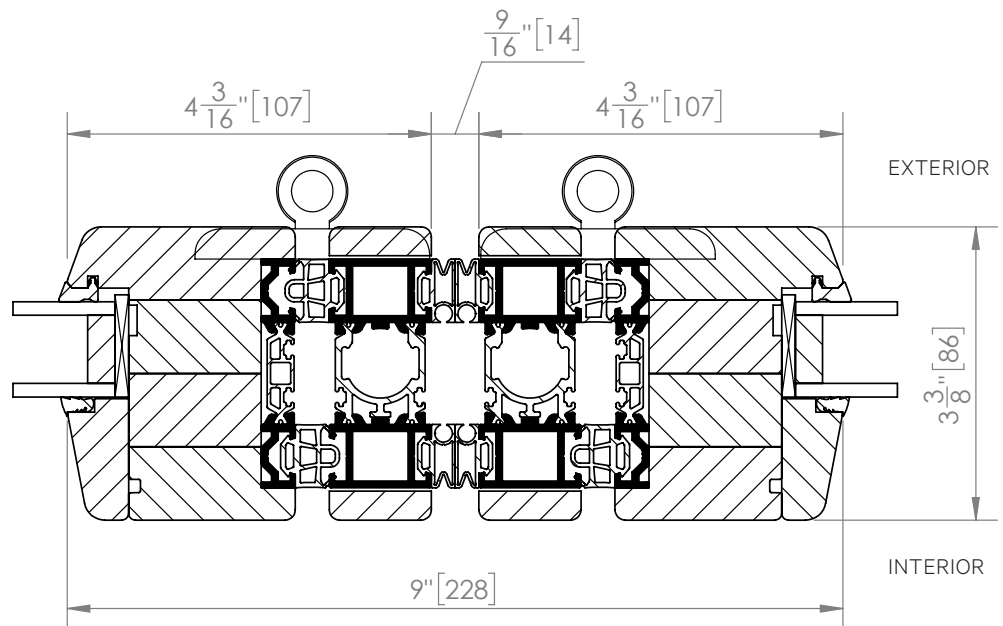


**Detail 7.1**  
Hinged Folding Panels  
with Locking

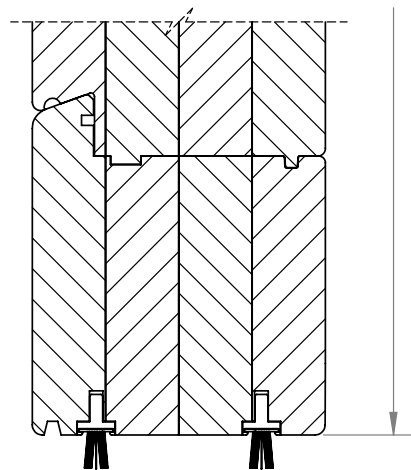
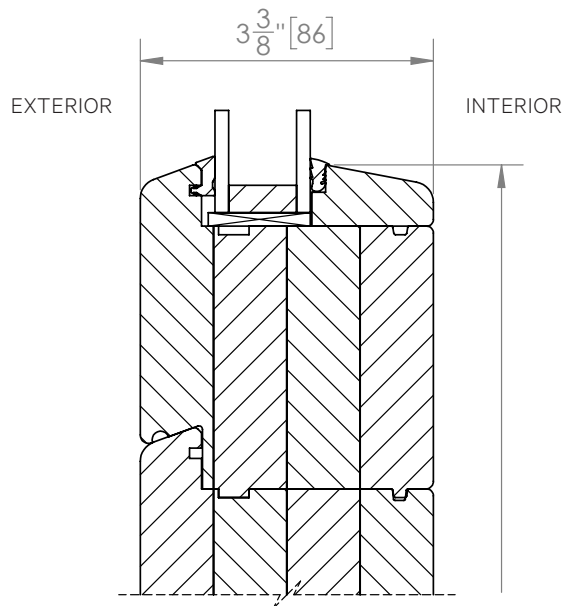
**Detail 8.1**  
Pair of Swing Panels with Primary  
Swing Panel with Lever Handle  
Locking on Right and Secondary  
Swing Panel with Concealed  
Edge Lock on Left



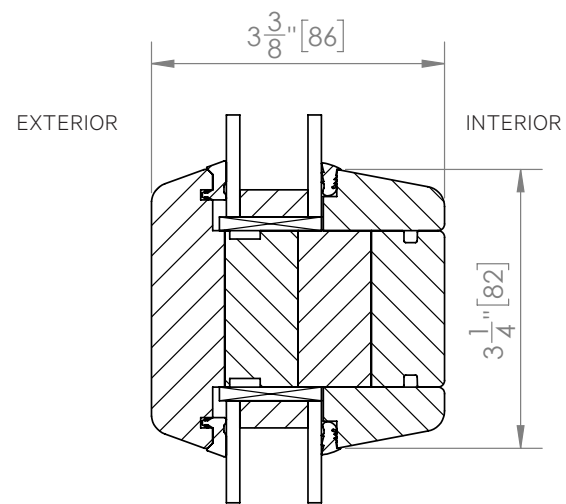
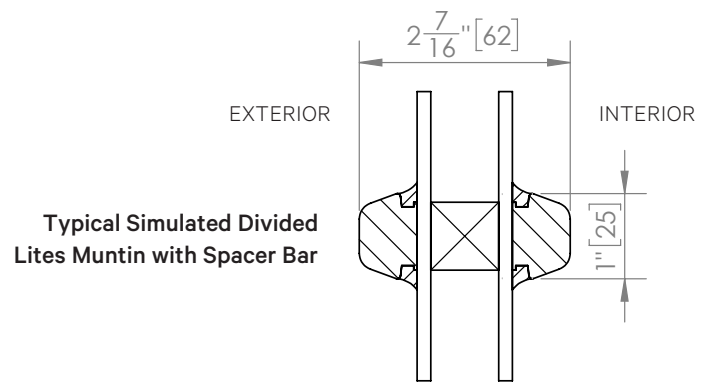
**Detail 9.1**  
Meeting of Folding Panels  
with Running Post and Top  
and Bottom Rollers Attached



**Detail 10.1**  
Meeting of Swing Panel with  
Locking and Folding Panel with  
Running Post and Top and  
Bottom Rollers Attached



Typical Higher Bottom Rail



Typical Mullion Profile

## Suggested Typical Installation

### INSTALLATION NOTES

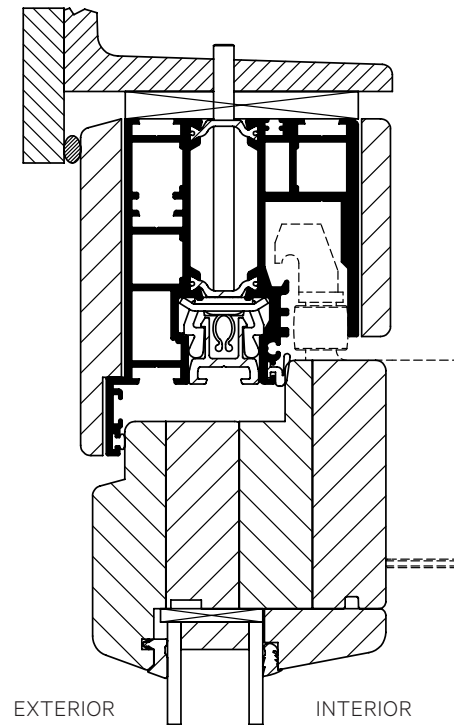
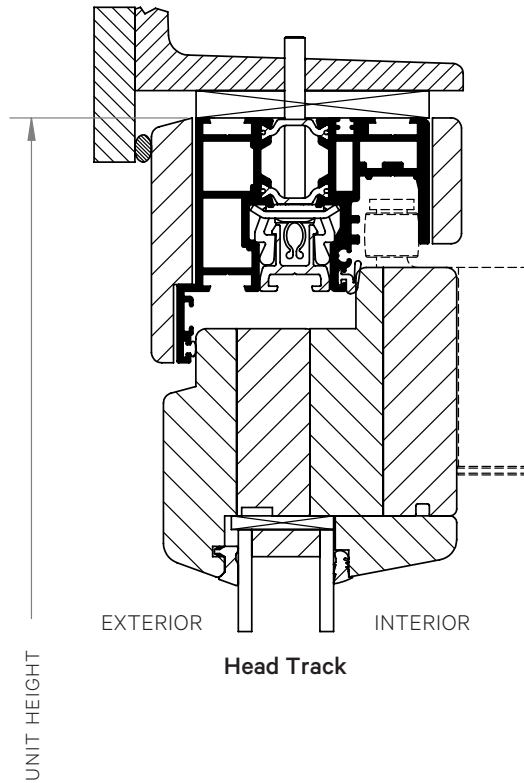
Suggested Typical Installation drawings shown are very general and may not be suitable for any particular installation. Product placement, fasteners, flashing, waterproofing, sealant, trim, and other details for specific surrounding conditions must be properly designed and provided by others.

### INSTALLATION CONSIDERATIONS

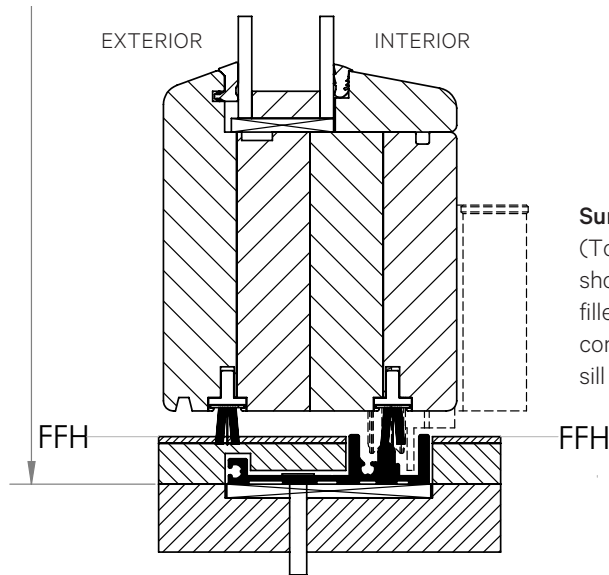
The approximate weight of a panel with double/triple glazing is 6-9 lbs/ft<sup>2</sup> (30-45 kg/m<sup>2</sup>). The maximum vertical structural deflection of the header should be ¼" (6 mm) under full live and dead loads. Although for Floor Supported systems, there is no vertical live load deflection of the header from the weight of the panels, structural support for lateral loads (both windload and when the panels are stacked open) must be provided for the header, surrounding walls, and floor. For further information, see "Preparation of the Rough Opening" section in the Installation Instructions for the applicable system. An owner's manual with these Installation Instructions is available from NanaWall or from NanaWall's website.

It is recommended that all building dead loads be applied to the header prior to installing the NanaWall. If so and if a reasonable amount of time has been allowed for the effect of this dead load to be imposed on the header, then only the building's live load can be used to account for the above maximum header deflection of ¼" (6 mm). There may be additional structural requirements not mentioned here.

## Inward Opening Details



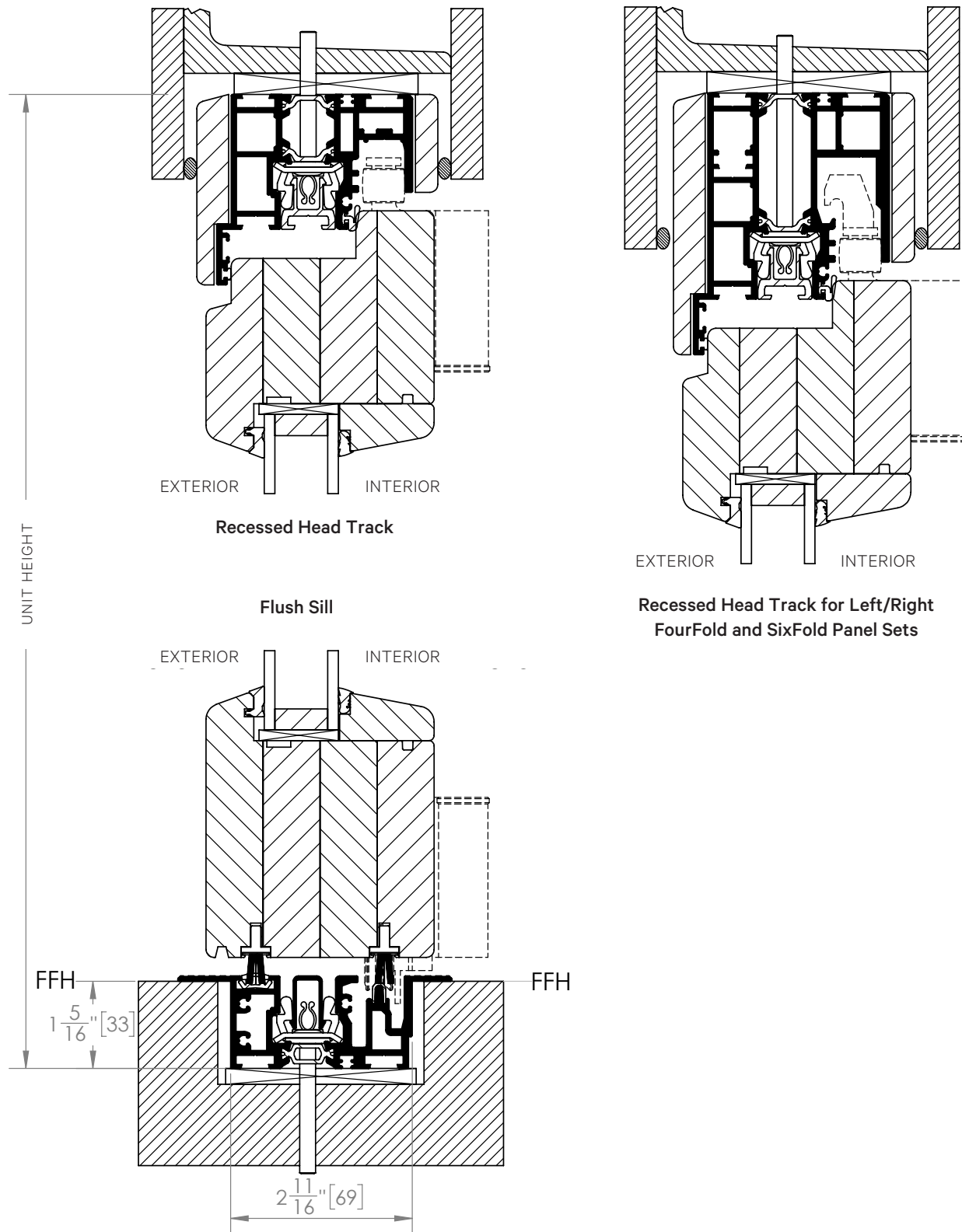
Head Track for Left/Right FourFold  
and SixFold Panel Sets



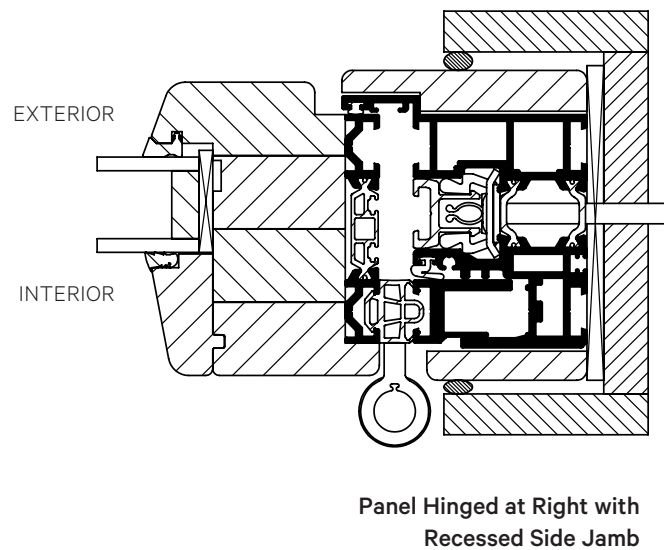
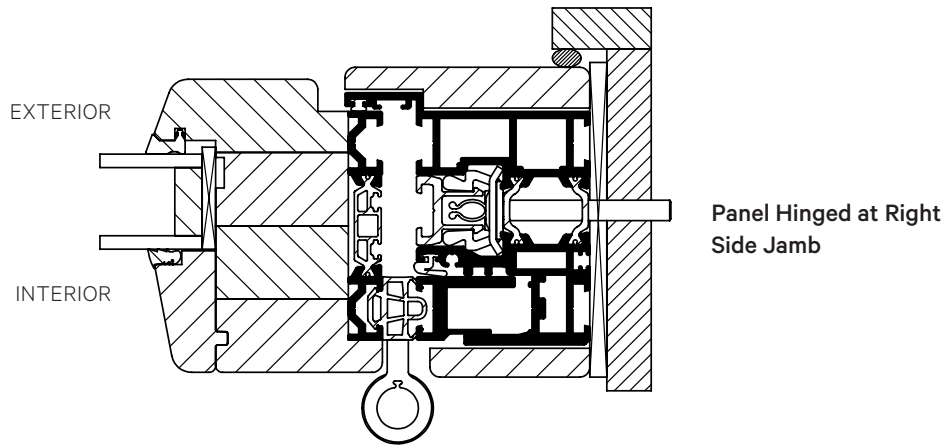
**Surface Mounted Flush Sill**

(To prevent sill deflection, shims between the anchor points should be installed and any cavities between the shims should be filled with non-expanding grout. If filling with grout is not possible, continuous shims should be placed along the entire length of the sill to provide continuous solid support and level condition.)

## Inward Opening Details

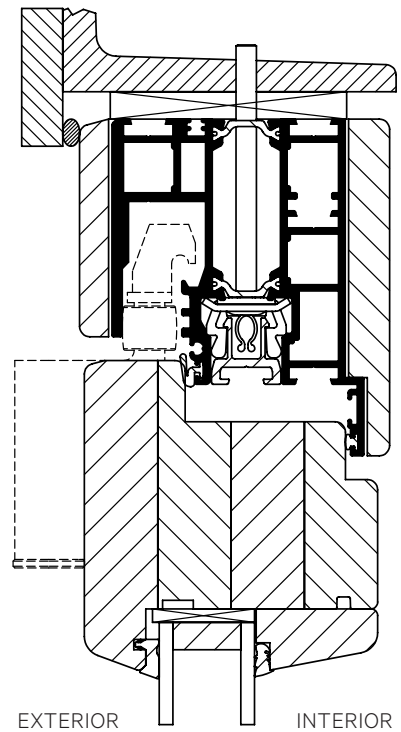
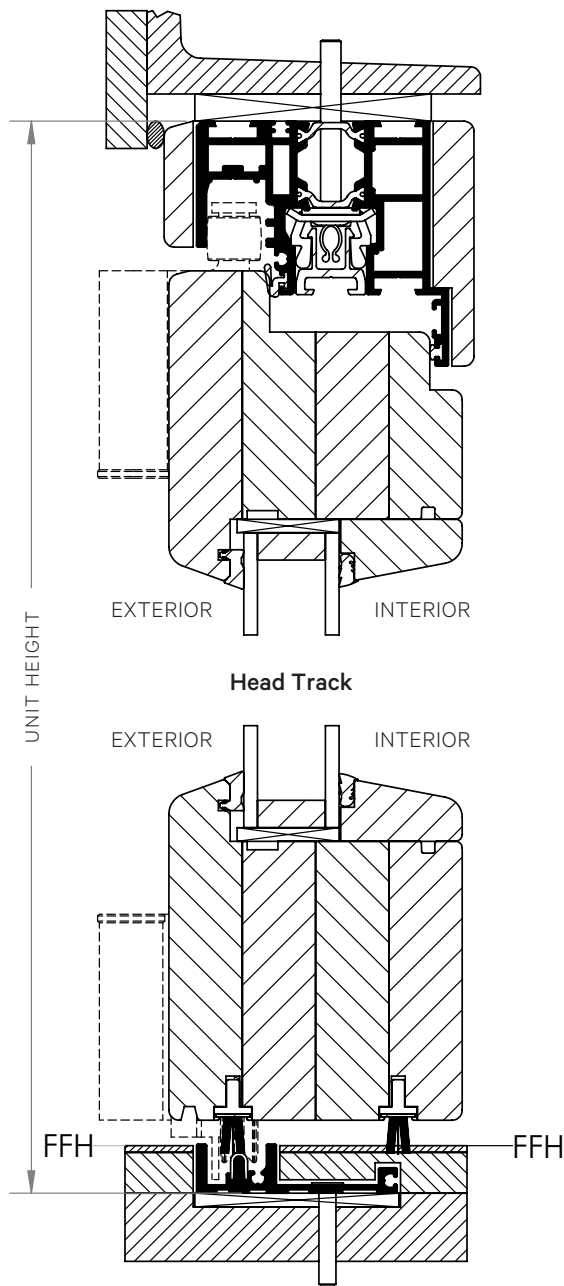


## Inward Opening Details





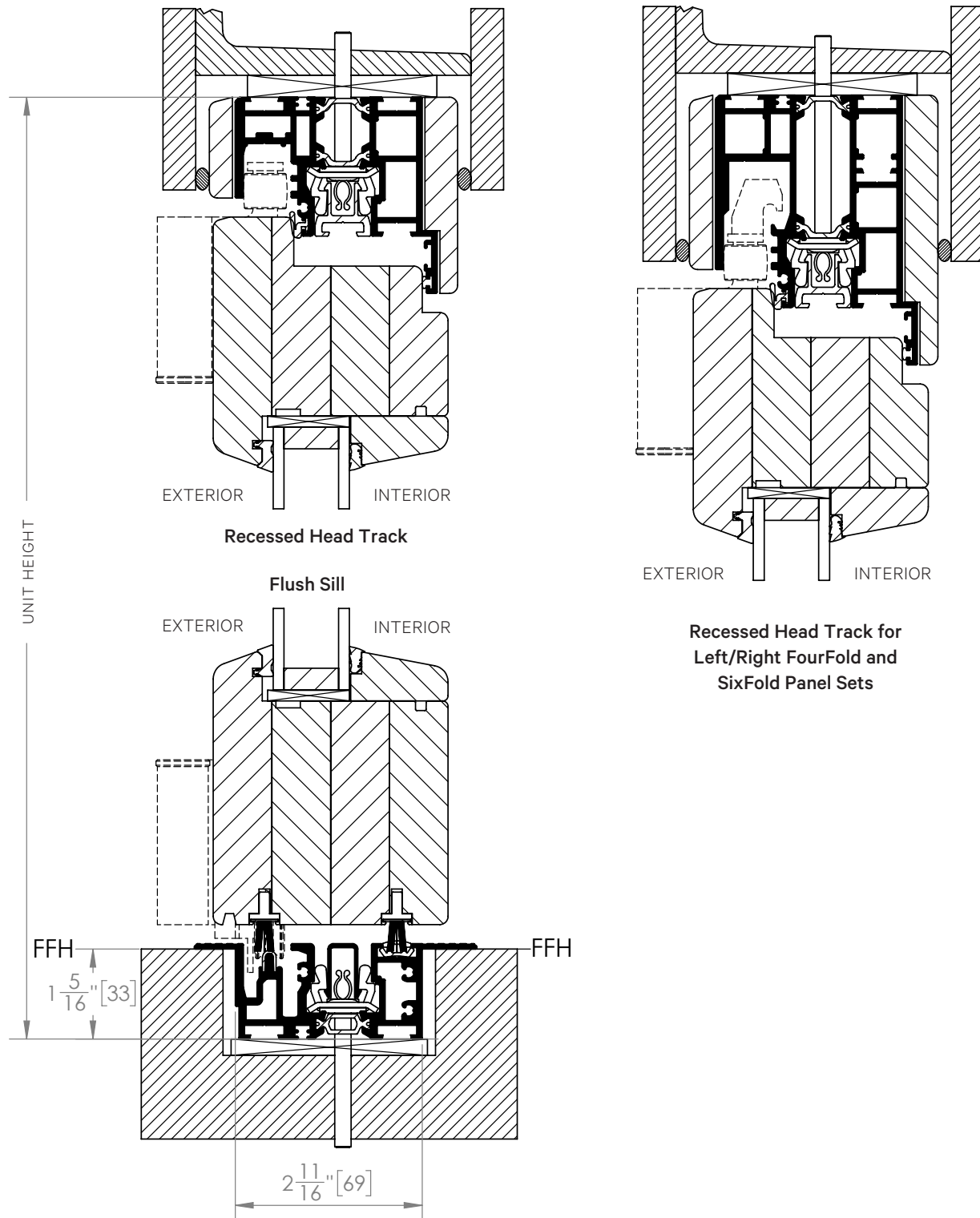
Outward Opening Details



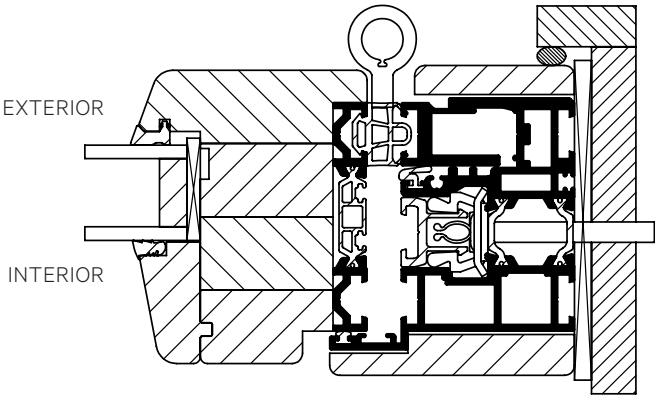
Surface Mounted Flush Sill

(To prevent sill deflection, shims between the anchor points should be installed and any cavities between the shims should be filled with non-expanding grout. If filling with grout is not possible, continuous shims should be placed along the entire length of the sill to provide continuous solid support and level condition.)

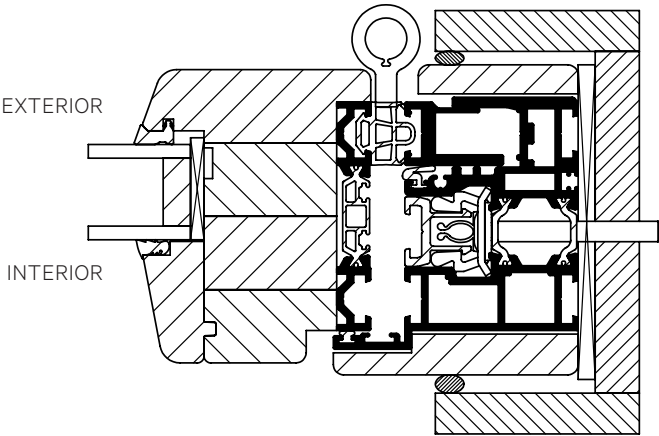
## Outward Opening Details



Outward Opening Details



Panel Hinged at Right  
Side Jamb



Panel Hinged at Right with  
Recessed Side Jamb