PERFORMANCE

The Series 4410S window is a thermally broken mainframe and sash that exceeds the performance specification criteria as required by ANSI/AAMA for AW (Architectural Grade) windows.

Fixed			Single Hung		
AAMA Rating	AW-65		AAMA Rating	AW-65	
Air Infiltration	0.3 CFM/ft^2		Air Infiltration	0.02 CFM/ft^2	
Water	Over 12 psf		Water	Over 10 psf	
Structural	97.5 psf		Structural	97.5 psf	
CRF (AAMA 1503)	54		CRF (AAMA 1503)	52	
Center of Glass U-Value	Window U-Factor [3]		Center of Glass U-Value	Window U-Factor [3]	
BTU/Ft^2 x F° x Hr	47" x 59" [2]	60" x 99.5" [1]	BTU/Ft^2 x F° x Hr	47" x 59" [2]	60" x 99.5" [1]
0.20	0.34 [4]	0.29 [4]	0.20	0.49	0.41
0.24	0.37 [4]	0.33 [4]	0.24	0.50	0.42
0.29	0.41 [4]	0.37 [4]	0.29	0.53	0.44
0.34	0.45 [4]	0.41 [4]	0.34	0.55	0.45
0.47	0.55 [4]	0.52 [4]	0.47	0.62	0.50

This Information is based on current product design, sealed dual glazing, warm edge spacers and testing standards.

Please contact WINCO for project specific information

[1] AAMA 101 Test Size

[2] NFRC Gateway Test Size

[3] Based on NFRC 100

[4] Estimated performance

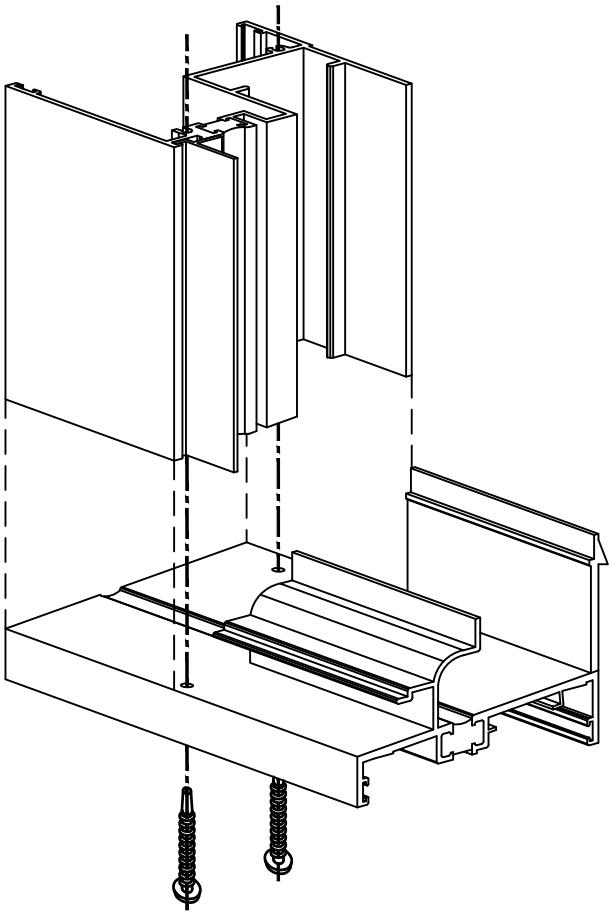
CONSTRUCTION

MATERIAL - The Series 4410S window is a 4" deep frame depth with a nominal wall thickness of 0.062 inch at the head and jamb members. The sill extrusion has a nominal wall thickness of 0.080 inch. The operable sash member is 1-5/8 inch deep with a nominal wall thickness of 0.062 inch. All material is extruded from 6063-T6 alloy.

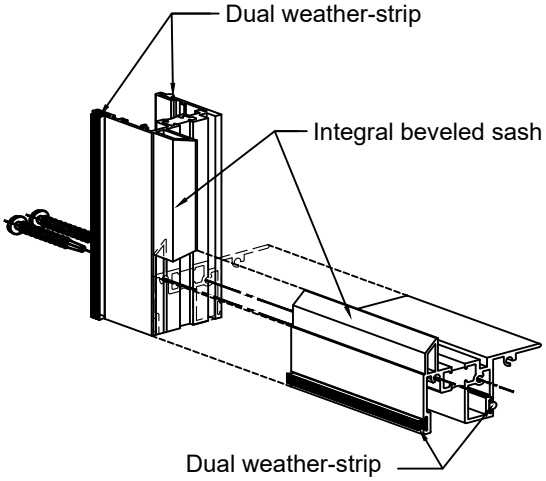
THERMAL BREAK - All framing members of the window system are thermally broken. Winco uses the Azon Azo Brader® process to mechanically condition the surface of the thermal cavity. The process runs the entire length of the extrusion and creates serrations that insure proper adhesion of the structural polymer. The structural urethane is a high density 2 part formula providing optimum thermal performance for the most demanding conditions. The combination of the conditioning of the aluminum surface along with the two part urethane allows Winco to provide a full 10 year warranty against thermal break creep and shrinkage in accordance with AAMA 505-98.

WEATHER-STRIP - All operating sash have a heavy fin seal wool pile weather strip on the exterior for superior water and air performance. On the interior side of the sash, a rigid vinyl weatherstripping is used for ease of operation.

FABRICATION - The main frame corners are coped and mechanically joined using two stainless steel spline screws per corner (fig 1). The sash utilizes hollow tube shaped extrusions for superior strength and rigidity. The sash corners are coped and mechanically joined using two stainless steel spline screws per corner, aligning the members to form a hairline joint (fig. 2). All frame joints are back sealed with small joint sealer providing a water tight joinery.



(fig 1)Main Frame Construction



(fig 2) Sash Construction

GLAZING

The windows can be interior or exterior glazed with .050 thick extruded aluminum glazing beads accommodating thicknesses from 1/4" up to 1". For actual details refer to the glazing section in the back of the 4410S section for optional glazing and blind details.

Glazing Thickness		1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1-1/4"	1-3/8"	1-1/2"
Monolithic		X	X	X	X	X	X	X	-	-	-	-	-	-	-
Insulated		-	-	-	-	-	-	-	X	-	X	X	-	-	-
Dual Glazed	Exterior	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Interior	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triple Glazed	Exterior	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Interior	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Winco has different gaskets and glazing methods that can accommodate odd thicknesses of glass. If you do not see what you are looking for within this chart please contact your local representative for information regarding your specific project needs.

HARDWARE

All exposed sweep lock hardware and keepers are solid white bronze alloy with US25D brushed finish. All exposed springloaded snap lock hardware is manufactured from extruded aluminum matching the window frame finish.

Window Type	Spring Lock at Jamb	Spring Lock at Head	Spring Lock at Sill	Stainless Steel Wheel w/ SS Bearing	Nylon Wheel w/ Steel Bearing	Stainless Steel Track Cover	Sweep Lock	Access Control Sweep Lock	Class 5 Sash Balance (Ultralift)	Limit Stop (non removable, Extruded)	Limit Stop (Key- Release)			
Single Hung	-	-	X	-	-	-	X	O	X	O	O			

X = Standard Hardware
O = Optional Hardware

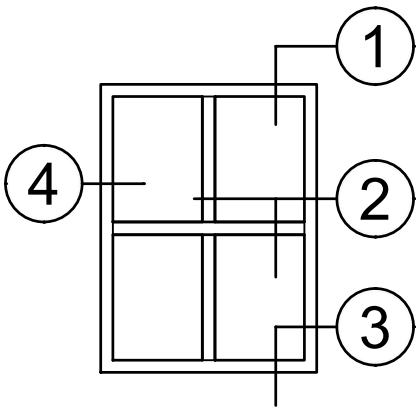
SCREENS

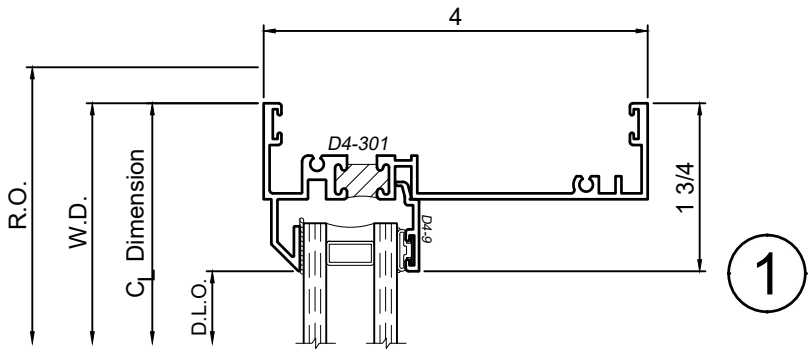
FRAME - frames are fabricated from 6063-T6 extruded aluminum alloy and temper. All screen frames are miter cut and corner keyed. The corners are mechanically crimped together for durability. The screen frame is finished to match the window frame.

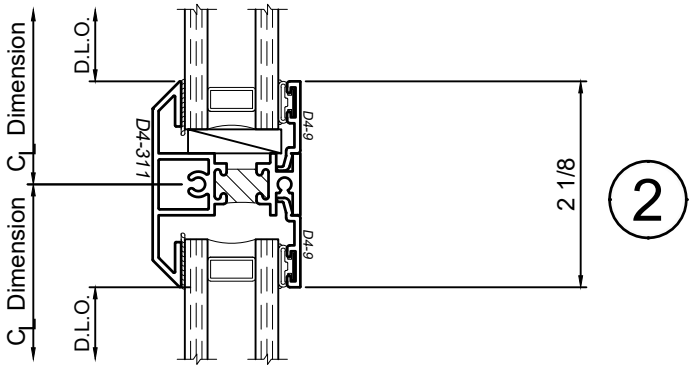
MESH - Standard .011 aluminum screen wire mesh is produced from 5154 alloy with 18x16 pattern in Charcoal or Aluminum color. All mesh is applied to the screen frame with a roller spline making for easy and quick replacements. Optional fiberglass or .009 stainless steel mesh is available as an option.

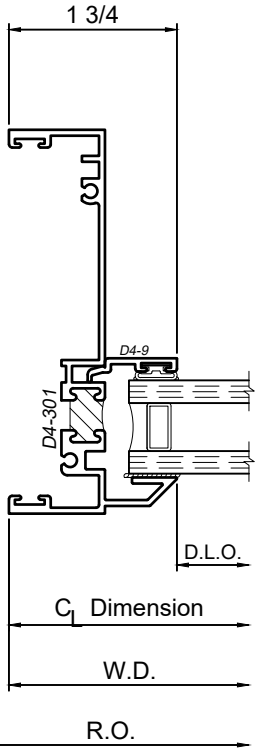
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Fixed - Picture Window

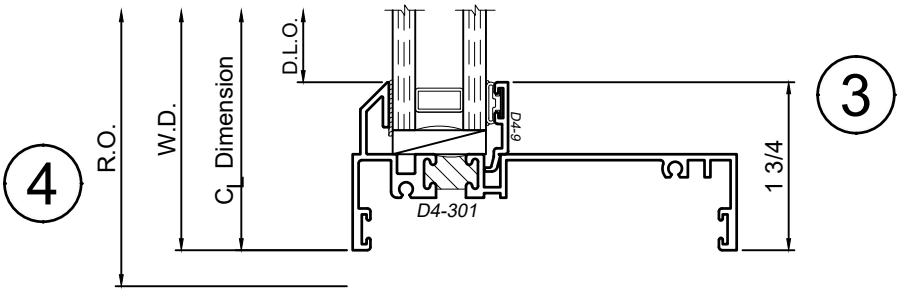
Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.







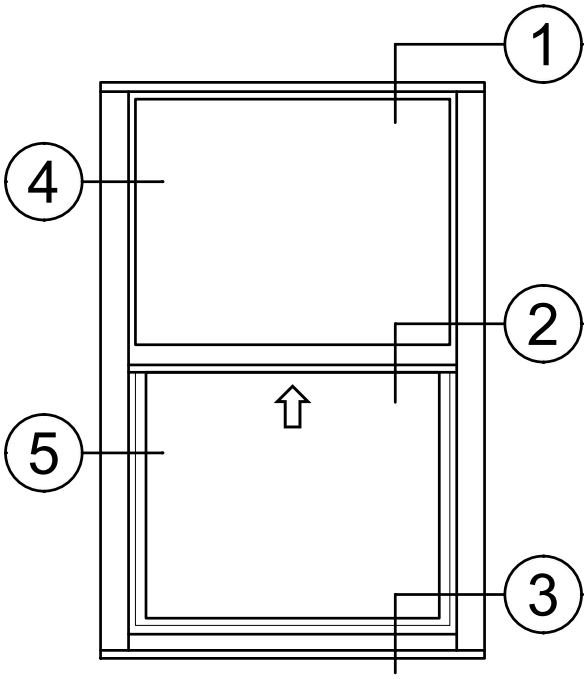


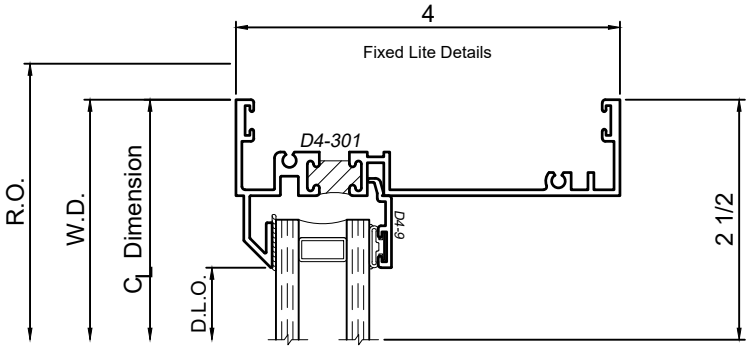


SCALE 6"=1'-0"

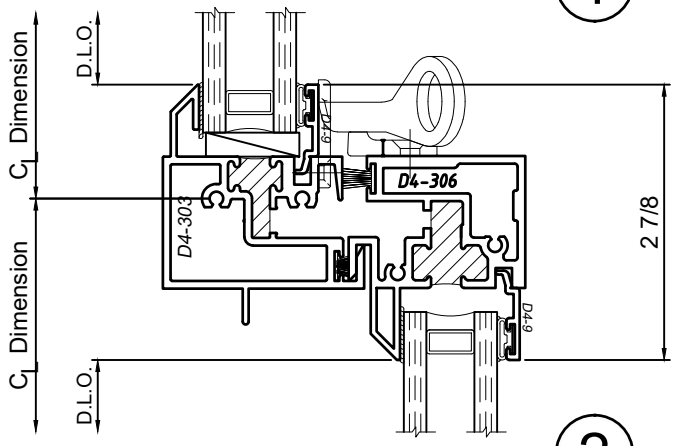
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Single Hung Window Head and Sill Details

Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.





1



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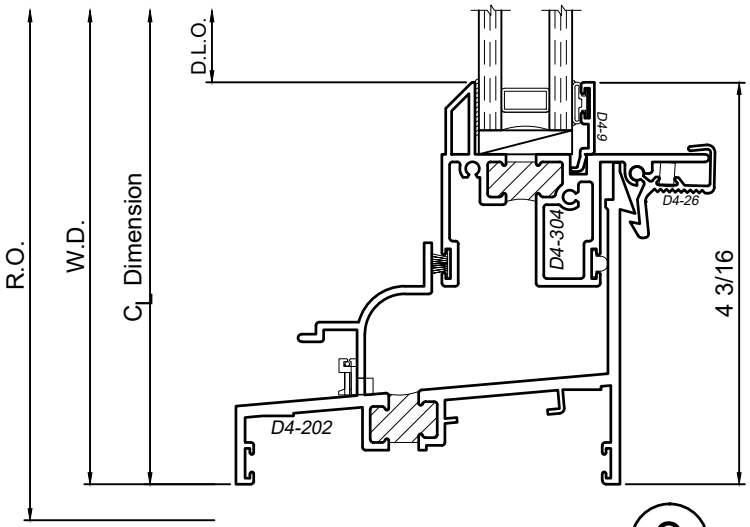
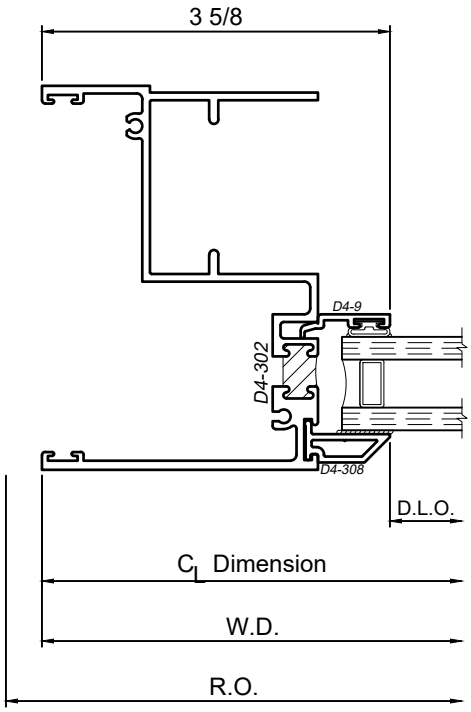


3

SCALE 6"=1'-0"

4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Single Hung Window Jamb Details

Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



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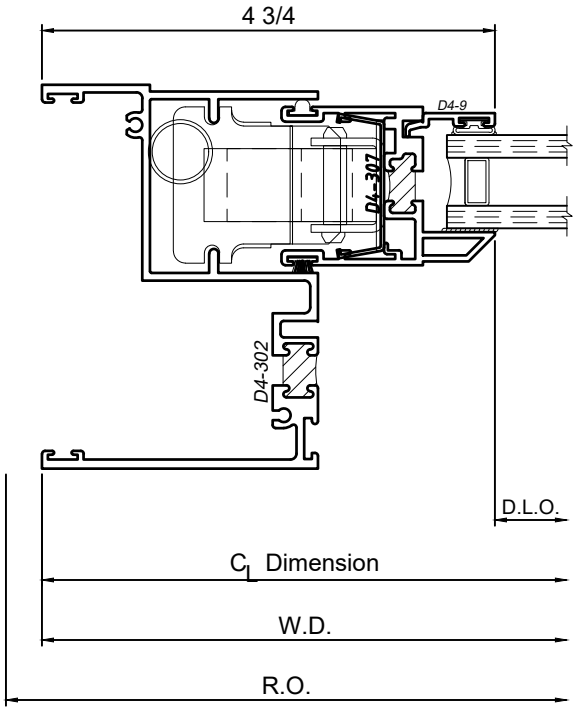

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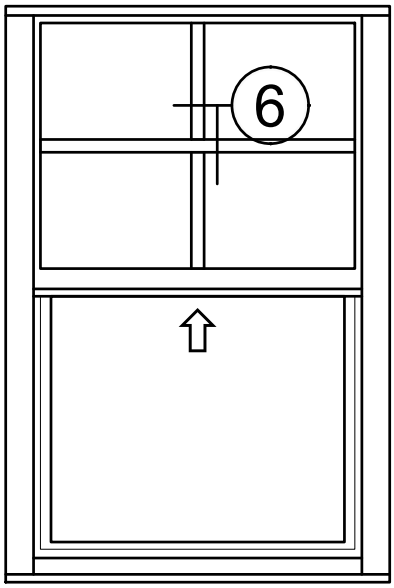
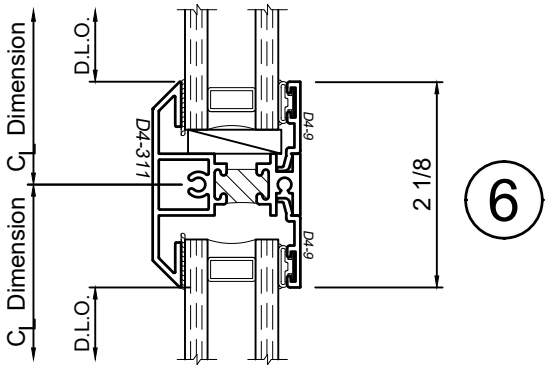
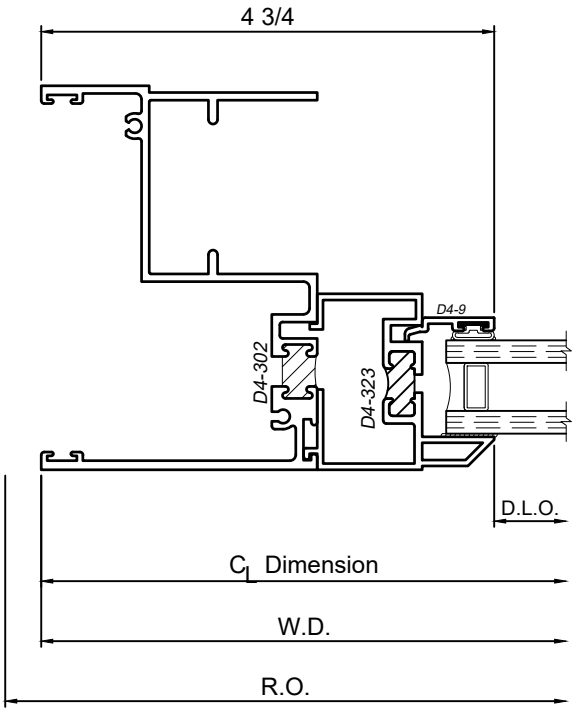
SCALE 6"=1'-0"



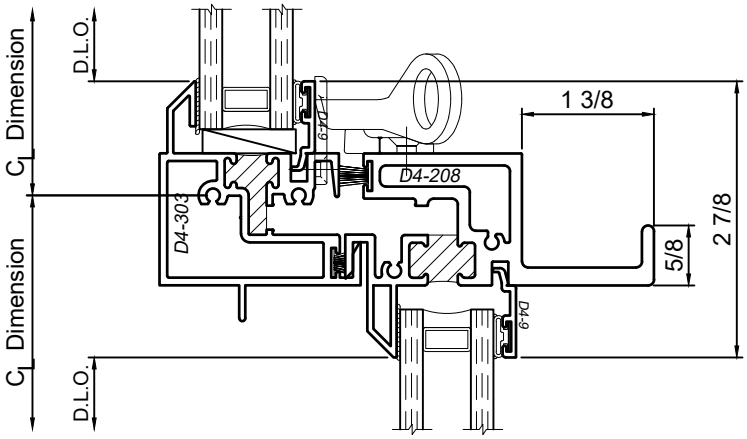


SCALE 6"=1'-0"

Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



Equal Sight Line Adaptor for Upper Lite



Heavy Sash Rail for higher Wind Loads

SCALE 6"=1'-0"

Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.

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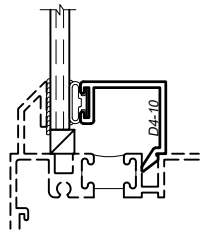
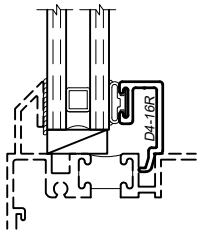
SCALE 6"=1'-0"

4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Glazing Options

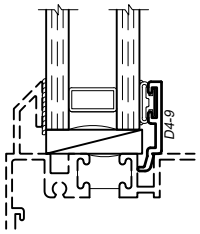
Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



3/16" Glazing Bead
D4-10



5/8" Glazing Bead
D4-16R

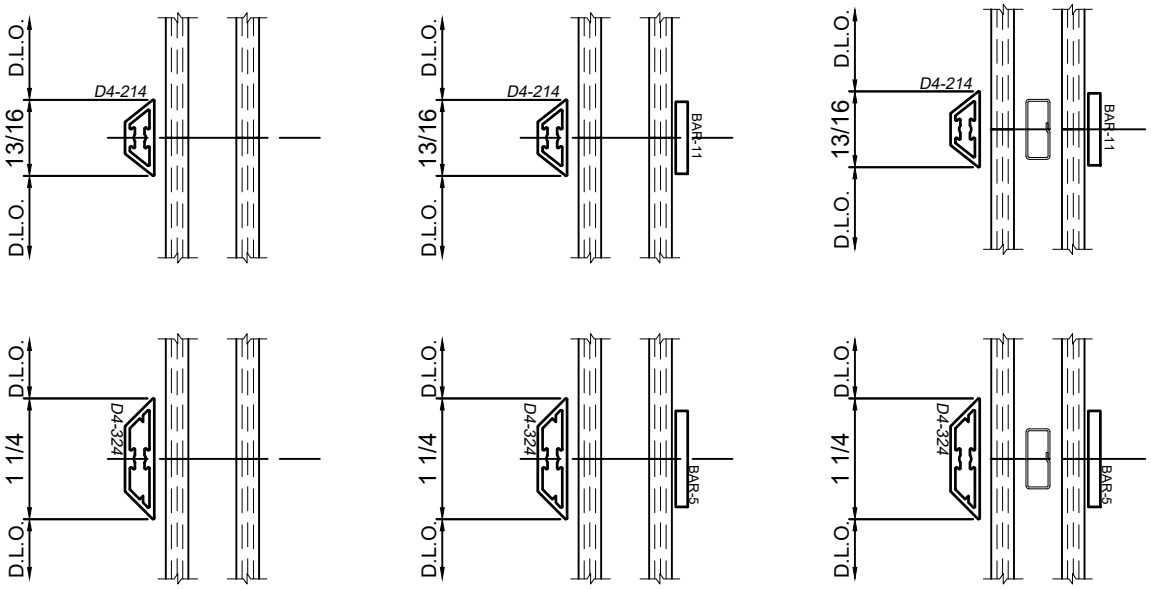


1" Glazing Bead
D4-9

Monolithic glass should be limited to more than 5mm (3/16") thickness to allow for proper vinyl compression. 6mm (1/4") glass may require wet glazing on both sides.

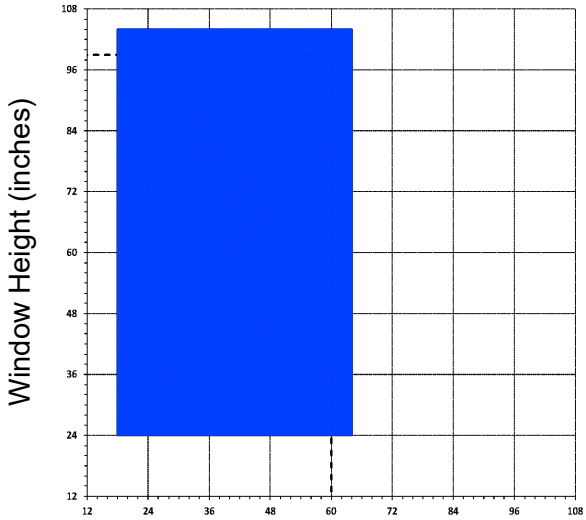
Note: Odd glass thicknesses may be possible by changing the gasket or the thickness of the glazing silicone. If desired glazing is not shown please contact your local Winco Sales Representative for additional information.

SCALE 6"=1'-0"



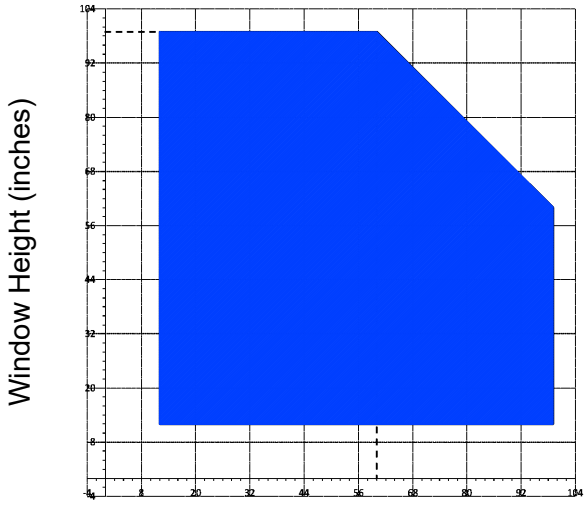
SCALE 6"=1'-0"

Single Hung



- - - - AAMA Gateway Size

Fixed



- Dashed line represents the gateway size window as tested by AAMA.
- All vent sizes are based upon 1" Insulated glass consisting of ¼" glass -½" air -¼" glass.
- Any vent size outside of the AAMA Gateway tested size may have reduced performance.
- Chart assumes the window has been installed in a properly prepared opening by a qualified installer.
- Individual job criteria such as: other glazing materials, specified wind load, and specific operating hardware; may enhance or restrict the chart.
- Minimum vent size is 14" x 14" with standard water leg sill.
- The chart is a general guideline for projected vent sizing, anything on the edge or outside of the range will need to be reviewed by Winco Engineering.

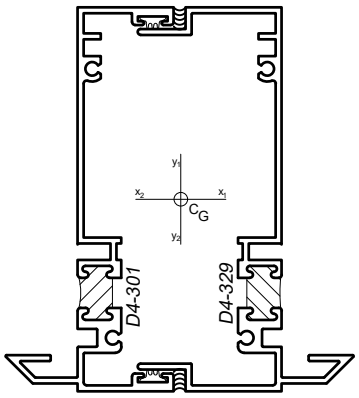
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Vertical Stack - D4-301 / D4-329

Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.

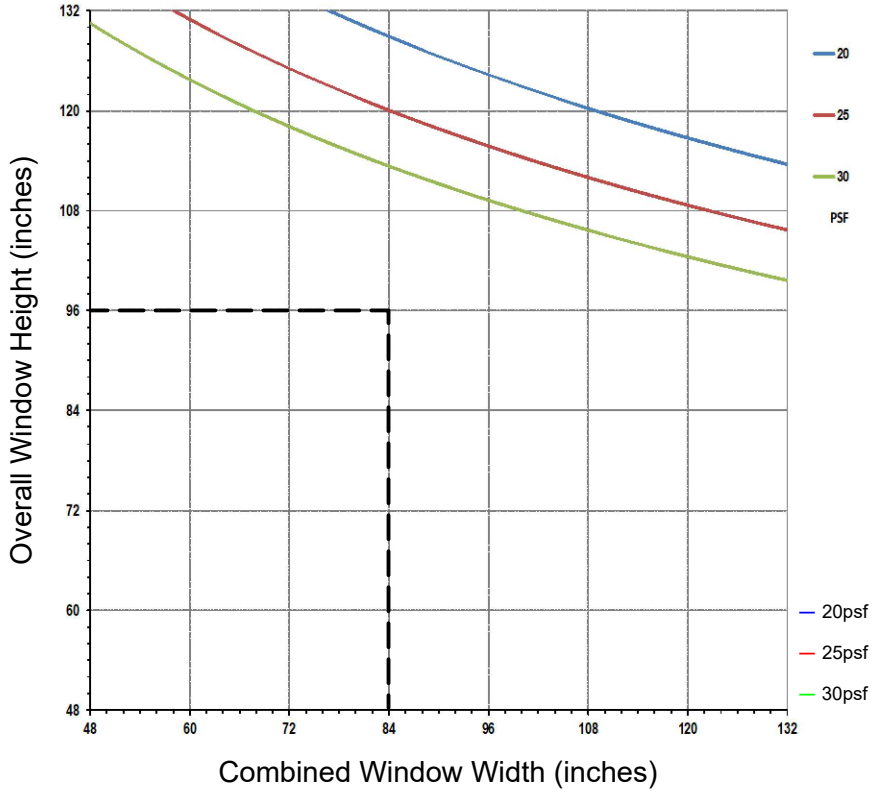
Combined Properties

	X-X	Y-Y
I	2.9795 in^4	0.2249 in^4
S	1.2578 in^3	0.2029 in^3

Maximum area = 40 ft²
Maximum Total Unit Weight must not exceed 500 lbs.



Wind Load Chart



This chart can be used as a guideline for the preliminary structural evaluation of the mullion/stack shown. The chart is based on conservative engineering practices and the minimum result from either L/175 Deflection, ¾" deflection, or 15 ksi outer fiber stress. The chart reflects the structural strength of 2 continuous window jambs running the full height of the opening. WINCO highly recommends consulting an engineer for any of the following circumstances:

- The window under consideration falls close too or on the design pressure line.
- Any rail exceeds 48" with a large (>16ft²) light of glass above.
- Any vent width exceeds 60".
- Window exceeds the maximum size shown.
- Window has multiple rails (>3).

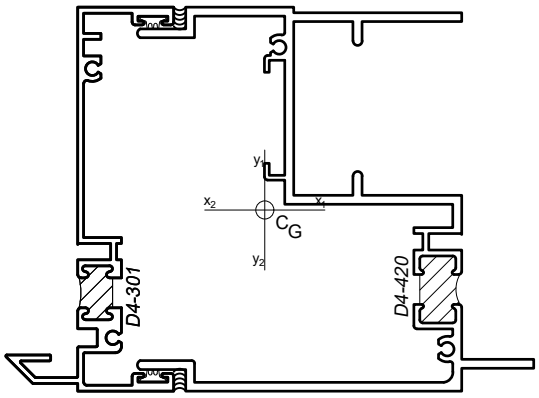
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Vertical Stack - D4-301 / D4-339

Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.

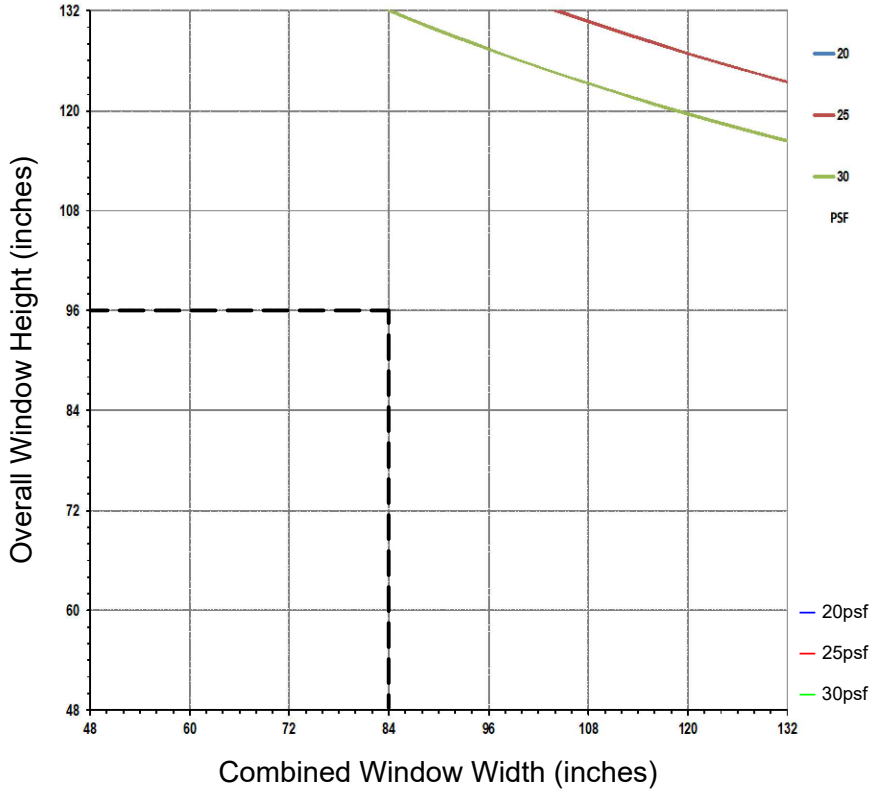
Combined Properties

	X-X	Y-Y
I	4.2816 in^4	1.1755 in^4
S	1.9426 in^3	0.5944 in^3

Maximum area = 40 ft²
Maximum Total Unit Weight must not exceed 500 lbs.



Wind Load Chart

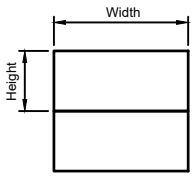


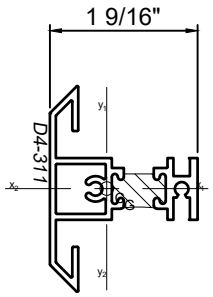
This chart can be used as a guideline for the preliminary structural evaluation of the mullion/stack shown. The chart is based on conservative engineering practices and the minimum result from either L/175 Deflection, ¾" deflection, or 15 ksi outer fiber stress. The chart reflects the structural strength of 2 continuous window jambs running the full height of the opening. WINCO highly recommends consulting an engineer for any of the following circumstances:

- The window under consideration falls close too or on the design pressure line.
- Any rail exceeds 48" with a large (>16ft²) light of glass above.
- Any vent width exceeds 60".
- Window exceeds the maximum size shown.
- Window has multiple rails (>3).

4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - D4-311 Rail

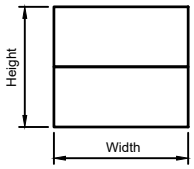
Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



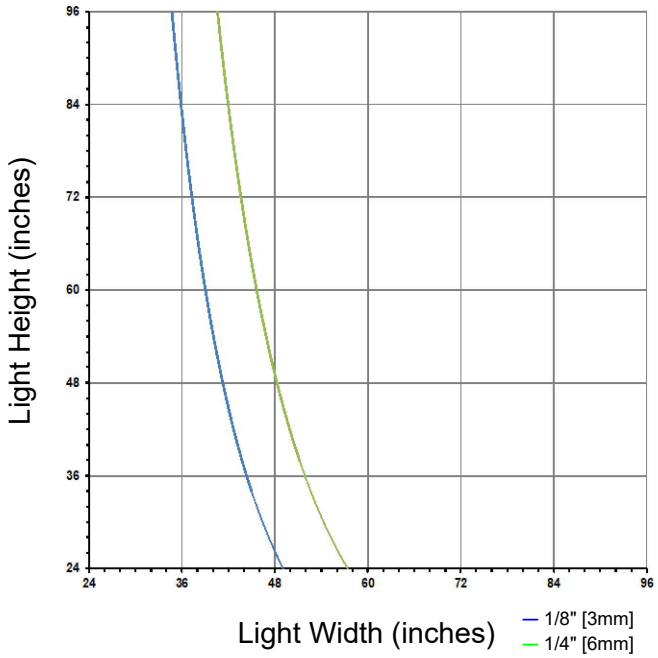


Section Properties

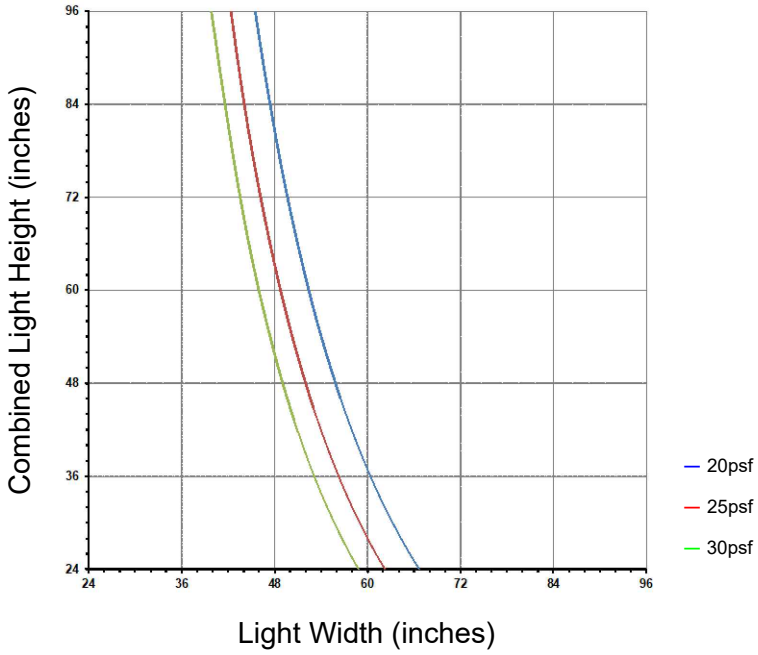
	X-X	Y-Y
I	0.1330 in^4	0.0983 in^4
S	0.1405 in^3	0.0914 in^3



Glass Dead Load Chart



Wind Load Chart

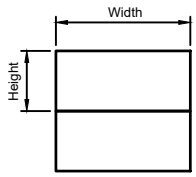


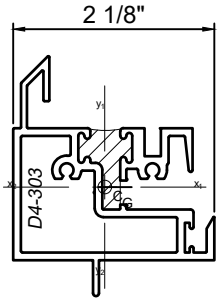
This chart can be used as a guideline for the preliminary structural evaluation of the Rail shown. The Dead Load chart is based on ¼" - ½" - ¼" I.G. and 0.090" deflection at ¼ and ⅛ point blocking. The Wind Load Chart is based upon the minimum result from either L/175 deflection, ¾" deflection, or 15 ksi outer fiber stress. The charts reflect the structural strength of only the Rail. WINCO highly recommends consulting an engineer for any of the following circumstances:

- The window under consideration falls close too or on the design pressure line.
- Any rail exceeds 48" with a large (>16ft²) light of glass above.
- I.G. make-up varies from the default.
- I.G. has additional blocking.

4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - D4-303 Rail

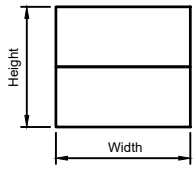
Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



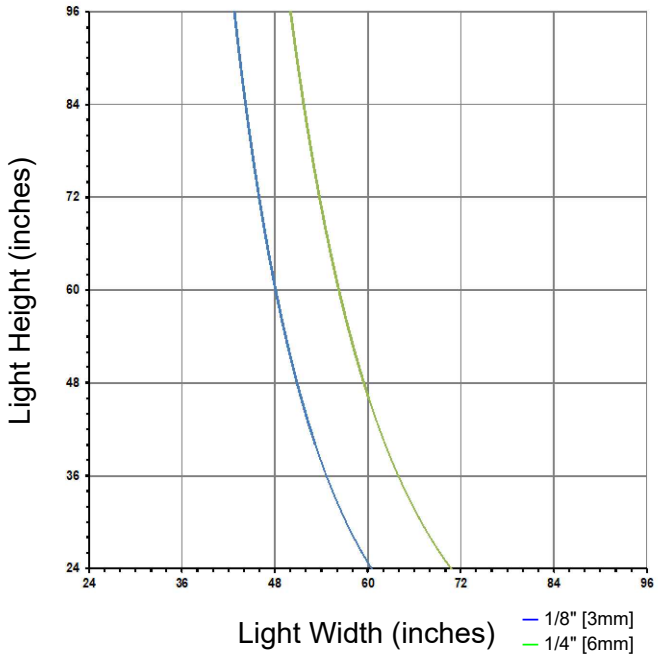


Section Properties

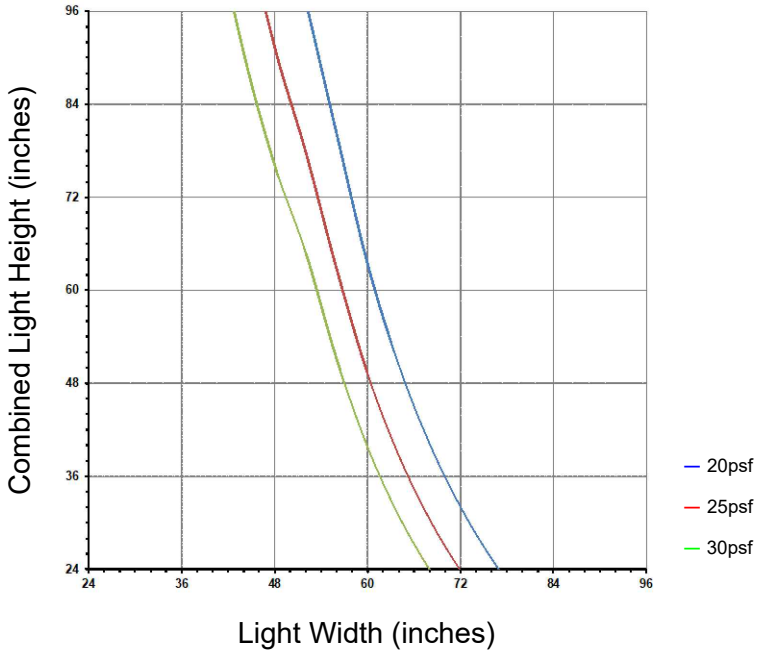
	X-X	Y-Y
I	0.2126 in^4	0.2268 in^4
S	0.1523 in^3	0.2205 in^3



Glass Dead Load Chart



Wind Load Chart

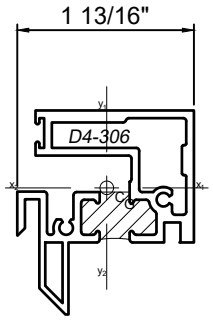


This chart can be used as a guideline for the preliminary structural evaluation of the Rail shown. The Dead Load chart is based on ¼" - ½" - ¼" I.G. and 0.090" deflection at ¼ and ⅛ point blocking. The Wind Load Chart is based upon the minimum result from either L/175 deflection, ¾" deflection, or 15 ksi outer fiber stress. The charts reflect the structural strength of only the Rail. WINCO highly recommends consulting an engineer for any of the following circumstances:

- The window under consideration falls close too or on the design pressure line.
- Any rail exceeds 48" with a large (>16ft²) light of glass above.
- I.G. make-up varies from the default.
- I.G. has additional blocking.

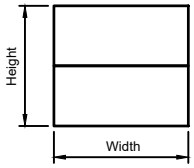
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - D4-306 Rail

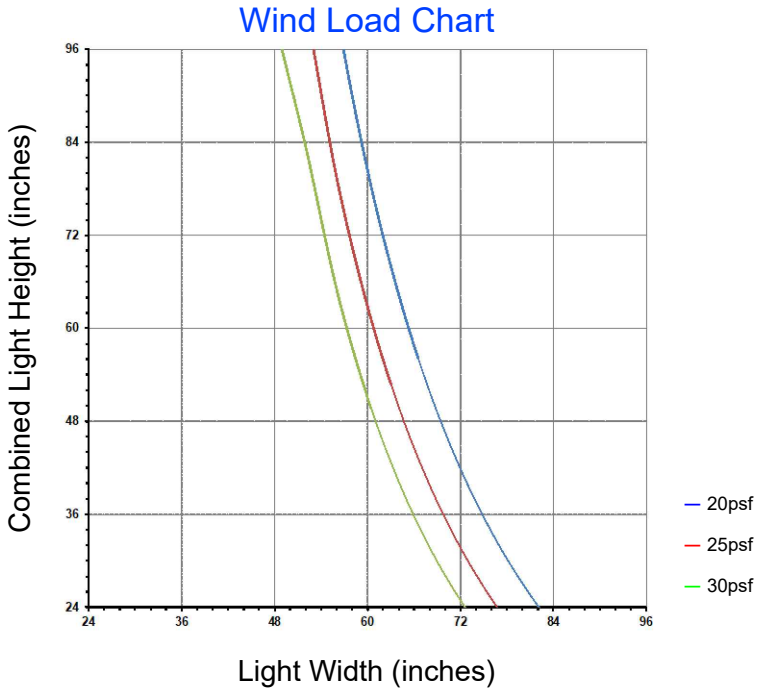
Note: Multiple configurations of this window system are available. Refer to the WINCO website for additional options or contact your local WINCO Sales Representative for information.



Section Properties

	X-X	Y-Y
I	0.2634 in^4	0.2853 in^4
S	0.1999 in^3	0.3058 in^3



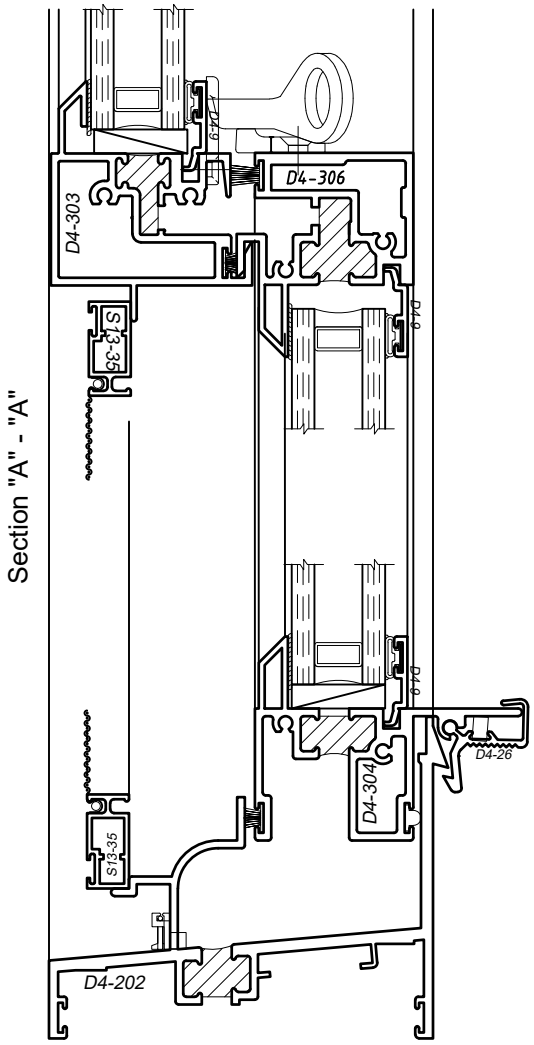


This chart can be used as a guideline for the preliminary structural evaluation of the Rail shown. The Dead Load chart is based on ¼" - ½" - ¼" I.G. and 0.090" deflection at ¼ and ⅛ point blocking. The Wind Load Chart is based upon the minimum result from either L/175 deflection, ¾" deflection, or 15 ksi outer fiber stress. The charts reflect the structural strength of only the Rail. WINCO highly recommends consulting an engineer for any of the following circumstances:

- The window under consideration falls close too or on the design pressure line.
- Any rail exceeds 48" with a large (>16ft²) light of glass above.
- I.G. make-up varies from the default.
- I.G. has additional blocking.

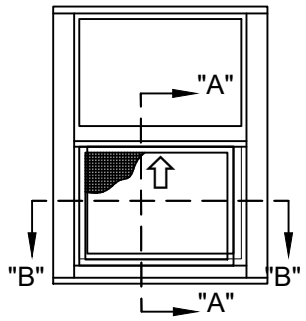
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Screen Options - Standard Fixed Screen

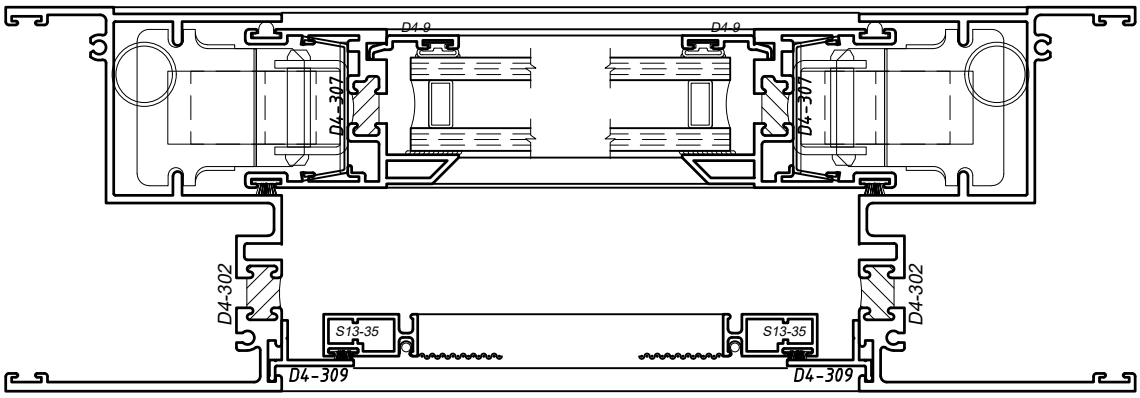
Note: Typical vent screen details shown. Winco reserves the right to alter the screen attachment detail due to job specific sizing and hardware. If you have specific screen applications you would like to see please contact your local Winco Sales Representative for more information.



Section "A" - "A"

All screen frames are fixed.





Section "B" - "B"

SCALE 6"=1'-0"

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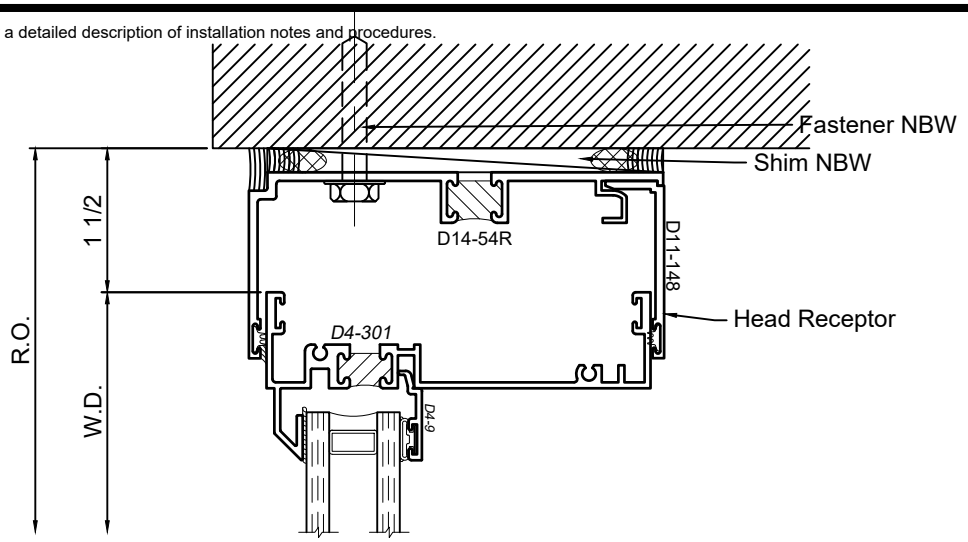
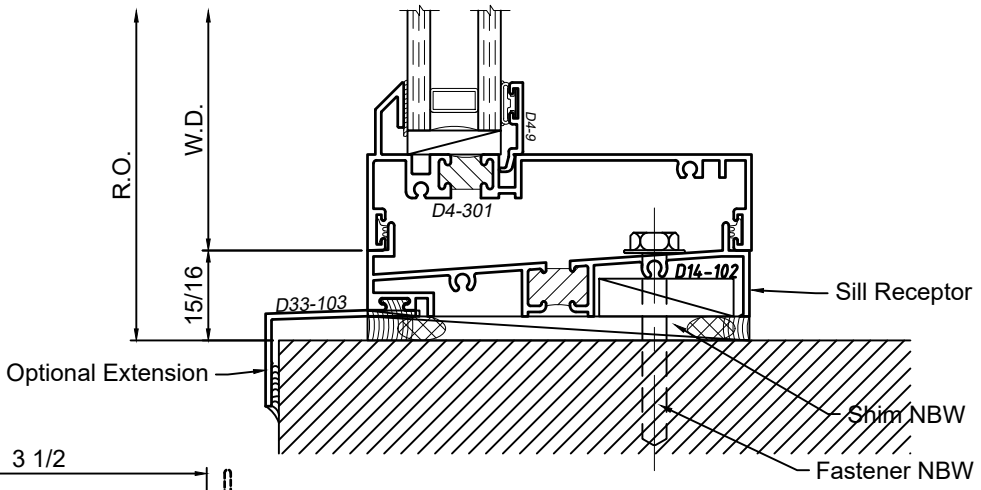
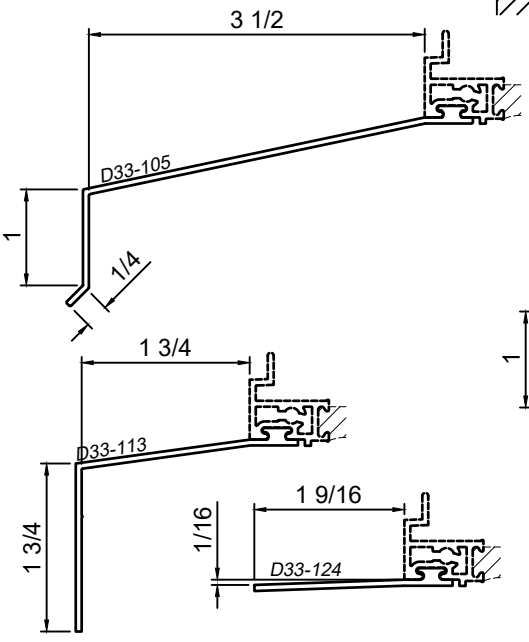
SCALE 6"=1'-0"

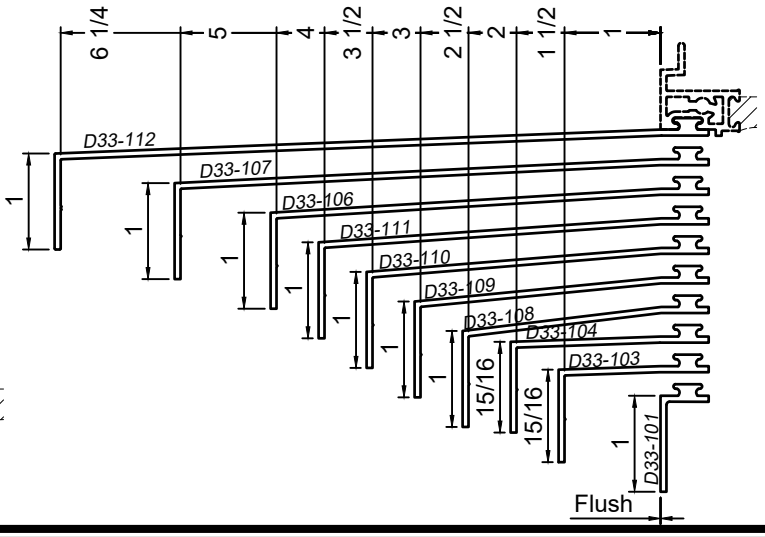
4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Trim - Receptor Installation

Note: See Winco Installation Instructions for a detailed description of installation notes and procedures.





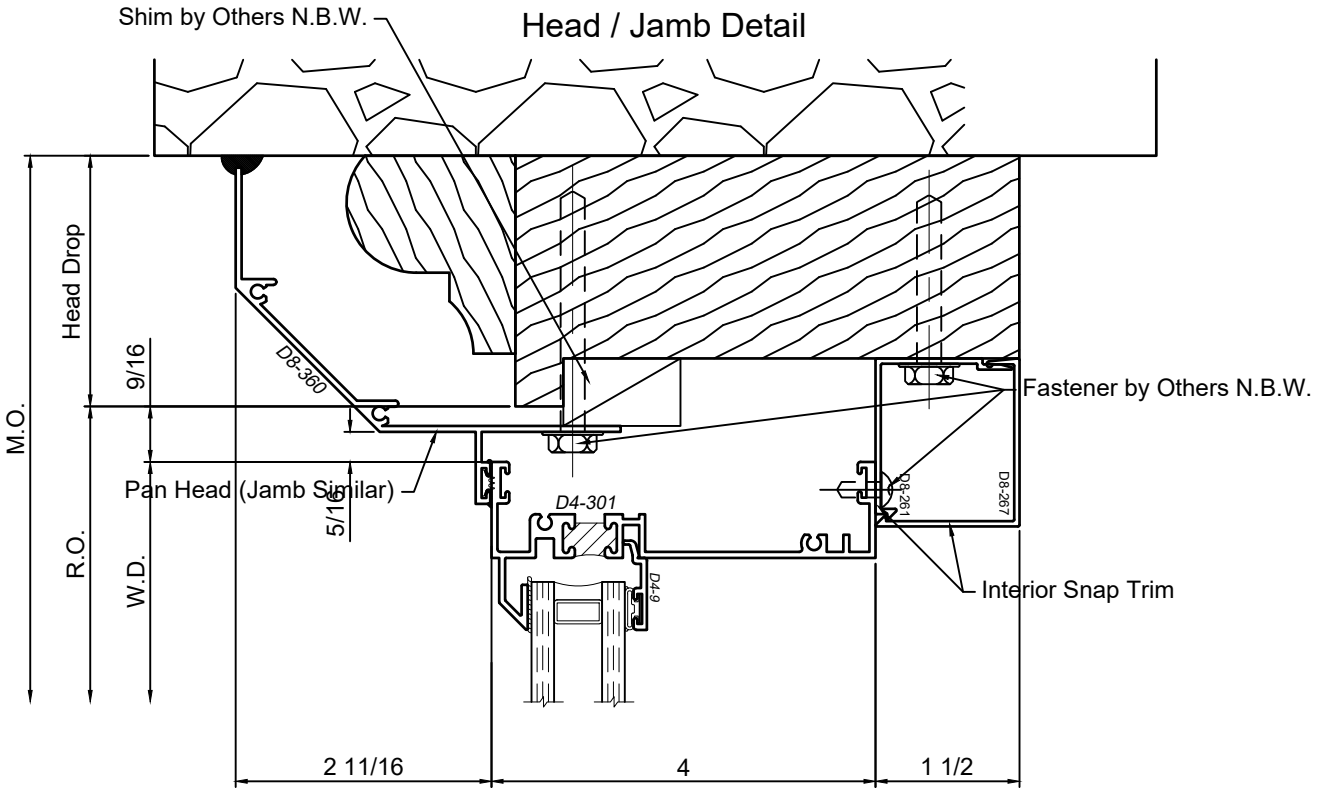


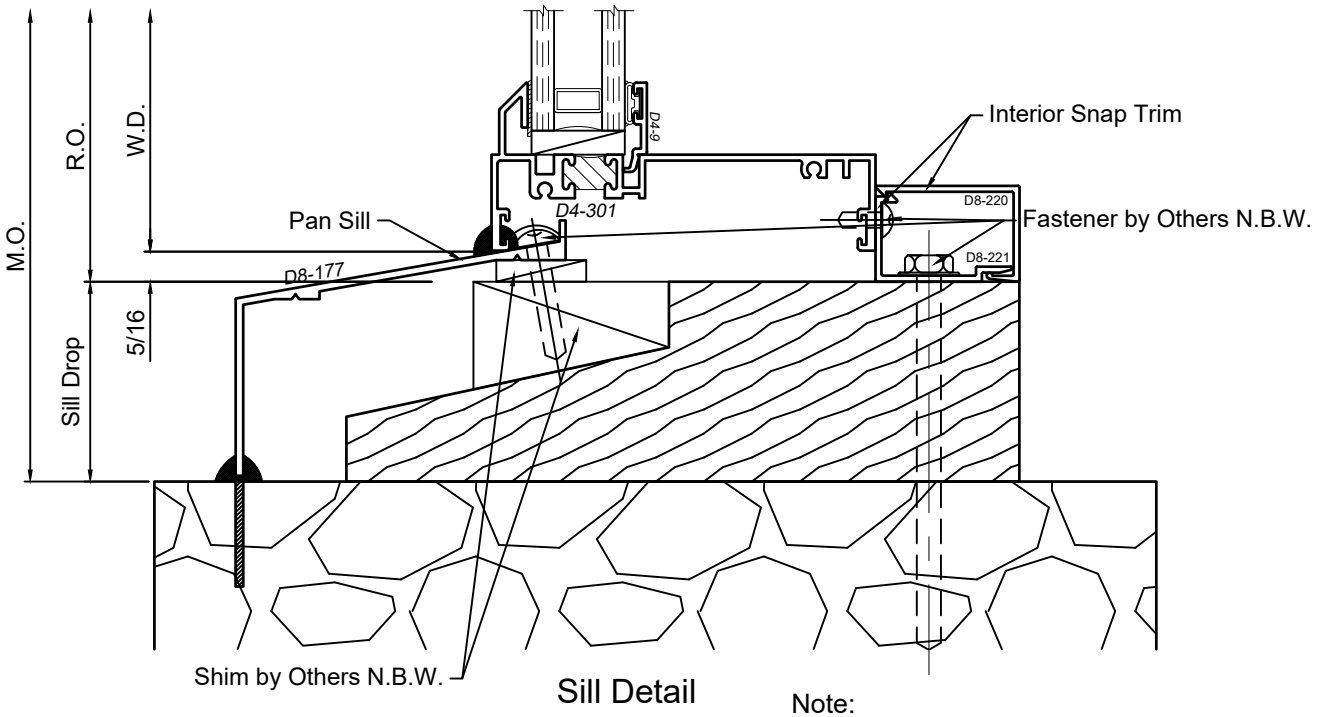


SCALE 6"=1'-0"

4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Trim - Panning Installation

Note: See Winco Installation Instructions for a detailed description of installation notes and procedures.



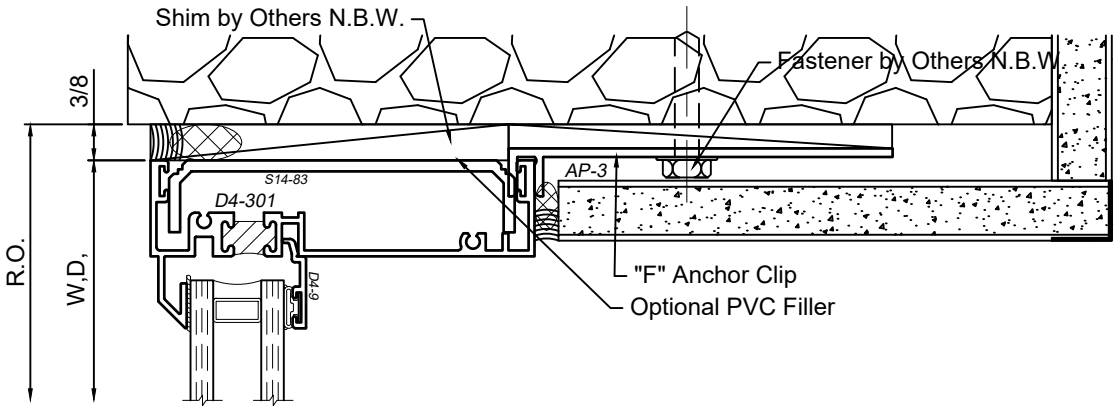


Note:
Typical panning system shown. Refer to "Panning and Trim" section of detail binder for all panning and interior snap trim options

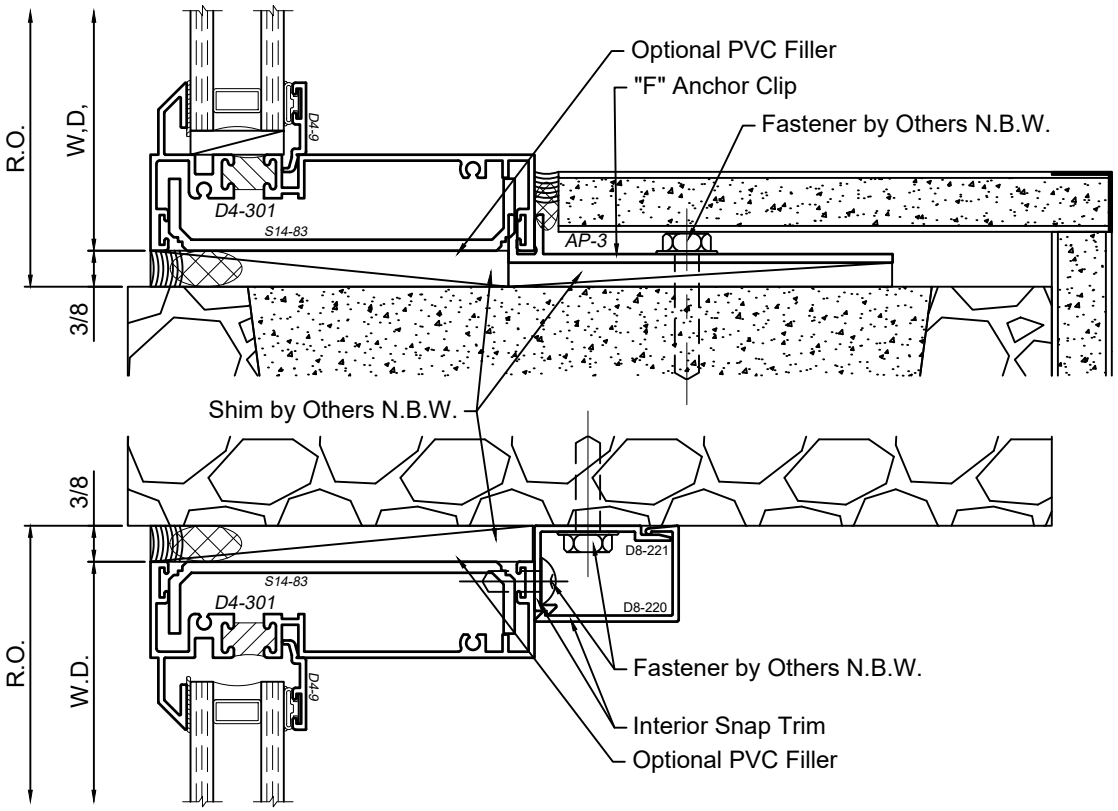
SCALE 6"=1'-0"

4410S Series 4" Thermal Fixed & Single Hung Windows
Product Details - Trim - F-Anchor and Snap Trim Installation

Note: See Winco Installation Instructions for a detailed description of installation notes and procedures.

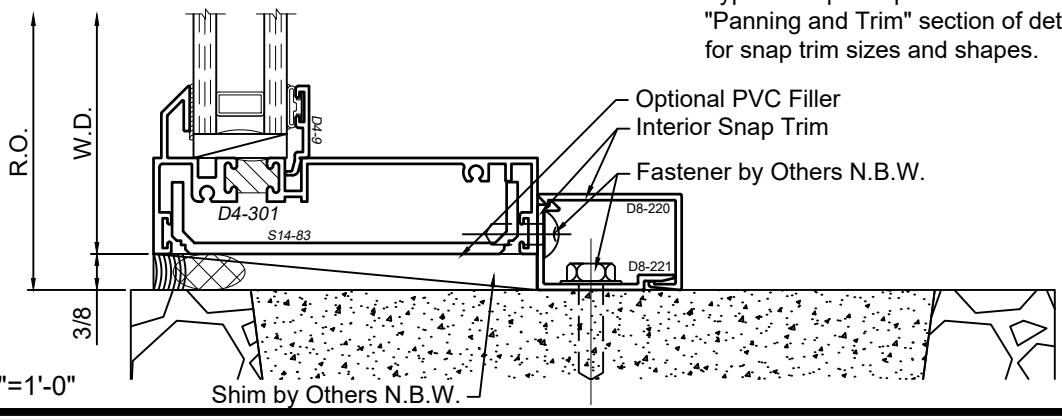


"F" Clip Installation



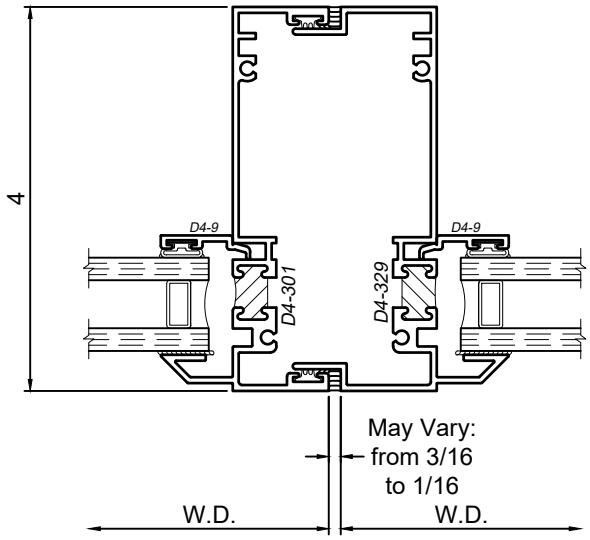
Snap Trim Installation

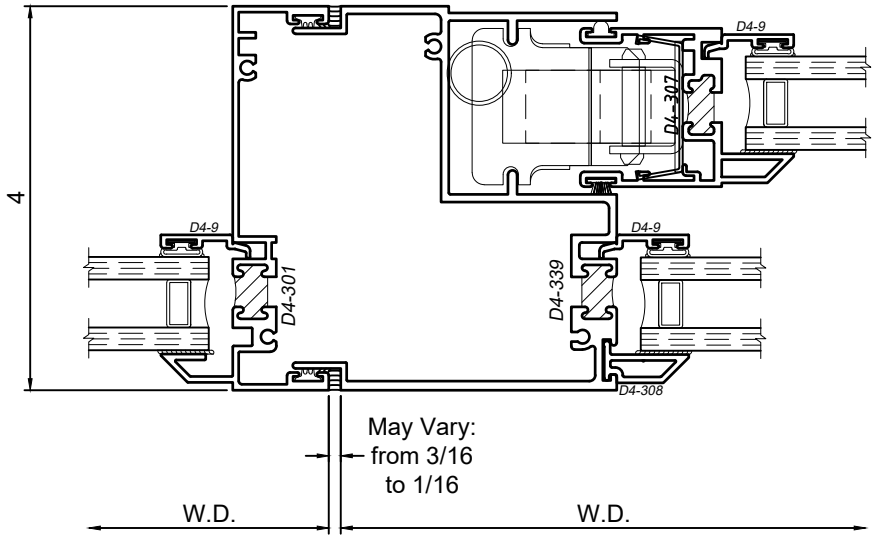
Note:
Typical snap trim profile shown. Refer to "Panning and Trim" section of detail binder for snap trim sizes and shapes.



SCALE 6"=1'-0"

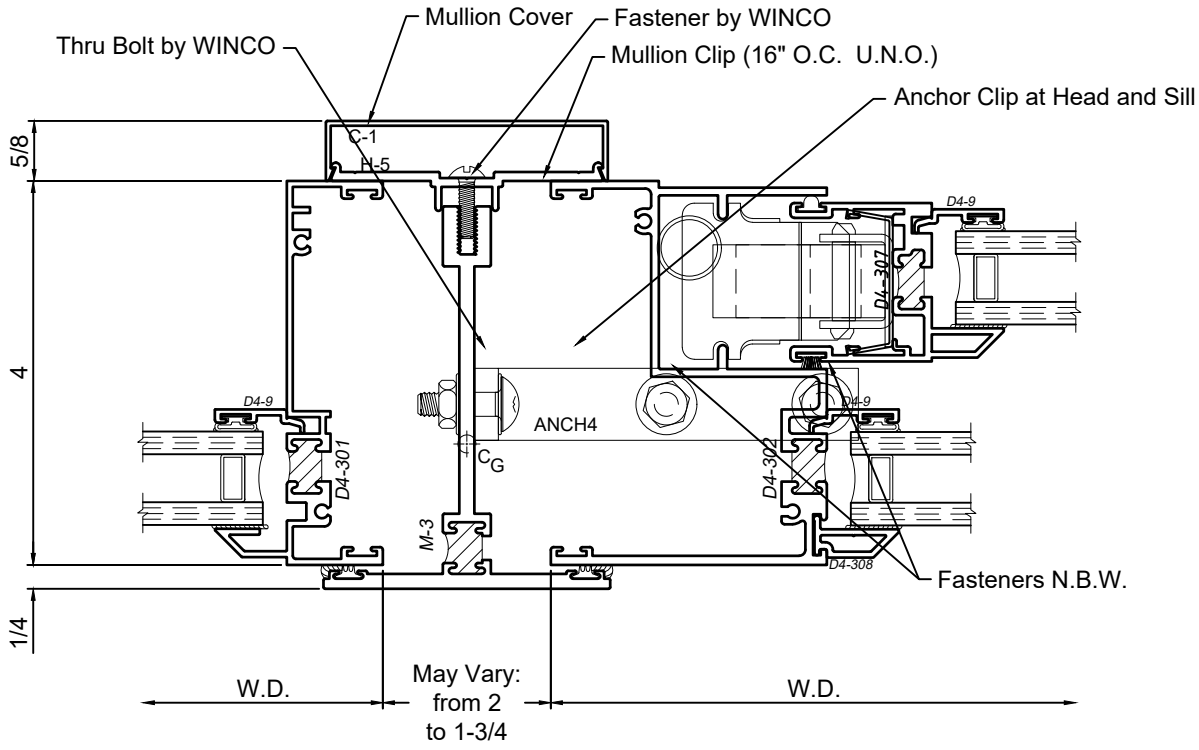
Typical Side Stack Framing



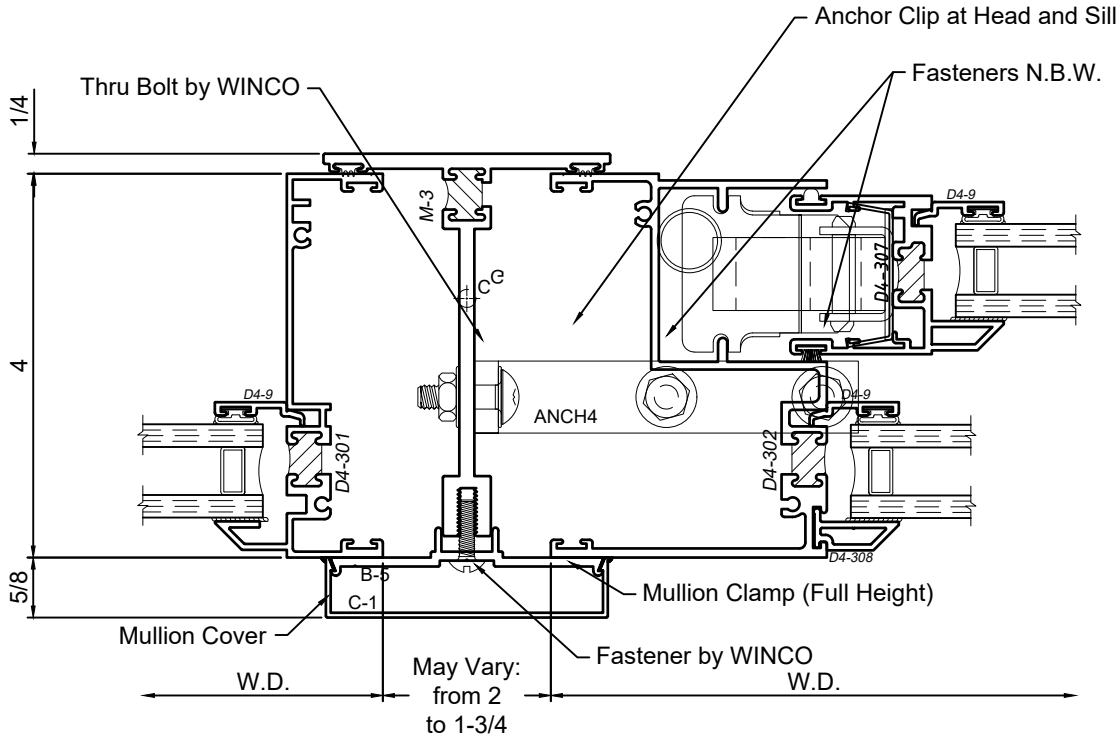


SCALE 6"=1'-0"

M-3 Mullion set from Building Interior

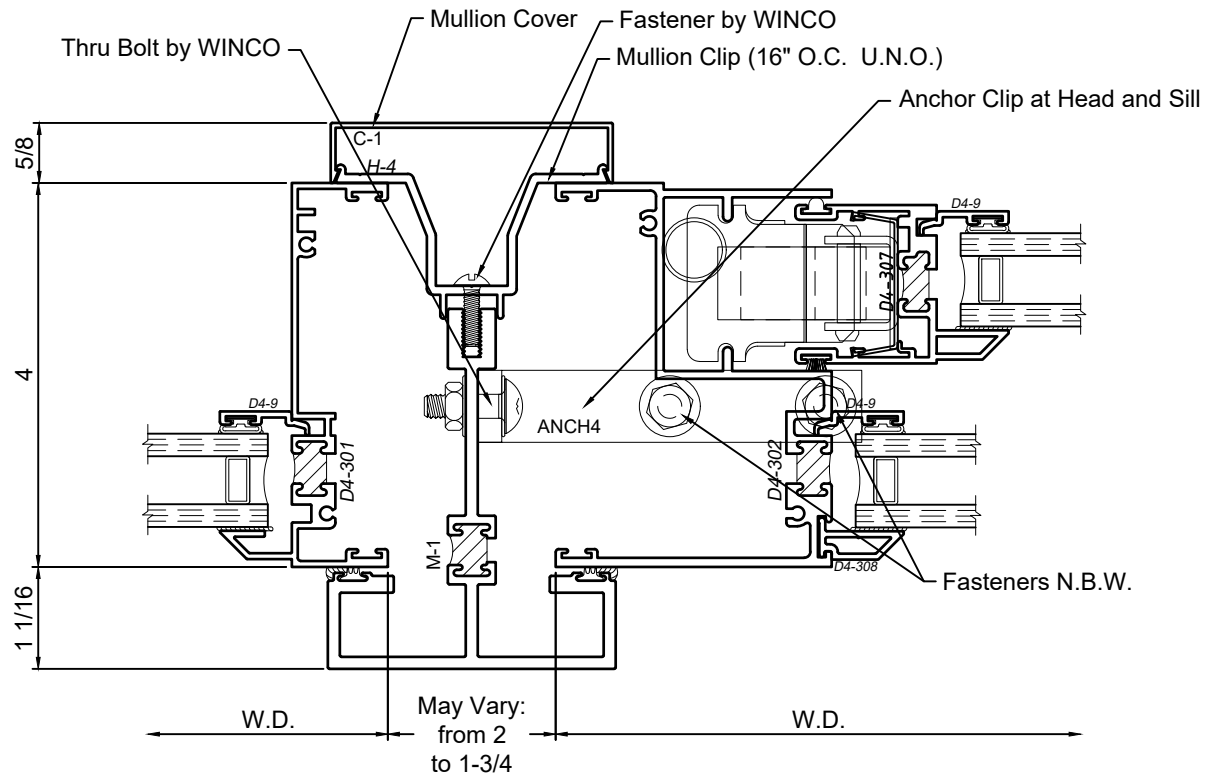


M-3 Mullion set from Building Exterior

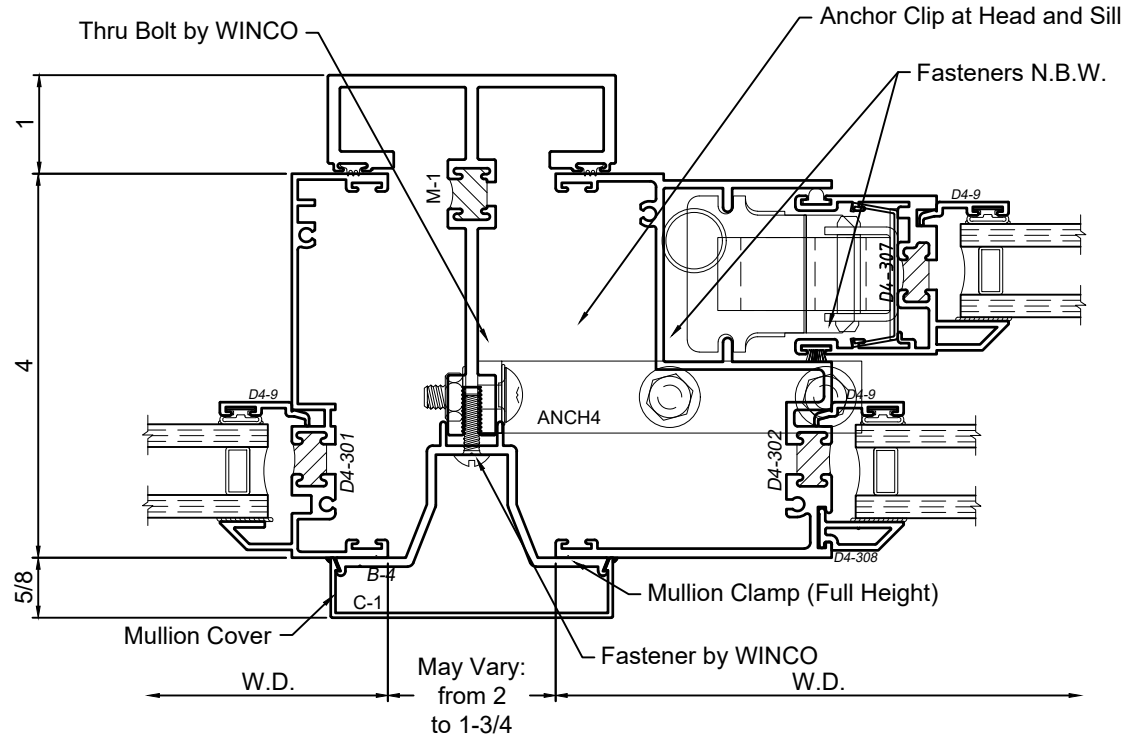


SCALE 6"=1'-0"

M-1 Mullion set from Building Interior

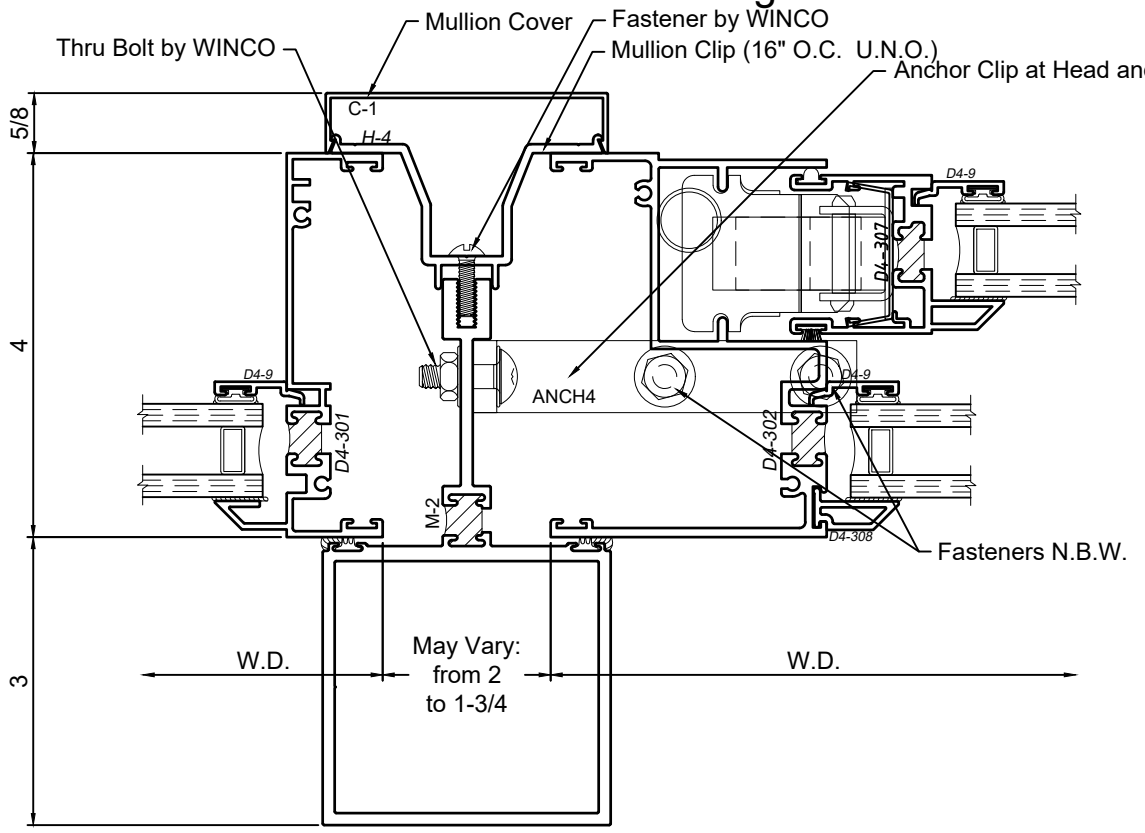


M-1 Mullion set from Building Exterior

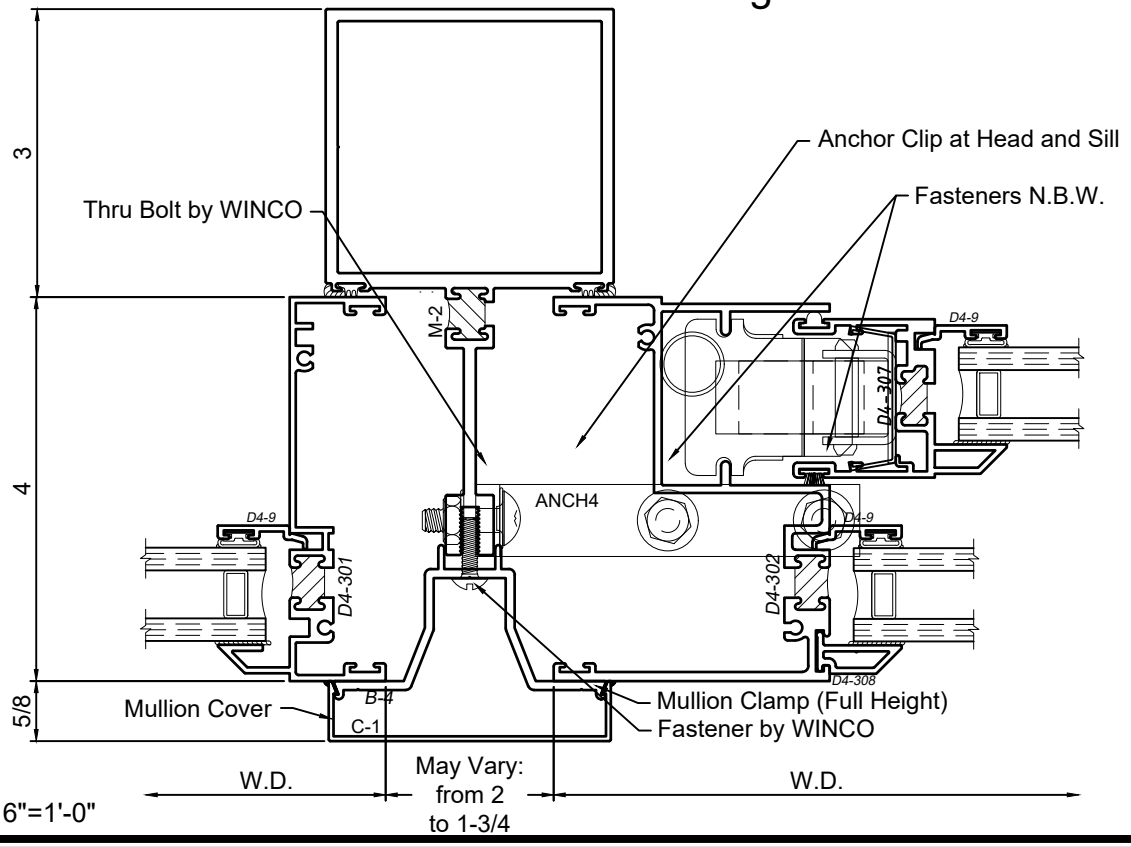


SCALE 6"=1'-0"

M-2 Mullion set from Building Interior



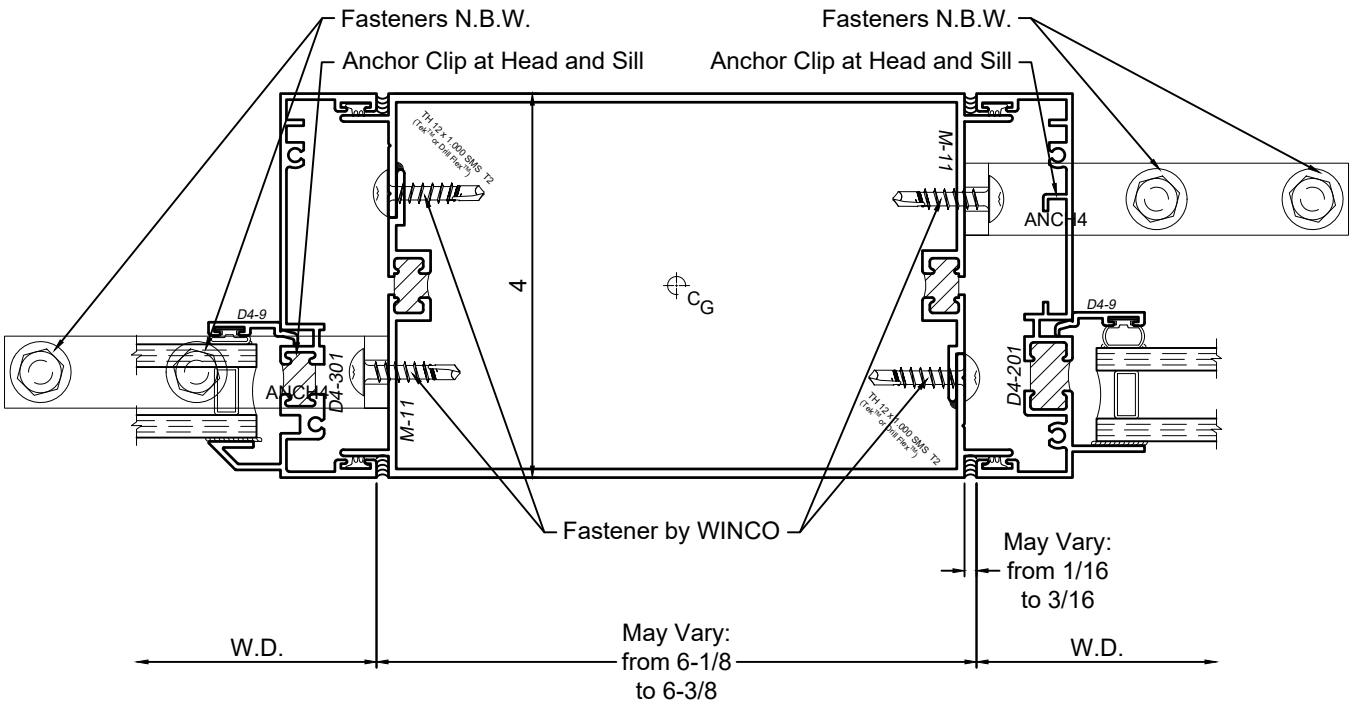
M-2 Mullion set from Building Exterior



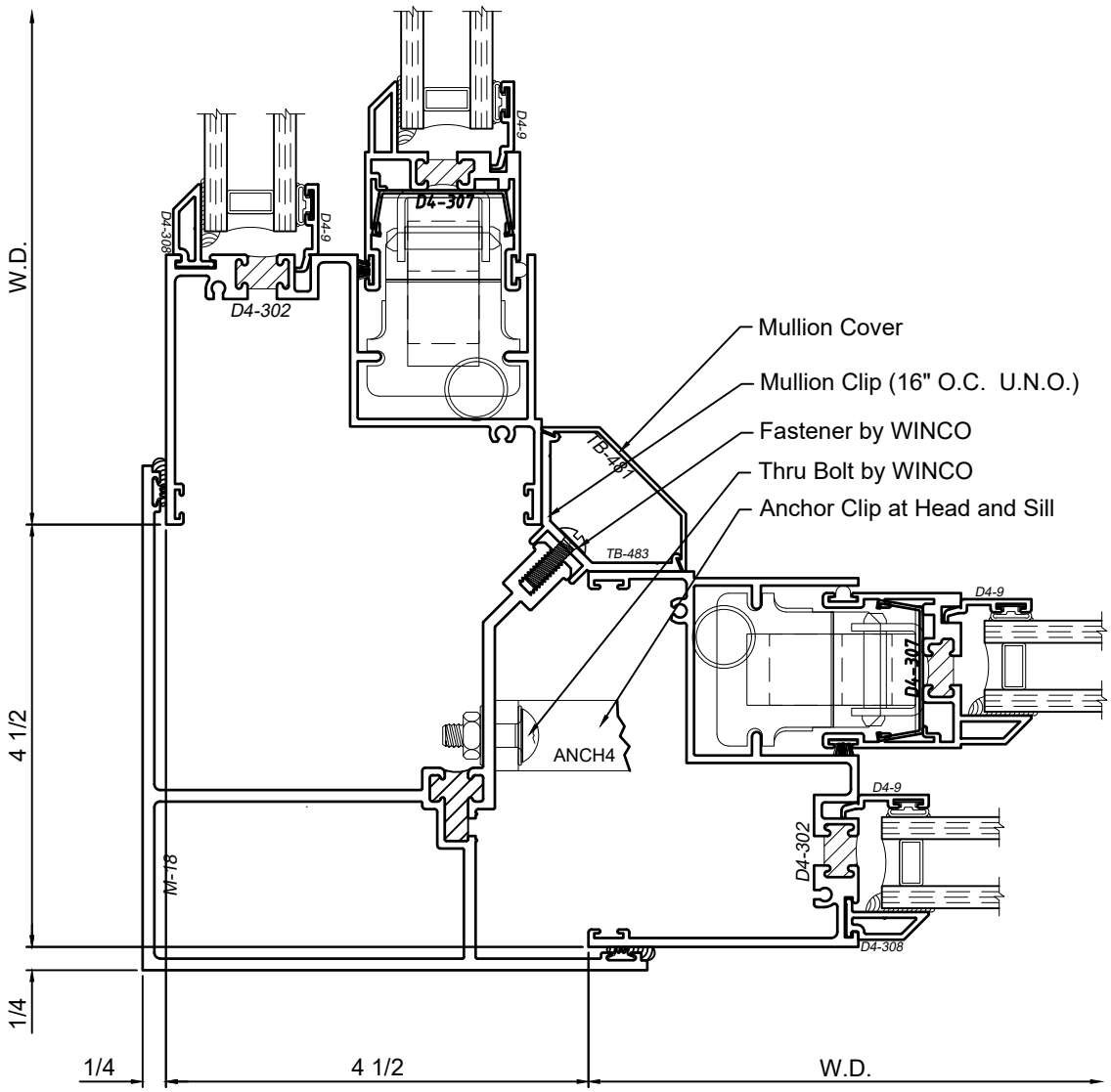
SCALE 6"=1'-0"

M-11 Mullion

Recommended usage only with Jamb Receptor for installation clearances



SCALE 6"=1'-0"



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