

Essential Casement / Awning

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Unit Features

Essential Casement: ESCA

Essential Casement Picture: ESCAP

Essential Awning: ESAWN

Essential Casement Transom: ESCATR

For applicable certification and code information, refer to the Introduction and Product Performance chapter.

Frame and Sash:

- The frame and sash exteriors are made of Ultrex®, an advanced fiber reinforced material that is resistant to thermal conductance.
 - Exterior colors: Stone White, Pebble Gray, Bronze, Cashmere, Gunmetal, or Ebony.
 - Interior colors: Stone White, Bronze, Gunmetal, or Ebony.
- Split finishes are not available for Dark Interior options. Only Bronze interior/Bronze exterior, Gunmetal interior/Gunmetal exterior, and Ebony interior/Ebony exterior combinations are available.

Frame:

- Composite frame thickness is 1 1/2" (38). Total frame depth is 3 3/32" (79). Ultrex is 0.070" - 0.077" (2) thick.

Sash:

- Composite sash thickness is 15/16" (24). Ultrex is 0.070" - 0.077" (2) thick. Sash can be replaced but not reglazed.

Jamb Extension:

- Standard jamb depth is 2" (51). 4 9/16" (116) and 6 9/16" (167) maintenance free jamb extension available.
 - Available in Stone White, Bronze, Gunmetal, or Ebony. Default color will match the unit interior selection.
- Split finishes not available for Dark Interior options. Stone White jamb extension is available for all interior color selections.

Casement Hardware:

- Hardware finishes available in Stone White, Almond Frost, Brass, Satin Nickel, Matte Black, and Oil Rubbed Bronze
- Dual arm roto hardware factory installed on casement units
 - Roto gear hardware is an E-coated, high strength, low alloy steel
 - Call number 16 and 20, and frame sizes up to RO 28" (711) wide require dyad operators.
- The hinge track is stainless steel
 - hinge arm is E-coated high strength, low alloy steel
 - hinge shoe is injection molded with a stainless steel insert.
- A snubber on the jamb and stile, certain heights have 0, 1 or 2 sets, interlock the sash to the frame on the hinge side.
- Folding handle with removable snap fit covers.
- The locking hardware consists of multi-point locking mechanism that is actuated from a single point operation.
- Optional coastal hardware is available.
- Optional factory applied Window Opening Control Device is available. This device works in accordance to ASTM F2090-17 Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.
 - min size: 18 9/16" (417) x 23 1/2" (597) - max size: 35" (902) x 71" (1816)
 - Available in Stone White, Almond Frost, Oil Rubbed Bronze, and Matte Black finishes.
 - Tether housing finish, E-Gard only.
- Optional field or factory applied Sash Limiter - 3" Travel is available (min size: 23" (584) x 23 1/2" (597) - max size: 35 1/2" (902) x 71 1/2" (1816)). Non-Custodial and Custodial options are available. Units with sash limiters do not meet egress criteria.

Awning Hardware:

- Hardware finishes available in Stone White, Almond Frost, Brass, Satin Nickel, Matte Black, and Oil Rubbed Bronze
- Scissors arm roto hardware factory installed on all awning units.
 - Roto hardware is an E-coated high strength, low alloy steel.
- The hinge track is stainless steel
 - hinge arm is E-coated high strength, low alloy steel
 - hinge shoe is injection molded with a stainless steel insert.
- Folding handle with removable snap fit covers
- A single point or double point lock on each jamb/stile, depending on unit size, with a removable escutcheon and handle
- Optional coastal hardware is available
- Optional field or factory applied Sash Limiter - 3" Travel is available (min size: 17 1/2" (445) x 23" (584) - max size: 47 1/2" (1207) x 35 1/2" (902)). Custodial and Non-Custodial options are available.
- Head jamb and top rail, on wider units, have one set of snubbers to interlock the sash to the frame.

Mulling:

- For mull performance, refer to the Essential Mulling Chapter of the ADM.
- Mull kits are available for field assembly. Kits include instructions, mull covers, mull plugs and brackets.

Unit Features Continued

Installation:

- Factory applied folding nailing fin
 - Optional installation brackets for masonry applications are available
 - Optional through jamb installation method
- Factory supplied field mulling kits are available for standard assemblies

Glazing

- Standard Glass Makeups:
 - 3/4" and 1 3/16" nominal thickness insulating glass with Low E2, and Argon gas.
- Glazing Seal: Silicone bedding on interior and exterior
- Gas Fill Options: Argon or Air
- Additional Glass Coating Options:
 - Low E1,
 - Low E2,
 - Low E3,
 - Low ERS,
 - Clear (no coating)
- Available Glass Types:
 - Triple Pane, Laminated Safety, STC/OITC upgrade, Tempered, Decorative, and California Fire glass (annealed exterior and tempered interior glazing configuration).
- Decorative glass options: Obscure, Glue Chip, Rain, Reed, Narrow Reed, Frost, Tinted (bronze, gray, or green).
- Decorative glass options may be limited due to glass makeup and Low E configurations.
- Insulating glass will be altitude adjusted with capillary tubes for higher elevations
 - Glass air spaces with capillary tubes are considered air filled

Grilles-Between-The-Glass (GBG):

- 23/32" (18) contoured aluminum bar placed between two panes of glass
- Patterns: Rectangular, 6 or 9 lite Prairie cut, or Cottage style
- Exterior colors: Stone White, Pebble Gray, Bronze, Gunmetal, Cashmere, or Ebony
- Interior colors: Stone White, Bronze, Gunmetal, or Ebony (matches unit interior color)
- GBG is not available with tinted glass.
- GBG is available on Laminated glass with a spacer bar 9.8mm or larger.

Weather Strip:

- All units are dual weather stripped.
- The primary weather strip is a black extruded PVC foam filled bulb that attaches to all four sides of the frame.
- The secondary weather strip is a black extruded PVC hollow that is attached to the sash.

Insect Screen:

- Charcoal fiberglass (non-corrosive) screen cloth.
- Roll formed aluminum frame finish
 - Available in Stone White, Bronze, Gunmetal, or Ebony (matches unit interior color).
- Features a bottom rail lift and top rail mounted springs that allow it to be removed from the interior of the unit.

Accessories:

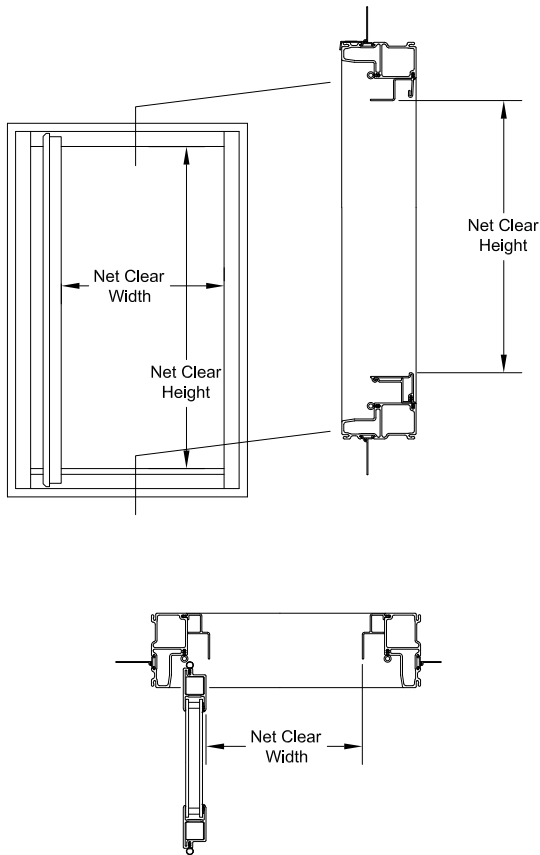
- Field applied j-channel, a 1" (25) or a 3" (76) frame expander, or flush fin installation kit.
- Factory applied: sheet rock return 1/2" (13) or 5/8" (16) drywall, a 3/4" (19) receiver, a frame filler or a flush fin.
 - Sheet rock return and 3/4" receiver are available for all interior color selections.

Exterior Casing:

- Non-integral to the unit.
- Fastened to the exterior wall with barb and kerf: 2" (51) brick mould as a full surround or with sill nosing.
- 3 1/2" (89) flat casing available as full surround or with sill nosing.
- Also available with 1" (25) ranch style sill and header overhang.

Certified Sizes and Rating

Product	Air Tested to PSF	Water Tested to psf	Design Pressure (DP)	Certification Rating	Max Overall Width		Max Overall Height	
					in	mm	in	mm
Essential Casement	1.57	6	40	LC-PG40-C	27 1/2	(699)	71 1/2	(1816)
Essential Casement	1.57	6	40	R-PG40-C	27 1/2	(699)	83 1/2	(2121)
Essential Casement	1.57	6	40	LC-PG40-C	35 1/2	(902)	34	(864)
Essential Casement	1.57	6	40	LC-PG40-C	35 1/2	(902)	54	(1372)
Essential Casement	1.57	6	40	LC-PG40-C	30 19/64	(770)	83 1/2	(2121)
Essential Casement	1.57	6	40	LC-PG40-C	35 1/2	(902)	71 1/2	(1816)
Essential Casement	1.57	6	40	LC-PG40-C	35 1/2	(902)	83 1/2	(2121)
Essential Awning	1.57	6	40	LC-PG40-AP	47 1/2	(1207)	35 1/2	(902)
Essential Awning	1.57	6	40	LC-PG40-AP	59 1/2	(1511)	47 1/2	(1207)
Essential Casement Picture/Transom	1.57	6	40	LC-PG40-FW	71 1/2	(1816)	71 1/2	(1816)
Essential Casement Picture/Transom	1.57	6	40	LC-PG40-FW	47 1/2	(1207)	83 1/2	(2121)

Egress, Lite and Vent Measurements
**EGRESS MEASUREMENTS
FOR
OPERATING CASEMENTS**


Code restrictions may vary depending on your local building codes.
For additional information, contact your local code department for IBC and IRC requirements.

NOTE:

Call numbers with an E meet the National Egress Codes requiring 5.7 SF clear opening. 20" (508) clear width and 24" (610) clear height, not to exceed a floor to sill height of 44". Code restrictions may vary depending on local building codes.

T= Tempered glass is standard for this size unit.

Floor to sill height is based on a rough opening height of 6' 10 1/2" (2096) (Inside opening height of 6' 10 1/4" (2090)).

These units (*) may optionally include a window opening control device tested to ASTM F 2090-10, which can be released from the inside without the use of a key, tool, special knowledge, or force greater than that required for normal unit operation. This device is designed to stop your window at a specified location. This device is not designed to prevent child falls.

Units with a frame size of 18 9/16" (472) x 23 1/2" (597) – 35 1/2" (902) x 71 1/2" (1816) can have an optional "window opening control device" installed at the factory. This device is designed to meet the ASTM F 2090-10 standard specification for window fall prevention device.

Egress, Lite and Vent Measurements - Casement

CN	Clear Opening Width		Clear Opening Height		Egress Opening		Floor to Sill Height		Vent Opening	
	ft - in	mm	ft - in	mm	ft ²	cm ²	ft-in	mm	ft ²	cm ²
1620	0-8 43/64	(220)	1-6 5/16	(465)	1.10	(1025)	5-0 41/64	(1540)	1.10	(1025)
1626	0-8 43/64	(220)	2-0 5/16	(618)	1.46	(1360)	4-6 41/64	(1388)	1.46	(1360)
1630	0-8 43/64	(220)	2-6 5/16	(770)	1.83	(1696)	4-0 41/64	(1236)	1.83	(1696)
1636	0-8 43/64	(220)	3-0 5/16	(923)	2.19	(2032)	3-6 41/64	(1083)	2.19	(2032)
1640	0-8 43/64	(220)	3-6 5/16	(1075)	2.55	(2367)	3-0 41/64	(931)	2.55	(2367)
1646	0-8 43/64	(220)	4-0 5/16	(1227)	2.91	(2703)	2-6 41/64	(778)	2.91	(2703)
1650	0-8 43/64	(220)	4-6 5/16	(1380)	3.27	(3038)	2-0 41/64	(626)	3.27	(3038)
1656	0-8 43/64	(220)	5-0 5/16	(1532)	3.63	(3374)	1-6 41/64	(474)	3.63	(3374)
1660	0-8 43/64	(220)	5-6 5/16	(1685)	3.99	(3710)	1-0 41/64	(321)	3.99	(3710)
1666	0-8 43/64	(220)	6-0 5/16	(1837)	4.35	(4045)	0-6 41/64	(169)	4.35	(4045)
1670	0-8 43/64	(220)	6-6 5/16	(1989)	4.72	(4381)	0-0 41/64	(16)	4.72	(4381)
2020	1-2 43/64	(373)	1-6 5/16	(465)	1.87	(1734)	5-0 41/64	(1540)	1.87	(1734)
2026	1-2 43/64	(373)	2-0 5/16	(618)	2.48	(2302)	4-6 41/64	(1388)	2.48	(2302)
2030	1-2 43/64	(373)	2-6 5/16	(770)	3.09	(2870)	4-0 41/64	(1236)	3.09	(2870)
2036	1-2 43/64	(373)	3-0 5/16	(923)	3.70	(3438)	3-6 41/64	(1083)	3.70	(3438)
2040	1-2 43/64	(373)	3-6 5/16	(1075)	4.31	(4005)	3-0 41/64	(931)	4.31	(4005)
2046	1-2 43/64	(373)	4-0 5/16	(1227)	4.92	(4573)	2-6 41/64	(778)	4.92	(4573)
2050	1-2 43/64	(373)	4-6 5/16	(1380)	5.53	(5141)	2-0 41/64	(626)	5.53	(5141)
2056	1-2 43/64	(373)	5-0 5/16	(1532)	6.15	(5709)	1-6 41/64	(474)	6.15	(5709)
2060	1-2 43/64	(373)	5-6 5/16	(1685)	6.76	(6277)	1-0 41/64	(321)	6.76	(6277)
2066	1-2 43/64	(373)	6-0 5/16	(1837)	7.37	(6845)	0-6 41/64	(169)	7.37	(6845)
2070	1-2 43/64	(373)	6-6 5/16	(1989)	7.98	(7413)	0-0 41/64	(16)	7.98	(7413)
2620	1-8 43/64	(525)	1-6 5/16	(465)	2.63	(2443)	5-0 41/64	(1540)	2.63	(2443)
2626	1-8 43/64	(525)	2-0 5/16	(618)	3.49	(3243)	4-6 41/64	(1388)	3.49	(3243)
2630	1-8 43/64	(525)	2-6 5/16	(770)	4.35	(4043)	4-0 41/64	(1236)	4.35	(4043)
2636	1-8 43/64	(525)	3-0 5/16	(923)	5.21	(4843)	3-6 41/64	(1083)	5.21	(4843)
2640 E	1-8 43/64	(525)	3-6 5/16	(1075)	6.07	(5644)	3-0 41/64	(931)	6.07	(5644)
2646 E	1-8 43/64	(525)	4-0 5/16	(1227)	6.94	(6444)	2-6 41/64	(778)	6.94	(6444)
2650 E	1-8 43/64	(525)	4-6 5/16	(1380)	7.80	(7244)	2-0 41/64	(626)	7.80	(7244)
2656 E	1-8 43/64	(525)	5-0 5/16	(1532)	8.66	(8044)	1-6 41/64	(474)	8.66	(8044)
2660 E	1-8 43/64	(525)	5-6 5/16	(1685)	9.52	(8844)	1-0 41/64	(321)	9.52	(8844)
2666 E	1-8 43/64	(525)	6-0 5/16	(1837)	10.38	(9644)	0-6 41/64	(169)	10.38	(9644)
2670 E	1-8 43/64	(525)	6-6 5/16	(1989)	11.24	(10444)	0-0 41/64	(16)	11.24	(10444)
3020	2-2 43/64	(677)	1-6 5/16	(465)	3.39	(3152)	5-0 41/64	(1540)	3.39	(3152)
3026	2-2 43/64	(677)	2-0 5/16	(618)	4.50	(4185)	4-6 41/64	(1388)	4.50	(4185)
3030	2-2 43/64	(677)	2-6 5/16	(770)	5.62	(5217)	4-0 41/64	(1236)	5.62	(5217)
3036 E	2-2 43/64	(677)	3-0 5/16	(923)	6.73	(6249)	3-6 41/64	(1083)	6.73	(6249)
3040 E	2-2 43/64	(677)	3-6 5/16	(1075)	7.84	(7282)	3-0 41/64	(931)	7.84	(7282)
3046 E	2-2 43/64	(677)	4-0 5/16	(1227)	8.95	(8314)	2-6 41/64	(778)	8.95	(8314)
3050 E	2-2 43/64	(677)	4-6 5/16	(1380)	10.06	(9347)	2-0 41/64	(626)	10.06	(9347)
3056 E	2-2 43/64	(677)	5-0 5/16	(1532)	11.17	(10379)	1-6 41/64	(474)	11.17	(10379)
3060 E	2-2 43/64	(677)	5-6 5/16	(1685)	12.28	(11411)	1-0 41/64	(321)	12.28	(11411)
3066 E	2-1 3/16	(640)	6-0 5/16	(1837)	12.65	(11748)	0-6 41/64	(169)	12.65	(11748)
3070 E	2-1 3/16	(640)	6-6 5/16	(1989)	13.70	(12723)	0-0 41/64	(16)	13.70	(12723)

T= Tempered glass is standard for this size unit.

FORMULA TO CALCULATE UNIT DAYLIGHT OPENING FOR TRANSOM OR PICTURE:

R.O. Width - 6 3/16" (157) = Daylight Opening Width

R.O. Height - 6 3/16" (157) = Daylight Opening Height

I.O. Width - 6 1/16" (154) = Daylight Opening Width

I.O. Height - 5 15/16" (151) = Daylight Opening Height

Lite and Vent Measurements - Awning

CN	Clear Opening Width		Clear Opening Height		Vent Opening	
	ft - in	mm	ft - in	mm	ft ²	cm ²
1616	0-8 43/64	(220)	1-0 5/16	(313)	0.74	(689)
1620	0-8 43/64	(220)	1-6 5/16	(465)	1.10	(1025)
1626	0-8 43/64	(220)	2-0 5/16	(618)	1.46	(1361)
1630	0-8 43/64	(220)	2-6 5/16	(770)	1.83	(1696)
1636	0-8 43/64	(220)	3-0 5/16	(922)	2.19	(2032)
1640	0-8 43/64	(220)	3-6 5/16	(1075)	2.55	(2368)
2016	1-2 43/64	(373)	1-0 5/16	(313)	1.25	(1166)
2020	1-2 43/64	(373)	1-6 5/16	(465)	1.87	(1734)
2026	1-2 43/64	(373)	2-0 5/16	(618)	2.48	(2302)
2030	1-2 43/64	(373)	2-6 5/16	(770)	3.09	(2870)
2036	1-2 43/64	(373)	3-0 5/16	(922)	3.70	(3438)
2040	1-2 43/64	(373)	3-6 5/16	(1075)	4.31	(4006)
2616	1-8 43/64	(525)	1-0 5/16	(313)	1.77	(1643)
2620	1-8 43/64	(525)	1-6 5/16	(465)	2.63	(2443)
2626	1-8 43/64	(525)	2-0 5/16	(618)	3.49	(3243)
2630	1-8 43/64	(525)	2-6 5/16	(770)	4.35	(4043)
2636	1-8 43/64	(525)	3-0 5/16	(922)	5.21	(4844)
2640	1-8 43/64	(525)	3-6 5/16	(1075)	6.07	(5644)
3016	2-2 43/64	(677)	1-0 5/16	(313)	2.28	(2119)
3020	2-2 43/64	(677)	1-6 5/16	(465)	3.39	(3152)
3026	2-2 43/64	(677)	2-0 5/16	(618)	4.50	(4184)
3030	2-2 43/64	(677)	2-6 5/16	(770)	5.62	(5217)
3036	2-2 43/64	(677)	3-0 5/16	(922)	6.73	(6249)
3040	2-2 43/64	(677)	3-6 5/16	(1075)	7.84	(7282)
3616	2-8 43/64	(830)	1-0 5/16	(313)	2.79	(2596)
3620	2-8 43/64	(830)	1-6 5/16	(465)	4.16	(3861)
3626	2-8 43/64	(830)	2-0 5/16	(618)	5.52	(5126)
3630	2-8 43/64	(830)	2-6 5/16	(770)	6.88	(6390)
3636	2-8 43/64	(830)	3-0 5/16	(922)	8.24	(7655)
3640	2-8 43/64	(830)	3-6 5/16	(1075)	9.60	(8920)
4016	3-2 43/64	(982)	1-0 5/16	(313)	3.31	(3073)
4020	3-2 43/64	(982)	1-6 5/16	(465)	4.92	(4570)
4026	3-2 43/64	(982)	2-0 5/16	(618)	6.53	(6067)
4030	3-2 43/64	(982)	2-6 5/16	(770)	8.14	(7564)
4036	3-2 43/64	(982)	3-0 5/16	(922)	9.75	(9061)
4040	3-2 43/64	(982)	3-6 5/16	(1075)	11.36	(10558)
4616	3-8 43/64	(1135)	1-0 5/16	(313)	3.82	(3550)
4620	3-8 43/64	(1135)	1-6 5/16	(465)	5.68	(5279)
4626	3-8 43/64	(1135)	2-0 5/16	(618)	7.54	(7008)
4630	3-8 43/64	(1135)	2-6 5/16	(770)	9.40	(8737)
4636	3-8 43/64	(1135)	3-0 5/16	(922)	11.27	(10467)
4640	3-8 43/64	(1135)	3-6 5/16	(1075)	13.13	(12196)
5016	4-2 43/64	(1287)	1-0 5/16	(313)	4.33	(4026)
5020	4-2 43/64	(1287)	1-6 5/16	(465)	6.45	(5988)
5026	4-2 43/64	(1287)	2-0 5/16	(618)	8.56	(7949)
5030	4-2 43/64	(1287)	2-6 5/16	(770)	10.67	(9911)
5036	4-2 43/64	(1287)	3-0 5/16	(922)	12.78	(11872)
5040	4-2 43/64	(1287)	3-6 5/16	(1075)	14.89	(13834)

T= Tempered glass is standard for this size unit.

FORMULA TO CALCULATE UNIT DAYLIGHT OPENING FOR TRANSOM OR PICTURE:

R.O. Width - 6 3/16" (157) = Daylight Opening Width

R.O. Height - 6 3/16" (157) = Daylight Opening Height

I.O. Width - 6 1/16" (154) = Daylight Opening Width

I.O. Height - 5 15/16" (151) = Daylight Opening Height

Sizing Guidelines and Measurement Conversions

Unit Measurements - Operator Casement and Awning					
From	To	Width		Height	
Frame Measurements		in	mm	in	mm
Masonry Opening	Rough Opening	0	()	+ 1/4	(6)
OM of Frame	Rough Opening	+ 1/2	(13)	+ 1/2	(13)
J-Channel OM	Rough Opening	-3/4	(19)	-3/4	-(19)
Glass Size	Rough Opening	+ 5 1/16	(129)	+ 5 1/16	(129)
Sash Opening	Rough Opening	+ 2 5/32	(55)	+ 2 5/32	(55)
Masonry Opening	Inside Opening	-1/8	(3)	0	()
OM of Frame	Inside Opening	+ 3/8	(10)	+ 1/4	(6)
J-Channel OM	Inside Opening	-7/8	(22)	-1	-(25)
Glass Size	Inside Opening	+ 4 15/16	(126)	+ 4 13/16	(122)
Sash Opening	Inside Opening	+ 2 1/32	(52)	+ 1 29/32	(49)
Sash		in	mm	in	mm
Glass Size	OM of Sash	+ 2 19/32	(66)	+ 2 19/32	(66)
OM of Sash	Rough Opening	+ 2 15/32	(63)	+ 2 15/32	(63)
OM of Sash	Inside Opening	+ 2 11/32	(60)	+ 2 7/32	(57)
Glass Size	Daylight Opening	-1 7/64	(28)	-1 7/64	(28)
Rough Opening	Daylight Opening	-6 11/64	(157)	-6 11/64	(157)
Inside Opening	Daylight Opening	-6 3/64	(154)	-5 59/64	(151)
Screen		in	mm	in	mm
Rough Opening	OM of Screen	-4 49/64	(121)	-5 11/64	(131)
Inside Opening	OM of Screen	-4 41/64	(118)	-4 59/64	(125)
Daylight Opening	OM of Screen	+ 1 27/64	(36)	+ 1 1/64	(26)

Standard Unit Measurements: Casement

Standard Casement Unit Measurements														
Width														
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Screen OM		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
16	1-6	(457)	1-6	(457)	1-5 7/8	(454)	1-5 1/2	(445)	1-3 17/32	(394)	1-1 15/64	(336)	11 53/64	(300)
20	2-0	(610)	2-0	(610)	1-11 7/8	(606)	1-11 1/2	(597)	1-9 17/32	(547)	1-7 15/64	(489)	17 53/64	(453)
26	2-6	(762)	2-6	(762)	2-5 7/8	(759)	2-5 1/2	(749)	2-3 17/32	(699)	2-1 15/64	(641)	23 53/64	(605)
30	3-0	(914)	3-0	(914)	2-11 7/8	(911)	2-11 1/2	(902)	2-9 17/32	(852)	2-7 15/64	(793)	29 53/64	(757)

Standard Casement Unit Measurements														
Height														
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Screen OM		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
20	1-11 3/4	(603)	2-0	(610)	1-11 3/4	(603)	1-11 1/2	(597)	1-9 17/32	(547)	1-6 53/64	(478)	17 53/64	(453)
26	2-5 3/4	(756)	2-6	(762)	2-5 3/4	(756)	2-5 1/2	(749)	2-3 17/32	(699)	2-0 53/64	(631)	23 53/64	(605)
30	2-11 3/4	(908)	3-0	(914)	2-11 3/4	(908)	2-11 1/2	(902)	2-9 17/32	(852)	2-6 53/64	(783)	29 53/64	(757)
36	3-5 3/4	(1060)	3-6	(1067)	3-5 3/4	(1060)	3-5 1/2	(1054)	3-3 17/32	(1004)	3-0 53/64	(936)	35 53/64	(910)
40	3-11 3/4	(1213)	4-0	(1219)	3-11 3/4	(1213)	3-11 1/2	(1207)	3-9 17/32	(1156)	3-6 53/64	(1088)	41 53/64	(1062)
46	4-5 3/4	(1365)	4-6	(1372)	4-5 3/4	(1365)	4-5 1/2	(1359)	4-3 17/32	(1309)	4-0 53/64	(1240)	47 53/64	(1215)
50	4-11 3/4	(1518)	5-0	(1524)	4-11 3/4	(1518)	4-11 1/2	(1511)	4-9 17/32	(1461)	4-6 53/64	(1393)	53 53/64	(1367)
56	5-5 3/4	(1670)	5-6	(1676)	5-5 3/4	(1670)	5-5 1/2	(1664)	5-3 17/32	(1614)	5-0 53/64	(1545)	59 53/64	(1519)
60	5-11 3/4	(1822)	6-0	(1829)	5-11 3/4	(1822)	5-11 1/2	(1816)	5-9 17/32	(1766)	5-6 53/64	(1698)	65 53/64	(1672)
66	6-5 3/4	(1975)	6-6	(1981)	6-5 3/4	(1975)	6-5 1/2	(1969)	6-3 17/32	(1918)	6-0 53/64	(1850)	71 53/64	(1824)
70	6-11 3/4	(2127)	7-0	(2134)	6-11 3/4	(2127)	6-11 1/2	(2121)	6-9 17/32	(2071)	6-6 53/64	(2002)	77 53/64	(1977)

Standard Unit Measurements: Awning

Standard Awning Unit Measurements														
Width														
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Screen OM		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
16	1-6	(457)	1-6	(457)	1-5 7/8	(454)	1-5 1/2	(445)	1-3 17/32	(394)	1-1 15/64	(336)	11 53/64	(300)
20	2-0	(610)	2-0	(610)	1-11 7/8	(606)	1-11 1/2	(597)	1-9 17/32	(547)	1-7 15/64	(489)	17 53/64	(453)
26	2-6	(762)	2-6	(762)	2-5 7/8	(759)	2-5 1/2	(749)	2-3 17/32	(699)	2-1 15/64	(641)	23 53/64	(605)
30	3-0	(914)	3-0	(914)	2-11 7/8	(911)	2-11 1/2	(902)	2-9 17/32	(852)	2-7 15/64	(793)	29 53/64	(757)
36	3-6	(1067)	3-6	(1067)	3-5 7/8	(1064)	3-5 1/2	(1054)	3-3 17/32	(1004)	3-1 15/64	(946)	35 53/64	(910)
40	4-0	(1219)	4-0	(1219)	3-11 7/8	(1216)	3-11 1/2	(1207)	3-9 17/32	(1156)	3-7 15/64	(1098)	41 53/64	(1062)
46	4-6	(1372)	4-6	(1372)	4-5 7/8	(1368)	4-5 1/2	(1359)	4-3 17/32	(1309)	4-1 15/64	(1251)	47 53/64	(1215)
50	5-0	(1524)	5-0	(1524)	4-11 7/8	(1521)	4-11 1/2	(1511)	4-9 17/32	(1461)	4-7 15/64	(1403)	53 53/64	(1367)

Standard Awning Unit Measurements														
Height														
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Screen OM		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
16	1-5 3/4	(451)	1-6	(457)	1-5 3/4	(451)	1-5 1/2	(445)	1-3 17/32	(394)	1-0 53/64	(326)	11 53/64	(300)
20	1-11 3/4	(603)	2-0	(610)	1-11 3/4	(603)	1-11 1/2	(597)	1-9 17/32	(547)	1-6 53/64	(478)	17 53/64	(453)
26	2-5 3/4	(756)	2-6	(762)	2-5 3/4	(756)	2-5 1/2	(749)	2-3 17/32	(699)	2-0 53/64	(631)	23 53/64	(605)
30	2-11 3/4	(908)	3-0	(914)	2-11 3/4	(908)	2-11 1/2	(902)	2-9 17/32	(852)	2-6 53/64	(783)	29 53/64	(757)
36	3-5 3/4	(1060)	3-6	(1067)	3-5 3/4	(1060)	3-5 1/2	(1054)	3-3 17/32	(1004)	3-0 53/64	(936)	35 53/64	(910)
40	3-11 3/4	(1213)	4-0	(1219)	3-11 3/4	(1213)	3-11 1/2	(1207)	3-9 17/32	(1156)	3-6 53/64	(1088)	41 53/64	(1062)

Standard Unit Measurements: Casement Pictures

Standard Casement Picture Unit Measurements												
Width												
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
16	1-6	(457)	1-6	(457)	1-5 7/8	(454)	1-5 1/2	(445)	1-3 17/32	(394)	11 53/64	(300)
20	2-0	(610)	2-0	(610)	1-11 7/8	(606)	1-11 1/2	(597)	1-9 17/32	(547)	17 53/64	(453)
26	2-6	(762)	2-6	(762)	2-5 7/8	(759)	2-5 1/2	(749)	2-3 17/32	(699)	23 53/64	(605)
30	3-0	(914)	3-0	(914)	2-11 7/8	(911)	2-11 1/2	(902)	2-9 17/32	(852)	29 53/64	(757)
36	3-6	(1067)	3-6	(1067)	3-5 7/8	(1064)	3-5 1/2	(1054)	3-3 17/32	(1004)	35 53/64	(910)
40	4-0	(1219)	4-0	(1219)	3-11 7/8	(1216)	3-11 1/2	(1207)	3-9 17/32	(1156)	41 53/64	(1062)
46	4-6	(1372)	4-6	(1372)	4-5 7/8	(1368)	4-5 1/2	(1359)	4-3 17/32	(1309)	47 53/64	(1215)
50	5-0	(1524)	5-0	(1524)	4-11 7/8	(1521)	4-11 1/2	(1511)	4-9 17/32	(1461)	53 53/64	(1367)
60	6-0	(1829)	6-0	(1829)	5-11 7/8	(1826)	5-11 1/2	(1816)	5-9 17/32	(1766)	65 53/64	(1672)

Standard Casement Picture Unit Measurements												
Height												
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
20	1-11 3/4	(603)	2-0	(610)	1-11 3/4	(603)	1-11 1/2	(597)	1-9 17/32	(547)	17 53/64	(453)
26	2-5 3/4	(756)	2-6	(762)	2-5 3/4	(756)	2-5 1/2	(749)	2-3 17/32	(699)	23 53/64	(605)
30	2-11 3/4	(908)	3-0	(914)	2-11 3/4	(908)	2-11 1/2	(902)	2-9 17/32	(852)	29 53/64	(757)
36	3-5 3/4	(1060)	3-6	(1067)	3-5 3/4	(1060)	3-5 1/2	(1054)	3-3 17/32	(1004)	35 53/64	(910)
40	3-11 3/4	(1213)	4-0	(1219)	3-11 3/4	(1213)	3-11 1/2	(1207)	3-9 17/32	(1156)	41 53/64	(1062)
46	4-5 3/4	(1365)	4-6	(1372)	4-5 3/4	(1365)	4-5 1/2	(1359)	4-3 17/32	(1309)	47 53/64	(1215)
50	4-11 3/4	(1518)	5-0	(1524)	4-11 3/4	(1518)	4-11 1/2	(1511)	4-9 17/32	(1461)	53 53/64	(1367)
56	5-5 3/4	(1670)	5-6	(1676)	5-5 3/4	(1670)	5-5 1/2	(1664)	5-3 17/32	(1614)	59 53/64	(1519)
60	5-11 3/4	(1822)	6-0	(1829)	5-11 3/4	(1822)	5-11 1/2	(1816)	5-9 17/32	(1766)	65 53/64	(1672)
66	6-5 3/4	(1975)	6-6	(1981)	6-5 3/4	(1975)	6-5 1/2	(1969)	6-3 17/32	(1918)	71 53/64	(1824)
70	6-11 3/4	(2127)	7-0	(2134)	6-11 3/4	(2127)	6-11 1/2	(2121)	6-9 17/32	(2071)	77 53/64	(1977)

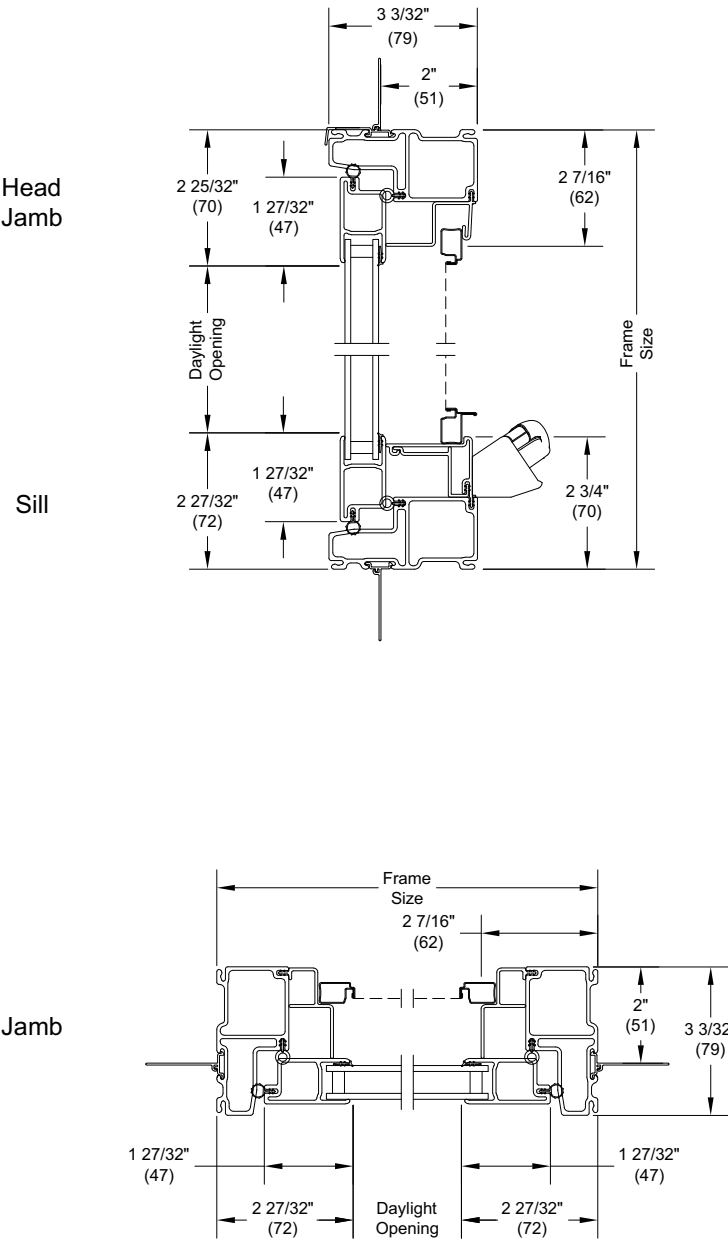
Standard Unit Measurements: Casement Transoms

Standard Casement Transom Unit Measurements												
Width												
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
16	1-6	(457)	1-6	(457)	1-5 7/8	(454)	1-5 1/2	(445)	1-3 17/32	(394)	11 53/64	(300)
20	2-0	(610)	2-0	(610)	1-11 7/8	(606)	1-11 1/2	(597)	1-9 17/32	(547)	17 53/64	(453)
26	2-6	(762)	2-6	(762)	2-5 7/8	(759)	2-5 1/2	(749)	2-3 17/32	(699)	23 53/64	(605)
30	3-0	(914)	3-0	(914)	2-11 7/8	(911)	2-11 1/2	(902)	2-9 17/32	(852)	29 53/64	(757)
36	3-6	(1067)	3-6	(1067)	3-5 7/8	(1064)	3-5 1/2	(1054)	3-3 17/32	(1004)	35 53/64	(910)
40	4-0	(1219)	4-0	(1219)	3-11 7/8	(1216)	3-11 1/2	(1207)	3-9 17/32	(1156)	41 53/64	(1062)
46	4-6	(1372)	4-6	(1372)	4-5 7/8	(1368)	4-5 1/2	(1359)	4-3 17/32	(1309)	47 53/64	(1215)
50	5-0	(1524)	5-0	(1524)	4-11 7/8	(1521)	4-11 1/2	(1511)	4-9 17/32	(1461)	53 53/64	(1367)
60	6-0	(1829)	6-0	(1829)	5-11 7/8	(1826)	5-11 1/2	(1816)	5-9 17/32	(1766)	65 53/64	(1672)

Standard Casement Transom Unit Measurements												
Height												
Call Number	Masonry Opening		Rough Opening		Inside Opening		Frame Size		Sash Size		Daylight Opening	
	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	ft-in	mm	in	mm
10	0-11 3/4	(298)	1-0	(305)	0-11 3/4	(298)	0-11 1/2	(292)	0-9 17/32	(242)	5 53/64	(148)
16	1-5 3/4	(451)	1-6	(457)	1-5 3/4	(451)	1-5 1/2	(445)	1-3 17/32	(394)	11 53/64	(300)
20	1-11 3/4	(603)	2-0	(610)	1-11 3/4	(603)	1-11 1/2	(597)	1-9 17/32	(547)	17 53/64	(453)

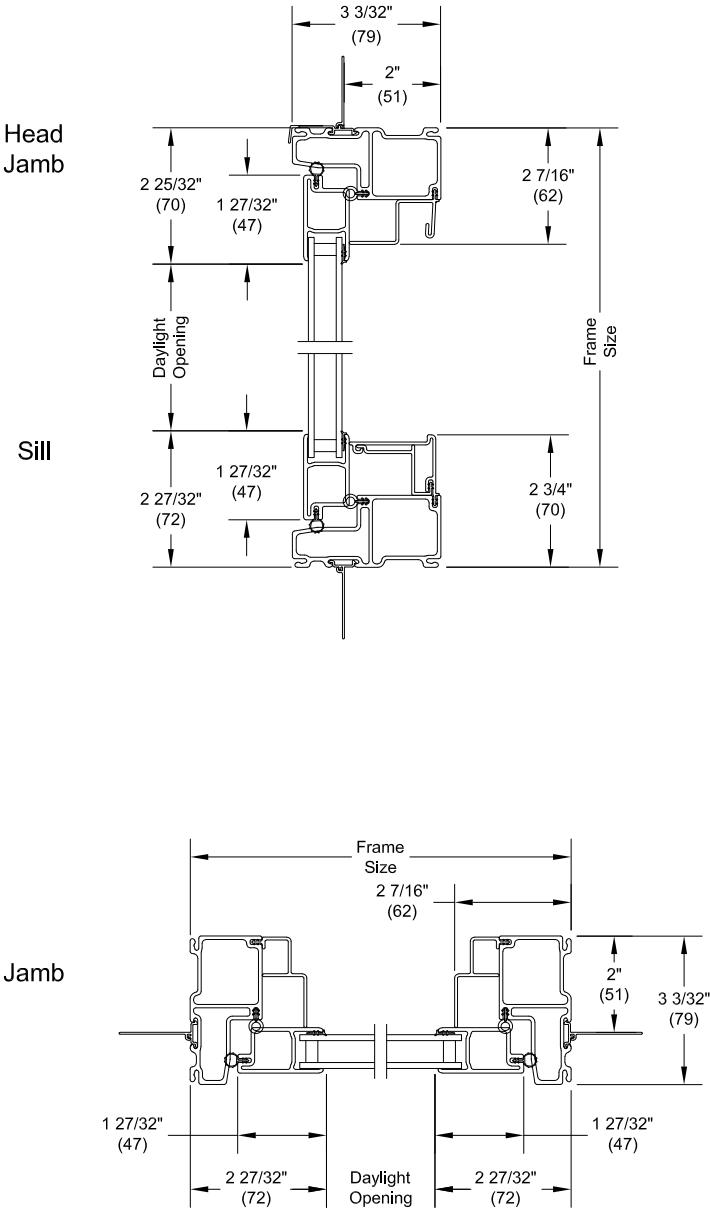
Section Details: Operating - Casement / Awning - 2"

Scale: 3" = 1' 0"



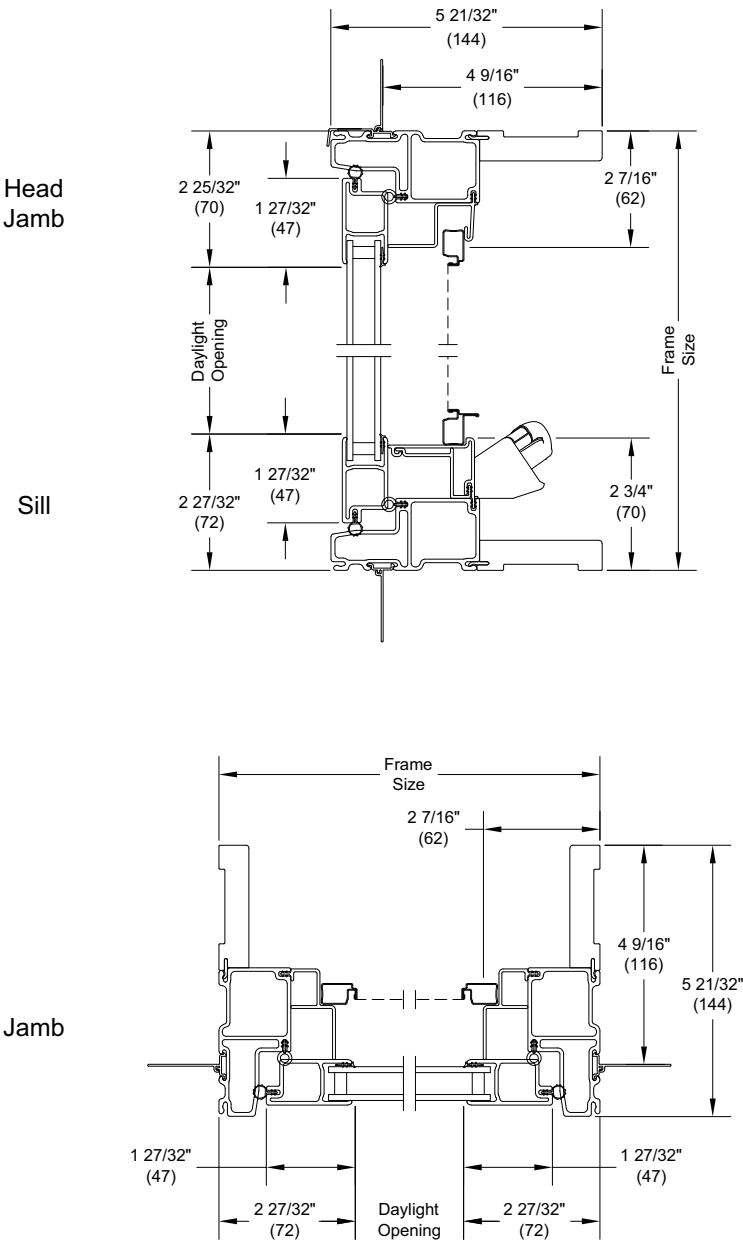
Section Details: Stationary - Picture/Transom - 2"

Scale: 3" = 1' 0"



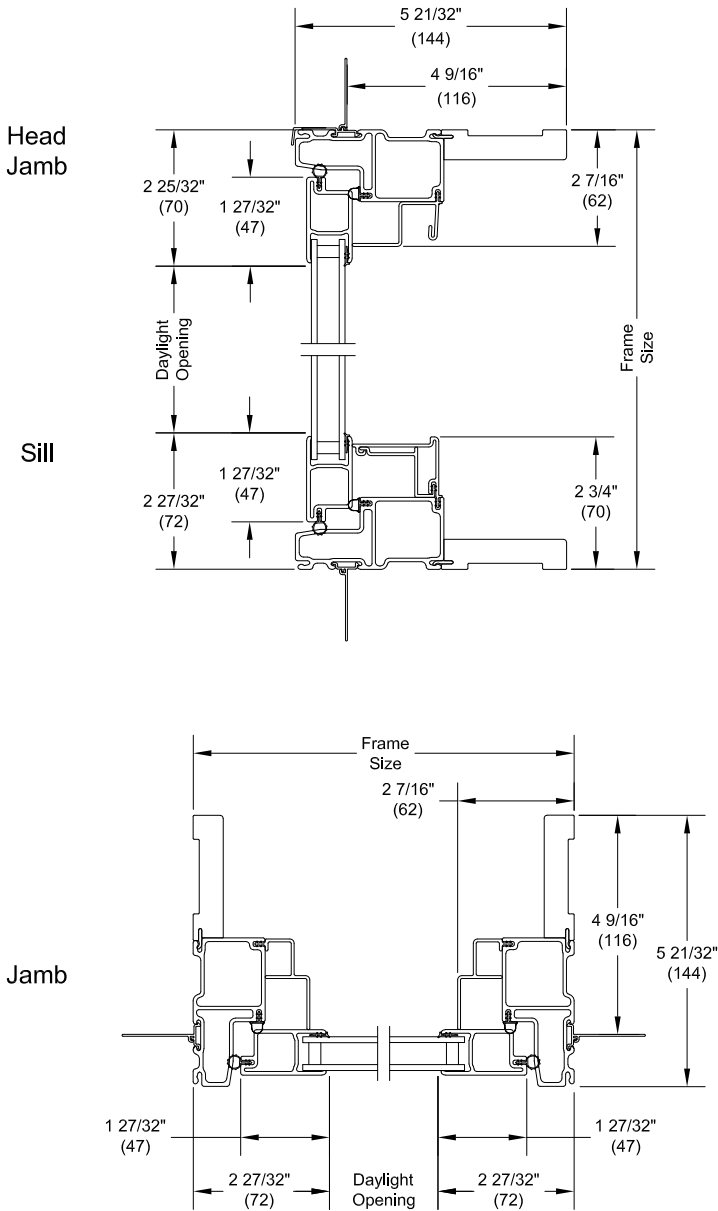
Section Details: Operating - Casement / Awning - 4 9/16"

Scale: 3" = 1' 0"



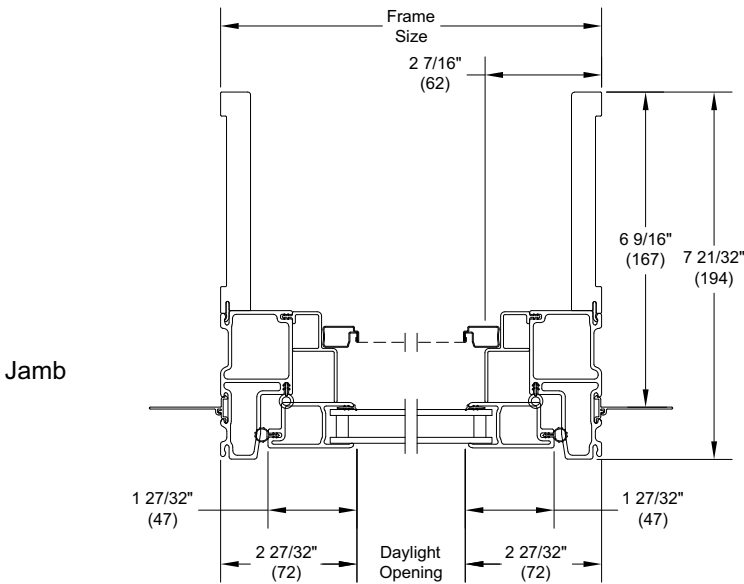
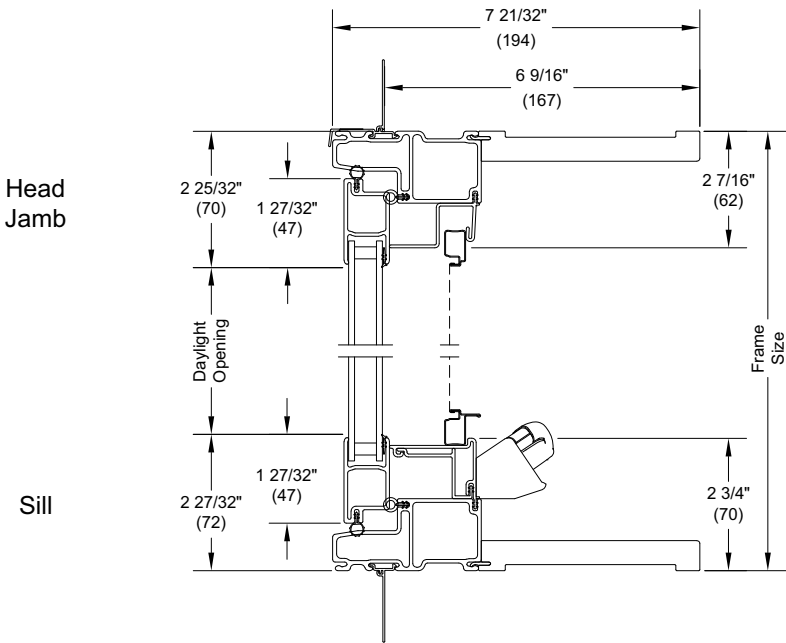
Section Details: Stationary - Picture/Transom - 4 9/16"

Scale: 3" = 1' 0"



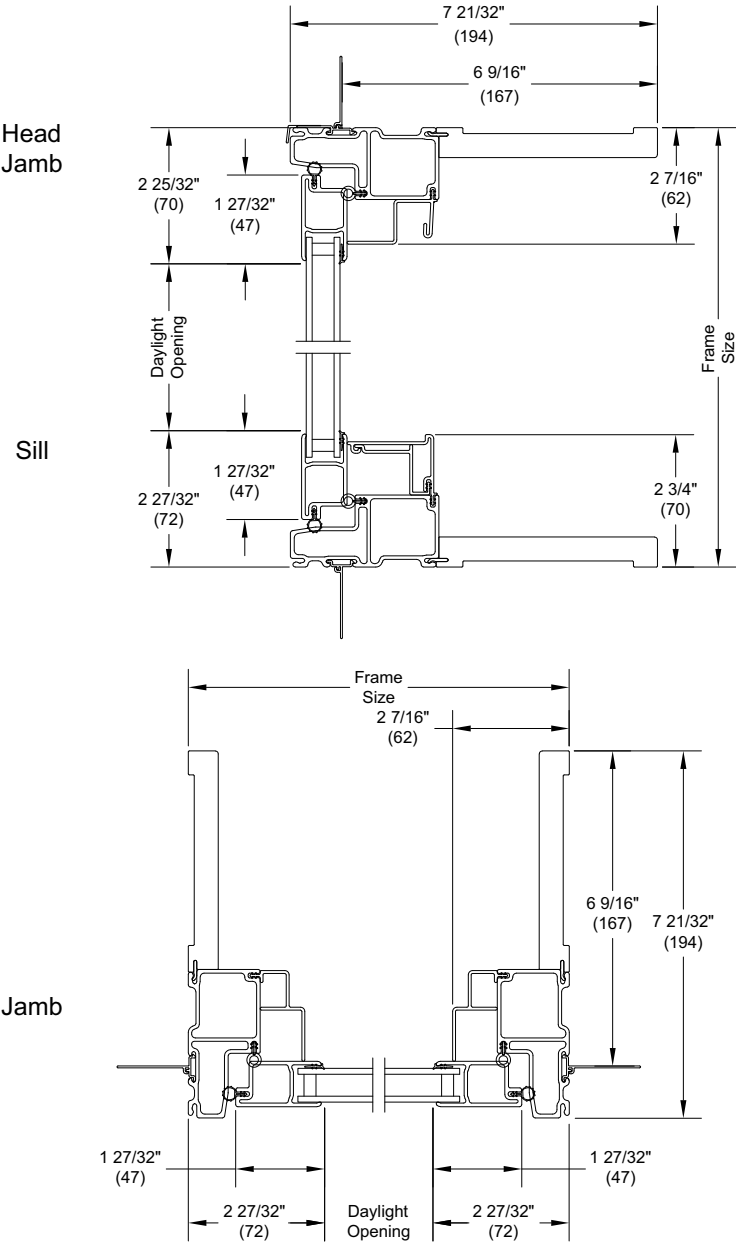
Section Details: Operating - Casement / Awning - 6 9/16"

Scale: 3" = 1' 0"



Section Details: Stationary - Picture/Transom - 6 9/16"

Scale: 3" = 1' 0"



GBG Lite Cuts

Divided Lite Patterns

Default Rectangular Lite Pattern per sash - GBG

Standard CN Height	Standard CN Width								
	16	20	26	30	36	40	46	50	60
10	2W1H	3W1H	3W1H	3W1H	4W1H	4W1H	5W1H	5W1H	7W1H
16	2W1H	3W1H	3W1H	3W1H	4W1H	4W1H	5W1H	5W1H	7W1H
20	2W2H	3W2H	3W2H	3W2H	4W2H	4W2H	5W2H	5W2H	7W2H
26	2W2H	3W2H	3W2H	3W2H	4W2H	4W2H	5W2H	5W2H	7W2H
30	2W2H	3W2H	3W2H	3W2H	4W2H	4W2H	5W2H	5W2H	7W2H
36	2W3H	3W3H	3W3H	3W3H	4W3H	4W3H	5W3H	5W3H	7W3H
40	2W3H	3W3H	3W3H	3W3H	4W3H	4W3H	5W3H	5W3H	7W3H
46	2W4H	3W4H	3W4H	3W4H	4W4H	4W4H	5W4H	5W4H	7W4H
50	2W4H	3W4H	3W4H	3W4H	4W4H	4W4H	5W4H	5W4H	7W4H
56	2W5H	3W5H	3W5H	3W5H	4W5H	4W5H	5W5H	5W5H	N/A
60	2W5H	3W5H	3W5H	3W5H	4W5H	4W5H	5W5H	5W5H	N/A
66	2W6H	3W6H	3W6H	3W6H	4W6H	4W6H	N/A	N/A	N/A
70	2W6H	3W6H	3W6H	3W6H	4W6H	4W6H	N/A	N/A	N/A

Optional Standard Cottage Pattern per sash - GBG

Standard CN Height	Standard CN Width								
	16	20	26	30	36	40	46	50	60
All Heights	4-Lite	4-Lite	4-Lite	4-Lite	5-Lite	5-Lite	6-Lite	6-Lite	8-Lite

NOTES:

- Rectangle GBGs for special size units will default to the next smaller standard size lite pattern. Also available will be Prairie patterns, Cottage patterns, and customer specified equal rectangular lite pattern.
- Prairie available in 9 lite and 6 lite top, bottom, left, and right patterns.
- Cottage GBGs for special size units will default to the next smaller standard size lite pattern. Cottage GBGs are also available in customer selected lite patterns.
- Minimum DLO measurement for equal lite GBG option is 3" (76) and will be validated by OMS.
- Standard DLO measurement for Prairie GBG option is 4" (102). Special DLO corners are not applicable.
- Standard DLO height measurement for Cottage GBG option is 10" (254). Minimum DLO height is 3" (76) for both one and two high patterns.
- GBG is available on Laminated glass with a spacer bar 9.8mm or larger.

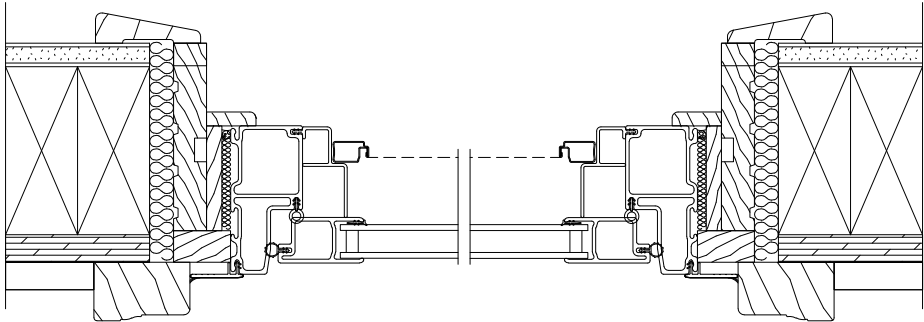
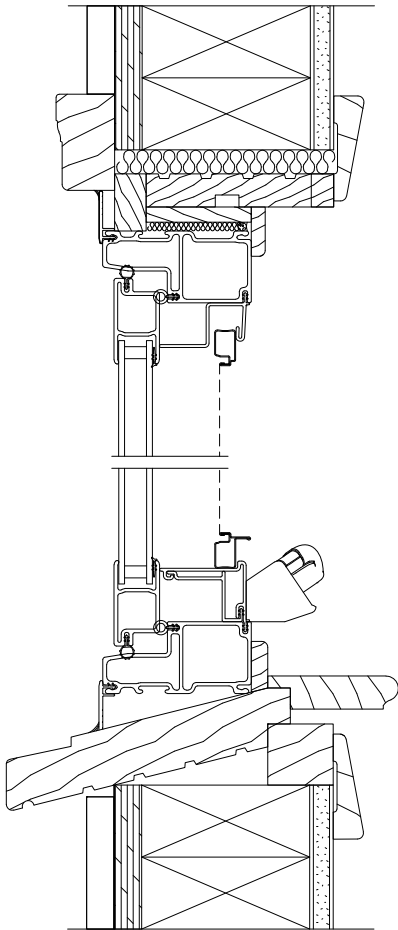
Installation Suggestion - Frame Expander

Scale: 1 1/2" - 1' 0"

Head
Jamb

Sill

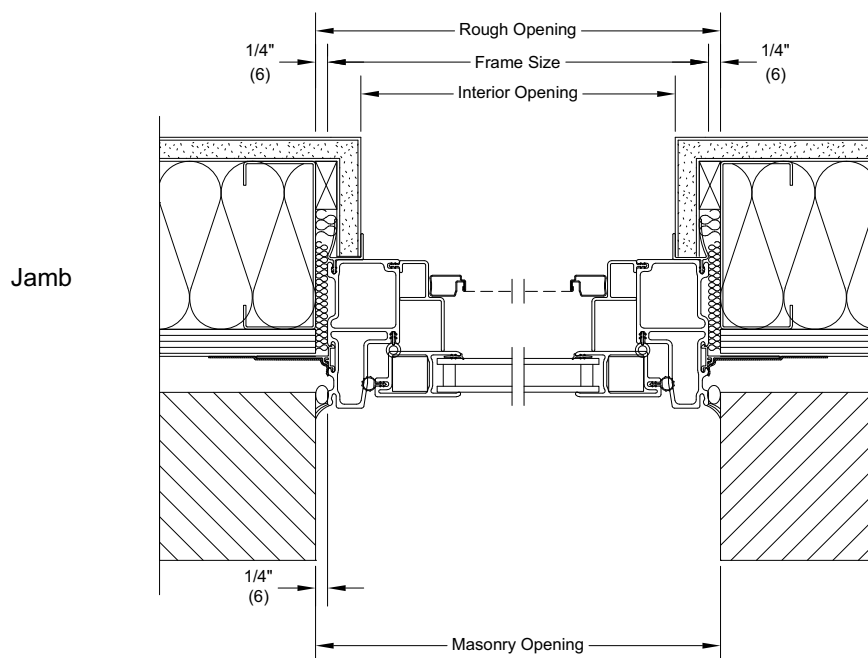
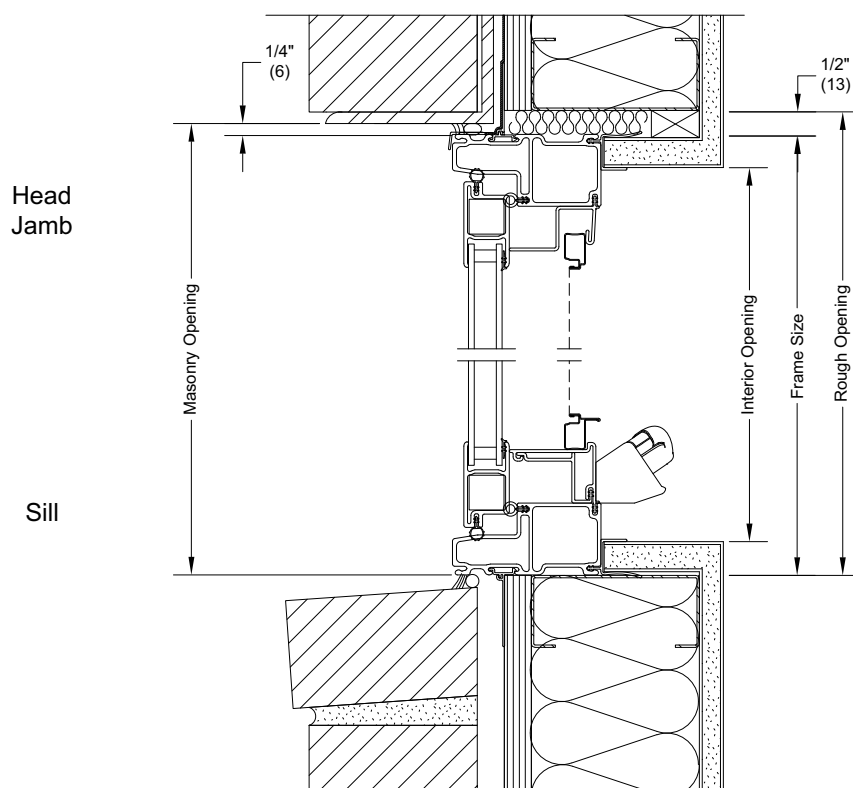
Jamb



NOTES:
The above wall sections represent typical wall conditions, these details are not intended as installation instructions. Please refer to the installation instructions provided with the purchased units.

Installation Suggestion - Brick Veneer with Steel Frame Construction

Scale: 1 1/2" - 1' 0"



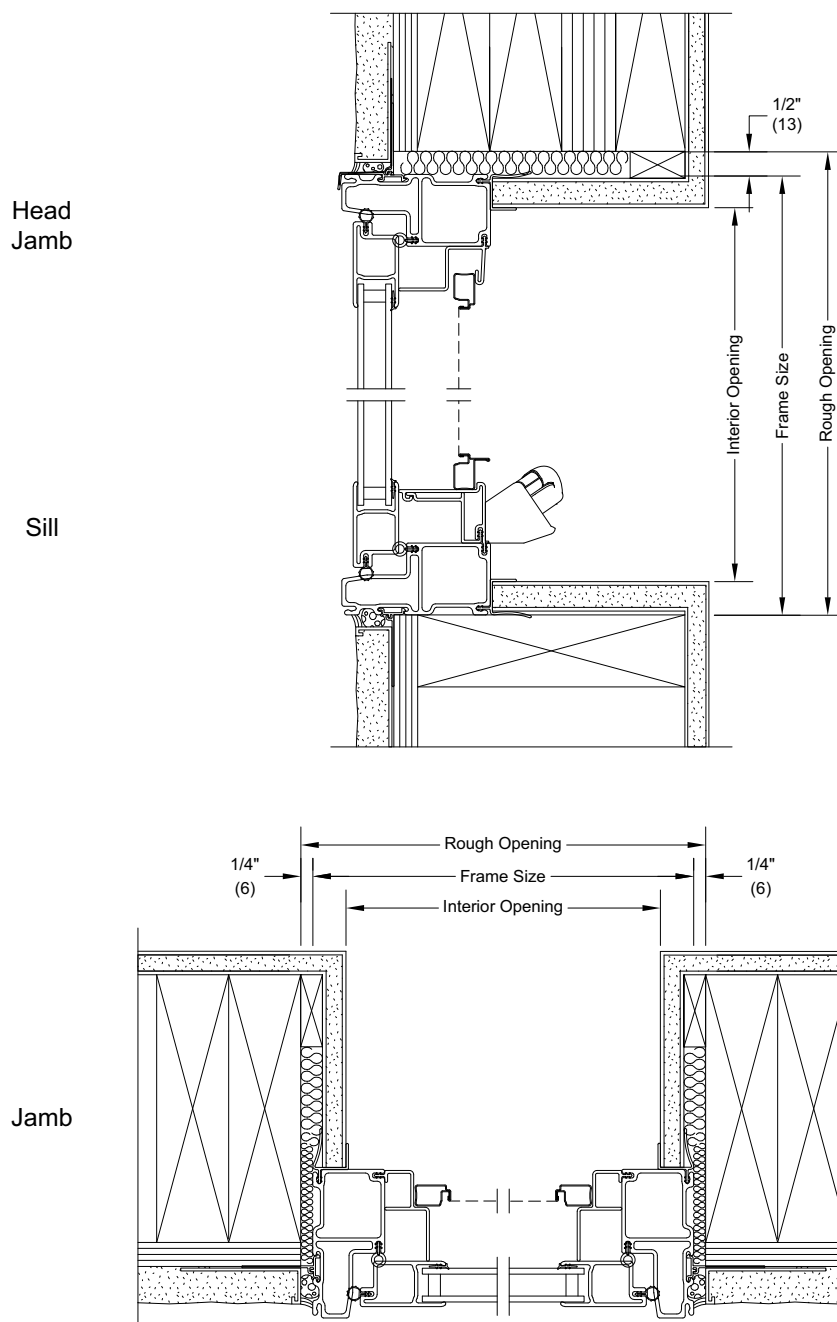
NOTES:

Shown with optional sheet rock return. Picture unit installation similar.

The above wall sections represent typical wall conditions, these details are not intended as installation instructions. Please refer to the installation instructions provided with the purchased units.

Installation Suggestion - Stucco with 2x6 Frame Construction

Scale: 1 1/2" = 1' 0"



NOTES:

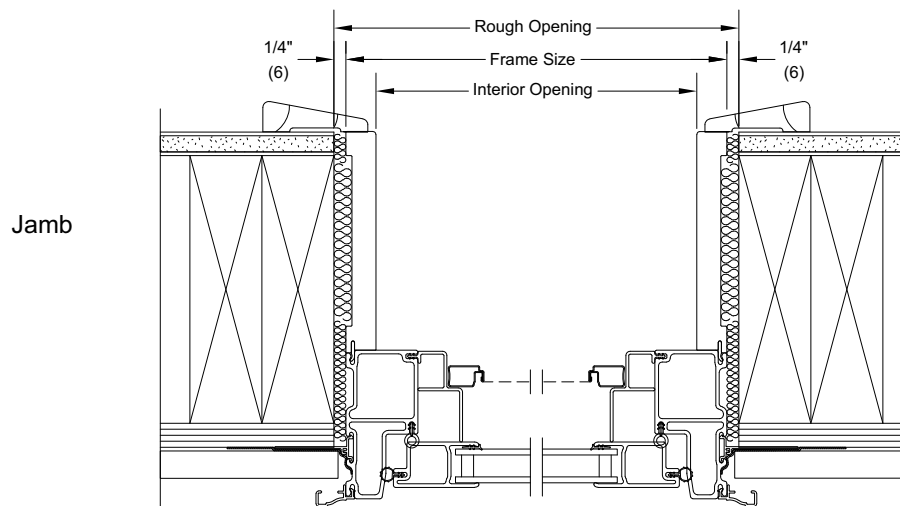
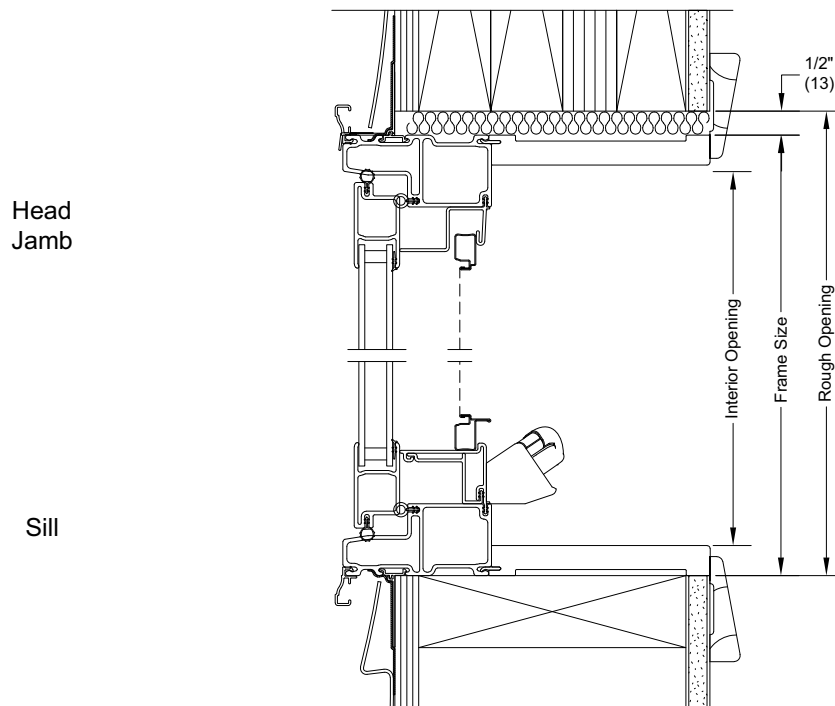
Shown with optional sheet rock return.

Picture unit installation similar.

The above wall sections represent typical wall conditions, these details are not intended as installation instructions. Please refer to the installation instructions provided with the purchased units.

Installation Suggestion - Vinyl Siding with Steel 2x6 Frame Construction

Scale: 1 1/2" = 1' 0"



NOTES:

Shown with optional sheet rock return. Picture unit installation similar.

The above wall sections represent typical wall conditions, these details are not intended as installation instructions. Please refer to the installation instructions provided with the purchased units.