

Armaclad Fiberglass Window System

Series 1001 - Commercial Picture Window

Product Specifications

Part 1 – General

1.01 SUMMARY

- A. Section Includes: Armaclad Commercial Fiberglass Picture Window, painted interior and exterior, complete with glazing specifications and standard anchors, panning and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01600 - Product Requirements
- B. Section 07900 - Joint Sealants
- C. Section 08800 - Glass and Glazing

1.03 REFERENCE STANDARDS

- A. **AAMA/WDMA/CSA/1.S.2/A440-08** "Standard/Specification for Windows, Doors and Unit Skylights"
- B. **AAMA 502** "Voluntary Specifications for Field Testing of Newly Installed Fenestration Products"
- C. **AAMA 611** " Voluntary Specifications for Anodized Architectural Aluminum"
- D. **AAMA 701/702** "Voluntary Specification for Pile Weather stripping and Replaceable Fenestration Weather seals"
- E. **AAMA 1503** "Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and glazed Wall Sections"
- F. **ASTM E 283** "Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences.
- G. **ASTM E 330** "Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- H. **ASTM E 547** "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Differential"
- I. **ASTM E 1886** "Standard Test Method for Performance of Exterior Windows, Curtain Walls and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials"
- J. **ASTM E 1996** "Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
- K. **ASTM E 2190** "Standard Specification for Insulating Glass Unit Performance and Evaluation"
- L. **ASTM F 588** " Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact "NFRC 100" Proceedure for Determining Fenestration Product U-Factors"

1.04 SUBMITTALS

- A. The window manufacturer shall supply test reports from an AAMA accredited laboratory certifying compliance with performance specifications for this product.
- B. The window manufacturer shall supply all required data for this product including hardware and accessories.
- C. The window manufacturer shall supply required construction details and fabrication methods.
- D. The window manufacturer shall supply recommendations for maintenance and cleaning of exterior surfaces.
- E. Before proceeding with the manufacture of windows, the contractor shall submit complete shop drawings with installation details for the Architect's approval. These drawings shall also show window elevations, details of all window sections, collateral materials, details of anchorage and associated hardware.
- F. The window manufacturer shall submit three (3) samples of finish.
- G. The window manufacturer shall submit a copy of the product warranty to be applied to the project.

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1.05 WARRANTY

- A. The manufacturer shall warrant the product against defects in the materials and manufacturing. If a defect is discovered and brought to the attention of the manufacturer within the specified time limit, the defect will be corrected at no cost to the owner. The warranty shall not be pro-rated. Warranties requiring the owner to return windows to the factory for repair or replacement shall not be accepted.
1. Fiberglass: Warrant for Twenty (20) years against defects
 2. Insulating Glass Units: Warrant Seal for Twenty (20) years against visual obstruction from film formation or moisture collection between internal glass surfaces, excluding failures caused by mishandling or breakage.
 3. Coatings: Warrant for Ten (10) years against chipping, peeling, cracking, chalking or fading.
 4. Sealant: Manufacturer Warranty applies.

Part 2 – Product

2.01 MANUFACTURER

- A. Basis of Design: Armaclad Windows and Doors, LLC

2.02 MATERIALS

FRAME

Materials: The primary frame and sash profiles are Pultruded Fiberglass (AAMA 305 glass fiber reinforced thermo set profiles) with critical wall thicknesses of .090 and higher to insure a solid and durable window construction. The primary profiles are supported with a series of extruded PVC profiles (used on interior side of window only) and ABS with Acrylic Cap Stock profiles (Glazing Bead and Interlocks) to complete a window package that provides high performance standards.

Insulation: The Pultruded Fiberglass profiles are insulated using pre-shaped OC Styrofoam blocking that runs the full length of the component providing a superior thermal advantage.

Corner Joinery: The frame and sash corner joints are re-enforced with ABS Corner Keys and fastened/sealed using Novagard, Novabond 900-090 Structural Adhesive.

GLAZING

Glass: 3/16" Minimum glass thickness, 1" to 1 3/8" Overall insulating unit thickness

Sealant: Dow Corning CWS Structural Adhesive

PAINT

Product: Sherwin Williams Polane Super S two part Urethane, Spray applied and Oven cured.

Colors: Standard colors include; Bronze, White, Sandstone, Anodized Silver

2.03 GENERAL PERFORMANCE REQUIREMENTS

- A. Thermal Performance: To comply with NFRC 100
- B. Air Infiltration, Water Resistance, Structural Test Pressure and Forced Entry Resistance Performances: To comply with AAMA/WDMA/CSA 101/I.S.2/A440-08

2.04 WINDOW TYPE

- A. Fiberglass Commercial Picture Window – Series 1001, 56" x 56" test specimen size.
1. 3 1/4" basic frame depth in pultruded fiberglass.
 2. Master frame and sash have a mitered and keyed corner construction, each corner bonded with epoxy resin.
 3. Structural Class achieved is CW-PG100 at Gateway test specimen size of 56" x 56".

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Performance Required

4. Design Pressure	100.31 psf
5. Air Infiltration Resistance per ASTM E 283	0.01 cfm/ft2
6. Water Infiltration Resistance per ASTM E 547	12.12 psf
7. Uniform Structural Load Test Pressure per ASTM E 330	+/- 150.47 psf

2.05 GLAZING

A. Insulating Glass - 1" Overall Thickness, Cardinal LoE (366/Argon-95/Clear), Warm Edge Spacer

1. U-Factor	0.26
2. Solar Heat Gain Coefficient	0.23
3. Visible Light Transmission	0.55
4. Condensation Resistance	60

Specification Note: The insulating glass shown is the Armaclad standard but many options are available including triple insul, Heat Mirror, laminated and krypton gas fill. When specifying project requirements, include all applicable data being certain that the glazing for each window type is clearly noted on the drawings or the window schedule.

2.07 ACCESSORY ITEMS

A. GRIDS

- Flat or Contour Internal (in insulating glass air space)
- Simulated Divided Lights (SDL's) - Applied to the exterior and interior sides of the glass unit.

B. PANNING

Heavy duty extruded aluminum profiles

C. INSTALLATION

- Heavy duty extruded aluminum, thermally broken Anchors
- "Through The Frame" screw grommets and jamb adjusters
- Extruded PVC Frame Expanders, Brick mold and Drywall Return
- Extruded Aluminum Nailing Fin

Specification Note: All accessory item requirements must be listed as part of the project quote.

2.08 FINISH

A. Pultruded Fiberglass Components

1. Five-step, baked on, water-borne paint system
2. Interior Finish: White
3. Exterior Finish: Bronze, White, Sandstone, Anodized Silver

Specifications Note: Non-Standard colors and color combinations require custom charges and a longer delivery lead time.

2.09 CAULKING

A. A Grade "A" Urethane Caulking Compound

Dow Corning 995 or equivalent as approved by the Architect shall be applied per installation drawings and points where the master frame and/or panning intersects the masonry or other exterior wall finish. The caulking material shall be applied in a manner which insures a continuous, air and water tight perimeter seal. The caulking color is to match the color of the windows unless specified otherwise by the Architect.

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2.10 TESTING

A. Laboratory Testing

1. At the discretion of the owner, one or a number of operable sash shall be removed from windows installed on the project and exchanged with the appropriate attic stock. The selected stock shall be tested by a certified testing laboratory to verify that the glass, glazing, hardware and finish are in conformance to the project specifications (AAMA 502-08). Should any component of the test specimen fail to conform to the project specifications, action shall be taken by the window manufacturer to correct each deficiency for every window on the project at no additional cost to the owner.
2. The owner shall assume the cost of the initial verification testing. However, should the product be found to be non-compliant, the manufacturer shall reimburse the owner the cost of the initial test. At the Architect's discretion, subsequent testing may be required and the cost of this test shall be borne by the manufacturer.
3. A representative of the manufacturer must be present for all testing.
4. In the case of a non-compliant test, the manufacturer must be allowed to make adjustments to the window and re-test as well as confirm the installation meets the prescribed requirements through air and water test cycles. These tests shall be conducted in compliance with ASTM E 783 (Air) and ASTM E 1105 (Water).

Part 3 – Execution

3.01 EXAMINATION

- A. Inspect all openings in which windows will be installed.
 1. Verify that each opening complies with manufacturer recommendations and appropriate AAMA practice.
 2. Verify that all fasteners in wall framing are properly seated and will not interfere with the window installation.
- B. Arrange to have unsatisfactory conditions corrected.
- C. Installer will not start work until condition of window openings have been approved by contractor.

3.02 INSTALLATION

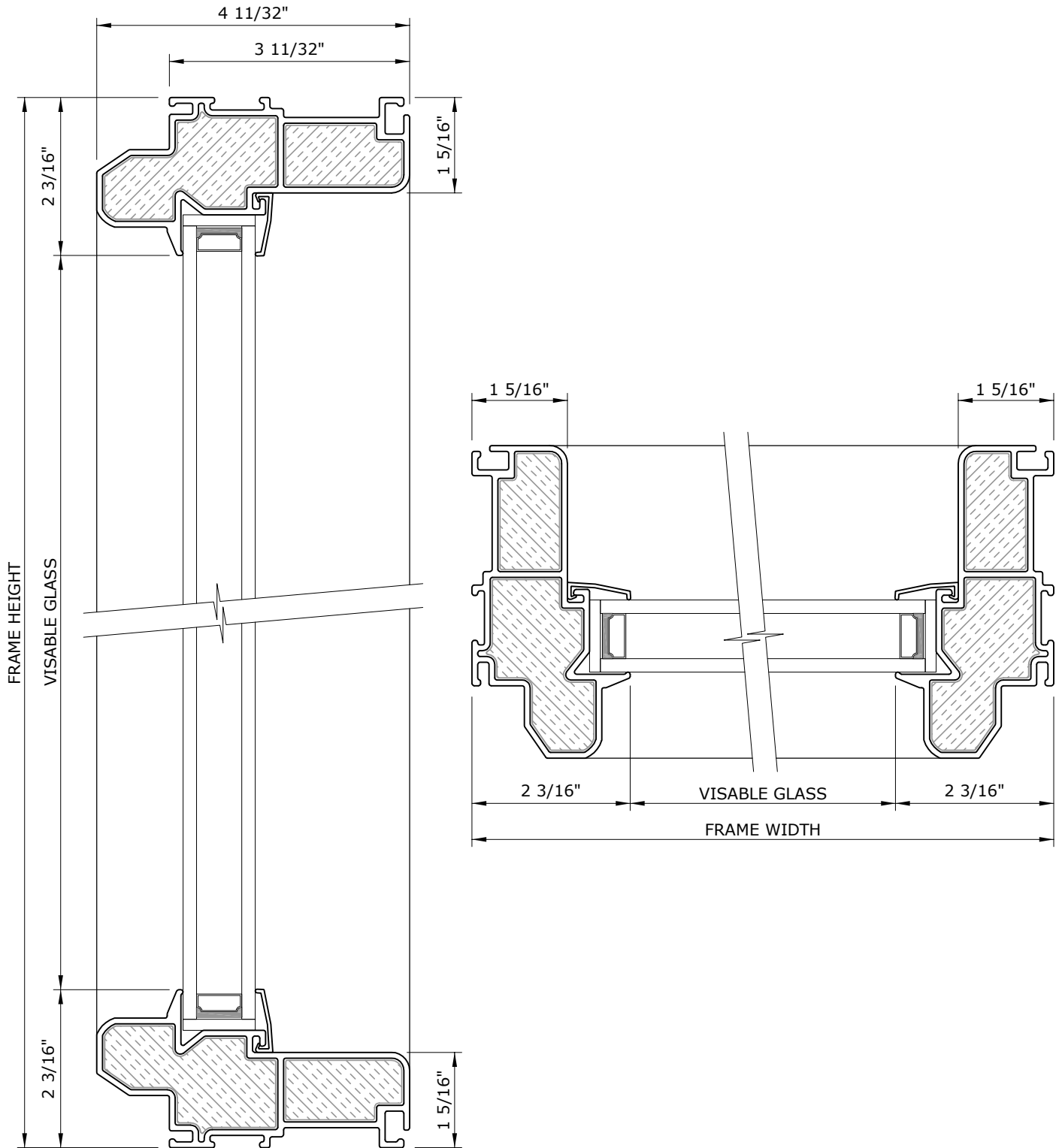
- A. Install windows in accordance with Architect/Contractor approved shop drawings or manufacturer's instructions.
- B. Do Not remove any labels until all windows are installed and are ready for cleaning. Insure all local building inspection regulations are adhered to where label removal is involved.

3.03 DELIVERY, STORAGE, ADJUSTMENTS AND CLEANING

- A. When the Fiberglass Picture Windows are delivered they must be kept in a dry area and kept out of direct sunlight until time of installation.
- B. After installation, the erector shall remove all sealants, caulking and other misplaced materials from other surfaces, including adjacent work. The window frame, sash, glass. Panning and interior trim shall be cleaned thoroughly with materials and methods recommended by the window and glass manufacturers and shall not cause any damage to the product or the installation.
- C. Protect glass and window materials from contact with contaminating substances resulting from construction operations. After installation and cleaning of windows by window installation contractor, the general contractor shall be responsible for maintaining the cleanliness and protection of the window from damage by other trades.

CROSS SECTION DETAIL - COMMON FRAME OPTION

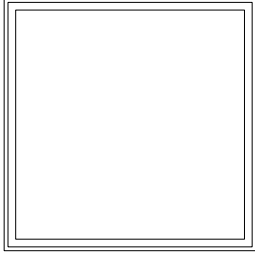
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Note: All dimensions shown are approximate and should be used for guideline purposes only.
 : DO NOT SCALE this drawing as it has been converted to a format that may have affected the actual dimensional sizing.

FACTORY SIZE LIMITS

1001 Picture Window/Transom



	Standard Glazing		Impact Glazing	
	Minimum	Maximum	Minimum	Maximum
Width	15 3/4"	84"	15 3/4"	60"
Height	14 1/2"	84"	14 1/2"	60"
Max. U/I (United Inches)	168"		120"	

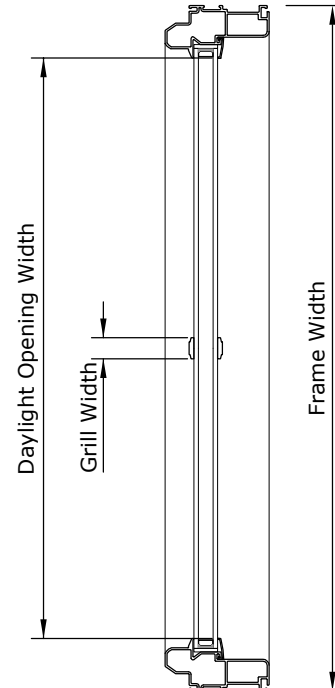
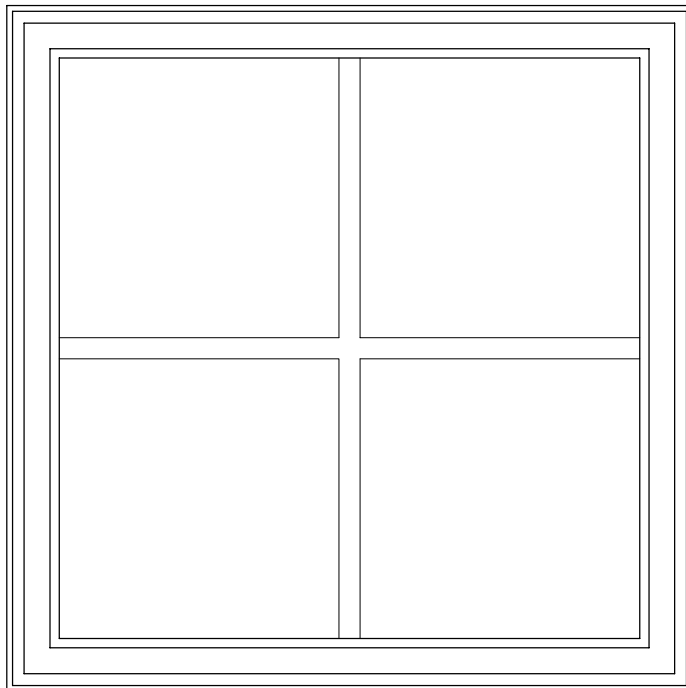
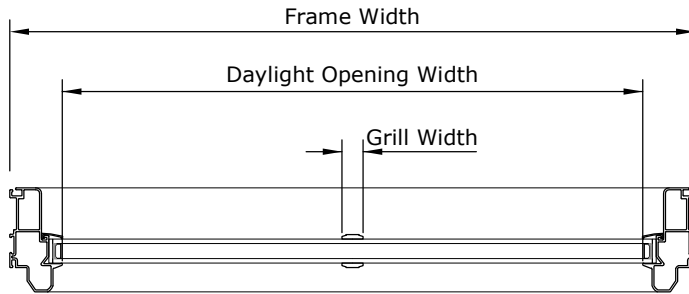
DAYLIGHT OPENINGS NOTES AND CALCULATIONS

The Daylight Opening is the visible glass area between the sash stiles and rails.

DAYLIGHT OPENING CALCULATIONS: Width = Frame Width - 4 3/8" Height = Frame Height - 4 3/8"

Individual Daylight Openings (With Grilles):

Calculate Daylight Opening (DLO) using the formulas above and $\{DLO - [(\#Grilles \times Grill \text{ Width}) / (\#Grilles + 1)]\}$



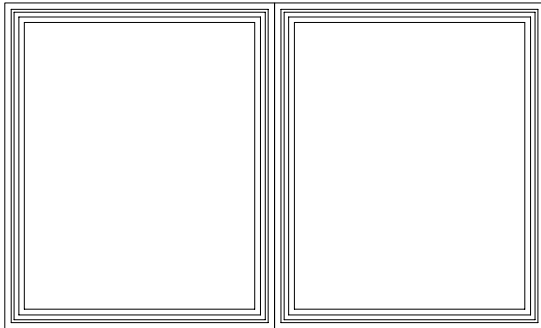
ELEVATIONS

NOTES: To determine individual minimum and maximum window unit sizes refer to page 1.3.6 Window Size Limitations.

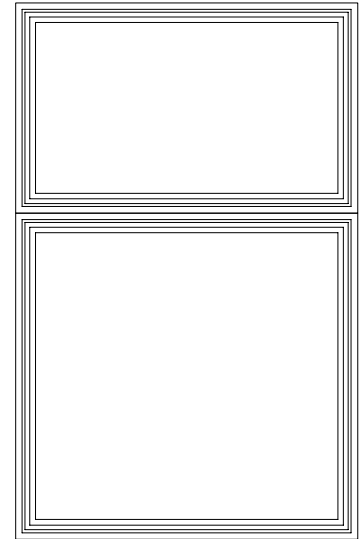
: When using 1" Architectural Mullions, add 1/2" per mullion to overall composite frame size for each mullion.

: All composite mulling should be completed in the factory unless circumstances dictate that field mulling is necessary.

: All Mullions In Composites For Commercial Applications Must Have 1" Architectural Mullions. See page 1.3.9 for details.



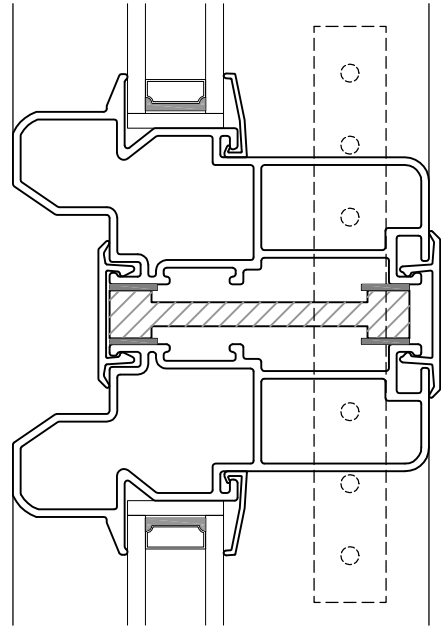
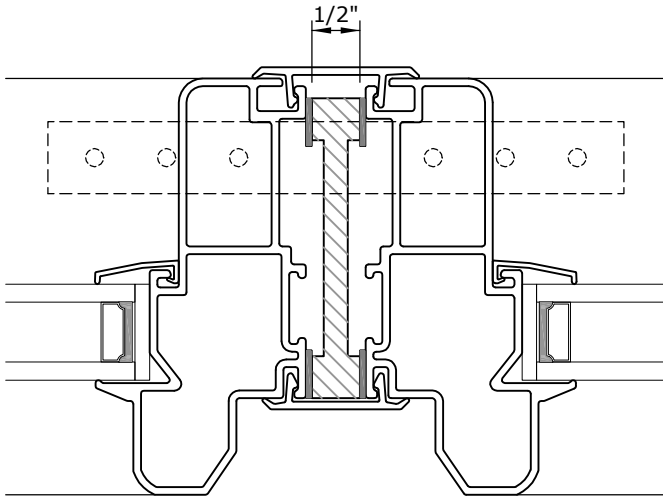
Maximum Composite Width = 120"
Maximum Composite Height = 84"
Maximum United Inches = 204"



Maximum Composite Width = 84"
Maximum Composite Height = 110"
Maximum United Inches = 194"

CROSS SECTION DETAIL

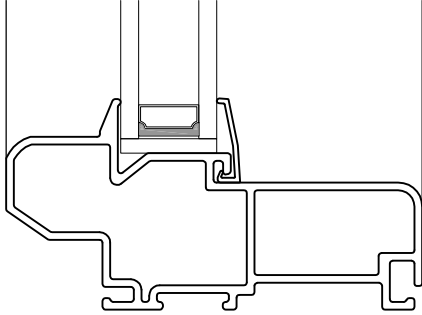
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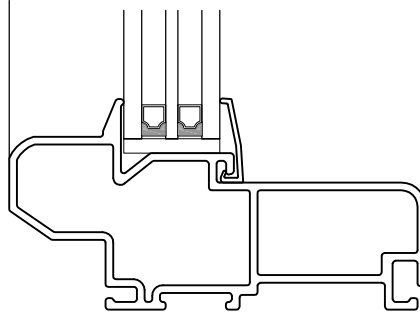
CROSS SECTION DETAIL

SCALE: 1:2

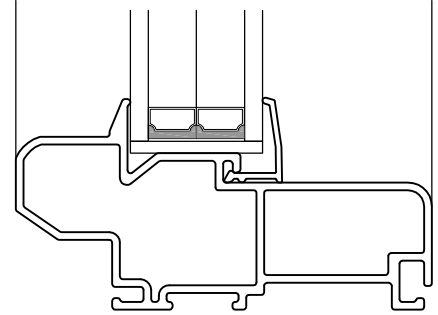
GLAZING OPTIONS



Standard Insul
(1" to 1 3/8" O/A)



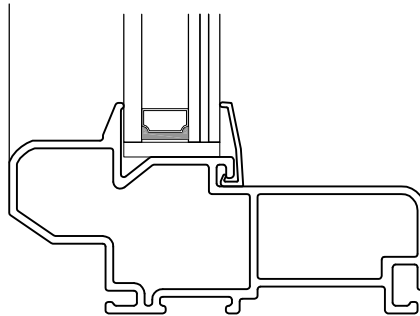
Standard Triple Insul
(1" to 1 3/8" O/A)



Standard Heat Mirror
(1" to 1 3/8" O/A)

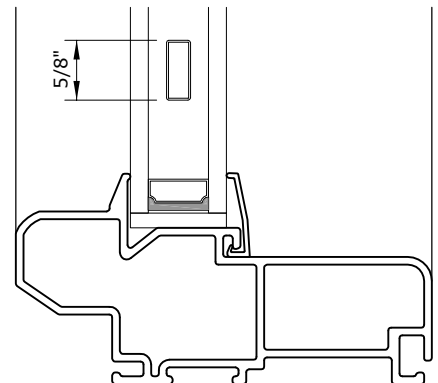
NOTES:

- External sheet glass on all commercial window applications will be 3/16" thick.
- Glass options include Annealed, Tempered and Laminated.
- Glass type options include Clear, LoE, Heat Mirror and Reflective
- Fill options include Air, Argon and Krypton.



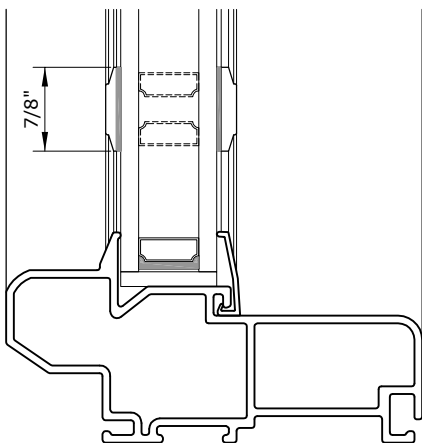
Standard Laminated
(1" to 1 3/8" O/A)

BETWEEN GLASS GRID OPTIONS

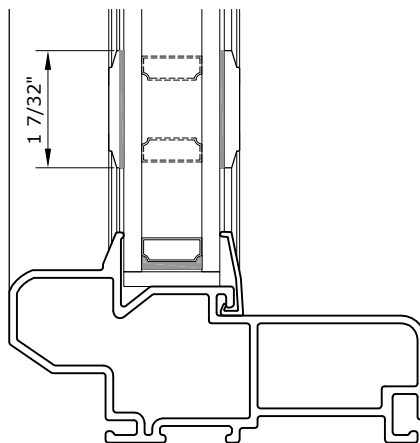


5/8" Flat Bar

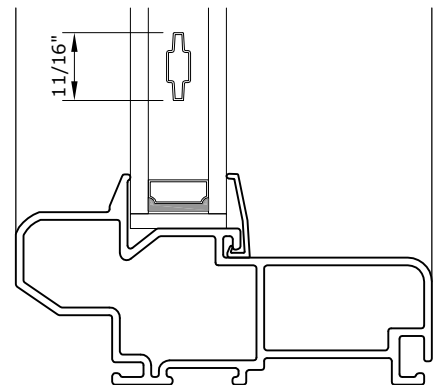
SIMULATED DIVIDED LIGHT OPTIONS (SDL's)
(Extruded Aluminum Exterior Grids and Extruded PVC Interior Grids)



Combination
DS5/VG15



Combination
DS6/VG16



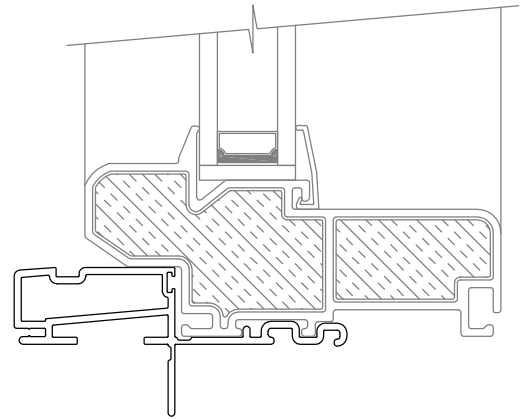
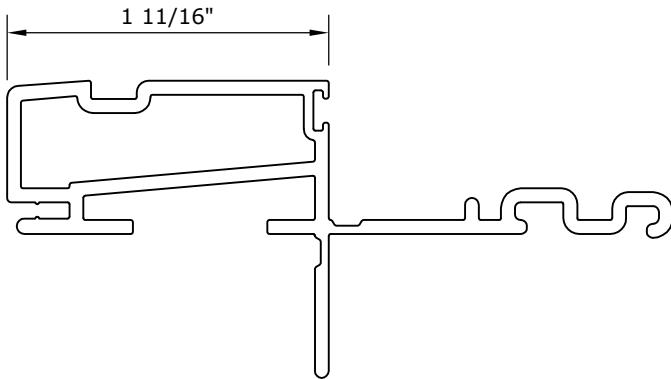
Contour Bar

NOTE: All Simulated Divided Light Options and Combinations Available With Or Without Spacer Bars Behind The Grids.

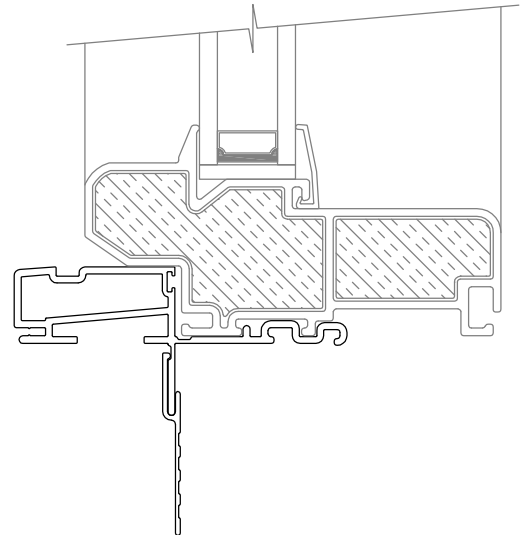
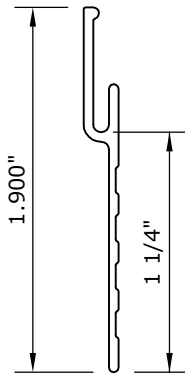
STANDARD ARMACLAD PANNING PROFILES

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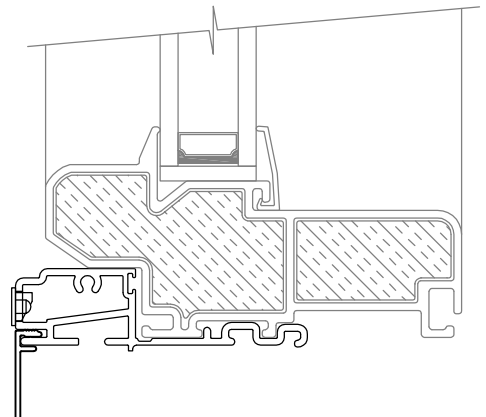
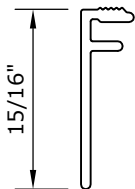
PAN-001 - 1 11/16" x 13/16" SQUARE NOSE ALUMINUM EXTERIOR SILL EXTENDER



PAN-013 - 2" ALUMINUM INSTALLATION FIN EXTENDER



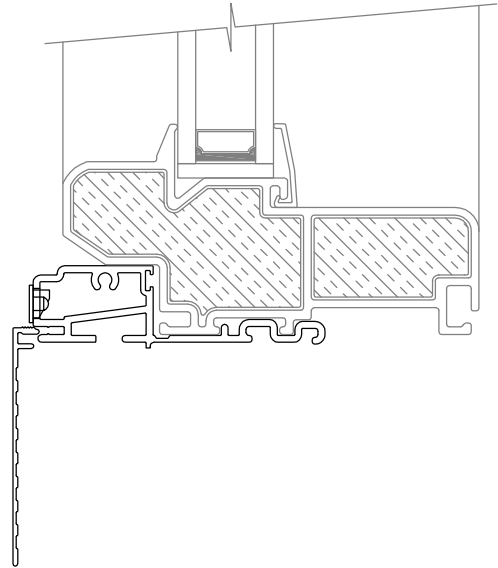
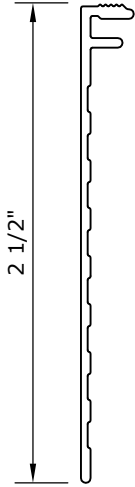
PAN-002 - 15/16" ALUMINUM JAMB EXTENDER FLASHING



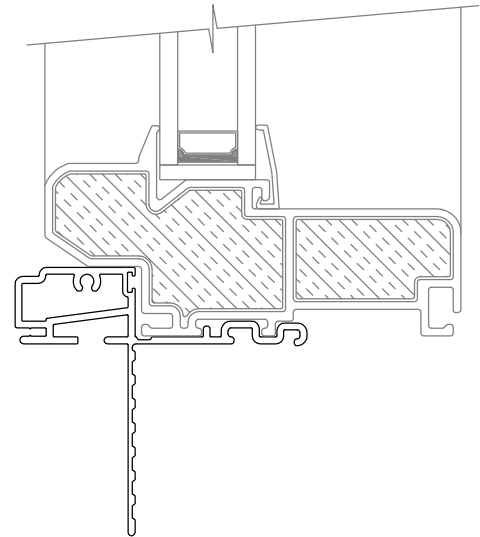
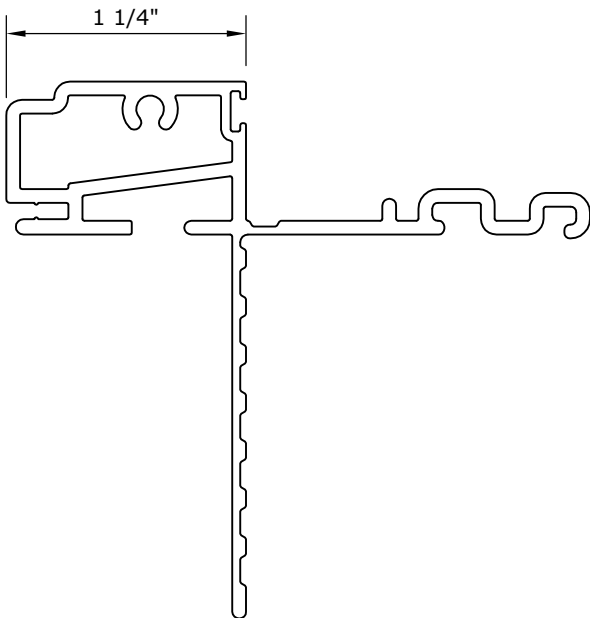
STANDARD ARMACLAD PANNING PROFILES

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PAN-014 - 2 1/2" ALUMINUM JAMB EXTENDER FLASHING



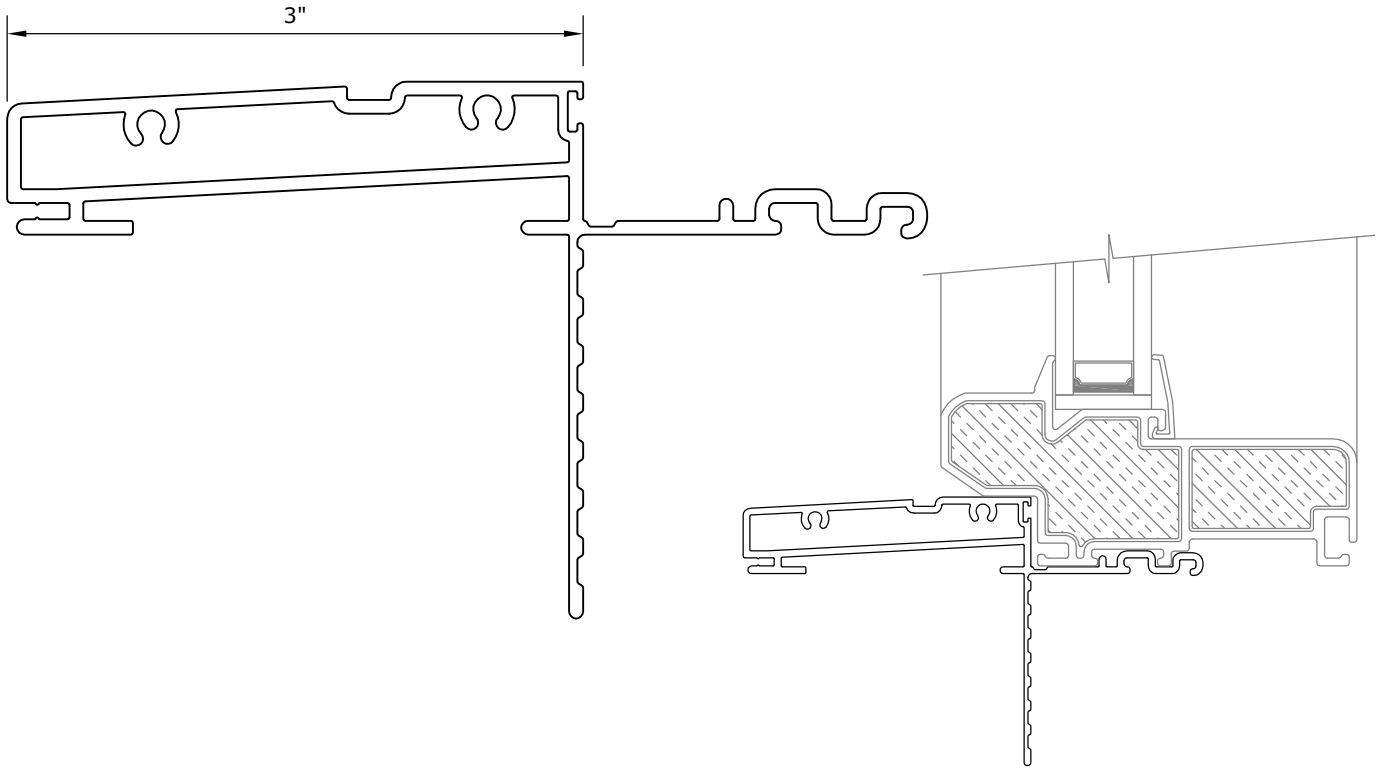
PAN-003 - 1 1/4" X 13/16" SQUARE NOSE ALUMINUM JAMB EXTENDER



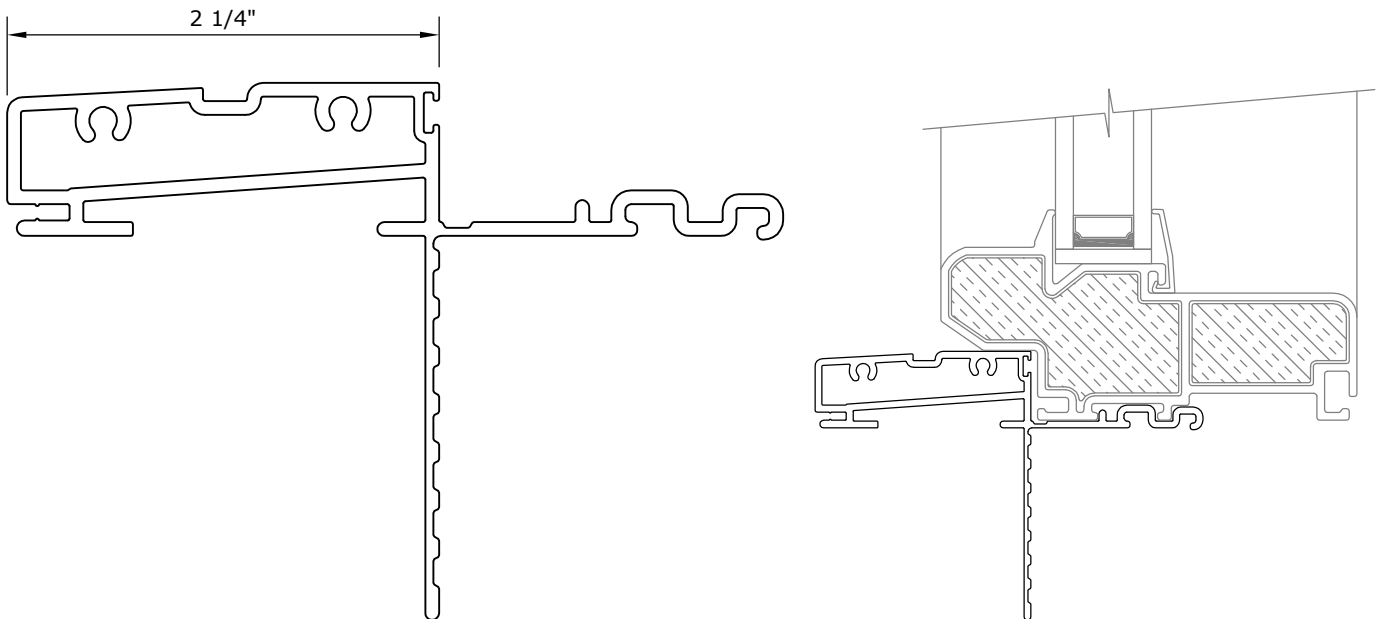
STANDARD ARMACLAD PANNING PROFILES

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PAN-004 - 3" X 13/16" SQUARE NOSE ALUMINUM EXTERIOR JAMB EXTENDER



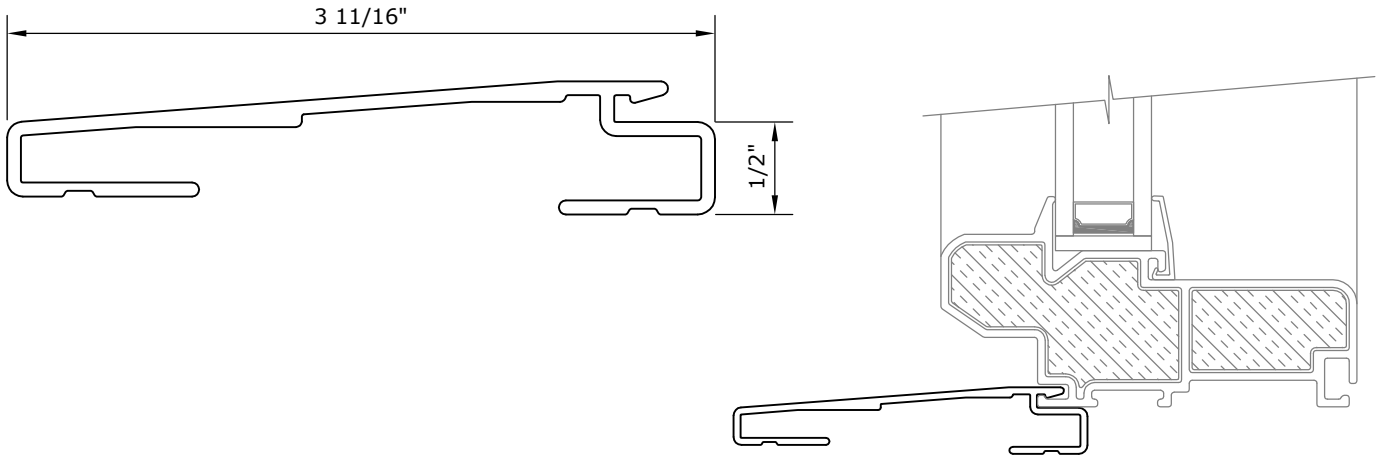
PAN-005 - 2 1/4" X 13/16" SQUARE NOSE ALUMINUM EXTERIOR JAMB EXTENDER



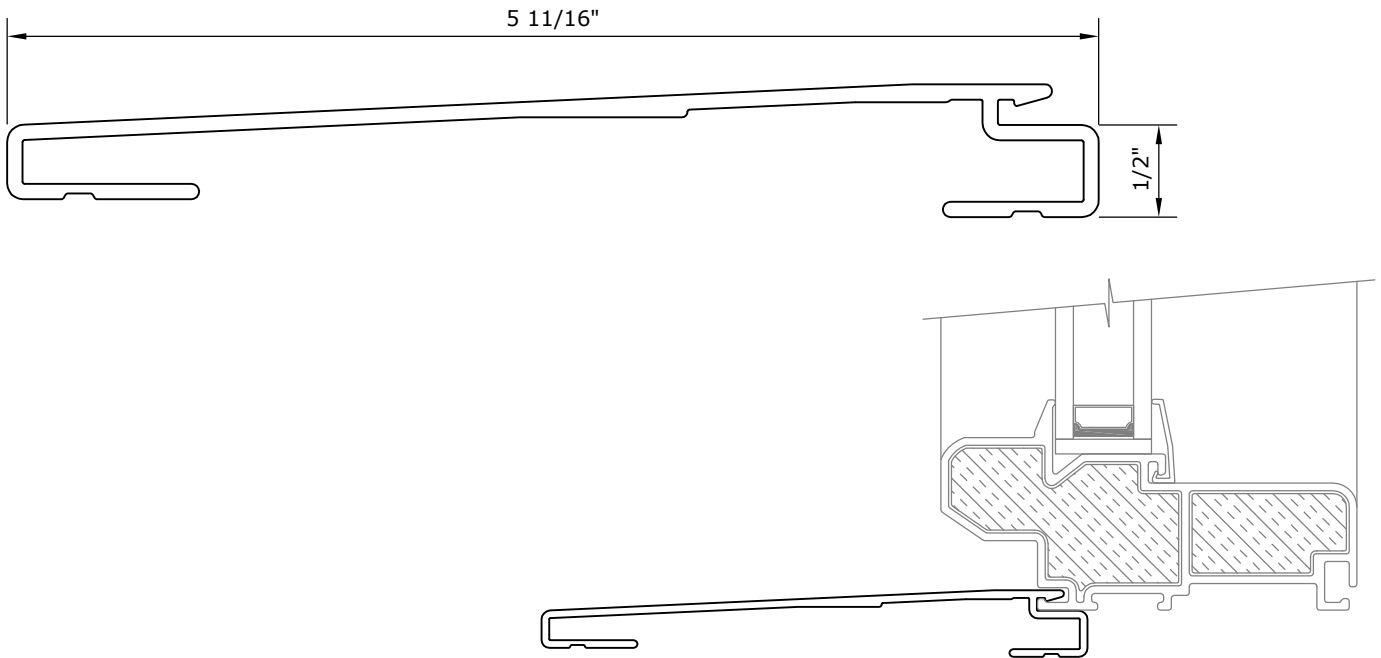
STANDARD ARMACLAD PANNING PROFILES

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PAN-006 - 3" ALUMINUM EXTERIOR SLOPED SILL EXTENDER

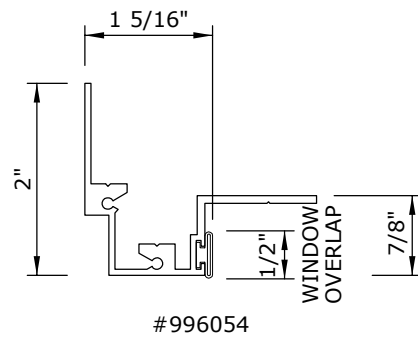
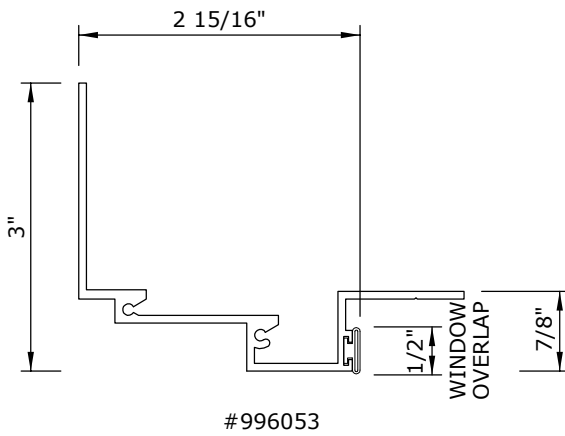
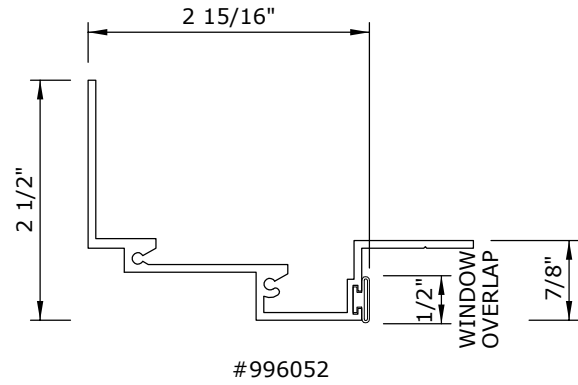
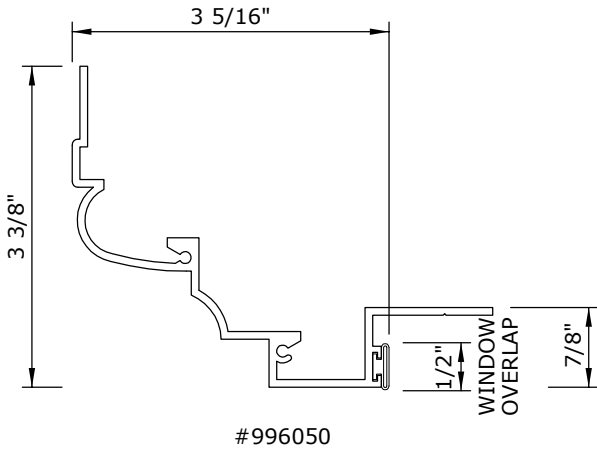
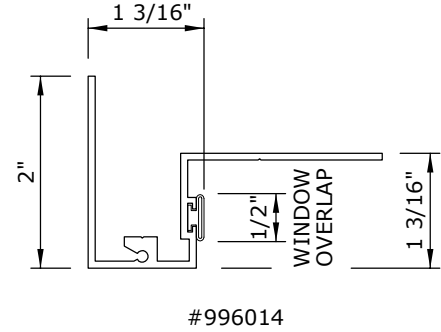
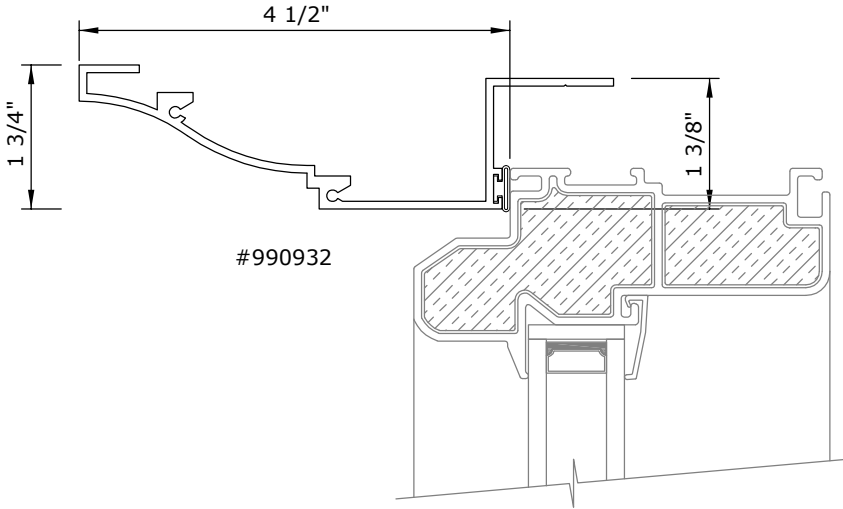


PAN-007 - 5" ALUMINUM EXTERIOR SLOPED SILL EXTENDER



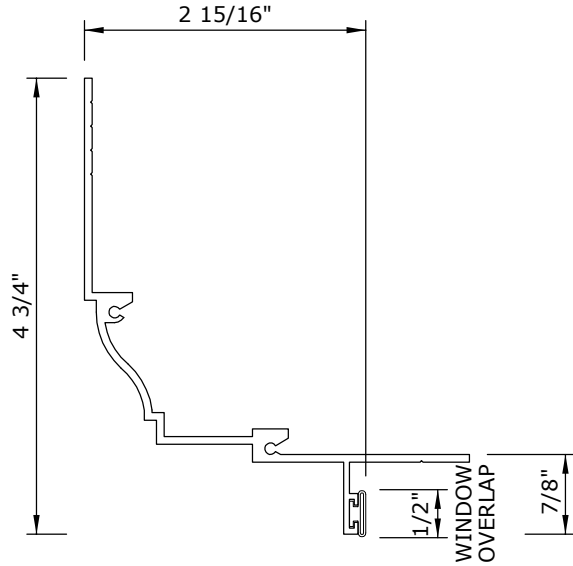
PRE-SET CONTOURED PANNING OPTIONS AVAILABLE FROM ARMACLAD

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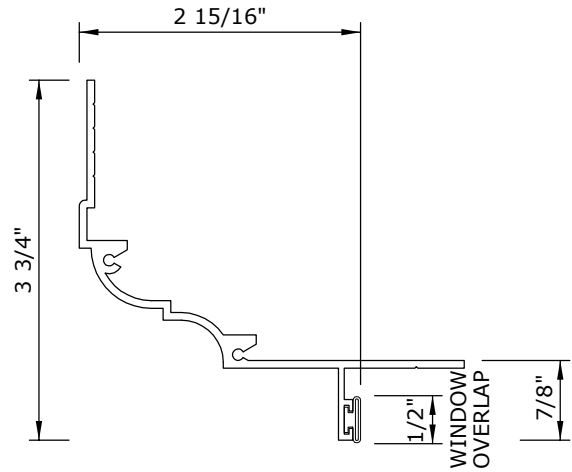


PRE-SET CONTOURED PANNING OPTIONS AVAILABLE FROM ARMACLAD

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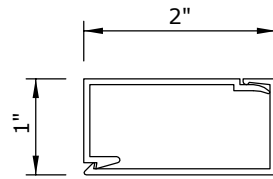
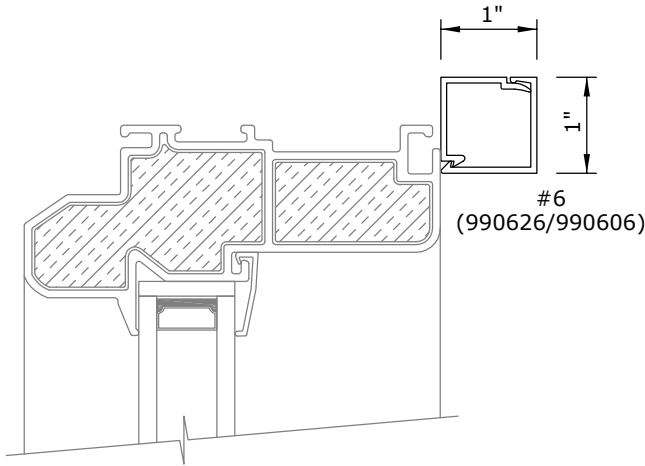
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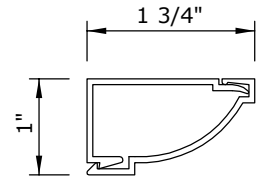
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INTERIOR TRIM ASSEMBLY OPTIONS AVAILABLE FROM ARMACLAD

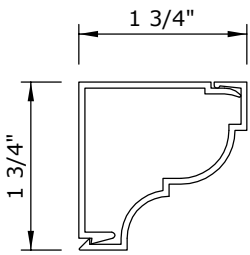
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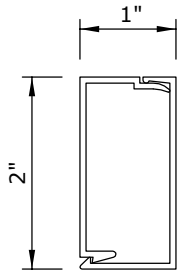
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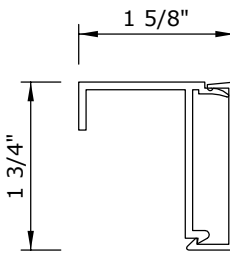
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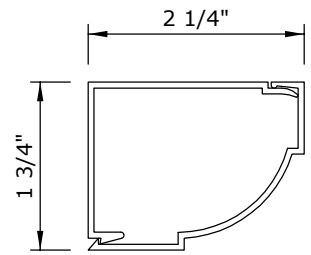
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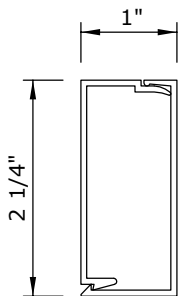
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(990570/990569)



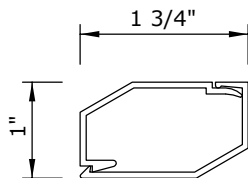
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(990345/990344)



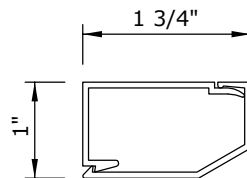
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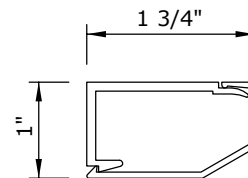
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(990144/990143)



#A2
(990622/990115)



#A3
(990630/990115)



#A4
(990555/990115)

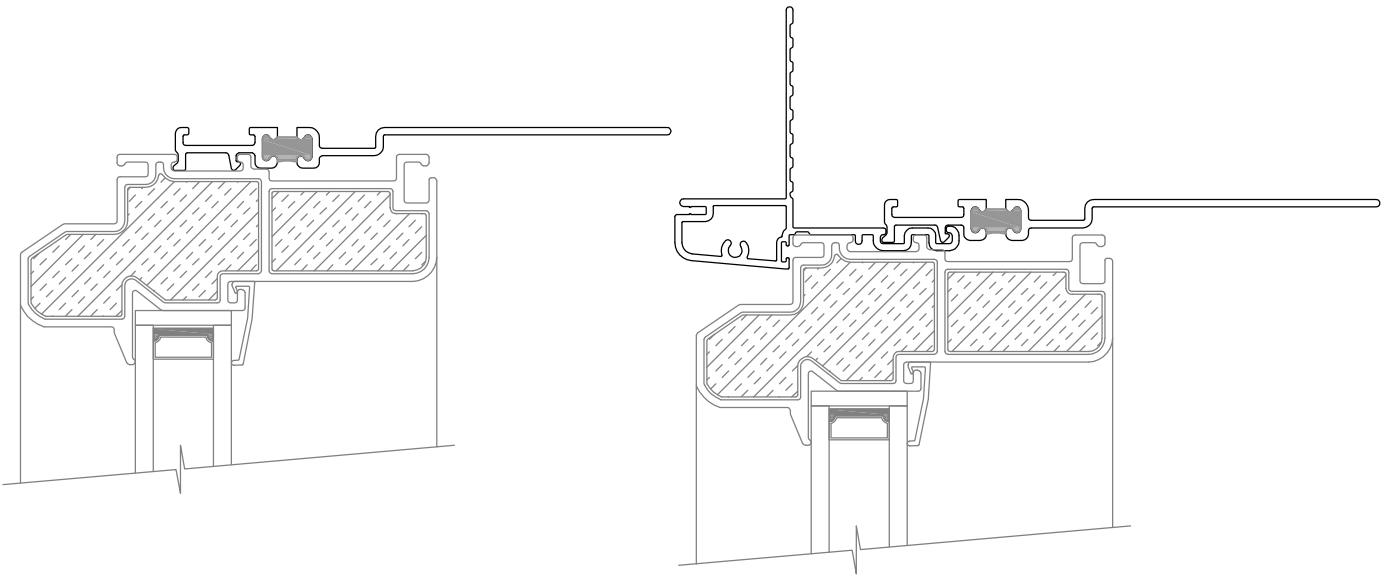
STANDARD ARMACLAD COMPONENTS

SCALE: 1:1

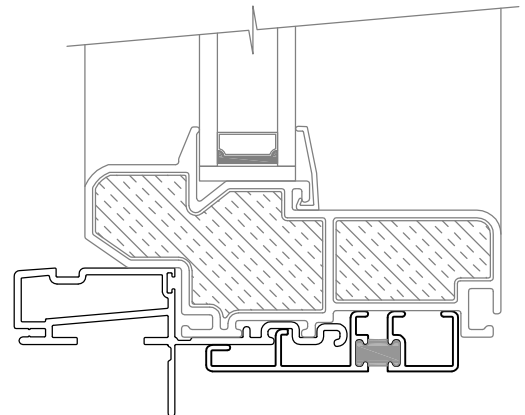
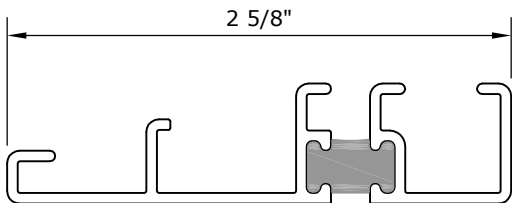
PAN-011 - THERMALLY BROKEN ALUMINUM ANCHOR CLIP



Supplied in 5" Pieces (Standard) or Custom Lengths if Required



PAN-012 - THERMALLY BROKEN SILL ANCHOR

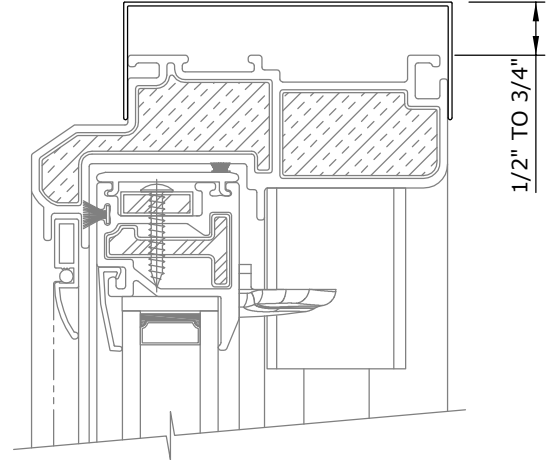
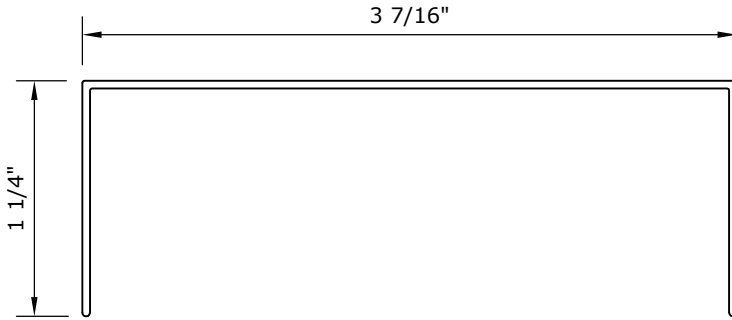


PAN-012 - THERMALLY BROKEN SILL ANCHOR

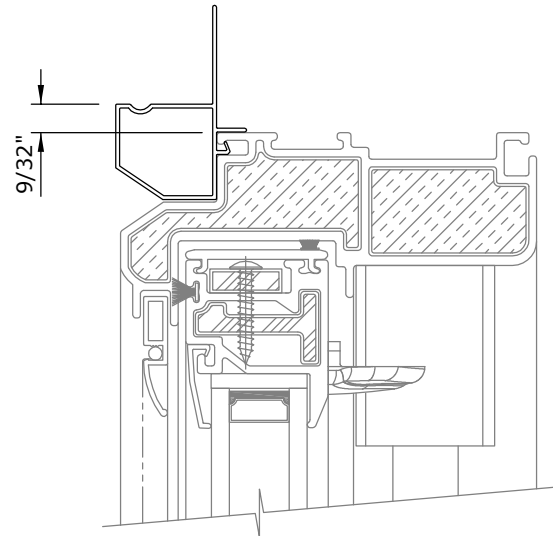
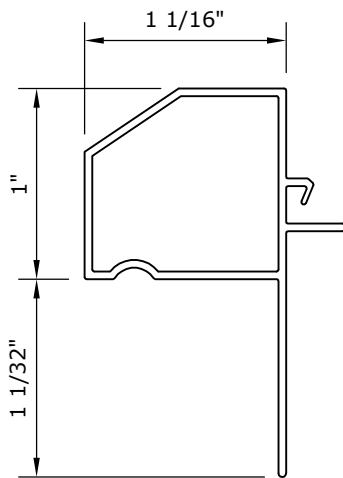
STANDARD ARMACLAD COMPONENTS

SCALE: 1:1

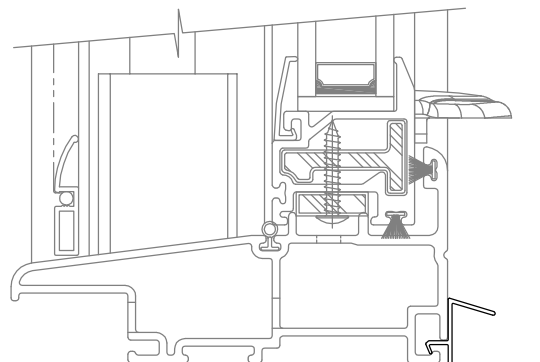
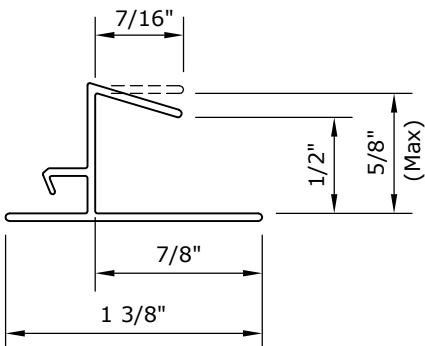
SV 34 - HEAD EXPANDER



SV 35 - BRICK MOLD



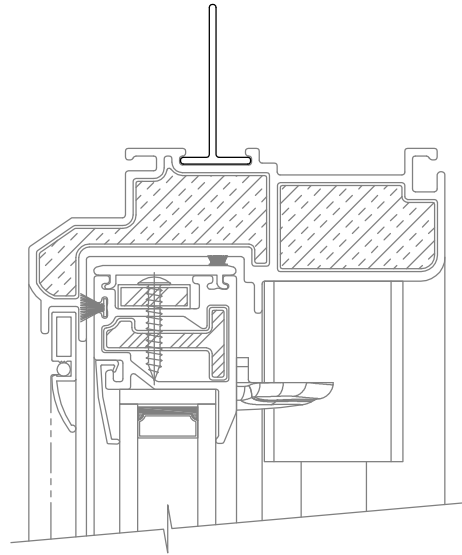
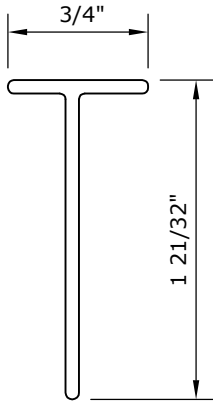
SV 36 - 5/8\" DRYWALL RECEPTOR



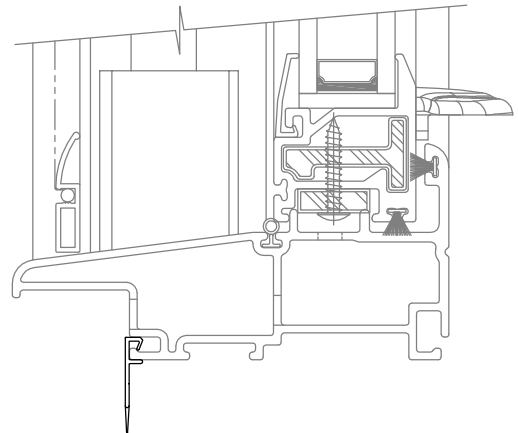
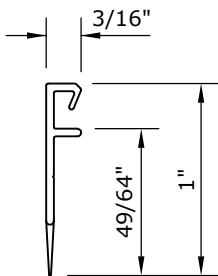
STANDARD ARMACLAD COMPONENTS

SCALE: 1:1

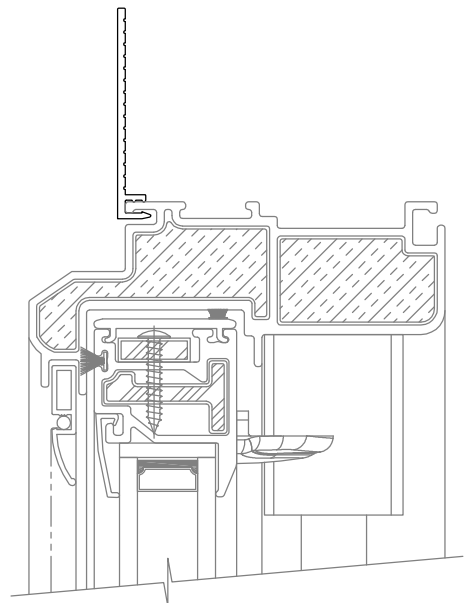
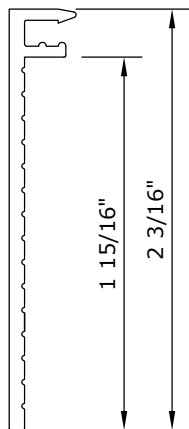
SS37B - NAILING FLANGE



SV 38 - 3/4" SILL TRIM



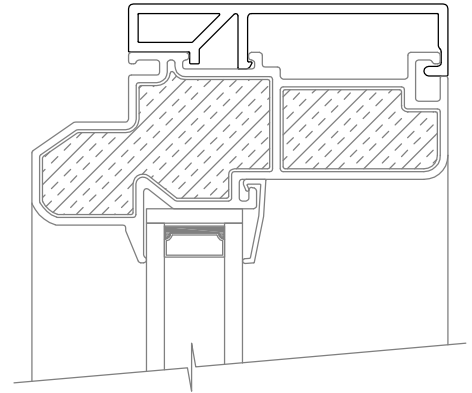
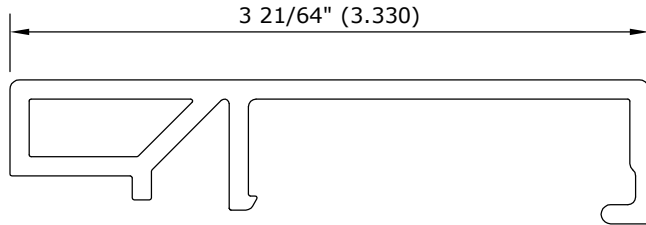
19737-EXT - 2 3/16" (FLORIDA) FLANGE



STANDARD COMPONENTS AVAILABLE FROM ARMACLAD

SCALE: 1:1

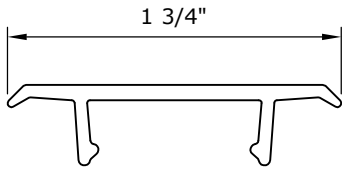
PAN-017 - 1/2" FRAME EXPANDER CAP (FOR USE WITH INSTALLATION RECEPTOR PACKAGES)



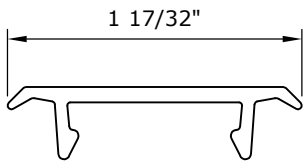
STANDARD ARMACLAD COMPONENTS

SCALE: 1:1

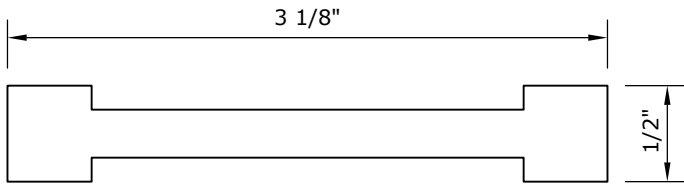
SS53 - INTERIOR ARCHITECTURAL MULLION COVER



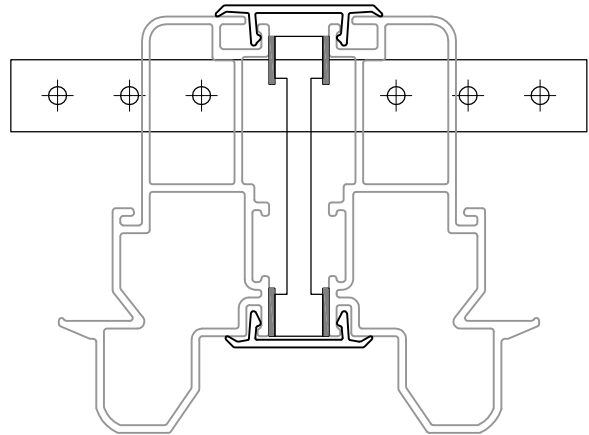
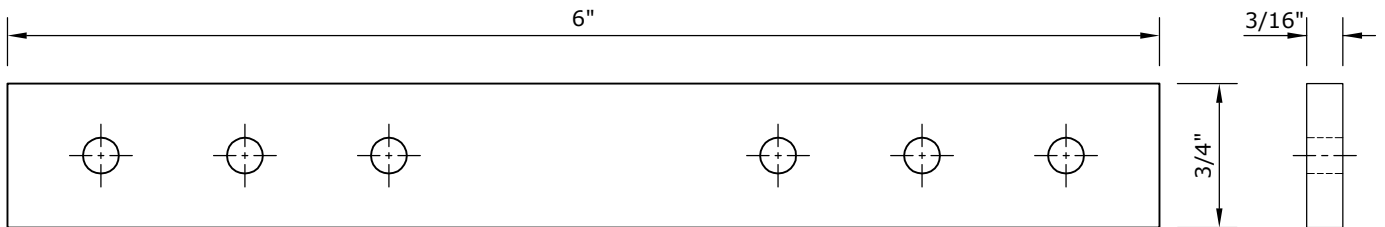
SS 54 - EXTERIOR ARCHITECTURAL MULLION COVER



SV 31-A - ARCHITECTURAL MULLION CORE



SV 31-B - ARCHITECTURAL MULLION SUPPORT BAR



NOTES

In this section, Armaclad gives Basic Installation Instructions, Guide Lines and General Applications using Armaclad Fiberglass Window Products and Accessories. As each installation is unique due to the design of the structure and the installation requirement, each project must be reviewed individually and designed to meet the specified need.

To allow as much flexibility as possible in the installation of our Fiberglass Window Products, Armaclad has developed and offers a wide range of Installation Accessories to choose from when designing and specifying the requirements.

To allow us to confirm the installation requirements are compatible with our products and to assist in the design specifications and material requirements, Armaclad requests that as much new or existing window opening building structure information as is available be supplied in dimensioned drawings and sketches, or in Autocad format if possible.

If an installation requirement cannot be met with the standard Armaclad accessory offering, we will work with Architects and Contractors to design and/or source the necessary components.

All Installation Requirements must be specified prior to the fabrication of the windows to allow all necessary preparations to be made during the manufacturing process.

Armaclad strongly discourages and will not warrant any product and installation that involves screws through the nailing fins only. All installations must include anchors that are attached to or nested into the frame, screws through the side jambs or a panning/clip system that nests and firmly holds the system in place and meets required code.

No fasteners should penetrate the fiberglass walls of the sill profile. This profile is designed to be a water reservoir and drain and must remain water tight.

Unless specifically made a part of the sales contract, Armaclad does not supply any of the installation materials including but not limited to sealants, fasteners, shims, insulation, ice and water shield, flashings and interior casings.

When sizing rough and masonry openings, please insure that the recommended clearances are used. These clearances are an important component in a successful installation.

SIZING THE OPENINGS

SCALE: 1:5

ROUGH OPENING:

- Window Frame Width + 1"
- Window Frame Height + 1"

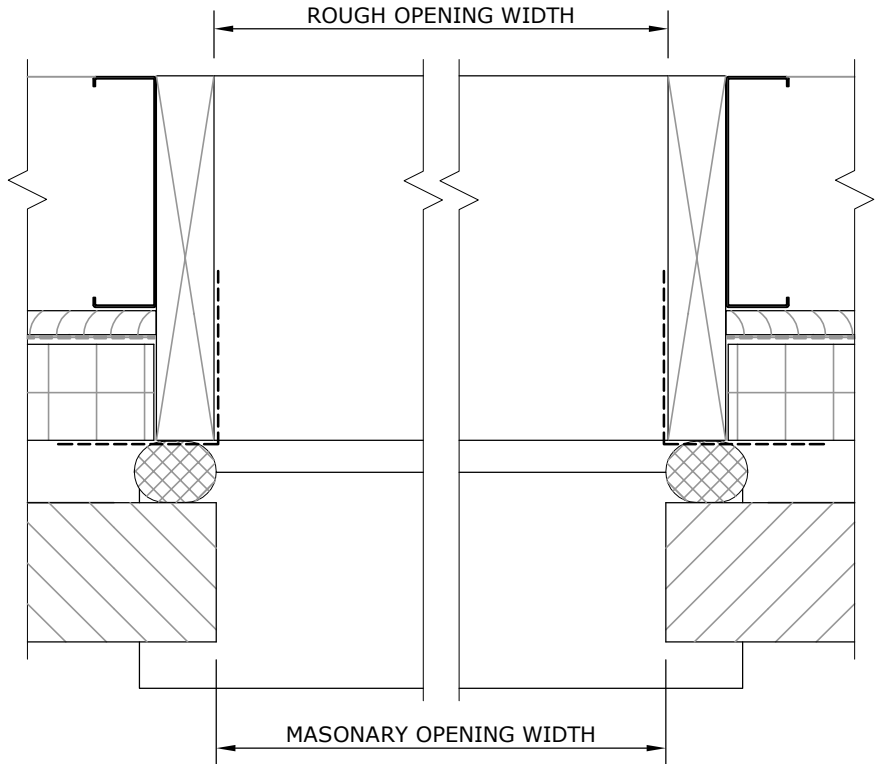
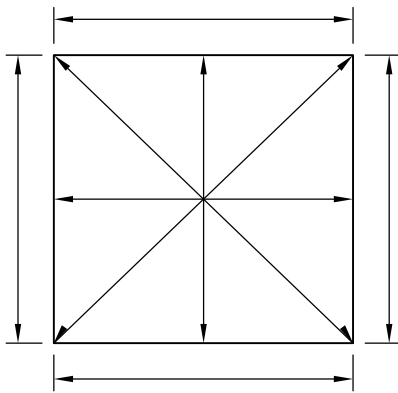
MASONRY OPENING:

- Window Frame Width (If No Panning) or O/A Panning Width + 1"
- Window Frame Height (If No Panning) or O/A Panning Width + 1"

BUILDING THE ROUGH OPENING

Using the size calculations shown above the R.O. should be built Plumb, Level and Square to insure the best possible conditions to install the window unit into.

The corresponding horizontal, vertical and corner to corner dimensions should measure within 1/8" of each other.



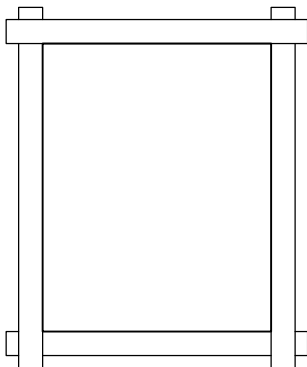
PREPARING THE ROUGH OPENING

ICE AND WATER SHIELD:

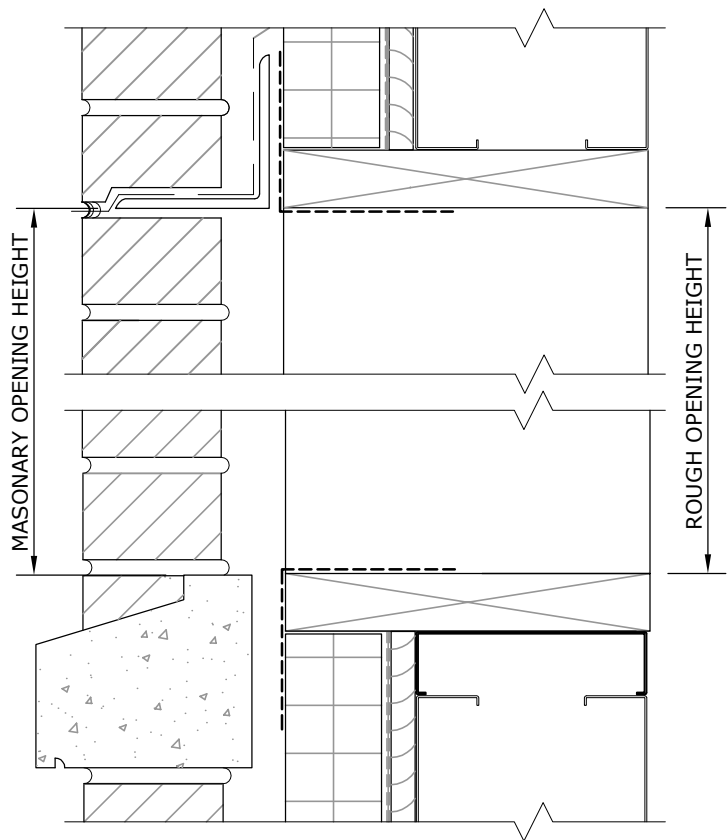
Whenever possible, the exterior of the R.O. should be wrapped with a high quality Ice And Water Shield to protect the structure around the opening from any un-detected sealant failures.

See - - - - lines in section details on right.

This material should be applied like a flashing starting with the bottom piece, the side pieces overlapping the bottom and the top piece overlapping the sides.



Please refer to the Ice And Water Shield manufacture's instructions prior to applying it to the openings.



INSTALLATION SECTION DRAWING

SCALE: 1:4

STEP 6

Place High Quality Insulation around the interior of the installation between the window frame and the structure

STEP 5

Apply a continuous bead of High Quality Exterior Grade Sealant around the perimeter of the installation between the panning and brick veneer

STEP 4

Place Backer Rod around exterior perimeter of the installation between the panning and brick veneer

STEP 3

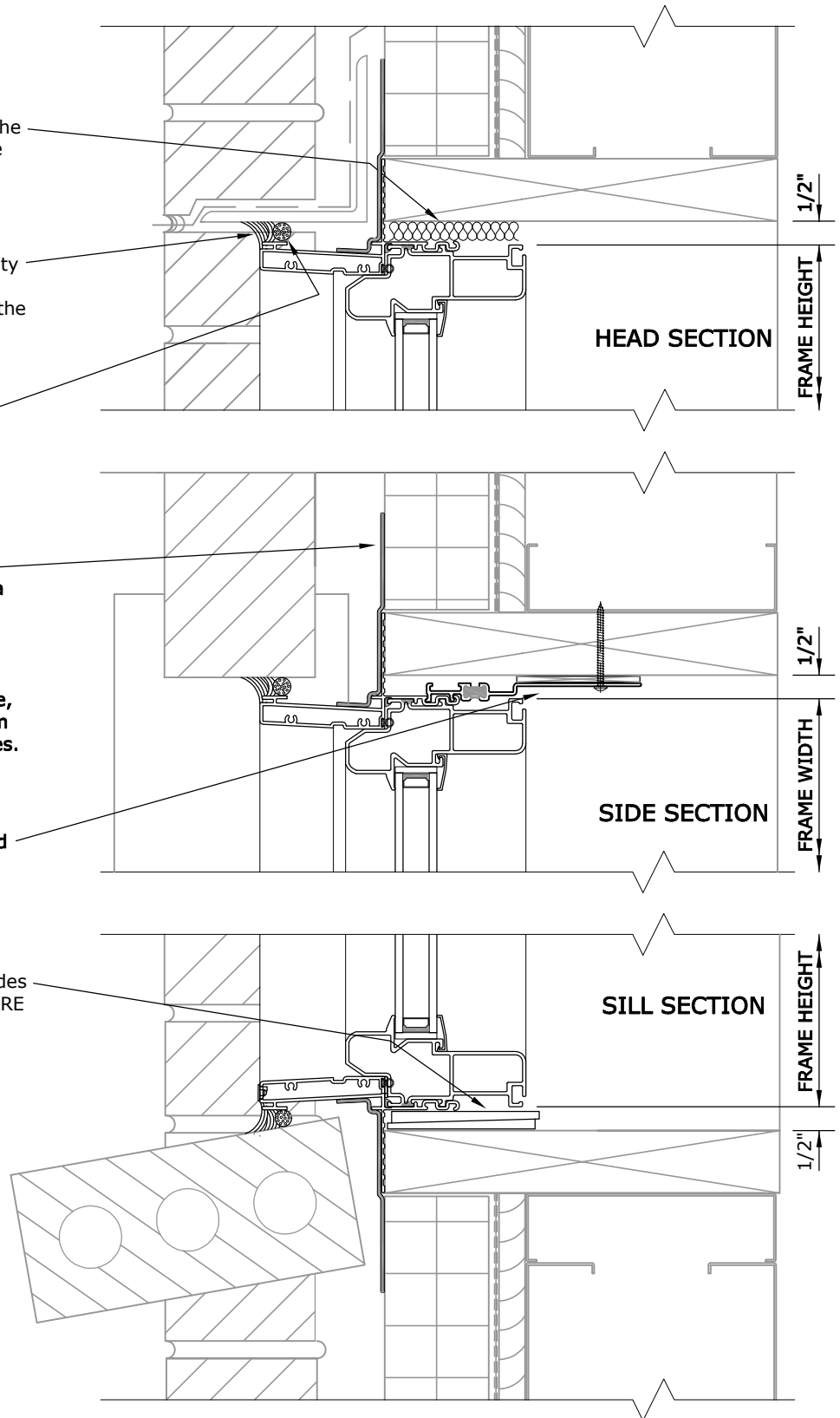
When ever possible, seal around the exterior side of the installation using a High Quality Ice and Water Shield overlapping the panning onto the structure.
 This material should be applied like a flashing starting with the bottom piece, the side pieces overlapping the bottom and the top piece overlapping the sides.

STEP 2

Secure window in place using specified method and fasteners

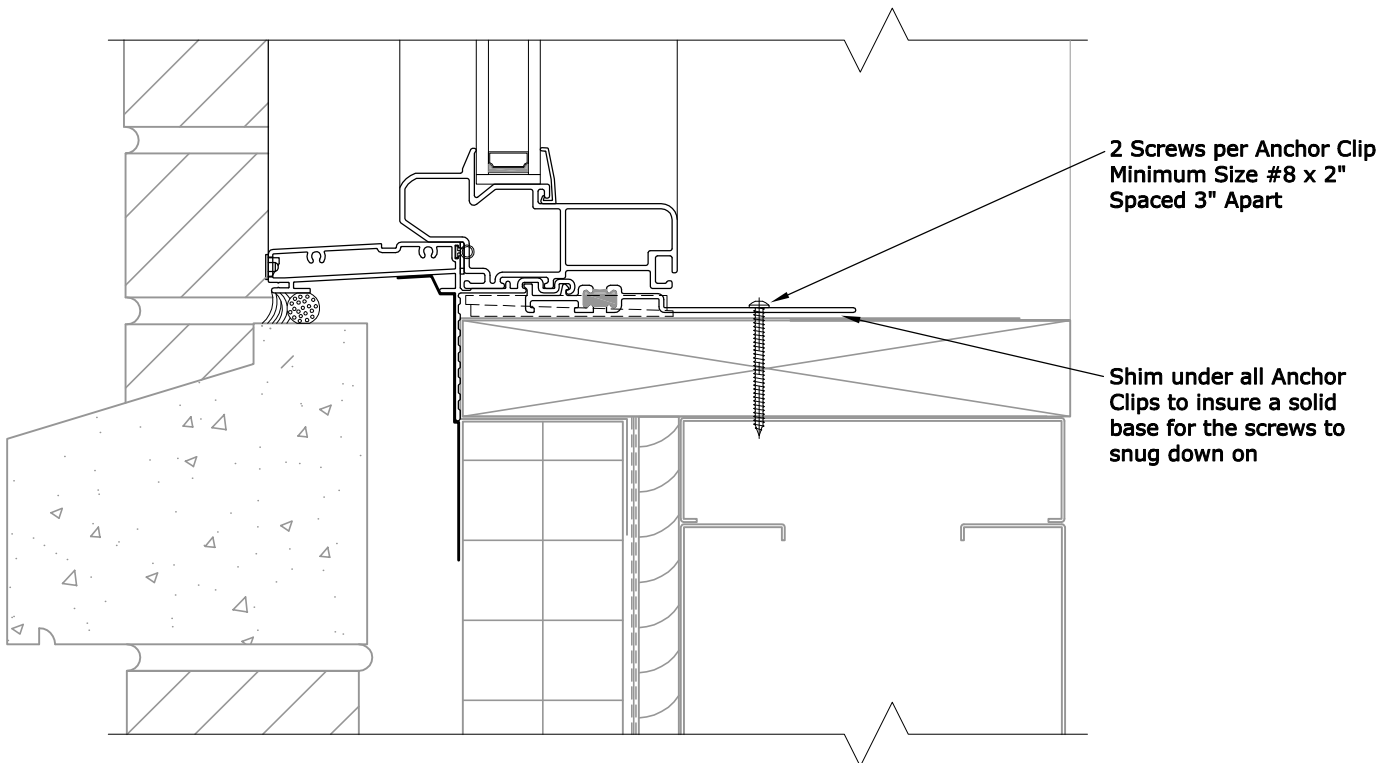
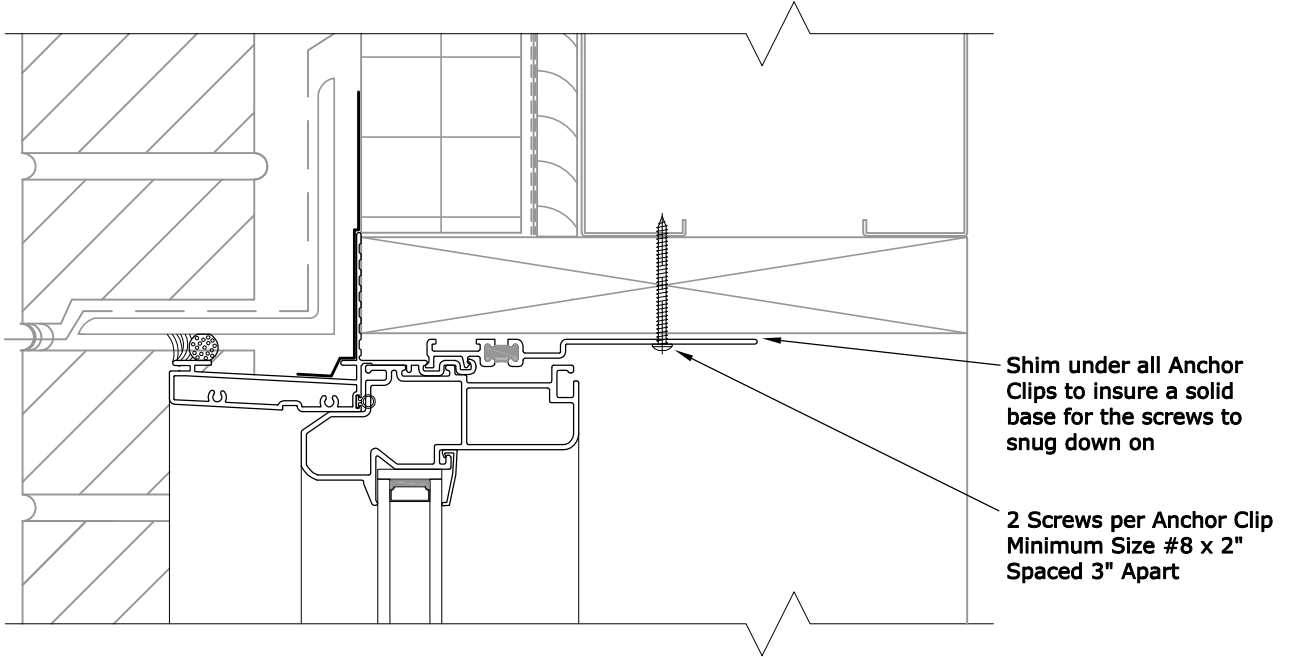
STEP 1

Shim window in opening on all four sides insuring it is PLUMB, LEVEL and SQUARE



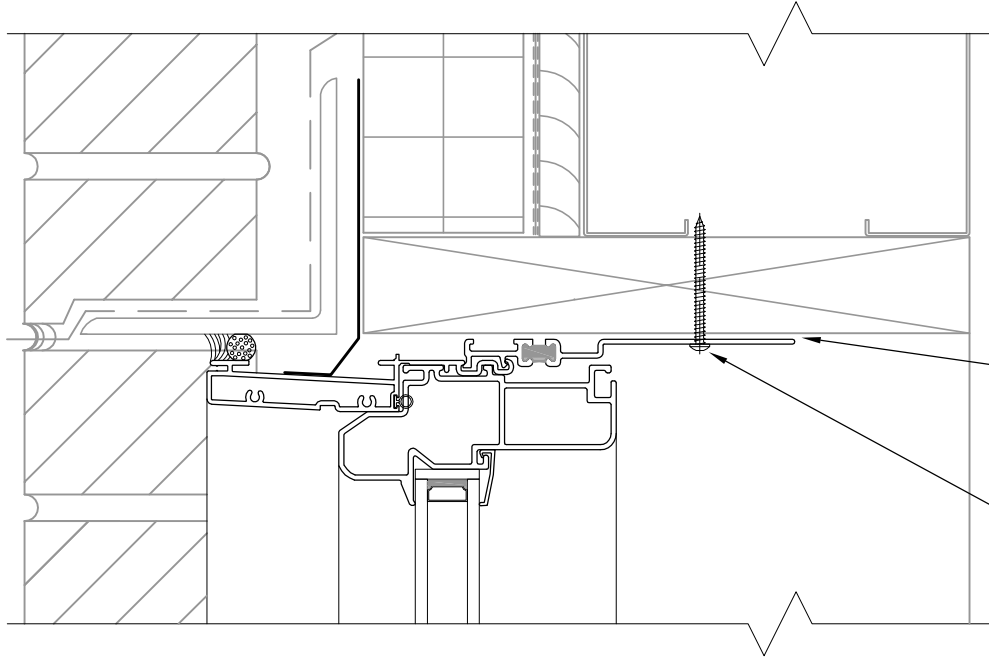
ANCHOR CLIP WITH PANNING

SCALE: 1:3



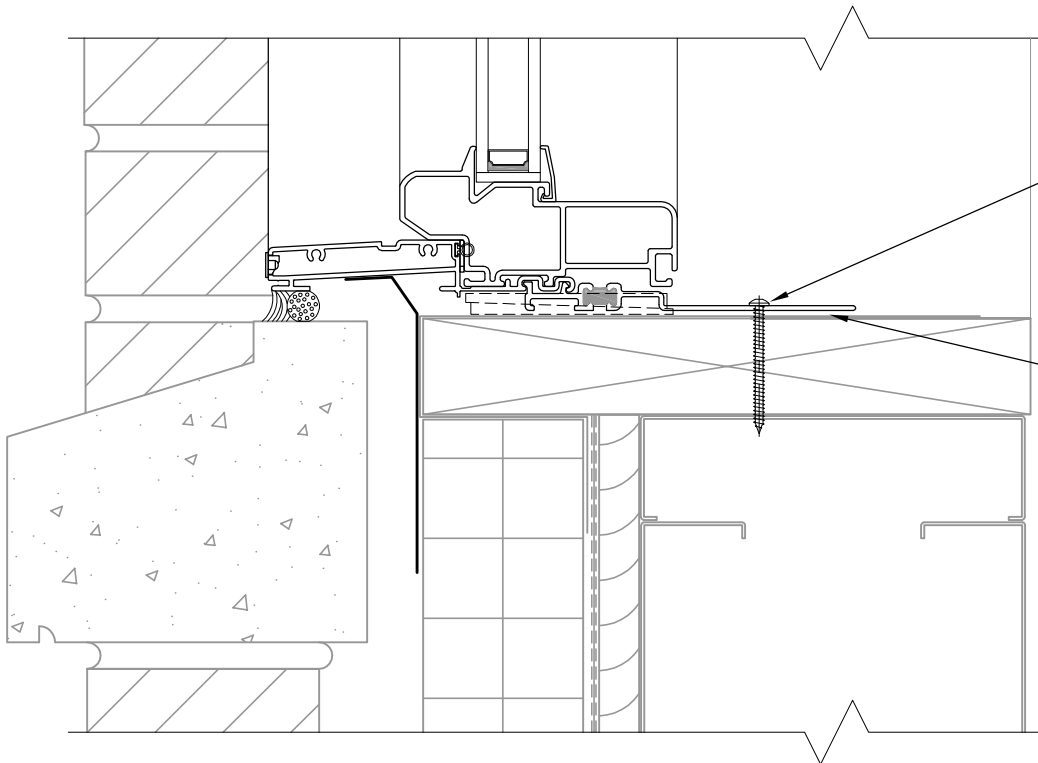
ANCHOR CLIP WITH PANNING (NO INSTALLATION FIN)

SCALE: 1:3



Shim under all Anchor Clips to insure a solid base for the screws to snug down on

2 Screws per Anchor Clip
Minimum Size #8 x 2"
Spaced 3" Apart

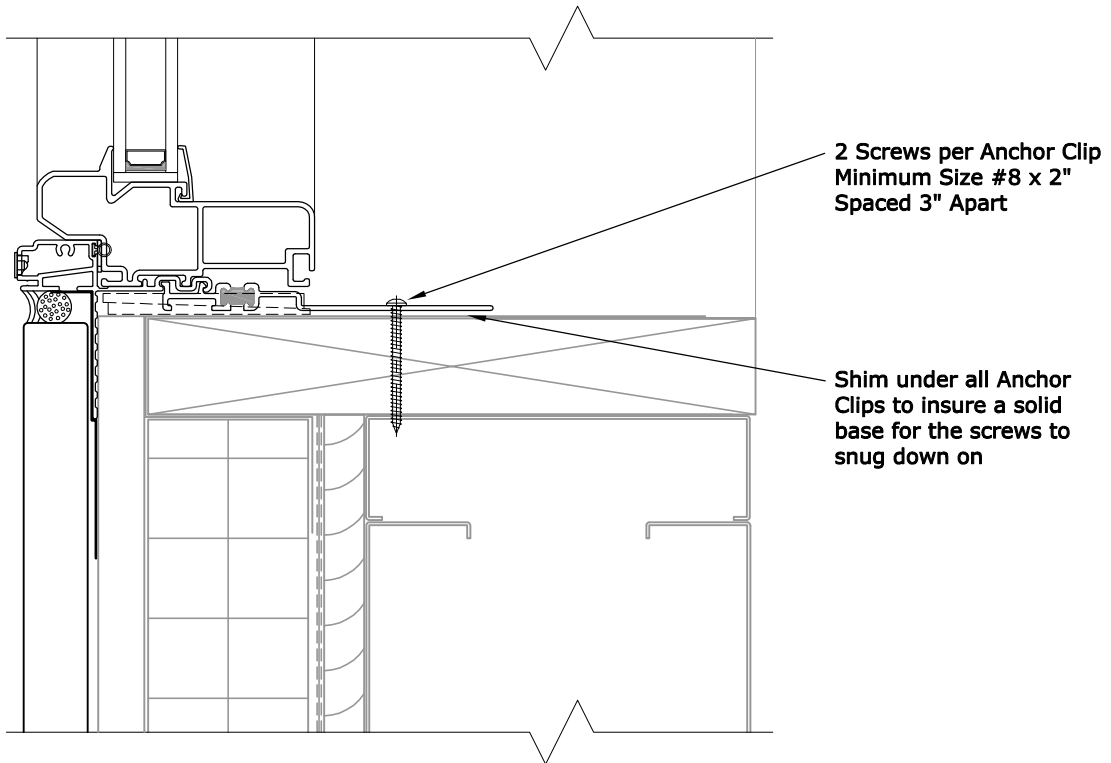
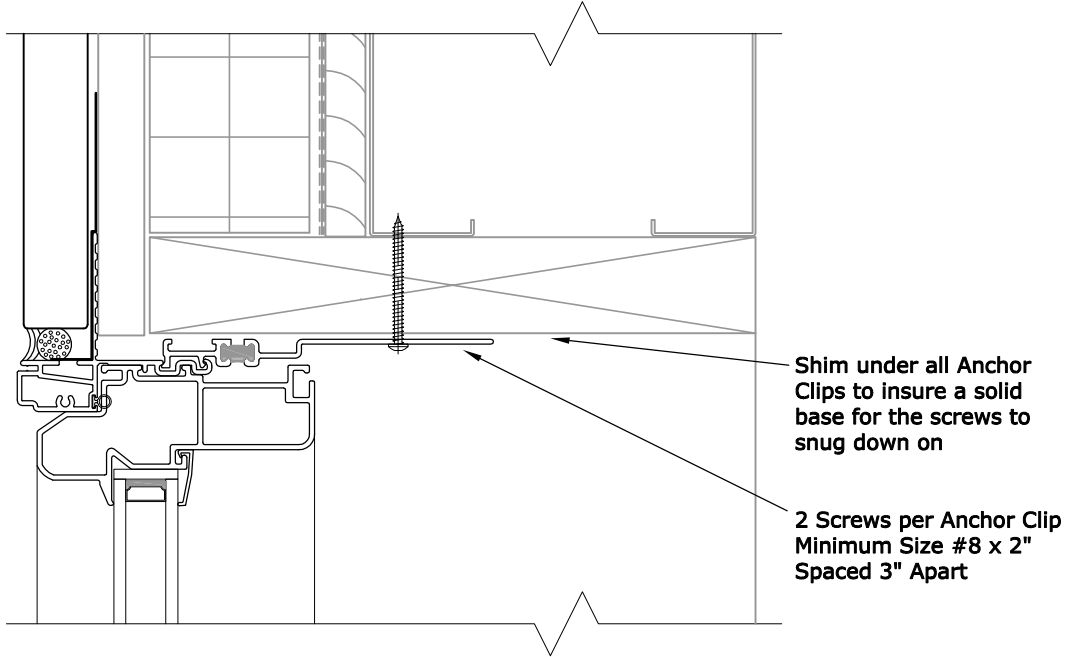


2 Screws per Anchor Clip
Minimum Size #8 x 2"
Spaced 3" Apart

Shim under all Anchor Clips to insure a solid base for the screws to snug down on

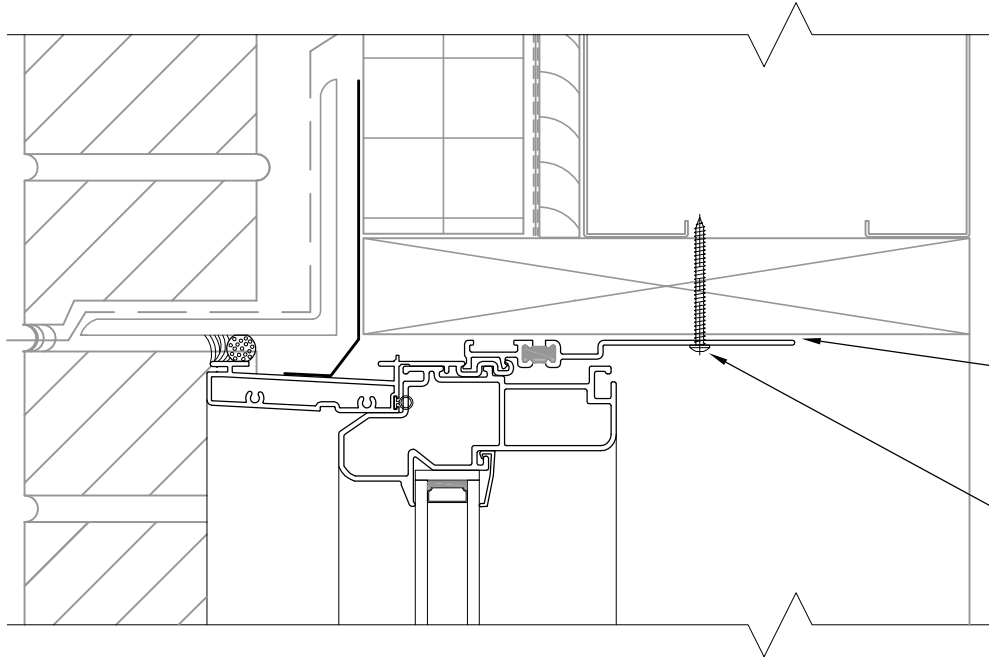
ANCHOR CLIP WITH PAN-001 - SIDING VENEER

SCALE: 1:3



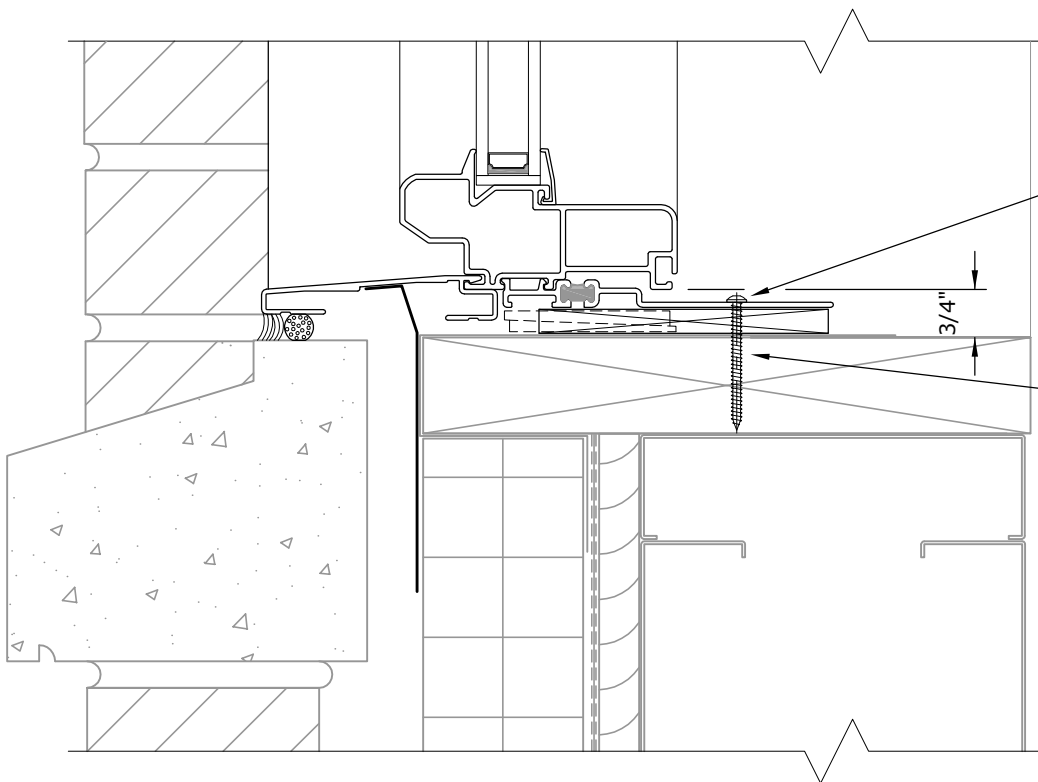
ANCHOR CLIP WITH SLOPE SILL PAN

SCALE: 1:3



Shim under all Anchor Clips to insure a solid base for the screws to snug down on

2 Screws per Anchor Clip
Minimum Size #8 x 2"
Spaced 3" Apart



2 Screws per Anchor Clip
Minimum Size #8 x 2"
Spaced 3" Apart

3/4"
Shim under all Anchor Clips to insure a solid base for the screws to snug down on

SILL ANCHOR AND SCREW THROUGH THE FRAME

SCALE: 1:3

